



# TRANSISTOR D.A.T.A.BOOK

2 MAR 1971

## SPRING 1971

30th EDITION

THIS D.A.T.A.BOOK VALID UNTIL FALL 1971 EDITION

**D.A.T.A.** REFERENCE STANDARDS FOR INDUSTRY



New Types Added .....	966
Types With Revised Specifications .....	521
Types and Manufacturers Added .....	3,358
Types and Manufacturers Deleted .....	481
TOTAL TYPE NUMBERS INCLUDED IN THIS EDITION .....	18,389
New Manufacturers Added .....	4
(Indicated by * in Manufacturer Listing)	
Manufacturers Deleted .....	0
TOTAL MANUFACTURERS THIS EDITION .....	100

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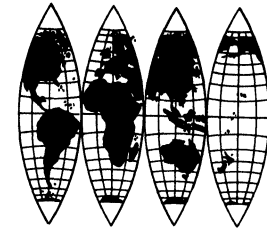
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***D.A.T.A.***

REFERENCE STANDARDS FOR INDUSTRY



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# TRANSISTOR D.A.T.A.BOOK

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# SPRING 1971

**30<sup>TH</sup>**  
**EDITION**



# EDITORIAL PROCEDURES AND OBSERVATIONS

## Purpose

This D.A.T.A.BOOK is designed to report comprehensively on what is presently being produced (throughout the free world) in this specific component field. While a D.A.T.A.BOOK such as this cannot possibly provide 100% of the answers you might need, its primary aim is that of both facilitating the selection of types suitable to your technical requirements and directing you to sources of their manufacture.

## Technical Data Collection

D.A.T.A. acquires and processes the information presented in this D.A.T.A.BOOK with the cooperation of the participating manufacturers who supply us with latest changes. Manufacturers are not charged for technical listings of their products.

## JEDEC Type Numbers

For 2N and 3N types, the electrical and physical characteristics data included in this D.A.T.A.BOOK are those registered with JEDEC. Indicated manufacturers' types may or may not conform exactly with the registered specifications; therefore, individual manufacturers' complete specifications should be checked to determine suitability for particular requirements.

## Substitute Types

This D.A.T.A.BOOK cannot truly claim to be an interchangeability chart; however, because of the sequencing arrangement, by characteristics, in the technical data sections, types with near-identical or similar characteristics appear together, one after the other. For the engineer, this immediate source of technical comparison is superior to, and safer than, a mere listing of possible replacement type numbers.

## Price and Availability

Because of the rapid change in the transistor field, back-up, delivery, and price information should be obtained direct from the manufacturers or their local offices, as included in this D.A.T.A.BOOK. See Table of Contents.

## Manufacturers' Specifications

This D.A.T.A.BOOK includes currently manufactured types, with their major characteristics and their manufacturers. Every effort is made to ensure the accuracy of all entries herein; however, the publisher cannot be held responsible or guarantee against the possibility of error or omission. Only the manufacturers themselves can provide you with complete technical details.

## Discontinued Transistors

Since the first edition of this D.A.T.A.BOOK in 1956, thousands of transistors have been discontinued by the manufacturers. In response to many requests from our subscribers, there is now available the annual D.A.T.A. DISCONTINUED TRANSISTOR D.A.T.A.BOOK, providing the most complete compilation of discontinued transistors, along with their characteristics, ever assembled. See order card inside front cover of this D.A.T.A.BOOK.



# T A B L E O F CONTENTS

TECHNICAL DATA SECTIONS

<b>HOW TO USE THIS D.A.T.A.BOOK</b> .....	iv-v
<b>1 TYPE NUMBER CROSS INDEX</b> .....	2-52
<p style="margin-left: 20px;">In type number sequence, indicating all current manufacturers (coded) of each type, and cross-referenced to Line Numbers in sections 2 through 13. Also includes special 2N and 3N type numbers which are not transistors (included in the SEMICON. DIODE &amp; SCR D.A.T.A.B O O K).</p>	
<b>LOW-POWER TRANSISTOR SECTIONS</b>	
<p style="margin-left: 20px;">• Normally under 1 watt dissipation in free air In order of maximum collector dissipation, <math>f\alpha_b</math>, and type number.</p>	
<b>2 Germanium PNP Types</b> .....	53-65
<b>3 Germanium NPN Types</b> .....	66-68
<b>4 Silicon PNP Types</b> .....	69-82
<b>5 Silicon NPN Types</b> .....	83-116
<b>6 Field-Effect P Channel Types</b> .....	117-119
<b>7 Field-Effect N Channel Types</b> .....	120-126
<b>HIGH-POWER TRANSISTOR SECTIONS</b>	
<p style="margin-left: 20px;">• Normally over 1 watt dissipation in free air In order of decreasing maximum thermal resistance and type number.</p>	
<b>8 Germanium PNP Types</b> .....	127-137
<b>9 Germanium NPN Types</b> .....	138
<b>10 Silicon PNP Types</b> .....	139-145
<b>11 Silicon NPN Types</b> .....	146-184
<b>SPECIAL SECTIONS</b>	
<b>12 Switching Transistors</b> .....	185-212
<p style="margin-left: 20px;">These types are also listed in previous sections. This section includes additional switching data.</p>	
<b>13 Miscellaneous Transistors</b> .....	213-226
<p style="margin-left: 20px;">For categories see Symbol/Code Interpreter.</p>	
<b>SUPPLEMENTARY SECTIONS</b>	
<b>14 Transistors with U.S. Military Specifications Including Qualified Manufacturers</b> .....	227-229
<b>15 Outline Drawings</b> In assigned number order. ....	230-277
<b>Lead Code Identification Guide</b> .....	277
<b>17 Transistor Manufacturers' Local Offices</b> .....	278-309
<b>18 Semiconductor Mounting Hardware Availability</b> ..	310-313
<b>19 Mounting Hardware Manufacturers' Local Offices</b> ..	314
<b>20 Transistor Manufacturer Codes, Names &amp; Addresses</b> ..	315-316
<b>SYMBOL CODE EXPLANATIONS</b> .....	See Interpreter Cards at Back of D.A.T.A.BOOK



## HOW TO MAKE MAXIMUM USE OF THE TRANSISTOR D.A.T.A.BOOK

For maximum information in minimum time, follow the 1-2-3 Basic Procedure in the box below:

**NOTE:** Each section of the D.A.T.A.BOOK is organized in a distinct sequence, as indicated at the top of each page.

1. Find in the following nine "known-unknown" situations the one corresponding with your present need;
2. Follow the outlined steps;
3. If the answer leads to another "known-unknown" situation, repeat 1. and 2. until all possible answers are obtained.

<b>1ST</b>	<p><b>KNOWN:</b> Electrical and Mechanical Requirements.  <b>UNKNOWN:</b> Suitable Type Number(s).</p> <p>a. Turn to Technical Data Section coinciding with your general requirements.  b. By checking the order of listing at top of each page, you will be able to quickly locate those types most closely fitting your requirements. The drawing number referenced at end of each technical data line will be found in Outline Drawings, Section 15, in drawing number order.  The Lead Code referenced at the end of a technical data line is applicable to JEDEC (TO) devices; and the Code identification will be found at the end of Section 15.  c. To ascertain manufacturers of selected type numbers, see "2nd known-unknown" situation below.</p>
<b>2ND</b>	<p><b>KNOWN:</b> Type Number  <b>UNKNOWN:</b> Manufacturer(s), Address, Local Offices</p> <p>a. Turn to Type No. Cross Index, Section 1 (in Type Number order).  b. The manufacturers (coded) are shown for each type number.  c. Manufacturers' names, in code order, are listed at back of D.A.T.A.BOOK with addresses.</p>
<b>3RD</b>	<p><b>KNOWN:</b> Type Number  <b>UNKNOWN:</b> Its Characteristics</p> <p>a. Turn to Type No. Cross Index, Section 1 (in type number order).  b. Opposite each type number is the page and line number, which is significant only for locating the technical data. Line numbers can change from issue to issue of the D.A.T.A.BOOK.  c. Turn to pertinent line number in Technical Data Sections. In addition to the electrical data, the drawing number referenced at end of the technical data line will be found in Outline Drawings, Section 15, in drawing number order. The Lead Code referenced at the end of a technical data line is applicable to JEDEC (TO) devices; and the Code identification will be found at the end of Section 15.</p>
<b>4TH</b>	<p><b>KNOWN:</b> Type Number  <b>UNKNOWN:</b> Equivalents or Similar Types</p> <p>a. Follow through "3rd known-unknown" situation above. . . and  b. Survey characteristics of types immediately above and below that line number to determine which type numbers might fill your need.  c. To ascertain manufacturers of suitable type numbers, see "2nd known-unknown" situation above.</p>
<b>5TH</b>	<p><b>KNOWN:</b> Type Number  <b>UNKNOWN:</b> Case, Dimensions, and Lead Configuration</p> <p>a. Follow through "3rd known-unknown" situation above.</p>
<b>6TH</b>	<p><b>KNOWN:</b> Military Requirement  <b>UNKNOWN:</b> Suitable Type Number(s) with MIL Specs.</p> <p>a. Turn to the Technical Data Section coinciding with your general military requirements.  b. By checking the order of listing at the top of each page, you will be able to quickly locate those military types (prefixed by JAN) most closely fitting the requirements. In addition to the electrical data, the drawing number referenced at end of the technical data line will be found in Outline Drawings, Section 15, in drawing number order. The Lead Code referenced at the end of a technical data line is applicable to JEDEC (TO) devices; and the Code identification will be found at the end of Section 15.  c. To ascertain qualified manufacturers of type numbers under consideration, turn to Types with U.S. MIL Specs., Section 14, where types are listed in type number order, giving manufacturers (coded) and MIL Spec. number.  d. The manufacturers codes are explained at back of D.A.T.A.BOOK with addresses.</p>
<b>7TH</b>	<p><b>KNOWN:</b> Type Number with MIL Specs.  <b>UNKNOWN:</b> Qualified Manufacturer(s) and/or MIL Spec. Number</p> <p>a. Turn to Types with U.S. Military Specification, Section 14, where opposite each type number are the qualified manufacturers (coded) and the MIL Spec. number.  b. Manufacturer codes are explained at back of D.A.T.A.BOOK with addresses.</p>
<b>8TH</b>	<p><b>KNOWN:</b> Type Number Not Included in D.A.T.A.BOOK Type No. Cross Index.  <b>UNKNOWN:</b> What Happened to it?</p> <p>a. Consult the D.A.T.A. DISCONTINUED TRANSISTOR D.A.T.A.BOOK.</p>



## HOW UNITS OF MEASURE ARE PRESENTED IN THIS D.A.T.A.BOOK

The basic unit, for each column heading in the technical data sections, is the one most applicable in tabulating that parameter. There are exceptions, however, which require the use of space-saving "suffix indicators", as explained below.

1. Since the column heading indicates a basic unit only, a "suffix indicator" may be added to the technical data presented in the column. The "suffix indicator" modifies the basic unit in accordance with established engineering practices.

EXAMPLES:	Column Heading	Data if Based on Column Heading	Space-saving Listing Technique	Meaning
	A	0.003	3.0m	3 milliamperes
	Hz	5,000	5.0k	5 kilohertz
	Ohms	9,000,000	9.0M	9 megaohms
	Sec.	0.000007	7.0 $\mu$	7 microseconds

See box below for prefixes and symbols

PREFIXES & SYMBOLS			Recommended by International Committee on Weights and Measures					
Indicating Powers of Ten			Adopted by National Bureau of Standards					
Power	Prefix	Symbol	Power	Prefix	Symbol	Power	Prefix	Symbol
10 <sup>12</sup>	tera	T	10	deka	da	10 <sup>-9</sup>	nano	n
10 <sup>9</sup>	giga	G	10 <sup>-1</sup>	deci	d	10 <sup>-12</sup>	pico	p
10 <sup>6</sup>	mega	M	10 <sup>-2</sup>	centi	c	10 <sup>-15</sup>	femto	f
10 <sup>3</sup>	kilo	k	10 <sup>-3</sup>	milli	m	10 <sup>-18</sup>	atto	a
10 <sup>2</sup>	hecto	h	10 <sup>-6</sup>	micro	$\mu$			

## HOW TYPE NUMBERS ARE SEQUENCED

Type numbers are listed in numeric-alphabetic sequence; i.e. type numbers beginning with a number (decimal, fraction, or whole) precede type numbers beginning with a letter.

EXPLANATION AND EXAMPLES	
1. Decimals and fractions precede whole numbers. An equivalent decimal precedes the fraction when the remainder of type number is identical.	.25Z15D 1/4Z15D 3/4M12Z 1T3
2. Zeros are ignored in sequencing except when the zero is the only basis for distinguishing one type number from another. In this case the type number containing the zero is listed first.	0112 112 0113 00115 AP01 AP1 AP02
3. Number and/or letter groupings preceding hyphens or slashes are the controlling factors in sequencing. The hyphens and slashes themselves precede any identically positioned letters also having the same beginning number/letter groupings.	66-0706 66M1 70/10 70A9
4. Identical type numbers representing devices with different characteristics are listed in order of manufacturer letter code.	TD6 GESY TD6 GIC
5. A military prefix (JAN) is ignored in the numeric-alphabetic sequencing of type numbers. A military type number directly follows its equivalent JEDEC type number provided that the sequencing data are identical.	2N645 JAN 2N645

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
1N4378	ΔTII	218-90	JAN2N44A	GESY	59-7	2N123	CNS	60-17	2N173	CNS	(cont.)	2N227	CNS	64-11
1N5722	ΔTII	218-91	2N45	CNS	59-7	♦ETC	IDC	192-88	♦ETC	MOTA	♦ETC	2N228	CNS	67-87
1N5723	ΔTII	218-92	♦ETC	GIC		JAN2N123	NJS	59-101	♦ETC	MULB	♦ETC	2N229	CNS	67-88
1N5724	ΔTII	218-93	2N45A	CNS	59-8	2N124	CNS	192-36	2N174	CNS	136-22	2N231	CNS	53-2
1N5725	ΔTII	218-94	2N59	CNS	61-88	♦ETC	NJS	66-4	♦DEL	♦ETC	♦ETC	2N233	CNS	67-9
2AC132	PHIC	213-80	2N59A	CNS	61-89	2N125	CNS	66-19	♦MULB	PHIN	♦ETC	2N233A	CNS	67-10
2AC187	PHIC	213-81	2N59B	CNS	61-90	♦ETC	NJS	66-20	♦MULB	PHIN	♦ETC	2N234A	CNS	130-9
2AC188	PHIC	213-82	2N59C	CNS	61-91	♦ETC	NJS	66-20	♦MULB	PHIN	♦ETC	2N235A	CNS	130-10
2AC197	MULB	213-83	♦ETC	CNS	61-91	JAN2N128	SPR	53-18	CNS	MOTA	♦ETC	2N235B	CNS	130-11
2AC198	MULB	213-84	2N60	CNS	61-81	2N130	CNS	56-28	♦MULB	PHIN	♦ETC	2N236A	CNS	130-12
2AC199	MULB	213-85	♦ETC	CNS	61-81	2N130A	CNS	56-59	♦MULB	PHIN	♦ETC	2N236B	CNS	130-13
2AD139	PHIC	213-86	2N60A	CNS	61-82	♦ETC	NJS	56-29	JAN2N174A	DEL	♦ETC	2N237	CNS	58-88
2AD140	PHIC	213-87	♦ETC	CNS	61-82	2N131	CNS	56-29	2N175	CNS	53-7	2N238	CNS	58-44
2AD149	PHIC	213-88	2N60B	CNS	61-83	♦ETC	NJS	56-62	♦ETC	MOTA	♦ETC	2N240	CNS	53-27
2AD161	PHIC	213-89	2N60C	CNS	61-84	2N132	CNS	56-31	CNS	IDC	♦KSC	2N241	CNS	56-73
2AD162	PHIC	213-90	♦ETC	CNS	61-75	2N132A	CNS	56-67	CNS	NJS	♦PPC	2N241A	CNS	62-52
2AT329	SERA	213-91	2N61A	CNS	61-76	2N133	CNS	56-30	2N178	CNS	133-49	2N242	CNS	129-20
2AT331	SERA	213-92	♦ETC	CNS	61-77	♦ETC	NJS	56-63	♦ETC	MOTA	♦ETC	2N243	CNS	111-95
2BC119	SGSI	213-93	2N61B	CNS	61-77	2N133A	CNS	56-63	2N180	CNS	58-100	2N244	CNS	111-96
2BC138	SGSI	213-94	2N61C	CNS	61-78	♦ETC	NJS	56-78	♦ETC	MOTA	♦ETC	2N249	CNS	64-109
2BC139	SGSI	213-95	♦ETC	CNS	61-78	2N135	CNS	56-83	2N181	CNS	58-101	2N250	CNS	132-88
2BC142	SGSI	213-96	2N63	CNS	56-58	♦ETC	NJS	56-83	2N182	CNS	66-65	2N251	CNS	132-89
2BC143	SGSI	213-97	♦ETC	CNS	56-58	2N136	CNS	56-85	2N183	CNS	66-71	2N255	CNS	129-21
2BC144	SGSI	213-98	2N64	CNS	56-60	♦ETC	NJS	56-85	2N184	CNS	66-76	2N257	CNS	130-101
2BC221	SGSI	213-99	♦ETC	CNS	56-60	2N137	CNS	58-41	2N185	CNS	58-42	2N257B	CNS	130-102
2BC222	SGSI	213-100	2N65	CNS	58-4	♦ETC	NJS	53-41	2N186	CNS	56-64	2N257G	CNS	130-103
2BC286	SGSI	213-101	♦ETC	CNS	58-4	2N138	CNS	55-62	2N187	CNS	62-12	2N263	CNS	85-74
2BC288	SGSI	213-102	2N68/13	CNS	128-107	♦ETC	NJS	129-14	2N188	CNS	56-68	2N264	CNS	84-60
2BD124	PHIN	213-103	2N77	CNS	53-39	2N140	CNS	138-2	2N188A	CNS	56-68	2N266	CNS	
2BD131	PHIN	213-104	♦ETC	CNS	53-39	2N141/13	CNS	129-15	2N189	CNS	62-23	2N267	CNS	
2BDY20	PHIN	213-105	2N78	CNS	66-45	2N142/13	CNS	138-8	2N190	CNS	62-23	2N268	CNS	
2BDY38	PHIN	213-106	♦ETC	CNS	66-45	2N143/13	CNS	66-25	2N191	CNS	62-43	2N269	CNS	
2C111	PHIN	222-94	2N78A	CNS	66-24	2N144/13	CNS	66-25	2N192	CNS	62-54	2N270	CNS	
2C415	PHIN	101-59	♦ETC	CNS	66-24	2N145	CNS	66-25	2N193	CNS	67-17	2N271	CNS	
2C425	PHIN	222-95	2N94	CNS	67-8	♦ETC	NJS	66-26	2N194	CNS	66-10	2N272	CNS	
2C444	PHIN	222-96	JAN2N78A	CNS	66-32	2N146	CNS	66-27	2N195	CNS	66-11	2N273	CNS	
2CY30	PHIN	106-61	2N94A	CNS	67-8	2N147	CNS	129-16	2N196	CNS	62-42	2N274	CNS	
2CY31	PHIN	72-95	♦ETC	CNS	67-38	2N155	CNS	129-16	2N197	CNS	62-42	2N275	CNS	
2CY32	PHIN	72-96	2N95	CNS	138-1	♦ETC	NJS	129-17	2N198	CNS	62-13	2N276	CNS	
2CY33	PHIN	72-99	♦ETC	CNS	138-1	2N158	CNS	129-18	2N199	CNS	62-24	2N277	CNS	
2CY34	PHIN	72-100	2N97	CNS	66-8	♦KSC	NJS	129-11	2N200	CNS	62-24	2N278	CNS	
2CY38	PHIN	79-103	♦ETC	CNS	66-9	JAN2N158	CNS	129-19	2N201	CNS	62-43	2N279	CNS	
2CY39	PHIN	79-104	2N98	CNS	66-9	2N158A	CNS	129-19	2N202	CNS	62-43	2N280	CNS	
2G101	PHIN	57-5	♦ETC	CNS	66-17	2N160	CNS	85-42	2N203	CNS	62-54	2N281	CNS	
2G102	PHIN	57-8	2N99	CNS	127-70	♦ETC	NJS	85-43	2N204	CNS	62-54	2N282	CNS	
2G103	PHIN	60-94	2N101/13	CNS	138-7	2N160A	CNS	85-43	2N205	CNS	67-17	2N283	CNS	
2G104	PHIN	208-85	2N102/13	CNS	138-7	♦ETC	NJS	85-48	2N206	CNS	67-17	2N284	CNS	
2G106	PHIN	60-95	2N103	CNS	66-7	2N161	CNS	85-48	2N207	CNS	67-17	2N285	CNS	
2G110	PHIN	207-78	♦ETC	CNS	66-7	2N161A	CNS	85-49	2N208	CNS	67-17	2N286	CNS	
2G210	PHIN	64-94	2N104	CNS	58-99	♦ETC	NJS	85-49	2N209	CNS	66-10	2N287	CNS	
2G220	PHIN	136-20	♦ETC	CNS	53-40	2N162	CNS	85-56	2N210	CNS	66-11	2N288	CNS	
2G221	PHIN	133-45	2N105	CNS	56-61	2N162A	CNS	85-57	2N211	CNS	66-11	2N289	CNS	
2G222	PHIN	133-46	♦ETC	CNS	56-61	♦ETC	NJS	85-57	2N212	CNS	66-11	2N290	CNS	
2G240	PHIN	129-64	2N107	CNS	53-67	2N163	CNS	85-51	2N213	CNS	67-33	2N291	CNS	
2H1254	EMLS	73-38	♦ETC	CNS	53-58	2N163A	CNS	85-51	2N214	CNS	67-91	2N292	CNS	
2H1255	EMLS	195-46	2N108	CNS	53-58	♦ETC	NJS	85-52	2N215	CNS	67-86	2N293	CNS	
2H1256	EMLS	73-42	♦ETC	CNS	53-58	2N163A	CNS	85-52	2N216	CNS	67-86	2N294	CNS	
2H1257	EMLS	197-48	2N109	CNS	61-35	♦ETC	NJS	85-52	2N217	CNS	67-90	2N295	CNS	
2H1258	EMLS	73-39	♦ETC	CNS	61-35	2N164	CNS	66-33	2N218	CNS	67-85	2N296	CNS	
2H1259	EMLS	195-44	2N111	CNS	58-24	♦ETC	NJS	66-66	2N219	CNS	67-85	2N297	CNS	
2N2X	TIF	213-108	♦ETC	CNS	58-24	2N164A	CNS	66-66	2N220	CNS	58-102	2N298	CNS	
2N34	CNS	58-85	2N112	CNS	58-26	♦ETC	NJS	66-34	2N221	CNS	58-102	2N299	CNS	
2N34A	CNS	53-63	2N112A	CNS	58-27	2N165	CNS	66-34	2N222	CNS	58-102	2N300	CNS	
2N35	CNS	67-7	2N113	CNS	58-28	♦ETC	NJS	66-3	2N223	CNS	53-3	2N301	CNS	
2N36	CNS	53-55	2N114	CNS	58-31	2N166	CNS	66-3	2N224	CNS	64-14	2N302	CNS	
2N37	CNS	53-56	♦ETC	CNS	58-31	♦ETC	NJS	66-46	2N225	CNS	64-15	2N303	CNS	
2N38	CNS	53-57	2N117	CNS	85-41	2N167	CNS	66-46	2N226	CNS	64-10	2N304	CNS	
2N43	CNS	63-92	♦ETC	CNS	85-41	♦AGESY	NJS	66-47	2N227	CNS	64-14	2N305	CNS	
2N43A	CNS	63-93	2N118	CNS	85-34	♦ETC	NJS	192-22	2N228	CNS	64-14	2N306	CNS	
JAN2N43A	GESY	59-84	2N118A	CNS	85-47	2N167A	CNS	66-49	2N229	CNS	64-14	2N307	CNS	
2N44	CNS	63-91	♦ETC	CNS	85-47	♦AGESY	NJS	66-49	2N230	CNS	64-14	2N308	CNS	
2N44A	CNS	61-32	2N119	CNS	85-50	♦ETC	NJS	66-49	2N231	CNS	64-14	2N309	CNS	
			♦ETC	CNS	85-50	2N169	CNS	66-21	2N232	CNS	64-14	2N310	CNS	
			2N120	CNS	85-36	♦ETC	NJS	66-21	2N233	CNS	64-14	2N311	CNS	
			♦ETC	CNS	85-54	2N170	CNS	66-2	2N234	CNS	64-14	2N312	CNS	
			2N122	CNS	160-12	♦ETC	NJS	66-28	2N235	CNS	64-15	2N313	CNS	
			♦ETC	CNS	160-12	2N172	CNS	66-28	2N236	CNS	64-15	2N314	CNS	
			2N122	CNS	160-12	♦ETC	NJS	136-21	2N237	CNS	64-10	2N315	CNS	
			♦ETC	CNS	160-12	2N173	CNS	136-21	2N238	CNS	64-10	2N316	CNS	

cont next col





# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
JAN2N404	GIC	59-91	2N426	NJS		2N457A	ΔTEC	133-81	2N476	ΔTEC	88-30	2N494B	ΔGESY	220-50
2N404A	RCA		(cont.)	SSI		ΔDEL			CNS	ETC		SOIF	SSI	
ΔETC	CNS	59-92	SES	UPI		ETC	IDC		NJS	SCA		TIIB	SSI	
GIC	ΔGESY	192-14	TIIB	GIC	59-71	ΔMOTA	PPC		SSI	TIIB	88-31	2N494C	ΔGESY	220-51
ITC	IDC		JAN2N426	GIC	191-36	NJS	TEC		2N477	ΔTEC		SOIF	SSI	
MST	ΔMOTA		2N427	CNS	61-85	ΔSOD	TEK		CNS	ETC		TIIB	CNS	69-95
ΔNPC	NJS		ΔETC	GIC	193-80	ΔTIIB			NJS	SCA		2N495	IDC	
ΔSES	RCA		ITC	MST		CNS	DEL	133-62	SSI	TIIB	88-32	2N496	CNS	69-89
JAN2N404A	TIIF	59-93	SSI	SES		ETC	IDC		2N478	ΔTEC		IDC	SSI	
2N405	RCA		UPI	GIC	59-105	KSC	NJS		CNS	ETC		2N497	CNS	149-93
2N406	CNS	58-97	JAN2N427	GIC	192-38	ΔSOD	TEK		NJS	SCA		ΔFSC	ETC	
ΔETC	GIC		2N428	CNS	194-25	ETC	KSC	136-31	SSI	TIIB	88-33	ITC	ΔGESY	
CNS	ΔRCA	58-98	ΔETC	GIC		NJS	PPC	132-35	2N479	ΔTEC		NJS	MST	
GIC	ETC		ITC	MST		ΔSOD	TEK		CNS	ETC		PHIN	SSI	
2N407	CNS	58-46	SSI	SES		ΔTIIB			SSI	TIIB	88-26	ΔRAYN	SCA	
ΔETC	NJS		TIIB	GIC	60-26	ΔDEL	KSC	133-63	2N479A	ΔTEC		SSI	SSI	
2N408	CNS	58-47	JAN2N428	GIC	193-56	ETC	NJS		CNS	ETC		TIIB	SSI	
ΔETC	GIC		2N428A	CNS	80-27	ΔMOTA	TEK		NJS	SCA	88-34	TIIF	VALG	
2N409	CNS	55-57	ETC	GIC	193-57	ΔTIIB			SSI	TIIB	88-27	JAN2N497	GESY	112-60
2N410	ETC	55-58	NJS	UPI		ΔDEL	TEK	133-64	2N480A	ΔTEC		TEC	TIIB	
2N411	ETC	55-72	2N438	CNS	67-32	ETC	KSC		CNS	ETC		2N497A	ΔGESY	150-77
2N412	ETC	55-73	ΔETC	GIC	191-54	NJS	PPC		NJS	SCA	59-72	CNS	ETC	
2N413	ETC	61-55	NJS	UPI		ΔSOD	TEK		SSI	TIIB	59-85	SSI	TADI	
ΔETC	GESY		2N438A	CNS	59-89	TEK	TIIB		NJS	SCA	60-5	TEC	TIIB	
GIC	IDC		ΔETC	GIC	66-72	JAN2N458B	none	136-32	2N482	CNS	59-85	2N498	ΔTIIB	149-94
ITC	NJS		2N439	CNS	60-14	2N459	CNS	132-47	ITC	UPI		CNS	ETC	
ΔSES	UPI		ETC	GIC	67-61	ΔMOTA	KSC	192-47	NJS	SCA	60-29	ΔFSC	ΔGESY	
2N413A	ETC	59-61	NJS	TIIB	193-12	2N459A	ETC	133-65	2N483	ETC	60-29	ITC	MST	
2N414	ETC	61-62	2N439A	CNS	60-14	ETC	MOTA	63-52	ITC	UPI	60-15	NJS	PHIN	
ΔETC	GESY		ETC	GIC	67-61	ΔMOTA	TEK		NJS	SCA	60-15	SSI	SCA	
GIC	IDC		2N440	CNS	193-12	2N460	ETC	63-52	2N484	ETC	60-15	SSI	TADI	
ITC	NJS		ΔETC	GIC	67-62	ETC	NJS		ITC	UPI	60-39	TIIF	TIIB	
ΔRCA	UPI		2N440A	CNS	67-62	2N461	ΔMOTA	63-72	2N485	CNS	60-39	JAN2N498	GESY	112-61
2N414A	CNS	60-11	ΔETC	GIC	67-62	CNS	ETC		ITC	UPI	60-39	TEC	TIIB	
ΔETC	NJS		2N441	ΔDEL	136-27	GIC	SES	64-12	NJS	SCA	56-86	2N498A	ΔGESY	150-78
2N414B	ITC	63-12	CNS	KSC		JAN2N461	ΔMOTA	64-12	2N487	CNS	220-25	ETC	SCA	
CNS	ETC		ΔMULB	PHIN		2N463	ETC	130-22	2N489	ΔGESY	220-25	JAN2N499	ETC	53-35
2N414C	ITC	63-13	PHIC	SOD		JAN2N463	none	189-10	CNS	SSI	220-25	IDC	ΔMOTA	
CNS	ETC		ΔRADF	PHIN		2N464	CNS	130-110	TIIB	SSI	220-25	SCA	SSI	
2N415	ETC	60-24	2N442	ΔDEL	136-28	ETC	GIC	61-47	2N489A	ΔGESY	220-26	JAN2N499	ΔMOTA	53-100
2N415A	CNS	60-25	CNS	ETC		JAN2N464	none	58-87	TIIB	SSI	220-26	ETC	SSI	
2N416	ETC	60-25	KSC	ΔMOTA		2N465	CNS	61-48	2N489B	TIIB	220-27	IDC	ΔMOTA	54-45
ΔETC	GIC		2N443	ΔDEL	136-29	ETC	ITC		CNS	SSI	220-27	SCA	SSI	
ITC	UPI		CNS	ETC		JAN2N465	ΔMOTA	58-90	2N490	ΔGESY	220-28	JAN2N499A	ETC	54-46
2N416	CNS	61-63	ΔMULB	PHIC		2N466	ETC	61-50	TIIB	SSI	220-28	SCA	SSI	
ΔETC	GIC		2N444	ΔGIC	66-60	ETC	GIC	58-90	2N490A	ΔGESY	220-29	JAN2N499A	ETC	54-29
JAN2N416	UPI	59-104	CNS	ETC		JAN2N466M	ΔMOTA	61-57	2N490B	ΔGESY	220-29	SCA	SSI	200-95
2N417	CNS	61-67	2N444A	CNS	67-5	2N467	CNS	58-91	TIIB	SSI	220-30	2N501	ETC	54-30
ΔETC	GIC		ETC	NJS		ETC	ITC	218-95	2N490C	ΔGESY	220-30	ΔMOTA	CNS	200-96
IDC	ITC		2N445	ΔGIC	66-61	ETC	SCA	88-16	CNS	SSI	220-30	2N501A	ETC	54-30
NJS	UPI		CNS	ETC		JAN2N467	ΔMOTA	58-103	2N491	ΔGESY	220-31	SCA	SSI	
JAN2N417	GIC	60-45	2N445A	ΔGIC	67-11	2N469	ΔGIC	218-95	TIIB	SSI	220-31	JAN2N501A	ΔMOTA	54-8
2N418	ΔSOD	130-18	CNS	ETC		2N469A	GIC	218-96	2N490C	ΔGESY	220-31	SPR	CNS	185-73
CNS	ETC	209-82	2N446	ΔGIC	66-69	2N470	ΔTEC	88-16	CNS	SSI	220-31	SCA	SSI	54-57
KSC	NJS		CNS	ETC		2N471	ETC		2N491A	ΔGESY	220-31	SCA	SSI	
2N419	ΔSOD	130-19	2N446A	ΔGIC	67-40	2N472	ΔTEC		CNS	SSI	220-31	SCA	SSI	
CNS	ETC		CNS	ETC		2N473	ETC		TIIB	SSI	220-31	SCA	SSI	
KSC	NJS		2N447	ΔGIC	66-74	2N474	ETC		2N491B	ΔGESY	220-31	SCA	SSI	
2N420	ΔSOD	130-20	CNS	ETC		2N475	ETC		TIIB	SSI	220-31	SCA	SSI	
CNS	ETC	209-83	2N447A	ΔGIC	67-60	2N476	ETC		2N492	ΔGESY	220-31	SCA	SSI	
ΔETC	GIC		2N447B	ETC	186-78	2N477	ETC		TIIB	SSI	220-31	SCA	SSI	
2N420A	ΔSOD	130-21	2N448	CNS	66-36	2N478	ETC		2N492A	ΔGESY	220-31	SCA	SSI	
ETC	KSC	209-84	ETC	NJS	66-40	2N479	ETC		TIIB	SSI	220-31	SCA	SSI	
2N422	CNS	58-108	2N449	CNS	66-40	2N480	ETC		2N492B	ΔGESY	220-31	SCA	SSI	
ETC	ITC		ETC	NJS	60-28	2N481	ETC		SSI	TIIB	220-31	SCA	SSI	
JAN2N422	none	59-11	2N450	CNS	60-28	2N482	ETC		2N493	ΔGESY	220-31	SCA	SSI	
2N424	ΔTIIB	168-91	ETC	ITC		2N483	ETC		TIIB	SSI	220-31	SCA	SSI	
CNS	ETC		2N456	NJS	132-33	2N484	ETC		2N493A	ΔGESY	220-31	SCA	SSI	
IDC	NJS		ETC	KSC	189-70	2N485	ETC		TIIB	SSI	220-31	SCA	SSI	
SEN	SSI		2N456A	ΔTIIB	133-59	2N486	ETC		2N493B	ΔGESY	220-31	SCA	SSI	
ΔSOD	TEC		CNS	DEL		2N487	ETC		TIIB	SSI	220-31	SCA	SSI	
JAN2N424	TIIB	169-1	2N456B	ΔTIIB	133-60	2N488	ETC		2N494	ΔGESY	220-31	SCA	SSI	
2N424A	SIL	168-75	CNS	DEL		2N489	ETC		TIIB	SSI	220-31	SCA	SSI	
ETC	TIIB		ETC	KSC		2N490	ETC		2N494A	ΔGESY	220-31	SCA	SSI	
SEN	SSI		ΔMOTA	NJS		2N491	ETC		TIIB	SSI	220-31	SCA	SSI	
SPC	TEC		TEK	PPC		2N492	ETC		2N494B	ΔGESY	220-31	SCA	SSI	
2N425	CNS	61-60	2N456B	ΔTIIB	133-60	2N493	ETC		TIIB	SSI	220-31	SCA	SSI	
ETC	GIC	192-13	CNS	DEL		2N494	ETC		2N494C	ΔGESY	220-31	SCA	SSI	
ITC	MST		ETC	KSC		2N495	ETC		TIIB	SSI	220-31	SCA	SSI	
NJS	SSI		ΔSOD	NJS		2N496	ETC		2N496A	ΔGESY	220-31	SCA	SSI	
JAN2N425	UPI	59-62	JAN2N456B	none	136-30	2N497	ETC		TIIB	SSI	220-31	SCA	SSI	
2N426	CNS	191-8	2N457	CNS	132-34	2N498	ETC		2N498A	ΔGESY	220-31	SCA	SSI	
ETC	GIC	61-61	ETC	IDC	189-71	2N499	ETC		TIIB	SSI	220-31	SCA	SSI	
ITC	MST	188-97	KSC	NJS		JAN2N499A	ETC		2N499B	ΔGESY	220-31	SCA	SSI	
cont next col.			PPC	PPC					TIIB	SSI	220-31	SCA	SSI	

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N511B (cont)	CNS PPC TEK TIIB SOD		2N527 (cont)	PHIN TIIF NPC SES VALG MOTA		2N558	CNS ETC MOTA	66-57	2N604A 2N609	SSI CNS CNS	87-33 61-92	2N652	CNS GIC MST	62-44
2N512	ETC SOD	136-36	2N527A	ETC MOTA	63-83	JAN2N559	CNS MEHK SSI TADI none	60-96 212-32 107-12 198-101	2N610	CNS UPI	61-85	2N652A	ETC MOTA	62-45
2N512A	ETC SOD	136-37	2N529	CNS NJS UPI ETC	59-63	JAN2N560	none	106-79 186-29 131-102	2N611 2N612	CNS UPI CNS	61-79 61-72	JAN2N652A 2N653	ETC MOTA MOTA	62-46 62-57
2N512B	ETC SOD	136-38	2N530	CNS ETC UPI ETC	59-75	2N561	CNS KSC SOD PPC	58-109	2N613 2N614	CNS UPI CNS	61-74 58-8	2N654	ETC MOTA	62-72
2N513	ETC SOD	136-39	2N531	CNS UPI ETC	59-86	2N563	CNS ETC UPI ETC	58-110	2N615 2N616	CNS UPI CNS	58-10 58-14	2N655	ETC MOTA	62-81
2N513A	ETC SOD	136-40	2N532	CNS UPI ETC	59-94	2N564	CNS ITC ETC	59-12	2N617 2N618	CNS UPI MOTA	58-12 133-69	2N656	ETC MOTA	149-95
2N513B	ETC SOD	136-41	2N533	CNS UPI ETC	59-100	2N565	CNS GIC ITC ETC	66-6	2N619 2N620 2N621 2N622 2N627	SCA SCA SCA SCA MOTA	93-30 93-31 93-32 83-1 133-70	JAN2N656 2N657	ETC MOTA MOTA PHIN SCA SES SSI TADI TIIB TRW VALG FSC TEC TII	112-62
2N514	ETC SOD	136-42	2N534	CNS UPI ETC	129-103	2N566	CNS GIC ITC ETC	59-40	2N628	CNS IDC PPC	133-71	2N656A	ETC MOTA	150-79
2N514A	ETC SOD	136-43	2N535	CNS UPI ETC	56-35	2N567	CNS GIC ITC ETC	59-50	2N629	CNS IDC PPC	133-72	2N657	ETC MOTA	149-96
2N514B	ETC SOD	136-44	2N535A	CNS UPI ETC	56-36	2N568	CNS GIC ITC ETC	59-76	2N630	CNS IDC PPC	133-73	2N657A	ETC MOTA	150-80
2N515	ETC SOD	66-14	2N535B	CNS UPI ETC	56-37	2N569	CNS GIC ITC ETC	59-77	2N631	CNS IDC PPC	61-59	2N658	ETC MOTA	63-31
2N516	ETC SOD	66-15	2N536	CNS UPI ETC	56-38	2N570	CNS GIC ITC ETC	61-100	2N632	CNS UPI	61-56	2N659	ETC MOTA	192-23
2N517	ETC SOD	66-16	JAN2N537	none	63-86	2N571	CNS GIC ITC ETC	137-25	2N633	CNS UPI	61-51	2N660	ETC MOTA	63-34
2N518	ETC SOD	60-36	2N538	ETC SOD	129-103	2N572	CNS GIC ITC ETC	137-26 137-27 137-28 137-29 137-30 137-31	2N634	CNS UPI	67-56	2N661	ETC MOTA	193-99
2N519	ETC SOD	62-56	2N538A	ETC SOD	129-104	JAN2N574	SOD	192-104	2N635	CNS UPI	67-67	2N662	ETC MOTA	63-35
2N519A	ETC SOD	58-92	2N539	ETC SOD	129-105	2N574	ETC SOD	192-92	2N636	CNS UPI	67-75	2N663	ETC MOTA	194-31
2N520	ETC SOD	59-73	JAN2N539	KSC SOD	129-101	2N576A	CNS GIC ITC ETC	67-100 192-92 57-33 192-39	2N637	CNS UPI	67-76	2N664	ETC MOTA	130-33
2N520A	ETC SOD	59-74	2N539A	ETC SOD	129-106	2N578	CNS GIC ITC ETC	67-100 192-92 57-33 192-39	2N638	CNS UPI	67-77	2N665	ETC MOTA	130-34
2N521	ETC SOD	60-19	JAN2N539AM	KSC SOD	129-107	2N579	CNS GIC ITC ETC	57-42 192-84	2N639	CNS UPI	67-78	2N666	ETC MOTA	130-35
2N521A	ETC SOD	60-20	JAN2N539M	KSC SOD	129-108	2N580	CNS GIC ITC ETC	57-58 194-2	2N640	CNS UPI	67-79	2N667	ETC MOTA	130-36
2N522	ETC SOD	63-26	2N540	ETC SOD	129-109	2N581	CNS GIC ITC ETC	60-21 192-105	2N641	CNS UPI	67-80	2N668	ETC MOTA	130-37
2N522A	ETC SOD	60-46	2N540A	ETC SOD	129-110	2N582	CNS GIC ITC ETC	60-51 194-26	2N642	CNS UPI	67-81	2N669	ETC MOTA	130-38
2N523	ETC SOD	63-27	2N541	ETC SOD	88-46	2N583	CNS GIC ITC ETC	57-43 192-106	2N643	CNS UPI	67-82	2N670	ETC MOTA	130-39
2N523A	ETC SOD	60-55	2N541A	ETC SOD	88-46	2N584	CNS GIC ITC ETC	57-59 194-27	2N644	CNS UPI	67-83	2N671	ETC MOTA	130-40
2N524	ETC SOD	63-76	2N542	ETC SOD	88-47	2N585	CNS GIC ITC ETC	66-85 192-29	2N645	CNS UPI	67-84	2N672	ETC MOTA	130-41
2N524A	ETC SOD	63-77	2N542A	ETC SOD	88-48	2N586	CNS GIC ITC ETC	63-99	2N646	CNS UPI	67-85	2N673	ETC MOTA	130-42
2N525	ETC SOD	63-78	2N543	ETC SOD	88-48	2N587	CNS GIC ITC ETC	67-92	2N647	CNS UPI	67-86	2N674	ETC MOTA	130-43
2N525A	ETC SOD	63-79	2N543A	ETC SOD	88-49	2N588	CNS GIC ITC ETC	53-36	2N648	CNS UPI	67-87	2N675	ETC MOTA	130-44
2N526	ETC SOD	63-80	2N544	ETC SOD	88-49	2N589	CNS GIC ITC ETC	133-68	2N649	CNS UPI	67-88	2N676	ETC MOTA	130-45
2N526A	ETC SOD	63-81	2N544A	ETC SOD	88-49	2N590	CNS GIC ITC ETC	53-65	2N650	CNS UPI	67-89	2N677	ETC MOTA	130-46
2N527	ETC SOD	63-82	2N545	ETC SOD	109-27	2N591	CNS GIC ITC ETC	213-8 213-9 213-10 213-11 213-12	2N651	CNS UPI	67-90	2N678	ETC MOTA	130-47
JAN2N526	ETC SOD	63-46	2N545A	ETC SOD	109-27	2N592	CNS GIC ITC ETC	64-26	2N652	CNS UPI	67-91	2N679	ETC MOTA	130-48
2N526A	ETC SOD	63-81	2N546	ETC SOD	109-29	2N593	CNS GIC ITC ETC	64-33 193-11	2N653	CNS UPI	67-92	2N680	ETC MOTA	130-49
2N527	ETC SOD	63-82	2N546A	ETC SOD	109-29	2N594	CNS GIC ITC ETC	64-28 64-34 193-3	2N654	CNS UPI	67-93	2N681	ETC MOTA	130-50
JAN2N526	ETC SOD	63-46	2N547	ETC SOD	109-55	2N595	CNS GIC ITC ETC	64-35 193-4	2N655	CNS UPI	67-94	2N682	ETC MOTA	130-51
2N526A	ETC SOD	63-81	2N547A	ETC SOD	109-55	2N596	CNS GIC ITC ETC	65-56 192-73	2N656	CNS UPI	67-95	2N683	ETC MOTA	130-52
2N527	ETC SOD	63-82	2N548	ETC SOD	109-56	2N597	CNS GIC ITC ETC	65-55 65-51 57-71 57-72 57-79 199-82	2N657	CNS UPI	67-96	2N684	ETC MOTA	130-53
JAN2N526	ETC SOD	63-46	2N548A	ETC SOD	109-56	2N598	CNS GIC ITC ETC	64-33 193-11	2N658	CNS UPI	67-97	2N685	ETC MOTA	130-54
2N526A	ETC SOD	63-81	2N549	ETC SOD	109-57	2N599	CNS GIC ITC ETC	64-28 64-34 193-3	2N659	CNS UPI	67-98	2N686	ETC MOTA	130-55
2N527	ETC SOD	63-82	2N549A	ETC SOD	109-57	2N600	CNS GIC ITC ETC	64-35 193-4	2N660	CNS UPI	67-99	2N687	ETC MOTA	130-56
JAN2N526	ETC SOD	63-46	2N550	ETC SOD	109-58	JAN2N600	GIC	65-56	2N661	CNS UPI	67-100	2N688	ETC MOTA	130-57
2N526A	ETC SOD	63-81	2N550A	ETC SOD	109-58	2N601	GIC	65-55	2N662	CNS UPI	67-101	2N689	ETC MOTA	130-58
2N527	ETC SOD	63-82	2N551	ETC SOD	109-52	2N602	GIC	65-51	2N663	CNS UPI	67-102	2N690	ETC MOTA	130-59
JAN2N526	ETC SOD	63-46	2N551A	ETC SOD	109-52	2N602A	GIC	57-51	2N664	CNS UPI	67-103	2N691	ETC MOTA	130-60
2N526A	ETC SOD	63-81	2N552	ETC SOD	109-53	2N603	GIC	57-71	2N665	CNS UPI	67-104	2N692	ETC MOTA	130-61
2N527	ETC SOD	63-82	2N552A	ETC SOD	109-53	2N603A	GIC	57-52	2N666	CNS UPI	67-105	2N693	ETC MOTA	130-62
JAN2N526	ETC SOD	63-46	2N553	ETC SOD	130-23	2N604	GIC	57-79	2N667	CNS UPI	67-106	2N694	ETC MOTA	130-63
2N526A	ETC SOD	63-81	2N553A	ETC SOD	130-23	JAN2N604	IDC	57-77	2N668	CNS UPI	67-107	2N695	ETC MOTA	130-64
2N527	ETC SOD	63-82	2N554	ETC SOD	133-66	2N605	GIC	57-77	2N669	CNS UPI	67-108	2N696	ETC MOTA	130-65
JAN2N526	ETC SOD	63-46	2N554A	ETC SOD	133-66	2N606	GIC	57-77	2N670	CNS UPI	67-109	2N697	ETC MOTA	130-66
2N526A	ETC SOD	63-81	2N555	ETC SOD	133-67	2N607	GIC	57-77	2N671	CNS UPI	67-110	2N698	ETC MOTA	130-67
2N527	ETC SOD	63-82	2N555A	ETC SOD	133-67	2N608	GIC	57-77	2N672	CNS UPI	67-111	2N699	ETC MOTA	130-68
JAN2N526	ETC SOD	63-46	2N556	ETC SOD	66-55	2N609	GIC	57-77	2N673	CNS UPI	67-112	2N700	ETC MOTA	130-69
2N526A	ETC SOD	63-81	2N556A	ETC SOD	66-55	2N610	GIC	57-77	2N674	CNS UPI	67-113	2N701	ETC MOTA	130-70
2N527	ETC SOD	63-82	2N557	ETC SOD	66-56	2N611	GIC	57-77	2N675	CNS UPI	67-114	2N702	ETC MOTA	130-71
JAN2N526	ETC SOD	63-46	2N557A	ETC SOD	66-56	2N612	GIC	57-77	2N676	CNS UPI	67-115	2N703	ETC MOTA	130-72
2N526A	ETC SOD	63-81	2N558	ETC SOD	66-56	2N613	GIC	57-77	2N677	CNS UPI	67-116	2N704	ETC MOTA	130-73
2N527	ETC SOD	63-82	2N559	ETC SOD	66-56	2N614	GIC	57-77	2N678	CNS UPI	67-117	2N705	ETC MOTA	130-74
JAN2N526	ETC SOD	63-46	2N560	ETC SOD	66-56	2N615	GIC	57-77	2N679	CNS UPI	67-118	2N706	ETC MOTA	130-75
2N526A	ETC SOD	63-81	2N561	ETC SOD	66-56	2N616	GIC	57-77	2N680	CNS UPI	67-119	2N707	ETC MOTA	130-76
2N527	ETC SOD	63-82	2N562	ETC SOD	66-56	2N617	GIC	57-77	2N681	CNS UPI	67-120	2N708	ETC MOTA	130-77
JAN2N526	ETC SOD	63-46	2N563	ETC SOD	66-56	2N618	GIC	57-77	2N682	CNS UPI	67-121	2N709	ETC MOTA	130-78
2N526A	ETC SOD	63-81	2N564	ETC SOD	66-56	2N619	GIC	57-77	2N683	CNS UPI	67-122	2N710	ETC MOTA	130-79
2N527	ETC SOD	63-82	2N565	ETC SOD	66-56	2N620	GIC							



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N678A	▲SOD CNS	127-105	JAN2N703	MOTA TII	96-20	2N711	▲TII MULB	84-97	2N722A	▲RAYN TEC	79-8	2N753	▲RAYN TSC	79-8
2N678B	▲SOD CNS	127-106	2N705	▲MOTA PHIN	64-95 208-63	2N711A	▲TII SSI	60-76 203-48	2N726	▲EMLS SCA	73-82	2N753 (cont.)	▲FSC ITC	73-82
2N678C	▲SOD CNS	127-107	2N705A	▲MOTA TII	58-49 186-47	2N711B	▲TII SSI	60-77 203-49	2N727	▲TEC RAYN	73-83	2N754	▲MOTA TEC	73-83
2N679	▲SOD CNS	67-19 191-44	2N705A	▲MOTA TII	60-97	2N715	▲TII SSI	107-70	2N730	▲FSC RAYN	107-6 194-36	2N755	▲MOTA TEC	107-6 194-36
2N680	▲SOD CNS	58-48	2N706	▲MOTA TII	98-82 208-86	2N716	▲TII SSI	107-71	2N731	▲EMLS RAYN	107-13 194-54	2N756	▲MOTA TEC	107-13 194-54
JAN2N695	none	54-107 186-46	2N706A	▲MOTA TII	97-35 211-94	2N717	▲TII SSI	105-56 200-21	2N734	▲MOTA RAYN	106-80	2N757	▲MOTA TEC	106-80
2N696	▲FSC CNS	110-26 200-20	2N706A/46	▲MOTA TII	105-94 204-8	2N718	▲TII SSI	105-58 200-73	2N735	▲EMLS RAYN	106-81	2N758	▲MOTA TEC	106-81
JAN2N696	▲FSC CNS	109-83 199-52	2N706A/46	▲MOTA TII	97-36 211-98	2N718A	▲TII SSI	107-44	2N736	▲MOTA RAYN	107-93	JAN2N757A	none	107-49
2N696A	▲FSC CNS	112-84 197-100	2N706A/46	▲MOTA TII	105-94 204-8	2N719	▲TII SSI	105-28	2N736A	▲MOTA RAYN	107-93	2N758A	▲MOTA TEC	107-16
2N697	▲FSC CNS	110-31 200-72	2N706A/46	▲MOTA TII	97-36 211-98	JAN2N718A	▲MOTA TII	107-45	2N736B	▲MOTA RAYN	107-94	2N758B	▲MOTA TEC	107-17
JAN2N697	▲FSC CNS	110-15 200-3	2N706A/46	▲MOTA TII	106-14 98-104	2N719A	▲TII SSI	107-5	2N737	▲MOTA RAYN	107-94	2N759	▲MOTA TEC	107-18
2N697A	▲FSC CNS	113-4 199-51	2N706B	▲MOTA TII	210-13	2N720	▲TII SSI	105-30	2N738	▲MOTA RAYN	107-94	JAN2N759A	none	107-50
2N698	▲FSC CNS	112-85	2N706B	▲MOTA TII	210-13	2N720A	▲TII SSI	107-75	2N739	▲MOTA RAYN	107-94	2N759B	▲MOTA TEC	107-19
JAN2N698	▲FSC CNS	109-84	2N706C	▲MOTA TII	104-1 208-94	2N721	▲TII SSI	105-30	2N739A	▲MOTA RAYN	107-94	2N760	▲MOTA TEC	107-20
2N699	▲FSC CNS	109-84	2N707	▲MOTA TII	98-105	2N721A	▲TII SSI	107-46	2N740	▲MOTA RAYN	107-94	2N760A	▲MOTA TEC	107-100
JAN2N699	▲FSC CNS	113-5	2N707A	▲MOTA TII	107-69	2N722	▲TII SSI	78-99	2N740A	▲MOTA RAYN	107-95	2N761	▲MOTA TEC	107-101
2N699A	▲FSC CNS	113-5	2N707A	▲MOTA TII	107-69	JAN2N720A	▲MOTA TII	107-89	2N741	▲MOTA RAYN	107-95	2N762	▲MOTA TEC	107-102
2N699B	▲FSC CNS	115-90	2N708	▲MOTA TII	104-54 210-88	2N721A	▲TII SSI	78-89	2N742	▲MOTA RAYN	107-95	2N763	▲MOTA TEC	107-102
2N700	▲MOTA TII	55-35	2N708A	▲MOTA TII	103-69 208-26	2N722A	▲TII SSI	107-46	2N743	▲MOTA RAYN	107-95	2N764	▲MOTA TEC	107-102
2N700A	▲MOTA TII	55-36	2N709	▲MOTA TII	103-70 99-53	2N722A	▲TII SSI	78-89	2N744	▲MOTA RAYN	107-95	2N765	▲MOTA TEC	107-102
JAN2N700A	▲MOTA TII	55-37	2N709A/46	▲MOTA TII	211-104	2N722A	▲TII SSI	78-89	2N745	▲MOTA RAYN	107-95	2N766	▲MOTA TEC	107-102
2N702	▲MOTA TII	96-86	2N709A/46	▲MOTA TII	106-41 212-34	2N722A	▲TII SSI	78-89	2N746	▲MOTA RAYN	107-95	2N767	▲MOTA TEC	107-102
JAN2N702	▲MOTA TII	96-87	2N709A/46	▲MOTA TII	106-35 212-27	2N722A	▲TII SSI	78-89	2N747	▲MOTA RAYN	107-95	2N768	▲MOTA TEC	107-102
2N703	▲MOTA TII	96-87	2N709A/46	▲MOTA TII	99-54 211-105	2N722A	▲TII SSI	78-89	2N748	▲MOTA RAYN	107-95	2N769	▲MOTA TEC	107-102
JAN2N703	▲MOTA TII	96-87	2N710	▲MOTA TII	64-96 208-64	2N722A	▲TII SSI	78-89	2N749	▲MOTA RAYN	107-95	2N770	▲MOTA TEC	107-102
JAN2N703	▲MOTA TII	96-87	2N710A	▲MOTA TII	58-50 186-48	2N722A	▲TII SSI	78-89	2N750	▲MOTA RAYN	107-95	2N771	▲MOTA TEC	107-102

cont.next col

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N827	ΔMOTA SSI	60-86	2N870	ΔFSC EMLS	107-22	2N918 (cont.)	CNS APX		2N936	ΔSOD CRY	77-100	2N976	SSI	85-103
2N828	ΔMOTA SSI	60-98		CNS RAYN			ESMF			CNS SCA			ΔFSC	208-24
2N828A	ΔMOTA SSI	61-14		ETC SES			FERB		2N937	ΔSOD TADI	77-102		ETC SCA	75-93
2N829	ΔMOTA SSI	60-99		SGSI TADI			MEHK MOTA			CRY SSI		2N979	ΔSFR	54-31
2N834	ΔMOTA SSI	208-51		TII TIIF			MULB		2N938	ΔSOD TADI	71-73	2N980	IDC	201-18
	ESMF	99-24	2N871	ΔFSC UPI	107-52		NPC			CRY SSI		2N981	SSI	54-32
	FSC	211-15		EMLS RAYN			NTLB		2N939	ΔSOD TADI	71-98	2N982	SSI	107-25
	HSC			ETC SES			RAYN			CNS SCA		2N983	IDC	54-70
	ITT			SGSI SSI			SGSI		2N940	ΔSOD TADI	71-99	2N984	SSI	210-74
	ITC			TADI TEC			TADI			CRY SSI		2N985	SSI	210-75
	MISI			TII TIIF		JAN2N918	VALG			SSI		2N986	SSI	54-61
	RAYN			TSC UPI			NSC		2N941	ΔSOD TADI	72-13	JAN2N986	none	218-98
	SES			TSC UPI			RCA			SSI	221-30	2N987	ΔAPX	56-53
	TEC			RAYN			TII		2N942	ΔSOD TADI	72-11	2N988	MULB	56-39
2N834/46	SCA	106-19	2N909	CNS SCA	105-31	2N919	CNS		2N943	ΔSOD TADI	71-74	2N989	SCA	98-12
	ITT	209-42		ETC SES			MULB			SSI	221-32	2N990	SCA	98-13
	SCA	104-59	2N910	ETC UPI	107-92		SCA		2N944	ΔSOD TADI	71-75	2N991	PHIC	54-103
2N834A	ITT	211-16		TEC		2N920	ETC		2N945	ΔSOD TADI	71-76	2N992	PHIC	54-101
	SCA		2N911	ΔFSC	107-23	2N921	ETC		2N946	ΔSOD TADI	71-77	2N993	PHIC	54-104
2N835	ΔMOTA SSI	99-21		ETC RAYN		2N922	ETC			CRY SSI	221-35	2N994	SES	61-101
	FSC	210-78		SGSI SSI		2N923	ETC		2N947	ΔSOD TADI	102-95	2N995	SSI	186-4
	HSC			TADI TEC		2N924	CRY			SSI			ΔFSC	76-67
	ITT			TII TRW			SOD		2N955	ΔFSC EMLS	108-15		ITT	76-68
	SCA			TSC UPI		2N925	SCA			ETC GIC		2N996	ΔFSC	201-19
	SGSI			RAYN			SSI			HSC ITC			SCA	76-103
2N835/46	SCA	106-20	JAN2N910	FSC	107-53	2N926	CNS			MEHK MOTA			SSI	203-74
	ITT	207-96		TII TSC			SCA		2N957	RAYN	93-61	2N997	SSI	106-88
	SCA	185-98	2N911	ΔFSC	107-23	2N927	CRY			SSI			ΔFSC	106-88
2N837	ΔSES	58-52		ETC RAYN		2N928	SOD		2N958	ΔMOTA SSI	60-101		ΔFSC	222-97
2N838	ΔMOTA SSI	60-100		SGSI SSI		2N929	SCA			TII TIIF	208-52	2N998	SSI	222-98
2N839	ΔTEC	95-11		TADI TEC			SSI		2N959	ΔMOTA SSI	60-102		ΔFSC	222-98
	TEC			TII TSC		2N930	ΔTII		2N960	SSI	208-53		ΔFSC	222-98
2N840	ΔMOTA SSI	95-12	JAN2N911	FSC	107-24		ESMF			TII TIIF	208-54	2N1000	SSI	67-53
	TEC			TII TSC		2N931	ETC		2N961	SSI	208-55		ETC	192-64
2N841	ΔMOTA SSI	95-41	2N912	ΔFSC	107-68		FERB			TII TIIF	208-56	2N1001	SSI	131-103
	TEC			ETC RAYN		2N932	GIC		2N962	SSI	208-57		ETC	61-42
2N841/46	SCA	95-42		SGSI SSI			MEHK			TII TIIF	208-58	2N1002	SSI	61-43
2N842	ΔTEC	95-13		TADI TEC		2N933	NTLB		2N963	SSI	208-59		ETC	61-44
	TEC			TII TSC			PHIN			TII TIIF	208-60	2N1003	SSI	61-44
2N843	ΔTEC	95-43		TSC UPI		2N934	RAYN		2N964	SSI	208-61	2N1004	SSI	61-44
	TEC			RAYN			SGSI			TII TIIF	208-62		ETC	61-44
2N844	ΔTEC	95-66	JAN2N912	FSC	107-7		TADI		2N965	SSI	208-63	2N1005	SSI	61-44
	TEC			TII TSC		2N935	TEC			TII TIIF	208-64		ETC	61-44
2N845	ΔTEC	95-67	2N913	ΔFSC	104-55		TSC		2N966	SSI	208-65	2N1006	SSI	61-44
2N846A	IDC	54-60		ETC RAYN			TIIF		2N967	SSI	208-66	2N1007	SSI	61-44
	SPR	210-73	2N914	ΔFSC	210-89		TSC			TII TIIF	208-67		ETC	61-44
2N849	ΔTII	99-36		ETC RAYN		2N936	VALG		2N968	SSI	208-68	2N1008	SSI	61-44
2N850	ΔTII	99-37		SGSI SSI			TADI			TII TIIF	208-69		ETC	61-44
2N851	ΔTII	99-58		TADI TEC		2N937	TII		2N969	SSI	208-70	2N1009	SSI	61-44
	TIIF			TII TSC			TIIF			TII TIIF	208-71		ETC	61-44
2N852	ΔTII	99-59		TSC UPI		2N938	NTLB		2N970	SSI	208-72	2N1010	SSI	61-44
	TIIF			RAYN			PHIN			TII TIIF	208-73		ETC	61-44
2N858	CRY	69-110	JAN2N914	FSC	103-72		RAYN		2N971	SSI	208-74	2N1011	SSI	61-44
	SCA	193-95		TII TSC		2N939	SGSI			TII TIIF	208-75		ETC	61-44
	SPR		2N915	ΔFSC	103-17		TADI		2N972	SSI	208-76	2N1012	SSI	61-44
2N859	CRY	70-1		ETC RAYN			TSC			TII TIIF	208-77		ETC	61-44
	SCA	193-92		SGSI SSI		2N940	TEC		2N973	SSI	208-78	2N1013	SSI	61-44
2N860	CRY	70-2		TADI TEC			TSC			TII TIIF	208-79		ETC	61-44
	SCA	193-93	2N916	ΔFSC	104-60		TIIF		2N974	SSI	208-80	2N1014	SSI	61-44
2N861	CRY	70-14		ETC RAYN		2N941	TII			TII TIIF	208-81	2N1015	SSI	61-44
	SCA	195-42		SGSI SSI			TIIF		2N975	SSI	208-82		ETC	61-44
2N862	CRY	70-3		TADI TEC		2N942	TSC			TII TIIF	208-83		ETC	61-44
	SCA	193-94	2N917	ΔFSC	103-73		TIIF		2N976	SSI	208-84	2N1016	SSI	61-44
2N863	CRY	70-15		ETC RAYN			TSC			TII TIIF	208-85		ETC	61-44
	SCA	195-41		SGSI SSI		2N943	TSC		2N977	SSI	208-86	2N1017	SSI	61-44
2N864	CRY	70-16		TADI TEC			TIIF			TII TIIF	208-87		ETC	61-44
	SCA	195-40		TII TSC		2N944	TSC		2N978	SSI	208-88	2N1018	SSI	61-44
2N864A	CRY	73-29	JAN2N916	FSC	103-74		TIIF			TII TIIF	208-89		ETC	61-44
	SCA	194-23		TII TSC		2N945	TSC		2N979	SSI	208-90	2N1019	SSI	61-44
2N865	CRY	70-22		TSC UPI			TIIF			TII TIIF	208-91		ETC	61-44
	SCA	199-89	2N918	ΔFSC	90-71		TSC		2N980	SSI	208-92	2N1020	SSI	61-44
2N865A	CRY	73-37		ETC RAYN		2N946	TSC			TII TIIF	208-93		ETC	61-44
	SCA	195-43		SGSI SSI			TIIF		2N981	SSI	208-94	2N1021	SSI	61-44
2N869	ΔFSC	76-66		TADI TEC		2N947	TSC			TII TIIF	208-95		ETC	61-44
	ETC			TII TSC			TIIF		2N982	SSI	208-96	2N1022	SSI	61-44
	ITT			RAYN		2N948	TSC			TII TIIF	208-97		ETC	61-44
	MOTA			SGSI SSI			TIIF		2N983	SSI	208-98	2N1023	SSI	61-44
	TEC			TADI TEC		2N949	TSC			TII TIIF	208-99		ETC	61-44
2N869A	ΔFSC	77-81		TII TSC			TIIF		2N984	SSI	208-100	2N1024	SSI	61-44
	ETC			RAYN		2N950	TSC			TII TIIF	208-101		ETC	61-44
	ITT			SGSI SSI			TIIF		2N985	SSI	208-102	2N1025	SSI	61-44
	MOTA			TADI TEC		2N951	TSC			TII TIIF	208-103		ETC	61-44
	TEC			TII TSC			TIIF		2N986	SSI	208-104	2N1026	SSI	61-44
2N869A	ΔFSC	77-81		RAYN		2N952	TSC			TII TIIF	208-105		ETC	61-44
	ETC			SGSI SSI			TIIF		2N987	SSI	208-106	2N1027	SSI	61-44
	ITT			TADI TEC		2N953	TSC			TII TIIF	208-107		ETC	61-44
	MOTA			TII TSC			TIIF		2N988	SSI	208-108	2N1028	SSI	61-44
	RAYN			RAYN		2N954	TSC			TII TIIF	208-109		ETC	61-44
	SGSI			SGSI SSI			TIIF		2N989	SSI	208-110	2N1029	SSI	61-44
	TADI			TADI TEC		2N955	TSC			TII TIIF	208-111		ETC	61-44
	TEC			TII TSC			TIIF		2N990	SSI	208-112	2N1030	SSI	61-44
JAN2N869A	FSC	77-59	2N917/46	FSC	106-34	2N956	TSC			TII TIIF	208-113		ETC	61-44
	MOTA	212-30	2N917A	RAYN	90-70		TIIF		2N991	SSI	208-114		ETC	61-44
			2N918	ΔFSC	90-71		TSC			TII TIIF	208-115			

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N1015F	SEN	179-62	2N1035	▲HAYN	71-62	JAN2N1049A	SEN	163-30	2N1102	CNS	87-83	2N1132A		
2N1016	▲WESY	179-63		▲CRY		2N1049B	▲TII	163-43	▲ETC	CNS	84-63	(cont.)	▲RAYN	
▲ETC	SEN	189-47		▲SOD			▲SIL		2N1104	SCA	195-47		▲TADI	
▲SIL	SPC	189-48	2N1036	▲ARAYN	71-65		▲SEN		2N1107	CNS	53-34	2N1132B46	SCA	79-12
	SSI			▲CRY		2N1050	▲TII	163-44	▲ETC	ETC	53-29	2N1132B	SCA	80-95
2N1016A	▲WESY	179-64		▲SOD			▲SEN		2N1108	CNS	53-29	▲RAYN	SCA	199-98
CNS	▲ETC	189-49	2N1037	▲ARAYN	71-63		▲SIL		2N1109	CNS	53-28	SSI	TADI	
SEN	▲SIL			▲CRY		2N1050A	▲TII	163-45	▲ETC	ETC	53-30	2N1136	▲SOD	132-48
SPC	SSI			▲SOD			▲SEN		2N1110	CNS	53-30	CNS	▲ETC	
	▲SIL		2N1038	▲TII	128-77	JAN2N1050A	SEN	163-31	2N1111	CNS	53-31	2N1136A	▲SOD	132-49
JAN2N1016B	SEN	179-66		▲MOTA			SSI		▲ETC	ETC	53-32	CNS	▲ETC	
SIL	SPC			▲TEK		2N1050B	▲TII	163-46	2N1111A	ETC	53-32	KSC	PPC	
	WESY		2N1038-1	KSC	128-57		▲SEN		2N1111B	ETC	53-33	2N1136B	▲SOD	132-50
2N1016C	▲WESY	179-67	2N1038-2	KSC	128-58		▲SIL		2N1114	CNS	67-63	CNS	▲ETC	
▲ETC	SEN	189-51	2N1039	▲TII	128-78	2N1051	IDC	106-89	2N1115	ETC	59-107	2N1137	▲SOD	132-51
▲SIL	SPC			ESMF			SSI		2N1116	▲TII	109-67	CNS	▲ETC	
	SSI			IDC		JAN2N1051	none	107-76	▲ETC	SCA		IDC	KSC	
JAN2N1016C	SEN	179-68		MISI		2N1052	▲TEC	109-59	▲SIL	SEN		2N1137A	▲SOD	132-52
SIL	SPC		JAN2N1039	KSC	65-10		SSI		2N1117	▲TII	109-62	CNS	▲ETC	
	WESY			TEK		2N1053	SCA	109-60	▲ETC	SCA		IDC	KSC	
2N1016D	▲WESY	179-69	2N1039-1	KSC	128-59	2N1054	▲TII	109-61	2N1118	IDC	70-13	2N1137B	▲SOD	132-53
▲ETC	SEN	189-52	2N1039-2	KSC	128-60		▲SEN		▲SEN	SPC		KSC	PPC	
▲SIL	SPC		2N1040	▲TII	128-79	2N1054	▲TII	109-61	2N1118A	IDC	70-5	2N1138	▲SOD	130-36
	SSI			ESMF			▲ETC		▲RAYN	SPR		CNS	▲ETC	
JAN2N1016D	SEN	179-70		KSC		2N1055	▲TEC	109-54	2N1118B	IDC	69-96	2N1138A	▲SOD	130-37
SIL	SPC		2N1040-1	KSC	128-61		▲SEN		▲SPR	TADI		CNS	▲ETC	
	WESY		2N1040-2	KSC	128-62	2N1057	ETC	63-94	JAN2N1118	SSI	69-96	CNS	▲ETC	
2N1016E	▲WESY	179-71	2N1041	▲TII	128-80		▲UNI		▲CRY	SPR	70-5	KSC	PPC	
SEN	▲SIL	189-53		ESMF		2N1057	▲ETC	66-18	▲RAYN	SSI	70-8	2N1138B	▲SOD	130-38
SPC	SSI		JAN2N1041	KSC	65-11		▲SEN		▲SPR	TADI	70-8	CNS	▲ETC	
2N1016F	SEN	179-72		TEK		2N1058	NJS	67-81	2N1119	IDC	194-28	2N1140	▲SOD	107-4
SPC	SSI	189-54	2N1041-1	KSC	128-63	2N1059	▲ETC	57-92	▲CRY	SPR	69-90	CNS	▲ETC	
2N1017	CNS	61-68	2N1041-2	KSC	128-64	2N1066	▲ARCA	152-3	2N1119A	IDC	192-67	2N1141	▲TII	64-107
ETC	▲ITC		2N1042	▲TII	128-65	2N1067	SEN	190-35	JAN2N1119	SPR	131-3	▲MOTA	TIIF	
MST	UPI			KSC	189-77		SPC		2N1120	▲SOD	133-89	2N1141A	▲TII	64-104
2N1018	CNS	61-69	JAN2N1042	KSC	128-81	2N1068	SEN	156-3	▲ETC	MOTA	133-89	▲MOTA	TIIF	64-106
ETC	ITC			TEK			SPC	190-37	JAN2N1120	ETC	66-44	2N1142	▲TII	64-106
	UPI		2N1042-1	KSC	128-66	2N1069	SSI	165-50	2N1121	IDC	53-16	▲MOTA	TIIF	
2N1021	▲TII	133-75	2N1042-2	KSC	128-67		▲SEN	190-5	2N1122	SCA	197-45	JAN2N1142	▲MOTA	64-100
	▲DEL		2N1043	▲TII	128-68		▲SOD			SSI			TIIF	
	KSC			▲MOTA	189-78	2N1070	▲ETC	165-51	2N1122A	SCA	53-17	2N1142A	▲TII	64-101
	PPC		JAN2N1043	KSC	128-82		▲SEN	190-6	▲SPR	SCA	197-46	2N1143	▲TII	64-103
2N1021A	▲TII	133-76		TEK		2N1073	▲SOD	158-42	2N1123	GIC	65-54	2N1143A	▲TII	64-102
	▲DEL		2N1043-1	KSC	128-69		▲SEN	186-64	2N1124	SEN	64-74	2N1144	CNS	58-34
	KSC		2N1043-2	KSC	128-70	2N1073A	▲SOD	127-71	2N1125	CNS	64-81	2N1144A	CNS	58-35
	PPC		2N1044	▲TII	189-79		▲SEN		2N1128	▲ETC	59-33	2N1145	CNS	133-90
JAN2N1021A	none	136-45	JAN2N1044	KSC	128-83	2N1073B	▲SOD	127-73	2N1129	CNS	58-106	2N1146	▲ETC	
2N1022	▲TII	133-77		TEK			▲SEN	127-73	2N1130	▲ETC	58-107	▲MOTA	KSC	
	▲DEL		2N1044-1	KSC	128-72	2N1077	▲SOD	128-108	2N1131	▲FSC	80-89	2N1146A	CNS	133-91
	KSC		2N1044-2	KSC	128-73	2N1078	▲MOTA	166-84		CNS		▲ETC	KSC	
	PPC		2N1045	▲TII	128-74	2N1079	▲TEC	166-85	2N1124	SEN	64-74	2N1146B	▲SOD	133-92
2N1022A	▲TII	133-78	JAN2N1045	KSC	128-84	2N1080	▲ETC	166-85	2N1125	CNS	64-81	KSC	PPC	
	▲DEL			TEK			▲SEN	141-10	2N1128	▲ETC	59-33	PPC	▲MOTA	
	KSC		2N1045-1	KSC	128-75	2N1084	▲TEC	157-54	2N1129	CNS	58-106	2N1146C	▲SOD	133-93
	PPC		2N1045-2	KSC	128-76	2N1085	SSI	66-41	2N1130	▲ETC	58-107	KSC	PPC	
JAN2N1022A	none	136-46	2N1046	▲TII	132-97	2N1086	▲ETC	66-42	2N1131	▲FSC	80-89	2N1147	CNS	133-94
2N1023	▲ARCA	57-91		TEK		2N1087	▲SEN	66-43	JAN2N1131	▲MOTA	80-90	▲ETC	CNS	
2N1024	▲SOD	71-78	JAN2N1046	KSC	129-72	2N1087	▲SEN	66-43	▲TEC	RAYN	80-90	2N1147A	▲SOD	133-95
	▲CRY		2N1046A	▲ETC	132-98	2N1088	▲SEN	66-43	2N1131/46	SCA	79-9	▲MOTA	PPC	
	▲RAYN		2N1046B	▲ETC	132-99	2N1089	▲SEN	66-88	2N1131A	CNS	80-91	2N1147B	CNS	133-96
	SSI		2N1047	▲TII	163-35	2N1090	GIC	192-63		SEN	198-100	▲MOTA	KSC	
2N1025	▲SOD	71-79		▲ETC		2N1091	▲GIC	66-91	2N1132	▲FSC	80-92	2N1147C	▲SOD	133-97
▲ETC	▲CRY		JAN2N1046	▲ETC	132-98	2N1092	▲GIC	148-77		CNS		KSC	▲MOTA	
▲SCA	▲RAYN		2N1047	▲TII	163-35	2N1093	▲SEN	190-36	2N1132A	▲FSC	80-92	PPC	▲SOD	
	SSI			▲ETC			SSI	59-106	2N1132B	▲FSC	80-92	CNS	▲ETC	
JAN2N1025M	▲SOD	71-80	JAN2N1047A	SEN	163-28	2N1093	CNS	61-21	2N1132C	▲FSC	80-92	2N1149	▲TII	85-66
2N1026	▲SOD	71-100		SIL		2N1094	▲SEN	106-102		RAYN		CNS	▲ETC	
▲CRY	▲ETC		2N1047B	▲TII	163-37	JAN2N1094	▲SEN	106-103	2N1132A	▲FSC	80-92	2N1150	▲TII	85-68
▲RAYN	SSI			▲ETC		2N1095	▲SEN	58-32	2N1132B	▲FSC	80-92	CNS	▲ETC	
2N1026A	▲CRY	78-25	2N1048	▲TII	163-38	2N1096	▲SEN	58-32	2N1132C	▲FSC	80-92	2N1151	▲TII	85-69
▲ETC	▲RAYN			▲ETC		2N1097	▲SEN	58-33	2N1132A46	▲FSC	80-92	CNS	▲ETC	
JAN2N1026M	▲CRY	71-101	JAN2N1048A	SEN	163-29	2N1098	▲SEN	58-33	2N1132A	▲FSC	80-92	2N1152	▲TII	85-70
2N1027	▲SOD	72-7		▲ETC		2N1099	▲SEN	133-87	2N1132A	▲FSC	80-92	CNS	▲ETC	
▲ETC	▲CRY		2N1048B	▲TII	163-40		▲SEN		2N1132A	▲FSC	80-92	2N1153	▲TII	85-72
▲SCA	▲RAYN			▲ETC		2N1100	▲SEN	133-88	2N1132A	▲FSC	80-92	CNS	▲ETC	
	SSI		2N1049	▲TII	163-41		▲SEN	189-29	2N1132A46	▲FSC	80-92	2N1154	▲TII	111-98
2N1028	▲SOD	72-10		▲ETC		2N1100	▲SEN	189-29	2N1132A46	▲FSC	80-92	CNS	▲ETC	
▲CRY	▲ETC		2N1049A	▲TII	163-42	2N1101	▲SEN	67-82	2N1132A	▲FSC	80-92	2N1155	▲TII	111-99
▲RAYN	▲SCA			▲ETC			▲SEN		2N1132A	▲FSC	80-92	CNS	▲ETC	
	SSI			▲ETC			▲SEN		2N1132A	▲FSC	80-92	2N1156	▲TII	111-100
2N1029A	KSC	127-108		▲ETC			▲SEN		2N1132A	▲FSC	80-92	CNS	▲ETC	
2N1029B	KSC	127-109		▲ETC			▲SEN		2N1132A	▲FSC	80-92	CNS	▲ETC	
2N1029C	KSC	127-110		▲ETC			▲SEN		2N1132A	▲FSC	80-92	CNS	▲ETC	
2N1031	▲SOD	133-79		▲ETC			▲SEN		2N1132A	▲FSC	80-92	CNS	▲ETC	
▲ETC	PPC			▲ETC			▲SEN		2N1132A	▲FSC	80-92	CNS	▲ETC	
2N1031A	▲SOD	133-80												



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N1157	ASOD	137-32	2N1187	AMOTA	62-73	JAN2N1225	APX	57-78	2N1278	ETC	85-79	2N1308	ETC	67-72
2N1157A	ASOD	137-33	2N1188	AMOTA	62-82	2N1226	ARCA	57-68	2N1279	ETC	85-81	2N1308	ETC	194-5
JAN2N1157A	SOD	137-34	2N1189	AMOTA	62-96	2N1227	APX	131-104	2N1280	ETC	63-4	2N1308	ETC	
2N1158	CNS	54-9	2N1190	AMOTA	62-110	2N1228	CNS	78-20	2N1281	ETC	63-14	2N1308	ETC	
2N1158A	ETC	54-108	2N1191	AMOTA	62-59	2N1229	CRY	78-21	2N1282	ETC	63-19	2N1308	ETC	
2N1159	ADEL	132-54	2N1192	AMOTA	62-74	2N1230	RAYN	78-22	2N1284	ETC	63-5	JAN2N1308	ETC	67-73
CNS	ETC	189-27	2N1193	AMOTA	62-83	2N1231	RAYN	78-23	2N1291	ETC	135-52	2N1309	ETC	58-56
KSC	PPC		2N1194	AMOTA	62-88	2N1232	SOD	78-10	2N1292	ETC	138-14	2N1309	ETC	
2N1160	ADEL	132-55	2N1195	MOTA	64-105	2N1233	CRY	78-11	2N1293	ETC	135-53	2N1309	ETC	
CNS	ETC	189-28	JAN2N1195	MOTA	64-40	2N1234	RAYN	78-9	2N1294	ETC	138-15	2N1309	ETC	
KSC	PPC		2N1196	EMLS	76-6	2N1235	SOD	78-8	2N1295	ETC	134-1	2N1309	ETC	
2N1162	AMOTA	133-98	2N1197	EMLS	76-10	2N1236	CRY	78-8	2N1296	ETC	138-16	2N1309	ETC	
CNS	ETC		JAN2N1197	none	75-95	2N1237	RAYN	78-8	2N1297	ETC	135-54	2N1309	ETC	
KSC	SOD		2N1198	SSS	66-37	2N1238	SOD	78-8	2N1298	ETC	138-17	2N1309	ETC	
2N1162A	AMOTA	133-99	2N1199	ETC	85-97	2N1239	CRY	78-8	2N1299	ETC	67-41	JAN2N1309	ETC	60-47
CNS	ETC		2N1200	ASOD	130-1	2N1240	RAYN	78-8	2N1301	ETC	60-65	2N1309	ETC	60-48
KSC	SOD		2N1201	KSC	208-92	2N1241	SOD	78-9	2N1302	ETC	197-39	2N1309	ETC	85-71
2N1163	AMOTA	133-100	2N1202	ASOD	130-2	2N1242	CRY	78-9	2N1303	ETC	191-33	2N1309	ETC	66-77
CNS	ETC		2N1203	ASOD	130-2	2N1243	SOD	78-8	2N1304	ETC		2N1310	ETC	66-78
KSC	SOD		2N1204	KSC	206-3	2N1244	ETC	78-8	2N1305	ETC		JAN2N1310	ETC	66-79
2N1163A	AMOTA	133-101	2N1204A	MOTA	63-28	2N1245	TEC	78-8	2N1306	ETC		2N1311	ETC	66-80
ETC	KSC		2N1205	ETC	85-73	2N1246	TEC	78-8	2N1307	ETC		2N1312	ETC	66-80
2N1164	AMOTA	133-102	2N1206	ETC	116-17	2N1247	TEC	78-8	2N1308	ETC		2N1313	ETC	61-94
CNS	ETC		2N1207	ETC	116-18	2N1248	TEC	78-8	2N1309	ETC		2N1314	ETC	132-56
KSC	SOD		2N1208	ETC	168-92	2N1249	TEC	78-8	2N1310	ETC		2N1315	ETC	63-20
2N1164A	AMOTA	133-103	2N1209	ETC	168-93	2N1250	TEC	78-8	2N1311	ETC		2N1316	ETC	193-58
CNS	ETC		JAN2N1197	none	75-95	2N1251	TEC	78-8	2N1312	ETC		2N1317	ETC	63-21
KSC	SOD		2N1198	SSS	66-37	2N1252	TEC	78-8	2N1313	ETC		2N1318	ETC	193-51
2N1165	AMOTA	133-104	2N1210	ASOD	166-100	2N1253	TEC	78-8	2N1314	ETC		2N1319	ETC	63-22
CNS	ETC		2N1211	ASOD	166-101	2N1254	TEC	78-8	2N1315	ETC		2N1320	ETC	129-26
KSC	SOD		2N1212	ASOD	168-94	2N1255	TEC	78-8	2N1316	ETC		2N1321	ETC	138-18
JAN2N1165	AMOTA	133-105	2N1213	ASOD	168-94	2N1256	TEC	78-8	2N1317	ETC		2N1322	ETC	129-27
2N1165A	AMOTA	133-106	2N1214	ASOD	168-94	2N1257	TEC	78-8	2N1318	ETC		2N1323	ETC	138-19
CNS	ETC		2N1215	ASOD	168-94	2N1258	TEC	78-8	2N1319	ETC		2N1324	ETC	129-28
KSC	SOD		2N1216	ASOD	168-94	2N1259	TEC	78-8	2N1320	ETC		2N1325	ETC	138-20
2N1166	AMOTA	133-107	2N1217	ASOD	168-94	2N1260	TEC	78-8	2N1321	ETC		2N1326	ETC	129-29
ETC	KSC		2N1218	ASOD	168-94	2N1261	TEC	78-8	2N1322	ETC		2N1327	ETC	138-21
2N1166A	AMOTA	133-108	2N1219	ASOD	168-94	2N1262	TEC	78-8	2N1323	ETC		2N1328	ETC	128-109
ETC	KSC		2N1220	ASOD	168-94	2N1263	TEC	78-8	2N1324	ETC		2N1329	ETC	138-22
2N1167	AMOTA	133-109	2N1221	ASOD	168-94	2N1264	TEC	78-8	2N1325	ETC		2N1330	ETC	138-23
CNS	ETC		2N1222	ASOD	168-94	2N1265	TEC	78-8	2N1326	ETC		2N1331	ETC	128-110
KSC	SOD		2N1223	ASOD	168-94	2N1266	TEC	78-8	2N1327	ETC		2N1332	ETC	138-24
2N1167A	AMOTA	133-110	2N1224	ASOD	168-94	2N1267	TEC	78-8	2N1328	ETC		2N1333	ETC	129-1
CNS	ETC		2N1225	ASOD	168-94	2N1268	TEC	78-8	2N1329	ETC		2N1334	ETC	138-25
2N1168	ADEL	135-51	2N1226	ASOD	168-94	2N1269	TEC	78-8	2N1330	ETC		2N1335	ETC	113-86
CNS	ETC		2N1227	ASOD	168-94	2N1270	TEC	78-8	2N1331	ETC		2N1336	ETC	113-87
KSC	PPC		2N1228	ASOD	168-94	2N1271	TEC	78-8	2N1332	ETC		2N1337	ETC	113-88
2N1169	ADEL	135-51	2N1229	ASOD	168-94	2N1272	TEC	78-8	2N1333	ETC		2N1338	ETC	113-89
CNS	ETC		2N1230	ASOD	168-94	2N1273	TEC	78-8	2N1334	ETC		2N1339	ETC	113-90
KSC	PPC		2N1231	ASOD	168-94	2N1274	TEC	78-8	2N1340	ETC		2N1340	ETC	113-91
2N1170	ADEL	135-51	2N1232	ASOD	168-94	2N1275	TEC	78-8	2N1341	ETC		2N1341	ETC	207-63
CNS	ETC		2N1233	ASOD	168-94	2N1276	TEC	78-8	2N1342	ETC		2N1342	ETC	113-92
KSC	PPC		2N1234	ASOD	168-94	2N1277	TEC	78-8	2N1343	ETC		2N1343	ETC	113-93
2N1171	ADEL	135-51	2N1235	ASOD	168-94	2N1278	TEC	78-8	2N1344	ETC		2N1344	ETC	60-12
CNS	ETC		2N1236	ASOD	168-94	2N1279	TEC	78-8	2N1345	ETC		2N1345	ETC	192-65
KSC	PPC		2N1237	ASOD	168-94	2N1280	TEC	78-8	2N1346	ETC		2N1346	ETC	60-31
2N1172	ADEL	135-51	2N1238	ASOD	168-94	2N1281	TEC	78-8	2N1347	ETC		2N1347	ETC	193-53
CNS	ETC		2N1239	ASOD	168-94	2N1282	TEC	78-8	2N1348	ETC		2N1348	ETC	60-32
KSC	PPC		2N1240	ASOD	168-94	2N1283	TEC	78-8	2N1349	ETC		2N1349	ETC	193-54
2N1173	ADEL	135-51	2N1241	ASOD	168-94	2N1284	TEC	78-8	2N1350	ETC		2N1350	ETC	60-32
CNS	ETC		2N1242	ASOD	168-94	2N1285	TEC	78-8	2N1351	ETC		2N1351	ETC	63-15
KSC	PPC		2N1243	ASOD	168-94	2N1286	TEC	78-8	2N1352	ETC		2N1352	ETC	63-16
2N1174	ADEL	135-51	2N1244	ASOD	168-94	2N1287	TEC	78-8	2N1353	ETC		2N1353	ETC	59-109
CNS	ETC		2N1245	ASOD	168-94	2N1288	TEC	78-8	2N1354	ETC		2N1354	ETC	62-97
KSC	PPC		2N1246	ASOD	168-94	2N1289	TEC	78-8	2N1355	ETC		2N1355	ETC	191-47
2N1175	ADEL	135-51	2N1247	ASOD	168-94	2N1290	TEC	78-8	2N1356	ETC		2N1356	ETC	63-1
CNS	ETC		2N1248	ASOD	168-94	2N1291	TEC	78-8	2N1357	ETC		2N1357	ETC	192-18
ITC	PPC		2N1249	ASOD	168-94	2N1292	TEC	78-8	2N1358	ETC		2N1358	ETC	63-17
MST	UPH		2N1250	ASOD	168-94	2N1293	TEC	78-8	2N1359	ETC		2N1359	ETC	192-85
2N1175A	ADEL	135-51	2N1251	ASOD	168-94	2N1294	TEC	78-8	2N1360	ETC		2N1360	ETC	
ETC	PPC		2N1252	ASOD	168-94	2N1295	TEC	78-8	2N1361	ETC		2N1361	ETC	
2N1176	ADEL	135-51	2N1253	ASOD	168-94	2N1296	TEC	78-8	2N1362	ETC		2N1362	ETC	
CNS	ETC		2N1254	ASOD	168-94	2N1297	TEC	78-8	2N1363	ETC		2N1363	ETC	
ITC	PPC		2N1255	ASOD	168-94	2N1298	TEC	78-8	2N1364	ETC		2N1364	ETC	
MST	UPH		2N1256	ASOD	168-94	2N1299	TEC	78-8	2N1365	ETC		2N1365	ETC	
2N1177	ADEL	135-51	2N1257	ASOD	168-94	2N1300	TEC	78-8	2N1366	ETC		2N1366	ETC	
ETC	PPC		2N1258	ASOD	168-94	2N1301	TEC	78-8	2N1367	ETC		2N1367	ETC	
2N1178	ADEL	135-51	2N1259	ASOD	168-94	2N1302	TEC	78-8	2N1368	ETC		2N1368	ETC	
CNS	ETC		2N1260	ASOD	168-94	2N1303	TEC	78-8	2N1369	ETC		2N1369	ETC	
ITC	PPC		2N1261	ASOD	168-94	2N1304	TEC	78-8	2N1370	ETC		2N1370	ETC	
MST	UPH		2N1262	ASOD	168-94	2N1305								

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N1356	ΔITC	63-7	2N1383	ΔTII	64-6	2N1440	ΔCRY	78-13	JAN2N1485	RCA	160-19	2N1521	ΔDEL	135-58
2N1357	ETC	192-86	↓ETC	GIC		↓CRY	↓CNS		SEN	SIL		↓DEL	CNS	191-61
2N1358	↓ΔITC	63-25	MOTA	MST		SOD	SSI		↓ΔRCA	CNS	160-20	↓DEL	↓ETC	135-59
2N1358A	ETC	193-83	SES	UPI		↓CRY	↓CNS	78-14	ASC	PIR		↓DEL	↓ETC	191-58
2N1358B	↓ΔDEL	134-2	ITC	ITC		SOD	SSI		IDC	SEN		↓DEL	↓ETC	135-60
2N1358C	ETC	189-67			63-96	↓CRY	↓CNS	78-15	SEN	↓SIL		↓DEL	↓ETC	191-62
2N1358D	↓ETC	197-40			65-57	SOD	SSI		SPC	SEN		↓DEL	↓ETC	55-92
2N1358E	↓ETC	95-91	2N1385	ΔTII	65-57	↓CRY	↓CNS	78-16	JAN2N1486	RCA	160-21	↓ΔRCA	↓CNS	55-93
2N1358F	↓ETC	199-90	2N1386	CNS	95-91	SOD	SSI		SEN	SIL		↓ΔRCA	↓CNS	134-10
2N1358G	↓ETC	95-68	↓ETC	SCA	199-90	↓CRY	↓CNS		↓ΔRCA	↓CNS	168-21	↓ETC	↓CNS	
2N1358H	↓ETC	95-68	2N1387	CNS	198-91	SOD	SSI		ASC	PIR		↓ETC	↓CNS	
2N1358I	↓ETC	96-31	↓ETC	SCA	96-31	↓CRY	↓CNS		SEN	↓SIL		↓ETC	↓CNS	
2N1358J	↓ETC	96-31	2N1388	CNS	96-31	SOD	SSI		ASC	PIR		↓ETC	↓CNS	
2N1358K	↓ETC	96-31	2N1389	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358L	↓ETC	96-31	2N1390	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358M	↓ETC	96-31	2N1391	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358N	↓ETC	96-31	2N1392	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358O	↓ETC	96-31	2N1393	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358P	↓ETC	96-31	2N1394	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358Q	↓ETC	96-31	2N1395	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358R	↓ETC	96-31	2N1396	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358S	↓ETC	96-31	2N1397	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358T	↓ETC	96-31	2N1398	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358U	↓ETC	96-31	2N1399	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358V	↓ETC	96-31	2N1400	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358W	↓ETC	96-31	2N1401	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358X	↓ETC	96-31	2N1402	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358Y	↓ETC	96-31	2N1403	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1358Z	↓ETC	96-31	2N1404	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1359	↓ETC	96-31	2N1405	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1360	↓ETC	96-31	2N1406	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1362	↓ETC	96-31	2N1407	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1363	↓ETC	96-31	2N1408	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1364	↓ETC	96-31	2N1409	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1365	↓ETC	96-31	2N1410	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1366	↓ETC	96-31	2N1411	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1367	↓ETC	96-31	2N1412	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1368	↓ETC	96-31	2N1413	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1369	↓ETC	96-31	2N1414	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1370	↓ETC	96-31	2N1415	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1371	↓ETC	96-31	2N1416	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1372	↓ETC	96-31	2N1417	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1373	↓ETC	96-31	2N1418	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1374	↓ETC	96-31	2N1419	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1375	↓ETC	96-31	2N1420	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1376	↓ETC	96-31	2N1421	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1377	↓ETC	96-31	2N1422	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1378	↓ETC	96-31	2N1423	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1379	↓ETC	96-31	2N1424	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1380	↓ETC	96-31	2N1425	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1381	↓ETC	96-31	2N1426	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1382	↓ETC	96-31	2N1427	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1383	↓ETC	96-31	2N1428	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1384	↓ETC	96-31	2N1429	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1385	↓ETC	96-31	2N1430	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1386	↓ETC	96-31	2N1431	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1387	↓ETC	96-31	2N1432	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1388	↓ETC	96-31	2N1433	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1389	↓ETC	96-31	2N1434	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1390	↓ETC	96-31	2N1435	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1391	↓ETC	96-31	2N1436	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1392	↓ETC	96-31	2N1437	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1393	↓ETC	96-31	2N1438	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1394	↓ETC	96-31	2N1439	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1395	↓ETC	96-31	2N1440	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1396	↓ETC	96-31	2N1441	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1397	↓ETC	96-31	2N1442	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1398	↓ETC	96-31	2N1443	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1399	↓ETC	96-31	2N1444	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1400	↓ETC	96-31	2N1445	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1401	↓ETC	96-31	2N1446	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1402	↓ETC	96-31	2N1447	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1403	↓ETC	96-31	2N1448	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1404	↓ETC	96-31	2N1449	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1405	↓ETC	96-31	2N1450	CNS	96-31	SOD	SSI		SEN	↓SIL		↓ETC	↓CNS	
2N1406	↓ETC	96-31	JAN2N1450M	none										
2N1407	↓ETC	96-31	2N1451	ΔITC	57-20	2N1451	ΔITC	62-60	2N1489	ΔRCA	168-25	2N1530	ΔMOTA	134-11
2N1408	↓ETC	96-31	2N1452	ETC	186-65	2N1452	ETC	62-78	ASC	CNS		↓ETC	↓CNS	
2N1409	↓ETC	96-31	2N1453	ETC	57-21	2N1453	ETC	129-32	PIR	SCA		↓ETC	↓CNS	
2N1410	↓ETC	96-31	2N1454	ETC	186-66	2N1454	ETC	129-33	PPC	SEN		↓ETC	↓CNS	
2N1411	↓ETC	96-31	2N1455	ETC	62-60	2N1455	ETC	129-33	SEN	SIL		↓ETC	↓CNS	
2N1412	↓ETC	96-31	2N1456	ETC	62-60	2N1456	ETC	129-33	SIL	SPC		↓ETC	↓CNS	
2N1413	↓ETC	96-31	2N1457	ETC	62-60	2N1457	ETC	129-33	SSI	SEN		↓ETC	↓CNS	
2N1414	↓ETC	96-31	2N1458	ETC	62-60	2N1458	ETC	129-33	SEN	SEN		↓ETC	↓CNS	
2N1415	↓ETC	96-31	2N1459	ETC	62-60	2N1459	ETC	129-33	SOD	SEN		↓ETC	↓CNS	
2N1416	↓ETC	96-31	2N1460	ETC	62-60	2N1460	ETC	129-33	SEN	SEN		↓ETC	↓CNS	
2N1417	↓ETC	96-31	2N1461	ETC	62-60	2N1461	ETC	129-33	SOD	SEN		↓ETC	↓CNS	
2N1418	↓ETC	96-31	2N1462	ETC	62-60	2N1462	ETC	129-33	SEN	SEN		↓ETC	↓CNS	
2N1419	↓ETC	96-31	2N1463	ETC	62-60	2N1463	ETC	129-33	SEN	SEN		↓ETC	↓CNS	
2N1420	↓ETC	96-31	2N1464	ETC	62-60	2N1464	ETC	129-33						

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N1542 (cont)	KSC SOD TII		2N1555A (cont)	ETC PPC SOD		2N1613	ATEI CNS ESMF FERB HSC INTG ITTB MEHK MISI MOTA MULB NTLB PHIN RADF RAYN SES SSI TADI TEC TFKG TII TIIF TIIF TSC	113-45	2N1651 (cont)	KSC SSI none		2N1708 (cont)	MOTA SES SSI SCA	
2N1542A	♦MOTA	134-27	JAN2N1555A	MOTA	134-58				JAN2N1651	none	134-75	2N1708A	♦MOTA SES SSI CNS	98-14 208-27 158-43
2N1543	CNS PPC SOD		2N1556	♦MOTA ETC PPC SOD	134-59				2N1652	♦SOD KSC none	134-76	2N1709	♦MOTA CNS LTTF NPC SSI	158-44
2N1544	♦MOTA DEL SOD	134-29	2N1556A	♦MOTA ETC SOD	134-60				JAN2N1652	none	134-77	2N1710	♦MOTA CNS LTTF NPC SSI	158-44
2N1544A	CNS PPC SOD		JAN2N1556A	MOTA	134-61				2N1653	♦SOD KSC MOTA	134-78	2N1711	♦MOTA CNS ATEI CNS ESMF IDC ITTB MEHK MISI MOTA MULB NSC RAYN SCA SGSI SSI TADI TEK TFKG TII TIIF TIIF TSC UPI VALG	113-94
2N1545	♦MOTA ETC PPC SOD	134-31	2N1557	♦MOTA ETC SOD	134-62	JAN2N1613	CNS SOD RAYN TSC	113-46	2N1654	♦RAYN CRY SOD SSI	71-59			
2N1545A	♦MOTA ETC PPC SOD	134-32	2N1557A	♦MOTA ETC SOD	134-63	2N1613/46	SCA RAYN	108-24	2N1655	♦RAYN CRY SOD SSI	71-58			
2N1546	♦MOTA DEL SOD	134-33	2N1558	♦MOTA ETC SOD	134-65	2N1613A	SCA TADI RAYN	150-90	2N1656	♦RAYN CRY SOD SSI	71-60			
2N1546A	CNS PPC SOD		2N1558A	♦MOTA ETC SOD	134-66	2N1613B	SCA RAYN	150-90	2N1658/13	KSC KSC	128-32			
2N1547	♦MOTA KSC SOD	134-35	JAN2N1558A	MOTA	134-67	2N1614	CNS SES	63-95	2N1659/13	PHIC PHIC	128-33 131-4	JAN2N1711	FSC TSC SCA SGSI SSI TADI TEK TFKG TII TIIF TIIF TSC UPI VALG	113-95 200-23 108-34 150-91
2N1547A	CNS PPC SOD		2N1559	♦MOTA ETC SOD	134-68	2N1615	CNS TEC	109-47	2N1666	♦APX PHIC PHIC	131-5 131-7	2N1711/46	SCA CNS RAYN	108-34 150-91
2N1548	♦MOTA KSC SOD	134-37	2N1559A	♦MOTA ETC SOD	134-69	2N1616	CNS ESMF MISI MISI PPC SEN SIL SOD SPC SSI	166-102	2N1667	♦APX PHIC PHIC SCA 220-52		2N1711A	RAYN	
2N1549	♦MOTA KSC SOD	134-38	JAN2N1559A	MOTA	134-70	2N1616A	♦SIL ETC PPC SEN SOD SPC SSI	168-79	2N1668	CNS PHIC PHIC SCA 220-52		2N1711B	RAYN SCA	150-92
2N1549A	CNS PPC SOD		2N1560	♦MOTA IDC SOD	134-71	2N1617	CNS ESMF MISI MISI PPC SEN SIL SOD SPC SSI	166-103	2N1670	♦GSEY SSI TII	220-53	2N1712	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	112-68
JAN2N1549A	MOTA	134-40	2N1560A	♦MOTA KSC SOD	134-72	2N1617A	CNS ETC PPC SEN SOD SPC SSI	168-80	2N1671	♦GSEY SOIF TII	220-54	JAN2N1714	TII	
2N1550	♦MOTA ETC PPC SOD	134-41	JAN2N1560A	MOTA	134-73	2N1618	CNS ESMF MISI MISI PPC SEN SIL SOD SPC SSI	166-104	2N1671C	♦GSEY TII	220-55	2N1715	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	112-69 112-70
2N1550A	♦MOTA ETC PPC SOD	134-42	2N1561	♦MOTA ETC SOD	64-46	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1672	♦GSEY SOIF TII	220-55	JAN2N1715	TII	
JAN2N1550A	MOTA	134-43	2N1562	♦MOTA ETC SOD	64-45	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1672A	♦GSEY SOIF TII	220-55	2N1716	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	112-71 112-72
2N1551	♦MOTA ETC PPC SOD	134-44	2N1564	♦MOTA ETC SOD	109-30	2N1617A	CNS ETC PPC SEN SOD SPC SSI	168-80	2N1674	♦GSEY SOIF TII	220-55	JAN2N1716	TII	
2N1551A	♦MOTA ETC PPC SOD	134-45	2N1565	♦MOTA ETC SOD	109-31	2N1617B	CNS ETC PPC SEN SOD SPC SSI	168-80	2N1674A	♦GSEY SOIF TII	220-55	2N1717	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	112-73 112-74
JAN2N1551A	MOTA	134-46	2N1566	♦MOTA ETC SOD	109-32	2N1618	CNS ESMF MISI MISI PPC SEN SIL SOD SPC SSI	166-104	2N1674A	♦GSEY SOIF TII	220-55	JAN2N1717	TII	
2N1552	♦MOTA ETC PPC SOD	134-47	2N1566A	♦MOTA ETC SOD	109-32	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674B	♦GSEY SOIF TII	220-55	2N1718	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	112-75 159-60
2N1552A	♦MOTA ETC PPC SOD	134-48	2N1567	♦MOTA ETC SOD	109-33	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674C	♦GSEY SOIF TII	220-55	JAN2N1718	TII	
JAN2N1552A	MOTA	134-49	2N1568	♦MOTA ETC SOD	109-34	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674D	♦GSEY SOIF TII	220-55	2N1719	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	159-61
2N1553	♦MOTA ETC PPC SOD	134-50	2N1569	♦MOTA ETC SOD	109-35	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674E	♦GSEY SOIF TII	220-55	JAN2N1719	TII	
2N1553A	♦MOTA ETC PPC SOD	134-51	2N1570	♦MOTA ETC SOD	109-36	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674F	♦GSEY SOIF TII	220-55	2N1720	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	159-62
JAN2N1553A	MOTA	134-52	2N1571	♦MOTA ETC SOD	109-37	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674G	♦GSEY SOIF TII	220-55	JAN2N1720	TII	
2N1554	♦MOTA ETC PPC SOD	134-53	2N1572	♦MOTA ETC SOD	109-38	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674H	♦GSEY SOIF TII	220-55	2N1721	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	159-63
2N1554A	♦MOTA ETC PPC SOD	134-54	2N1573	♦MOTA ETC SOD	109-39	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674I	♦GSEY SOIF TII	220-55	JAN2N1721	TII	
JAN2N1554A	MOTA	134-55	2N1574	♦MOTA ETC SOD	109-40	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674J	♦GSEY SOIF TII	220-55	2N1722	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	170-100
2N1555	♦MOTA ETC PPC SOD	134-56	2N1575	♦MOTA ETC SOD	109-41	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674K	♦GSEY SOIF TII	220-55	JAN2N1722	TII	
2N1555A	♦MOTA ETC PPC SOD	134-57	2N1576	♦MOTA ETC SOD	109-42	2N1618A	CNS ETC PPC SEN SOD SPC SSI	168-81	2N1674L	♦GSEY SOIF TII	220-55	2N1723	♦MOTA CNS SCA SSI TEC TEK TIIF TIIF TSC UPI VALG	170-101

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N1724A (cont.)	KER MISI SEN SSI TRW UNI		2N1810	SPC	183-20	2N1893 (cont.)	HSC INTG ITB		2N1958	CNS MST TEC	110-43	2N1990 (cont.)	TRW VALG	
2N1725	ESMF MISI SEN SOD TEC TRW UNI	170-107	2N1811	SPC	188-18	2N1958A	INTG ITB MISI MST		2N1959	SSS CNS HSC	201-28	2N1990R	TSC	92-106
2N1726	ESMF MISI SEN SOD TEC TRW UNI	54-35	2N1812	SPC	188-19	2N1959A	INTG ITB MISI MST		2N1969	SSS CNS HSC	110-44	2N1990S	MISI	109-37
2N1727	ESMF MISI SEN SOD TEC TRW UNI	54-36	2N1813	SPC	183-22	2N1969A	INTG ITB MISI MST		2N1970	SSS CNS HSC	201-21	2N1990W	ESMF MISI	94-67
2N1728	ESMF MISI SEN SOD TEC TRW UNI	54-37	2N1814	SPC	188-20	2N1970A	INTG ITB MISI MST		2N1971	SSS CNS HSC	110-45	2N1991	ESMF MISI	80-88
2N1729	ESMF MISI SEN SOD TEC TRW UNI	58-59	2N1815	SPC	183-23	2N1971A	INTG ITB MISI MST		2N1972	SSS CNS HSC	201-29	2N1991	ESMF MISI	
2N1730	ESMF MISI SEN SOD TEC TRW UNI	186-76	2N1816	SPC	188-21	2N1972A	INTG ITB MISI MST		2N1973	SSS CNS HSC	110-46	2N1991	ESMF MISI	
2N1731	ESMF MISI SEN SOD TEC TRW UNI	67-1	2N1817	SPC	183-24	2N1973A	INTG ITB MISI MST		2N1974	SSS CNS HSC	201-22	2N1991	ESMF MISI	
2N1732	ESMF MISI SEN SOD TEC TRW UNI	59-110	2N1818	SPC	188-22	2N1974A	INTG ITB MISI MST		2N1975	SSS CNS HSC	110-46	2N1991	ESMF MISI	
2N1742	ESMF MISI SEN SOD TEC TRW UNI	67-44	2N1819	SPC	183-25	2N1975A	INTG ITB MISI MST		2N1976	SSS CNS HSC	201-22	2N1991	ESMF MISI	
2N1743	ESMF MISI SEN SOD TEC TRW UNI	54-18	2N1820	SPC	188-23	2N1976A	INTG ITB MISI MST		2N1977	SSS CNS HSC	60-33	2N1991	ESMF MISI	
2N1743	ESMF MISI SEN SOD TEC TRW UNI	54-16	2N1821	SPC	183-26	2N1977A	INTG ITB MISI MST		2N1978	SSS CNS HSC	193-60	2N1991	ESMF MISI	
2N1744	ESMF MISI SEN SOD TEC TRW UNI	54-10	2N1822	SPC	188-24	2N1978A	INTG ITB MISI MST		2N1979	SSS CNS HSC	134-81	2N1991	ESMF MISI	
2N1745	ESMF MISI SEN SOD TEC TRW UNI	54-50	2N1823	SPC	183-27	2N1979A	INTG ITB MISI MST		2N1980	SSS CNS HSC	110-46	2N1991	ESMF MISI	
2N1746	ESMF MISI SEN SOD TEC TRW UNI	54-49	2N1824	SPC	188-25	2N1980A	INTG ITB MISI MST		2N1981	SSS CNS HSC	201-22	2N1991	ESMF MISI	
2N1747	ESMF MISI SEN SOD TEC TRW UNI	54-51	2N1825	SPC	183-28	2N1981A	INTG ITB MISI MST		2N1982	SSS CNS HSC	60-33	2N1991	ESMF MISI	
2N1748	ESMF MISI SEN SOD TEC TRW UNI	54-22	2N1826	SPC	188-26	2N1982A	INTG ITB MISI MST		2N1983	SSS CNS HSC	193-60	2N1991	ESMF MISI	
2N1748A	ESMF MISI SEN SOD TEC TRW UNI	54-47	2N1827	SPC	183-29	2N1983A	INTG ITB MISI MST		2N1984	SSS CNS HSC	134-81	2N1991	ESMF MISI	
2N1749	ESMF MISI SEN SOD TEC TRW UNI	55-13	2N1830	SPC	188-27	2N1984A	INTG ITB MISI MST		2N1985	SSS CNS HSC	110-43	2N1991	ESMF MISI	
2N1751	ESMF MISI SEN SOD TEC TRW UNI	134-80	2N1831	SPC	183-30	2N1985A	INTG ITB MISI MST		2N1986	SSS CNS HSC	201-28	2N1991	ESMF MISI	
2N1752	ESMF MISI SEN SOD TEC TRW UNI	54-23	2N1832	SPC	188-28	2N1986A	INTG ITB MISI MST		2N1987	SSS CNS HSC	110-44	2N1991	ESMF MISI	
2N1754	ESMF MISI SEN SOD TEC TRW UNI	53-89	2N1833	SPC	183-31	2N1987A	INTG ITB MISI MST		2N1988	SSS CNS HSC	201-21	2N1991	ESMF MISI	
2N1755	ESMF MISI SEN SOD TEC TRW UNI	200-48	2N1834	SPC	188-29	2N1988A	INTG ITB MISI MST		2N1989	SSS CNS HSC	110-45	2N1991	ESMF MISI	
2N1756	ESMF MISI SEN SOD TEC TRW UNI	129-73	2N1835	SPC	183-32	2N1989A	INTG ITB MISI MST		2N1990	SSS CNS HSC	201-29	2N1991	ESMF MISI	
2N1757	ESMF MISI SEN SOD TEC TRW UNI	194-17	2N1836	SPC	188-30	2N1990A	INTG ITB MISI MST		2N1991	SSS CNS HSC	110-45	2N1991	ESMF MISI	
2N1758	ESMF MISI SEN SOD TEC TRW UNI	129-74	2N1837	SPC	183-33	2N1991A	INTG ITB MISI MST		2N1992	SSS CNS HSC	201-29	2N1991	ESMF MISI	
2N1759	ESMF MISI SEN SOD TEC TRW UNI	194-18	2N1838	SPC	188-31	2N1992A	INTG ITB MISI MST		2N1993	SSS CNS HSC	110-45	2N1991	ESMF MISI	
2N1760	ESMF MISI SEN SOD TEC TRW UNI	129-76	2N1839	SPC	183-34	2N1993A	INTG ITB MISI MST		2N1994	SSS CNS HSC	201-29	2N1991	ESMF MISI	
2N1761	ESMF MISI SEN SOD TEC TRW UNI	194-19	2N1840	SPC	188-32	2N1994A	INTG ITB MISI MST		2N1995	SSS CNS HSC	110-46	2N1991	ESMF MISI	
2N1762	ESMF MISI SEN SOD TEC TRW UNI	129-77	2N1841	SPC	183-35	2N1995A	INTG ITB MISI MST		2N1996	SSS CNS HSC	201-22	2N1991	ESMF MISI	
2N1768	ESMF MISI SEN SOD TEC TRW UNI	129-78	2N1842	SPC	188-33	2N1996A	INTG ITB MISI MST		2N1997	SSS CNS HSC	60-33	2N1991	ESMF MISI	
2N1769	ESMF MISI SEN SOD TEC TRW UNI	194-20	2N1843	SPC	183-34	2N1997A	INTG ITB MISI MST		2N1998	SSS CNS HSC	193-60	2N1991	ESMF MISI	
2N1775	ESMF MISI SEN SOD TEC TRW UNI	129-79	2N1844	SPC	188-34	2N1998A	INTG ITB MISI MST		2N1999	SSS CNS HSC	134-81	2N1991	ESMF MISI	
2N1786	ESMF MISI SEN SOD TEC TRW UNI	129-80	2N1845	SPC	183-35	2N1999A	INTG ITB MISI MST		2N2000	SSS CNS HSC	110-43	2N1991	ESMF MISI	
2N1787	ESMF MISI SEN SOD TEC TRW UNI	129-81	2N1846	SPC	188-35	2N2000A	INTG ITB MISI MST		2N2001	SSS CNS HSC	201-28	2N1991	ESMF MISI	
2N1788	ESMF MISI SEN SOD TEC TRW UNI	129-82	2N1847	SPC	183-36	2N2001A	INTG ITB MISI MST		2N2002	SSS CNS HSC	110-44	2N1991	ESMF MISI	
2N1789	ESMF MISI SEN SOD TEC TRW UNI	129-83	2N1848	SPC	188-36	2N2002A	INTG ITB MISI MST		2N2003	SSS CNS HSC	201-21	2N1991	ESMF MISI	
2N1790	ESMF MISI SEN SOD TEC TRW UNI	129-84	2N1849	SPC	183-37	2N2003A	INTG ITB MISI MST		2N2004	SSS CNS HSC	110-45	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-85	2N1850	SPC	188-37	2N2004A	INTG ITB MISI MST		2N2005	SSS CNS HSC	201-22	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-86	2N1851	SPC	183-38	2N2005A	INTG ITB MISI MST		2N2006	SSS CNS HSC	110-46	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-87	2N1852	SPC	188-38	2N2006A	INTG ITB MISI MST		2N2007	SSS CNS HSC	201-22	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-88	2N1853	SPC	183-39	2N2007A	INTG ITB MISI MST		2N2008	SSS CNS HSC	60-33	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-89	2N1854	SPC	188-39	2N2008A	INTG ITB MISI MST		2N2009	SSS CNS HSC	193-60	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-90	2N1855	SPC	183-40	2N2009A	INTG ITB MISI MST		2N2010	SSS CNS HSC	134-81	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-91	2N1856	SPC	188-40	2N2010A	INTG ITB MISI MST		2N2011	SSS CNS HSC	110-43	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-92	2N1857	SPC	183-41	2N2011A	INTG ITB MISI MST		2N2012	SSS CNS HSC	201-28	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-93	2N1858	SPC	188-41	2N2012A	INTG ITB MISI MST		2N2013	SSS CNS HSC	110-44	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-94	2N1859	SPC	183-42	2N2013A	INTG ITB MISI MST		2N2014	SSS CNS HSC	201-21	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-95	2N1860	SPC	188-42	2N2014A	INTG ITB MISI MST		2N2015	SSS CNS HSC	110-45	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-96	2N1861	SPC	183-43	2N2015A	INTG ITB MISI MST		2N2016	SSS CNS HSC	201-29	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-97	2N1862	SPC	188-43	2N2016A	INTG ITB MISI MST		2N2017	SSS CNS HSC	110-46	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-98	2N1863	SPC	183-44	2N2017A	INTG ITB MISI MST		2N2018	SSS CNS HSC	201-22	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-99	2N1864	SPC	188-44	2N2018A	INTG ITB MISI MST		2N2019	SSS CNS HSC	60-33	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-100	2N1865	SPC	183-45	2N2019A	INTG ITB MISI MST		2N2020	SSS CNS HSC	193-60	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-101	2N1866	SPC	188-45	2N2020A	INTG ITB MISI MST		2N2021	SSS CNS HSC	134-81	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-102	2N1867	SPC	183-46	2N2021A	INTG ITB MISI MST		2N2022	SSS CNS HSC	110-43	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-103	2N1868	SPC	188-46	2N2022A	INTG ITB MISI MST		2N2023	SSS CNS HSC	201-28	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-104	2N1869	SPC	183-47	2N2023A	INTG ITB MISI MST		2N2024	SSS CNS HSC	110-44	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-105	2N1870	SPC	188-47	2N2024A	INTG ITB MISI MST		2N2025	SSS CNS HSC	201-21	2N1991	ESMF MISI	
2N1809	ESMF MISI SEN SOD TEC TRW UNI	129-106	2N1871	SPC	183-48	2N2025A	INTG ITB MISI MST		2N2026	SSS CNS HSC	110-45	2N1991	ESMF MISI	
2N1808	ESMF MISI SEN SOD TEC TRW UNI	129-107	2N1872	SPC	18									



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N2042	♦MOTA	82- 2	2N2081	♦MOTA	136- 66	2N2132	♦WESY	183- 55	2N2165	♦CRY	221- 47	2N2194A	(cont.)	
2N2042A	♦MOTA	62- 3	2N2081A	♦MOTA	136- 67	2N2133	♦WESY	183- 56	2N2166	♦SPR	70- 7	2N2194B	♦MOTA	MISI
2N2043	♦MOTA	62- 8	2N2082	♦MOTA	136- 68	2N2137	♦MOTA	132- 57	2N2167	♦CRY	221- 48		♦RAYN	NSC
2N2043A	♦MOTA	62- 9	2N2082A	♦MOTA	136- 69	2N2137A	♦MOTA	132- 58	2N2168	♦SPR	70- 20		♦SSI	SCA
2N2048	♦CNS	60- 78	2N2084	♦APX	58- 19	2N2138	♦MOTA	132- 59	2N2169	♦SPR	221- 49	2N2194B	♦SSI	TADI
♦ETC	♦IDC	203- 29	JAN2N2084	♦APX	58- 16	2N2138A	♦MOTA	132- 60	2N2170	♦SPR	54- 72		♦TIIF	♦TSC
♦MOTA	♦SPR		2N2085	♦CNS	67- 59	2N2139	♦MOTA	132- 61	2N2170	♦CNS	210- 76		♦TSC	♦FSC
2N2048A	♦CNS	60- 79	2N2086	♦CNS	110- 64	2N2139A	♦MOTA	132- 62	2N2170	♦CNS	210- 77	2N2195A	♦HSC	ITT
2N2049	♦FSC	202- 78	2N2087	♦CNS	203- 46	2N2140	♦MOTA	132- 63	2N2171	♦MOTA	54- 73		♦MOTA	♦RAYN
2N2049A	♦RAYN	113- 9	2N2087A	♦CNS	110- 65	2N2140A	♦MOTA	132- 64	2N2171	♦MOTA	210- 77	2N2195A	♦SSI	♦SSI
2N2050	♦CNS		2N2088	♦CNS	203- 47	2N2141	♦MOTA	132- 65	2N2172	♦MOTA	54- 62		♦SSI	♦TSC
2N2050A	♦CNS		2N2089	♦CNS	203- 47	2N2141A	♦MOTA	132- 66	2N2173	♦MOTA	209- 34	2N2195B	♦SSI	♦TSC
2N2051	♦CNS		2N2090	♦CNS	56- 92	2N2142	♦MOTA	132- 67	2N2174	♦MOTA	54- 62		♦SSI	♦TSC
2N2052	♦CNS		2N2091	♦CNS	56- 93	2N2143	♦MOTA	132- 68	2N2175	♦MOTA	63- 84	2N2196	♦SSI	♦TSC
2N2053	♦CNS		2N2092	♦CNS	56- 94	2N2144	♦MOTA	132- 69	2N2176	♦MOTA	63- 18	2N2197	♦SSI	♦TSC
2N2054	♦CNS		2N2093	♦CNS	56- 94	2N2145	♦MOTA	132- 70	2N2177	♦MOTA	63- 87	2N2198	♦SSI	♦TSC
2N2055	♦CNS		2N2094	♦CNS	56- 94	2N2146	♦MOTA	132- 71	2N2178	♦MOTA	185- 99	2N2199	♦SSI	♦TSC
2N2056	♦CNS		2N2095	♦CNS	56- 94	2N2147	♦MOTA	132- 72	2N2179	♦MOTA	69- 32	2N2200	♦SSI	♦TSC
2N2057	♦CNS		2N2096	♦CNS	56- 94	2N2148	♦MOTA	132- 73	2N2180	♦MOTA	69- 32	2N2201	♦SSI	♦TSC
2N2058	♦CNS		2N2097	♦CNS	56- 94	2N2149	♦MOTA	132- 74	2N2181	♦MOTA	69- 30	2N2202	♦SSI	♦TSC
2N2059	♦CNS		2N2098	♦CNS	56- 94	2N2150	♦MOTA	132- 75	2N2182	♦MOTA	69- 31	2N2203	♦SSI	♦TSC
2N2060	♦CNS		2N2099	♦CNS	56- 94	2N2151	♦MOTA	132- 76	2N2183	♦MOTA	69- 31	2N2204	♦SSI	♦TSC
2N2060A	♦CNS		2N2100	♦CNS	56- 94	2N2152	♦MOTA	132- 77	2N2184	♦MOTA	69- 31	2N2205	♦SSI	♦TSC
2N2061	♦CNS		2N2101	♦CNS	56- 94	2N2153	♦MOTA	132- 78	2N2185	♦MOTA	69- 102	2N2206	♦SSI	♦TSC
2N2061A	♦CNS		2N2102	♦CNS	56- 94	2N2154	♦MOTA	132- 79	2N2186	♦MOTA	221- 50	2N2207	♦SSI	♦TSC
2N2062	♦CNS		2N2103	♦CNS	56- 94	2N2155	♦MOTA	132- 80	2N2187	♦MOTA	69- 103	2N2208	♦SSI	♦TSC
2N2062A	♦CNS		2N2104	♦CNS	56- 94	2N2156	♦MOTA	132- 81	2N2188	♦MOTA	221- 51	2N2209	♦SSI	♦TSC
2N2063	♦CNS		2N2105	♦CNS	56- 94	2N2157	♦MOTA	132- 82	2N2189	♦MOTA	69- 104	2N2210	♦SSI	♦TSC
2N2063A	♦CNS		2N2106	♦CNS	56- 94	2N2158	♦MOTA	132- 83	2N2190	♦MOTA	221- 52	2N2211	♦SSI	♦TSC
2N2064	♦CNS		2N2107	♦CNS	56- 94	2N2159	♦MOTA	132- 84	2N2191	♦MOTA	58- 17	2N2212	♦SSI	♦TSC
2N2064A	♦CNS		2N2108	♦CNS	56- 94	2N2160	♦MOTA	132- 85	2N2192	♦MOTA	58- 20	2N2213	♦SSI	♦TSC
2N2065	♦CNS		2N2109	♦CNS	56- 94	2N2161	♦MOTA	132- 86	2N2193	♦MOTA	58- 18	2N2214	♦SSI	♦TSC
2N2065A	♦CNS		2N2110	♦CNS	56- 94	2N2162	♦MOTA	132- 87	2N2194	♦MOTA	58- 21	2N2215	♦SSI	♦TSC
2N2066	♦CNS		2N2111	♦CNS	56- 94	2N2163	♦MOTA	132- 88	2N2195	♦MOTA	113- 10	2N2216	♦SSI	♦TSC
2N2066A	♦CNS		2N2112	♦CNS	56- 94	2N2164	♦MOTA	132- 89	2N2196	♦MOTA	198- 102	2N2217	♦SSI	♦TSC
2N2067	♦CNS		2N2113	♦CNS	56- 94	2N2165	♦MOTA	132- 90	2N2197	♦MOTA	113- 10	2N2218	♦SSI	♦TSC
2N2067A	♦CNS		2N2114	♦CNS	56- 94	2N2166	♦MOTA	132- 91	2N2198	♦MOTA	198- 102	2N2219	♦SSI	♦TSC
2N2068	♦CNS		2N2115	♦CNS	56- 94	2N2167	♦MOTA	132- 92	2N2199	♦MOTA	113- 10	2N2220	♦SSI	♦TSC
2N2068A	♦CNS		2N2116	♦CNS	56- 94	2N2168	♦MOTA	132- 93	2N2200	♦MOTA	198- 102	2N2221	♦SSI	♦TSC
2N2069	♦CNS		2N2117	♦CNS	56- 94	2N2169	♦MOTA	132- 94	2N2201	♦MOTA	113- 10	2N2222	♦SSI	♦TSC
2N2070	♦CNS		2N2118	♦CNS	56- 94	2N2170	♦MOTA	132- 95	2N2202	♦MOTA	198- 102	2N2223	♦SSI	♦TSC
2N2070A	♦CNS		2N2119	♦CNS	56- 94	2N2171	♦MOTA	132- 96	2N2203	♦MOTA	113- 10	2N2224	♦SSI	♦TSC
2N2071	♦CNS		2N2120	♦CNS	56- 94	2N2172	♦MOTA	132- 97	2N2204	♦MOTA	198- 102	2N2225	♦SSI	♦TSC
2N2071A	♦CNS		2N2121	♦CNS	56- 94	2N2173	♦MOTA	132- 98	2N2205	♦MOTA	113- 10	2N2226	♦SSI	♦TSC
2N2072	♦CNS		2N2122	♦CNS	56- 94	2N2174	♦MOTA	132- 99	2N2206	♦MOTA	198- 102	2N2227	♦SSI	♦TSC
2N2072A	♦CNS		2N2123	♦CNS	56- 94	2N2175	♦MOTA	132- 100	2N2207	♦MOTA	113- 10	2N2228	♦SSI	♦TSC
2N2073	♦CNS		2N2124	♦CNS	56- 94	2N2176	♦MOTA	132- 101	2N2208	♦MOTA	198- 102	2N2229	♦SSI	♦TSC
2N2073A	♦CNS		2N2125	♦CNS	56- 94	2N2177	♦MOTA	132- 102	2N2209	♦MOTA	113- 10	2N2230	♦SSI	♦TSC
2N2074	♦CNS		2N2126	♦CNS	56- 94	2N2178	♦MOTA	132- 103	2N2210	♦MOTA	198- 102	2N2231	♦SSI	♦TSC
2N2074A	♦CNS		2N2127	♦CNS	56- 94	2N2179	♦MOTA	132- 104	2N2211	♦MOTA	113- 10	2N2232	♦SSI	♦TSC
2N2075	♦CNS		2N2128	♦CNS	56- 94	2N2180	♦MOTA	132- 105	2N2212	♦MOTA	198- 102	2N2233	♦SSI	♦TSC
2N2075A	♦CNS		2N2129	♦CNS	56- 94	2N2181	♦MOTA	132- 106	2N2213	♦MOTA	113- 10	2N2234	♦SSI	♦TSC
2N2076	♦CNS		2N2130	♦CNS	56- 94	2N2182	♦MOTA	132- 107	2N2214	♦MOTA	198- 102	2N2235	♦SSI	♦TSC
2N2076A	♦CNS		2N2131	♦CNS	56- 94	2N2183	♦MOTA	132- 108	2N2215	♦MOTA	113- 10	2N2236	♦SSI	♦TSC
2N2077	♦CNS		2N2132	♦CNS	56- 94	2N2184	♦MOTA	132- 109	2N2216	♦MOTA	198- 102	2N2237	♦SSI	♦TSC
2N2077A	♦CNS		2N2133	♦CNS	56- 94	2N2185	♦MOTA	132- 110	2N2217	♦MOTA	113- 10	2N2238	♦SSI	♦TSC
2N2078	♦CNS		2N2134	♦CNS	56- 94	2N2186	♦MOTA	132- 111	2N2218	♦MOTA	198- 102	2N2239	♦SSI	♦TSC
2N2078A	♦CNS		2N2135	♦CNS	56- 94	2N2187	♦MOTA	132- 112	2N2219	♦MOTA	113- 10	2N2240	♦SSI	♦TSC
2N2079	♦CNS		2N2136	♦CNS	56- 94	2N2188	♦MOTA	132- 113	2N2220	♦MOTA	198- 102	2N2241	♦SSI	♦TSC
2N2079A	♦CNS		2N2137	♦CNS	56- 94	2N2189	♦MOTA	132- 114	2N2221	♦MOTA	113- 10	2N2242	♦SSI	♦TSC
2N2080	♦CNS		2N2138	♦CNS	56- 94	2N2190	♦MOTA	132- 115	2N2222	♦MOTA	198- 102	2N2243	♦SSI	♦TSC
2N2080A	♦CNS		2N2139	♦CNS	56- 94	2N2191	♦MOTA	132- 116	2N2223	♦MOTA	113- 10	2N2244	♦SSI	♦TSC
			2N2140	♦CNS	56- 94	2N2192	♦MOTA	132- 117	2N2224	♦MOTA	198- 102	2N2245	♦SSI	♦TSC
			2N2141	♦CNS	56- 94	2N2193	♦MOTA	132- 118	2N2225	♦MOTA	113- 10	2N2246	♦SSI	♦TSC
			2N2142	♦CNS	56- 94	2N2194	♦MOTA	132- 119	2N2226	♦MOTA	198- 102	2N2247	♦SSI	♦TSC
			2N2143	♦CNS	56- 94	2N2195	♦MOTA	132- 120	2N2227	♦MOTA	113- 10	2N2248	♦SSI	♦TSC
			2N2144	♦CNS	56- 94	2N2196	♦MOTA	132- 121	2N2228	♦MOTA	198- 102	2N2249	♦SSI	♦TSC
			2N2145	♦CNS	56- 94	2N2197	♦MOTA	132- 122	2N2229	♦MOTA	113- 10	2N2250	♦SSI	♦TSC
			2N2146	♦CNS	56- 94	2N2198	♦MOTA	132- 123	2N2230	♦MOTA	198- 102	2N2251	♦SSI	♦TSC
			2N2147	♦CNS	56- 94	2N2199	♦MOTA	132- 124	2N2231	♦MOTA	113- 10	2N2252	♦SSI	♦TSC
			2N2148	♦CNS	56- 94	2N2200	♦MOTA	132- 125	2N2232	♦MOTA	198- 102	2N2253	♦SSI	♦TSC
			2N2149	♦CNS	56- 94	2N2201	♦MOTA	132- 126	2N2233	♦MOTA	113- 10	2N2254	♦SSI	♦TSC
			2N2150	♦CNS	56- 94	2N2202	♦MOTA	132- 127	2N2234	♦MOTA	198- 102	2N2255	♦SSI	♦TSC
			2N2151	♦CNS	56- 94	2N2203	♦MOTA	132- 128	2N2235	♦MOTA	113- 10	2N2256	♦SSI	♦TSC
			2N2152	♦CNS	56- 94	2N2204	♦MOTA	132- 129	2N2236	♦MOTA				

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N2218A (cont)	RAYN SGSI SSI TEC TIIF TIIB UPI VALG		2N2221A (cont.)	NTLB RAYN PHIN SGSI SSI TEC TIIF TIIB TRW UPI VALG		2N2236	RAYN SSI RAYN SSI GSESY	109-93 198-97 110-47 200-104 146-1	2N2293	SOD KSC MOTA	135-71	2N2351A	FSC RAYN SSI TSC UPI	105-35 199-4
JAN2N2218A	FSC NSC TII TSC	114-107 206-79	JAN2N2221A	FSC MOTA RAYN TII NSC SPR	108-62 206-81	2N2237	SSI RAYN SSI GSESY	110-47 200-104 146-1	2N2294	SOD ETC	135-72	2N2352	ITT RAYN SSI TSC UPI	105-36 199-5
2N2219	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	114-108	2N2222	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-63	2N2242	SES MOTA CNS NSC RAYN TII	103-75	2N2295	SOD ETC KSC	135-73	2N2352A	ITT RAYN SSI TSC UPI	105-37 199-6
JAN2N2219	GESY MOTA RAYN TII	114-109 206-104	JAN2N2222	FSC MOTA RAYN TII NSC SPR TII	108-64 206-108	2N2243	GIC RAYN SSI TEC TIIB	113-19	2N2296	SOD IDC KSC	135-74	2N2353	ITT RAYN SSI TSC UPI	101-84
2N2219A	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	115-33 207-102	2N2222A	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-99 207-103	2N2243A	GIC RAYN SSI TEC TIIB	113-20	2N2297	FSC MOTA MULB	80-96	2N2354	SSI UPI	67-80
JAN2N2219A	ITT NSC TII	114-110 206-80	JAN2N2222A	FSC MOTA RAYN TII NSC SPR TII	108-65 206-82	2N2256	MOTA SCA	97-87 206-20	2N2300	ETC MOTA MULB	78-100	2N2355	GSESY SSI	109-96 221-62
2N2220	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-58	2N2222B	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-100 207-104 214-5	2N2257	MOTA SCA	97-88 206-21	2N2301	RAYN SCA SSI TEC TII	160-23	2N2356A	GSESY SSI	95-69 221-63
JAN2N2220A	ITT NSC TII	108-110	2N2223	CNS FERB GIC GESY MISI MOTA NPC RAYN SSI TII TIIF TSC	107-27 214-6	2N2258	MOTA SCA	80-89 206-22	2N2302	ETC MOTA MULB	160-23	2N2357	GSESY SSI	136-84
2N2221	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-59	2N2223A	CNS FERB GIC GESY MISI MOTA NPC RAYN SSI TII TIIF TSC	107-27 214-6	2N2259	MOTA SCA	80-90 206-23	2N2303	RAYN SCA SSI TEC TII	168-29	2N2358	MOTA TEK	136-85
JAN2N2221	ITT NSC SPR	108-60 206-105	2N2223B	CNS FERB GIC GESY MISI MOTA NPC RAYN SSI TII TIIF TSC	107-27 214-6	2N2271	UPI	64-9	2N2304	SOD SPC	168-29	2N2359	MOTA TEK	136-86
2N2221A	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2224	MOTA SCA	115-1	2N2272	MOTA SSI	56-99	2N2305	SEN SOD	168-29	2N2360	MOTA IDC	54-90
JAN2N2221	ITT NSC SPR	108-60 206-105	2N2226	WESY SCA SIL	181-8	2N2273	MOTA SSI	56-99	2N2306	SEN SOD	168-29	2N2361	SPR IDC	54-91
2N2222	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-58	2N2227	WESY SCA SIL	181-9	2N2274	MOTA CRI RAYN IDC SCA SSI	56-104 69-78 221-53	2N2307	SEN SOD	168-29	2N2362	SPR IDC	54-92
JAN2N2222	ITT NSC SPR	108-60 206-105	2N2228	WESY SCA SIL	181-10	2N2275	CRY RAYN IDC SCA SSI	69-79 221-54	2N2308	SEN SOD	168-29	2N2363	SPR IDC	54-92
2N2223	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-59	2N2229	WESY SCA SIL	181-11	2N2276	CRY RAYN IDC SCA SSI	69-80 221-55	2N2309	RAYN SCA SSI SPC	110-66	2N2364	RAYN SSI	105-38 199-7
JAN2N2223	ITT NSC SPR	108-60 206-105	2N2230	WESY SCA SIL	181-12	2N2277	CRY RAYN IDC SCA SSI	69-81 221-56	2N2310	RAYN ETC	105-77 203-52	2N2365	RAYN SSI	105-39 199-8
2N2224	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2231	WESY SCA SIL	181-13	2N2278	CRY RAYN IDC SCA SSI	69-82 221-57	2N2311	RAYN SSI	105-78 203-53	2N2366	RAYN SSI	105-38 199-7
JAN2N2224	ITT NSC SPR	108-60 206-105	2N2232	WESY SCA SIL	181-14	2N2279	CRY RAYN IDC SCA SSI	69-83 221-58	2N2312	RAYN ETC	105-79 203-54	2N2367	RAYN SSI	105-38 199-7
2N2225	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2233	WESY SCA SIL	181-15	2N2280	CRY RAYN IDC SCA SSI	70-4 221-59	2N2313	RAYN SSI	105-80 203-55	2N2368	BELI EMLS FERB GIC INTG ITT LTTF MISA MOTA MULB NJS PHIC RADF SES RAYN SGSI TADI TEC TII TIIF UPI VALG	104-91 211-78
JAN2N2225	ITT NSC SPR	108-60 206-105	2N2234	WESY SCA SIL	181-16	2N2281	CRY RAYN IDC SCA SSI	214-7	2N2314	RAYN SSI	105-81	2N2369	BELI EMLS FERB GIC INTG ITT LTTF MISA MOTA MULB NJS PHIC RADF SES RAYN SGSI TADI TEC TII TIIF UPI VALG	104-98 211-102
2N2226	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2235	WESY SCA SIL	181-17	2N2282	CRY RAYN IDC SCA SSI	127-64	2N2315	RAYN ETC	105-82 203-50	2N2370	CRY SSI	70-63
JAN2N2226	ITT NSC SPR	108-60 206-105	2N2236	WESY SCA SIL	181-18	2N2283	CRY RAYN IDC SCA SSI	127-65	2N2316	RAYN ETC	105-83 203-51	2N2371	RAYN SSI	70-64
2N2227	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2237	WESY SCA SIL	181-19	2N2284	CRY RAYN IDC SCA SSI	127-66	2N2317	RAYN ETC	105-84 203-52	2N2372	RAYN SSI	69-76
JAN2N2227	ITT NSC SPR	108-60 206-105	2N2238	WESY SCA SIL	181-20	2N2285	CRY RAYN IDC SCA SSI	134-89	2N2318	RAYN ETC	105-85 203-53	2N2373	RAYN SSI	69-77
2N2228	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2239	WESY SCA SIL	181-21	2N2286	CRY RAYN IDC SCA SSI	134-90	2N2319	RAYN ETC	105-86 203-54	2N2374	RAYN SSI	64-37
JAN2N2228	ITT NSC SPR	108-60 206-105	2N2240	WESY SCA SIL	181-22	2N2287	CRY RAYN IDC SCA SSI	134-91	2N2320	RAYN ETC	105-87 203-55	2N2375	RAYN SSI	64-37
2N2229	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2241	WESY SCA SIL	181-23	2N2288	CRY RAYN IDC SCA SSI	134-92	2N2321	RAYN ETC	105-88 203-56	2N2376	RAYN SSI	64-37
JAN2N2229	ITT NSC SPR	108-60 206-105	2N2242	WESY SCA SIL	181-24	2N2289	CRY RAYN IDC SCA SSI	134-93	2N2322	RAYN ETC	105-89 203-57	2N2377	RAYN SSI	64-37
2N2230	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2243	WESY SCA SIL	181-25	2N2290	CRY RAYN IDC SCA SSI	134-94	2N2323	RAYN ETC	105-90 203-58	2N2378	RAYN SSI	64-37
JAN2N2230	ITT NSC SPR	108-60 206-105	2N2244	WESY SCA SIL	181-26	2N2291	CRY RAYN IDC SCA SSI	135-69	2N2324	RAYN ETC	105-91 203-59	2N2379	RAYN SSI	64-37
2N2231	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2245	WESY SCA SIL	181-27	2N2292	CRY RAYN IDC SCA SSI	135-70	2N2325	RAYN ETC	105-92 203-60	2N2380	RAYN SSI	64-37
JAN2N2231	ITT NSC SPR	108-60 206-105	2N2246	WESY SCA SIL	181-28	2N2293	CRY RAYN IDC SCA SSI	135-71	2N2326	RAYN ETC	105-93 203-61	2N2381	RAYN SSI	64-37
2N2232	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2247	WESY SCA SIL	181-29	2N2294	CRY RAYN IDC SCA SSI	135-72	2N2327	RAYN ETC	105-94 203-62	2N2382	RAYN SSI	64-37
JAN2N2232	ITT NSC SPR	108-60 206-105	2N2248	WESY SCA SIL	181-30	2N2295	CRY RAYN IDC SCA SSI	135-73	2N2328	RAYN ETC	105-95 203-63	2N2383	RAYN SSI	64-37
2N2233	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2249	WESY SCA SIL	181-31	2N2296	CRY RAYN IDC SCA SSI	135-74	2N2329	RAYN ETC	105-96 203-64	2N2384	RAYN SSI	64-37
JAN2N2233	ITT NSC SPR	108-60 206-105	2N2250	WESY SCA SIL	181-32	2N2297	CRY RAYN IDC SCA SSI	135-75	2N2330	RAYN ETC	105-97 203-65	2N2385	RAYN SSI	64-37
2N2234	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2251	WESY SCA SIL	181-33	2N2298	CRY RAYN IDC SCA SSI	135-76	2N2331	RAYN ETC	105-98 203-66	2N2386	RAYN SSI	64-37
JAN2N2234	ITT NSC SPR	108-60 206-105	2N2252	WESY SCA SIL	181-34	2N2299	CRY RAYN IDC SCA SSI	135-77	2N2332	RAYN ETC	105-99 203-67	2N2387	RAYN SSI	64-37
2N2235	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2253	WESY SCA SIL	181-35	2N2300	CRY RAYN IDC SCA SSI	135-78	2N2333	RAYN ETC	106-00 203-68	2N2388	RAYN SSI	64-37
JAN2N2235	ITT NSC SPR	108-60 206-105	2N2254	WESY SCA SIL	181-36	2N2301	CRY RAYN IDC SCA SSI	135-79	2N2334	RAYN ETC	106-01 203-69	2N2389	RAYN SSI	64-37
2N2236	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2255	WESY SCA SIL	181-37	2N2302	CRY RAYN IDC SCA SSI	135-80	2N2335	RAYN ETC	106-02 203-70	2N2390	RAYN SSI	64-37
JAN2N2236	ITT NSC SPR	108-60 206-105	2N2256	WESY SCA SIL	181-38	2N2303	CRY RAYN IDC SCA SSI	135-81	2N2336	RAYN ETC	106-03 203-71	2N2391	RAYN SSI	64-37
2N2237	MOTA CNS ETC GIC HSC IDC ITC ITT ITTB MEHK MULB MISI NPC NTLB PHIN RAYN RADF SCA SES SPR TADI TEC TFKG TIIB TRW UPI VALG	108-61 206-43	2N2257	WESY SCA SIL	181-39	2N2304	CRY RAYN IDC SCA SSI	135-82	2N2337	RAYN ETC	106-04 20			

# 1. TYPE No. CROSS INDEX

				IN TYPE NUMBER SEQUENCE											
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
2N2374 (cont.)	ETC ITC MOTA		2N2421B	ΔGESY	220-78	2N2475 (cont.)	PHIN TADI VALG		2N2500	ΔTII	119-13	JAN2N2559	KSC TII	127-43	
2N2375	GIC MSTA CNS ETC	64-31	2N2422A	ΔGESY	220-77	SGSI	TEC		JAN2N2500	none	119-14	2N2560	ΔTII CNS KSC	128-93	
2N2376	MOTA CNS GIC	64-32	JAN2N2422A	none	220-79	TEC			2N2501	ΔMOTA	104-3	2N2561	ΔTII CNS KSC	128-94	
2N2377	ETC MOTA CNS IDC	70-11	2N2423	ΔGESY	220-80	2N2476	ΔRCA CNS FERB HSC IDC RAYN MOTA SGSI SPR	110-87 206-44	2N2509	ΔTSC GIC NSC RAYN SCA TEC UPI	101-68	2N2562	ΔTII CNS KSC TEK	128-95	
JAN2N2377	SSI CRY SPR	69-97	2N2427	ΔTEC	107-29	2N2477	ΔRCA ETC FERB HSC MOTA RAYN SGSI ETC	110-88 206-45	2N2510	ΔTSC GIC NSC RAYN SCA SES TEC	101-69	2N2563	ΔTII CNS KSC TEK	128-96	
2N2378	ΔSPR IDC CRY	70-12	2N2428	ΔAPX NPC PHIC	61-38	2N2478	ETC HSC MOTA RAYN SGSI ETC	110-75 205-100	2N2511	ΔTSC GIC NSC RAYN SCA SES TEC	101-70	2N2564/5	CNS KSC	127-55	
JAN2N2378	ΔSPR IDC CRY SPR	69-91	2N2429	ΔAPX NPC PHIC	61-40	2N2479	CNS RAYN TADI ETC	110-67 203-51	2N2512	ΔTSC GIC NSC RAYN SCA SES TEC	101-70	2N2565	ΔTII CNS KSC	128-98	
2N2380	RAYN SSI	110-48	2N2430	ΔAPX NPC PHIC	63-55	2N2480	ESMF MISI MOTA RAYN SGSI TADI TSC	95-70 214-12	2N2513	ΔTSC GIC NSC RAYN SCA SES TEC	101-70	2N2566/5	CNS KSC	127-56	
2N2380A	RAYN SSI	110-48	2N2431MP	ΔAPX PHIC	214-9	2N2481	ΔMOTA CNS HSC RAYN TADI MOTA	103-77 208-28	2N2514	ΔSOD SSI	105-25	2N2567	ΔTII CNS KSC	128-99	
2N2381	ΔMOTA	64-98	2N2432	ΔTII CRY TEC TIIF	95-3 221-64	2N2482	ESMF MISI MOTA RAYN SGSI TADI TSC	95-71 214-13	2N2515	ΔSOD SSI	105-44	2N2568	ΔTII CNS KSC	127-57	
2N2382	ΔMOTA	64-99	JAN2N2432	CNS TADI CRY TEC	95-45	2N2483	ESMF MISI MOTA RAYN SGSI TADI TSC	95-71 214-13	2N2516	ΔSOD SSI	105-61	2N2569	ΔTII CNS KSC	127-58	
2N2383	ETC	169-2	2N2432A	ΔTII CRY TEC TIIF	95-4	2N2484	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2517	ΔSOD SSI	105-62	2N2570	ΔTII CNS KSC	127-59	
2N2384	SSI	169-3	JAN2N2432A	ΔTII CRY TEC TIIF	95-46	2N2485	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2518	ΔSOD SSI	105-62	2N2571	ΔTII CNS KSC	127-60	
2N2386	SSI	119-5	2N2433	ΔTSC SSI	107-78	2N2486	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2519	ΔSOD SSI	105-63	2N2572	ΔTII CNS KSC	127-61	
2N2387	SSI	95-17	2N2434	ΔTSC SSI	107-86	2N2487	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2520	ΔSOD SSI	105-40	2N2573	ΔTII CNS KSC	127-62	
2N2388	SSI	95-18	2N2435	ΔTSC SSI	107-79	2N2488	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2521	ΔSOD SSI	105-41	2N2574	ΔTII CNS KSC	127-63	
2N2389	SSI	106-65	2N2436	ΔTSC SSI	107-87	2N2489	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2522	ΔSOD SSI	105-42	2N2575	ΔTII CNS KSC	127-64	
2N2390	SSI	106-66	2N2437	ΔTSC SSI	107-72	2N2490	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2523	ΔSOD SSI	105-64	2N2576	ΔTII CNS KSC	127-65	
2N2393	SSI	80-5	2N2438	ΔTSC SSI	107-80	2N2491	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2524	ΔSOD SSI	105-65	2N2577	ΔTII CNS KSC	127-66	
2N2394	SSI	80-6	2N2439	ΔTSC SSI	107-88	2N2492	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2525	ΔTRW SSI	160-72	2N2578	ΔTII CNS KSC	127-67	
2N2395	SSI	106-63	2N2440	ΔTSC SSI	114-16	2N2493	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2526	ΔMOTA	132-105	2N2579	ΔTII CNS KSC	127-68	
2N2396	SSI	106-64	2N2441	ΔTSC SSI	113-21	2N2494	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2527	ΔMOTA	132-106	2N2580	ΔTII CNS KSC	127-69	
2N2398	SSI	54-93	2N2442	ΔTSC SSI	107-87	2N2495	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2528	ΔMOTA	132-107	2N2581	ΔTII CNS KSC	127-70	
2N2399	SSI	54-94	2N2443	ΔTSC SSI	107-87	2N2496	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2529	ΔMOTA	132-108	2N2582	ΔTII CNS KSC	127-71	
2N2400	SSI	60-80	2N2444	ΔTSC SSI	107-87	2N2497	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2530	ΔMOTA	132-109	2N2583	ΔTII CNS KSC	127-72	
2N2401	SSI	60-81	2N2445	ΔTSC SSI	107-87	2N2498	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2531	ΔMOTA	132-110	2N2584	ΔTII CNS KSC	127-73	
2N2402	SSI	60-91	2N2446	ΔTSC SSI	107-87	2N2499	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2532	ΔMOTA	132-111	2N2585	ΔTII CNS KSC	127-74	
2N2405	SSI	147-34	2N2447	ΔTSC SSI	107-87	2N2500	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2533	ΔMOTA	132-112	2N2586	ΔTII CNS KSC	127-75	
2N2410	SSI	114-91	2N2448	ΔTSC SSI	107-87	2N2501	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2534	ΔMOTA	132-113	2N2587	ΔTII CNS KSC	127-76	
2N2411	SSI	74-23	2N2449	ΔTSC SSI	107-87	2N2502	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2535	ΔMOTA	132-114	2N2588	ΔTII CNS KSC	127-77	
2N2412	SSI	204-26	2N2450	ΔTSC SSI	107-87	2N2503	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2536	ΔMOTA	132-115	2N2589	ΔTII CNS KSC	127-78	
2N2414	SSI	107-28	2N2451	ΔTSC SSI	107-87	2N2504	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2537	ΔMOTA	132-116	2N2590	ΔTII CNS KSC	127-79	
2N2415	SSI	55-31	2N2452	ΔTSC SSI	107-87	2N2505	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2538	ΔMOTA	132-117	2N2591	ΔTII CNS KSC	127-80	
2N2416	SSI	55-23	2N2453	ΔTSC SSI	107-87	2N2506	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2539	ΔMOTA	132-118	2N2592	ΔTII CNS KSC	127-81	
2N2417	SSI	220-57	2N2454	ΔTSC SSI	107-87	2N2507	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2540	ΔMOTA	132-119	2N2593	ΔTII CNS KSC	127-82	
JAN2N2417A	SSI	220-58	2N2455	ΔTSC SSI	107-87	2N2508	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2541	ΔMOTA	132-120	2N2594	ΔTII CNS KSC	127-83	
2N2418	SSI	220-59	2N2456	ΔTSC SSI	107-87	2N2509	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2542	ΔMOTA	132-121	2N2595	ΔTII CNS KSC	127-84	
2N2419	SSI	220-60	2N2457	ΔTSC SSI	107-87	2N2510	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2543	ΔMOTA	132-122	2N2596	ΔTII CNS KSC	127-85	
JAN2N2418A	SSI	220-61	2N2458	ΔTSC SSI	107-87	2N2511	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2544	ΔMOTA	132-123	2N2597	ΔTII CNS KSC	127-86	
2N2418B	SSI	220-62	2N2459	ΔTSC SSI	107-87	2N2512	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2545	ΔMOTA	132-124	2N2598	ΔTII CNS KSC	127-87	
2N2419	SSI	220-63	2N2460	ΔTSC SSI	107-87	2N2513	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2546	ΔMOTA	132-125	2N2599	ΔTII CNS KSC	127-88	
2N2419A	SSI	220-64	2N2461	ΔTSC SSI	107-87	2N2514	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2547	ΔMOTA	132-126	2N2600	ΔTII CNS KSC	127-89	
JAN2N2419A	SSI	220-65	2N2462	ΔTSC SSI	107-87	2N2515	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2548	ΔMOTA	132-127	2N2601	ΔTII CNS KSC	127-90	
2N2419B	SSI	220-66	2N2463	ΔTSC SSI	107-87	2N2516	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2549	ΔMOTA	132-128	2N2602	ΔTII CNS KSC	127-91	
2N2420	SSI	220-67	2N2464	ΔTSC SSI	107-87	2N2517	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2550	ΔMOTA	132-129	2N2603	ΔTII CNS KSC	127-92	
2N2420A	SSI	220-68	2N2465	ΔTSC SSI	107-87	2N2518	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2551	ΔMOTA	132-130	2N2604	ΔTII CNS KSC	127-93	
JAN2N2420A	SSI	220-69	2N2466	ΔTSC SSI	107-87	2N2519	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2552	ΔMOTA	132-131	2N2605	ΔTII CNS KSC	127-94	
2N2420B	SSI	220-70	2N2467	ΔTSC SSI	107-87	2N2520	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2553	ΔMOTA	132-132	2N2606	ΔTII CNS KSC	127-95	
2N2421	SSI	220-71	2N2468	ΔTSC SSI	107-87	2N2521	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2554	ΔMOTA	132-133	2N2607	ΔTII CNS KSC	127-96	
2N2421A	SSI	220-72	2N2469	ΔTSC SSI	107-87	2N2522	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2555	ΔMOTA	132-134	2N2608	ΔTII CNS KSC	127-97	
JAN2N2421A	SSI	220-73	2N2470	ΔTSC SSI	107-87	2N2523	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2556	ΔMOTA	132-135	2N2609	ΔTII CNS KSC	127-98	
		220-74	2N2471	ΔTSC SSI	107-87	2N2524	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2557	ΔMOTA	132-136	2N2610	ΔTII CNS KSC	127-99	
		220-75	2N2472	ΔTSC SSI	107-87	2N2525	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2558	ΔMOTA	132-137	2N2611	ΔTII CNS KSC	128-00	
		220-76	2N2473	ΔTSC SSI	107-87	2N2526	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2559	ΔMOTA	132-138	2N2612	ΔTII CNS KSC	128-01	
		220-77	2N2474	ΔTSC SSI	107-87	2N2527	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2560	ΔMOTA	132-139	2N2613	ΔTII CNS KSC	128-02	
		220-78	2N2475	ΔTSC SSI	107-87	2N2528	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2561	ΔMOTA	132-140	2N2614	ΔTII CNS KSC	128-03	
		220-79	2N2476	ΔTSC SSI	107-87	2N2529	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2562	ΔMOTA	132-141	2N2615	ΔTII CNS KSC	128-04	
		220-80	2N2477	ΔTSC SSI	107-87	2N2530	ESMF MISI MOTA RAYN SGSI TADI TSC	102-17	2N2563	ΔMOTA	132-142	2N2616	ΔTII CNS KSC	128-05	
		135-75	2N2478	ΔTSC SSI	107-87	2N25									

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
JAN2N2604	NSC RAYN	77-47	2N2642	TIIB	(cont.)	2N2696	ITT	76-70	2N2751	SCA	181-28	2N2789	ETC	207-34
2N2605	NSC SSI	79-18	JAN2N2642	TSC	95-40	2N2697	RAYN	201-36	2N2752	SSS	181-27	2N2790	SCA	108-68
	BNT			TII	214-18		SCA			SEN	187-73	(cont.)	SCA	207-35
	FSC			TSC	95-37	2N2698	TADI	158-46	2N2753	SSS	187-74	2N2791	GIC	108-69
	MOTA			ESMF	214-19		TEC			SEN	181-28		SCA	207-36
	RAYN			GIC		2N2706	TEC	158-47	2N2754	SEN	181-29	2N2792	SCA	108-70
	SSI			MISI			SGSI	64-67		SEN	187-76		SCA	207-37
	TII			NSC		2N2706MP	PHIC	214-22	2N2755	SSI	181-30	2N2795	SCA	55-21
	TIIF			RAYN		2N2707	APX	213-35		SSI	187-77		SCA	210-64
JAN2N2605	NSC RAYN	77-48		SOD			PHIC		2N2756	SSI	181-31	2N2796	SCA	55-22
2N2605A	FSC	78-87		TADI		2N2708	ETC	91-67		SEN	187-78		SCA	210-65
	TADI			TIIB			APX		2N2757	PTI	181-32	2N2800	SCA	82-9
2N2606	TSC	117-97		TSC			FERB			SEN	187-29		SCA	202-11
	TSC			ESMF	95-38		SCA		2N2758	SEN	187-30		SCA	202-12
JAN2N2606	SIX	117-98		GIC	222-100		TADI			SSI	181-33		SCA	79-45
2N2607	TSC	117-99		MISI		JAN2N2708	TSC	90-94	2N2759	SEN	187-30	2N2800/46	SCA	202-13
2N2607	SODI	117-100		NSC			FSC	104-65		SEN	181-34	2N2801	SCA	82-10
JAN2N2607	SIX	117-100		RAYN			SCA	211-20	2N2760	SEN	187-31		SCA	202-13
2N2608	TSC	117-101		SGSI		2N2710	SGSI	87-68		SEN	181-35		SCA	79-46
	SODI			TEC			TIIB		2N2761	SEN	187-32	2N2801/46	SCA	72-26
	TIIB			TIIF		2N2711	UPI	87-68		SEN	181-36	2N2802	SCA	214-26
JAN2N2608	SIX	117-102		UPI			TSC		2N2762	SEN	181-37		SCA	72-27
2N2609	TSC	117-103		TSC	107-30	2N2712	TEC	87-69		SEN	187-32		SCA	72-26
	FSC			SCA			NSC		2N2763	SEN	181-38		SCA	214-26
	TIIB			SGSI		2N2713	TEC	87-70		SEN	181-39		SCA	72-27
JAN2N2609	TSC	117-104		TADI			SPR		2N2764	SEN	181-40	2N2803	SCA	214-27
2N2610	SIX	84-107		TEC		2N2714	ESMF	87-71		SEN	187-33		SCA	72-28
2N2611	SSS	156-9		TEC			MISI		2N2765	SEN	181-41	2N2804	SCA	222-102
2N2612	SCA	132-108		TEC	64-90	2N2715	SPR	87-72		SEN	187-34		SCA	72-28
2N2613	SCA	57-30		TEC	194-73		TEC		2N2766	SEN	181-42	2N2805	SCA	222-102
2N2614	SCA	57-31		TEC	104-81	2N2716	TEC	87-73		SEN	187-35		SCA	72-29
2N2615	SCA	99-56		TEC	104-81		TEC		2N2767	SEN	181-43	2N2806	SCA	214-28
2N2616	SCA	99-60		TEC	104-81	2N2717	TEC	57-6		SEN	187-37		SCA	72-29
	SCA			TEC	214-20	2N2720	TEC	214-23		SEN	181-44	2N2807	SCA	214-28
	SCA			TEC			TEC		2N2768	SEN	187-38		SCA	72-30
	SCA			TEC		2N2721	TEC	96-33		SEN	181-45	2N2808	SCA	214-29
	SCA			TEC			TEC		2N2769	SEN	187-39		SCA	72-31
	SCA			TEC		2N2722	TEC	214-24		SEN	181-46	2N2809	SCA	214-29
	SCA			TEC			TEC		2N2770	SEN	187-40		SCA	72-31
	SCA			TEC		2N2723	TEC	96-45		SEN	181-41	2N2810	SCA	214-29
	SCA			TEC			TEC		2N2771	SEN	187-41		SCA	72-30
	SCA			TEC		2N2724	TEC	214-25		SEN	181-42	2N2811	SCA	214-29
	SCA			TEC			TEC		2N2772	SEN	187-42		SCA	72-31
	SCA			TEC		2N2725	TEC	214-25		SEN	181-43	2N2812	SCA	222-103
	SCA			TEC			TEC		2N2773	SEN	187-44		SCA	72-31
	SCA			TEC		2N2726	TEC	225-89		SEN	187-44	2N2813	SCA	222-103
	SCA			TEC			TEC		2N2774	SEN	181-44		SCA	72-31
	SCA			TEC		2N2727	TEC	225-90		SEN	187-44	2N2814	SCA	222-103
	SCA			TEC			TEC		2N2775	SEN	181-45		SCA	72-31
	SCA			TEC		2N2728	TEC	225-91		SEN	187-80	2N2815	SCA	222-103
	SCA			TEC			TEC		2N2776	SEN	181-46		SCA	72-31
	SCA			TEC		2N2729	TEC	147-30		SEN	187-81	2N2816	SCA	214-28
	SCA			TEC			TEC		2N2777	SEN	181-47		SCA	72-30
	SCA			TEC		2N2730	TEC	147-31		SEN	187-82	2N2817	SCA	214-29
	SCA			TEC			TEC		2N2778	SEN	181-47		SCA	72-30
	SCA			TEC		2N2731	TEC	147-31		SEN	187-82	2N2818	SCA	214-29
	SCA			TEC			TEC		2N2779	SEN	181-48		SCA	72-30
	SCA			TEC		2N2732	TEC	136-92		SEN	187-83	2N2819	SCA	214-29
	SCA			TEC			TEC		2N2780	SEN	181-48		SCA	72-30
	SCA			TEC		2N2733	TEC	189-9		SEN	187-83	2N2820	SCA	214-29
	SCA			TEC			TEC		2N2781	SEN	181-49		SCA	72-30
	SCA			TEC		2N2734	TEC	99-61		SEN	187-83	2N2821	SCA	214-29
	SCA			TEC			TEC		2N2782	SEN	181-49		SCA	72-30
	SCA			TEC		2N2735	TEC	136-92		SEN	187-84	2N2822	SCA	214-29
	SCA			TEC			TEC		2N2783	SEN	181-50		SCA	72-30
	SCA			TEC		2N2736	TEC	99-61		SEN	187-84	2N2823	SCA	214-29
	SCA			TEC			TEC		2N2784	SEN	181-51		SCA	72-30
	SCA			TEC		2N2737	TEC	136-92		SEN	187-84	2N2824	SCA	214-29
	SCA			TEC			TEC		2N2785	SEN	181-51		SCA	72-30
	SCA			TEC		2N2738	TEC	189-9		SEN	187-84	2N2825	SCA	214-29
	SCA			TEC			TEC		2N2786	SEN	181-51		SCA	72-30
	SCA			TEC		2N2739	TEC	99-61		SEN	187-84	2N2826	SCA	214-29
	SCA			TEC			TEC		2N2787	SEN	181-51		SCA	72-30
	SCA			TEC		2N2740	TEC	136-93		SEN	187-84	2N2827	SCA	214-29
	SCA			TEC			TEC		2N2788	SEN	181-51		SCA	72-30
	SCA			TEC		2N2741	TEC	136-94		SEN	187-84	2N2828	SCA	214-29
	SCA			TEC			TEC		2N2789	SEN	181-51		SCA	72-30
	SCA			TEC		2N2742	TEC	136-95		SEN	187-84	2N2829	SCA	214-29
	SCA			TEC			TEC		2N2790	SEN	181-51		SCA	72-30
	SCA			TEC		2N2743	TEC	136-95		SEN	187-84	2N2830	SCA	214-29
	SCA			TEC			TEC		2N2791	SEN	181-51		SCA	72-30
	SCA			TEC		2N2744	TEC	136-95		SEN	187-84	2N2831	SCA	214-29
	SCA			TEC			TEC		2N2792	SEN	181-51		SCA	72-30
	SCA			TEC		2N2745	TEC	136-10		SEN	187-84	2N2832	SCA	214-29
	SCA			TEC			TEC		2N2793	SEN	181-51		SCA	72-30
	SCA			TEC		2N2746	TEC	136-11		SEN	187-84	2N2833	SCA	214-29
	SCA			TEC			TEC		2N2794	SEN	181-51		SCA	72-30
	SCA			TEC		2N2747	TEC	136-12		SEN	187-84	2N2834	SCA	214-29
	SCA			TEC			TEC		2N2795	SEN	181-51		SCA	72-30
	SCA			TEC		2N2748	TEC	136-12		SEN	187-84	2N2835	SCA	214-29
	SCA			TEC			TEC		2N2796	SEN	181-51		SCA	72-30
	SCA			TEC		2N2749	TEC	136-13		SEN	187-84	2N2836	SCA	214-29
	SCA			TEC			TEC		2N2797	SEN	181-51		SCA	72-30
	SCA			TEC		2N2750	TEC	136-14		SEN	187-84	2N2837	SCA	214-29
	SCA			TEC			TEC		2N2798	SEN	181-51		SCA</	



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N2819 (cont.)	MISI PTI SPC TRW		2N2851-1 SCA	PPC SOD SSI SCA	115-72 196-30	2N2877 (cont.)	PIR SIL TEC UNI TRW		2N2904 (cont.)	EMLS ETC GIC IDC HSC INTG ITTB MEHK MINA MST NJS NSC PHIC RAYN SCA SGSI SPR TADI TFKG TIIB TIIF TSC		2N2906 (cont.)	TII TIIF VALG ITT NSC TEC TSC	
2N2820	ESMF MISI SEN SSI	177-80	2N2852 GSE	SCA TRW	115-80 196-32	2N2878	UNI SOD KER PIR SEN SSI TEC	164-107 199-10		JAN2N2906	MOTA RAYN TII	79-54 205-39		
2N2821	ESMF MISI SEN SSI	177-81	2N2852-1 SCA	PPC SOD SSI SCA	115-73 196-33					2N2906A	UNI MOTA RAYN TEC	79-55 204-90		
2N2822	ESMF MISI SEN SSI	177-82	2N2852-3 SCA	PPC SOD SSI SCA	159-69 196-34 115-81	2N2879	UNI SOD KER PPC SEN SSI TRW	164-108 196-19						
2N2823	ESMF MISI SEN SSI	177-83	2N2853 GSE	SCA TRW	115-74 196-36	2N2880	UNI SOD KER GSE NSC PPC SIL TEC TIIB	164-109 199-11		JAN2N2904	MOTA RAYN TEC	81-9 205-35		
2N2824	ESMF MISI SEN SSI	177-84	2N2853-1 SCA	PPC SOD SSI SCA	159-70 196-37 115-82 196-38					2N2904A	UNI MOTA RAYN TEC	81-10 204-86		
2N2825	ESMF MISI SEN SSI	177-85	2N2854 GSE	SCA TRW	159-71 196-39	JAN2N2880	FSC SIL TEC	164-110 194-74						
2N2828	CNS SOD SSI	163-56	2N2855 GSE	SCA TRW	115-83 196-41	2N2881	UNI SOD KER CRY	140-64						
2N2829	CNS SOD SSI	164-105	2N2855-1 SCA	PPC SOD SSI SCA	115-75 196-42	2N2882	UNI SOD KER CRY	140-65						
2N2832	UNI	132-109	2N2855-3 SCA	PPC SOD SSI SCA	159-72 196-43 115-84 196-44	2N2883	UNI SOD KER CRY	115-49						
2N2833	UNI	193-72	2N2856-1 SCA	PPC SOD SSI SCA	115-76 196-45	2N2884	UNI SOD KER CRY	115-50						
2N2834	UNI	193-73	2N2856-3 SCA	PPC SOD SSI SCA	159-73 196-46 92-16	2N2887	UNI SOD KER CRY	160-25						
JAN2N2834	UNI	193-74	2N2857 GSE	SCA TRW	115-77 196-47	2N2890	UNI SOD KER CRY	113-23 199-58		JAN2N2904A	MOTA RAYN TEC	81-11 205-36		
2N2835	UNI	133-1	2N2858 GSE	SCA TRW	115-78 196-48	2N2891	UNI SOD KER CRY	113-24 199-59		2N2905	UNI MOTA RAYN TEC	81-12 204-87		
2N2836	UNI	133-2	JAN2N2857	MOTA	91-19	2N2892	UNI SOD KER CRY	161-83 199-60						
2N2837	UNI	193-75	2N2858	UNI	109-43 190-58	2N2893	UNI SOD KER CRY	161-84 199-61						
2N2838	UNI	133-7	JAN2N2858	none	157-95 192-60 109-44 190-59	2N2894	UNI SOD KER CRY	77-60 210-22		JAN2N2905	MOTA RAYN TEC	81-13 205-37		
2N2840	UNI	133-8	2N2859	UNI	109-44 190-59	2N2895	UNI SOD KER CRY	77-85 212-4 108-16		2N2905A	UNI MOTA RAYN TEC	81-14 204-88		
2N2841	UNI	133-9	JAN2N2859	none	157-96 192-61 73-49	2N2896	UNI SOD KER CRY	108-17						
2N2842	UNI	133-10	2N2860	UNI	114-70	2N2897	UNI SOD KER CRY	107-105						
2N2843	UNI	133-11	2N2861	UNI	114-71	2N2898	UNI SOD KER CRY	108-18						
2N2844	UNI	133-12	2N2862	UNI	114-72	2N2899	UNI SOD KER CRY	108-19						
2N2845	UNI	133-13	2N2863	UNI	114-73	2N2900	UNI SOD KER CRY	107-106						
2N2846	UNI	133-14	2N2864	UNI	114-74	2N2901	UNI SOD KER CRY	88-78 214-30						
2N2847	UNI	133-15	2N2865	UNI	114-75	2N2902	UNI SOD KER CRY	88-79 214-31						
2N2848	UNI	133-16	2N2866	UNI	114-76	2N2903	UNI SOD KER CRY	81-8 204-85						
2N2849	UNI	133-17	2N2867	UNI	114-77	2N2904	UNI SOD KER CRY							
2N2849-1	UNI	133-18	2N2868	UNI	114-78	2N2905	UNI SOD KER CRY							
2N2849-3	UNI	133-19	2N2869	UNI	114-79	2N2906	UNI SOD KER CRY							
2N2850	UNI	133-20	2N2870	UNI	114-80	2N2907	UNI SOD KER CRY							
2N2850-1	UNI	133-21	2N2871	UNI	114-81	2N2908	UNI SOD KER CRY							
2N2850-3	UNI	133-22	2N2872	UNI	114-82	2N2909	UNI SOD KER CRY							
2N2851	UNI	133-23	2N2873	UNI	114-83	2N2910	UNI SOD KER CRY							
			2N2874	UNI	114-84	2N2911	UNI SOD KER CRY							
			2N2875	UNI	114-85	2N2912	UNI SOD KER CRY							
			2N2876	UNI	114-86	2N2913	UNI SOD KER CRY							
			2N2877	UNI	114-87	2N2914	UNI SOD KER CRY							
			2N2878	UNI	114-88	2N2915	UNI SOD KER CRY							
			2N2879	UNI	114-89									
			2N2880	UNI	114-90									
			2N2881	UNI	114-91									
			2N2882	UNI	114-92									
			2N2883	UNI	114-93									
			2N2884	UNI	114-94									
			2N2885	UNI	114-95									
			2N2886	UNI	114-96									
			2N2887	UNI	114-97									
			2N2888	UNI	114-98									
			2N2889	UNI	114-99									
			2N2890	UNI	114-100									

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N2915 (cont.)	CNS GIC MOTA QDC SGSI SODI TADI TII TIIF	214-33	2N2927	ETC SCA TADI TEC SCA	81-96 201-37	2N2972 (cont.)	TIIF TII		2N2993 (cont.)	TEC TIIF UNI		2N3036 (cont.)	TEC TIIF TRW	
	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF		2N2927/46	◆MOTA SGSI TEC SCA	79-19 201-38	2N2973	◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-44	2N2994	◆ΔTII SCA TEC TIIF UNI	148-68	2N3037	◆ΔTII TIIF TIIF	102-52 199-47 102-53
2N2915A	◆BNT ◆RAYN ◆SSI ◆TII	95-98 214-34	2N2929	◆MOTA	65-59				2N2995	ΔGESY UNI	159-74	2N3038	◆ΔTII TIIF	199-48
2N2916	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-99 214-35	2N2930	ETC	64-27 191-59	2N2974	◆BNT ◆MEHK ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-45 214-47	2N2996	◆ΔTII MOTA TIIF none	55-30	2N3039	◆ΔTII TIIF	76-56 199-17
	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF		2N2936	◆RAYN	214-45				2N2997	◆ΔTII MOTA TIIF none	55-19 55-34	2N3040	◆ΔTII TIIF	76-57 199-18
2N2916A	◆BNT ◆RAYN ◆SSI ◆TII	95-100 214-36	2N2937	◆RAYN	214-46	2N2975	◆BNT ◆MEHK ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-46 214-48	2N2998	◆ΔTII MOTA TIIF none	55-20 55-38	2N3041	◆ΔTII TIIF	199-18
2N2917	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-101 214-37	2N2938	ETC FERB ETC	96-46 200-105 114-72				2N2999	ΔTII TIIF	55-42	2N3042	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-57
	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF		2N2939	ETC TEC SSS	114-73	2N2976	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-47 214-49	2N3000	◆ΔFSC ◆ITT SCA TIIF	104-4 209-5	2N3043	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-58
2N2918	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-102 214-38	2N2940	ETC TEC	114-73				2N3001	◆MOTA ◆RAYN ◆SGSI ◆TIIF	99-38 211-56	2N3044	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-59
2N2919	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-103 214-39	2N2941	SSS TEC	114-74	2N2977	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-48 214-50	2N3002	◆MOTA ◆RAYN ◆SGSI ◆TIIF	77-61 210-23	2N3045	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-60
	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF		2N2942	◆CRY IDC	78-59 194-1				2N3003	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-32 209-85	2N3046	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-61
2N2919A	◆BNT ◆RAYN ◆SSI ◆TII	95-104 214-40	2N2943	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	78-60 221-68	2N2978	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-49 214-51	2N3004	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-6 209-7	2N3047	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-62
2N2920	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-105 214-41	2N2944	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	78-52 193-10				2N3005	◆MOTA ◆RAYN ◆SGSI ◆TIIF	77-61 210-23	2N3048	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-63
	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF		2N2945A	◆CRY IDC	78-53 221-70	2N2979	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-50 214-52	2N3006	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-5 209-6	2N3049	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-64
2N2920A	◆BNT ◆RAYN ◆SSI ◆TII	95-106 214-42	2N2946	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	78-35 221-72				2N3007	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-6 209-7	2N3050	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-65
2N2921	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-107 214-43	2N2947	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	78-36 221-73	2N2980	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-51 214-53	2N3008	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3051	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-66
2N2922	◆BNT ◆RAYN ◆SSI ◆TII	95-108 214-44	2N2948	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	161-68				2N3009	◆MOTA ◆RAYN ◆SGSI ◆TIIF	115-9 207-3	2N3052	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-67
2N2923	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-109 214-45	2N2949	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	161-20	2N2981	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-52 214-54	2N3010	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-5 209-6	2N3053	◆FSC ◆MOTA ◆SGSI ◆TIIF	150-97
2N2924	◆BNT ◆RAYN ◆SSI ◆TII	95-110 214-46	2N2950	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	152-36				2N3011	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-6 209-7	2N3054	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-68
2N2925	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-111 214-47	2N2951	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	152-37	2N2982	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-53 214-55	2N3012	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3055	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-69
2N2926	◆BNT ◆RAYN ◆SSI ◆TII	95-112 214-48	2N2952	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	149-25				2N3013	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3056	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-70
2N2927	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-113 214-49	2N2953	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2983	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-54 214-56	2N3014	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3057	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-71
2N2928	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-114 214-50	2N2954	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3015	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3058	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-72
2N2929	◆BNT ◆RAYN ◆SSI ◆TII	95-115 214-51	2N2955	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2984	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-55 214-57	2N3016	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3059	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-73
2N2930	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-116 214-52	2N2956	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3017	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3060	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-74
2N2931	◆BNT ◆RAYN ◆SSI ◆TII	95-117 214-53	2N2957	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2985	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-56 214-58	2N3018	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3061	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-75
2N2932	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-118 214-54	2N2958	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3019	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3062	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-76
2N2933	◆BNT ◆RAYN ◆SSI ◆TII	95-119 214-55	2N2959	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2986	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-57 214-59	2N3020	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3063	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-77
2N2934	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-120 214-56	2N2960	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3021	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3064	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-78
2N2935	◆BNT ◆RAYN ◆SSI ◆TII	95-121 214-57	2N2961	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2987	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-58 214-60	2N3022	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3065	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-79
2N2936	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-122 214-58	2N2962	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3023	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3066	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-80
2N2937	◆BNT ◆RAYN ◆SSI ◆TII	95-123 214-59	2N2963	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2988	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-59 214-61	2N3024	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3067	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-81
2N2938	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-124 214-60	2N2964	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3025	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3068	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-82
2N2939	◆BNT ◆RAYN ◆SSI ◆TII	95-125 214-61	2N2965	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2989	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-60 214-62	2N3026	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3069	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-83
2N2940	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-126 214-62	2N2966	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3027	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3070	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-84
2N2941	◆BNT ◆RAYN ◆SSI ◆TII	95-127 214-63	2N2967	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2990	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-61 214-63	2N3028	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3071	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-85
2N2942	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-128 214-64	2N2968	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3029	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3072	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-86
2N2943	◆BNT ◆RAYN ◆SSI ◆TII	95-129 214-65	2N2969	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2991	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-62 214-64	2N3030	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3073	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-87
2N2944	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-130 214-66	2N2970	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3031	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3074	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-88
2N2945	◆BNT ◆RAYN ◆SSI ◆TII	95-131 214-67	2N2971	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2992	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-63 214-65	2N3032	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3075	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-89
2N2946	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-132 214-68	2N2972	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72				2N3033	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3076	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-90
2N2947	◆BNT ◆RAYN ◆SSI ◆TII	95-133 214-69	2N2973	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72	2N2993	◆BNT ◆GIC ◆MOTA ◆NSC ◆RAYN ◆SGSI ◆SOD ◆TADI ◆TII	93-64 214-66	2N3034	◆MOTA ◆RAYN ◆SGSI ◆TIIF	104-7 209-22	2N3077	◆FSC ◆MOTA ◆SGSI ◆TIIF	214-91
2N2948	◆BNT ◆GESY ◆MEHK ◆NSC ◆RAYN ◆SODI ◆SODI ◆TADI ◆TII ◆TIIF	95-134 214-70	2N2974	◆MOTA ◆RAYN ◆SPR ◆SSS ◆TADI ◆TII ◆TIIF	148-72									

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N3059	DC SCA SSI	78-56	2N3110 (cont.)	ITT NSC RAYN SGSI TADI TIIF TSC	200-5	2N3145	SSI TEC	180-30	2N3196	SCA SOD SSI	143-97	2N3235 (cont.)	SSI TRW TEK	
2N3060	DC SOD SSI	78-37	2N3112	ΔSIX	117-109	2N3146	ΔATI	136-96	2N3197	SCA SOD SSI	143-98	2N3236	ΔSIL ASC CNS PPC SSI TRW	174-52
2N3061	DC SPR TADI	78-47	2N3113	ΔSIX	117-16	2N3147	ΔTII	136-97	2N3198	SCA SOD SSI	143-99	2N3237	ΔSIL ASC SEN SSI TRW	175-69
2N3062	DC RAYN TADI	78-28	2N3114	ΔFSC	112-86	2N3149	ASIL KER PIR SEN SPC TEC	181-56	2N3199	SCA SOD SSI	142-69	2N3238	ΔSIL ASC SEN SSI TRW	174-53
2N3063	DC RAYN TADI	78-38	2N3115	ΔMOTA	105-98	2N3150	ASIL KER PIR SEN SPC TEC	181-57	2N3200	SCA SOD SSI	142-70	2N3239	ΔSIL ASC SEN SSI TRW	174-54
2N3064	DC RAYN TADI	78-26	2N3116	ΔMOTA	105-99	2N3151	ASIL KER PIR SEN SPC TEC	181-58	2N3201	SCA SOD SSI	142-71	2N3240	ΔSIL ASC SEN SSI TRW	174-55
2N3065	DC RAYN TADI	78-31	2N3117	ΔFSC	102-62	2N3153	CRY KSC	64-91	2N3202	SCA SOD SSI	140-66	2N3241A	RCA	107-31
2N3066	BNT SIX	121-104	2N3118	ΔRCA	149-97	2N3154	KSC	130-51	2N3203	SCA SOD SSI	140-67	2N3242A	RCA	107-32
2N3067	BNT SIX	121-105	2N3119	ΔRCA	149-98	2N3155	KSC	130-52	2N3204	SCA SOD SSI	140-68	2N3244	HSC SSI TEC	203-90
2N3068	BNT SIX	121-106	2N3120	ΔFSC	82-12	2N3156	KSC	130-53	2N3205	SCA SOD SSI	142-72	2N3245	HSC SSI TEC	202-107
2N3069	BNT ECD SIX	124-59	2N3121	ΔFSC	76-81	2N3157	KSC	130-54	2N3206	SCA SOD SSI	142-73	2N3246	HSC SSI TEC	101-65
2N3070	BNT ECD SIX	124-60	2N3122	ΔMOTA	202-63	2N3158	KSC	130-55	2N3207	SCA SOD SSI	142-74	2N3247	HSC SSI TEC	85-85
2N3071	BNT SIX	124-61	2N3123	ΔMOTA	76-81	2N3159	KSC	130-56	2N3208	SCA SOD SSI	140-69	2N3248	HSC SSI TEC	77-39
2N3072	CNS ITT NSC SCA TADI	82-11	2N3124	ΔMOTA	202-64	2N3160	KSC	130-57	2N3209	SCA SOD SSI	142-72	2N3249	HSC SSI TEC	206-29
2N3073	CNS ITT NSC SCA TADI	202-61	2N3125	ΔMOTA	76-81	2N3161	KSC	130-58	2N3210	SCA SOD SSI	142-73	2N3250	HSC SSI TEC	77-49
2N3074	PHIC	58-36	2N3126	ΔMOTA	202-63	2N3162	KSC	143-100	2N3211	SCA SOD SSI	140-69	2N3251	HSC SSI TEC	206-83
2N3075	PHIC	58-37	2N3127	ΔMOTA	76-81	2N3163	KSC	143-101	2N3212	SCA SOD SSI	142-72	2N3252	HSC SSI TEC	77-40
2N3076	PHIC	175-68	2N3128	ΔMOTA	205-96	2N3164	KSC	143-102	2N3213	SCA SOD SSI	142-73	2N3253	HSC SSI TEC	206-83
2N3077	PHIC	102-60	2N3129	ΔMOTA	76-81	2N3165	KSC	143-103	2N3214	SCA SOD SSI	142-74	2N3254	HSC SSI TEC	77-41
2N3078	PHIC	102-61	2N3130	ΔMOTA	205-96	2N3166	KSC	143-104	2N3215	SCA SOD SSI	142-75	2N3255	HSC SSI TEC	206-84
2N3079	PHIC	179-80	2N3131	ΔMOTA	76-81	2N3167	KSC	143-105	2N3216	SCA SOD SSI	142-76	2N3256	HSC SSI TEC	77-42
2N3080	PHIC	189-64	2N3132	ΔMOTA	205-97	2N3168	KSC	143-106	2N3217	SCA SOD SSI	142-77	2N3257	HSC SSI TEC	212-23
2N3081	PHIC	179-81	2N3133	ΔMOTA	76-81	2N3169	KSC	143-107	2N3218	SCA SOD SSI	142-78	2N3258	HSC SSI TEC	77-50
2N3082	PHIC	189-65	2N3134	ΔMOTA	205-97	2N3170	KSC	143-108	2N3219	SCA SOD SSI	142-79	2N3259	HSC SSI TEC	208-13
2N3083	PHIC	81-2	2N3135	ΔMOTA	76-81	2N3171	KSC	143-109	2N3220	SCA SOD SSI	142-80	2N3260	HSC SSI TEC	77-51
2N3084	PHIC	203-30	2N3136	ΔMOTA	205-98	2N3172	KSC	143-110	2N3221	SCA SOD SSI	142-81	2N3261	HSC SSI TEC	206-85
2N3085	PHIC	79-47	2N3137	ΔMOTA	76-81	2N3173	KSC	144-1	2N3222	SCA SOD SSI	142-82	2N3262	HSC SSI TEC	77-52
2N3086	PHIC	203-31	2N3138	ΔMOTA	205-99	2N3174	KSC	144-2	2N3223	SCA SOD SSI	142-83	2N3263	HSC SSI TEC	212-24
2N3087	PHIC	125-58	2N3139	ΔMOTA	76-81	2N3175	KSC	144-3	2N3224	SCA SOD SSI	142-84	2N3264	HSC SSI TEC	77-53
2N3088	PHIC	125-59	2N3140	ΔMOTA	205-99	2N3176	KSC	144-4	2N3225	SCA SOD SSI	142-85	2N3265	HSC SSI TEC	208-13
2N3089	PHIC	125-60	2N3141	ΔMOTA	76-81	2N3177	KSC	144-5	2N3226	SCA SOD SSI	142-86	2N3266	HSC SSI TEC	77-54
2N3089A	PHIC	125-61	2N3142	ΔMOTA	205-99	2N3178	KSC	144-6	2N3227	SCA SOD SSI	142-87	2N3267	HSC SSI TEC	212-24
2N3107	PHIC	113-97	2N3143	ΔMOTA	76-81	2N3179	KSC	144-7	2N3228	SCA SOD SSI	142-88	2N3268	HSC SSI TEC	77-55
2N3108	PHIC	200-28	2N3144	ΔMOTA	205-99	2N3180	KSC	144-8	2N3229	SCA SOD SSI	142-89	2N3269	HSC SSI TEC	208-13
2N3108	PHIC	113-51	2N3145	ΔMOTA	76-81	2N3181	KSC	144-9	2N3230	SCA SOD SSI	142-90	2N3270	HSC SSI TEC	77-56
2N3109	PHIC	200-4	2N3146	ΔMOTA	205-99	2N3182	KSC	144-10	2N3231	SCA SOD SSI	142-91	2N3271	HSC SSI TEC	212-24
2N3110	PHIC	113-98	2N3147	ΔMOTA	76-81	2N3183	KSC	144-11	2N3232	SCA SOD SSI	142-92	2N3272	HSC SSI TEC	77-57
2N3110	PHIC	200-29	2N3148	ΔMOTA	205-99	2N3184	KSC	144-12	2N3233	SCA SOD SSI	142-93	2N3273	HSC SSI TEC	208-13
2N3110	PHIC	113-52	2N3149	ΔMOTA	76-81	2N3185	KSC	144-13	2N3234	SCA SOD SSI	142-94	2N3274	HSC SSI TEC	77-58
cont.next col			2N3150	ΔMOTA	205-99	2N3186	KSC	144-14	2N3235	SCA SOD SSI	142-95	2N3275	HSC SSI TEC	212-24
			2N3151	ΔMOTA	76-81	2N3187	KSC	144-15	2N3236	SCA SOD SSI	142-96	2N3276	HSC SSI TEC	77-59
			2N3152	ΔMOTA	205-99	2N3188	KSC	144-16	2N3237	SCA SOD SSI	142-97	2N3277	HSC SSI TEC	208-13
			2N3153	ΔMOTA	76-81	2N3189	KSC	144-17	2N3238	SCA SOD SSI	142-98	2N3278	HSC SSI TEC	77-60
			2N3154	ΔMOTA	205-99	2N3190	KSC	144-18	2N3239	SCA SOD SSI	142-99	2N3279	HSC SSI TEC	212-24
			2N3155	ΔMOTA	76-81	2N3191	KSC	144-19	2N3240	SCA SOD SSI	142-100	2N3280	HSC SSI TEC	77-61
			2N3156	ΔMOTA	205-99	2N3192	KSC	144-20	2N3241	SCA SOD SSI	142-101	2N3281	HSC SSI TEC	208-13
			2N3157	ΔMOTA	76-81	2N3193	KSC	144-21	2N3242	SCA SOD SSI	142-102	2N3282	HSC SSI TEC	77-62
			2N3158	ΔMOTA	205-99	2N3194	KSC	144-22	2N3243	SCA SOD SSI	142-103	2N3283	HSC SSI TEC	212-24
			2N3159	ΔMOTA	76-81	2N3195	KSC	144-23	2N3244	SCA SOD SSI	142-104	2N3284	HSC SSI TEC	77-63
			2N3160	ΔMOTA	205-99	2N3196	KSC	144-24	2N3245	SCA SOD SSI	142-105	2N3285	HSC SSI TEC	208-13
			2N3161	ΔMOTA	76-81	2N3197	KSC	144-25	2N3246	SCA SOD SSI	142-106	2N3286	HSC SSI TEC	77-64
			2N3162	ΔMOTA	205-99	2N3198	KSC	144-26	2N3247	SCA SOD SSI	142-107	2N3287	HSC SSI TEC	212-24
			2N3163	ΔMOTA	76-81	2N3199	KSC	144-27	2N3248	SCA SOD SSI	142-108	2N3288	HSC SSI TEC	77-65
			2N3164	ΔMOTA	205-99	2N3200	KSC	144-28	2N3249	SCA SOD SSI	142-109	2N3289	HSC SSI TEC	208-13
			2N3165	ΔMOTA	76-81	2N3201	KSC	144-29	2N3250	SCA SOD SSI	142-110	2N3290	HSC SSI TEC	77-66
			2N3166	ΔMOTA	205-99	2N3202	KSC	144-30	2N3251	SCA SOD SSI	142-111	2N3291	HSC SSI TEC	212-24
			2N3167	ΔMOTA	76-81	2N3203	KSC	144-31	2N3252	SCA SOD SSI	142-112	2N3292	HSC SSI TEC	77-67
			2N3168	ΔMOTA	205-99	2N3204	KSC	144-32	2N3253	SCA SOD SSI	142-113	2N3293	HSC SSI TEC	208-13
			2N3169	ΔMOTA	76-81	2N3205	KSC	144-33	2N3254	SCA SOD SSI	142-114	2N3294	HSC SSI TEC	77-68
			2N3170	ΔMOTA	205-99	2N3206	KSC	144-34	2N3255	SCA SOD SSI	142-115	2N3295	HSC SSI TEC	212-24
			2N3171	ΔMOTA	76-81	2N3207	KSC	144-35	2N3256	SCA SOD SSI	142-116	2N3296	HSC SSI TEC	77-69
			2N3172	ΔMOTA	205-99	2N3208	KSC	144-36	2N3257	SCA SOD SSI	142-117	2N3297	HSC SSI TEC	208-13
			2N3173	ΔMOTA	76-81	2N3209	KSC	144-37	2N3258	SCA SOD SSI	142-118	2N3298	HSC SSI TEC	77-70
			2N3174	ΔMOTA	205-99	2N3210	KSC	144-38	2N3259	SCA SOD SSI	142-119	2N3299	HSC SSI TEC	212-24
			2N3175	ΔMOTA	76-81	2N3211	KSC	144-39	2N3260	SCA SOD SSI	142-120	2N3300	HSC SSI TEC	77-71
			2N3176	ΔMOTA	205-99	2N3212	KSC	144-40	2N3261	SCA SOD SSI	142-121	2N3301	HSC SSI TEC	208-13
			2N3177	ΔMOTA	76-81	2N3213	KSC	144-41	2N3262	SCA SOD SSI	142-122	2N3302	HSC SSI TEC	77-72
			2N3178	ΔMOTA	205-99	2N3214	KSC	144-42	2N3263	SCA SOD SSI	142-123	2N3303	HSC SSI TEC	212-24
			2N3179	ΔMOTA	76-81	2N3215	KSC	144-43	2N3264	SCA SOD SSI	142-124	2N3304	HSC SSI TEC	

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N3261 (cont.)	ATEI	207-80	2N3308	ESMF	70-108	2N3350	ESMF	73-83	2N3396	ESMF	87-81	2N3427	ESMF	82-103
↓ FERB	SSI		2N3309	MISI	150-4	↓ ΔTII	MISI	214-73	CNS	DC		ITC	SES	63-10
2N3262	↓ ΔRCA	154-7		SSI		BNT	FSC		NSC	NSC		↓ ΔMOTA	ITC	63-10
↓ FERB	ITC	202-79	2N3311	↓ ΔMOTA	136-98	MOTA	NSC		↓ SPR	TEK		↓ ΔWESY	SES	178-59
	SSI		CNS	↓ ETC		RAYN	SSI		TEK	TEK		SEN	SSI	189-35
2N3263	↓ ΔRCA	171-3		KSC		TADI	TIIB		↓ ΔGESY	ESMF	87-82	KER	SIL	178-60
SSI	TRW		2N3312	↓ ΔMOTA	136-99	TIIF	↓ TSC		CNS	MISI		SIL	SSI	189-36
2N3264	↓ ΔRCA	171-4		CNS		2N3351	↓ ΔTII	73-54	NSC	NSC		2N3430	↓ ΔWESY	178-60
SSI	TRW		2N3313	↓ ΔMOTA	136-100	BNT	ESMF	214-74	↓ SPR	TEK		KER	SEN	189-36
2N3265	↓ ΔRCA	175-71		CNS		FSC	MISI		TEK	TEK		SIL	SSI	178-61
KER	PIR		2N3313	↓ ΔMOTA	136-100	MOTA	NSC		↓ ΔGESY	ESMF	87-83	KER	SEN	189-37
PPC	SEN			↓ ETC		RAYN	SSI		CNS	MISI		SIL	SSI	189-37
SOD	SSI		2N3314	↓ ΔMOTA	136-101	TADI	TIIB		NSC	NSC		2N3432	↓ ΔWESY	178-62
TEC	TRW			↓ ETC		TIIF	↓ TSC		↓ SPR	TEK		KER	SEN	189-38
2N3266	↓ ΔRCA	175-72	2N3315	↓ ΔMOTA	136-102	2N3352	↓ ΔTII	73-55	↓ ΔAPX	PHIC	56-7	SIL	SSI	178-63
KER	PIR			↓ ETC		BNT	ESMF	214-75	↓ NPC	CRY	71-54	2N3433	↓ ΔWESY	178-63
PPC	SEN		2N3316	↓ ΔMOTA	136-103	FSC	MISI		2N3401	SOD	221-84	KER	SEN	189-39
SOD	SSI			↓ ETC		MOTA	NSC		2N3402	↓ ΔGESY	109-18	SIL	SSI	178-64
TEC	TRW		2N3317	↓ ΔMOTA	136-103	RAYN	SSI		CNS	ESMF		2N3434	↓ ΔTSC	189-40
2N3267	↓ ΔTII	55-39	2N3318	CRY	69-82	TADI	TIIB		NSC	MISI		↓ ΔTSC	KER	178-64
2N3268	TEC	85-40	2N3318	CRY	221-77	TIIF	↓ TSC		↓ NPC	TEK		SEN	SSI	189-40
2N3277	↓ ΔFSC	117-5	2N3318	CRY	69-94	2N3365	↓ ΔTSC	121-107	2N3403	↓ ΔGESY	109-19	BNT	↓ ΔTSC	122-3
2N3278	↓ ΔFSC	117-13	2N3319	CRY	221-78	BNT	↓ SIX		↓ NPC	TEK		↓ ΔTSC	↓ SIX	122-4
2N3279	↓ ΔMOTA	57-14	2N3319	CRY	69-109	2N3366	↓ ΔTSC	121-108	CNS	ESMF		BNT	↓ ΔTSC	122-5
2N3280	↓ ΔMOTA	57-15	2N3320	CRY	221-79	BNT	↓ SIX		NSC	MISI		↓ ΔTSC	↓ SIX	122-5
2N3281	↓ ΔMOTA	57-12	2N3320	CRY	54-76	2N3367	↓ ΔTSC	121-109	↓ NPC	TEK		BNT	↓ ΔTSC	122-5
2N3282	↓ ΔMOTA	57-13	2N3321	IDC	211-53	BNT	↓ SIX		2N3404	↓ ΔGESY	109-20	BNT	↓ ΔTSC	122-5
2N3283	↓ ΔMOTA	56-106	2N3322	IDC	54-77	2N3368	↓ ΔTSC	121-110	CNS	ESMF		BNT	↓ ΔTSC	122-5
2N3284	↓ ΔMOTA	56-107	2N3322	IDC	211-54	BNT	↓ SIX		NSC	MISI		BNT	↓ ΔTSC	122-5
2N3285	↓ ΔMOTA	56-108	2N3323	↓ ΔMOTA	61-22	2N3369	↓ ΔTSC	122-1	↓ NPC	TEK		2N3439	↓ ΔRCA	147-43
2N3286	↓ ΔMOTA	56-109	2N3324	↓ ΔMOTA	61-23	BNT	↓ SIX		2N3405	↓ ΔGESY	109-21	CNS	↓ FERB	
2N3287	↓ ΔMOTA	90-24	2N3325	↓ ΔMOTA	60-83	ESMF	↓ SODI		CNS	ESMF		↓ FSC	ITC	
ETC	SCA		2N3326	FSC	115-12	2N3370	↓ ΔTSC	122-2	NSC	MISI		SCA	MST	
2N3288	↓ ΔMOTA	90-25	ITT	RAYN		BNT	↓ SIX		↓ NPC	TEK		SSI	SSI	
ETC	SCA		SCA	SSI		2N3371	↓ ΔTII	61-16	2N3409	↓ ΔMOTA	108-71	JAN2N3439	↓ ΔRCA	112-64
2N3289	↓ ΔMOTA	90-9	2N3327	SSI	160-11	2N3375	↓ ΔRCA	156-14	GIC	SGSI	214-76	2N3440	↓ ΔRCA	147-44
ETC	SCA		2N3328	↓ ΔTII	117-8	CNS	↓ ECD		FSC	↓ ΔMOTA	108-72	CNS	↓ FERB	
SSI	↓ TSC		2N3329	↓ SIX	117-110	↓ FERB	↓ FSC		2N3410	SGSI	214-77	↓ FSC	ITC	
2N3290	↓ ΔMOTA	90-10	2N3329	↓ ΔTII	117-110	KER	↓ MOTA		FSC	↓ ΔMOTA	108-73	MOTA	MST	
ETC	SCA		2N3329	↓ SIX	117-110	↓ MULB	PHIC		2N3411	SGSI	214-78	SCA	SSI	
SSI	↓ TSC		2N3329	↓ SODI	117-110	↓ PHIN	PIR		CNS	SGSI	108-73	SCA	SSI	
2N3291	↓ ΔMOTA	89-104	JAN2N3329	none	118-1	↓ RADF	RAYN		2N3412	CNS	54-42	ASC	ESMF	
ETC	SCA		2N3330	↓ ΔTII	118-2	SSI	SOD		2N3414	↓ ΔGESY	102-18	↓ FERB	PIR	
SSI	↓ TSC		2N3330	↓ SIX	118-2	TADI	SSS		ESMF	NSC		MISI	PPC	
2N3292	↓ ΔMOTA	89-105	2N3331	↓ ΔTII	118-3	TIIF	TFKG		MISI	NSC		PPC	SEN	
ETC	SCA		JAN2N3330	none	118-3	TSC	TIIB		NSC	TEK		SIL	SOD	
SSI	↓ TSC		2N3331	↓ ΔTII	118-4	2N3376	↓ VALG		2N3415	↓ ΔGESY	102-19	SSI	TEK	
2N3293	↓ ΔMOTA	89-106	2N3332	↓ ΔTII	118-4	JAN2N3375	↓ MOTA	156-15	CNS	ESMF		WESY		
ETC	SCA		2N3333	↓ SIX	118-4	NSC	↓ RCA	194-76	NSC	MISI		SCA	SSI	
SSI	↓ TSC		2N3333	↓ SODI	118-4	2N3376	↓ ΔSIX	118-8	↓ NPC	NSC		2N3442	↓ ΔRCA	160-34
2N3294	↓ ΔMOTA	89-107	2N3333	↓ SODI	118-4	2N3377	↓ ΔSIX	117-40	↓ SPR	TEK		APX	ASC	
ETC	SCA		JAN2N3331	none	118-5	2N3377	↓ TSC	117-40	2N3416	↓ ΔGESY	102-20	ATEI	CNS	
SSI	↓ TSC		2N3332	↓ ΔTII	118-6	2N3378	↓ ΔSIX	118-9	CNS	ESMF		ESMF	↓ FERB	
2N3295	↓ ΔMOTA	148-78	2N3333	↓ ΔTII	118-6	2N3379	↓ ΔSIX	117-41	NSC	MISI		KER	MISI	
KER	SSI		JAN2N3332	none	118-7	2N3380	↓ TSC	117-41	↓ NPC	TEK		PIR	PPC	
2N3296	↓ ΔMOTA	152-38	2N3333	↓ ΔTII	117-9	2N3381	↓ ΔSIX	117-42	2N3417	↓ ΔGESY	102-21	↓ RADF	SEN	
SCA	SSI		2N3334	↓ ΔTII	117-10	2N3382	↓ ΔSIX	118-11	CNS	ESMF		SIL	SOD	
2N3297	↓ ΔMOTA	161-69	2N3334	↓ ΔTII	117-10	2N3383	↓ ΔSIX	117-43	NSC	ESMF		SSI	SSI	
KER	SCA		2N3335	↓ ΔTII	117-11	2N3384	↓ ΔSIX	118-12	2N3418	↓ ΔGESY	102-21	SPC	SSI	
SSI	TEC		2N3336	↓ ΔTII	117-12	2N3385	↓ ΔSIX	117-44	TEK	TEK		TEC	TEK	
2N3298	↓ ΔMOTA	147-77	2N3337	↓ ΔTII	117-12	2N3386	↓ ΔSIX	117-44	2N3419	↓ ΔGESY	102-21	WESY		
CNS	SCA		2N3337	↓ ΔTII	117-12	2N3387	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
SSI	TEC		2N3338	↓ ΔTII	117-12	2N3388	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
2N3299	↓ ΔFSC	115-10	2N3339	↓ ΔTII	117-12	2N3389	↓ ΔSIX	117-45	2N3420	↓ ΔGESY	102-21	TEK	WESY	
BNT	↓ ETC	207-45	2N3340	↓ ΔTII	117-12	2N3390	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
HSC	ITC		JAN2N3332	none	118-7	2N3391	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
ITTB	↓ MOTA		2N3333	↓ ΔTII	117-9	2N3392	↓ ΔSIX	117-45	2N3421	↓ ΔGESY	102-21	TEK	WESY	
NSC	RAYN		2N3334	↓ ΔTII	117-10	2N3393	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
SCA	SSI		2N3335	↓ ΔTII	117-10	2N3394	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
SGSI	TEC		2N3336	↓ ΔTII	117-10	2N3395	↓ ΔSIX	117-45	2N3422	↓ ΔGESY	102-21	TEK	WESY	
TEC	UPU		2N3337	↓ ΔTII	117-10	2N3396	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
2N3300	↓ ΔFSC	115-11	2N3338	↓ ΔTII	117-10	2N3397	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
BNT	CNS	207-46	2N3339	↓ ΔTII	117-10	2N3398	↓ ΔSIX	117-45	2N3423	↓ ΔGESY	102-21	TEK	WESY	
↓ ETC	HSC		2N3340	↓ ΔTII	117-10	2N3399	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
ITC	ITTB		2N3341	↓ ΔTII	117-10	2N3400	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
↓ MOTA	NSC		2N3342	↓ ΔTII	117-10	2N3401	↓ ΔSIX	117-45	2N3424	↓ ΔGESY	102-21	TEK	WESY	
RAYN	SCA		2N3343	↓ ΔTII	117-10	2N3402	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
SES	SGSI		2N3344	↓ ΔTII	117-10	2N3403	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
SSI	TEC		2N3345	↓ ΔTII	117-10	2N3404	↓ ΔSIX	117-45	2N3425	↓ ΔGESY	102-21	TEK	WESY	
2N3301	↓ ΔFSC	103-21	2N3346	↓ ΔTII	117-10	2N3405	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
BNT	CNS	207-47	2N3347	↓ ΔTII	117-10	2N3406	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
↓ ETC	ITC		2N3348	↓ ΔTII	117-10	2N3407	↓ ΔSIX	117-45	2N3426	↓ ΔGESY	102-21	TEK	WESY	
↓ MOTA	NSC		2N3349	↓ ΔTII	117-10	2N3408	↓ ΔSIX	117-45	CNS	ESMF		TEK	WESY	
RAYN	SCA		2N3350	↓ ΔTII	117-10	2N3409	↓ ΔSIX	117-45	NSC	MISI		TEK	WESY	
SES	SGSI		2N3351	↓ ΔTII	117-10	2N3410	↓ ΔSIX	117-45	2N3427	↓ ΔGESY	102-21	TEK	WESY	
SSI	TEC		2N3352	↓ ΔTII	117-10	2N3411	↓ ΔSIX	117-45	CNS					

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N3460	ΔTSC BNT ♦SIX ♦TII	122-14	2N3494 (cont.)	SSI TEC TIIF		2N3521	ΔGESY SGSI SGSI	214-86	2N3573	ΔTII TSC	117-3	2N3619	ΔSOD CNS SSI	154-8
2N3461	ΔSOD SCA	127-59	2N3495	♦ΔMOTA HSC	81-3 203-70	2N3522	ΔGESY FSC	214-87	2N3574	ΔTII TSC	117-6	2N3620	ΔSOD CNS	154-9
2N3464	SSI ΔCRY ΔCRY	81-89 150-102 125-66	2N3496	♦FSC SSI TIIF		2N3524	SGSI TEC	214-88	2N3575	ΔTII TSC	117-14	2N3621	ΔSOD SSI TEK	161-102
2N3465	♦ΔMOTA	139-36	2N3497	♦FSC SSI TIIF	79-67 205-109	2N3526	SGSI TEC	112-87	2N3576	RAYN SSI	77-62 209-94	2N3622	ΔSOD SSI TEK	161-103
2N3466	♦FSC ITT ♦TII	203-86	2N3498	♦ΔMOTA SCA TEC	79-48 203-71	2N3527	ΔCRY SCA KER	78-40	2N3577	ΔSIX ΔSOD	118-14 79-5	2N3623	ΔSOD SSI TEK	154-10
JAN2N3467	♦MOTA TII	139-26 211-26	2N3499	♦ΔMOTA HSC SSI	147-46	2N3528	ΔRAYN MOTA	77-43 206-71	2N3578	SCA SSI	77-105	2N3624	ΔSOD SSI TEK	154-11
2N3468	♦FSC ITT ♦TII	139-37 202-88	JAN2N3498	FSC IDC SSI	150-103 212-6	2N3529	ΔRAYN TADI	77-83 211-84	2N3579	SCA SSI	77-106	2N3625	ΔSOD SSI TEK	161-104
JAN2N3468	ΔSOD KER PPC	139-27 211-27 148-34	2N3499	♦ΔMOTA HSC SSI	147-47	2N3530	IDC SSI	211-84	JAN2N3584	ΔRAYN RCA	161-97	2N3626	ΔSOD SSI TEK	161-105
2N3469	GSE PIR SEN TEC	181-59	JAN2N3499	FSC SCA	150-104 212-7	2N3531	ΔRAYN TADI	78-103	2N3580	ΔRAYN RCA	161-99 194-7	2N3627	ΔSOD SSI TEK	154-12
2N3470	♦ΔWESY SSI	181-60	2N3500	♦ΔMOTA HSC TEC	147-48	2N3532	ΔRAYN TADI	78-102	JAN2N3585	ΔRAYN RCA	161-101 194-8	2N3628	ΔSOD SSI TEK	154-13
2N3471	♦ΔWESY SSI	181-61	JAN2N3500	FSC SSI	150-105 212-8	2N3533	ΔRAYN TADI	78-103	2N3586	ΔRAYN RCA	161-100 193-71	2N3629	ΔSOD SSI TEK	161-106
2N3472	♦ΔWESY SSI	181-62	2N3501	♦ΔMOTA HSC TEC	147-49	2N3534	ΔRAYN TADI	78-103	2N3587	ΔRAYN RCA	161-101 194-8	2N3630	ΔSOD SSI TEK	161-107
2N3473	♦ΔWESY SSI	181-63	JAN2N3501	FSC SSI	150-106 212-9	2N3535	ΔRAYN TADI	78-103	2N3588	ΔRAYN RCA	161-101 194-8	2N3631	ΔSIX ΔRAYN	122-15 159-52
2N3474	♦ΔWESY SSI	181-64	2N3502	♦ΔMOTA HSC TEC	147-49	2N3536	ΔRAYN TADI	78-103	2N3589	ΔRAYN RCA	161-101 194-8	2N3632	ΔSIX ΔRAYN	122-15 159-52
2N3475	♦ΔWESY SSI	181-65	JAN2N3502	FSC SSI	150-106 212-9	2N3537	ΔRAYN TADI	78-103	2N3590	ΔRAYN RCA	161-101 194-8	2N3633	ΔSIX ΔRAYN	122-15 159-52
2N3476	♦ΔWESY SSI	181-66	2N3503	♦ΔMOTA HSC TEC	147-49	2N3538	ΔRAYN TADI	78-103	2N3591	ΔRAYN RCA	161-101 194-8	2N3634	ΔSIX ΔRAYN	122-15 159-52
2N3477	♦ΔWESY SSI	181-66	JAN2N3503	FSC SSI	150-106 212-9	2N3539	ΔRAYN TADI	78-103	2N3592	ΔRAYN RCA	161-101 194-8	2N3635	ΔSIX ΔRAYN	122-15 159-52
2N3478	♦ΔWESY SSI	181-66	2N3504	♦ΔMOTA HSC TEC	147-49	2N3540	ΔRAYN TADI	78-103	2N3593	ΔRAYN RCA	161-101 194-8	2N3636	ΔSIX ΔRAYN	122-15 159-52
2N3479	♦ΔWESY SSI	181-66	JAN2N3504	FSC SSI	150-106 212-9	2N3541	ΔRAYN TADI	78-103	2N3594	ΔRAYN RCA	161-101 194-8	2N3637	ΔSIX ΔRAYN	122-15 159-52
2N3480	♦ΔWESY SSI	181-66	2N3505	♦ΔMOTA HSC TEC	147-49	2N3542	ΔRAYN TADI	78-103	2N3595	ΔRAYN RCA	161-101 194-8	2N3638	ΔSIX ΔRAYN	122-15 159-52
2N3481	♦ΔWESY SSI	181-66	JAN2N3505	FSC SSI	150-106 212-9	2N3543	ΔRAYN TADI	78-103	2N3596	ΔRAYN RCA	161-101 194-8	2N3639	ΔSIX ΔRAYN	122-15 159-52
2N3482	♦ΔWESY SSI	181-66	2N3506	♦ΔMOTA HSC TEC	147-49	2N3544	ΔRAYN TADI	78-103	2N3597	ΔRAYN RCA	161-101 194-8	2N3640	ΔSIX ΔRAYN	122-15 159-52
2N3483	♦ΔWESY SSI	181-66	JAN2N3506	FSC SSI	150-106 212-9	2N3545	ΔRAYN TADI	78-103	2N3598	ΔRAYN RCA	161-101 194-8	2N3641	ΔSIX ΔRAYN	122-15 159-52
2N3484	♦ΔWESY SSI	181-66	2N3507	♦ΔMOTA HSC TEC	147-49	2N3546	ΔRAYN TADI	78-103	2N3599	ΔRAYN RCA	161-101 194-8	2N3642	ΔSIX ΔRAYN	122-15 159-52
2N3485	♦ΔWESY SSI	181-66	JAN2N3507	FSC SSI	150-106 212-9	2N3547	ΔRAYN TADI	78-103	2N3600	ΔRAYN RCA	161-101 194-8	2N3643	ΔSIX ΔRAYN	122-15 159-52
2N3486	♦ΔWESY SSI	181-66	2N3508	♦ΔMOTA HSC TEC	147-49	2N3548	ΔRAYN TADI	78-103	2N3601	ΔRAYN RCA	161-101 194-8	2N3644	ΔSIX ΔRAYN	122-15 159-52
JAN2N3486A	♦ΔWESY SSI	181-66	JAN2N3508	FSC SSI	150-106 212-9	2N3549	ΔRAYN TADI	78-103	2N3602	ΔRAYN RCA	161-101 194-8	2N3645	ΔSIX ΔRAYN	122-15 159-52
2N3487	♦ΔWESY SSI	181-66	2N3509	♦ΔMOTA HSC TEC	147-49	2N3550	ΔRAYN TADI	78-103	2N3603	ΔRAYN RCA	161-101 194-8	2N3646	ΔSIX ΔRAYN	122-15 159-52
2N3488	♦ΔWESY SSI	181-66	JAN2N3509	FSC SSI	150-106 212-9	2N3551	ΔRAYN TADI	78-103	2N3604	ΔRAYN RCA	161-101 194-8	2N3647	ΔSIX ΔRAYN	122-15 159-52
2N3489	♦ΔWESY SSI	181-66	2N3510	♦ΔMOTA HSC TEC	147-49	2N3552	ΔRAYN TADI	78-103	2N3605	ΔRAYN RCA	161-101 194-8	2N3648	ΔSIX ΔRAYN	122-15 159-52
JAN2N3489A	♦ΔWESY SSI	181-66	JAN2N3510	FSC SSI	150-106 212-9	2N3553	ΔRAYN TADI	78-103	2N3606	ΔRAYN RCA	161-101 194-8	2N3649	ΔSIX ΔRAYN	122-15 159-52
2N3490	♦ΔWESY SSI	181-66	2N3511	♦ΔMOTA HSC TEC	147-49	2N3554	ΔRAYN TADI	78-103	2N3607	ΔRAYN RCA	161-101 194-8	2N3650	ΔSIX ΔRAYN	122-15 159-52
2N3491	♦ΔWESY SSI	181-66	JAN2N3511	FSC SSI	150-106 212-9	2N3555	ΔRAYN TADI	78-103	2N3608	ΔRAYN RCA	161-101 194-8	2N3651	ΔSIX ΔRAYN	122-15 159-52
2N3492	♦ΔWESY SSI	181-66	2N3512	♦ΔMOTA HSC TEC	147-49	2N3556	ΔRAYN TADI	78-103	2N3609	ΔRAYN RCA	161-101 194-8	2N3652	ΔSIX ΔRAYN	122-15 159-52
2N3493	♦ΔWESY SSI	181-66	JAN2N3512	FSC SSI	150-106 212-9	2N3557	ΔRAYN TADI	78-103	2N3610	ΔRAYN RCA	161-101 194-8	2N3653	ΔSIX ΔRAYN	122-15 159-52
2N3494	♦ΔWESY SSI	181-66	2N3513	♦ΔMOTA HSC TEC	147-49	2N3558	ΔRAYN TADI	78-103	2N3611	ΔRAYN RCA	161-101 194-8	2N3654	ΔSIX ΔRAYN	122-15 159-52
2N3495	♦ΔWESY SSI	181-66	JAN2N3513	FSC SSI	150-106 212-9	2N3559	ΔRAYN TADI	78-103	2N3612	ΔRAYN RCA	161-101 194-8	2N3655	ΔSIX ΔRAYN	122-15 159-52
2N3496	♦ΔWESY SSI	181-66	2N3514	♦ΔMOTA HSC TEC	147-49	2N3560	ΔRAYN TADI	78-103	2N3613	ΔRAYN RCA	161-101 194-8	2N3656	ΔSIX ΔRAYN	122-15 159-52
2N3497	♦ΔWESY SSI	181-66	JAN2N3514	FSC SSI	150-106 212-9	2N3561	ΔRAYN TADI	78-103	2N3614	ΔRAYN RCA	161-101 194-8	2N3657	ΔSIX ΔRAYN	122-15 159-52
2N3498	♦ΔWESY SSI	181-66	2N3515	♦ΔMOTA HSC TEC	147-49	2N3562	ΔRAYN TADI	78-103	2N3615	ΔRAYN RCA	161-101 194-8	2N3658	ΔSIX ΔRAYN	122-15 159-52
2N3499	♦ΔWESY SSI	181-66	JAN2N3515	FSC SSI	150-106 212-9	2N3563	ΔRAYN TADI	78-103	2N3616	ΔRAYN RCA	161-101 194-8	2N3659	ΔSIX ΔRAYN	122-15 159-52
2N3500	♦ΔWESY SSI	181-66	2N3516	♦ΔMOTA HSC TEC	147-49	2N3564	ΔRAYN TADI	78-103	2N3617	ΔRAYN RCA	161-101 194-8	2N3660	ΔSIX ΔRAYN	122-15 159-52
2N3501	♦ΔWESY SSI	181-66	JAN2N3516	FSC SSI	150-106 212-9	2N3565	ΔRAYN TADI	78-103	2N3618	ΔRAYN RCA	161-101 194-8	2N3661	ΔSIX ΔRAYN	122-15 159-52
2N3502	♦ΔWESY SSI	181-66	2N3517	♦ΔMOTA HSC TEC	147-49	2N3566	ΔRAYN TADI	78-103	2N3619	ΔRAYN RCA	161-101 194-8	2N3662	ΔSIX ΔRAYN	122-15 159-52
2N3503	♦ΔWESY SSI	181-66	JAN2N3517	FSC SSI	150-106 212-9	2N3567	ΔRAYN TADI	78-103	2N3620	ΔRAYN RCA	161-101 194-8	2N3663	ΔSIX ΔRAYN	122-15 159-52
2N3504	♦ΔWESY SSI	181-66	2N3518	♦ΔMOTA HSC TEC	147-49	2N3568	ΔRAYN TADI	78-103	2N3621	ΔRAYN RCA	161-101 194-8	2N3664	ΔSIX ΔRAYN	122-15 159-52
2N3505	♦ΔWESY SSI	181-66	JAN2N3518	FSC SSI	150-106 212-9	2N3569	ΔRAYN TADI	78-103	2N3622	ΔRAYN RCA	161-101 194-8	2N3665	ΔSIX ΔRAYN	122-15 159-52
2N3506	♦ΔWESY SSI	181-66	2N3519	♦ΔMOTA HSC TEC	147-49	2N3570	ΔRAYN TADI	78-103	2N3623	ΔRAYN RCA	161-101 194-8	2N3666	ΔSIX ΔRAYN	122-15 159-52
2N3507	♦ΔWESY SSI	181-66	JAN2N3519	FSC SSI	150-106 212-9	2N3571	ΔRAYN TADI	78-103	2N3624	ΔRAYN RCA	161-101 194-8	2N3667	ΔSIX ΔRAYN	122-15 159-52
2N3508	♦ΔWESY SSI	181-66	2N3520	♦ΔMOTA HSC TEC	147-49	2N3572	ΔRAYN TADI	78-103	2N3625	ΔRAYN RCA	161-101 194-8	2N3668	ΔSIX ΔRAYN	122-15 159-52
2N3509	♦ΔWESY SSI	181-66	JAN2N3520	FSC SSI	150-106 212-9	2N3573	ΔRAYN TADI	78-103	2N3626	ΔRAYN RCA	161-101 194-8	2N3669	ΔSIX ΔRAYN	122-15 159-52
2N3510	♦ΔWESY SSI	181-66	2N3521	♦ΔMOTA HSC TEC	147-49	2N3574	ΔRAYN TADI	78-103	2N3627	ΔRAYN RCA	161-101 194-8	2N3670	ΔSIX ΔRAYN	122-15 159-52
2N3511	♦ΔWESY SSI	181-66	JAN2N3521	FSC SSI	150-106 212-9	2N3575	ΔRAYN TADI	78-103	2N3628	ΔRAYN RCA	161-101 194-8	2N3671	ΔSIX ΔRAYN	122-15 159-52
2N3512	♦ΔWESY SSI	181-66	2N3522	♦ΔMOTA HSC TEC	147-49	2N3576	ΔRAYN TADI	78-103	2N3629	ΔRAYN RCA	161-101 194-8	2N3672	ΔSIX ΔRAYN	122-15 159-52
2N3513	♦ΔWESY SSI	181-66	JAN2N3522	FSC SSI	150-106 212-9	2N3577	ΔRAYN TADI	78-103	2N3630	ΔRAYN RCA	161-101 194-8	2N3673	ΔSIX ΔRAYN	122-15 159-52
2N3514	♦ΔWESY SSI	181-66	2N3523	♦ΔMOTA HSC TEC	147-49	2N3578	ΔRAYN TADI	78-103	2N3631	ΔRAYN RCA	161-101 194-8	2N3674	ΔSIX ΔRAYN	122-15 159-52
2N3515	♦ΔWESY SSI	181-66	JAN2N3523	FSC SSI	150-106 212-9	2N35								



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N3647	ΔMOTA	106-7	2N3693	(cont.)		2N3724	ΔFSC	115-36	2N3746	GSE	196-22	2N3779	ΔSIL	145-51
2N3648	ΔMOTA	106-21	2N3694	SGSI	89-65		ITT	208-3	(cont.)	ΔPIR		2N3780	ΔSIL	145-52
2N3659	SSS	150-5		BNT			KER			SSS			SSS	190-71
2N3660	ΔTEC	141-2		CSI			RAYN			TEC		2N3781	ΔSIL	145-53
2N3661	ΔTEC	141-3		IDC			SGSI			UNI			SSS	190-72
2N3662	ΔGESY	90-95		MEHK			SSI			TRW		2N3782	ΔSIL	145-54
2N3663	ΔGESY	90-96		NSC			TSC			ΔSOD	165-57		SSS	190-73
2N3664	ΔMOTA	150-109		NSC			UPU			GSE	197-77	2N3783	ΔMOTA	61-27
2N3665	ΔTEC	150-110		TSC			ITT			ΔPIR		2N3784	ΔMOTA	61-25
	ITT			BNT			RAYN			SSS		2N3785	ΔMOTA	61-26
	SCA			SSI			SSI			SSS		2N3788	SOD	171-16
	NSC			SSI			TIIF			TRW			SSS	
	SSS			SSI			TSC			UNI		2N3789	ΔMOTA	144-96
	SSS			SSI			UPU			ΔSOD	165-59		SOD	
	SSS			SSI			RAYN			KER	197-79		TEC	
	SSS			SSI			SGSI			PPC		2N3790	ΔMOTA	144-97
	SSS			SSI			SSI			SSS			SOD	
	SSS			SSI			TIIF			UNI			TEC	
	SSS			SSI			TSC			TRW		2N3791	ΔMOTA	144-98
	SSS			SSI			UPU			PIR	165-1		SOD	
	SSS			SSI			RAYN			SOD	194-75		TEC	
	SSS			SSI			SSI			ΔSOD	165-60		TEC	
	SSS			SSI			TIIF			PIR	199-12		TEC	
	SSS			SSI			TSC			SSS		JAN2N3791	none	132-78
	SSS			SSI			UPU			UNI			144-99	
	SSS			SSI			RAYN			ΔSOD	165-61		195-33	
	SSS			SSI			SGSI			KER	199-13		144-100	
	SSS			SSI			SSI			PPC		2N3792	ΔMOTA	
	SSS			SSI			TIIF			SSS			SOD	
	SSS			SSI			TSC			UNI			TEC	
	SSS			SSI			UPU			TRW			TEC	
	SSS			SSI			RAYN			UNI		JAN2N3792	none	132-79
	SSS			SSI			SGSI			ΔSOD	165-62		144-101	
	SSS			SSI			SSI			GSE	199-14		195-34	
	SSS			SSI			TIIF			PIR		2N3793	ΔNSC	93-56
	SSS			SSI			TSC			SSS		2N3794	ΔNSC	93-57
	SSS			SSI			UPU			TRW		2N3795	ΔSIL	140-70
	SSS			SSI			RAYN			UNI			SSS	190-7
	SSS			SSI			SGSI			SCA	139-110	2N3796	ΔMOTA	120-65
	SSS			SSI			SSI			TSC	203-98	2N3797	ΔMOTA	120-66
	SSS			SSI			TIIF			ΔMOTA	140-1	2N3798	ΔMOTA	77-73
	SSS			SSI			TSC			SSS	202-103		SCA	
	SSS			SSI			UPU			SSS	202-1	2N3799	ΔMOTA	77-74
	SSS			SSI			RAYN			none	139-48		SCA	
	SSS			SSI			SGSI			211-68		2N3800	ΔMOTA	72-32
	SSS			SSI			SSI			80-61			FSC	222-107
	SSS			SSI			TIIF			203-99			SSS	
	SSS			SSI			TSC			80-50			TSC	
	SSS			SSI			UPU			202-104			TSC	
	SSS			SSI			RAYN			80-51			TSC	
	SSS			SSI			SGSI			211-69			TSC	
	SSS			SSI			SSI			159-77			TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	
	SSS			SSI			SGSI						TSC	
	SSS			SSI			SSI						TSC	
	SSS			SSI			TIIF						TSC	
	SSS			SSI			TSC						TSC	
	SSS			SSI			UPU						TSC	
	SSS			SSI			RAYN						TSC	

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N3811 (cont.)	BNT NSC SSI TII	214-104	2N3845	ΔGSEY ΔSPR	89-11	2N3879	ΔRCA KER PPC SEN TEC UNI WESY	161-110	2N3927 (cont.)	TADI VALG KER	154-16	2N3972	ΔSODI ECD NSC TADI TIIB TII TSC	126-51 186-8
JAN2N3811	MOTA NSC RAYN TADI TIIF	214-105	2N3845A	ΔGSEY ΔSPR	89-12	2N3880	ΔKMC ΔRAYN	91-69	2N3928	TIIB KER	204-51 162-3	2N3973	ΔGSEY IDC/	102-97 205-62
2N3811A	ΔMOTA NSC SSI	80-35 214-106	2N3846	ΔTII	181-67 193-76	2N3881	SSI	110-28	2N3929	KER	204-52 78-80	2N3974	ΔGSEY IDC/	102-98 205-63
2N3812	ΔMOTA RAYN	72-14	JAN2N3846	none	181-68 197-41 181-69 193-77	2N3883	ΔMOTA SSI	64-93 201-3	2N3930	ΔFSC SGSI	81-45	2N3975	ΔGSEY IDC	102-99 205-64
2N3813	ΔMOTA RAYN	72-15	2N3847	ΔTII ITC SEN	181-69 193-77	2N3900	ΔGSEY NSC SPR TEC	87-87	2N3931	ΔFSC SGSI	90-103 90-104	2N3976	ΔGSEY IDC	102-99 205-65
2N3814	ΔMOTA RAYN	72-16	JAN2N3847	none	181-70 197-42 181-71 193-78	2N3900A	ΔGSEY SPR IDC	87-88	2N3932	ΔRCA ΔRCA	121-35 215-7	2N3977	ΔSPR IDC MOTA	205-64 102-100 78-17
2N3815	ΔMOTA RAYN	72-17	2N3848	ITC SEN TEC TRW	181-71 193-78	2N3901	ΔGSEY NSC SPR	87-89	2N3933	ΔRCA ΔTSC	121-35 215-7	2N3978	ΔSPR IDC TADI	78-18 221-95
2N3816	ΔMOTA RAYN	72-18	2N3849	ITC SEN TEC	181-72 193-79	2N3901A	ΔGSEY NSC SPR DEL	87-89	2N3934	ΔTSC BNT SSA	121-35 215-7 151-7	2N3979	ΔSPR IDC TADI	78-19 221-97
2N3816A	ΔMOTA RAYN	72-40	2N3850	ΔUNI ITC SEN TEC	152-43 194-55	JAN2N3902	MOTA SOD PPC DEL	178-66 206-86	2N3935	ΔTSC BNT SSA	121-36 215-8	2N3980	ΔTII TADI TIIB	220-89
2N3817	ΔMOTA RAYN	72-19	2N3851	ΔUNI SOD TEC TRW	152-44 194-56	2N3903	ΔMOTA FSC NSC TIIB	100-85	2N3935A	ΔTSC BNT SSA	121-36 215-8	2N3981	ΔTII TADI TIIB	220-89
2N3817A	ΔMOTA RAYN	72-41	2N3852	ΔUNI SOD TEC TRW	152-45 194-57	2N3904	ΔMOTA CNS MEHK NSC	100-97 208-16	2N3936	ΔMOTA SSA	103-23 207-69	2N3982	ΔTII TADI TIIB	220-89
2N3818	ΔMOTA SSI	161-21	2N3853	ΔUNI SOD TEC	152-46 194-58	2N3905	ΔMOTA TIIB MEHK TEC	75-62 204-70	2N3937	ΔMOTA SSA	103-80 208-84	2N3983	ΔTII TADI TIIB	220-89
2N3819	ΔTII SLCB	124-75	2N3854	ΔUNI SOD TEC TRW	152-46 194-58	2N3906	ΔMOTA CNS NSC TEC	75-62 204-70	2N3938	ΔMOTA SSA	103-80 208-84	2N3984	ΔTII TADI TIIB	220-89
2N3820	ΔTII TIIB TIIF	118-101	2N3855	ΔUNI SOD TEC	152-46 194-58	2N3907	ΔMOTA CNS NSC	75-62 204-70	2N3939	ΔMOTA SSA	103-80 208-84	2N3985	ΔTII TADI TIIB	220-89
2N3821	ΔTII TIIB TIIF	122-16	2N3856	ΔUNI SOD TEC	152-46 194-58	2N3908	ΔMOTA CNS NSC	75-62 204-70	2N3940	ΔMOTA SSA	103-80 208-84	2N3986	ΔTII TADI TIIB	220-89
JAN2N3821	BNT NSC SODI TIIB	122-17	2N3857	ΔUNI SOD TEC	152-46 194-58	2N3909	ΔMOTA CNS NSC	75-62 204-70	2N3941	ΔMOTA SSA	103-80 208-84	2N3987	ΔTII TADI TIIB	220-89
2N3822	ΔTII TIIB TIIF	122-18	2N3858	ΔUNI SOD TEC	152-46 194-58	2N3910	ΔMOTA CNS NSC	75-62 204-70	2N3942	ΔMOTA SSA	103-80 208-84	2N3988	ΔTII TADI TIIB	220-89
JAN2N3822	BNT MOTA NSC SODI TADI TIIF TSC	122-19	2N3859	ΔUNI SOD TEC	152-46 194-58	2N3911	ΔMOTA CNS NSC	75-62 204-70	2N3943	ΔMOTA SSA	103-80 208-84	2N3989	ΔTII TADI TIIB	220-89
2N3823	ΔTII TIIB TIIF	122-20	2N3860	ΔUNI SOD TEC	152-46 194-58	2N3912	ΔMOTA CNS NSC	75-62 204-70	2N3944	ΔMOTA SSA	103-80 208-84	2N3990	ΔTII TADI TIIB	220-89
JAN2N3823	ΔAKER ECD MISI MULB PHIN SODI TIIB TSC	122-20	2N3861	ΔUNI SOD TEC	152-46 194-58	2N3913	ΔMOTA CNS NSC	75-62 204-70	2N3945	ΔMOTA SSA	103-80 208-84	2N3991	ΔTII TADI TIIB	220-89
2N3824	ΔTII TIIB TIIF	122-21	2N3862	ΔUNI SOD TEC	152-46 194-58	2N3914	ΔMOTA CNS NSC	75-62 204-70	2N3946	ΔMOTA SSA	103-80 208-84	2N3992	ΔTII TADI TIIB	220-89
JAN2N3824	BNT MOTA NSC SODI TADI TIIF TSC	122-21	2N3863	ΔUNI SOD TEC	152-46 194-58	2N3915	ΔMOTA CNS NSC	75-62 204-70	2N3947	ΔMOTA SSA	103-80 208-84	2N3993	ΔTII TADI TIIB	220-89
2N3825	ΔTII TIIB TIIF	122-22	2N3864	ΔUNI SOD TEC	152-46 194-58	2N3916	ΔMOTA CNS NSC	75-62 204-70	2N3948	ΔMOTA SSA	103-80 208-84	2N3994	ΔTII TADI TIIB	220-89
2N3826	BNT SIX TIIB	93-62	2N3865	ΔUNI SOD TEC	152-46 194-58	2N3917	ΔMOTA CNS NSC	75-62 204-70	2N3949	ΔMOTA SSA	103-80 208-84	2N3995	ΔTII TADI TIIB	220-89
2N3827	NSC TIIB	102-96	2N3866	ΔUNI SOD TEC	152-46 194-58	2N3918	ΔMOTA CNS NSC	75-62 204-70	2N3950	ΔMOTA SSA	103-80 208-84	2N3996	ΔTII TADI TIIB	220-89
2N3828	NSC TIIB	98-100	2N3867	ΔUNI SOD TEC	152-46 194-58	2N3919	ΔMOTA CNS NSC	75-62 204-70	2N3951	ΔMOTA SSA	103-80 208-84	2N3997	ΔTII TADI TIIB	220-89
2N3829	ΔTII SSI	77-58	2N3868	ΔUNI SOD TEC	152-46 194-58	2N3920	ΔMOTA CNS NSC	75-62 204-70	2N3952	ΔMOTA SSA	103-80 208-84	2N3998	ΔTII TADI TIIB	220-89
2N3830	SCA KER SSI	209-9 155-46 205-52	2N3869	ΔUNI SOD TEC	152-46 194-58	2N3921	ΔMOTA CNS NSC	75-62 204-70	2N3953	ΔMOTA SSA	103-80 208-84	2N3999	ΔTII TADI TIIB	220-89
2N3831	RAYN TIIF KER SSI	155-47 205-53	2N3870	ΔUNI SOD TEC	152-46 194-58	2N3922	ΔMOTA CNS NSC	75-62 204-70	2N3954	ΔMOTA SSA	103-80 208-84	2N4000	ΔTII TADI TIIB	220-89
2N3832	ETC	116-21 212-1	2N3871	ΔUNI SOD TEC	152-46 194-58	2N3923	ΔMOTA CNS NSC	75-62 204-70	2N3955	ΔMOTA SSA	103-80 208-84	2N4001	ΔTII TADI TIIB	220-89
2N3833	ΔTII TIIB	116-6	2N3872	ΔUNI SOD TEC	152-46 194-58	2N3924	ΔMOTA CNS NSC	75-62 204-70	2N3956	ΔMOTA SSA	103-80 208-84	2N4002	ΔTII TADI TIIB	220-89
2N3834	ΔTII TIIB	116-7	2N3873	ΔUNI SOD TEC	152-46 194-58	2N3925	ΔMOTA CNS NSC	75-62 204-70	2N3957	ΔMOTA SSA	103-80 208-84	2N4003	ΔTII TADI TIIB	220-89
2N3835	CNS ΔTII TIIB	116-8	2N3874	ΔUNI SOD TEC	152-46 194-58	2N3926	ΔMOTA CNS NSC	75-62 204-70	2N3958	ΔMOTA SSA	103-80 208-84	2N4004	ΔTII TADI TIIB	220-89
2N3836	ΔTII TIIB	223-3	2N3875	ΔUNI SOD TEC	152-46 194-58	2N3927	ΔMOTA CNS NSC	75-62 204-70	2N3959	ΔMOTA SSA	103-80 208-84	2N4005	ΔTII TADI TIIB	220-89
2N3837	ΔTII TIIB	223-4	2N3876	ΔUNI SOD TEC	152-46 194-58	2N3928	ΔMOTA CNS NSC	75-62 204-70	2N3960	ΔMOTA SSA	103-80 208-84	2N4006	ΔTII TADI TIIB	220-89
2N3838	ΔTII MOTA RAYN	204-101 213-36	2N3877	ΔUNI SOD TEC	152-46 194-58	2N3929	ΔMOTA CNS NSC	75-62 204-70	2N3961	ΔMOTA SSA	103-80 208-84	2N4007	ΔTII TADI TIIB	220-89
JAN2N3838	none	205-45 213-37	2N3878	ΔUNI SOD TEC	152-46 194-58	2N3930	ΔMOTA CNS NSC	75-62 204-70	2N3962	ΔMOTA SSA	103-80 208-84	2N4008	ΔTII TADI TIIB	220-89
2N3839	ΔRCA KMC SCA SSI	92-17	2N3879	ΔUNI SOD TEC	152-46 194-58	2N3931	ΔMOTA CNS NSC	75-62 204-70	2N3963	ΔMOTA SSA	103-80 208-84	2N4009	ΔTII TADI TIIB	220-89
2N3840	ΔSPR IDC TADI	78-46 221-86	2N3880	ΔUNI SOD TEC	152-46 194-58	2N3932	ΔMOTA CNS NSC	75-62 204-70	2N3964	ΔMOTA SSA	103-80 208-84	2N4010	ΔTII TADI TIIB	220-89
2N3841	ΔCRY TADI	73-9 221-87	2N3881	ΔUNI SOD TEC	152-46 194-58	2N3933	ΔMOTA CNS NSC	75-62 204-70	2N3965	ΔMOTA SSA	103-80 208-84	2N4011	ΔTII TADI TIIB	220-89
2N3842	TADI	73-4 221-88	2N3882	ΔUNI SOD TEC	152-46 194-58	2N3934	ΔMOTA CNS NSC	75-62 204-70	2N3966	ΔMOTA SSA	103-80 208-84	2N4012	ΔTII TADI TIIB	220-89
2N3843	ΔGSEY SPR	88-80	2N3883	ΔUNI SOD TEC	152-46 194-58	2N3935	ΔMOTA CNS NSC	75-62 204-70	2N3967	ΔMOTA SSA	103-80 208-84	2N4013	ΔTII TADI TIIB	220-89
2N3843A	ΔGSEY SPR	88-81	2N3884	ΔUNI SOD TEC	152-46 194-58	2N3936	ΔMOTA CNS NSC	75-62 204-70	2N3968	ΔMOTA SSA	103-80 208-84	2N4014	ΔTII TADI TIIB	220-89
2N3844	ΔGSEY SPR	88-104	2N3885	ΔUNI SOD TEC	152-46 194-58	2N3937	ΔMOTA CNS NSC	75-62 204-70	2N3969	ΔMOTA SSA	103-80 208-84	2N4015	ΔTII TADI TIIB	220-89
2N3844A	ΔGSEY SPR	88-105	2N3886	ΔUNI SOD TEC	152-46 194-58	2N3938	ΔMOTA CNS NSC	75-62 204-70	2N3970	ΔMOTA SSA	103-80 208-84	2N4016	ΔTII TADI TIIB	220-89
			2N3887	ΔUNI SOD TEC	152-46 194-58	2N3939	ΔMOTA CNS NSC	75-62 204-70	2N3971	ΔMOTA SSA	103-80 208-84	2N4017	ΔTII TADI TIIB	220-89
			2N3888	ΔUNI SOD TEC	152-46 194-58	2N3940	ΔMOTA CNS NSC	75-62 204-70	2N3972	ΔMOTA SSA	103-80 208-84	2N4018	ΔTII TADI TIIB	220-89
			2N3889	ΔUNI SOD TEC	152-46 194-58	2N3941	ΔMOTA CNS NSC	75-62 204-70	2N3973	ΔMOTA SSA	103-80 208-84	2N4019	ΔTII TADI TIIB	220-89
			2N3890	ΔUNI SOD TEC	152-46 194-58	2N3942	ΔMOTA CNS NSC	75-62 204-70	2N3974	ΔMOTA SSA	103-80 208-84	2N4020	ΔTII TADI TIIB	220-89
			2N3891	ΔUNI SOD TEC	152-46 194-58	2N3943	ΔMOTA CNS NSC	75-62 204-70	2N3975	ΔMOTA SSA	103-80 208-84	2N4021	ΔTII TADI TIIB	220-89
			2N3892	ΔUNI SOD TEC	152-46 194-58	2N3944	ΔMOTA CNS NSC	75-62 204-70	2N3976	ΔMOTA SSA	103-80 208-84	2N4022	ΔTII TADI TIIB	220-89
			2N3893	ΔUNI SOD TEC	152-46 194-58	2N3945	ΔMOTA CNS NSC	75-62 204-70	2N3977	ΔMOTA SSA	103-80 208-84	2N4023	ΔTII TADI TIIB	220-89
			2N3894	ΔUNI SOD TEC	152-46 194-58	2N3946	ΔMOTA CNS NSC	75-62 204-70	2N3978	ΔMOTA SSA	103-80 208-84	2N4024	ΔTII TADI TIIB	220-89
			2N3895	ΔUNI SOD TEC										

# 1. TYPE No. CROSS INDEX

TYPE No.			MFRS			TYPE No.			MFRS			TYPE No.			MFRS			TYPE No.			MFRS			
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
2N4012 (cont.)	KER SEN SSS TSC		2N4037 (cont.)	SSI TSC		2N4089	ΔTSC	118-22	2N4133	KER SSI	149-28	2N4227 (cont.)	ETC BNT					2N4227 (cont.)	ETC BNT				207-8	
	♦MOTA SSI		2N4038	TEC		2N4090	ΔTSC	118-23	2N4134	SEN	90-27	2N4228	♦ΔGIC					2N4228	♦ΔGIC				74-29	
2N4013	♦FSC ITT SCA SPR TIIF	103-81 208-7	2N4039	♦ΔTRW	120-34	2N4091	♦FNS ECD	126-52	ETC														204-104	
	♦ITT SCA SPR TIIF		2N4040	♦FERB SEN TII	158-54		♦MOTA SOD		2N4135	♦ΔFSC SSSI	90-57	2N4231	♦FSC					2N4231	♦FSC				162-4	
2N4014	♦FSC ITT SCA SPR TIIF	103-82 208-8	2N4041	♦FERB SEN TII	158-55	JAN2N4091	none	124-76 185-54	2N4136	♦ΔAPX SSI	213-40	2N4232	♦FSC					2N4232	♦FSC				162-5	
	♦ITT SCA SPR TIIF		2N4044	♦ΔSODI QDC	215-27	2N4092	♦ΔTSC CNS	126-53 126-54	2N4137	♦ΔAPX SSI	104-67 210-92	2N4233	♦FSC					2N4233	♦FSC				162-6	
2N4015	♦ΔFSC BNT NSC SSI	79-71 215-19	2N4045	♦ΔSODI QDC	215-28		♦MOTA SOD		2N4138	♦CRY TII	97-89 207-6	2N4234	♦ΔMOTA					2N4234	♦ΔMOTA				139-39	
	♦MOTA SSI		2N4046	♦ΔFSC ITT	115-15 206-88	JAN2N4092	none	124-77 185-75	2N4139	♦ΔTSC MEHK	122-36	2N4235	♦FSC					2N4235	♦FSC				139-40	
2N4016	♦ΔFSC BNT NSC SSI	79-72 215-20	2N4047	♦ΔFSC HSC ITTB RAYN SSSI	115-16 206-89	2N4092A	ΔTSC	126-55 185-76 126-56	2N4140	♦ΔGIC BNT ETC NPC	97-89 207-6	2N4236	♦FSC					2N4236	♦FSC				139-41	
	♦MOTA SSI		2N4048	♦ΔMOTA APX	136-104 188-101	2N4093	♦ΔTSC CNS	124-78 186-9	2N4141	♦ΔGIC BNT ETC NPC	97-90 207-7	2N4237	♦FSC					2N4237	♦FSC				112-51	
2N4017	♦ΔFSC BNT SGSI TADI	78-81 223-5	2N4049	♦ΔMOTA APX	136-105 188-102	2N4093A	ΔTSC	126-57 186-10	2N4142	♦ΔGIC BNT MEHK	74-27 204-102	2N4238	♦ΔMOTA					2N4238	♦ΔMOTA				139-40	
	♦MOTA SSI		2N4050	♦ΔMOTA APX	136-106 188-103	2N4094	ΔTSC	126-58 185-55	2N4143	♦ΔGIC BNT MEHK	74-28 204-103	2N4239	♦FSC					2N4239	♦FSC				112-51	
2N4018	♦ΔFSC BNT SGSI TADI	78-82 223-6	2N4051	♦ΔMOTA APX	136-107 188-104	2N4095	ΔTSC	126-59 185-77	2N4150	KER PIR	154-22 194-3	2N4240	♦ΔRCA					2N4240	♦ΔRCA				162-7	
	♦MOTA SSI		2N4052	♦ΔMOTA APX	136-108 188-105	2N4100	♦ΔSODI QDC	105-87 215-33		♦SEN SOD		2N4241	♦APX						2N4241	♦APX				194-10
2N4019	♦ΔFSC BNT SGSI TADI	78-83 223-7	2N4053	♦ΔMOTA APX	136-109 188-106	2N4105	♦APX PHIC	138-6	JAN2N4150	none	154-23 200-65	2N4242	♦MOTA					2N4242	♦MOTA				130-59	
	♦MOTA SSI		2N4054	♦GESY	154-17	2N4106	♦APX PHIC	127-47			200-65 75-34	2N4243	♦MOTA					2N4243	♦MOTA				130-59	
2N4020	♦ΔFSC BNT SGSI TADI	78-95 215-21	2N4055	♦GESY	154-18	2N4107	♦APX PHIC	213-39	2N4207	♦ΔFSC	75-34 211-82	2N4244	♦MOTA					2N4244	♦MOTA				130-59	
	♦MOTA SSI		2N4056	♦GESY	154-19	2N4111	♦ETC SCA	165-67	2N4208	♦ΔFSC	75-35 211-85	2N4245	♦MOTA					2N4245	♦MOTA				130-59	
2N4021	♦ΔFSC BNT SGSI TADI	78-84 215-22	2N4057	♦GESY	154-20	2N4112	♦ETC SCA	165-68	2N4209	♦ΔFSC TSC	75-37 212-14	2N4246	♦MOTA					2N4246	♦MOTA				130-59	
	♦MOTA SSI		2N4058	♦ΔTII	76-29	2N4113	♦PPC SCA	165-69	2N4210	♦ΔTEC SEN	175-79	2N4247	♦ΔFSC					2N4247	♦ΔFSC				130-59	
2N4022	♦ΔFSC BNT SGSI TADI	78-96 215-23	2N4059	♦ΔTII	76-30	2N4114	♦PPC SCA	165-70	2N4211	♦ΔTEC SEN	175-80	2N4248	♦ΔFSC					2N4248	♦ΔFSC				130-59	
	♦MOTA SSI		2N4060	♦ΔTII	76-31	2N4115	♦ΔFSC SCA	166-98	2N4212	♦ΔTEC SEN	175-80	2N4249	♦ΔFSC					2N4249	♦ΔFSC				130-59	
2N4023	♦ΔFSC BNT SGSI TADI	78-97 215-24	2N4061	♦ΔTII	76-32	2N4116	♦ΔFSC SCA	166-99	2N4220	♦ΔMOTA BNT ESMF	122-37	2N4250	♦ΔFSC					2N4250	♦ΔFSC				130-59	
	♦MOTA SSI		2N4062	♦ΔTII	76-33	2N4117	♦ΔSIX BNT	122-30	2N4221	♦ΔMOTA BNT ESMF	122-39	2N4251	♦ΔFSC					2N4251	♦ΔFSC				130-59	
2N4024	♦ΔFSC BNT SGSI TADI	78-85 215-25	2N4063	♦ΔRCA MST	155-49	2N4117A	♦ΔSIX BNT	122-31	2N4222	♦ΔMOTA BNT ESMF	122-40	2N4252	♦ΔTII					2N4252	♦ΔTII				130-59	
	♦MOTA SSI		2N4064	♦ΔRCA MST	155-50	2N4118	♦ΔSIX BNT	122-32	2N4222A	♦ΔMOTA BNT ESMF	122-42	2N4253	♦ΔTII					2N4253	♦ΔTII				130-59	
2N4025	♦ΔFSC BNT SGSI TADI	78-98 215-26	2N4065	♦MOTA TSC	119-21	2N4118A	♦ΔSIX BNT	122-33	2N4223	♦ΔMOTA BNT ESMF	122-43	2N4254	♦ΔTII					2N4254	♦ΔTII				130-59	
	♦MOTA SSI		2N4066	♦MOTA TSC	119-22	2N4119	♦ΔSIX BNT	122-34	2N4224	♦ΔMOTA BNT ESMF	122-44	2N4255	♦ΔTII					2N4255	♦ΔTII				130-59	
2N4026	♦ΔFSC BNT SGSI TADI	80-36 210-40	2N4067	♦MOTA TSC	119-22	2N4119A	♦ΔSIX BNT	122-35	2N4225	♦ΔMOTA BNT ESMF	122-45	2N4256	♦ΔGESY					2N4256	♦ΔGESY				130-59	
	♦MOTA SSI		2N4068	♦ΔRCA SCA	107-33	2N4121	♦ΔFSC MEHK	70-110 210-15	2N4226	♦ΔMOTA BNT ESMF	122-46	2N4257	♦ΔFSC					2N4257	♦ΔFSC				130-59	
2N4027	♦ΔFSC BNT SGSI TADI	80-37 210-41	2N4069	♦ΔRCA SCA	107-33	2N4122	♦ΔFSC MEHK	70-110 210-15	2N4227	♦ΔMOTA BNT ESMF	122-47	2N4258	♦ΔFSC					2N4258	♦ΔFSC				130-59	
	♦MOTA SSI		2N4070	♦PIR SOD	119-21	2N4123	♦ΔMOTA MEHK	100-86	2N4228	♦ΔMOTA BNT ESMF	122-48	2N4259	♦ΔRCA					2N4259	♦ΔRCA				130-59	
2N4028	♦ΔFSC BNT SGSI TADI	80-52 211-41	2N4071	♦PIR SOD	119-22	2N4124	♦ΔMOTA MEHK	100-86	2N4229	♦ΔMOTA BNT ESMF	122-49	2N4260	♦ΔRCA					2N4260	♦ΔRCA				130-59	
	♦MOTA SSI		2N4072	♦SOD TRW	194-77	2N4125	♦ΔMOTA MEHK	100-86	2N4230	♦ΔMOTA BNT ESMF	122-50	2N4261	♦ΔRCA					2N4261	♦ΔRCA				130-59	
2N4029	♦ΔFSC BNT SGSI TADI	80-53 211-42	2N4073	♦SOD TRW	194-78	2N4126	♦ΔMOTA MEHK	100-86	2N4231	♦ΔMOTA BNT ESMF	122-51	2N4262	♦ΔRCA					2N4262	♦ΔRCA				130-59	
	♦MOTA SSI		2N4074	♦SOD TRW	194-78	2N4127	♦ΔMOTA MEHK	100-86	2N4232	♦ΔMOTA BNT ESMF	122-52	2N4263	♦ΔRCA					2N4263	♦ΔRCA				130-59	
2N4030	♦ΔFSC INTG ITTB RAYN SSSI	81-97 210-42	2N4075	♦SOD TRW	194-78	2N4128	♦ΔMOTA MEHK	100-86	2N4233	♦ΔMOTA BNT ESMF	122-53	2N4264	♦ΔRCA					2N4264	♦ΔRCA				130-59	
	♦MOTA SSI		2N4076	♦SOD TRW	194-78	2N4129	♦ΔMOTA MEHK	100-86	2N4234	♦ΔMOTA BNT ESMF	122-54	2N4265	♦ΔRCA					2N4265	♦ΔRCA				130-59	
2N4031	♦ΔFSC INTG ITTB RAYN SSSI	81-98 210-43	2N4077	♦SOD TRW	194-78	2N4130	♦ΔMOTA MEHK	100-86	2N4235	♦ΔMOTA BNT ESMF	122-55	2N4266	♦ΔRCA					2N4266	♦ΔRCA				130-59	
	♦MOTA SSI		2N4078	♦SOD TRW	194-78	2N4131	♦ΔMOTA MEHK	100-86	2N4236	♦ΔMOTA BNT ESMF	122-56	2N4267	♦ΔRCA					2N4267	♦ΔRCA				130-59	
2N4032	♦ΔFSC INTG ITTB RAYN SSSI	82-15 211-43	2N4079	♦SOD TRW	194-78	2N4132	♦ΔMOTA MEHK	100-86	2N4237	♦ΔMOTA BNT ESMF	122-57	2N4268	♦ΔRCA					2N4268	♦ΔRCA				130-59	
	♦MOTA SSI		2N4080	♦SOD TRW	194-78	2N4133	♦ΔMOTA MEHK	100-86	2N4238	♦ΔMOTA BNT ESMF	122-58	2N4269	♦ΔRCA					2N4269	♦ΔRCA				130-59	
2N4033	♦ΔFSC INTG ITTB RAYN SSSI	82-16 211-44	2N4081	♦SOD TRW	194-78	2N4134	♦ΔMOTA MEHK	100-86	2N4239	♦ΔMOTA BNT ESMF	122-59	2N4270	♦ΔRCA					2N4270	♦ΔRCA				130-59	
	♦MOTA SSI		2N4082	♦SOD TRW	194-78	2N4135	♦ΔMOTA MEHK	100-86	2N4240	♦ΔMOTA BNT ESMF	122-60	2N4271	♦ΔRCA					2N4271	♦ΔRCA				130-59	
2N4034	♦ΔFSC INTG ITTB RAYN SSSI	77-63 210-14	2N4083	♦SOD TRW	194-78	2N4136	♦ΔMOTA MEHK	100-86	2N4241	♦ΔMOTA BNT ESMF	122-61	2N4272	♦ΔRCA					2N4272	♦ΔRCA				130-59	
	♦MOTA SSI		2N4084	♦SOD TRW	194-78	2N4137	♦ΔMOTA MEHK	100-86	2N4242	♦ΔMOTA BNT ESMF	122-62	2N4273	♦ΔRCA					2N4273	♦ΔRCA				130-59	
2N4035	♦ΔFSC INTG ITTB RAYN SSSI	77-68 210-80	2N4085	♦SOD TRW	194-78	2N4138	♦ΔMOTA MEHK	100-86	2N4243	♦ΔMOTA BNT ESMF	122-63	2N4274	♦ΔRCA					2N4274	♦ΔRCA				130-59	
	♦MOTA SSI		2N4086	♦SOD TRW	194-78	2N4139	♦ΔMOTA MEHK	100-86	2N4244	♦ΔMOTA BNT ESMF	122-64	2N4275	♦ΔRCA					2N4275	♦ΔRCA				130-59	
2N4036	♦ΔFSC ATEI FSC NSC SSI	139-31 199-101	2N4087	♦SOD TRW	194-78	2N4140	♦ΔMOTA MEHK	100-86	2N4245	♦ΔMOTA BNT ESMF	122-65	2N4276	♦ΔRCA					2N4276	♦ΔRCA				130-59	
	♦MOTA SSI		2N4088	♦SOD TRW	194-78	2																		

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N4274 (cont)	NJS MEHK RAYN NSC SSI TSC		2N4347 (cont)	SIL SEN SPC SOD SSI WESY		2N4403 (cont)	MOTA FSC NSC	204-29	JAN2N4440	HCA	156-31	2N4861A (cont)	MOTA	185-49
2N4275	BNT FSC MEHK CSI NSC NJS RAYN TSC	90-41 209-66	2N4348	ASC RCA PIR KER SCA PPC SIL SEN SSI SPC	173-53	2N4404	MOTA SCA NSC	140-11 204-37	2N4446	CRY	125-68 185-78 125-69 185-79	2N4862	NSC SODI	152-51
2N4276	MOTA	136-110	2N4349	SSI	152-49	2N4405	MOTA SCA NSC	140-12 204-38	2N4447	CRY	125-70 185-80	2N4863	KER SOD	152-52
2N4277	MOTA	188-107	2N4350	TEC	209-43	2N4406	MOTA SCA NSC	140-13 203-32	2N4448	CRY	125-71 185-81	2N4864	KER SOD	160-106
2N4278	MOTA	188-108	2N4351	CNS	152-50	2N4407	MOTA SCA NSC	140-14 203-33	2N4449	FSC	99-25 211-35	2N4865	KER SOD	181-73
2N4279	MOTA	188-109	2N4352	SSI	152-50	2N4409	MOTA SCA NSC	100-101	JAN2N4449	none	99-26 210-99	2N4866	PIR SOD	193-66
2N4280	MOTA	188-110	2N4353	TEC	209-43	2N4410	MOTA SCA NSC	100-102	2N4450	FSC	103-24 207-42	2N4867	KER SOD	181-74
2N4281	MOTA	137-4	2N4354	SSI	152-50	2N4411	MOTA SCA NSC	70-48 80-84	2N4451	FSC	75-21 210-3	2N4868	PIR SOD	200-45
2N4282	MOTA	189-1	2N4355	TEC	209-43	2N4412	MOTA SCA NSC	80-85	2N4452	FSC	76-21 205-91	2N4869	KER SOD	181-75
2N4283	MOTA	189-2	2N4356	SSI	152-50	2N4413	MOTA SCA NSC	78-75	2N4453	FSC	75-22 209-98	JAN2N4865	SSI TEC	181-74
2N4286	NSC	93-37	2N4357	TEC	209-43	2N4414	MOTA SCA NSC	78-76	JAN2N4453	none	75-23 212-31	2N4866	KER PIR	193-67
2N4287	NSC	93-38	2N4358	SSI	152-50	2N4415	MOTA SCA NSC	80-86	2N4851	MOTA	220-90	2N4867	PIR SOD	122-56
2N4288	NSC	72-22	2N4359	TEC	209-43	2N4416	MOTA SCA NSC	80-87	2N4852	TIIB	220-91	2N4867	NSC SOD	122-57
2N4289	NSC	72-23	2N4360	SSI	152-50	2N4417	MOTA SCA NSC	78-77	2N4853	TIIB	220-92	2N4868	BNT SOD	122-58
2N4290	NSC	72-24	2N4361	TEC	209-43	2N4418	MOTA SCA NSC	78-78	2N4854	TIIB	204-105 213-41	2N4868	NSC SOD	122-59
2N4291	NSC	72-25	2N4362	SSI	152-50	2N4419	MOTA SCA NSC	122-53	JAN2N4854	ESMF MISI RAYN TIIB TIIF	205-46 213-42 204-106 213-43	2N4869	BNT SOD	122-60
2N4292	NSC	90-77	2N4363	TEC	209-43	2N4420	MOTA SCA NSC	104-68 210-98	2N4855	ESMF MISI RAYN TIIB TIIF	124-79 185-10	2N4870	NSC SOD	220-93
2N4293	NSC	90-78	2N4364	SSI	152-50	2N4421	MOTA SCA NSC	104-33 209-81	2N4856	ESMF MISI RAYN TIIB TIIF	124-80 124-81 185-11	2N4871	NSC SOD	220-94
2N4294	NSC	90-42	2N4365	TEC	209-43	2N4422	MOTA SCA NSC	104-10 208-107	2N4857	ESMF MISI RAYN TIIB TIIF	124-82 185-18	2N4872	NSC SOD	212-21
2N4295	NSC	90-59	2N4366	SSI	152-50	2N4423	MOTA SCA NSC	104-11 209-10	2N4858	ESMF MISI RAYN TIIB TIIF	124-83 124-84 185-19	2N4873	NSC SOD	104-94
2N4296	NSC	90-59	2N4367	TEC	209-43	2N4424	MOTA SCA NSC	102-28	JAN2N4857	ESMF MISI RAYN TIIB TIIF	124-85 185-56	2N4874	NSC SOD	111-83
2N4297	NSC	90-59	2N4368	SSI	152-50	2N4425	MOTA SCA NSC	109-22	2N4857A	ESMF MISI RAYN TIIB TIIF	124-86 124-87 185-48	2N4875	NSC SOD	111-92
2N4298	NSC	90-59	2N4369	TEC	209-43	2N4426	MOTA SCA NSC	149-29	2N4858	ESMF MISI RAYN TIIB TIIF	124-88 185-12	2N4876	NSC SOD	111-91
2N4299	NSC	90-59	2N4370	SSI	152-50	2N4427	MOTA SCA NSC	151-9	2N4859	ESMF MISI RAYN TIIB TIIF	124-89 124-90 185-13	2N4877	NSC SOD	155-42
2N4300	NSC	90-59	2N4371	TEC	209-43	2N4428	MOTA SCA NSC	155-51	JAN2N4858	ESMF MISI RAYN TIIB TIIF	124-88 185-12	2N4878	NSC SOD	191-63
2N4301	NSC	90-59	2N4372	SSI	152-50	2N4429	MOTA SCA NSC	159-8	2N4858A	ESMF MISI RAYN TIIB TIIF	124-86 124-87 185-48	2N4879	NSC SOD	95-6
2N4302	NSC	90-59	2N4373	TEC	209-43	2N4430	MOTA SCA NSC	110-93	2N4859	ESMF MISI RAYN TIIB TIIF	124-88 185-12	2N4880	NSC SOD	215-35
2N4303	NSC	90-59	2N4374	SSI	152-50	2N4431	MOTA SCA NSC	110-94	2N4860	ESMF MISI RAYN TIIB TIIF	124-91 185-20	2N4881	NSC SOD	95-1
2N4304	NSC	90-59	2N4375	TEC	209-43	2N4432	MOTA SCA NSC	87-17	2N4861	ESMF MISI RAYN TIIB TIIF	124-92 124-93 185-21	2N4882	NSC SOD	215-36
2N4305	NSC	90-59	2N4376	SSI	152-50	2N4433	MOTA SCA NSC	84-103	2N4862	ESMF MISI RAYN TIIB TIIF	124-92 124-93 185-21	2N4883	NSC SOD	95-2
2N4306	NSC	90-59	2N4377	TEC	209-43	2N4434	MOTA SCA NSC	89-25	2N4863	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4884	NSC SOD	215-37
2N4307	NSC	90-59	2N4378	SSI	152-50	2N4435	MOTA SCA NSC	203-34	2N4864	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4885	NSC SOD	126-36
2N4308	NSC	90-59	2N4379	TEC	209-43	2N4436	MOTA SCA NSC	89-108	2N4865	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4886	NSC SOD	126-37
2N4309	NSC	90-59	2N4380	SSI	152-50	2N4437	MOTA SCA NSC	207-49	2N4866	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4887	NSC SOD	126-38
2N4310	NSC	90-59	2N4381	TEC	209-43	2N4438	MOTA SCA NSC	156-2	2N4867	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4888	NSC SOD	126-39
2N4311	NSC	90-59	2N4382	SSI	152-50	2N4439	MOTA SCA NSC		2N4868	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4889	NSC SOD	126-40
2N4312	NSC	90-59	2N4383	TEC	209-43	2N4440	MOTA SCA NSC		2N4869	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4890	NSC SOD	74-8
2N4313	NSC	90-59	2N4384	SSI	152-50	2N4441	MOTA SCA NSC		2N4870	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4891	NSC SOD	74-9
2N4314	NSC	90-59	2N4385	TEC	209-43	2N4442	MOTA SCA NSC		2N4871	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4892	NSC SOD	104-15
2N4315	NSC	90-59	2N4386	SSI	152-50	2N4443	MOTA SCA NSC		2N4872	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4893	NSC SOD	201-5
2N4316	NSC	90-59	2N4387	TEC	209-43	2N4444	MOTA SCA NSC		2N4873	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4894	NSC SOD	220-95
2N4317	NSC	90-59	2N4388	SSI	152-50	2N4445	MOTA SCA NSC		2N4874	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4895	NSC SOD	220-96
2N4318	NSC	90-59	2N4389	TEC	209-43	2N4446	MOTA SCA NSC		2N4875	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4896	NSC SOD	220-97
2N4319	NSC	90-59	2N4390	SSI	152-50	2N4447	MOTA SCA NSC		2N4876	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4897	NSC SOD	220-98
2N4320	NSC	90-59	2N4391	TEC	209-43	2N4448	MOTA SCA NSC		2N4877	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4898	NSC SOD	113-103
2N4321	NSC	90-59	2N4392	SSI	152-50	2N4449	MOTA SCA NSC		2N4878	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4899	NSC SOD	200-76
2N4322	NSC	90-59	2N4393	TEC	209-43	2N4450	MOTA SCA NSC		2N4879	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4900	NSC SOD	113-27
2N4323	NSC	90-59	2N4394	SSI	152-50	2N4451	MOTA SCA NSC		2N4880	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4901	NSC SOD	199-63
2N4324	NSC	90-59	2N4395	TEC	209-43	2N4452	MOTA SCA NSC		2N4881	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4902	NSC SOD	220-99
2N4325	NSC	90-59	2N4396	SSI	152-50	2N4453	MOTA SCA NSC		2N4882	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4903	NSC SOD	220-99
2N4326	NSC	90-59	2N4397	TEC	209-43	2N4454	MOTA SCA NSC		2N4883	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4904	NSC SOD	141-70
2N4327	NSC	90-59	2N4398	SSI	152-50	2N4455	MOTA SCA NSC		2N4884	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4905	NSC SOD	141-71
2N4328	NSC	90-59	2N4399	TEC	209-43	2N4456	MOTA SCA NSC		2N4885	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4906	NSC SOD	141-72
2N4329	NSC	90-59	2N4400	SSI	152-50	2N4457	MOTA SCA NSC		2N4886	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4907	NSC SOD	144-21
2N4330	NSC	90-59	2N4401	TEC	209-43	2N4458	MOTA SCA NSC		2N4887	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4908	NSC SOD	144-22
2N4331	NSC	90-59	2N4402	SSI	152-50	2N4459	MOTA SCA NSC		2N4888	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4909	NSC SOD	144-22
2N4332	NSC	90-59	2N4403	TEC	209-43	2N4460	MOTA SCA NSC		2N4889	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4910	NSC SOD	144-22
2N4333	NSC	90-59	2N4404	SSI	152-50	2N4461	MOTA SCA NSC		2N4890	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4911	NSC SOD	144-22
2N4334	NSC	90-59	2N4405	TEC	209-43	2N4462	MOTA SCA NSC		2N4891	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4912	NSC SOD	144-22
2N4335	NSC	90-59	2N4406	SSI	152-50	2N4463	MOTA SCA NSC		2N4892	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4913	NSC SOD	144-22
2N4336	NSC	90-59	2N4407	TEC	209-43	2N4464	MOTA SCA NSC		2N4893	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4914	NSC SOD	144-22
2N4337	NSC	90-59	2N4408	SSI	152-50	2N4465	MOTA SCA NSC		2N4894	ESMF MISI RAYN TIIB TIIF	124-94 185-57	2N4915	NSC SOD	144-22
2N4338	NSC	90-59	2N4409</											

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N4902 (cont.)	CNS SOD TEC		2N4944	ΔFSC ETC	92-36	2N4995	ΔTII	102-102	2N5039	ΔRCA PPC	173-91	2N5089	ΔMOTA	100-21
↓FSC ↓SSI			CNS NPC	↓TSC		2N4996	ΔTII	94-28	↓FSC SSI TRW		200-17	BNT	CNS FSC	
2N4903	↓TII ΔMOTA	144-23	2N4945	ΔFSC NPC	92-37	2N4997	ΔTII	94-29	↓WESY		75-31	2N5090	ΔRCA KER	152-53
CNS SOD TEC	↓FSC ↓SSI ↓TII		CNS	↓TSC		2N4998	ΔTII	162-9	ΔFSC NJS		75-32	↓MOTA	SEN SSI	
2N4904	↓TII ΔMOTA	144-24	2N4946	ΔFSC ETC	92-38	2N4999	ΔTII	142-40	ΔFSC CNS		82-29	↓SSS	TADI	
CNS SOD TEC	↓FSC ↓SSI ↓TII		CNS NPC	↓TSC		2N5000	ΔTII	162-10	ΔFSC CNS		53-38	2N5091	ΔITC	139-22
2N4905	↓TII ΔMOTA	144-25	2N4947	ΔTII	220-99	2N5001	ΔTII	142-41	ΔFSC CNS		53-37	2N5092	ΔITC	150-28
CNS SOD TEC	↓FSC ↓SSI ↓TII		JAN2N4947	none	220-100	2N5002	ΔTII	165-71	ΔFSC CNS		121-44	2N5093	ΔITC	139-23
2N4906	↓TII ΔMOTA	144-26	2N4948	ΔTII	220-101	2N5003	ΔTII	171-19	ΔFSC CNS		215-43	2N5094	ΔITC	139-24
CNS IDC SSI	↓FSC ↓SSI ↓TII		JAN2N4948	ΔTII	220-102	2N5004	ΔTII	144-76	ΔFSC CNS		121-46	2N5095	ΔITC	150-29
2N4907	↓TII ΔMOTA	144-93	2N4949	ΔTII	220-103	2N5005	ΔTII	143-35	ΔFSC CNS		215-44	2N5096	ΔITC	139-25
CNS SOD TEC	↓FSC ↓SSI ↓TII		JAN2N4949	ΔTII	220-104	2N5006	ΔTII	171-19	ΔFSC CNS		171-25	2N5097	ΔITC	150-30
2N4908	↓TII ΔMOTA	144-94	2N4950	ΔTII	220-104	2N5007	ΔTII	144-76	ΔFSC CNS		171-26	2N5098	ΔITC	150-31
CNS IDC SSI	↓FSC ↓SSI ↓TII		2N4951	ΔTII	201-102	2N5008	ΔTII	171-20	ΔFSC CNS		193-59	2N5099	ΔITC	150-32
2N4909	↓TII ΔMOTA	144-95	2N4952	ΔTII	103-25	2N5009	ΔTII	144-77	ΔFSC CNS		164-44	2N5100	ΔITC	141-55
CNS IDC SSI	↓FSC ↓SSI ↓TII		2N4953	ΔTII	207-9	2N5010	ΔTII	149-30	ΔFSC CNS		193-59	2N5101	ΔITC	159-79
2N4910	↓TII ΔMOTA	160-36	2N4954	ΔTII	103-26	2N5011	ΔTII	149-31	ΔFSC CNS		164-45	2N5102	ΔITC	152-54
CNS PPC SSI	↓FSC ↓SSI ↓TII		2N4955	ΔTII	207-10	2N5012	ΔTII	149-32	ΔFSC CNS		193-16	2N5103	ΔITC	122-63
2N4911	↓TII ΔMOTA	160-37	2N4956	ΔTII	71-19	2N5013	ΔTII	149-33	ΔFSC CNS		91-74	2N5104	ΔITC	122-64
CNS PPC SSI	↓FSC ↓SSI ↓TII		2N4957	ΔTII	101-100	2N5014	ΔTII	149-34	ΔFSC CNS		211-50	2N5105	ΔITC	122-65
2N4912	↓TII ΔMOTA	160-38	2N4958	ΔTII	223-10	2N5015	ΔTII	149-35	ΔFSC CNS		221-106	2N5106	ΔITC	115-66
CNS PPC SSI	↓FSC ↓SSI ↓TII		2N4959	ΔTII	71-17	2N5016	ΔTII	149-36	ΔFSC CNS		105-20	2N5107	ΔITC	224-96
2N4913	↓TII ΔMOTA	169-9	2N4960	ΔTII	71-18	2N5017	ΔTII	149-37	ΔFSC CNS		169-12	2N5108	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4961	ΔTII	115-17	2N5018	ΔTII	149-38	ΔFSC CNS		221-101	2N5109	ΔITC	149-36
2N4914	↓TII ΔMOTA	169-10	2N4962	ΔTII	207-65	2N5019	ΔTII	149-39	ΔFSC CNS		105-20	2N5110	ΔITC	115-66
CNS PPC SSI	↓FSC ↓SSI ↓TII		2N4963	ΔTII	108-77	2N5020	ΔTII	149-40	ΔFSC CNS		221-101	2N5111	ΔITC	224-96
2N4915	↓TII ΔMOTA	169-11	2N4964	ΔTII	207-68	2N5021	ΔTII	149-41	ΔFSC CNS		169-12	2N5112	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4965	ΔTII	70-85	2N5022	ΔTII	149-42	ΔFSC CNS		105-20	2N5113	ΔITC	149-36
2N4916	↓TII ΔMOTA	71-2	2N4966	ΔTII	70-86	2N5023	ΔTII	149-43	ΔFSC CNS		169-13	2N5114	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4967	ΔTII	108-76	2N5024	ΔTII	149-44	ΔFSC CNS		105-20	2N5115	ΔITC	224-96
2N4917	↓TII ΔMOTA	210-17	2N4968	ΔTII	207-66	2N5025	ΔTII	149-45	ΔFSC CNS		169-12	2N5116	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4969	ΔTII	115-18	2N5026	ΔTII	149-46	ΔFSC CNS		221-101	2N5117	ΔITC	149-36
2N4918	↓TII ΔMOTA	71-6	2N4970	ΔTII	207-67	2N5027	ΔTII	149-47	ΔFSC CNS		105-20	2N5118	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4971	ΔTII	207-68	2N5028	ΔTII	149-48	ΔFSC CNS		169-12	2N5119	ΔITC	224-96
2N4919	↓TII ΔMOTA	210-17	2N4972	ΔTII	70-85	2N5029	ΔTII	149-49	ΔFSC CNS		105-20	2N5120	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4973	ΔTII	70-86	2N5030	ΔTII	149-50	ΔFSC CNS		169-12	2N5121	ΔITC	149-36
2N4920	↓TII ΔMOTA	71-6	2N4974	ΔTII	70-86	2N5031	ΔTII	149-51	ΔFSC CNS		105-20	2N5122	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4975	ΔTII	108-77	2N5032	ΔTII	149-52	ΔFSC CNS		169-12	2N5123	ΔITC	224-96
2N4921	↓TII ΔMOTA	210-17	2N4976	ΔTII	70-85	2N5033	ΔTII	149-53	ΔFSC CNS		105-20	2N5124	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4977	ΔTII	70-85	2N5034	ΔTII	149-54	ΔFSC CNS		169-12	2N5125	ΔITC	149-36
2N4922	↓TII ΔMOTA	71-6	2N4978	ΔTII	70-85	2N5035	ΔTII	149-55	ΔFSC CNS		105-20	2N5126	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4979	ΔTII	108-77	2N5036	ΔTII	149-56	ΔFSC CNS		169-12	2N5127	ΔITC	224-96
2N4923	↓TII ΔMOTA	210-17	2N4980	ΔTII	207-68	2N5037	ΔTII	149-57	ΔFSC CNS		105-20	2N5128	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4981	ΔTII	70-85	2N5038	ΔTII	149-58	ΔFSC CNS		169-12	2N5129	ΔITC	149-36
2N4924	↓TII ΔMOTA	71-6	2N4982	ΔTII	70-85	2N5039	ΔTII	149-59	ΔFSC CNS		105-20	2N5130	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4983	ΔTII	108-77	2N5040	ΔTII	149-60	ΔFSC CNS		169-12	2N5131	ΔITC	224-96
2N4925	↓TII ΔMOTA	210-17	2N4984	ΔTII	207-68	2N5041	ΔTII	149-61	ΔFSC CNS		105-20	2N5132	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4985	ΔTII	70-85	2N5042	ΔTII	149-62	ΔFSC CNS		169-12	2N5133	ΔITC	149-36
2N4926	↓TII ΔMOTA	71-6	2N4986	ΔTII	70-85	2N5043	ΔTII	149-63	ΔFSC CNS		105-20	2N5134	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4987	ΔTII	108-77	2N5044	ΔTII	149-64	ΔFSC CNS		169-12	2N5135	ΔITC	224-96
2N4927	↓TII ΔMOTA	210-17	2N4988	ΔTII	207-68	2N5045	ΔTII	149-65	ΔFSC CNS		105-20	2N5136	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4989	ΔTII	70-85	2N5046	ΔTII	149-66	ΔFSC CNS		169-12	2N5137	ΔITC	149-36
2N4928	↓TII ΔMOTA	71-6	2N4990	ΔTII	70-85	2N5047	ΔTII	149-67	ΔFSC CNS		105-20	2N5138	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4991	ΔTII	108-77	2N5048	ΔTII	149-68	ΔFSC CNS		169-12	2N5139	ΔITC	224-96
2N4929	↓TII ΔMOTA	210-17	2N4992	ΔTII	207-68	2N5049	ΔTII	149-69	ΔFSC CNS		105-20	2N5140	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4993	ΔTII	70-85	2N5050	ΔTII	149-70	ΔFSC CNS		169-12	2N5141	ΔITC	149-36
2N4930	↓TII ΔMOTA	71-6	2N4994	ΔTII	70-85	2N5051	ΔTII	149-71	ΔFSC CNS		105-20	2N5142	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4995	ΔTII	108-77	2N5052	ΔTII	149-72	ΔFSC CNS		169-12	2N5143	ΔITC	224-96
2N4931	↓TII ΔMOTA	210-17	2N4996	ΔTII	207-68	2N5053	ΔTII	149-73	ΔFSC CNS		105-20	2N5144	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4997	ΔTII	70-85	2N5054	ΔTII	149-74	ΔFSC CNS		169-12	2N5145	ΔITC	149-36
2N4932	↓TII ΔMOTA	71-6	2N4998	ΔTII	70-85	2N5055	ΔTII	149-75	ΔFSC CNS		105-20	2N5146	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N4999	ΔTII	108-77	2N5056	ΔTII	149-76	ΔFSC CNS		169-12	2N5147	ΔITC	224-96
2N4933	↓TII ΔMOTA	210-17	2N5000	ΔTII	207-68	2N5057	ΔTII	149-77	ΔFSC CNS		105-20	2N5148	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N5001	ΔTII	70-85	2N5058	ΔTII	149-78	ΔFSC CNS		169-12	2N5149	ΔITC	149-36
2N4934	↓TII ΔMOTA	71-6	2N5002	ΔTII	70-85	2N5059	ΔTII	149-79	ΔFSC CNS		105-20	2N5150	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N5003	ΔTII	108-77	2N5060	ΔTII	149-80	ΔFSC CNS		169-12	2N5151	ΔITC	224-96
2N4935	↓TII ΔMOTA	210-17	2N5004	ΔTII	207-68	2N5061	ΔTII	149-81	ΔFSC CNS		105-20	2N5152	ΔITC	104-100
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N5005	ΔTII	70-85	2N5062	ΔTII	149-82	ΔFSC CNS		169-12	2N5153	ΔITC	149-36
2N4936	↓TII ΔMOTA	71-6	2N5006	ΔTII	70-85	2N5063	ΔTII	149-83	ΔFSC CNS		105-20	2N5154	ΔITC	115-66
CNS PPC SEN TEC	↓FSC ↓SSI ↓TII		2N5007	ΔTII	108-77	2N5064	ΔTII	149-84						



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N5130	CNS	90-58	2N5160	ΔMOTA	139-32	2N5234	ΔGESY	101-47	2N5290	ΔFSC	144-78	2N5330	ΔTRW	173-92
	CSI		2N5161	ΔMOTA	141-48		CNS		KER	PPC			SSI	200-80
	NJS		2N5162	ΔMOTA	142-106	2N5235	ΔGESY	101-48	SOD	SSI		2N5331	ΔTRW	175-82
	SGSI		2N5163	BNT	120-67		CNS		KER	PPC	144-79		SOD	200-81
2N5131	ΔFSC	89-4	ECD	SODI		2N5236	ΔFSC	111-7	SOD	SSI		2N5332	ΔTRW	175-82
	BNT			TSC			SSI	213-1	SOD	SSI			TEC	200-81
	CSI		2N5172	CNS	87-91	2N5237	ΔSOD	154-26	2N5292	ΔFSC		2N5333	ΔTII	77-87
	NPC		ΔGESY	NSC			KER	199-71					ΔMOTA	224-104
2N5132	ΔFSC	89-67	2N5174	ΔGESY	87-92	JAN2N5237	PIR	154-27	2N5293	ΔRCA	104-99	JAN2N5332	none	77-80
	BNT			CNS			SSI	200-66	FSC	ΔRCA	164-92		ΔTII	224-105
	CSI		2N5175	ΔGESY	87-93		none	154-28	2N5294	ΔRCA	164-92	2N5333	ΔTII	141-95
	NPC			CNS		2N5238	ΔSOD	154-28	FSC	ΔRCA	164-93		TEC	
	SGSI		2N5176	ΔGESY	87-94		PIR	199-72	2N5295	ΔRCA	164-93	2N5334	ΔMOTA	152-26
2N5133	ΔFSC	88-53	2N5177	ΔTRW	163-49	JAN2N5238	SEN	154-29	FSC	ΔRCA	164-94		ΔMOTA	197-54
	BNT		ECD	KER			SSI	200-67	2N5296	ΔRCA	164-94		ΔMOTA	197-54
	CSI		2N5178	ΔTRW	168-19		none	170-41	FSC	ΔRCA	164-95	2N5335	ΔMOTA	152-27
	NJS			KER		2N5239	ΔRCA	170-42	FSC	ΔRCA	164-95		ΔMOTA	197-55
	NSC		2N5179	ΔRCA	91-7		SCA	178-39	2N5297	ΔRCA	164-96	2N5336	ΔMOTA	152-28
	SGSI		ΔMOTA	TSC		2N5240	ΔRCA	178-39	FSC	ΔRCA	164-96		ΔMOTA	195-99
2N5134	ΔFSC	89-109	2N5180	ΔRCA	87-61	2N5241	ΔDEL	192-11	2N5298	ΔRCA	164-96	2N5337	ΔMOTA	152-29
	BNT	206-25		SCA			SOD	173-76	2N5301	ΔMOTA	177-86		ΔMOTA	195-100
	CSI		2N5181	ΔRCA	87-53	JAN2N5241	none	192-69	ΔFSC	ΔMOTA	177-86	2N5338	ΔMOTA	152-30
	NJS		2N5182	ΔRCA	87-54			203-84	ΔSSI	ΔMOTA	190-95		ΔMOTA	195-101
	NSC		2N5183	ΔRCA	107-67	2N5243	CNS	80-58	ΔTII	ΔMOTA	177-87	2N5339	ΔMOTA	152-31
	SGSI		2N5184	ΔRCA	107-34			77-69	ΔTII	ΔMOTA	190-96		ΔMOTA	195-102
2N5135	ΔFSC	95-48	2N5185	ΔRCA	184-31	2N5244	ΔFSC	224-102	ΔTII	ΔMOTA	177-88	2N5340	ΔMOTA	142-75
	BNT		2N5186	ΔRCA	99-2		SGSI	124-97	ΔTII	ΔMOTA	190-97		ΔMOTA	200-1
	CSI					2N5245	ITT		ΔTII	ΔMOTA	177-88	2N5341	ΔMOTA	166-88
	NSC		2N5187	ΔRCA	209-110		BNT		ΔTII	ΔMOTA	190-97	2N5342	ΔMOTA	195-104
	SGSI						TSC		ΔTII	ΔMOTA	190-97	2N5343	ΔMOTA	195-105
2N5136	ΔFSC	92-34	2N5188	ΔRCA	209-68	2N5246	ΔTII	124-98	2N5305	ΔGESY	223-12	2N5344	ΔMOTA	142-75
	BNT			SCA	115-51		BNT	124-99	CNS	ΔGESY	223-13	2N5345	ΔMOTA	142-76
	CSI		2N5189	ΔRCA	185-97	2N5247	ΔTII	124-100	CNS	ΔGESY	223-14	2N5346	ΔMOTA	166-87
	NSC			SCA	112-39		TSC		CNS	ΔGESY	223-15	2N5347	ΔMOTA	195-104
	SGSI		2N5190	ATEI	147-55	2N5248	ΔTII	124-100	CNS	ΔGESY	223-15	2N5348	ΔMOTA	195-105
2N5137	ΔFSC	95-49	2N5191	ΔMOTA	186-11	2N5249	ΔTII	101-49	2N5307	ΔGESY	223-14	2N5349	ΔMOTA	166-90
	BNT		2N5192	ΔMOTA	165-31		TSC		CNS	ΔGESY	223-15	2N5350	ΔMOTA	195-106
	CSI		2N5193	ΔMOTA	143-56	2N5249A	ΔGESY	101-50	2N5308	ΔGESY	223-15	2N5351	ΔMOTA	76-34
	NSC		2N5194	ΔMOTA	143-57		ΔGESY		CNS	ΔGESY	223-15	2N5352	ΔMOTA	76-35
	SGSI		2N5195	ΔMOTA	143-58	2N5250	ΔSOD	181-77	2N5309	ΔGESY	223-15	2N5353	ΔMOTA	76-36
2N5138	ΔFSC	70-79	2N5196	ΔSIX	121-47		PIR	193-68	2N5310	ΔGESY	223-15	2N5354	ΔMOTA	142-86
	BNT			TSC	215-54	2N5251	KER		2N5311	ΔGESY	223-15	2N5355	ΔMOTA	199-22
	CSI		2N5197	ΔSIX	121-48		PTI		2N5312	ΔGESY	223-15	2N5356	ΔMOTA	122-66
	NSC			TSC	215-55	JAN2N5250	TEC		2N5313	ΔGESY	223-15	2N5357	ΔMOTA	122-67
	SGSI		2N5198	ΔSIX	121-49		TEC		2N5314	ΔGESY	223-15	2N5358	ΔMOTA	122-68
2N5139	ΔFSC	70-107	2N5199	ΔSIX	121-50	2N5251	ΔSOD	181-78	2N5315	ΔGESY	223-15	2N5359	ΔMOTA	122-69
	BNT	208-49		TSC	215-56		PIR	200-46	2N5316	ΔGESY	223-15	2N5360	ΔMOTA	122-70
	CSI		2N5200	ΔFSC	99-62		PTI	181-79	2N5317	ΔGESY	223-15	2N5361	ΔMOTA	122-71
2N5140	ΔFSC	71-3	2N5201	ΔFSC	224-100	JAN2N5251	TEC	181-80	2N5318	ΔGESY	223-15	2N5362	ΔMOTA	122-72
	BNT	209-99		TSC	99-84		TEC	200-47	2N5319	ΔGESY	223-15	2N5363	ΔMOTA	122-72
	CSI	70-108	2N5202	ΔFSC	224-101	2N5252	ΔFSC	152-55	2N5320	ΔGESY	223-15	2N5364	ΔMOTA	122-72
	NSC	208-67		TSC	99-84		SSI	200-47	2N5321	ΔGESY	223-15	2N5365	ΔMOTA	122-72
	SGSI	73-85	2N5203	ΔFSC	224-102	2N5253	ΔFSC	152-56	2N5322	ΔGESY	223-15	2N5366	ΔMOTA	122-72
2N5141	ΔFSC	201-31	2N5204	ΔFSC	200-15		SSI	200-48	2N5323	ΔGESY	223-15	2N5367	ΔMOTA	122-72
	BNT		2N5205	ΔFSC	200-15	2N5254	CNS	76-7	2N5324	ΔGESY	223-15	2N5368	ΔMOTA	122-72
	NSC			TSC	200-15		CNS	223-11	2N5325	ΔGESY	223-15	2N5369	ΔMOTA	122-72
	SGSI		2N5206	ΔFSC	200-15	2N5255	CNS	76-8	2N5326	ΔGESY	223-15	2N5370	ΔMOTA	122-72
2N5142	ΔFSC	70-90	2N5207	ΔFSC	200-15		CNS	215-58	2N5327	ΔGESY	223-15	2N5371	ΔMOTA	122-72
	BNT	201-32		TSC	200-15	2N5256	CNS	76-9	2N5328	ΔGESY	223-15	2N5372	ΔMOTA	122-72
	CSI		2N5208	ΔFSC	75-79		CNS	215-59	2N5329	ΔGESY	223-15	2N5373	ΔMOTA	122-72
	NSC		2N5209	ΔFSC	100-44	2N5257	CNS	215-59	2N5330	ΔGESY	223-15	2N5374	ΔMOTA	122-72
	SGSI			TSC	100-44	2N5258	CNS	112-40	2N5331	ΔGESY	223-15	2N5375	ΔMOTA	122-72
2N5143	ΔFSC	103-84	2N5210	ΔFSC	100-45		CNS	147-56	2N5332	ΔGESY	223-15	2N5376	ΔMOTA	122-72
	BNT	224-98	2N5211	ΔFSC	100-45	2N5259	CNS	185-104	2N5333	ΔGESY	223-15	2N5377	ΔMOTA	122-72
	CSI	115-38		TSC	100-45	2N5260	CNS	185-104	2N5334	ΔGESY	223-15	2N5378	ΔMOTA	122-72
	NSC	224-99	2N5212	ΔFSC	153-94	2N5261	CNS	185-104	2N5335	ΔGESY	223-15	2N5379	ΔMOTA	122-72
	SGSI	79-49	2N5213	ΔFSC	153-95		CNS	185-104	2N5336	ΔGESY	223-15	2N5380	ΔMOTA	122-72
2N5144	ΔFSC	202-91	2N5214	ΔFSC	166-86	2N5262	CNS	185-104	2N5337	ΔGESY	223-15	2N5381	ΔMOTA	122-72
	BNT	139-53		TSC	166-86	2N5263	CNS	185-104	2N5338	ΔGESY	223-15	2N5382	ΔMOTA	122-72
	CSI		2N5215	ΔFSC	159-54	2N5264	CNS	185-104	2N5339	ΔGESY	223-15	2N5383	ΔMOTA	122-72
	NSC			TSC	159-54		CNS	185-104	2N5340	ΔGESY	223-15	2N5384	ΔMOTA	122-72
	SGSI		2N5216	ΔFSC	160-39	2N5265	CNS	185-104	2N5341	ΔGESY	223-15	2N5385	ΔMOTA	122-72
2N5145	ΔFSC	139-54		TSC	160-39	2N5266	CNS	185-104	2N5342	ΔGESY	223-15	2N5386	ΔMOTA	122-72
	BNT		2N5217	ΔFSC	153-96	2N5267	CNS	185-104	2N5343	ΔGESY	223-15	2N5387	ΔMOTA	122-72
	CSI			TSC	153-96	2N5268	CNS	185-104	2N5344	ΔGESY	223-15	2N5388	ΔMOTA	122-72
	NSC		2N5218	ΔFSC	169-15	2N5269	CNS	185-104	2N5345	ΔGESY	223-15	2N5389	ΔMOTA	122-72
	SGSI			TSC	169-15	2N5270	CNS	185-104	2N5346	ΔGESY	223-15	2N5390	ΔMOTA	122-72
2N5146	ΔFSC	147-74	2N5219	ΔFSC	198-75	2N5271	CNS	185-104	2N5347	ΔGESY	223-15	2N5391	ΔMOTA	122-72
	BNT			TSC	198-75	2N5272	CNS	185-104	2N5348	ΔGESY	223-15	2N5392	ΔMOTA	122-72
	CSI		2N5220	ΔFSC	100-61	2N5273	CNS	185-104	2N5349	ΔGESY	223-15	2N5393	ΔMOTA	122-72
	NSC			TSC	100-61	2N5274	CNS	185-104	2N5350	ΔGESY	223-15	2N5394	ΔMOTA	122-72
	SGSI		2N5221	ΔFSC	75-52	2N5275	CNS	185-104	2N5351	ΔGESY	223-15	2N53		

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line
2N5383	IDC 77-44	2N5436	ΔMOTA 135-108	2N5507	ΔTSC 117-89	2N5557	ΔMOTA 122-85	2N5625	KER 144-82
2N5384	ΔSPT 143-37	2N5437	ΔMOTA 187-109	2N5508	ΔTSC 215-65	2N5558	ΔMOTA 122-86	2N5626	PPC SSI 173-35
	PPC SSI	2N5438	ΔMOTA 187-110		215-66		BNT	2N5627	SSI TRW 144-83
2N5385	ΔTII 143-38	2N5439	ΔMOTA 135-110	2N5509	ΔTSC 117-91	2N5559	ΔSOD 175-87	2N5628	PPC SSI 173-36
	PPC SSI		188-1	2N5510	ΔTSC 215-67		SSI	2N5629	ΔMOTA 177-90
2N5386	ΔTII 144-31	2N5440	ΔMOTA 136-2	2N5511	ΔTSC 117-93	2N5560	ΔSOD 179-82		SSI TRW
	KER SOD		188-2		215-68		TRW		
	PPC SSI	2N5447	ΔTII 188-3	2N5512	ΔTSC 117-94	2N5561	ΔSOD 121-70		
	TIIB		76-73		215-69		UNI		
2N5387	ΔTII 175-83	2N5448	ΔTII 76-74	2N5513	ΔTSC 117-95	2N5562	ΔSOD 121-71	2N5630	ΔMOTA 177-91
	KER SSI		ΔTFKG	2N5514	ΔTSC 215-71	2N5563	ΔSOD 121-72		
	TIIB	2N5449	ΔTII 102-75	2N5515	ΔSIX 121-54	2N5564	ΔSOD 124-48	2N5631	ΔMOTA 177-92
2N5388	ΔTII 175-84	2N5450	ΔTII 102-76	2N5516	ΔSIX 121-55	2N5565	ΔSOD 124-49		
	KER SSI		ΔTFKG		215-72	2N5566	ΔSOD 124-50		
	TIIB	2N5451	ΔTII 102-77	2N5517	ΔSIX 121-56	2N5567	ΔSOD 124-51	2N5632	ΔMOTA 175-40
2N5389	ΔTII 175-85	2N5452	ΔSOD 121-51	2N5518	ΔSIX 121-57	2N5568	ΔSOD 124-52		
	KER SSI		ECOD 215-60	2N5519	ΔSIX 121-58	2N5569	ΔSOD 124-53	2N5633	ΔMOTA 175-41
2N5390	ΔTII 223-16	2N5453	ΔSOD 121-52	2N5520	ΔSIX 121-59	2N5570	ΔSOD 124-54		
	TIIB		ECOD 215-61	2N5521	ΔSIX 121-60	2N5571	ΔSOD 124-55	2N5634	ΔMOTA 175-42
2N5391	ΔTSC 122-73	2N5454	ΔSOD 121-53	2N5522	ΔSIX 121-61	2N5572	ΔSOD 124-56		
2N5392	ΔTSC 122-74	2N5455	ΔSOD 121-54	2N5523	ΔSIX 121-62	2N5573	ΔSOD 124-57	2N5635	ΔMOTA 168-43
2N5393	ΔTSC 122-75	2N5456	ΔSOD 121-55	2N5524	ΔSIX 121-63	2N5574	ΔSOD 124-58		
2N5394	ΔTSC 122-76	2N5457	ΔSOD 121-56	2N5525	ΔSIX 121-64	2N5575	ΔSOD 124-59	2N5636	ΔMOTA 175-49
2N5395	ΔTSC 122-77	2N5458	ΔSOD 121-57	2N5526	ΔSIX 121-65	2N5576	ΔSOD 124-60		
2N5396	ΔTSC 122-78	2N5459	ΔSOD 121-58	2N5527	ΔSIX 121-66	2N5577	ΔSOD 124-61	2N5637	ΔMOTA 161-80
2N5397	ΔSIX 122-79	2N5460	ΔSOD 121-59	2N5528	ΔSIX 121-67	2N5578	ΔSOD 124-62		
	BNT	2N5461	ΔSOD 121-60	2N5529	ΔSIX 121-68	2N5579	ΔSOD 124-63	2N5638	ΔMOTA 124-15
2N5398	ΔSIX 122-80	2N5462	ΔSOD 121-61	2N5530	ΔSIX 121-69	2N5580	ΔSOD 124-64		
	BNT	2N5463	ΔSOD 121-62	2N5531	ΔSIX 121-70	2N5581	ΔSOD 124-65	2N5639	ΔMOTA 185-31
2N5399	ΔTII 104-85	2N5464	ΔSOD 121-63	2N5532	ΔSIX 121-71	JAN2N5581	none 108-78		
	none	2N5465	ΔSOD 121-64	2N5533	ΔSIX 121-72	2N5582	ΔMOTA 207-106	2N5640	ΔMOTA 185-50
JAN2N5399	none	2N5466	ΔSOD 173-93	2N5534	ΔSIX 121-73	JAN2N5582	none 108-79	2N5641	ΔMOTA 175-50
2N5400	ΔMOTA 75-54	2N5467	ΔSOD 173-94	2N5535	ΔSIX 121-74	2N5583	ΔMOTA 140-49	2N5642	ΔMOTA 161-81
	BNT	2N5468	ΔSOD 173-95	2N5536	ΔSIX 121-75	2N5584	ΔMOTA 140-50	2N5643	ΔMOTA 166-83
2N5401	ΔMOTA 75-55	2N5469	ΔSOD 173-96	2N5537	ΔSIX 121-76	2N5585	ΔMOTA 140-51	2N5644	ΔMOTA 149-46
	BNT	2N5470	ΔSOD 173-97	2N5538	ΔSIX 121-77	2N5586	ΔMOTA 140-52	2N5645	ΔMOTA 157-71
2N5402	ΔSOD 145-55	2N5471	ΔSOD 173-98	2N5539	ΔSIX 121-78	2N5587	ΔMOTA 140-53	2N5646	ΔMOTA 161-82
	PPC SSI	2N5472	ΔSOD 173-99	2N5540	ΔSIX 121-79	2N5588	ΔMOTA 140-54	2N5647	ΔMOTA 122-90
2N5403	ΔSOD 145-56	2N5473	ΔSOD 173-100	2N5541	ΔSIX 121-80	2N5589	ΔMOTA 140-55	2N5648	ΔMOTA 122-91
	PPC SSI	2N5474	ΔSOD 173-101	2N5542	ΔSIX 121-81	2N5590	ΔMOTA 140-56	2N5649	ΔMOTA 122-92
2N5404	ΔSOD 198-49	2N5475	ΔSOD 173-102	2N5543	ΔSIX 121-82	2N5591	ΔMOTA 140-57	2N5650	ΔMOTA 84-108
	PPC SSI	2N5476	ΔSOD 173-103	2N5544	ΔSIX 121-83	2N5592	ΔMOTA 140-58	2N5651	ΔMOTA 84-109
2N5405	ΔSOD 198-50	2N5477	ΔSOD 173-104	2N5545	ΔSIX 121-84	2N5593	ΔMOTA 140-59		
	PPC SSI	2N5478	ΔSOD 173-105	2N5546	ΔSIX 121-85	2N5594	ΔMOTA 140-60	2N5652	ΔMOTA 84-110
2N5406	ΔSOD 145-57	2N5479	ΔSOD 173-106	2N5547	ΔSIX 121-86	2N5595	ΔMOTA 140-61	2N5653	ΔMOTA 124-18
	PPC SSI	2N5480	ΔSOD 173-107	2N5548	ΔSIX 121-87	2N5596	ΔMOTA 140-62	2N5654	ΔMOTA 185-32
2N5407	ΔSOD 145-58	2N5481	ΔSOD 173-108	2N5549	ΔSIX 121-88	2N5597	ΔMOTA 140-63	2N5655	ΔMOTA 185-51
	PPC SSI	2N5482	ΔSOD 173-109	2N5550	ΔSIX 121-89	2N5598	ΔMOTA 140-64	2N5656	ΔMOTA 160-107
2N5408	ΔSOD 198-52	2N5483	ΔSOD 173-110	2N5551	ΔSIX 121-90	2N5599	ΔMOTA 140-65	2N5657	ΔMOTA 160-108
	PPC SSI	2N5484	ΔSOD 173-111	2N5552	ΔSIX 121-91	2N5600	ΔMOTA 140-66	2N5658	ΔMOTA 160-109
2N5409	ΔSOD 143-40	2N5485	ΔSOD 173-112	2N5553	ΔSIX 121-92	2N5601	ΔMOTA 140-67	2N5659	ΔMOTA 165-6
	PPC SSI	2N5486	ΔSOD 173-113	2N5554	ΔSIX 121-93	2N5602	ΔMOTA 140-68	2N5660	ΔMOTA 196-50
2N5410	ΔSOD 198-55	2N5487	ΔSOD 173-114	2N5555	ΔSIX 121-94	2N5603	ΔMOTA 140-69	2N5661	ΔMOTA 165-7
	PPC SSI	2N5488	ΔSOD 173-115	2N5556	ΔSIX 121-95	2N5604	ΔMOTA 140-70	2N5662	ΔMOTA 196-51
2N5411	ΔSOD 143-42	2N5489	ΔSOD 173-116	2N5557	ΔSIX 121-96	2N5605	ΔMOTA 140-71	2N5663	ΔMOTA 162-18
	PPC SSI	2N5490	ΔSOD 173-117	2N5558	ΔSIX 121-97	2N5606	ΔMOTA 140-72	2N5664	ΔMOTA 185-33
2N5412	ΔSOD 198-56	2N5491	ΔSOD 173-118	2N5559	ΔSIX 121-98	2N5607	ΔMOTA 140-73	2N5665	ΔMOTA 124-19
	PPC SSI	2N5492	ΔSOD 173-119	2N5560	ΔSIX 121-99	2N5608	ΔMOTA 140-74	2N5666	ΔMOTA 185-52
2N5413	ΔSOD 173-52	2N5493	ΔSOD 173-120	2N5561	ΔSIX 121-100	2N5609	ΔMOTA 140-75	2N5667	ΔMOTA 160-107
	KER TEC	2N5494	ΔSOD 173-121	2N5562	ΔSIX 121-101	2N5610	ΔMOTA 140-76	2N5668	ΔMOTA 160-108
2N5414	ΔSOD 200-6	2N5495	ΔSOD 173-122	2N5563	ΔSIX 121-102	2N5611	ΔMOTA 140-77	2N5669	ΔMOTA 160-109
	KER TEC	2N5496	ΔSOD 173-123	2N5564	ΔSIX 121-103	2N5612	ΔMOTA 140-78	2N5670	ΔMOTA 165-6
2N5415	ΔSOD 206-101	2N5497	ΔSOD 173-124	2N5565	ΔSIX 121-104	2N5613	ΔMOTA 140-79	2N5671	ΔMOTA 196-50
	SSI	2N5498	ΔSOD 173-125	2N5566	ΔSIX 121-105	2N5614	ΔMOTA 140-80	2N5672	ΔMOTA 165-7
2N5416	ΔSOD 147-80	2N5499	ΔSOD 173-126	2N5567	ΔSIX 121-106	2N5615	ΔMOTA 140-81	2N5673	ΔMOTA 196-51
	SSI	2N5500	ΔSOD 173-127	2N5568	ΔSIX 121-107	2N5616	ΔMOTA 140-82	2N5674	ΔMOTA 162-19
2N5417	ΔSOD 206-102	2N5501	ΔSOD 173-128	2N5569	ΔSIX 121-108	2N5617	ΔMOTA 140-83	2N5675	ΔMOTA 194-60
	SSI	2N5502	ΔSOD 173-129	2N5570	ΔSIX 121-109	2N5618	ΔMOTA 140-84	2N5676	ΔMOTA 160-91
2N5418	ΔSOD 140-89	2N5503	ΔSOD 173-130	2N5571	ΔSIX 121-110	2N5619	ΔMOTA 140-85	2N5677	ΔMOTA 194-62
	FSC ITC	2N5504	ΔSOD 173-131	2N5572	ΔSIX 121-111	2N5620	ΔMOTA 140-86	2N5678	ΔMOTA 165-8
2N5419	ΔSOD 206-103	2N5505	ΔSOD 173-132	2N5573	ΔSIX 121-112	2N5621	ΔMOTA 140-87	2N5679	ΔMOTA 165-9
	FSC ITC	2N5506	ΔSOD 173-133	2N5574	ΔSIX 121-113	2N5622	ΔMOTA 140-88	2N5680	ΔMOTA 194-68
2N5420	ΔSOD 140-89	2N5507	ΔSOD 173-134	2N5575	ΔSIX 121-114	2N5623	ΔMOTA 140-89	2N5681	ΔMOTA 160-92
	MST TEC	2N5508	ΔSOD 173-135	2N5576	ΔSIX 121-115	2N5624	ΔMOTA 140-90	2N5682	ΔMOTA 194-69
2N5421	ΔSOD 102-29	2N5509	ΔSOD 173-136	2N5577	ΔSIX 121-116	2N5625	ΔMOTA 140-91	2N5683	ΔMOTA 160-93
	FSC ITC	2N5510	ΔSOD 173-137	2N5578	ΔSIX 121-117	2N5626	ΔMOTA 140-92	2N5684	ΔMOTA 194-70
2N5422	ΔSOD 102-30	2N5511	ΔSOD 173-138	2N5579	ΔSIX 121-118	2N5627	ΔMOTA 140-93	2N5685	ΔMOTA 124-20
	FSC ITC	2N5512	ΔSOD 173-139	2N5580	ΔSIX 121-119	2N5628	ΔMOTA 140-94	2N5686	ΔMOTA 124-21
2N5423	ΔSOD 102-31	2N5513	ΔSOD 173-140	2N5581	ΔSIX 121-120	2N5629	ΔMOTA 140-95	2N5687	ΔMOTA 173-55
	FSC ITC	2N5514	ΔSOD 173-141	2N5582	ΔSIX 121-121	2N5630	ΔMOTA 140-96	2N5688	ΔMOTA 199-73
2N5424	ΔSOD 149-11	2N5515	ΔSOD 173-142	2N5583	ΔSIX 121-122	2N5631	ΔMOTA 140-97	2N5689	ΔMOTA 173-56
	SEN SOD	2N5516	ΔSOD 173-143	2N5584	ΔSIX 121-123	2N5632	ΔMOTA 140-98	2N5690	ΔMOTA 173-57
2N5425	ΔSOD 151-20	2N5517	ΔSOD 173-144	2N5585	ΔSIX 121-124	2N5633	ΔMOTA 140-99	2N5691	ΔMOTA 173-58
	KER SEN	2N5518	ΔSOD 173-145	2N5586	ΔSIX 121-125	2N5634	ΔMOTA 140-100	2N5692	ΔMOTA 173-59
2N5426	ΔSOD 157-70	2N5519	ΔSOD 173-146	2N5587	ΔSIX 121-126	2N5635	ΔMOTA 140-101	2N5693	ΔMOTA 173-60
	SEN SOD	2N5520	ΔSOD 173-147	2N5588	ΔSIX 121-127	2N5636	ΔMOTA 140-102	2N5694	ΔMOTA 173-61
2N5427	ΔSOD 159-13	2N5521	ΔSOD 173-148	2N5589	ΔSIX 121-128	2N5637	ΔMOTA 140-103	2N5695	ΔMOTA 173-62
	SEN SOD	2N5522	ΔSOD 173-149	2N5590	ΔSIX 121-129	2N5638	ΔMOTA 140-104	2N5696	ΔMOTA 173-63
2N5428	ΔSOD 159-14	2N5523	ΔSOD 173-150	2N5591	ΔSIX 121-130	2N5639	ΔMOTA 140-105	2N5697	ΔMOTA 173-64
	ΔKER	2N5524	ΔSOD 173-151	2N5592					

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2N5678	Δ SOD	145-3	2N5760	Δ MOTA	175-45	2N5852	Δ MOTA	109-14	2N5928	Δ PTI	181-93	2N6016	Δ GESY	210-59
		194-83		SSI		2N5853	Δ SOD	144-73			187-86			80-79
2N5679	Δ MOTA	139-49	2N5761	Δ NECJ	94-55	2N5854	Δ SOD	144-74	2N5929	Δ WESY	175-91	2N6017	Δ GESY	209-56
	SCA			Δ NECJ	100-18	2N5855	Δ SOD	81-73		SSI	196-102			142-107
2N5680	Δ MOTA	139-50	2N5762	Δ MOTA	79-73	2N5856	Δ FSC	112-6	2N5930	Δ WESY	175-92	2N6021	Δ FSC	142-108
2N5681	Δ MOTA	147-57	2N5763	Δ MOTA	225-10	2N5857	Δ FSC	81-74		SSI	196-103	2N6022	Δ FSC	142-109
	SSI					2N5858	Δ FSC	112-7	2N5931	Δ WESY	175-93	2N6023	Δ FSC	142-110
	TRW		2N5764	Δ TRW	155-57	2N5859	Δ MOTA	151-31		SSI	196-104	2N6024	Δ FSC	143-1
2N5682	Δ MOTA	147-58						206-75	2N5932	Δ WESY	175-94	2N6025	Δ FSC	143-2
	SCA		2N5765	Δ TRW	159-6	2N5860	Δ MOTA	151-32		SSI	197-17	2N6026	Δ FSC	173-98
2N5683	Δ MOTA	145-37		SSI				206-30	2N5933	Δ WESY	175-95	2N6032	Δ RCA	199-84
			2N5766	Δ TRW	151-30	2N5861	Δ MOTA	151-33		SSI	197-18			173-99
2N5684	Δ MOTA	145-38	2N5767	Δ TRW	155-58			204-18	2N5934	Δ WESY	175-96	2N6033	Δ RCA	199-85
			2N5768	Δ TRW	159-29	2N5862	Δ MOTA	170-31		SSI	197-19			177-95
2N5685	Δ MOTA	180-110	2N5769	Δ TRW	164-72	2N5863	SSI	139-75	2N5935	Δ WESY	175-97	2N6046	Δ WESY	197-20
			2N5770	Δ TRW	159-7	2N5864	SSI	140-38		SSI	197-20			197-20
2N5686	Δ MOTA	181-1	2N5771	Δ TRW	163-59	2N5865	SSI	201-40	2N5936	Δ WESY	175-98	2N6047	Δ WESY	177-96
			2N5772	Δ TRW	167-34					SSI	197-21			197-21
2N5687	Δ TRW	151-28	2N5773	Δ TRW	218-100	2N5867	Δ MOTA	144-35	2N5937	Δ WESY	175-99	2N6048	Δ WESY	177-97
2N5688	Δ TRW	155-43		SSI		2N5868	SSI	191-100		SSI	197-22			197-22
2N5689	Δ TRW	160-77	2N5774	Δ TRW	108-91	2N5869	Δ MOTA	144-36	2N5938	Δ TII	162-23	2N6060	Δ TEC	180-67
2N5690	Δ TRW	164-89	2N5775	Δ TRW	218-102	2N5870	SSI	191-101		Δ TII	225-11			193-34
2N5691	Δ TRW	169-23	2N5776	Δ TRW	218-103	2N5871	SSI	169-26	2N5939	Δ TII	167-35	2N6061	Δ TEC	145-35
2N5692	Δ MOTA	136-3	2N5777	Δ TRW	167-34	2N5872	Δ MOTA	169-27		Δ TII	225-12			194-88
			2N5778	Δ TRW	218-100	2N5873	SSI	191-102	2N5940	Δ TII	167-36	2N6062	Δ TEC	180-68
2N5693	Δ MOTA	188-57	2N5779	Δ TRW	140-107	2N5874	SSI	191-103		Δ TII	225-13			193-35
			2N5780	Δ TRW	140-108	2N5875	SSI	144-62	2N5943	Δ MOTA	149-49	2N6063	Δ TEC	145-36
2N5694	Δ MOTA	188-58	2N5781	PIR	140-108	2N5876	SSI	191-104		TSC				194-89
			2N5782	PIR	140-108	2N5877	SSI	144-63	2N5947	Δ MOTA	158-40	20C6	MULB	215-50
2N5695	Δ MOTA	188-59	2N5783	PIR	140-109	2N5878	SSI	191-105	2N5949	Δ TII	124-102	20C26	PHIN	223-17
			2N5784	PIR	140-109	2N5879	SSI	191-106		Δ TII	124-103	20C28	MULB	215-108
2N5696	Δ MOTA	188-60	2N5785	PIR	155-59	2N5880	SSI	145-2	2N5950	Δ TII	124-103	20C29	MULB	215-109
			2N5786	PIR	155-60	2N5881	SSI	191-107		Δ TII	124-104	20C30	PHIN	223-18
2N5697	Δ TRW	149-47	2N5787	PIR	155-60	2N5882	SSI	170-52	2N5951	Δ TII	124-104	20C31	MULB	215-110
	SSS		2N5788	PIR	155-61	2N5883	SSI	144-108		Δ TII	124-105	20C36	MULB	216-1
2N5698	Δ TRW	151-29	2N5789	PIR	155-61	2N5884	SSI	191-108	2N5952	Δ TII	124-105	20C74	PHIN	216-2
			2N5790	PIR	155-61	2N5885	SSI	144-109		Δ TII	124-106	20C83	MULB	216-3
2N5699	Δ TRW	155-55	2N5791	PIR	155-61	2N5886	SSI	191-109	2N5953	Δ TII	124-106	20C84	MULB	216-4
			2N5792	PIR	155-61	2N5887	SSI	175-46		Δ TII	124-106	2S001	TIIB	85-44
2N5700	Δ TRW	162-20	2N5793	PIR	155-61	2N5888	SSI	191-110	2N5954	Δ RCA	163-60	2S002	TIIB	85-45
	SSS		2N5794	PIR	155-61	2N5889	SSI	175-47		SSI	163-60	2S003	TIIB	85-61
2N5701	Δ TRW	162-21	2N5795	PIR	155-61	2N5890	SSI	192-1	2N5955	Δ RCA	163-61	2S004	TIIB	85-46
			2N5796	PIR	155-61	2N5891	SSI	145-1		SSI	163-61	2S005	TIIB	84-50
2N5702	Δ TRW	115-94	2N5797	PIR	155-61	2N5892	SSI	192-2	2N5956	Δ RCA	163-62	2S012	TIIB	165-76
			2N5798	PIR	155-61	2N5893	SSI	192-3		SSI	163-62	2S012A	TIIB	168-77
2N5703	Δ TRW	155-56	2N5799	PIR	155-61	2N5894	SSI	175-60	2N5957	Δ TEC	175-100	2S013A	TIIB	168-78
			2N5800	PIR	155-61	2N5895	SSI	192-4		Δ TEC	193-30	2S014	TIIB	84-64
2N5704	Δ TRW	160-78	2N5801	PIR	155-61	2N5896	SSI	175-61	2N5958	Δ TEC	145-4	2S017	TIIB	149-101
			2N5802	PIR	155-61	2N5897	SSI	192-5		Δ TEC	194-84	2S018	TIIB	149-102
2N5705	Δ TRW	163-86	2N5803	PIR	155-61	2N5898	SSI	145-20	2N5959	Δ TEC	175-101	2S019	TIIB	149-103
			2N5804	PIR	155-61	2N5899	SSI	192-6		Δ TEC	193-31	2S020	TIIB	149-104
2N5706	Δ TRW	168-72	2N5805	PIR	155-61	2N5900	SSI	145-21	2N5960	Δ TEC	145-5	2S024	TIIB	171-29
			2N5806	PIR	155-61	2N5901	SSI	192-7		Δ TEC	194-85	2S025	TIIB	171-30
2N5707	Δ TRW	170-32	2N5807	PIR	155-61	2N5902	SSI	177-93	2N5961	Δ FSC	111-21	2S026	TIIB	171-31
2N5708	Δ TRW	172-43	2N5808	PIR	155-61	2N5903	SSI	192-8		BNT	111-22	2S033	TIIB	164-47
2N5709	Δ TRW	173-97	2N5809	PIR	155-61	2N5904	SSI	177-94	2N5962	Δ FSC	111-22			195-50
2N5710	Δ TRW	149-48	2N5810	PIR	155-61	2N5905	SSI	192-9		BNT	111-23	2S034	TIIB	164-48
			2N5811	PIR	155-61	2N5906	SSI	138-26	2N5963	Δ FSC	111-23			195-51
2N5711	Δ TRW	170-44	2N5812	PIR	155-61	2N5907	SSI	138-27		BNT	111-23	2S035	TIIB	164-49
			2N5813	PIR	155-61	2N5908	SSI	138-28	2N5964	Δ FSC	111-53			195-52
2N5712	Δ TRW	160-79	2N5814	PIR	155-61	2N5909	SSI	138-29		Δ FSC	111-54	2S036	TIIB	164-50
			2N5815	PIR	155-61	2N5910	SSI	138-30	2N5965	Δ FSC	111-53			195-53
2N5713	Δ TRW	164-31	2N5816	PIR	155-61	2N5911	SSI	138-31	2N5966	Δ TEC	178-40			195-53
			2N5817	PIR	155-61	2N5912	SSI	138-32		Δ TEC	193-32	2S95A	TIIB	98-17
2N5714	Δ TRW	167-33	2N5818	PIR	155-61	2N5913	SSI	138-33	2N5967	Δ TEC	145-29			207-75
			2N5819	PIR	155-61	2N5914	SSI	138-33		Δ TEC	194-86	2S101	TIIB	96-21
2N5715	Δ TRW	152-6	2N5820	PIR	155-61	2N5915	SSI	138-33	2N5968	Δ TEC	178-41			202-74
2N5716	Δ MOTA	120-68	2N5821	PIR	155-61	2N5916	SSI	138-34		Δ TEC	193-33	2S102	TIIB	105-72
2N5717	Δ MOTA	120-69	2N5822	PIR	155-61	2N5917	SSI	138-35	2N5969	Δ TEC	145-30	2S103	TIIB	105-76
2N5718	Δ MOTA	120-70	2N5823	PIR	155-61	2N5918	SSI	138-37		Δ TEC	194-87	2S104	TIIB	105-88
2N5719	Δ MOTA	120-70	2N5824	PIR	155-61	2N5919	SSI	138-37	2N5970	Δ DEL	175-34	2S131	TIIB	98-85
2N5720	Δ FSC	156-32	2N5825	PIR	155-61	2N5920	SSI	138-38		Δ DEL	191-96	2S301	TIIB	72-105
	SSI		2N5826	PIR	155-61	2N5921	SSI	138-39	2N5971	Δ DEL	175-35	2S302	TIIB	72-109
2N5721	Δ FSC	196-54	2N5827	PIR	155-61	2N5922	SSI	138-40		Δ DEL	191-97	2S302A	TIIB	72-110
	PPC		2N5828	PIR	155-61	2N5923	SSI	125-45	2N5972	Δ DEL	175-36	2S303	TIIB	73-7
2N5730	Δ FSC	165-10	2N5829	PIR	155-61	2N5924	SSI	215-97		Δ DEL	191-98	2S304	TIIB	73-12
	PPC		2N5830	PIR	155-61	2N5925	SSI	125-46	2N5973	Δ DEL	175-37	2S305	TIIB	72-106
2N5731	Δ FSC	196-55	2N5831	PIR	155-61	2N5926	SSI	125-47		Δ DEL	191-99	2S306	TIIB	69-3
	PPC		2N5832	PIR	155-61	2N5927	SSI	215-99	2N5992	Δ RCA	164-74			221-

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
253020	TIB	75-3	25A275	FCAJ	55-101	25A544	NECJ	81-81	25B132	FCAJ	133-6	25B376	MATJ	63-49
253021	TIB	75-8	25A279	MATJ	57-81	25A545	NECJ	207-38	25B132A	FCAJ	133-7	25B377	MATJ	63-64
253030	TIB	75-12	25A291	FCAJ	53-97	25A546	NECJ	71-53	25B134	MITJ	56-65	25B378	SONY	61-80
253040	TIB	75-13	25A292	FCAJ	53-102	25A546A	♦MATJ	81-72	25B135	MITJ	56-66	25B379	SONY	61-86
253210	TIB	72-92	25A293	FCAJ	53-108	25A547	♦MATJ	141-4	25B136A	MITJ	59-2	25B380	SONY	61-87
253220	TIB	72-93	25A294	FCAJ	53-108	25A547A	♦MATJ	141-5	25B151	FCAJ	131-18	25B381	SONY	64-63
253221	TIB	72-94	25A295	FCAJ	53-59	25A548	HITJ	7-1	25B152	FCAJ	131-19	25B382	SONY	64-65
253230	TIB	72-97	25A321	TSAJ	53-76	25A548H	HITJ	209-60	25B156	HITJ	58-62	25B389	FCAJ	55-61
253240	TIB	72-101	25A322	TSAJ	53-75	25A550A	♦MATJ	73-89	25B158	HITJ	58-64	25B401	MATJ	63-88
25A12	HITJ	55-59	25A338	MATJ	53-85	25A552	NECJ	81-82	25B167	FCAJ	62-47	25B402	MATJ	63-89
25A12H	HITJ	55-59	25A339	MATJ	54-96	25A560	TOSJ	82-17	25B168	FCAJ	59-4	25B403	MATJ	63-90
25A15	HITJ	55-69	25A340	MATJ	54-97	25A561	♦TOSJ	73-59	25B170	MATJ	57-99	25B405	TSAJ	137-8
25A15H	HITJ	55-78	25A341	MATJ	54-97	25A562	♦TOSJ	73-60	25B171	MATJ	57-107	25B410	TSAJ	136-8
25A17H	HITJ	55-78	25A342	MATJ	54-97	25A564	♦MATJ	70-34	25B172	MATJ	58-5	25B411	TSAJ	136-9
25A18H	HITJ	55-79	25A343	MATJ	54-97	25A564A	♦MATJ	70-35	25B173	MATJ	57-108	25B415	DETM	62-29
25A30	FCAJ	55-64	25A350	HITJ	55-96	25A566	HITJ	139-2	25B175	MATJ	57-110	25B426	♦TOSJ	130-60
25A31	FCAJ	55-62	25A350H	HITJ	55-97	25A567	HITJ	139-3	25B176	MATJ	58-2	25B427	♦TOSJ	63-50
25A32	FCAJ	56-87	25A352	HITJ	55-98	25A568	HITJ	139-3	25B177	MATJ	58-2	25B428	FCAJ	63-51
25A33	FCAJ	190-51	25A353	HITJ	55-99	25A569	MITJ	70-91	25B178A	MATJ	63-45	25B430	MATJ	135-97
25A35	FCAJ	56-82	25A353A	HITJ	55-87	25A570	MITJ	70-94	25B180	FCAJ	127-76	25B431	FCAJ	62-48
25A36	FCAJ	55-65	25A354	HITJ	55-88	25A571	NECJ	82-20	25B180A	FCAJ	128-23	25B432	FCAJ	131-26
25A37	FCAJ	55-53	25A354A	HITJ	55-89	25A594	TOSJ	208-34	25B181	FCAJ	127-77	25B433	FCAJ	132-90
25A40	FCAJ	55-54	25A355	HITJ	55-90	25A597	TOSJ	81-85	25B181A	FCAJ	128-24	25B434	♦TOSJ	142-44
25A43	FCAJ	192-26	25A355A	HITJ	55-91	25A597	TOSJ	139-4	25B185	TSAJ	58-65	25B435	♦TOSJ	142-45
25A49	DETM	54-11	25A358	HITJ	58-15	25A603	NECJ	73-91	25B186	TSAJ	58-66	25B439	♦TOSJ	59-55
25A52	♦TOSJ	54-17	25A373	HITJ	64-48	25A604	NECJ	73-67	25B187	TSAJ	58-67	25B440	♦TOSJ	59-56
25A53	♦TOSJ	54-12	25A374	MATJ	65-76	25A605	NECJ	73-68	25B188	TSAJ	58-68	25B443A	HITJ	56-74
25A64	♦TOSJ	54-12	25A377	MATJ	53-104	25A606	NECJ	141-16	25B189	DETM	64-22	25B443B	HITJ	56-76
25A69	MATJ	56-95	25A378	MATJ	53-105	25A608	TSAJ	69-41	25B199	TOSJ	64-20	25B444A	HITJ	56-75
25A70	MATJ	56-96	25A385	MATJ	55-68	25A609	TSAJ	204-5	25B201	FCAJ	64-20	25B444B	HITJ	56-77
25A71	MATJ	56-97	25A400	FCAJ	55-106	25A609	TSAJ	69-40	25B202	♦TOSJ	64-75	25B445	FCAJ	128-17
25A101	MATJ	54-19	25A401	HITJ	58-22	25A613	NECJ	141-53	25B203	SHEJ	135-81	25B446	FCAJ	128-18
25A102	MATJ	54-20	25A402	TSAJ	72-50	25A614	NECJ	141-54	25B204	SHEJ	135-82	25B447	FCAJ	132-36
25A103	MATJ	54-21	25A408	FCAJ	53-85	25A623	MITJ	141-11	25B205	SHEJ	135-83	25B448	MATJ	128-16
25A104	MATJ	54-24	25A409	FCAJ	199-43	25A624	MITJ	200-30	25B206	SHEJ	135-84	25B449	♦MATJ	129-12
25A105	FCAJ	53-47	25A412	HITJ	60-66	25A626	NECJ	141-12	25B207	SHEJ	135-85	25B457	MITJ	59-5
25A106	FCAJ	53-46	25A413	MATJ	200-2	25A627	NECJ	200-31	25B207A	SHEJ	135-86	25B457A	MITJ	59-6
25A107	FCAJ	53-43	25A414	MATJ	60-6	25A628	MITJ	144-17	25B208	SHEJ	135-87	25B459	HITJ	57-22
25A108	FCAJ	55-100	25A415	MATJ	192-49	25A628A	MITJ	144-18	25B208A	SHEJ	135-88	25B460	HITJ	57-23
25A109	FCAJ	55-82	25A416	MATJ	60-22	25A629	MITJ	70-24	25B209	SHEJ	135-89	25B461	TOSJ	64-86
25A110	FCAJ	55-83	25A417	NECJ	192-71	25A637	♦MATJ	201-23	25B210	SHEJ	135-90	25B463	♦TOSJ	127-92
25A111	FCAJ	55-75	25A417	NECJ	127-2	25A637	♦MATJ	70-25	25B211	SHEJ	135-91	25B466	FCAJ	128-30
25A112	FCAJ	55-76	25A417	NECJ	200-101	25A645	MITJ	201-24	25B212	SHEJ	135-92	25B467	FCAJ	128-31
25A113	FCAJ	53-73	25A417	NECJ	61-17	25A645	MITJ	70-26	25B213	SHEJ	135-93	25B468	HITJ	127-13
25A114	FCAJ	53-74	25A417	NECJ	210-4	25A646	MITJ	73-45	25B213A	SHEJ	135-94	25B468A	HITJ	130-97
25A115	FCAJ	53-78	25A422	TSAJ	53-109	25A647	MITJ	141-13	25B214	SHEJ	135-95	25B470	FCAJ	55-45
25A116	FCAJ	53-71	25A429	TOSJ	70-23	25A647	MITJ	200-32	25B214A	SHEJ	135-96	25B471	HITJ	127-14
25A117	FCAJ	53-99	25A434	HITJ	56-8	25A647	MITJ	141-14	25B261	FCAJ	54-98	25B472	HITJ	127-15
25A118	FCAJ	53-96	25A435	HITJ	56-9	25A661	TOSJ	200-33	25B262	FCAJ	54-99	25B473	♦MATJ	127-16
25A136	FCAJ	55-66	25A436	HITJ	54-67	25A663	TOSJ	141-15	25B263	FCAJ	62-61	25B474	♦TSAJ	128-47
25A137	FCAJ	55-55	25A437	HITJ	54-68	25B17A	FCAJ	200-34	25B282	MATJ	127-3	25B475	♦MATJ	58-83
25A138	FCAJ	55-71	25A438	HITJ	54-69	25B17A	FCAJ	80-100	25B283	MATJ	189-86	25B476	MATJ	64-23
25A139	FCAJ	194-9	25A440A	TSAJ	54-63	25B18A	FCAJ	139-5	25B283	MATJ	127-4	25B481	♦MATJ	127-78
25A144	MATJ	56-20	25A447	MATJ	56-48	25B19	FCAJ	127-52	25B284	MATJ	189-87	25B482	♦TOSJ	57-39
25A145	MATJ	56-17	25A448	SONY	53-51	25B20	FCAJ	127-54	25B285	MATJ	189-88	25B484	SHEJ	133-8
25A188	FCAJ	55-67	25A450H	HITJ	61-18	25B21	FCAJ	127-97	25B295	FCAJ	131-20	25B485	SHEJ	133-10
25A189	FCAJ	55-56	25A451H	HITJ	211-45	25B22	TSAJ	127-99	25B295	FCAJ	131-20	25B486	♦TOSJ	57-40
25A201	TSAJ	56-84	25A452H	HITJ	61-19	25B22	TSAJ	127-99	25B302	HITJ	53-50	25B487	FCAJ	127-74
25A202	TSAJ	56-88	25A453	SONY	54-79	25B23	FCAJ	61-46	25B303	HITJ	53-50	25B488	FCAJ	127-75
25A203	TSAJ	56-79	25A454	SONY	54-80	25B23	FCAJ	59-14	25B303	TSAJ	53-60	25B489	TSAJ	65-77
25A208	HITJ	57-28	25A455	SONY	54-81	25B23	FCAJ	59-14	25B304	FCAJ	63-47	25B493	MATJ	128-9
25A208H	HITJ	191-10	25A456	SONY	54-82	25B23	FCAJ	64-18	25B304A	FCAJ	63-48	25B494	MITJ	62-30
25A209	HITJ	57-34	25A467	TOSJ	74-30	25B24	FCAJ	59-15	25B309	MATJ	131-21	25B495	MITJ	62-31
25A209H	HITJ	192-31	25A480	SONY	70-31	25B25	FCAJ	64-19	25B310	MATJ	131-22	25B495A	MITJ	62-32
25A210	HITJ	193-6	25A483	TOSJ	139-1	25B25	FCAJ	59-15	25B310	MATJ	131-22	25B496	HITJ	65-47
25A210H	HITJ	192-11	25A494	♦TOSJ	70-65	25B25	FCAJ	53-66	25B311	MATJ	132-37	25B497	FCAJ	54-100
25A212	HITJ	57-32	25A494Y	♦TOSJ	70-67	25B25	FCAJ	131-16	25B312	FCAJ	131-23	25B497	TOSJ	145-44
25A212H	HITJ	191-81	25A495	♦TOSJ	70-101	25B25	FCAJ	59-16	25B320	DETM	64-22	25B502	TOSJ	145-45
25A217	HITJ	191-55	25A495G	♦TOSJ	70-102	25B25	FCAJ	59-16	25B320	DETM	64-22	25B503	TOSJ	145-45
25A217H	HITJ	193-96	25A497	TOSJ	80-97	25B25	FCAJ	59-17	25B325	♦TOSJ	59-17	25C22	NECJ	158-26
25A221	TSAJ	53-83	25A498	TOSJ	80-98	25B25	FCAJ	59-18	25B325	♦TOSJ	59-17	25C23	NECJ	158-27
25A222	TSAJ	53-87	25A499	♦TOSJ	72-60	25B25	FCAJ	59-18	25B325	♦TOSJ	59-17	25C24	NECJ	158-28
25A223	TSAJ	53-86	25A500	♦TOSJ	70-66	25B25	FCAJ	59-18	25B325	♦TOSJ	59-17	25C25	NECJ	158-29
25A234	HITJ	55-109	25A502	TOSJ	72-61	25B25	FCAJ	59-18	25B325	♦T				

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
2SC67	NECJ	184-34	2SC225	FCAJ	148-57	2SC389	TOSJ	86-39	2SC519A	♦TOSJ	187-39	2SC638	NECJ	159-90
		209-100	2SC229	FCAJ	111-28	2SC392	TOSJ	86-97				2SC639	NECJ	104-97
2SC68	NECJ	104-35	2SC232	FCAJ	111-29	2SC394	♦TOSJ	89-73	2SC520A	♦TOSJ	167-40			211-95
		209-101	2SC238	FCAJ	111-30	2SC395A	♦TOSJ	93-63				2SC640	NECJ	85-1
2SC69	NECJ	114-86	2SC239	FCAJ	148-58			204-108	2SC521A	♦TOSJ	167-41	2SC641H	HITJ	83-107
2SC79	FCAJ	99-27	2SC230	FCAJ	102-2	2SC397	TOSJ	90-106						204-30
2SC87	FCAJ	110-95	2SC231	FCAJ	111-3	2SC398	♦TOSJ	90-2	2SC5220	♦TOSJ	156-33	2SC642	TOSJ	143-81
		207-52	2SC232	FCAJ	111-32	2SC399	♦TOSJ	90-3						167-43
2SC88	FCAJ	110-96	2SC233	FCAJ	111-33	2SC400	♦TOSJ	93-98	2SC522R	♦TOSJ	156-34	2SC642A	TOSJ	183-62
		207-17	2SC234	FCAJ	148-74			207-86				2SC643	TOSJ	143-82
2SC89	HITJ	66-83	2SC235	FCAJ	148-75	2SC401	SONY	83-96	2SC5230	♦TOSJ	156-35			167-44
		191-19	2SC236	FCAJ	148-76	2SC402	SONY	83-97				2SC643A	TOSJ	183-63
2SC89H	HITJ	191-11	2SC237	FCAJ	102-3	2SC402A	SONY	87-43	2SC523R	♦TOSJ	156-36	2SC644	♦MATJ	85-99
2SC90	HITJ	66-86	2SC238	FCAJ	108-102	2SC402B	SONY	96-81				2SC645	♦MATJ	84-94
		192-32	2SC239	FCAJ	102-4	2SC403	SONY	83-98	2SC524	TOSJ	156-37	2SC646	♦MATJ	165-77
2SC90H	HITJ	192-21	2SC240	NECJ	169-28	2SC403A	SONY	87-44	2SC5240	♦TOSJ	156-38	2SC647	♦MATJ	171-38
2SC91	HITJ	66-89	2SC241	NECJ	169-29	2SC403B	SONY	96-82				2SC648H	HITJ	83-71
		193-17	2SC242	NECJ	169-30	2SC404	SONY	83-99	2SC524R	♦TOSJ	156-39	2SC649	HITJ	89-93
2SC91H	HITJ	193-1	2SC243	NECJ	169-31	2SC407	SHEJ	173-100				2SC650	HITJ	89-94
2SC92	NECJ	159-80	2SC247	FCAJ	110-70			210-45	2SC525	TOSJ	156-40	2SC651	NECJ	112-34
2SC93	NECJ	159-81	2SC248	FCAJ	97-24	2SC408	SHEJ	171-32	2SC5250	♦TOSJ	156-41	2SC652	NECJ	112-32
2SC94	NECJ	159-82	2SC249	FCAJ	108-35			210-46				2SC654	NECJ	115-64
2SC97	NECJ	115-19	2SC250	FCAJ	83-42	2SC409	SHEJ	171-33	2SC525R	♦TOSJ	156-42	2SC655	MATJ	83-46
		207-39	2SC251	NECJ	91-8			210-47				2SC656	MATJ	83-32
2SC97A	NECJ	115-43	2SC251A	NECJ	91-9	2SC410	SHEJ	171-34	2SC526	♦MATJ	112-31	2SC657	SONY	86-40
		209-40	2SC252	NECJ	91-10			210-48	2SC535	HITJ	84-10	2SC663	MITJ	86-94
2SC98	MATJ	98-87	2SC253	NECJ	91-11	2SC411	SHEJ	171-35	2SC536	TSAJ	89-102	2SC664	HITJ	146-11
		208-99	2SC266	NECJ	83-106			210-49	2SC537	TSAJ	89-103	2SC665	HITJ	152-64
2SC99	MATJ	98-88	2SC267	NECJ	85-80	2SC412	SHEJ	171-36	2SC538	♦MATJ	94-74	2SC668	TSAJ	84-46
		208-100	2SC268	NECJ	85-88			210-50	2SC538A	♦MATJ	94-75	2SC674	TSAJ	84-47
2SC101A	TOSJ	164-70	2SC268A	NECJ	85-89	2SC423	TSAJ	109-6	2SC539	♦MATJ	94-76	2SC679	HITJ	162-24
2SC105	TOSJ	93-89	2SC269	NECJ	86-28			211-37	2SC540	NECJ	85-92	2SC680	HITJ	146-12
2SC108A	TSAJ	114-17			209-102	2SC425	TSAJ	109-7	2SC541	FCAJ	152-60	2SC680A	HITJ	146-13
2SC109A	TSAJ	114-18	2SC271	NECJ	84-11			211-38	2SC542	FCAJ	156-43	2SC681	HITJ	146-14
2SC116	HITJ	112-4	2SC272	NECJ	84-18	2SC429	NECJ	84-3	2SC543	FCAJ	159-55	2SC681A	HITJ	146-15
2SC116T	HITJ	112-3	2SC273	NECJ	107-109	2SC430	NECJ	84-5	2SC547	TOSJ	152-61	2SC682	HITJ	87-59
2SC128	MATJ	66-97	2SC281	HITJ	88-103	2SC431	SHEJ	180-85	2SC548	TOSJ	152-62	2SC683	HITJ	87-60
		192-50	2SC281H	HITJ	89-53			210-51	2SC549	TOSJ	156-44	2SC684	HITJ	91-64
2SC129	MATJ	66-99	2SC282	HITJ	101-95	2SC432	SHEJ	180-86	2SC550	TOSJ	156-45	2SC685	HITJ	146-16
		192-72	2SC283	HITJ	101-71			210-52	2SC551	TOSJ	159-83	2SC685A	HITJ	146-17
2SC130	FCAJ	148-73	2SC283H	HITJ	101-94	2SC433	SHEJ	180-87	2SC552	TOSJ	159-84	2SC686	NECJ	114-89
2SC131	FCAJ	101-102	2SC284	HITJ	101-96			210-53	2SC553	TOSJ	159-85	2SC687	♦MATJ	171-39
		208-101	2SC284H	HITJ	203-97	2SC434	SHEJ	180-88	2SC555	TOSJ	150-76	2SC689H	HITJ	94-77
2SC132	FCAJ	101-103	2SC285	FCAJ	108-104			210-54	2SC556	TOSJ	112-33			211-51
		208-102	2SC285A	FCAJ	108-105	2SC435	SHEJ	180-89	2SC558	♦TOSJ	167-42	2SC690	MITJ	162-25
2SC133	FCAJ	101-104	2SC287A	NECJ	86-59			210-55	2SC559	TOSJ	110-86	2SC691	MITJ	155-64
		208-103	2SC288A	NECJ	86-106	2SC436	SHEJ	180-90	2SC560	TOSJ	114-81	2SC692	MITJ	159-9
2SC134	FCAJ	101-105	2SC289	NECJ	84-17			210-56	2SC561	FCAJ	89-74	2SC693	TSAJ	83-100
		208-108	2SC291	SONY	146-2	2SC454	HITJ	89-95	2SC562	♦MATJ	84-90	2SC694	TSAJ	83-101
2SC135	FCAJ	101-106	2SC292	SONY	146-3	2SC454L	HITJ	89-96	2SC563	♦MATJ	84-95	2SC695	NECJ	83-72
		208-109	2SC293	SONY	146-4	2SC456	♦MATJ	112-21	2SC566	NECJ	115-63	2SC696	♦MATJ	111-103
2SC136	FCAJ	101-107	2SC297	SONY	160-40	2SC458	HITJ	89-97	2SC567	NECJ	91-25	2SC696A	♦MATJ	111-104
		208-110	2SC298	SONY	160-41	2SC458L	HITJ	89-98	2SC568	NECJ	91-75	2SC697	♦MATJ	156-49
2SC137	FCAJ	101-108	2SC299	SONY	160-42	2SC458LG	HITJ	89-99	2SC571	MATJ	146-6	2SC697A	♦MATJ	156-50
		208-104	2SC300	MITJ	104-48	2SC460	HITJ	89-100	2SC572	MATJ	146-7	2SC702	MITJ	155-65
2SC138	NECJ	115-52	2SC301	MITJ	104-49	2SC461	HITJ	89-101	2SC573	MATJ	146-8	2SC703	MITJ	160-43
2SC138A	NECJ	115-53	2SC302	MITJ	104-50	2SC463H	HITJ	86-55	2SC582	MATJ	154-31	2SC704	MITJ	163-33
2SC139	NECJ	115-54	2SC306	MITJ	114-78	2SC464	HITJ	90-43	2SC585	MATJ	159-86	2SC705	TSAJ	84-48
2SC150	HITJ	112-8			203-69	2SC465	HITJ	90-44	2SC586	MATJ	171-37	2SC707	HITJ	86-72
2SC150H	HITJ	208-88	2SC307	MITJ	114-92	2SC466	HITJ	88-11	2SC587	MATJ	96-47	2SC707H	HITJ	86-73
2SC150T	HITJ	112-12			205-102	2SC468H	HITJ	90-16				2SC708	TOSJ	112-26
2SC151	HITJ	112-11	2SC309	MITJ	114-61			207-97	2SC587A	SONY	96-48	2SC708A	HITJ	112-27
2SC151H	HITJ	208-89			202-42	2SC469	NECJ	83-94				2SC708AH	HITJ	198-88
2SC152	HITJ	112-13	2SC310	MITJ	114-62	2SC470	SONY	112-19	2SC588	SONY	110-77	2SC708H	HITJ	198-89
2SC152H	HITJ	208-90			202-43	2SC475	NECJ	85-90	2SC589	MATJ	112-24	2SC710	MITJ	89-75
2SC154	HITJ	112-28	2SC313	HITJ	91-63	2SC476	NECJ	85-91				2SC711	MITJ	89-38
2SC154C	HITJ	112-9	2SC316	MATJ	96-89	2SC477	MATJ	84-96	2SC590	MITJ	114-87	2SC711A	MITJ	89-39
2SC154H	HITJ	112-5	2SC317H	HITJ	101-72	2SC478	♦MATJ	97-42				2SC712	MITJ	89-40
2SC155	FCAJ	83-104			206-12	2SC481	TOSJ	184-18	2SC591	NECJ	159-87	2SC713	MITJ	89-5
2SC156	FCAJ	83-105	2SC318	SONY	97-25	2SC482	♦TOSJ	109-97	2SC592	FCAJ	158-29			201-25
2SC170	FCAJ	84-27	2SC318A	SONY	97-26	2SC484	♦TOSJ	112-76	2SC593	♦MATJ	87-16	2SC714	MITJ	93-64
2SC171	FCAJ	89-110	2SC319	NECJ	115-44	2SC485	♦TOSJ	112-77	2SC594	NECJ	112-25			207-19
2SC172	FCAJ	98-89	2SC320	NECJ	115-55	2SC486	♦TOSJ	112-78				2SC715	TSAJ	84-77
2SC172A	FCAJ	104-12	2SC321H	HITJ	103-89	2SC487	♦TOSJ	159-31	2SC595	NECJ	99-22			205-92
2SC174	FCAJ	89-51			210-60	2SC488	TOSJ	159-49				2SC716	TSAJ	84-78
2SC174A	FCAJ	89-68	2SC340H	HITJ	207-85	2SC488H	HITJ	207-98	2SC596	NECJ	115-56			205-93
2SC179	HITJ	66-84	2SC350	HITJ	89-54	2SC489	♦TOSJ	159-50	2SC597	FCAJ	152-63	2SC717	HITJ	91-65
		191-20	2SC350H	HITJ	89-55	2SC490	♦TOSJ	159-51				2SC727	FCAJ	101-61
2SC180	HITJ	66-87	2SC352	SONY	112-15	2SC491	♦TOSJ	159-52	2SC598	FCAJ	156-46	2SC728	FCAJ	101-62
		192-33	2SC352											



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
2SC783	♦TOSJ	161-4	2SC928	TSAJ	86-42	2SC1155	MITJ	157-77	2SD126H	HITJ	167-87	2SD258	SAKJ	183-82	
2SC784	♦TOSJ	84-7	2SC929	TSAJ	84-43			200-37			190-57			192-102	
2SC785	♦TOSJ	84-4	2SC930	TSAJ	84-44	2SC1156	MITJ	157-78	2SD127	SONY	67-109	2SD259	SAKJ	183-83	
2SC786	TOSJ	90-81	2SC931	TSAJ	146-30			200-38	2SD127A	SONY	67-110			192-103	
2SC787	TOSJ	86-98	2SC932	TSAJ	146-31	2SC1157	MITJ	157-79	2SD128	SONY	68-1	2SD261	NECJ	106-97	
2SC788	TOSJ	114-63	2SC933	TSAJ	90-61			200-39	2SD128A	SONY	68-2	2SH11	NECJ	220-107	
2SC791	♦TOSJ	159-33			211-39	2SC1164	TOSJ	111-17	2SD129	TOSJ	162-27	2SH12	NECJ	220-108	
2SC792	TOSJ	146-19	2SC934	TSAJ	90-62	2SC1166	TOSJ	110-54	2SD130	♦TOSJ	162-28	2SH13	♦TOSJ	220-109	
2SC793BL	♦TOSJ	168-82			211-40	2SC1170	TOSJ	146-48	2SD132	NECJ	175-103	2SH14	♦TOSJ	220-110	
2SC793R	♦TOSJ	168-83	2SC935	HITJ	146-32	2SC1170A	TOSJ	146-49	2SD136	FCAJ	154-35	2SH20	TOSJ	221-1	
2SC793Y	♦TOSJ	168-84	2SC936	HITJ	146-33	2SC1172	TOSJ	146-50	2SD137	FCAJ	154-36	2SH22	TOSJ	221-2	
2SC795	SONY	146-20	2SC937	HITJ	146-34	2SD12	MATJ	169-32	2SD141	NECJ	158-57	2SJ11	TOSJ	117-20	
2SC796	FCAJ	108-56	2SC939	NECJ	167-45	2SD13	MATJ	171-42	2SD142	NECJ	158-58	2SJ12	TOSJ	117-21	
2SC797	FCAJ	108-32	2SC940	NECJ	167-46	2SD14	MATJ	171-43	2SD146	FCAJ	159-92	2SJ15	FCAJ	117-60	
2SC798	FCAJ	111-65	2SC941	TOSJ	89-10	2SD15	SAKJ	171-44	2SD147	FCAJ	159-93	2SJ16	FCAJ	117-61	
2SC799	NECJ	156-51	2SC943	NECJ	96-93			190-102	2SD150	NECJ	159-35	2SK11	♦TOSJ	120-17	
2SC800	NECJ	84-8	2SC944	NECJ	93-65	2SD16	SAKJ	171-45	2SD151	NECJ	171-51	2SK12	♦TOSJ	120-18	
2SC802	FCAJ	116-3			205-54			190-103	2SD152	NECJ	158-59	2SK13	TOSJ	120-19	
		204-4	2SC947	♦MATJ	86-74	2SD17	SAKJ	171-46	2SD154	NECJ	159-94	2SK16H	HITJ	120-20	
		152-7	2SC948	♦MATJ	86-89			190-104	2SD155	NECJ	159-95	2SK19BL	♦TOSJ	120-71	
2SC803	FCAJ	200-98	2SC957	SONY	104-95	2SD18	SAKJ	171-47	2SD156	FCAJ	154-37	2SK19GR	♦TOSJ	120-72	
		86-107	2SC959	NECJ	157-80			190-105	2SD157	FCAJ	154-38	2SK19Y	♦TOSJ	120-73	
2SC805	SONY	112-14	2SC973	MITJ	154-34	2SD24	TSAJ	146-51	2SD158	FCAJ	162-29	2SK32	NECJ	122-93	
2SC806	SONY	146-21	2SC974	MITJ	155-66	2SD28	SONY	146-52	2SD159	FCAJ	162-30	2SK33	MITJ	120-38	
2SC806A	SONY	146-22	2SC975	MITJ	159-22	2SD29	SONY	146-53	2SD162	FCAJ	66-31	2SK34	MITJ	120-39	
2SC807	SONY	146-23	2SC976	MITJ	152-8	2SD30	TSAJ	68-11	2SD163	SAKJ	171-52	2SK37	NECJ	120-21	
2SC807A	SONY	146-24	2SC977	MITJ	157-55	2SD31	♦MATJ	66-92			190-106	2V205	SGSI	76-19	
2SC814	NECJ	105-14	2SC978	MITJ	159-34	2SD32	♦MATJ	66-93	2SD164	SAKJ	171-53			223-19	
2SC815	NECJ	92-107	2SC979	TOSJ	99-5	2SD33	FCAJ	67-12			190-107	2V435	SGSI	80-7	
2SC821	MATJ	146-25	2SC980	TOSJ	90-46	2SD34	FCAJ	68-4	2SD165	SAKJ	171-54			223-20	
2SC822	MATJ	146-26	2SC980A/G	TOSJ	90-47	2SD35	MATJ	66-53			190-108	2X2N3055	♦RADF	190-60	
2SC823	NECJ	111-16	2SC983	TOSJ	110-53	2SD36	MATJ	66-54	2SD166	SAKJ	171-55			216-5	
2SC824	NECJ	111-43	2SC985	NECJ	92-22	2SD37	FCAJ	67-13			190-109	3N34	♦ΔTHI	84-71	
2SC825	FCAJ	162-26	2SC985A	NECJ	100-19	2SD38	FCAJ	68-5	2SD167	FCAJ	67-93				
2SC826	FCAJ	111-56	2SC987	NECJ	87-7	2SD41	TOSJ	180-91	2SD171	SONY	175-104	3N35	THI	84-73	
2SC827	FCAJ	111-57	2SC987A	NECJ	92-31	2SD45	SONY	167-52	2SD172	FCAJ	171-56				
		194-66	2SC988	NECJ	87-3	2SD46	SONY	167-53	2SD173	FCAJ	171-57	JAN3N35	THI	84-70	
2SC828	♦MATJ	85-100	2SC988A	NECJ	87-5	2SD47	SONY	167-54	2SD174	FCAJ	165-79	3N45	♦SOD	133-11	
2SC828A	♦MATJ	85-101	2SC988B	NECJ	87-6	2SD48	FCAJ	159-91	2SD175	FCAJ	165-80			189-34	
2SC829	♦MATJ	86-8	2SC989	NECJ	87-4	2SD49	SONY	146-54	2SD176	FCAJ	171-58	3N46	♦SOD	133-12	
2SC830	HITJ	146-27			212-41	2SD50	FCAJ	165-78	2SD177	FCAJ	171-59			189-30	
2SC831	NECJ	128-14	2SC990	NECJ	161-7	2SD51	SONY	146-55	2SD178	MATJ	67-105	3N47	♦SOD	133-13	
		141-97	2SC991	TOSJ	111-8	2SD51A	SONY	167-55	2SD178A	MATJ	67-106	3N48	♦SOD	133-14	
2SC833	TOSJ	146-28	2SC992	TOSJ	111-9	2SD53	FCAJ	171-48	2SD180	NECJ	167-68	3N49	♦SOD	134-106	
2SC838	NECJ	93-93	2SC994	TOSJ	111-10	2SD54	FCAJ	175-102	2SD182	FCAJ	156-52	3N50	♦SOD	134-107	
2SC839	NECJ	93-94	2SC995	TOSJ	114-25	2SD55	TOSJ	180-92	2SD183	FCAJ	156-53	3N51	♦SOD	134-108	
2SC840	♦MATJ	161-5	2SC996	TOSJ	146-35	2SD55A	TOSJ	170-61	2SD184	FCAJ	161-23	3N52	♦SOD	134-109	
2SC840A	♦MATJ	161-6	2SC997	TOSJ	86-63	2SD56	SONY	146-56			190-87	3N62	TEC	221-109	
2SC841H	HITJ	204-31	2SC998	TOSJ	111-6	2SD57	MITJ	161-10	2SD185	FCAJ	161-24	3N63	TEC	221-110	
2SC844	FCAJ	150-6	2SC999	TOSJ	183-64	2SD58	MITJ	161-11			190-88	3N64	TEC	222-1	
2SC845	FCAJ	150-7	2SC999A	TOSJ	183-65	2SD59	MITJ	167-56	2SD186	TSAJ	67-94	3N65	TEC	222-2	
2SC847	FCAJ	107-73	2SC1001	TOSJ	146-36	2SD60	MITJ	167-57	2SD187	TSAJ	67-95	3N66	TEC	222-3	
2SC848	FCAJ	107-57	2SC1002	TOSJ	146-37	2SD61	TSAJ	146-57	2SD188	NECJ	168-85	3N67	TEC	222-4	
2SC849	FCAJ	107-58	2SC1003	TOSJ	146-38	2SD68	TSAJ	146-58	2SD189	♦MATJ	171-60	3N68	TEC	222-5	
		199-96	2SC1004	TOSJ	167-47	2SD72	TSAJ	68-21	2SD189A	♦MATJ	171-61	3N68A	TEC	222-6	
2SC850	FCAJ	107-74	2SC1004A	TOSJ	183-66	2SD73	NECJ	167-58	2SD195	FCAJ	67-16	3N69	TEC	222-7	
		200-26	2SC1005	TSAJ	183-67	2SD74	NECJ	167-59	2SD196	FCAJ	174-25	3N70	CRY	222-8	
2SC851	NECJ	168-34	2SC1005A	TSAJ	183-68	2SD75	HITJ	67-34	2SD196A	FCAJ	175-105				
2SC853	NECJ	105-15	2SC1011	MITJ	155-67	2SD75A	HITJ	67-35	2SD197	FCAJ	174-26	3N71	♦ΔSOD	83-90	
2SC854	FCAJ	149-12	2SC1012A	♦MATJ	149-51	2SD75AH	HITJ	67-25	2SD197A	FCAJ	175-106			222-9	
2SC855	FCAJ	149-50	2SC1013	MITJ	155-44	2SD75H	HITJ	67-26	2SD198	♦MATJ	165-81	3N72	CRY	♦ΔSOD	83-91
2SC856	HITJ	97-31			200-35	2SD77	HITJ	67-28	2SD199	♦MATJ	165-82	3N73	CRY	♦ΔSOD	83-92
2SC857H	HITJ	198-90	2SC1014	MITJ	155-45	2SD77A	HITJ	67-29	2SD200	♦MATJ	167-69	3N73	CRY	♦ΔSOD	83-92
2SC858	TSAJ	83-102			200-36	2SD77AH	HITJ	67-30	2SD201	SAKJ	167-70	3N74	♦ΔTHI	95-22	
2SC859	TSAJ	83-103	2SC1015	MITJ	163-13	2SD77H	HITJ	67-31			192-93	3N74	CRY	TEC	222-12
2SC860	TSAJ	90-108	2SC1017	MITJ	152-66	2SD78	NECJ	147-83	2SD202	SAKJ	167-71				
2SC864	♦TOSJ	90-35	2SC1018	MITJ	152-67	2SD79	NECJ	158-56			192-94				
2SC866	SONY	160-82	2SC1021	MITJ	167-48	2SD80	SAKJ	167-60	2SD203	SAKJ	167-60	JAN3N74	none	95-23	
2SC868	MITJ	89-41	2SC1022	MITJ	167-49			191-37			192-95			222-13	
		203-36	2SC1024	TSAJ	146-39	2SD81	SAKJ	167-61	2SD211	SAKJ	192-107	3N75	♦ΔTHI	95-24	
2SC869	MITJ	89-42	2SC1025	TSAJ	146-40			191-38			192-96			222-14	
		203-37	2SC1033	♦MATJ	96-94	2SD82	SAKJ	167-62	2SD212	SAKJ	175-108				
2SC870	MITJ	89-43	2SC1033A	♦MATJ	96-95			191-39			192-97	JAN3N75	CRY	95-25	
2SC871	MITJ	89-44	2SC1034	SONY	146-41	2SD83	SAKJ	167-63	2SD213	SAKJ	175-109			222-15	
2SC875	TSAJ	108-36	2SC1035	TSAJ	86-43	2SD84	SAKJ	191-40	2SD214	SAKJ	192-98	3N76	CRY	95-26	
2SC876	TSAJ	108-37	2SC1036	TSAJ	86-44			191-41			192-99			222-16	
2SC881	NECJ	105-16	2SC1038	NECJ	184-57	2SD88	SONY	146-59	2SD217	NECJ	166-95	JAN3N76	THI	95-27	
2SC890	NECJ	151-37	2SC1039	NECJ	184-58	2SD88A	SONY	146-60	2SD218	NECJ					

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
3N103	ΔCRY	222-33	3N165	ΔSODI	118-44	12C102	GESY	222-67	153-28	WESY	178-84	182T2C	ESMF	169-43
	SPR				216-7		SSE	222-68			186-109		MISI	
3N104	ΔCRY	222-34	3N166	ΔSODI	118-45		SSE	222-69	153-30	WESY	178-85	183T2A	ESMF	169-44
	SPR				185-106		SSE	222-70			186-110		MISI	
3N105	ΔCRY	222-35	3N167	ΔSIX	117-74		SSE	222-71	154-04	WESY	178-86	183T2B	ESMF	169-45
	SPR				185-40		SSE	222-72			187-1		MISI	
3N106	ΔCRY	222-36	3N168	ΔSIX	117-75		SSE	222-73	154-05	WESY	178-87	183T2C	ESMF	169-46
	SPR				185-41	71T2	ESMF	148-80	154-06	WESY	178-88		MISI	
3N107	ΔCRY	222-37	3N169	ΔMOTA	126-43		MISI				187-2	184T2A	ESMF	169-47
	SPR				185-61	72T2	ESMF	148-81	154-07	WESY	178-89		MISI	
3N108	ΔTII	222-38	3N170	ΔMOTA	126-44		MISI				178-90	184T2B	ESMF	169-48
	SPR				185-62	73T2	ESMF	148-82	154-08	WESY	178-91		MISI	
	TIIF				126-45	74T2	ESMF	148-83	154-09	WESY	178-92	184T2C	ESMF	167-73
	TII				185-63		MISI				178-93		MISI	
JAN3N108	CRY	73-30	3N171	ΔMOTA	118-108		MISI		154-10	WESY	178-94	185T2A	ESMF	169-49
	TIIF	222-39	3N172	ΔSODI	185-95		MISI				187-4		MISI	
	TII	222-40	3N173	ΔSODI	185-95	90T2	ESMF	87-98	154-12	WESY	178-95	185T2B	ESMF	169-50
3N109	ΔTII	222-41	3N174	ΔTII	118-105	ESMF	MISI				187-3		MISI	
	SPR				185-96	100T2	ESMF	146-62	154-14	WESY	178-94	185T2C	ESMF	169-51
	TIIF				186-24		MISI				187-6		MISI	
	TII				121-19	104T2	ESMF	146-63	154-16	WESY	178-95		MISI	
3N110	ΔCRY	222-42	3N175	ΔGIC	185-107		MISI				187-7	528BSY	VALG	120-42
	TIIF				121-20	108T2	ESMF	176-1	154-18	WESY	178-96		WESY	183-84
	TII				186-5	109T2	ESMF	176-2			187-8		WESY	183-85
3N111	ΔCRY	222-43	3N176	ΔGIC	117-23	111T2	ESMF	112-43	154-20	WESY	178-97	1401-0205	WESY	183-86
	TIIF				186-5		MISI	185-4			187-9	1401-0210	WESY	183-87
	TII				186-14	151-04	WESY	179-83	154-22	WESY	178-98	1401-0215	WESY	183-88
3N114	ΔCRY	222-44	3N177	ΔGIC	117-22		WESY	179-84	154-24	WESY	178-99	1401-0220	WESY	183-89
	SPR				117-23	151-05	WESY	179-85			187-10	1401-0225	WESY	183-90
	TIIF				117-24	151-06	WESY	188-69	154-26	WESY	178-100	1401-0405	WESY	183-91
	TII				185-108	151-07	WESY	179-86			187-11	1401-0410	WESY	183-92
3N115	ΔCRY	222-45	3N178	ΔGIC	118-47	151-08	WESY	179-87	154-28	WESY	178-12	1401-0415	WESY	183-93
	SPR				186-6		WESY	188-70			187-13		WESY	190-8
	TIIF				118-48	151-09	WESY	179-88	154-30	WESY	178-101	1401-0420	WESY	183-94
	TII				186-15	151-10	WESY	179-89			187-14	1401-0425	WESY	190-9
3N116	ΔCRY	222-46	3N179	ΔGIC	118-49		WESY	188-71	163-04	WESY	181-94		WESY	183-95
	SPR				186-23	151-12	WESY	179-90			181-93	1401-0605	WESY	183-96
	TIIF				118-50		WESY	188-72	163-05	WESY	181-95	1401-0610	WESY	183-97
	TII				186-25	151-14	WESY	179-91	163-06	WESY	181-96	1401-0615	WESY	183-98
3N117	ΔCRY	222-47	3N180	ΔGIC	118-51		WESY	188-73			187-44	1401-0620	WESY	183-99
	SPR				118-51	151-16	WESY	179-92	163-07	WESY	181-97		WESY	190-11
	TIIF				124-56		WESY	188-74	163-08	WESY	181-98	1401-0625	WESY	183-100
	TII				118-52	151-18	WESY	179-93			187-45		WESY	190-12
3N118	ΔCRY	222-48	3N181	ΔGIC	216-8		WESY	188-75	163-09	WESY	181-99	1401-0630	WESY	183-101
	SPR				118-53	151-20	WESY	179-94	163-10	WESY	181-100		WESY	190-13
	TIIF				223-21	151-22	WESY	179-95			187-46	1401-0805	WESY	183-102
	TII				118-54		WESY	179-96	163-12	WESY	181-101	1401-0810	WESY	183-103
3N119	ΔCRY	222-49	3N182	ΔGIC	223-22	151-24	WESY	179-97			187-47	1401-0815	WESY	183-104
	SPR				124-57	151-26	WESY	179-98	163-16	WESY	181-102	1401-0820	WESY	183-105
	TIIF				124-107	151-28	WESY	188-79			187-48	1401-0825	WESY	190-14
	TII				124-108	151-30	WESY	179-98	163-18	WESY	181-104		WESY	183-106
3N120	ΔCRY	222-50	3N183	ΔGIC	118-55		WESY	188-80			187-50	1401-0830	WESY	190-15
	SPR				223-22	152-05	WESY	179-100	163-24	WESY	181-107	1401-1005	WESY	183-108
	TIIF				124-52	152-06	WESY	179-101			187-51	1401-1010	WESY	183-109
	TII				124-109	152-08	WESY	188-81	163-22	WESY	181-106	1401-1015	WESY	183-110
3N121	ΔCRY	222-51	3N184	ΔGIC	118-55		WESY	188-82			187-51	1401-1020	WESY	184-1
	SPR				186-75	152-05	WESY	179-100	163-24	WESY	181-107	1401-1025	WESY	184-2
	TIIF				120-23	152-06	WESY	179-101			187-52	1401-1030	WESY	184-3
	TII				120-24	152-07	WESY	188-83	163-26	WESY	181-108	1401-1035	WESY	184-4
3N122	ΔCRY	222-52	3N185	ΔGIC	120-24	152-08	WESY	179-102			187-53	1401-1040	WESY	184-5
	SPR				120-74	152-09	WESY	179-103	163-28	WESY	181-109	1401-1045	WESY	184-6
	TIIF				120-75	152-10	WESY	188-84			187-54	1401-1050	WESY	184-7
	TII				120-76	152-11	WESY	179-104	163-30	WESY	181-110	1401-1055	WESY	184-8
3N123	ΔCRY	222-53	3N186	ΔGIC	120-77	152-12	WESY	179-105			187-55	1401-1060	WESY	184-9
	SPR				120-61	152-13	WESY	188-85	164-04	WESY	182-1	1401-1065	WESY	184-10
	TIIF				120-77	152-14	WESY	179-106			187-56	1401-1070	WESY	184-11
	TII				121-32	152-15	WESY	188-86	164-05	WESY	182-2	1401-1075	WESY	184-12
3N124	ΔCRY	222-54	3N187	ΔGIC	152-68	152-16	WESY	179-107	164-06	WESY	182-3	1401-1080	WESY	184-13
	SPR				170-55	152-17	WESY	188-87			187-57	1401-1085	WESY	184-14
	TIIF				161-92	152-18	WESY	179-108	164-07	WESY	182-4	1401-1090	WESY	184-15
	TII				166-97	152-19	WESY	188-88	164-08	WESY	182-5	1401-1095	WESY	184-16
3N125	ΔCRY	222-55	3N188	ΔGIC	169-33	152-20	WESY	179-109			182-6	1401-1100	WESY	184-17
	SPR				169-34	152-21	WESY	188-89	164-09	WESY	182-7	1401-1105	WESY	184-18
	TIIF				169-34	152-22	WESY	179-110	164-10	WESY	182-8	1401-1110	WESY	184-19
	TII				152-70	152-23	WESY	188-90			187-59	1401-1115	WESY	184-20
3N126	ΔCRY	222-56	3N189	ΔGIC	152-69	152-24	WESY	180-1	164-12	WESY	182-8	1401-1120	WESY	184-21
	SPR				159-36	152-25	WESY	180-2	164-14	WESY	182-9	1401-1125	WESY	184-22
	TIIF				163-79	152-26	WESY	180-3			187-60	1401-1130	WESY	184-23
	TII				152-70	152-27	WESY	180-4	164-16	WESY	182-9	1401-1135	WESY	184-24
3N127	ΔCRY	222-57	3N190	ΔGIC	155-104	152-28	WESY	180-5			187-61	1401-1140	WESY	184-25
	SPR				156-54	152-29	WESY	180-6	164-18	WESY	182-10	1561-0403	WESY	180-69
	TIIF				159-96	152-30	WESY	180-7			187-62	1561-0404	WESY	180-70
	TII				150-16	153-04	WESY	180-8	164-20	WESY	182-11	1561-0405	WESY	177-98
JAN3N127	CRY	117-46	3N191	ΔGIC	152-71	153-05	WESY	180-9			187-63	1561-0406	WESY	177-99
	TIIF	216-6												

# 1. TYPE No. CROSS INDEX

				IN TYPE NUMBER SEQUENCE							
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
1571-1025	WESY	184-25	1723-1005	WESY	174-70	1763-1010	WESY	174-88	2849-1	MFRS	Pg&Line
1571-1220	WESY	184-26							(cont.)	156-55	40309
1571-1225	WESY	184-27	1723-1010	WESY	174-71	1763-1020	WESY	174-87		198-47	40310
1571-1425	WESY	184-28								115-86	40311
1571-1620	WESY	184-29	1723-1205	WESY	174-72	1763-1030	WESY	174-88	2849-2	UNI	
1571-1625	WESY	184-30								165-99	40311
1714-0402	WESY	163-87	1723-1210	WESY	174-73	1763-1210	WESY	174-89		198-48	40311
										158-57	40312
1714-0405	WESY	163-88	1723-1405	WESY	174-74	1763-1220	WESY	174-90	2849-3	UNI	
										196-49	40312
1714-0602	WESY	163-89	1723-1410	WESY	174-75	1763-1230	WESY	174-91		158-87	40312
										196-49	40313
1714-0605	WESY	163-90	1723-1605	WESY	174-76	1763-1410	WESY	174-92	2850-1	UNI	
										157-56	40313
1714-0802	WESY	163-91	1723-1610	WESY	174-77	1763-1420	WESY	174-93		197-80	40314
										185-11	40314
1714-0805	WESY	163-92	1723-1805	WESY	174-78	1763-1430	WESY	174-94	2850-2	UNI	
										197-81	40315
1714-1002	WESY	163-93	1723-1810	WESY	174-79	1763-1610	WESY	174-95		157-57	40315
										197-82	40316
1714-1005	WESY	163-94	1743-0610	WESY	174-80	1763-1620	WESY	174-96	2851-1	UNI	
										157-58	40316
1714-1202	WESY	163-95	1743-0630	WESY	174-81	1763-1630	WESY	174-97		197-83	40317
										185-12	40317
1714-1205	WESY	163-96	1743-0820	WESY	174-82	1763-1640	WESY	174-98	2851-2	UNI	
										197-84	40318
1714-1402	WESY	163-97	1743-1010	WESY	174-83	1763-1810	WESY	174-99		157-59	40319
										197-85	40319
1714-1405	WESY	163-98	1743-1030	WESY	174-84	1763-1820	WESY	174-100	2852-1	UNI	
										157-60	40320
1714-1602	WESY	163-99	1743-1220	WESY	174-85	1763-1830	WESY	174-101		196-6	40321
										165-13	40321
1714-1605	WESY	163-100	1743-1410	WESY	174-86	1763-1840	WESY	174-102	2852-2	UNI	
										196-7	40322
1714-1802	WESY	163-101	1743-1430	WESY	174-87	1763-1850	WESY	174-103		157-61	40322
										196-8	40323
1714-1805	WESY	163-102	1743-1620	WESY	174-88	1763-1860	WESY	174-104	2853-1	UNI	
										157-62	40323
1716-0402	WESY	169-52	1743-1810	WESY	174-89	1763-1870	WESY	174-105		197-86	40324
										165-14	40324
1716-0405	WESY	169-53	1743-1820	WESY	174-90	1763-1880	WESY	174-106	2853-2	UNI	
										197-87	40325
1716-0602	WESY	169-54	1743-1830	WESY	174-91	1763-1890	WESY	174-107		157-63	40325
										197-88	40326
1716-0605	WESY	169-55	1748-0610	WESY	174-92	1763-1900	WESY	174-108	2854-1	UNI	
										197-89	40326
1716-0802	WESY	169-56	1748-0630	WESY	174-93	1763-1910	WESY	174-109		199-23	40327
										165-15	40327
1716-0805	WESY	169-57	1748-0810	WESY	174-94	1763-1920	WESY	174-110	2854-2	UNI	
										199-24	40328
1716-1002	WESY	169-58	1748-0820	WESY	174-95	1763-1930	WESY	174-111		157-65	40329
										199-25	40330
1716-1005	WESY	169-59	1748-0830	WESY	174-96	1763-1940	WESY	174-112	2855-1	UNI	
										157-66	40341
1716-1202	WESY	169-60	1748-1010	WESY	174-97	1763-1950	WESY	174-113		197-89	40341
										165-16	40346
1716-1205	WESY	169-61	1748-1030	WESY	174-98	1763-1960	WESY	174-114	2855-2	UNI	
										197-90	40346
1716-1402	WESY	169-62	1748-1210	WESY	174-99	1763-1970	WESY	174-115		157-67	40346
										197-91	40346V1
1716-1405	WESY	169-63	1748-1220	WESY	174-100	1763-1980	WESY	174-116	2856-1	UNI	
										157-68	40346V2
1716-1602	WESY	169-64	1748-1230	WESY	174-101	1763-1990	WESY	174-117		196-9	40347
										165-17	40347
1716-1605	WESY	169-65	1748-1410	WESY	174-102	1763-2000	WESY	174-118	2856-2	UNI	
										196-10	40347V1
1716-1802	WESY	169-66	1748-1430	WESY	174-103	1763-2010	WESY	174-119		157-69	40347V2
										196-11	40348
1716-1805	WESY	169-67	1748-1610	WESY	174-104	1763-2020	WESY	174-120	2856-3	UNI	
										148-36	40348V1
1718-0402	WESY	165-83	1748-1620	WESY	174-105	1763-2030	WESY	174-121		131-27	40348V1
										131-28	40348V2
1718-0405	WESY	165-84	1748-1630	WESY	174-106	1763-2040	WESY	174-122	5552-4	UNI	
										107-2	40349
1718-0602	WESY	165-85	1748-1810	WESY	174-107	1763-2050	WESY	174-123	40022	RCA	
									40050	RCA	
1718-0605	WESY	165-86	1748-1820	WESY	174-108	1763-2060	WESY	174-124	40051	RCA	
									40080	RCA	
1718-0802	WESY	165-87	1748-1830	WESY	174-109	1763-2070	WESY	174-125	SCA		40349V1
									SCA		40349V2
1718-0805	WESY	165-88	1756-0640	WESY	174-110	1763-2080	WESY	174-126	40082	RCA	
									40084	RCA	
1718-1002	WESY	165-89	1756-0660	WESY	174-111	1763-2090	WESY	174-127	40084	RCA	
									40084	RCA	
1718-1005	WESY	165-90	1756-0840	WESY	174-112	1763-2100	WESY	174-128	40231	RCA	
									40232	RCA	
1718-1202	WESY	165-91	1756-0860	WESY	174-113	1763-2110	WESY	174-129	40233	RCA	
									40234	RCA	
1718-1205	WESY	165-92	1756-1040	WESY	174-114	1763-2120	WESY	174-130	40235	RCA	
									40236	RCA	
1718-1402	WESY	165-93	1756-1060	WESY	174-115	1763-2130	WESY	174-131	40237	RCA	
									40238	RCA	
1718-1405	WESY	165-94	1756-1240	WESY	174-116	1763-2140	WESY	174-132	40239	RCA	
									40240	RCA	
1718-1602	WESY	165-95	1756-1260	WESY	174-117	1763-2150	WESY	174-133	40241	RCA	
									40242	RCA	
1718-1605	WESY	165-96	1756-1440	WESY	174-118	1763-2160	WESY	174-134	40243	RCA	
									40244	RCA	
1718-1802	WESY	165-97	1756-1460	WESY	174-119	1763-2170	WESY	174-135	40245	RCA	
									40246	RCA	
1718-1805	WESY	165-98	1756-1640	WESY	174-120	1763-2180	WESY	174-136	40250	KER	
									40250	KER	
1723-0405	WESY	174-64	1756-1660	WESY	174-121	1763-2190	WESY	174-137	PIR		40385
									PIR		40389
1723-0410	WESY	174-65	1756-1840	WESY	174-122	1763-2200	WESY	174-138	SCA		40390
									SCA		40391
1723-0605	WESY	174-66	1756-1860	WESY	174-123	1763-2210	WESY	174-139	40250V1	RCA	
									40251	RCA	
1723-0610	WESY	174-67	1763-0610	WESY	174-80	1763-2220	WESY	174-140	ATEI		40392

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
40422	SCA	158-60	A5T3645	TIIB	76-110	A604	PHIC	216-18	AC171	TFKG	56-44	AD161/AD162		
40424	SCA	158-61		TIIB	204-76	A605	PHIC	216-19	AC172	BELI	67-96	(cont)	MINA	
40426	SCA	158-62	A5T3903	TIIB	103-35	A606	PHIC	216-20		PHIN			PHIC	
40439	RCA	131-32		TIIB	206-92	A640L	APX	88-82		VALG			MULB	
40440	RCA	131-33	A5T3904	TIIB	103-90	A640S	APX	216-21	AC175	TFKG	68-7	AD162	PHIN	APX
40446	RCA	155-69		TIIB	207-17			88-83	AC176	MULB	68-20			SHWG
40457	SCA	107-82	A5T3905	TIIB	77-1	A641L	APX	216-22		SHWG			MINA	MULB
40458	RCA	108-42		TIIB	204-77	A641S	APX	88-84	AC176K	SHWG	127-46		PHIC	PHIN
	SCA	205-55	A5T3906	TIIB	77-2			216-23	AC178	TFKG	64-50		RADF	SHWG
	RCA	149-54		TIIB	188-98	A642L	APX	88-85	AC179	TFKG	68-8		TFKG	VALG
40459	RCA	205-56	A5T5058	TIIB	112-81	A642S	APX	216-24	AC180	ESMF	64-82	AD163		SHWG
	RCA	131-34		TIIB	112-82	A643L	APX	88-86		MISI		AD164		TFKG
40462	RCA	165-47	A5T5059	TIIB	112-82	A643S	APX	216-25	AC180K	ESMF	127-51	AD165		TFKG
40464	SCA	165-48		TIIB		A644L	APX	88-87		MISI		AD262		ATEI
40465	SCA	165-49	A130	PHIC	102-50	A644S	APX	216-26	AC181	ESMF	68-12	AD263		ATEI
40466	SCA	165-49	A132	PHIC	102-51	A645L	APX	88-88		MISI		ADY26		MULB
40467A	RCA	125-55	A133	PHIC	98-24	A645S	APX	216-27	AC181K	ESMF	138-3	ADY27		PHIN
40468A	RCA	125-55	A135	PHIC	98-25	A649L	APX	88-89		MISI			PHIC	PHIN
40491	SCA	158-63	A136	PHIC	98-26	A705	APX	167-79	AC182	ESMF	62-104	ADY27		VALG
40500	SCA	107-83	A137	PHIC	98-27	A747A	APX	93-99	AC183	MISI	67-97	ADY30		RADF
40513	RCA	171-65	A138	PHIC	98-28	A747B	APX	93-100	AC184	ESMF	63-69	ADY31		RADF
40514	RCA	171-66	A139	PHIC	98-29	A748B	APX	93-101	AC185	MISI	67-107	ADY32		RADF
40519	RCA	98-22	A141	PHIC	83-16	A748C	APX	93-102	AC186	ESMF	67-107	ADZ11		MULB
40537	RCA	139-43	A142	PHIC	83-17	A749B	APX	93-103	AC187	MISI	67-107		PHIC	PHIN
	SCA		A142	PHIC	83-18	A749C	APX	93-104	AC187/01	ESMF	67-107		RADF	PHIN
40538	RCA	139-44	A143	PHIC	83-18	A777	APX	110-55	AC187/01/AC188/01	ESMF	67-107		PHIC	PHIN
	SCA		A157A	PHIC	88-70	A778	APX	110-56		MISI	67-107		RADF	PHIN
40539	RCA	151-110	A157B	PHIC	88-70	A779	APX	110-57	AC187K	ESMF	67-107		PHIC	PHIN
	SCA		A158B	PHIC	88-88	A1109	APX	88-57	SHWG	TFKG	67-102	ADZ12		MULB
40542	RCA	171-67	A158C	PHIC	88-88	A1170	APX	90-17	AC187K-AC188K	TFKG	67-102		PHIC	PHIN
40543	RCA	171-68	A159B	PHIC	88-33	A1341	APX	88-58	AC188	APX	68-22		RADF	PHIN
40544	RCA	152-81	A159C	PHIC	88-33	A1480	APX	88-58	AC188	APX	68-22		PHIC	PHIN
	SCA		A160	PHIC	88-35	AC107	PHIC	216-35		ATEI		AF102		MULB
40559A	RCA	125-56	A161	PHIC	69-7	A1480	PHIC	55-49		MINA		AF106		PHIN
40577	RCA	108-83	A162	PHIC	69-8	A1480	PHIC	55-49		PHIN				SHWG
40578	KER	151-54	A177	APX	69-9	A1480	PHIC	55-49		PHIC				SHWG
	RCA		A178A	APX	73-92	A1480	PHIC	55-49		PHIC				SHWG
40581	RCA	151-55	A178B	APX	73-92	A1480	PHIC	55-49		PHIC				SHWG
40582	RCA	155-70	A179A	APX	73-95	A1480	PHIC	55-49		PHIC				SHWG
40594	RCA	155-71	A179B	APX	73-96	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A203	APX	147-29	A1480	PHIC	55-49		PHIC				SHWG
40595	RCA	140-91	A208	APX	157-81	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A209	APX	152-1	A1480	PHIC	55-49		PHIC				SHWG
40600	RCA	125-79	A210	APX	147-7	A1480	PHIC	55-49		PHIC				SHWG
40601	RCA	125-80	A211	APX	147-8	A1480	PHIC	55-49		PHIC				SHWG
40602	RCA	125-81	A214	APX	106-71	A1480	PHIC	55-49		PHIC				SHWG
40603	RCA	125-82	A230	APX	115-69	A1480	PHIC	55-49		PHIC				SHWG
40604	RCA	125-83	A235	APX	162-45	A1480	PHIC	55-49		PHIC				SHWG
40605	RCA	152-82	A249	APX	147-87	A1480	PHIC	55-49		PHIC				SHWG
40608	RCA	149-55	A253	APX	158-30	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A270	APX	153-98	A1480	PHIC	55-49		PHIC				SHWG
40611	RCA	151-56	A271	APX	158-37	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A272	APX	161-30	A1480	PHIC	55-49		PHIC				SHWG
40612	RCA	128-19	A274	APX	153-99	A1480	PHIC	55-49		PHIC				SHWG
40613	RCA	164-63	A275	APX	158-38	A1480	PHIC	55-49		PHIC				SHWG
40616	RCA	151-57	A276	APX	161-31	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A298	APX	147-88	A1480	PHIC	55-49		PHIC				SHWG
40618	RCA	164-64	A301	PHIC	96-37	A1480	PHIC	55-49		PHIC				SHWG
40621	RCA	164-65	A306	PHIC	102-78	A1480	PHIC	55-49		PHIC				SHWG
40622	RCA	164-66	A307	PHIC	102-79	A1480	PHIC	55-49		PHIC				SHWG
40623	RCA	128-20	A310	PHIC	96-38	A1480	PHIC	55-49		PHIC				SHWG
40624	RCA	167-76	A311	PHIC	96-5	A1480	PHIC	55-49		PHIC				SHWG
40625	RCA	149-56	A411	APX	56-23	A1480	PHIC	55-49		PHIC				SHWG
40626	RCA	128-21	A417	APX	84-102	A1480	PHIC	55-49		PHIC				SHWG
40627	RCA	167-77	A418	APX	84-97	A1480	PHIC	55-49		PHIC				SHWG
40628	RCA	149-57	A419	APX	84-98	A1480	PHIC	55-49		PHIC				SHWG
40629	RCA	164-67	A420	APX	84-99	A1480	PHIC	55-49		PHIC				SHWG
40630	RCA	164-68	A427	APX	86-99	A1480	PHIC	55-49		PHIC				SHWG
40631	RCA	164-69	A430	APX	94-51	A1480	PHIC	55-49		PHIC				SHWG
40632	RCA	167-78	A467	APX	84-91	A1480	PHIC	55-49		PHIC				SHWG
40633	KER	171-69	A473	APX	94-64	A1480	PHIC	55-49		PHIC				SHWG
	RCA		A480	APX	86-82	A1480	PHIC	55-49		PHIC				SHWG
40634	RCA	140-22	A481	APX	86-64	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A482	APX	86-76	A1480	PHIC	55-49		PHIC				SHWG
40635	RCA	151-58	A483	APX	86-90	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A484	APX	86-77	A1480	PHIC	55-49		PHIC				SHWG
40636	KER	171-70	A485	APX	91-66	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A486	APX	86-100	A1480	PHIC	55-49		PHIC				SHWG
40637	RCA	98-23	A490	APX	91-28	A1480	PHIC	55-49		PHIC				SHWG
40665	RCA	159-57	A492	APX	90-109	A1480	PHIC	55-49		PHIC				SHWG
40666	PIR	155-109	A494	APX	87-13	A1480	PHIC	55-49		PHIC				SHWG
	RCA		A495	APX	87-8	A1480	PHIC	55-49		PHIC				SHWG
40673	RCA	124-58	A496	APX	94-6	A1480	PHIC	55-49		PHIC				SHWG
40675	RCA	171-71	A497	APX	94-24	A1480	PHIC	55-49		PHIC				SHWG
	SCA		A569	PHIC	222-74	A1480	PHIC	55-49		PHIC				SHWG
A3T918	TIIB	92-89		RADF		A1480	PHIC	55-49		PHIC				SHWG
A3T929	TIIB	92-73	A570	PHIC	222-75	A1480	PHIC	55-49		PHIC				SHWG
A3T930	TIIB	92-74		RADF		A1480	PHIC	55-49		PHIC				SHWG
A3T2221	TIIB	92-81	A580-0402	WESY	178-6	A1480	PHIC	55-49		PHIC				SHWG
			A580-0403	WESY	178-7	A1480	PHIC	55-49		PHIC				SHWG
			A580-0405	WESY	178-8	A1480	PHIC	55-49		PHIC				SHWG
A3T2222	TIIB	206-51	A580											

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
AF239 (cont)	ATEI		AT151	AVA	106-54	AT446	SERA	111-86	B3575	SOD	156-73	B143024	SOD	156-99
♦ MOTA	PHIC		AT52	AVA	106-55	AT447	SERA	111-83	B3576	SOD	156-74	B143025	SOD	156-100
♦ PHIN	♦ RADF		AT101	AVA	92-26	AT448	SERA	111-84	B3577	SOD	165-109	B143026	SOD	156-101
♦ SHWG	♦ VALG		AT101A	AVA	92-27	AT450	SERA	70-68	B3578	SOD	165-110	B143027	SOD	156-102
AF239S	ATEI	54-85	AT140	AVA	92-28	AT451	SERA	70-69	B3579	SOD	166-1	B143028	SOD	156-103
♦ PHIN	♦ SHWG		AT141	AVA	92-29	AT452	SERA	70-70	B3580	SOD	166-2	B143029	SOD	156-104
	♦ VALG		AT201A	AVA	106-56	AT453	SERA	70-71	B3581	SOD	166-3	B144000	KER	166-7
AF240	ATEI	54-83	AT220	AVA	112-37	AT454	SERA	72-24	B3582	SOD	166-4		SOD	
♦ PHIC	♦ SHWG		AT240	AVA	106-57	AT455	SERA	72-25	B3583	SOD	166-5	B144001	KER	166-8
♦ RADF	♦ VALG		AT240A	AVA	106-58	AT460	SERA	81-99	B3584	SOD	166-6		SOD	
	♦ VALG		AT241	AVA	106-59	AT461	SERA	81-100	B3585	SOD	162-46	B144002	KER	166-9
AF251	♦ TFKG	56-51	AT242	AVA	106-60	AT462	SERA	81-101	B3586	SOD	162-47		SOD	
AF252	♦ TFKG	56-50	AT301	AVA	148-59	AT463	SERA	81-102	B3587	SOD	162-48	B144003	KER	166-10
AF253	♦ TFKG	56-49	AT318	SERA	93-76	AT464	SERA	81-103	B3588	SOD	162-49		SOD	
AF256	♦ TFKG	56-47	AT319	SERA	93-77	AT465	SERA	81-104	B3589	SOD	162-50	B144004	KER	166-11
AF267	♦ VALG	54-87	AT320	AVA	148-60	AT466	SERA	81-105	B3590	SOD	162-51		SOD	
AF279	♦ SHWG	54-88	AT321	SERA	93-78	AT467	SERA	81-106	B3591	SOD	162-52	B144005	KER	166-12
AF280	♦ SHWG	54-74	AT322	SERA	93-79	AT468	SERA	81-107	B3592	SOD	162-53		SOD	
AFY11	♦ SHWG	65-44	AT323	SERA	93-80	AT470	SERA	113-62	B3593	SOD	162-54	B144006	KER	166-13
AFY12	ATEI	54-56	AT324	SERA	93-81	AT471	SERA	113-63	B3594	SOD	154-51		SOD	
	♦ SHWG		AT325	SERA	93-82	AT472	SERA	113-64	B3595	SOD	154-52	B144007	KER	166-14
	♦ VALG		AT326	SERA	93-71	AT473	SERA	113-65	B3596	SOD	154-53		SOD	
AFY16	ATEI	57-18	AT327	SERA	93-72	AT474	SERA	113-66	B3597	SOD	154-54	B144008	KER	166-15
♦ PHIN	♦ SHWG		AT328	SERA	93-73	AT475	SERA	113-67	B3598	SOD	154-55		SOD	
	♦ VALG		AT329	SERA	93-58	AT476	SERA	113-68	B3599	SOD	154-56	B145000	SOD	166-16
AFY18	♦ SHWG	61-95	AT330	SERA	93-74	AT477	SERA	113-69	B3600	SOD	154-57	B145001	SOD	166-17
AFY19	MULB	65-63	AT331	SERA	72-53	AT478	SERA	113-70	B3601	SOD	154-58	B145002	SOD	166-18
	♦ VALG		AT335	SERA	93-83	AT479	SERA	114-26	B3602	SOD	154-59	B145003	SOD	166-19
AFY37	♦ SHWG	57-19	AT337	♦ SERA	93-75	AT480	SERA	81-61	B3603	SOD	154-60	B145004	SOD	166-20
AFY39	♦ SHWG	63-85	AT338	SERA	90-82	AT481	SERA	81-62	B3604	SOD	154-61	B145005	SOD	166-21
AFY40	PHIC	58-40	AT339	SERA	93-84	AT482	SERA	81-63	B3605	SOD	154-62	B145006	SOD	166-22
	♦ RADF		AT340	SERA	94-30	AT483	SERA	81-64	B3606	SOD	154-63	B145007	SOD	166-23
	♦ VALG		AT341	SERA	93-85	AT484	SERA	81-65	B3607	SOD	154-64	B145008	SOD	166-24
AFY40R	♦ VALG	58-39	AT344	SERA	94-31	AT485	SERA	81-66	B3608	SOD	154-65	B145009	SOD	166-25
AFY41	♦ VALG	54-84	AT345	SERA	87-55	AT490	SERA	102-105	B3609	SOD	154-66	B145010	SOD	166-26
AFY42	♦ SHWG	61-34	AT346	SERA	87-56	AT491	SERA	102-106	B3610	SOD	154-67	B145011	SOD	166-27
AFZ11	APX	56-25	AT347	SERA	93-86	AT492	SERA	102-107	B3611	SOD	154-68	B145012	SOD	166-28
	MULB		AT348	SERA	93-87	AT493	SERA	102-108	B3612	SOD	154-69	B145013	SOD	166-29
	♦ PHIC		AT349	SERA	93-88	AT494	SERA	102-109	B3613	SOD	154-70	B145014	SOD	166-30
AFZ12	♦ VALG	56-27	AT350	SERA	111-105	AT495	SERA	102-110	B3614	SOD	154-71	B146000	SOD	167-80
	♦ VALG		AT351	SERA	111-106	AT1138	SERA	131-49	B3615	SOD	154-72	B146001	SOD	167-81
AL100	ATEI	131-45	AT353	SERA	93-52	AT1138A	SERA	131-50	B3616	SOD	154-73	B146002	SOD	167-82
AL102	ATEI	131-46	AT354	SERA	93-53	AT1138B	♦ SERA	131-51	B3617	SOD	154-74	B146003	SOD	167-83
AL103	ATEI	131-47	AT355	SERA	87-57	AT1833	SERA	131-52	B3618	SOD	162-55	B146004	SOD	167-84
ASY26	ESMF	59-97	AT356	SERA	87-58	AT1834	SERA	131-53	B3619	SOD	162-56	B146005	SOD	167-85
	MULB	191-88	AT360	SERA	112-105	AU101	PHIN	130-63	B3620	SOD	162-57	B146006	SOD	167-86
	♦ PHIC		AT361	SERA	112-106		VALG		B3621	SOD	162-58	B146007	SOD	167-87
	♦ RADF		AT362	SERA	112-107	AU102	PHIN	130-64	B3622	SOD	162-59	B146008	SOD	167-88
	♦ TIFI		AT363	SERA	112-108		VALG		B3623	SOD	162-60	B146009	SOD	167-89
ASY27	♦ VALG	60-8	AT364	SERA	112-109	AU103	MULB	131-54	B3624	SOD	162-61	B146010	SOD	167-90
	♦ VALG		AT365	SERA	112-110		PHIN	193-98	B3625	SOD	162-62	B146011	SOD	167-91
	♦ VALG		AT366	SERA	113-1	PHIC	♦ VALG		B3626	SOD	162-63	B146012	SOD	167-92
	♦ VALG		AT367	SERA	113-2	AU104	PHIC	131-55	B3746	♦ SOD	184-39	B146013	SOD	167-93
	♦ VALG		AT368	SERA	113-3		PHIN		B3747	♦ SOD	149-58	B146014	SOD	167-94
ASY28	MULB	66-94	AT370	SERA	103-91	AU106	ATEI	131-56	B3748	♦ SOD	149-59	B148000	KER	171-72
	PHIC	191-89	AT370	SERA	105-46	AU107	ATEI	131-57	B3749	♦ SOD	154-75		SOD	200-7
	♦ RADF		AT381	SERA	105-47	AU108	ATEI	131-58	B3750	♦ SOD	154-76	B148001	KER	171-73
	♦ VALG		AT382	SERA	105-48	AU108F	ATEI	131-59	B5000	♦ SOD	169-68		SOD	200-8
ASY29	MULB	66-98	AT383	SERA	105-49	AU110	ATEI	131-60	B5001	♦ SOD	164-78	B148002	KER	171-74
	PHIC	192-53	AT384	SERA	105-50	AU111	ATEI	131-61	B5002	♦ SOD	164-79		SOD	200-9
	♦ RADF		AT385	SERA	105-51	AU112	ATEI	131-62	B5021	SOD	164-80	B148003	KER	171-75
	♦ VALG		AT386	SERA	105-52	AU113	ATEI	131-63	B5022	SOD	164-81		SOD	200-10
ASY31	♦ PHIN	58-9	AT387	SERA	105-53	AU110	PHIN	128-22	B5031	SOD	164-82	B148004	KER	171-76
	♦ VALG	192-15	AT388	SERA	105-54	AU118	VALG		B5032	SOD	164-83		SOD	200-11
ASY32	♦ PHIN	58-11	AT390	SERA	79-26	AU119	SHWG	128-49	B5041	SOD	164-84	B149000	SOD	163-103
	♦ VALG	192-56	AT391	SERA	79-27	AU119	SHWG	131-64	B5042	SOD	164-85	B149001	SOD	163-104
ASY48	♦ SHWG	65-66	AT392	SERA	79-28	AU120	SHWG	131-65	B5051	SOD	164-86	B149002	SOD	163-105
ASY70	♦ SHWG	65-69	AT393	SERA	79-29	AU121	SHWG	131-66	B5052	SOD	164-87	B149003	SOD	163-106
ASY71	♦ VALG	58-93	AT394	SERA	79-30	AU121A	ATEI	131-67	B10474	♦ SOD	130-66	B149004	SOD	163-107
ASY73	♦ PHIC	68-17	AT395	SERA	79-31	AU122	SHWG	131-68	B10475	♦ SOD	129-89	B149005	SOD	163-108
	♦ RADF	191-90	AT396	SERA	79-32	AU122A	ATEI	131-69	B10912	♦ SOD	131-73	B170000	SOD	171-77
	♦ VALG		AT397	SERA	79-33	AU129	SHWG	131-70	B10913	♦ SOD	131-74	B170001	SOD	171-78
ASY74	PHIC	68-18	AT398	SERA	79-34	AU134	SHWG	131-71	B102000	SOD	133-15	B170002	SOD	171-79
	♦ RADF	192-52	AT399	SERA	79-50	AU135	ATEI	128-50	B102001	SOD	133-16	B170003	SOD	171-80
	♦ VALG		AT400	SERA	97-93	AU136	ATEI	128-51	B102002	SOD	133-17	B170004	SOD	171-81
ASY75	PHIC	68-19	AT401	SERA	97-94	AU137	ATEI	132-4	B102003	SOD	133-18	B170005	SOD	171-82
	♦ RADF	193-7	AT402	SERA	97-95	AU138	ATEI	131-72	B103000	SOD	133-19	B170006	SOD	171-83
	♦ VALG		AT403	SERA	97-96	B1085	♦ SOD	130-65	B103001	SOD	133-20	B170007	SOD	171-84
ASY76	PHIC	65-25	AT404	SERA	97-97	B1178	♦ SOD	132-77	B103002	SOD	133-21	B170008	SOD	171-85
	♦ RADF		AT405	SERA	97-98	B1181	♦ SOD	135-98	B103003	SOD	133-22	B170009	SOD	171-86
	♦ VALG		AT406	SERA	98-36	B3465	♦ SOD	154-42	B103004	SOD	133-23	B170010	SOD	171-87
ASY77	PHIC	65-26	AT407	SERA	98-37	B3466	♦ SOD	154-43	B113000	♦ S				



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
B176008	♦SOD	172- 2	BC132	MEHK	88- 59	BC161-6	♦INTG	81- 78	BC198C	TFKG	83- 28	BC238A	♦SHWG	97-106
B176009	♦SOD	172- 3	NSC	SGSI		BC161-10	♦INTG	81- 79	BC199B	TFKG	83- 29	BC238B	APX	92- 48
B176010	♦SOD	172- 4	BC134	SGSI	89- 77				BC199C	TFKG	83- 30	BC238%	♦PHIN	98- 50
B176011	♦SOD	172- 5	BC135	SGSI	89- 78	BC161-16	♦INTG	81- 80	BC200	APX	69- 6	BC238A	INTG	98- 51
B176012	♦SOD	172- 6	BC137	MEHK	73- 56				♦MULB	♦PHIN		BC238B	♦TFKG	
B176013	♦SOD	172- 7		SGSI						VALG		BC238B	♦APX	98- 52
B176014	♦SOD	172- 8	BC139	MEHK	81- 47	BC167A	SHWG	87- 50	BC201	SHWG	72- 76	INTG	♦PHIN	
B176015	♦SOD	172- 9	SGSI	TIIF		BC167B	♦TFKG	92- 45	BC202	SHWG	72- 77		♦TFKG	
B176024	♦SOD	172- 10	BC140	SHWG	151- 59	BC168A	SHWG	87- 51	BC203	SHWG	72- 78	BC238C	♦APX	98- 53
B176025	♦SOD	172- 11		SHWG	199- 56	BC168B	♦TFKG	92- 46	BC204A	ESMF	74- 54	INTG	♦PHIN	
B176026	♦SOD	172- 12	BC140-6	♦INTG	111-107	BC169A	SHWG	87- 52	MEHK	MISI			♦TFKG	
B176027	SOD	172- 13	SHWG	TFKG	216- 37	BC169B	♦TFKG	92- 66		SGSI		BC239A	♦SHWG	98- 54
B176028	SOD	172- 14	BC140-10	♦INTG	111-108	BC170A	INTG	96- 50	BC204B	ESMF	74- 55	BC239B	♦APX	92- 67
B176029	SOD	172- 15	SHWG	TFKG	216- 38	BC170B	INTG	96- 51	MEHK	MISI		BC239%	♦PHIN	98- 55
B177000	♦SOD	193- 55	BC140-16	♦INTG	111-109	BC170C	INTG	96- 52		SGSI		BC239B	♦APX	98- 56
BC100	TFKG	109- 26	SHWG	TFKG	216- 39	BC171	ITTB	89- 48	BC204V	ESMF	74- 56	INTG	♦PHIN	
		96- 96	BC141	SHWG	151- 60	BC171A	INTG	97- 99	MEHK	MISI			♦TFKG	
BC107	APX		BC141-6	♦INTG	199- 57	BC171B	INTG	97-100	BC204VI	ESMF	74- 57	BC239C	♦APX	98- 57
	BELI		SHWG	TFKG	111-110	BC172	ITTB	89- 49	MEHK	MISI		INTG	♦PHIN	
	ESMF		BC141-10	♦INTG	216- 40	BC172A	INTG	97-101		SGSI		BC250A	♦INTG	74- 12
	ITTB		SHWG	TFKG	112- 1	BC172B	INTG	97-102	BC205	SGSI	70- 98	BC250B	♦INTG	74- 13
	MINA		BC141-16	♦INTG	216- 41	BC172C	INTG	97-103	BC205A	ESMF	74- 58	BC250C	♦INTG	74- 14
	MULB		SHWG	TFKG	112- 2	BC173	ITTB	89- 50	MEHK	MISI		BC251A	♦INTG	74- 83
	♦NTLB		BC142	SHWG	216- 42	BC173B	INTG	98- 45		SGSI		BC251B	♦INTG	74- 84
	PHIN		BC143	SHWG	112- 92	BC173C	INTG	98- 46	BC205B	ESMF	74- 59	BC251C	♦INTG	74- 85
	SGSI		BC144	SHWG	81- 54	BC174A	INTG	97- 44	MEHK	MISI		BC252A	♦INTG	74- 86
	TIIB		BC145	SHWG		BC174B	INTG	97- 45		SGSI		BC252B	♦INTG	74- 87
BC107A	♦VALG	98- 38	BC146	SHWG	111- 58	BC177	APX	74- 42	BC205V	ESMF	74- 60	BC252C	♦INTG	74- 88
	ESMF		BC147	SHWG					MEHK	MISI		BC253A	♦INTG	74- 89
	MEHK		BC147A	SHWG		ATEI	♦BELI		BC205VI	ESMF	74- 61	BC253B	♦INTG	74- 90
	NSC		BC147B	SHWG		ESMF	MEHK		MEHK	MISI		BC253C	♦INTG	74- 91
	SGSI		BC147C	SHWG		MINA	MEHK		BC206B	ESMF	74- 62	BC256A	♦INTG	74- 92
	♦TFKG		BC147D	SHWG		NSC	MEHK		MEHK	MISI		BC256B	♦INTG	74- 93
BC107B	♦RADF	98- 39	BC147E	SHWG		PHIN	MEHK		BC207	♦SGSI	89- 79	BC256C	♦INTG	74- 94
	TIIF		BC147F	SHWG		♦PHIN	MEHK		BC207A	♦ESMF	89- 80	BC256D	♦INTG	74- 95
BC107C	♦VALG	96- 97	BC147G	SHWG		♦SHWG	MEHK		MEHK	♦MISI		BC256E	♦INTG	74- 96
	ESMF		BC147H	SHWG		TIIF			BC207B	♦ESMF	89- 81	BC256F	♦INTG	74- 97
	MEHK		BC147I	SHWG		♦MISI			MEHK	♦MISI		BC256G	♦INTG	74- 98
	NSC		BC147J	SHWG		♦MISI			BC208	♦SGSI	89- 82	BC256H	♦INTG	74- 99
	SGSI		BC147K	SHWG		♦MISI			BC208A	♦ESMF	89- 83	BC256I	♦INTG	74- 100
	♦TFKG		BC147L	SHWG		♦MISI			MEHK	♦MISI		BC256J	♦INTG	74- 101
BC108	ATEI		BC147M	SHWG		BC177A	♦MISI	74- 43	BC209	♦SGSI	89- 86	BC256K	♦INTG	74- 102
	ESMF		BC147N	SHWG		BC177B	♦MISI	74- 44	BC209B	♦ESMF	89- 87	BC256L	♦INTG	74- 103
	MEHK		BC147O	SHWG		BC177C	♦MISI	74- 45	MEHK	♦MISI		BC256M	♦INTG	74- 104
	NSC		BC147P	SHWG		BC177D	♦MISI	74- 46	BC209C	♦ESMF	89- 88	BC256N	♦INTG	74- 105
	SGSI		BC147Q	SHWG		BC177E	♦MISI	74- 47	MEHK	♦MISI		BC256O	♦INTG	74- 106
	♦RADF		BC147R	SHWG		BC177F	♦MISI	74- 48	BC211	ESMF	112- 93	BC256P	♦INTG	74- 107
	TIIF		BC147S	SHWG		BC177G	♦MISI	74- 49	BC212K	♦TIIF	74- 63	BC256Q	♦INTG	74- 108
	♦VALG		BC147T	SHWG		BC177H	♦MISI	74- 50	BC212KA	♦TIIF	205- 67	BC256R	♦INTG	74- 109
	ESMF		BC147U	SHWG		BC177I	♦MISI	74- 51	BC212KB	♦TIIF	74- 64	BC256S	♦INTG	74- 110
	MEHK		BC147V	SHWG		BC177J	♦MISI	74- 52	BC212L	NSC	205- 68	BC256T	♦INTG	74- 111
	NSC		BC147W	SHWG		BC177K	♦MISI	74- 53	BC212LA	TIIF	74- 65	BC256U	♦INTG	74- 112
	SGSI		BC147X	SHWG		BC177L	♦MISI	74- 54	BC212LB	♦TIIF	205- 69	BC256V	♦INTG	74- 113
	♦TFKG		BC147Y	SHWG		BC177M	♦MISI	74- 55	BC213K	♦TIIF	205- 70	BC256W	♦INTG	74- 114
BC108A	ATEI		BC147Z	SHWG		BC177N	♦MISI	74- 56	BC213KA	♦TIIF	205- 71	BC256X	♦INTG	74- 115
	ESMF		BC148	SHWG		BC177O	♦MISI	74- 57	BC213KB	♦TIIF	205- 72	BC256Y	♦INTG	74- 116
	MEHK		BC148A	SHWG		BC177P	♦MISI	74- 58	BC213KC	♦TIIF	205- 73	BC256Z	♦INTG	74- 117
	NSC		BC148B	SHWG		BC177Q	♦MISI	74- 59	BC213L	NSC	74- 73	BC257	♦SHWG	71- 26
	SGSI		BC148C	SHWG		BC177R	♦MISI	74- 60	BC213LA	♦TIIF	205- 74	BC258	♦SHWG	71- 27
	♦RADF		BC148D	SHWG		BC177S	♦MISI	74- 61	BC213LB	♦TIIF	205- 75	BC259	♦SHWG	71- 28
	TIIF		BC148E	SHWG		BC177T	♦MISI	74- 62	BC213LC	♦TIIF	205- 76	BC260A	♦INTG	74- 15
	♦VALG		BC148F	SHWG		BC177U	♦MISI	74- 63	BC214K	♦TIIF	74- 66	BC260B	♦INTG	74- 16
	ESMF		BC148G	SHWG		BC177V	♦MISI	74- 64	BC214KB	♦TIIF	205- 77	BC260C	♦INTG	74- 17
	MEHK		BC148H	SHWG		BC177W	♦MISI	74- 65	BC214KC	♦TIIF	205- 78	BC260D	♦INTG	74- 18
	NSC		BC148I	SHWG		BC177X	♦MISI	74- 66	BC214K	♦TIIF	205- 79	BC260E	♦INTG	74- 19
	SGSI		BC148J	SHWG		BC177Y	♦MISI	74- 67	BC214KB	♦TIIF	205- 80	BC260F	♦INTG	74- 20
	♦TFKG		BC148K	SHWG		BC177Z	♦MISI	74- 68	BC214KC	♦TIIF	205- 81	BC260G	♦INTG	74- 21
BC108B	ESMF	98- 41	BC148L	SHWG		BC178A	♦MISI	74- 69	BC214K	♦TIIF	205- 82	BC260H	♦INTG	74- 22
	MEHK		BC148M	SHWG		BC178B	♦MISI	74- 70	BC214KB	♦TIIF	205- 83	BC260I	♦INTG	74- 23
	NSC		BC148N	SHWG		BC178C	♦MISI	74- 71	BC214KC	♦TIIF	205- 84	BC260J	♦INTG	74- 24
	SGSI		BC148O	SHWG		BC178D	♦MISI	74- 72	BC214K	♦TIIF	205- 85	BC260K	♦INTG	74- 25
	♦RADF		BC148P	SHWG		BC178E	♦MISI	74- 73	BC214KB	♦TIIF	205- 86	BC260L	♦INTG	74- 26
	TIIF		BC148Q	SHWG		BC178F	♦MISI	74- 74	BC214KC	♦TIIF	205- 87	BC260M	♦INTG	74- 27
	♦VALG		BC148R	SHWG		BC178G	♦MISI	74- 75	BC214K	♦TIIF	205- 88	BC260N	♦INTG	74- 28
	ESMF		BC148S	SHWG		BC178H	♦MISI	74- 76	BC214KB	♦TIIF	205- 89	BC260O	♦INTG	74- 29
	MEHK		BC148T	SHWG		BC178I	♦MISI	74- 77	BC214KC	♦TIIF	205- 90	BC260P	♦INTG	74- 30
	NSC		BC148U	SHWG		BC178J	♦MISI	74- 78	BC214K	♦TIIF	205- 91	BC260Q	♦INTG	74- 31
	SGSI		BC148V	SHWG		BC178K	♦MISI	74- 79	BC214KB	♦TIIF	205- 92	BC260R	♦INTG	74- 32
	♦RADF		BC148W	SHWG		BC178L	♦MISI	74- 80	BC214KC	♦TIIF	205- 93	BC260S	♦INTG	74- 33
	TIIF		BC148X	SHWG		BC178M	♦MISI	74- 81	BC214K	♦TIIF	205- 94	BC260T	♦INTG	74- 34
	♦VALG		BC148Y	SHWG		BC178N	♦MISI	74- 82	BC214KB	♦TIIF	205- 95	BC260U	♦INTG	74- 35
	ESMF		BC148Z	SHWG		BC178O	♦MISI	74- 83	BC214KC	♦TIIF	205- 96	BC260V	♦INTG	74- 36
	MEHK		BC149	SHWG		BC178P	♦MISI	74- 84	BC214K	♦TIIF	205- 97	BC260W	♦INTG	74- 37
	NSC		BC149A	SHWG		BC178Q	♦MISI	74- 85	BC214KB	♦TIIF	205- 98	BC260X		

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BC325	TIIB	76-48	BCY30			BCY89			BD163	ATEI	181-35	BF159	MEHK	91-2
BC326	TIIB	76-47	(cont.)			(cont.)			BD215	ATEI	180-13		SGSI	
BC327	SHWG	76-75	PHIN	PHIC		PHIC	NSC	216-49	BDY10	APX	184-16	BF160	MEHK	90-83
	TFKG			VALG		RADF	VALG		MULB	PHIC	189-21		NSC	
BC328	SHWG	76-76	BCY31		71-97	BCY90	TAGS	75-104	PHIN	VALG		BF161	SGSI	87-35
	TFKG		PHIC	PHIN		BCY90B	TAGS	78-64	BDY11	APX	184-17	BF162	SGSI	90-84
BC328/BC338	SHWG	216-43	RADF	VALG		BCY91	TAGS	75-105	MULB	PHIC	189-22	BF163	SGSI	90-85
	TFKG		BCY32	MULB	72-4	BCY91B	TAGS	78-65	PHIN	RADF		BF164	SGSI	90-86
BC337	SHWG	102-80	PHIC	PHIN		BCY92	TAGS	75-106		VALG		BF165	SGSI	98-60
	TFKG		RADF	TAGS				193-103	BDY12	SHWG	163-109	BF166	SGSI	87-30
BC337/BC327	SHWG	216-44	BCY33		71-95	BCY92B	TAGS	78-66	BDY13	SHWG	163-110	BF167	APX	84-92
	TFKG		PHIC	MULB				193-104	BDY15A	INTG	157-105		ESMF	MINA
BC338	SHWG	102-81	RADF	PHIN		BCY93	TAGS	75-107		ITTB			MISI	MULB
	TFKG			TAGS		BCY93B	TAGS	78-67	BDY15B	INTG	157-106		PHIC	PHIN
BC340-6	INTG	114-30	BCY34		72-3	BCY94	TAGS	75-108		ITTB			RADF	SGSI
BC340-10	INTG	114-31	PHIC	MULB		BCY94B	TAGS	78-68	BDY15C	INTG	157-107		SHWG	TFKG
BC340-16	INTG	114-32	RADF	PHIN		BCY95	TAGS	75-109		ITTB			TIIF	VALG
BC341-6	INTG	114-33		TAGS				193-105	BDY16A	INTG	157-108	BF173	APX	94-65
BC341-10	INTG	114-34	BCY38		79-105	BCY95B	TAGS	78-69		ITTB			ESMF	MINA
BC360-6	INTG	81-108	MULB	PHIN				193-106	BDY16B	INTG	157-109		MISI	MULB
BC360-10	INTG	81-109	PHIC	RADF		BCY96	TAGS	75-110		ITTB			PHIC	PHIN
BC360-16	INTG	81-110	RADF	VALG		BCY96B	TAGS	78-70	BDY17	MULB	172-19		RADF	SHWG
BC361-6	INTG	82-1	BCY39		79-106	BCY97	TAGS	76-1	PHIC	VALG		BF174	VALG	114-12
BC361-10	INTG	82-2	PHIC	PHIN		BCY97B	TAGS	78-71	BDY18	MULB	172-20		SGSI	
BC370	ATEI	77-98	RADF	VALG		BCY98B	TAGS	78-72	PHIC	VALG			SGSI	87-31
BC377	ATEI	104-109	BCY40		79-108	BCZ10	PHIC	71-89	BDY19	MULB	172-21	BF175	SGSI	94-14
BC378	ATEI	104-110	PHIC	PHIN					PHIC	VALG		BF176	SGSI	110-58
BC394	SGSI	112-95	RADF	VALG		BCZ11	MULB	71-96	BDY23	ESMF	182-18	BF177	APX	
BC395	SGSI	96-6	BCY42		96-53	PHIC	PHIN			MISI			MINA	
BC396	SGSI	72-85	BCY43		96-54				BDY24	ESMF	182-19		PHIC	RADF
BC400	SGSI	70-83	BCY54		79-107	BCZ12	PHIC	71-90	BDY25	ESMF	182-20		SHWG	TFKG
BC477	SGSI	76-88	PHIC	PHIN		BCZ13	PHIN	69-22	BDY26	ESMF	182-21	BF178	VALG	110-59
BC477A	SGSI	76-89		VALG	216-46	BCZ14	PHIN	69-23	BDY27	ESMF	182-22		APX	ESMF
BC477VI	SGSI	76-90	BCY55						BDY28	ESMF	182-23		MINA	MISI
BC478	SGSI	76-91		NTLB		BD106	ITTB	157-99		MISI			PHIC	PHIN
BC478A	SGSI	76-92		PHIN		BD106A	INTG	157-100	BDY28	ESMF	182-23		RADF	TFKG
BC478B	SGSI	76-93	BCY56		97-107	BD106B	INTG	157-101		MISI			SHWG	TFKG
BC479	SGSI	76-94		PHIN		BD107	ITTB	157-102	BDY34	TFKG	158-69	BF179	ATEI	110-60
BC479B	SGSI	76-95	BCY57		98-91	BD107A	INTG	157-103	BDY38	APX	172-22		PHIN	SHWG
BCW25	TIIB	107-39	BCY58		105-2	BD107B	INTG	157-104		PHIC			TIIF	VALG
		216-45		PHIN		BD109	SHWG	160-46		MULB			ESMF	MINA
BCW26	TIIB	107-40	BCY58		105-2	BD111	SGSI	162-64	BDY39	VALG	172-23		MISI	MULB
BCW29	PHIN	69-42		SHWG		BD111A	SGSI	146-64	BDY55	SHWG	180-78	BF179A	PHIC	PHIN
	RADF		BCY58A		105-3	BD113	SGSI	162-65	BDY56	ESMF	180-79		RADF	VALG
BCW29R	APX	69-43		TIIF		BD115	APX	156-105	BDY57	MISI	178-29	BF179B	ESMF	149-107
BCW30	MULB	69-44	BCY58B		105-4				BDY58	ESMF	178-30		SHWG	ATEI
	RADF			INTG					BDY58	MISI	178-30		SHWG	MISI
BCW30R	APX	69-45	BCY58C		105-5	BD117	SGSI	165-18	BDY60	APX	162-68	BF179C	ESMF	150-1
BCW31	MULB	84-30	BCY58D		105-6	BD121	MULB	165-27		MISI	201-103		SHWG	ATEI
	RADF			INTG		BD123	SSI	200-12	BDY61	VALG	162-69	BF180	ESMF	86-83
BCW31R	APX	84-31	BCY59		94-58	BD124	SSI	200-13		APX	201-104		SHWG	ATEI
BCW32	MULB	84-32		SHWG					BDY61	VALG	162-69		SHWG	ATEI
	RADF		BCY59			BD124	APX	159-99		PHIC	201-104	BF180	ESMF	86-78
BCW32R	APX	84-33		TIIF				202-16	BDY62	PHIC	201-105		SHWG	ATEI
BCW33	MULB	84-34	BCY59A		105-7	BD127	PHIC	159-10		RADF			PHIN	MULB
	RADF			INTG		BD128	VALG	159-11	BDY62	VALG	201-105	BF181	ESMF	86-65
BCW33R	APX	84-35	BCY59B		105-8	BD129	TFKG	159-12		APX	162-70		PHIC	PHIN
	MULB			INTG		BD130	TFKG	159-12	BDY63	TIIB	169-69		PHIC	MULB
BCW34	TIIB	102-91	BCY59C		105-9	BD131	SHWG	172-16	BDY64	TIIB	176-54		PHIC	PHIN
BCW35	TIIB	76-96		ATEI				161-70	BDY65	TIIB	160-94		RADF	TIIF
BCW36	TIIB	97-4	BCY59D		105-10				BDY66	TIIB	160-95	BF182	VALG	86-78
BCW37	TIIB	73-98		INTG		BD132	MULB	142-39	BDY67	TIIB	143-11		APX	PHIN
BCW44	SGSI	113-106	BCY59E						BDY68	TIIB	143-12		PHIC	PHIN
BCW45	SGSI	82-24		INTG					BDY69	TIIB	144-37		RADF	VALG
BCW46	VALG	86-19	BCY65		147-89	BD135A	VALG	158-64	BDY70	TIIB	141-96		ESMF	MISI
BCW47	VALG	86-20	BCY65E		115-107	BD135B	SHWG	158-65	BDY77	TIIB	141-96	BF183	MULB	86-91
BCW48	VALG	86-21		SHWG					BDY87	SHWG	225-94		PHIC	PHIN
BCW49	VALG	86-22	BCY66		147-90	BD137A	SHWG	158-66	BDY88	SHWG	225-95		RADF	VALG
BCW50	SGSI	107-41		SHWG		BD137B	INTG	158-67	BDY89	SHWG	225-96		APX	PHIN
BCW54	ITTB	98-58	BCY67		81-86	BD137C	PHIN		BF108	NPCL	114-35		MISI	PHIC
BCW55	ITTB	98-59		TIIF					BF109	MULB	149-18		PHIC	RADF
BCW56	VALG	70-27	BCY69		97-5	BD135-BD138MP	VALG	216-50		PHIN			VALG	84-104
BCW57	VALG	70-28		SHWG					BF111	VALG	152-86	BF184	APX	
BCW58	VALG	70-29	BCY70		76-23	BD136A	SHWG	141-28	BF115	SHWG	86-9		MINA	PHIC
BCW59	VALG	70-30		ESMF		BD136B	MISI	141-29		APX			PHIC	RADF
BCW60A	SHWG	86-11		MULB									SHWG	VALG
		203-105	BCY71		76-26	BD137A	INTG	158-66	BF117	VALG	111-44	BF185	APX	84-101
BCW60B	SHWG	86-12		NTLB		BD137B	PHIN	158-67		INTG			PHIC	PHIN
BCW60C	SHWG	203-106		PHIN					BF118	ITTB	114-64		PHIC	RADF
		86-13		TIIF		BD137C	TFKG		BF119	INTG	114-55		SHWG	TFKG
BCW60D	SHWG	203-107							BF120	TIIF	94-82	BF186	APX	115-93
BCW61A	SHWG	86-14	BCY71A		76-27	BD138A	INTG	141-30	BF121	INTG	101-55		MULB	PHIC
		203-108		MULB		BD138B	PHIN	141-31		TIIF			PHIN	VALG
BCW61B	SHWG	70-39		NTLB					BF123	TIIF	101-58	BF194	APX	92-53
BCW61C	SHWG	203-109	BCY72		76-22	BD139A	PHIC	158-68	BF125	INTG	101-57		PHIC	MINA
		70-40		PHIN					BF127	TIIF	101-56		PHIC	PHIN
BCW61D	SHWG	203-110		TIIF		BD139B	INTG		BF127	INTG	101-56		SHWG	TFKG
		204-1							BF137	ITTB	111-45	BF195	APX	92-42
BCY10	PHIC	75-90	BCY78		74-105	BD139C	PHIC		BF140R,S	INTG	116-4		BELI	MINA
	VALG			SHWG					BF152	NPCL	90-110		MULB	PHIC
BCY11	PHIN	75-91		TIIF		BD139D	INTG			APX			PHIN	RADF
BCY12	PHIN	75-92	BCY79											

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BF200	APX	86-56	BFR88	TIIF	184-55	BFV29	TIIF	70-49	BFV91	TIIF	79-97	BFV91	MULB	75-2
	ESMF		BFR89	TIIF	184-56			209-104			210-28			205-11
	MULB		BFR90	TIIF	184-57	BFV30	TIIF	70-32			213-31	BFV92	RADF	84-93
	PHIC		BFR91	SGSI	86-33			202-66	BFV91N	TIIF	79-98		VALG	
	RADF		BFR92	SGSI	83-34	BFV31	TIIF	70-46			210-29	BFV96	MULB	120-80
BF222	SGSI	87-29	BFR93	SGSI	83-35			209-48			223-32		VALG	
BF223	TFKG	104-102	BFR94	SGSI	89-13	BFV32	TIIF	70-47	BFV92	TIIF	106-11	BFW98	RADF	99-65
BF224	TIIF	103-94	BFR95	SGSI	69-14			209-49			209-24	BFW99	SHWG	92-21
			BFR96	SGSI	69-15	BFV33	TIIF	70-33	BFV92N	TIIF	106-12	BFX11	SGSI	80-47
BF225	TIIF	104-36	BFR97	SGSI	83-36	BFV34	TIIF	69-51			209-25		TIIF	216-61
			BFR98	SGSI	83-37			222-76	BFV93	TIIF	105-102	BFX12	MULB	75-4
BF229	TFKG	83-23	BFR99	SGSI	83-38	BFV35	TIIF	69-52	BFV93A	TIIF	223-33		TIIF	
BF230	TFKG	83-21	BFR100	SGSI	69-19			222-77	BFV93AN	TIIF	223-34		VALG	
BF234	ESMF	97-108	BFR101	SGSI	69-20	BFV36	TIIF	69-53	BFV93N	TIIF	105-103	BFX13	MULB	75-8
	MISI		BFR102	SGSI	69-21			222-78			206-56		TIIF	
BF235	ESMF	97-109	BFR103	PHIN	84-41	BFV37	TIIF	85-75	BFV94	TIIF	105-104		VALG	
	MISI		BFR104	RADF				222-79			206-57	BFX15	TIIF	109-98
BF237	TIIF	102-39	BFR105	APX	84-40	BFV38	TIIF	85-76	BFV94N	TIIF	105-105			216-62
BF238	TIIF	102-40	BFR106	MULB				222-80			206-58	BFX16	SGSI	216-63
BF240	SHWG	94-8	BFR107	PHIN	84-25	BFV40	TIIF	86-3	BFV95	TIIF	79-94		TIIF	
	TFKG		BFR108	RADF		BFV41	TIIF	86-16			206-59	BFX17	SGSI	115-22
BF241	SHWG	94-9	BFR109	APX	84-26	BFV42	TIIF	86-31			223-35	BFX18	SGSI	90-49
	TFKG		BFR110	MULB				209-71	BFV95N	TIIF	79-95		TIIF	
BF244	TIIF	124-110	BFR111	PHIN	84-28	BFV43	TIIF	86-23			206-60	BFX19	SGSI	90-50
BF245	TIIF	125-1	BFR112	RADF				207-99			223-36	BFX20	SGSI	90-51
			BFR113	APX	84-29	BFV44	TIIF	86-24	BFV96	TIIF	105-91	BFX21	SGSI	90-52
BF246	TIIF	125-2	BFR114	MULB				207-100			203-88	BFX22	SGSI	90-52
BF247	TIIF	125-3	BFR115	PHIN	84-36	BFV45	TIIF	86-17	BFV96N	TIIF	105-92	BFX29	MULB	80-38
			BFR116	RADF		BFV46	TIIF	86-25			203-89		PHIC	
BF248	TIIF	105-101	BFR117	APX	84-37			208-35	BFV97	TIIF	106-29		VALG	
BF249	TIIF	79-93	BFR118	RADF		BFV47	TIIF	86-32	BFV97N	TIIF	106-30	BFX30	MULB	80-15
BF250	TIIF	105-21	BFR119	VALG	121-73	BFV49	TIIF	86-4	BFV98	TIIF	105-26		NTLB	
BF251	SGSI	86-66	BFR120	VALG	121-74			205-4	BFV98N	TIIF	105-27		VALG	
BF252	SGSI	86-30	BFR121	PHIN	153-100	BFV50	TIIF	85-108	BFW10	APX	122-99	BFX31	SGSI	87-36
BF254	SHWG	92-54	BFR122	RADF				203-93		MULB		BFX33	TFKG	151-61
BF254Δ	APX	87-11	BFR123	APX	153-101	BFV51	TIIF	85-3		PHIN		BFX34	SGSI	115-91
BF254□	VALG		BFR124	PHIN	153-102			186-16	BFW11	APX	122-100	BFX35	SGSI	200-44
BF254%	PHIN	98-4	BFR125	RADF		BFV52	TIIF	85-109		PHIC			TIIF	79-74
BF255	SHWG	92-43	BFR126	APX	153-103			203-87		MULB		BFX36	TIIF	81-7
BF255□	APX	87-9	BFR127	SGSI	69-16	BFV53	TIIF	85-4		PHIN			SGSI	216-64
BF255%	VALG		BFR128	SGSI	69-17			186-17	BFW16	APX	111-89	BFX37	MULB	76-53
BF257	PHIN	97-48	BFR129	SGSI	69-18	BFV54	TIIF	86-18		PHIC			SGSI	
	INTG	114-56	BFR130	SGSI	83-39			207-20		MULB			NSC	
	TFKG		BFR131	SGSI	83-40	BFV55	TIIF	85-110	BFW16A	PHIN	149-60	BFX38	SGSI	82-3
BF258	SHWG	114-57	BFR132	SGSI	83-41			203-92		VALG			TIIF	201-44
	TIIF		BFR133	MULB	120-78	BFV59	TIIF	86-69		RADF		BFX39	SGSI	82-4
	INTG		BFR134	RADF		BFV60	TIIF	85-5	BFW17	MULB	111-88		TIIF	201-45
	TFKG		BFR135	VALG		BFV61	TIIF	85-6		PHIN		BFX40	SGSI	82-5
BF259	SHWG	114-58	BFR136	APX	120-79	BFV62	TIIF	85-7	BFW17A	PHIN	149-61	BFX41	TIIF	201-46
	TIIF		BFR137	TIIF	97-6	BFV70	TIIF	223-25		VALG			SGSI	82-6
BF260	ATEI	86-84	BFR138	TIIF	85-104	BFV71	TIIF	223-26	BFW19	SGSI	111-15	BFX43	MULB	201-47
BF261	ATEI	86-85	BFR139	TIIF	97-7	BFV72	TIIF	223-27	BFW20	TIIF	76-51		PHIC	104-70
BF270	SGSI	86-67	BFR140	TIIF	97-8	BFV73	TIIF	223-28	BFW21	TIIF	76-52		TIIF	
BF271	SGSI	92-104	BFR141	TIIF	85-105	BFV73N	TIIF	223-29	BFW22	TIIF	76-60		TIIF	
BF272	SGSI	69-50	BFR142	TIIF	85-106	BFV75	TIIF	223-30	BFW23	TIIF	76-61	BFX44	APX	104-71
BF273	SGSI	86-86	BFR143	TIIF	74-107	BFV76	TIIF	223-31	BFW24	TIIF	75-24		PHIC	
BF273C	SGSI	90-97	BFR144	TIIF	74-108	BFV78	TIIF	223-32	BFW29	LTTF	110-35		TIIF	
BF273D	SGSI	90-98	BFR145	TIIF	70-44	BFV81A	TIIF	210-26	BFW30	TIIF	94-52	BFX45	MULB	84-74
BF274	SGSI	86-87	BFR146	TIIF	74-109			210-27		MULB			PHIC	203-94
BF274B	SGSI	90-99	BFR147	TIIF	70-45	BFV81B	TIIF	210-28		PHIN		BFX48	VALG	77-78
BF274C	SGSI	90-100	BFR148	TIIF	70-45			209-95	BFW31	TIIF	80-65	BFX49	SGSI	210-19
BF287	SGSI	86-92	BFR149	FERB	101-63	BFV82	TIIF	73-84		VALG			RADF	150-26
BF288	SGSI	86-45	BFR150	FERB	101-64	BFV82A	TIIF	73-85		TIIF	202-108	BFX50	RADF	101-91
BF290	SGSI	86-96	BFR151	FERB	76-4	BFV82B	TIIF	73-86	BFW32	RADF	108-46		TIIF	203-38
BF291	SGSI	103-68	BFR152	FERB	76-5			202-66		TIIF	202-109	BFX51	RADF	152-17
BF291A	SGSI	104-26	BFR153	FERB	101-89	BFV82C	TIIF	73-87	BFW33	TIIF	113-30		TIIF	
BF291B	SGSI	104-27	BFR154	FERB	101-90			202-67		TIIF		BFX52	RADF	101-92
BF292	SGSI	112-83	BFR155	FERB	76-16	BFV83	TIIF	98-61	BFW36	LTTF	110-61		TIIF	203-39
BF292A	SGSI	113-83	BFR156	FERB	76-17	BFV83A	TIIF	98-62	BFW37	LTTF	110-51	BFX53	TFKG	99-86
BF292B	SGSI	113-84	BFR157	FERB	76-18			208-36	BFW39	SGSI	216-53	BFX55	SHWG	151-62
BF292C	SGSI	113-85	BFR158	FERB	101-66	BFV83B	TIIF	98-92		TIIF		BFX59	SHWG	92-102
BF293A	SGSI	104-28	BFR159	FERB	101-67			209-13	BFW39A	SGSI	216-54	BFX60	SHWG	92-100
BF293D	SGSI	104-29	BFR160	FERB	76-11	BFV83C	TIIF	98-93	BFW40	SGSI	216-55	BFX62	SHWG	86-80
BF294	SGSI	113-107	BFR161	FERB	76-12			209-23		TIIF		BFX63	APX	121-75
BF302	ATEI	86-68	BFR162	FERB	102-6	BFV85	TIIF	103-42	BFW40A	SGSI	216-56		PHIC	
BF303	ATEI	86-57	BFR163	FERB	102-7			206-53	BFW43	SGSI	78-107		RADF	
BF304	ATEI	86-58	BFR164	FERB	150-25	BFV85A	TIIF	103-43	BFW44	SGSI	81-49		VALG	
BF305	ATEI	114-36	BFR165	TFKG	152-88			206-54	BFW45	APX	114-65	BFX66	SGSI	106-98
BF306	ATEI	94-18	BFR166	SHWG	92-105	BFV85B	TIIF	103-44		MULB			TIIF	
BF308	SGSI	86-109	BFR167	TIIF	91-104			206-55	BFW51	PHIN	216-57	BFX67	SGSI	223-37
BF309	SGSI	86-110	BFR168	TIIF	84-84	BFV85C	TIIF	103-95		PHIC		BFX68	SGSI	111-66
BF310	TFKG	94-15	BFR169	TIIF	92-19			207-108	BFW51A	SGSI	216-58		TIIF	
BF311	TFKG	102-9	BFR170	TIIF	84-88	BFV85D	TIIF	95-31	BFW52	SGSI	216-59	BFX69	SGSI	113-108
BF314	TFKG	99-23	BFR171	FERB	108-43	BFV85E	TIIF	95-32	BFW52A	SGSI	216-60		TIIF	
BF316	SGSI	69-49	BFR172	FERB	108-44	BFV85F	TIIF	96-7	BFW54	TIIF	122-101	BFX69A	SGSI	114-10
BF322	TIIF	115-21	BFR173	FERB	108-45	BFV85G	TIIF	96-8	BFW55	TIIF	122-102	BFX70	SGSI	108-2
BF323	TIIF	82-2												

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BFX87	MEHK	80-101	BFY67A	TIIF	111-59	TYE93	APX	164-2	BSV84	ATEI	113-77	BSX12A	RADF	109-38
	MULB	201-26		VALG			VALG				199-99	BSX21	APX	96-11
	NTLB		BFY67C	TIIF	111-60	PHIN	TIIF	216-77	BSV85	ATEI	103-49		MULB	
	TIIF			VALG			SHWG	218-104			206-31		PHIN	
BFX88	MEHK	80-102	BFY68A	VALG	111-61	BN209	APX	218-105	BSV89	SGSI	104-38		TIIF	VALG
	MULB	201-27	BFY69	TFKG	84-22	BP101					211-57	BSX22	INTG	114-38
	NTLB		BFY69A	TFKG	84-23	BPX25	MULB				104-39	ITTB	TIIF	
	TIIF		BFY70	APX	151-64	BPX29	MULB				211-58	BSX23	INTG	114-39
BFX89	APX	91-71		PHIN			PHIN	218-106	BSV91	SGSI	104-40		ITTB	
	MULB			TIIF			TIIF				211-59	BSX24	TIIF	97-50
	PHIN			VALG			VALG	218-107	BSV92	SGSI	104-72	BSX25	TFKG	102-54
	SHWG		BFY72	SGSI	115-47	BPX30					211-80		TIIF	
				TIIF	207-53	BPX38					210-11	BSX26	SGSI	104-78
BFX90	SGSI	78-108	BFY74	SGSI	104-23	BPX43			BSV95	SGSI	115-58		TIIF	209-14
BFX91	SGSI	81-50	BFY75	SGSI	104-24	BPX81					210-11	BSX27	SGSI	99-57
BFX92	TIIF	95-64	BFY76	SGSI	102-58	BPX82			BSW11	TFKG	83-31		TIIF	211-60
BFX92A	TIIF	102-66		SGSI		BPX83					210-1	BSX28	TIIF	104-92
BFX93	TIIF	95-65	BFY77	TIIF	102-63	BPX86			BSW12	TFKG	83-22		SGSI	209-88
BFX93A	TIIF	102-68	BFY78	TIIF	99-63	BPX89					205-12	BSX29	TIIF	77-84
BFX94	SGSI	108-84	BFY79	SGSI	99-9	BPY60			BSW13	SHWG	87-12		TIIF	210-34
	TIIF		BFY80	TFKG	94-59	BPY61/I					207-71	BSX30	TIIF	115-42
BFX95	SGSI	108-85		TIIF		BPY61/II			BSW19	TFKG	92-33		TIIF	207-25
	TIIF		BFY81	SGSI	216-69	BPY62/I					208-80	BSX32	SGSI	115-59
BFX95A	SGSI	105-106		TIIF		BPY62/II			BSW21A	ESMF	75-13		TIIF	208-65
BFX96	SGSI	115-23	BFY82	SGSI	216-70	BPY62/III					75-14	BSX33	SGSI	107-91
	TIIF			TIIF		BPY65			BSW22	MISI	75-15		TIIF	200-14
BFX96A	SGSI	115-24	BFY83	SGSI	216-71	BPY76					75-16	BSX36	SGSI	77-16
BFX97	SGSI	115-25		TIIF		BR100B			BSW22A	MISI	75-16		TIIF	205-18
	TIIF		BFY84	SGSI	216-72							BSX38	TFKG	87-20
BFX97A	SGSI	115-26		TIIF		BR100D							TIIF	
BFX98	SGSI	112-96	BFY85	TFKG	94-56				BSW23	SGSI	81-67	BSX39	SGSI	104-87
BFX99	SGSI	108-5		TIIF	216-73	BR101B					205-13		TIIF	209-15
	TIIF		BFY86	TFKG	94-57				BSW24	SGSI	79-82	BSX40	ITTB	82-5
BFY10	APX	96-9		TIIF	216-74	BR101D					205-14		TIIF	
	MULB		BFY87	TFKG	83-14				BSW25	TIIF	77-89	BSX41	ITTB	82-19
	PHIN		BFY87A	TFKG	83-15						212-2		TIIF	
			BFY88	TFKG	91-13	BSV15			BSW26	TIIF	108-47	BSX44	APX	99-42
BFY11	APX	96-10	BFY90	FERB	91-29						205-15		PHIC	
	MULB		BFY90	SHWG	91-30	BSV16			BSW27	TIIF	114-95		TIIF	
	PHIN			APX							205-16	BSX45	SHWG	149-13
			BFY91	PHIC		BSV21			BSW28	TIIF	114-96		TIIF	
BFY18	TIIF	97-86		RADF							205-58	BSX46	SHWG	149-14
	TIIF	206-15	BFY90B	TIIF	91-31	BSV22	VALG	120-81	BSW29	TIIF	151-65	BSX47	SHWG	151-66
	TIIF	99-8	BFY91	MULB	216-75						205-17		SHWG	199-88
BFY19	TIIF		BFY92	TIIF	216-76	BSV35	FERB	102-5	BSW32	TIIF	93-2	BSX48	SHWG	147-5
	TIIF		BLY12	ITTB	162-71	BSV35A	FERB	101-101	BSW33	RADF	84-79		SHWG	210-37
BFY26	TIIF	103-2	BLY14	APX	158-70						208-81	BSX49	SHWG	147-6
BFY27	TADI	103-48		PHIN		BSV36	FERB	102-8	BSW34	RADF	84-80		SHWG	210-20
BFY33	SHWG	111-62	BLY17	VALG	172-24						208-82	BSX51	ESMF	98-67
	TIIF			MULB		BSV37	FERB	76-28	BSW35	RADF	84-81		TIIF	203-13
BFY34	SHWG	111-63		PHIN		BSV38	TIIF	122-105	BSW41	VALG	208-83	BSX51A	ESMF	98-68
	TIIF		BLY17A	PHIN							103-50	BSX52	TIIF	203-14
BFY37	TIIF	97-49	BLY17B	VALG	169-70	BSV38P	TIIF	185-14	MULB	PHIN	207-41	BSX52	ESMF	98-69
BFY39	NSC	97-9	BLY20	MULB	158-71						98-63	BSX52A	TIIF	203-15
	TIIF		BLY21	VALG	158-72	BSV39	TIIF	122-106			203-9	BSX52A	ESMF	98-70
BFY39/I	INTG	97-10	BLY23	APX	152-89	BSV39P	TIIF	120-46	BSW42	MISI	88-64	BSX53	TIIF	203-16
	TIIF			VALG	204-12	BSV40	ITTB	103-96	BSW42A	ESMF	98-64	BSX53	TIIF	86-5
BFY39/II	INTG	97-11	BLY34	RADF	152-90	BSV41	ITTB	103-97	BSW43	MISI	203-10	BSX54	TIIF	205-59
	TIIF			APX		BSV42	ITTB	81-20	BSW43	ESMF	98-65	BSX54	TIIF	86-6
BFY39/III	VALG	97-12	BLY35	MULB	159-100	BSV43A	ITTB	81-21	BSW43A	MISI	203-11	BSX59	APX	205-60
	TIIF		BLY36	RADF		BSV43B	ITTB	81-22	BSW44	ESMF	98-66		MULB	115-80
BFY40	VALG	113-73	BLY37	MULB	159-101	BSV44A	ITTB	81-23			203-12		PHIC	210-84
BFY41	TIIF	112-45	BLY38	RADF	207-81	BSV44B	ITTB	81-24	BSW44A	MISI	75-18	BSX60	APX	115-61
BFY43	TIIF	113-74		PHIN	158-31	BSV45A	ITTB	81-25			75-19		MULB	210-85
BFY44	APX	151-63	BLY38	VALG	207-79	BSV45B	ITTB	81-26	BSW45	ESMF	75-19		PHIC	
	MULB			MULB	149-62	BSV46	ITTB	79-78	BSW45A	MISI	75-20	BSX61	PHIC	
	RADF		BLY40	RADF	176-55	BSV47A	ITTB	79-77					RADF	
			BLY47	LTTF	146-65	BSV47B	ITTB	79-78	BSW45A	ESMF	75-20	BSX61	APX	115-62
BFY45	SHWG	110-78		TIIF	195-78	BSV48A	ITTB	79-78	BSW58	MISI	84-82		MULB	210-86
BFY46	SHWG	111-67	BLY47A	TIIF	146-66	BSV48B	ITTB	79-79			209-73		PHIC	
	TIIF			TIIF	195-79	BSV49A	ITTB	79-80	BSW59	VALG	84-83		RADF	
BFY50	APX	113-75	BLY48	TIIF	146-67	BSV51	ITTB	79-80			210-108		PHIN	
	MULB	199-95		TIIF	195-80	BSV52	ITTB	93-82	BSW65	MULB	113-110	BSX62	SHWG	151-67
	PHIC		BLY48A	TIIF	146-68						200-83		SHWG	200-40
	NTLB			TIIF	195-81	BSV52R	APX	84-39	BSW66	MULB	114-1	BSX66	VALG	97-51
	TIIF		BLY49	TIIF	146-69		MULB	210-107	BSW66	APX	114-2	BSX67	VALG	97-52
	RADF			TIIF	195-82	BSV53	TIIF	210-108		RADF	200-85	BSX67	VALG	205-106
BFY51	VALG	113-34	BLY49A	TIIF	146-70	BSV53P	TIIF	86-33	BSW67	PHIN	200-85	BSX68	TFKG	84-75
	TIIF	198-98	BLY50	TIIF	146-71						114-3	BSX68	VALG	203-95
	TIIF		BLY50A	TIIF	146-72	BSV54	TIIF	99-11	BSW67	VALG	200-86	BSX69	TFKG	84-76
	TIIF			TIIF	195-84						114-4	BSX69	VALG	203-96
BFY52	SGSI	200-92	BLY50A	TIIF	146-72	BSV54P	TIIF	209-63	BSW70	APX	200-87	BSX70	VALG	108-6
	TIIF		BLY53	TIIF	195-85						200-87	BSX71	VALG	108-7
	TIIF			TIIF	195-86	BSV55	TIIF	209-64	BSW68	MULB	114-5	BSX72	VALG	108-7
	TIIF			TIIF	158-32						200-88		TFKG	109-24
BFY52	APX	113-35	BLY53A	MULB	158-10	BSV55A	TIIF	210-5	BSW68	APX	114-6	BSX75	TIIF	206-61
	MULB	198-99	BLY55	VALG	158-11						200-89	BSX75	TIIF	206-62
	NTLB		BLY61	MULB	146-73	BSV55AP	TIIF	70-50	BSW69	RADF	84-72	BSX76	MULB	97-110
	PHIN		BLY62	TIIF	146-74							BSX76	TIIF	206-17
	TIIF		BLY63	TIIF	146-75	BSV55P	TIIF	210-33	BSW69	VALG	200-84	BSX77	MULB	98-1
	TIIF		BLY76	TIIF	146-75							BSX77	TIIF	206-32
	TIIF			TIIF	152-2	BSV59								

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
BSX90	TIIF	98-71	BSY84	ITTB		C426	SGSI	114-7	CQT1111	KSC	135-13	CS5371	TSC	103-54
		207-87	(cont.)					117-101	CQT1111A	KSC	135-14			207-29
BSX91	TIIF	98-72	MEHK	INTG	115-99	C428	SGSI	112-47	CQT1112	KSC	135-15	CS5447	TSC	73-71
		207-88	BSY85	INTG		C441	SGSI	105-55	CS697	TSC	106-69	CS5448	TSC	73-72
BSX92	TIIF	104-79	ITTB	INTG	115-100	C442	SGSI	102-90			200-74	CS5449	TSC	96-59
		211-49	BSY86	INTG		C444	SGSI	98-97	CS706	TSC	94-2	CS5450	TSC	96-60
BSX93	SGSI	104-93	ITTB	INTG		C450	SGSI	88-91			208-87	CS5451	TSC	96-61
		211-81	BSY87	INTG	114-46	C502	CRY	213-32	CS1420	TSC	106-70	CST1773	KSC	129-90
BSX95	VALG	111-68	ITTB	INTG		C651	SGSI	115-40			200-75			189-31
		200-106	BSY88	INTG	114-47			213-33	CS1990	TSC	106-62	CST1773A	KSC	129-91
BSX96	VALG	111-69	ITTB	INTG		C652	SGSI	104-80	CS2369	TSC	94-4			189-32
		200-107	BSY89	ITTB	95-54			213-34			209-3	CST1773B	KSC	129-92
BSY10	MULB	96-12	BSY90	ITTB	222-85	C680	CRY	120-90	CS2484	TSC	94-84			189-33
	PHIN		ITTB	INTG	114-48	C680A	CRY	120-91	CS2711	TSC	93-4	CST1789	KSC	129-93
			BSY91	ITTB	113-40	C681	CRY	120-92	CS2712	TSC	93-5	CTP1500	KSC	135-16
BSY11	MULB	85-94	ITTB	TFKG		C681A	CRY	120-93	CS2713	TSC	93-6	CTP1503	KSC	135-17
	PHIN		BSY92	TFKG	113-41	C682	CRY	120-94	CS2714	TSC	93-7	CTP1504	KSC	135-18
			BSY93	TFKG	102-55	C682A	CRY	120-95	CS2715	TSC	93-8	CTP1508	KSC	135-19
BSY17	VALG	98-73	BSY94	TFKG		C683	CRY	120-96	CS2716	TSC	93-9	CTP1544	KSC	133-24
	SHWG		BSY95	MEHK	86-7	C683A	CRY	120-97	CS2921	TSC	93-10	CTP1552	KSC	133-25
BSY18	TIIF	98-74	BSY95A	MEHK		C684	CRY	120-98	CS2922	TSC	93-11	CTP3500	KSC	135-20
	SHWG		ITTB	MEHK	97-56	C684A	CRY	120-99	CS2923	TSC	93-12	CTP3503	KSC	135-21
BSY19	TIIF	103-98	ITTB	MEHK		C685	CRY	120-100	CS2924	TSC	93-13	CTP3504	KSC	135-22
	TADI	210-18	MULB	NTLB		C685A	CRY	120-101	CS2925	TSC	93-14	CTP3508	KSC	135-23
	VALG	103-99	PHIN			C720	SGSI	104-51	CS2926	TSC	87-99	CTP3544	KSC	135-24
BSY21	TIIF	103-99	BU100	SGSI	162-72	C722	SGSI	210-57	CS3390	TSC	93-15	CTP3545	KSC	135-25
	TADI	208-40	BU100A	SGSI	146-78			104-15	CS3391	TSC	93-16	CTP3552	KSC	135-26
BSY24	ITTB	110-41	BU102	SGSI	182-24	C740	SGSI	208-98	CS3391A	TSC	93-17	CTP3553	KSC	135-27
	ITTB	200-93	BU104	ESMF	182-25	C742	SGSI	104-53	CS3392	TSC	93-18	D5E37	GESY	221-3
BSY26	ITTB	97-54	BU105	MISI	167-95	C744	SGSI	104-16	CS3393	TSC	93-19	D5E43	GESY	221-4
	MULB	204-47		APX		C760	SGSI	112-48	CS3394	TSC	93-20	D5E44	GESY	221-5
BSY27	ITTB	97-55		PHIC		C762	SGSI	107-90	CS3395	TSC	93-21	D5E45	GESY	221-6
	MULB	204-48		PHIN		C764	SGSI	106-13	CS3396	TSC	93-22	D5K1	GESY	221-7
BSY28	ITTB	98-101		RADF		C1001	SGSI	114-15	CS3397	TSC	93-23	D5K2	GESY	221-8
	ITTB	209-58		VALG				104-42	CS3398	TSC	93-24	D7A30	GESY	152-91
BSY29	ITTB	98-102	BU106	TIIF	146-79	C1002	SGSI	209-74	CS3414	TSC	94-85	D7A31	GESY	152-92
	ITTB	209-57	BU107	TIIF	146-80	C1003	SGSI	88-102	CS3415	TSC	94-86	D7A32	GESY	152-93
BSY34	SHWG	149-15	BU108	TIIF	170-64	C1004	SGSI	102-67	CS3416	TSC	94-87	D12A8	GESY	216-78
	SHWG	210-7		APX				95-72	CS3417	TSC	90-98	D12E026	GESY	216-79
BSY38	APX	98-94	BU110	SHWG	170-54	C6690	CRY	199-55	CS3605	TSC	90-19	D12E109	GESY	216-80
	MINA	208-105	BU111	SHWG	166-31	C6691	CRY	120-1			208-18	D12E126	GESY	216-81
	NSC		BU115	ATEI	172-25	C6692	CRY	120-2	CS3606	TSC	90-20	D13T1	GESY	221-9
	PHIN		BU116	ATEI	172-26	C7076	CRY	120-3			208-41	D13T2	GESY	221-10
	TIIF		BU117	ATEI	172-27			94-110	CS3607	TSC	90-21	D16G6	GESY	90-63
BSY39	VALG	98-95	BU120	ATEI	172-28	C9080	CRY	222-86			208-50	D16P1	GESY	225-97
	APX	208-106	BU121	ATEI	172-29	C9081	CRY	78-43	CS3662	TSC	94-41	D26B1	GESY	83-52
	MINA		BU122	ATEI	172-30	C9082	CRY	78-44	CS3663	TSC	94-42	D26B2	GESY	185-69
	NSC		BU123	ATEI	172-31	C9083	CRY	78-45	CS3702	TSC	73-69	D26C1	GESY	83-53
	PHIN		BU125	SGSI	184-53	C9084	CRY	78-50	CS3703	TSC	73-70	D26C2	GESY	185-70
BSY40	MULB	75-5	BU127	SGSI	146-81	C9085	CRY	78-45	CS3704	TSC	96-56	D26C3	GESY	83-54
	PHIC	206-2	BU128	SGSI	146-82	CA2D2	SOD	130-8	CS3705	TSC	96-57	D26C4	GESY	83-55
	TIIF		BUY10	ITTB	162-73	CDT1309	KSC	131-75	CS3706	TSC	96-58	D26C5	GESY	83-56
BSY41	PHIC	75-9	BUY11	ITTB	200-94	CDT1310	KSC	131-76	CS3707	TSC	93-25	D26C6	GESY	83-57
	TIIF	206-4			162-74			131-77	CS3708	TSC	93-26	D26C7	GESY	83-58
BSY44	VALG	113-78	BUY18	SGSI	202-65	CDT1311	KSC	189-17	CS3709	TSC	93-27	D26E1	GESY	83-59
	TADI				169-71			131-78	CS3710	TSC	93-28	D26E2	GESY	83-60
BSY45	TIIF	113-38	BUY20	TIIF	170-37	CDT1312	KSC	189-18	CS3711	TSC	93-29	D26E3	GESY	83-61
	TADI		BUY21	TIIF	170-38			131-79	CS3843	TSC	88-92	D26E4	GESY	83-62
BSY46	TIIF	113-39	BUY21A	TIIF	170-39	CDT1313	KSC	189-19	CS3844	TSC	88-109	D26E5	GESY	83-63
	TIIF	199-9	BUY22	TIIF	170-40	CDT1315	KSC	189-20	CS3845	TSC	88-13	D26E6	GESY	83-64
BSY51	ESMF	114-40	BUY23	TIIF	181-2	CDT1319	KSC	189-21	CS3854	TSC	89-7	D26E7	GESY	83-65
	ITTB	202-48			195-86			131-80	CS3854A	TSC	89-8	D26G1	GESY	83-66
	NSC		BUY23A	TIIF	181-3	CDT1320	KSC	131-81	CS3855	TSC	89-9	D29A4	SPR	76-82
BSY52	ESMF	114-41	BUY39	TIIF	165-19	CDT1321	KSC	189-13	CS3855A	TSC	89-17	D29A5	SPR	76-83
	ITTB	202-49	BUY40	TIIF	165-20			131-82	CS3859	TSC	89-21	D29E1	GESY	80-39
	MISI		BUY41	TIIF	165-20	CDT1322	KSC	189-14	CS3859A	TSC	88-110	D29E1J1	GESY	81-55
	NSC		BUY43	SHWG	161-38			131-83	CS3900	TSC	89-22	D29E2	GESY	80-48
BSY53	ESMF	114-42	BUY46	SHWG	161-39			189-15	CS3900A	TSC	87-100	D29E2J1	GESY	81-57
	ITTB	202-75		ATEI		CF2386	CRY	189-16	CS3900A	TSC	87-101	D29E4	GESY	80-40
	NSC		BUY47	SHWG	146-83	CFM13026	TSC	125-102	CS3901	TSC	87-102	D29E5	GESY	80-45
BSY54	ESMF	114-43	BUY48	SGSI	146-84	CH3055	PPC	126-66	CS3903	TSC	100-89	D29E6	GESY	80-49
	ITTB	202-76	BUY49	SGSI	146-85	CH3226	PPC	126-67	CS3904	TSC	206-93	D29E7	GESY	80-57
	NSC		BUY51	TIIF	175-51	CH3232	PPC	174-28			100-103	D29E8	GESY	80-25
BSY55	INTG	114-44	BUY51A	TIIF	175-52	CLT2010	CLA	219-14	CS3905	TSC	208-19	D29E9	GESY	80-26
	ITTB		BUY52	TIIF	175-53	CLT2020	CLA	219-15			75-65	D29E9J1	GESY	81-52
	TFKG		BUY52A	TIIF	175-54	CLT2030	CLA	219-16	CS3906	TSC	188-96	D29E10	GESY	80-46
BSY56	INTG	114-45	BUY53	TIIF	175-55	CM600	CRY	122-108	CS4001	CSI	75-10	D29E10J1	GESY	81-56
	ITTB		BUY53A	TIIF	175-56	CM601	CRY	122-109	CS4002	CSI	206-94	D30A1	GESY	69-24
	TFKG		BUY54	TIIF	175-57	CM602	CRY	122-110	CS4003	CSI	91-14	D30A2	GESY	69-25
BSY58	SHWG	149-16	BUY54A	TIIF	175-58	CM603	CRY	123-1	CS4005	CSI	88-60	D30A3	GESY	69-26
	SHWG	210-12		SLCB	125-107	CM641	CRY	123-2	CS4006	CSI	96-15	D30A4	GESY	69-27
BSY59	SHWG	72-81		SLCB	125-108	CM642	CRY	123-3	CS4007	CSI	96-15	D30A5	GESY	69-28
BSY62	SHWG	94-60		SLCB	125-82	CM643	CRY	123-4	CS4012	CSI	96-16	D33D21	GESY	108-8
	TIIF			SLCB	120-83	CM644	CRY	123-5			74-20	D33D21J1	GESY	11



# 1. TYPE No. CROSS INDEX

				IN TYPE NUMBER SEQUENCE										
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line			
D40N1	♦ GSEY	154-77	DT1602	LUCB	83-73	EN708	♦ FSC	90-22	FM1201	♦ NSC	128-6	GET2484	♦ GSEY	102-64
D40N3	♦ GSEY	154-78	DT1603	LUCB	83-74			208-42			218-95	GET2904	♦ GSEY	77-17
D41D1	♦ GSEY	141-17	DT1610	LUCB	109-42	EN718A	♦ FSC	92-39	FM1202	♦ NSC	128-6			205-20
		203-17			190-4	EN722	♦ FSC	70-87			128-96	GET2905	♦ GSEY	77-18
D41D2	♦ GSEY	141-18	DT1612	LUCB	83-75	EN744	♦ FSC	90-8	FM1203	♦ NSC	128-8			205-21
		203-18			83-76			207-73			128-97	GET2906	♦ GSEY	77-19
D41D4	♦ GSEY	141-19	DT1621	LUCB	111-97	EN870	♦ FSC	92-35	FM1204	♦ NSC	128-9			205-22
		203-19			166-32	EN871	♦ FSC	92-40			128-98	GET2907	♦ GSEY	77-20
D41D5	♦ GSEY	141-20	DT3200	LUCB	166-32	EN914	♦ FSC	90-23	FM1205	♦ NSC	128-10			205-23
		203-20			166-33			208-43			128-99	GET3013	♦ GSEY	104-18
D41D7	♦ GSEY	141-21	DT3301	LUCB	160-47			88-37	FM1206	♦ NSC	128-11			209-18
		203-21			160-48	EN930	♦ FSC	92-41			128-100	GET3014	♦ GSEY	104-19
D41D8	♦ GSEY	141-22	DT4011	LUCB	167-97	EN956	♦ FSC	92-41			128-12			209-27
		203-22			167-98	EN1132	♦ BNT	73-58	FM1207	♦ NSC	128-12			209-27
D42C1	♦ GSEY	158-73	DT4306	LUCB	176-56	EN1613	♦ FSC	96-17	FM1208	♦ NSC	126-13			203-41
		199-26			176-57						126-102	GET3638A	♦ GSEY	77-54
D42C2	♦ GSEY	158-74	DT6106	LUCB	135-28	EN1711	♦ BNT	96-22	FM1209	♦ NSC	126-14			203-42
		199-27		♦ DEL	133-26		♦ FSC				126-103	GET3646	♦ GSEY	104-20
D42C3	♦ GSEY	158-75	DTG110A	♦ DEL	135-29	EN2219	♦ BNT	101-98	FM1210	♦ NSC	126-15			209-31
		199-28		♦ DEL	133-27		♦ FSC				126-104	GI2711	♦ GIC	94-90
D42C4	♦ GSEY	158-76	DTG600	♦ DEL	190-42	EN2222	♦ BNT	90-4	FM1211	♦ NSC	126-16	GI2712	♦ GIC	94-91
		199-29		♦ DEL	133-28		♦ FSC				126-105	GI2713	♦ GIC	94-92
D42C5	♦ GSEY	158-77	DTG601	♦ DEL	190-43	EN2369A	♦ FSC	90-64	FM3954	♦ NSC	126-17	GI2714	♦ GIC	94-93
		199-30		♦ DEL	133-29		♦ MEHK	110-109			126-106	GI2715	♦ GIC	94-94
D42C6	♦ GSEY	158-78	DTG602	♦ DEL	190-44	EN2484	♦ FSC	88-93	FM3954A	♦ NSC	126-18	GI2716	♦ GIC	94-95
		199-31		♦ DEL	133-30		♦ MEHK				126-107	GI2921	♦ GIC	87-106
D42C7	♦ GSEY	158-79	DTG603M	♦ DEL	190-45	EN2894A	♦ FSC	71-21	FM3955	♦ NSC	126-19	GI2922	♦ GIC	87-107
		199-32		♦ DEL	133-31			212-3			126-108	GI2923	♦ GIC	87-108
D42C8	♦ GSEY	158-80	DTG1010	♦ DEL	190-46	EN2905	♦ BNT	73-99	FM3955A	♦ NSC	126-20	GI2924	♦ GIC	87-109
		199-33		♦ DEL	135-30		♦ FSC	202-110			126-109	GI2925	♦ GIC	87-110
D43C1	♦ GSEY	141-33	DTG1110	♦ DEL	190-2	EN2907	♦ BNT	70-96	FM3956	♦ NSC	126-21	GI2926	♦ GIC	88-1
		197-56		♦ DEL	135-31		♦ FSC	203-1			126-110	GI3392	♦ GIC	88-2
D43C2	♦ GSEY	141-34	DTG1200	♦ DEL	190-3	EN3009	♦ FSC	90-28	FM3957	♦ NSC	126-22	GI3638	♦ GIC	75-11
		197-57		♦ DEL	135-32			209-16			217-1			207-54
D43C3	♦ GSEY	141-35	DTG2000	♦ DEL	135-102	EN3011	♦ FSC	90-53	FM3958	♦ NSC	126-23	GI3638A	♦ GIC	75-12
		197-58		♦ DEL	189-81			209-89			217-2			207-55
D43C4	♦ GSEY	141-36	DTG2100	♦ DEL	135-103	EN3013	♦ FSC	90-29	FOS100	♦ ITTB	96-62	GI3641	♦ GIC	98-2
		197-59		♦ DEL	189-82			209-17	FOS101	♦ ITTB	96-78	GI3643	♦ GIC	98-3
D43C5	♦ GSEY	141-37	DTG2200	♦ DEL	135-104	EN3014	♦ FSC	90-30	FOS102	♦ ITTB	104-89	GI3644	♦ GIC	75-3
		197-60		♦ DEL	189-83			209-26	FOS104	♦ ITTB	103-100			204-79
D43C6	♦ GSEY	141-38	DTG2300	♦ DEL	135-105	EN3502	♦ FSC	73-100			208-9	GI3702	♦ GIC	73-73
		197-61		♦ DEL	189-84			203-2	FP4339	♦ SIX	118-56	GI3703	♦ GIC	73-74
D43C7	♦ GSEY	141-39	DTG2400	♦ DEL	135-106	EN3504	♦ FSC	70-97	FP4339/2N4339	♦ SIX	213-57	GI3704	♦ GIC	96-63
		197-62		♦ DEL	189-85			203-3		♦ SIX		GI3705	♦ GIC	96-64
D43C8	♦ GSEY	141-40	DTG2400M	♦ DEL	133-32	EN3903	♦ FSC	100-91	FP4340	♦ SIX	118-57	GI3706	♦ GIC	96-65
		197-63		♦ DEL	188-16			206-95	FP4340/2N4340	♦ SIX	213-58	GI3707	♦ GIC	94-96
D44C1	♦ GSEY	163-66	DTS103	♦ DEL	178-103	EN3904	♦ FSC	100-107		♦ SIX		GI3708	♦ GIC	94-97
		199-34		♦ DEL	191-91			208-20	FT023	♦ LTF	95-55	GI3709	♦ GIC	94-98
D44C2	♦ GSEY	163-67	DTS104	♦ DEL	178-104	EN3905	♦ FSC	75-67	FT024	♦ LTF	95-56	GI3710	♦ GIC	94-99
		199-35		♦ DEL	191-92			204-78	FT025	♦ LTF	96-23	GI3711	♦ GIC	94-100
D44C3	♦ GSEY	163-68	DTS105	♦ DEL	178-105	EN3906	♦ FSC	75-75	FT026	♦ LTF	96-24	GI3793	♦ GIC	94-32
		199-36		♦ DEL	191-93			206-96	FT027	♦ LTF	158-12	GI3794	♦ GIC	99-44
D44C4	♦ GSEY	163-69	DTS106	♦ DEL	178-106	ET670	♦ ETC	64-13	FT34C	♦ FSC	114-8	GM290A	♦ THB	65-60
		199-37		♦ DEL	191-94	ET1550	♦ ETC	145-39			200-90	GM378A	♦ THB	65-58
D44C5	♦ GSEY	163-70	DTS107	♦ DEL	178-107	ET1551	♦ ETC	145-40	FT34D	♦ FSC	114-9	GM656A	♦ THB	55-40
		199-38		♦ DEL	191-95	FE0654A	♦ FSC	120-102			200-91	GPT	♦ ROSG	219-24
D44C6	♦ GSEY	163-71	DTS108	♦ DEL	178-108	FE0654B	♦ FSC	120-103	FT57	♦ FSC	125-57	GS101	♦ GSI	219-25
		199-39		♦ DEL	176-58	FE0654C	♦ FSC	120-104	FT107A	♦ FSC	94-61	GS103	♦ GSI	219-26
D44C7	♦ GSEY	163-72	DTS401	♦ SEN	189-106	FE3819	♦ FSC	125-4	FT107B	♦ FSC	94-62	GS161	♦ GSI	219-27
		199-40		♦ DEL	178-109	FE4302	♦ FSC	123-10	FT107C	♦ FSC	94-63	GS163	♦ GSI	219-28
D44C8	♦ GSEY	163-73	DTS402	♦ SEN	178-110	FE4303	♦ FSC	123-11	FT118	♦ FSC	87-32	GS165	♦ GSI	219-29
		199-41		♦ DEL	178-110	FE4304	♦ FSC	123-12	FT0654A	♦ FSC	123-17	GS167	♦ GSI	219-30
D44C9	♦ GSEY	163-74	DTS410	♦ SEN	191-75	FE5245	♦ FSC	125-5	FT0654B	♦ FSC	123-18	GS201	♦ GSI	219-31
		199-42		♦ DEL	179-1	FE5246	♦ FSC	125-6	FT0654C	♦ FSC	123-19	GS203	♦ GSI	219-32
D44R1	♦ GSEY	164-5	DTS411	♦ SEN	192-27	FE5247	♦ FSC	125-7	FT0654D	♦ FSC	123-20	GS261	♦ GSI	219-33
		164-6		♦ DEL	176-59	FE5457	♦ FSC	124-23	FT0654E	♦ FSC	123-21	GS263	♦ GSI	219-34
D44R2	♦ GSEY	164-7	DTS413	♦ SEN	192-54	FE5458	♦ FSC	124-24	FT701	♦ FSC	223-39	GS265	♦ GSI	219-35
		164-8		♦ SOD		FE5459	♦ FSC	124-25	FT704	♦ FSC	118-99	GS267	♦ GSI	219-36
D44R3	♦ GSEY	164-9	DTS423	♦ DEL	179-2	FE5484	♦ FSC	124-26	FT709	♦ FSC	99-43	GS300	♦ GSI	219-37
		197-64		♦ SOD	192-28	FE5485	♦ FSC	124-27			211-62	GS302	♦ GSI	219-38
D44R4	♦ GSEY	164-10	DTS423M	♦ DEL	179-3	FE5486	♦ FSC	124-28	FT1702	♦ FSC	75-36	GS370	♦ GSI	219-39
		197-65		♦ DEL	191-35	FF102	♦ CRY	120-13			211-36	GS372	♦ GSI	219-40
D45C1	♦ GSEY	142-95	DTS424	♦ DEL	179-4			219-18	FT2974	♦ FSC	217-3	GS400	♦ GSI	219-41
		197-66		♦ DEL	191-76	FF108	♦ CRY	120-14	FT2978	♦ FSC	217-4	GS403	♦ GSI	219-42
D45C2	♦ GSEY	142-96	DTS425	♦ DEL	179-5			219-19	FT3820	♦ FSC	117-62	GS420	♦ GSI	219-43
		197-67		♦ DEL	191-77	FF409	♦ CRY	123-13	FT3909	♦ FSC	118-58	GS422	♦ GSI	219-44
D45C3	♦ GSEY	142-97	DTS430	♦ DEL	180-19			219-20	FT4017	♦ FSC	223-40	GS423	♦ GSI	219-45
		197-68		♦ DEL	191-82	FF411	♦ CRY	123-14	FT4018	♦ FSC	223-41	GS470	♦ GSI	219-46
D45C4	♦ GSEY	142-100	DTS431	♦ DEL	180-20			219-21	FT4019	♦ FSC	223-42	GS501	♦ GSI	219-47
		197-69		♦ DEL	191-83	FF600	♦ CRY	123-15	FT4020	♦ FSC	217-5	GS503	♦ GSI	219-48
D45C5	♦ GSEY	142-101	DTS431M	♦ DEL	180-21			219-22	FT4021	♦ FSC	217-6	GS561	♦ GSI	219-49
		197-70		♦ DEL	191-7	FF617	♦ CRY	123-16	FT4022	♦ FSC	217-7	GS563	♦ GSI	



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
GT1608	GIC	86-95	HEPF2004	MOTA	125-88	K2116B	KMC	92-2	KD5523	KMC	106-77	KSD9702A	KER	174-40
GT1609	GIC	66-96	HEPF2005	MOTA	123-22	K2117	KMC	91-40	KD5525	KMC	106-72	KSD9703	KER	174-41
GT1644	GIC	71-34	HEPF2007	MOTA	126-24	K2117A	KMC	91-85	KD5526	KMC	106-73	KSD9703A	KER	174-42
GT5116	GIC	57-63	HEPG6001	MOTA	127-40	K2117B	KMC	92-3	KF2000	KSC	65-14	KSD9704	KER	174-43
GT5117	GIC	57-73	HEPS0001	MOTA	146-102	K2118	KMC	91-41	KF2001	KSC	65-15	KSD9705	KER	174-44
GT5148	GIC	53-77	HEPS3001	MOTA	146-103	K2118A	KMC	91-86	KF2002	KSC	65-16	KSD9706	KER	174-45
GT5149	GIC	53-98	HEPS3005	MOTA	146-104	K2118B	KMC	92-4	KF2003	KSC	65-17	KSD9707	KER	174-46
HEP1	MOTA	60-72	HEPS3006	MOTA	146-105	K2119	KMC	91-42	KJ2000	KSC	129-65	KSP1001	KER	182-26
HEP2	MOTA	64-108	HEPS3007	MOTA	146-106	K2119A	KMC	91-87	KJ2001	KSC	129-66	KSP1002	KER	182-27
HEP3	MOTA	56-110	HEPS3008	MOTA	146-107	K2119B	KMC	92-5	KJ2002	KSC	129-67	KSP1003	KER	182-28
HEP50	MOTA	105-107	HEPS9001	MOTA	221-12	K2120	KMC	91-43	KJ2003	KSC	129-68	KSP1051	KER	152-96
HEP51	MOTA	81-4	HEPS9100	MOTA	225-103	K2120A	KMC	91-88	KL8010	KSC	130-67	KSP1052	KER	152-97
HEP52	MOTA	79-8	HEPS9120	MOTA	225-104	K2120B	KMC	92-6	KL8011	KSC	130-68	KSP1053	KER	152-98
HEP53	MOTA	110-79	HS5810	GESY	111-46	K2121	KMC	91-44	KL8012	KSC	130-69	KSP1054	KER	152-99
HEP54	MOTA	100-46	HS5811	GESY	81-38	K2121A	KMC	91-89	KL8013	KSC	130-70	KSP1055	KER	152-100
HEP55	MOTA	100-68	HS5812	GESY	111-47	K2121B	KMC	92-7	KL8503	KSC	129-35	KSP1071	KER	162-76
HEP56	MOTA	101-33	HS5813	GESY	81-39	K2122	KMC	91-45	KL8504	KSC	129-36	KSP1072	KER	162-77
HEP57	MOTA	75-68	HS5814	GESY	111-48	K2122A	KMC	91-90	KL8505	KSC	129-37	KSP1073	KER	162-78
HEP75	MOTA	146-86	HS5815	GESY	81-40	K2122B	KMC	92-8	KL8506	KSC	129-38	KSP1074	KER	162-79
HEP76	MOTA	139-6	HS5816	GESY	111-49	K2123	KMC	91-46	KM7000	KSC	129-69	KSP1075	KER	162-80
HEP200	MOTA	127-20	HS5817	GESY	81-41	K2123A	KMC	91-91	KM7001	KSC	129-70	KSP1091	KER	165-22
HEP230	MOTA	127-21	HS5818	GESY	111-50	K2123B	KMC	92-9	KM7002	KSC	129-71	KSP1092	KER	165-23
HEP231	MOTA	127-22	HS5819	GESY	81-42	K2124	KMC	91-47	KM7007	KSC	129-2	KSP1093	KER	165-24
HEP232	MOTA	127-23	HS5820	GESY	111-51	K2124A	KMC	91-92	KM7008	KSC	129-3	KSP1094	KER	165-25
HEP233	MOTA	127-24	HS5821	GESY	81-43	K2124B	KMC	92-10	KM7009	KSC	129-4	KSP1095	KER	165-26
HEP234	MOTA	127-25	HS5822	GESY	111-52	K2125	KMC	91-48	KM7010	KSC	129-5	KSP1101	KER	169-77
HEP235	MOTA	127-26	HS5823	GESY	81-44	K2125A	KMC	91-93	KM7011	KSC	129-94	KSP1102	KER	169-78
HEP236	MOTA	127-27	HSC3921	HSC	120-4	K2125B	KMC	92-11	KM7012	KSC	129-95	KSP1103	KER	169-79
HEP237	MOTA	127-28			217-11	K2126	KMC	91-49	KM7013	KSC	129-96	KSP1104	KER	169-80
HEP238	MOTA	127-29	HSC3954	HSC	120-5	K2126A	KMC	91-94	KM7014	KSC	129-97	KSP1105	KER	169-81
HEP239	MOTA	127-30			217-12	K2126B	KMC	92-12	KM7015	KSC	129-98	KSP1121	KER	164-9
HEP240	MOTA	146-87	HSC4391	HSC	124-30	K2127	KMC	91-50	KM7016	KSC	129-99	KSP1122	KER	164-10
HEP241	MOTA	146-88			185-34	K2127A	KMC	91-95	KM7017	KSC	129-100	KSP1123	KER	164-11
HEP242	MOTA	139-7	HSC4392	HSC	124-31	K2127B	KMC	92-13	KS6101	KER	152-94	KSP1124	KER	164-12
HEP243	MOTA	146-89			185-35	K2501	KMC	99-87			209-19	KSP1125	KER	164-13
HEP244	MOTA	146-90	HSC4393	HSC	124-32	K2502	KMC	106-44	KS6102	KER	152-95	KSP1141	KER	170-88
HEP245	MOTA	146-91			185-36	K2503	KMC	102-12			209-36	KSP1142	KER	170-89
HEP246	MOTA	139-8	HSC4416	HSC	124-33	K2507	KMC	106-45	KS6103	KER	154-83	KSP1143	KER	170-90
HEP247	MOTA	146-92	HSC4416A	HSC	124-34	K2509	KMC	102-13			207-101	KSP1144	KER	170-91
HEP248	MOTA	139-9	HSC5163	HSC	124-35	K2523	KMC	99-74	KS6104	KER	154-84	KSP1145	KER	170-92
HEP250	MOTA	62-63	HSC5457	HSC	124-36	K2524	KMC	99-88			207-109	KSP1151	KER	169-82
HEP251	MOTA	62-84	HSC5457A	HSC	124-37	K2525	KMC	99-107	KS6105	KER	155-105	KSP1152	KER	169-83
HEP252	MOTA	62-64	HSC5458	HSC	124-38	K2526	KMC	100-8			209-90	KSP1153	KER	169-84
HEP253	MOTA	63-59	HSC5458A	HSC	124-39	K2601	KMC	99-75	KS6106	KER	155-106	KSP1154	KER	169-85
HEP254	MOTA	63-60	HSC5459	HSC	124-40	K2601A	KMC	99-98			209-105	KSP1155	KER	169-86
HEP310	MOTA	221-11	HSC5459A	HSC	124-41	K2601B	KMC	100-9	KS6107	KER	155-107	KSP1156	KER	169-87
HEP312	MOTA	219-63	HSC5484	HSC	124-42	K2601C	KMC	91-51			204-19	KSP1171	KER	170-93
HEP623	MOTA	127-31	HSC5485	HSC	124-43	K2602	KMC	99-76	KS6108	KER	155-108	KSP1172	KER	170-94
HEP624	MOTA	127-32	HSC5486	HSC	124-44	K2602A	KMC	99-99			204-32	KSP1173	KER	170-95
HEP625	MOTA	127-33	HSC5638	HSC	124-45	K2602B	KMC	100-10	KS6109	KER	158-13	KSP1174	KER	170-96
HEP626	MOTA	127-34			185-37	K2602C	KMC	91-52			209-106	KSP1175	KER	170-97
HEP627	MOTA	127-35	HSC5639	HSC	124-46	K2603	KMC	99-77	KS6110	KER	158-14	KSP1176	KER	170-98
HEP628	MOTA	127-36			185-52	K2603A	KMC	99-100			209-38	KSP1201	KER	176-63
HEP629	MOTA	62-33	HSC5640	HSC	124-47	K2603B	KMC	100-11	KS6111	KER	158-15	KSP1202	KER	176-64
HEP630	MOTA	62-34			185-65	K2603C	KMC	91-53			209-107	KSP1203	KER	176-65
HEP631	MOTA	62-65	HT100	EMLS	73-46	K2604	KMC	99-78	KS6112	KER	158-16	KSP1204	KER	176-66
HEP632	MOTA	62-76			197-52	K2604A	KMC	99-101			209-39	KSP1205	KER	176-67
HEP633	MOTA	62-85	HT101	EMLS	73-47	K2604B	KMC	100-12	KS6113	KER	160-97	KSP1251	KER	176-68
HEP634	MOTA	62-92			197-53	K2604C	KMC	91-54			206-63	KSP1252	KER	176-69
HEP635	MOTA	60-73	HT400	EMLS	95-57	K2607	KMC	106-38	KS6114	KER	160-98	KSP1253	KER	176-70
HEP636	MOTA	61-24	HT401	EMLS	95-58	K2607A	KMC	106-46			206-77	KSP1254	KER	176-71
HEP637	MOTA	61-28	JH2101	ECD	123-23	K2607B	KMC	106-50	KS6115	KER	161-93	KSP1255	KER	176-72
HEP638	MOTA	54-43	JH2102	ECD	123-24	K2608	KMC	106-39			206-78	KSP1256	KER	176-73
HEP639	MOTA	53-110	JH2103	ECD	123-25	K2608A	KMC	106-47	KS6116	KER	161-94	KSP1601	KER	182-29
HEP640	MOTA	54-1	JH2104	ECD	123-26	K2608B	KMC	106-51			206-98	KSP1602	KER	182-30
HEP641	MOTA	67-77	JH2105	ECD	123-27	K2609	KMC	106-40	KS6117	KER	169-72	KSP1603	KER	182-31
HEP642	MOTA	127-37	JH2106	ECD	123-28	K2609A	KMC	106-48			202-93	KSP1604	KER	182-32
HEP643	MOTA	127-38	K2101	KMC	99-66	K2609B	KMC	106-52	KS6118	KER	169-73	KSP1605	KER	182-33
HEP644	MOTA	127-39	K2101A	KMC	99-90	K2610	KMC	99-79			202-106	L14A502	GESY	219-64
HEP700	MOTA	139-10	K2101B	KMC	99-110	K2610A	KMC	99-102	KS6119	KER	169-74	L14B	GESY	223-43
HEP701	MOTA	146-93	K2102	KMC	99-67	K2610B	KMC	100-13			203-4	L14E1	GESY	219-65
HEP702	MOTA	139-11	K2102A	KMC	99-91	K2611	KMC	99-80	KS6120	KER	170-56	L14E2	GESY	219-66
HEP703	MOTA	146-94	K2102B	KMC	100-1	K2611A	KMC	99-103			202-82	L14E3	GESY	219-67
HEP704	MOTA	146-95	K2103	KMC	99-68	K2611B	KMC	100-14	KS6121	KER	170-57	L14E4	GESY	219-68
HEP705	MOTA	139-12	K2103A	KMC	99-92	K2612	KMC	99-81			202-83	LDA400	APX	103-58
HEP706	MOTA	146-96	K2103B	KMC	100-2	K2612A	KMC	99-104	KS6122	KER	170-58	LDA400MP	APX	103-59
HEP707	MOTA	146-97	K2104	KMC	99-69	K2612B	KMC	100-15			202-94			217-13
HEP708	MOTA	139-13	K2104A	KMC	99-93	K2613	KMC	99-82	KS6123	KER	169-75	LDA401	APX	103-60
HEP709	MOTA	99-45	K2104B	KMC	100-3	K2613A	KMC	99-105			202-84	LDA401MP	APX	103-61
HEP710	MOTA	139-14	K2105	KMC	99-70	K2613B	KMC	100-16	KS6124	KER	169			

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
LDS201	APX	104-74	M73P-X502	GESY	225-61	MD1122F	MOTA	217-35	MD8002	MOTA	94-102	MEM511C	GIC	117-47
	MULB	210-91	M82P-X500	GESY	225-62	MD1126	MOTA	217-36			217-68	MEM515	GIC	119-37
LDS205	APX	104-90	M100	SIX	123-29	MD1127	MOTA	217-37	MD8003	MOTA	94-103	MEM517	GIC	119-30
		211-52	M101	SIX	123-30	MD1128	MOTA	209-37			217-69	MEM517A	GIC	119-29
LDS207	APX	102-42	M103	SIX	117-76			217-38	ME209	APX	222-88	MEM517B	GIC	117-1
		222-87	M104	SIX	117-77	MD1129	MOTA	217-39		PHIC		MEM517C	GIC	119-38
LDS208	APX	103-6	M106	SIX	119-18	MD1129F	MOTA	217-40	ME213	PHIC	102-84	MEM520	GIC	117-85
		204-56			223-44	MD1130	MOTA	217-41	ME213A	PHIC	102-85	MEM520C	GIC	117-88
LDS210	APX	103-7	M107	SIX	119-19	MD1130F	MOTA	217-42	ME214	APX	222-89	MEM550	GIC	117-32
		204-20			223-45	MD1131	MOTA	217-43		PHIC				223-76
LDS257	APX	76-40	M108	SIX	119-20	MD1131F	MOTA	217-44	ME216	PHIC	102-86	MEM550C	GIC	117-18
LD929	TEC	88-38			223-46	MD1132	MOTA	217-45	ME217	PHIC	102-87	MEM551	GIC	117-33
LD930	TEC	88-39	M113	SIX	117-78	MD1132F	MOTA	217-46	MEO401	MEHK	77-56			217-73
LS400	TII	219-69	M114	SIX	117-79	MD1134	MOTA	217-47			208-45	MEM551C	GIC	117-19
	TII		M116	SIX	121-22	MD2218	MOTA	108-48	MEO402	MEHK	77-57			217-74
LS600	TII	219-70	M117	SIX	121-23			223-51			208-46	MEM554	GIC	120-48
LT11	KSC	129-6	M119	SIX	117-80	MD2218A	MOTA	108-49	MEO404	MEHK	76-97	MEM554C	GIC	120-49
LT12	KSC	129-7	M163	SIX	118-110			223-52	MEO404-1	MEHK	77-25	MEM556	GIC	117-29
LT13	KSC	129-8	M164	SIX	119-1	MD2218AF	MOTA	93-66	MEO404-2	MEHK	77-26	MEM556C	GIC	117-30
LT14	KSC	129-9	M511	SIX	117-81			223-53	MEO411	MEHK	70-80	MEM557	GIC	120-50
LT15	KSC	129-10	M511A	SIX	117-82	MD2218F	MOTA	93-67	MEO412	MEHK	70-84	MEM557C	GIC	121-27
LT5021	KSC	129-39	M517	SIX	117-83			223-54	MEO413	MEHK	70-81	MEM560	GIC	118-62
LT5023	KSC	129-40	MA100	MOTA	62-35	MD2219	MOTA	108-92	MEO414	MEHK	70-88	MEM560C	GIC	117-64
LT5024	KSC	129-41	MA200	MOTA	59-26			223-55	MEO461	MEHK	72-67	MEM562	GIC	121-28
LT5026	KSC	129-42	MA201	MOTA	59-27	MD2219A	MOTA	108-93			209-50			186-44
LT5027	KSC	129-43	MA202	MOTA	59-28			223-56	MEO462	MEHK	72-68	MEM562C	GIC	120-63
LT5029	KSC	129-44	MA203	MOTA	59-29	MD2219AF	MOTA	93-95			209-51	MEM563	GIC	121-29
LT5030	KSC	129-45	MA204	MOTA	59-30			223-57	MEO463	MEHK	72-64	MEM564C	GIC	121-30
LT5032	KSC	129-46	MA205	MOTA	59-31	MD2219F	MOTA	93-96			208-68	MEM571C	GIC	120-51
LT5033	KSC	129-47	MA206	MOTA	59-32			223-58	MEO475	MEHK	70-92	MEU21	MEHK	221-13
LT5035	KSC	129-48	MA881	MOTA	62-10	MD2369	MOTA	109-8	MEO491	MEHK	72-73	MEU22	MEHK	221-14
LT5036	KSC	129-49	MA882	MOTA	62-36			223-59			211-96	MFE2004	MOTA	126-67
LT5037	KSC	129-50	MA883	MOTA	62-49	MD2369A	MOTA	109-9	MEO492	MEHK	72-74			186-18
LT5040	KSC	129-51	MA884	MOTA	62-68			217-48			211-97	MFE2005	MOTA	126-68
LT5041	KSC	129-52	MA885	MOTA	62-4	MD2369AF	MOTA	94-19	MEO493	MEHK	72-75			185-86
LT5043	KSC	129-53	MA886	MOTA	62-11			217-49			211-100	MFE2006	MOTA	126-69
LT5044	KSC	129-54	MA887	MOTA	62-37	MD2369B	MOTA	109-10	ME501A	PHIC	77-27			185-66
LT5046	KSC	129-55	MA888	MOTA	62-50			217-50	ME501B	MEHK	217-70	MFE2007	MOTA	126-70
LT5047	KSC	129-56	MA889	MOTA	62-69	MD2369BF	MOTA	94-20	ME502	MEHK	77-28			185-42
LT5049	KSC	129-57	MA909	MOTA	58-95			217-51			217-71	MFE2008	MOTA	126-71
LT5050	KSC	129-58	MA910	MOTA	58-96	MD2369F	MOTA	94-21	ME503	MEHK	77-29			185-43
LT5052	KSC	130-71	MA1703	MOTA	62-93			223-60	ME504	PHIC	217-72	MFE2009	MOTA	126-72
LT5053	KSC	130-72	MA1704	MOTA	63-11	MD2904	MOTA	80-16	ME511	MEHK	77-30			185-44
LT5055	KSC	130-73	MA1706	MOTA	62-94			223-61	ME512	MEHK	77-31	MFE2010	MOTA	126-73
LT5056	KSC	130-74	MA1707	MOTA	62-105	MD2904A	MOTA	80-66	ME513	MEHK	77-32			185-45
LT5058	KSC	130-75	MA8001	MEHK	114-66			223-62	ME900	PHIC	102-88	MFE2011	MOTA	126-74
LT5059	KSC	130-76	MA8002	MEHK	114-67	MD2904AF	MOTA	72-54	ME901	PHIC	102-89			185-46
LT5061	KSC	130-77	MA8003	MEHK	114-68			223-63	ME1001	MEHK	93-68	MFE2012	MOTA	126-75
LT5062	KSC	130-78	MCH2005F	TSC	225-105	MD2904F	MOTA	72-55	ME1002	MEHK	93-69			185-47
LT5064	KSC	130-79	MD1F3066	DIC	125-89			223-64	ME1075	MEHK	89-9	MFE2093	MOTA	123-36
LT5065	KSC	130-80	MD1F3067	DIC	125-90	MD2905	MOTA	80-67	ME1100	MEHK	88-94	MFE2094	MOTA	123-37
LT5067	KSC	130-81	MD1F3068	DIC	125-91			223-65	ME1120	MEHK	88-95	MFE2095	MOTA	123-38
LT5068	KSC	130-82	MD1F3069	DIC	125-92	MD2905A	MOTA	80-68	ME2001	MEHK	97-57	MFE3001	MOTA	120-107
LT5070	KSC	130-83	MD1F3070	DIC	125-93			223-66	ME2002	MEHK	97-58	MFE3002	MOTA	120-108
LT5071	KSC	130-84	MD1F3071	DIC	125-94	MD2905AF	MOTA	72-56	ME3001	MEHK	90-88	MFE3003	MOTA	117-65
LT5073	KSC	130-85	MD1F3458	DIC	123-31			223-67	ME3002	MEHK	91-15	MFE3006	MOTA	123-39
LT5074	KSC	130-86	MD1F3459	DIC	123-32	MD2905F	MOTA	72-57	ME3011	MEHK	91-16	MFE3007	MOTA	123-40
LT5076	KSC	130-87	MD1F3460	DIC	123-33			223-68	ME4001	MEHK	93-39	MFE3008	MOTA	123-41
LT5077	KSC	130-88	MD1F3823	DIC	123-34	MD2974	MEHK	88-3	ME4002	MEHK	93-54	MFE3020	MOTA	119-31
LT5079	KSC	130-89	MD1F4391	DIC	126-25			217-52	ME4003	MEHK	93-55			186-2
LT5080	KSC	130-90	MD1F4392	DIC	126-26	MD2975	MEHK	88-4	ME4101	MEHK	88-96	MFE3021	MOTA	119-32
LT5082	KSC	130-91	MD1F4393	DIC	126-27			217-53	ME4102	MEHK	88-97			186-3
LT5083	KSC	130-92	MD1F4416	DIC	123-35	MD2978	MEHK	88-5	ME4103	MEHK	89-1	MFE4007	MOTA	117-66
LT5085	KSC	130-93	MD1T918	DIC	90-87			217-54	ME4104	MEHK	88-98	MFE4008	MOTA	117-67
LT5086	KSC	130-94	MD1T1893	DIC	107-42	MD2979	MEHK	88-6	ME6001	MEHK	103-8	MFE4009	MOTA	117-68
LT5088	KSC	132-5	MD1T2222	DIC	108-91			217-55	ME6002	MEHK	103-9	MFE4010	MOTA	117-69
LT5089	KSC	132-6	MD1T2369	DIC	104-75	MD3133	MOTA	80-69	ME6003	MEHK	102-92	MFE4011	MOTA	117-70
LT5091	KSC	132-7			210-110			223-69	ME6101	MEHK	77-65	MFE4012	MOTA	117-71
LT5092	KSC	132-8	MD1T2484	DIC	102-65	MD3133F	MOTA	72-58			210-2	MHM1001	SOD	223-77
LT5094	KSC	132-9	MD1T2605	DIC	77-110			223-70	ME6102	MEHK	77-70	MHM1101	SOD	223-78
LT5095	KSC	132-10	MD1T2907	DIC	79-88	MD3134	MOTA	80-70			210-78	MHM1201	SOD	223-79
LT5097	KSC	132-11			205-47			223-71	ME8001	MEHK	105-97	MHM2001	SOD	223-81
LT5098	KSC	132-12	MD1T3251	DIC	77-55	MD3134F	MOTA	72-59	ME8002	MEHK	105-70	MHM2011	SOD	223-82
LT5100	KSC	132-13	MD1T3704	DIC	105-19			223-72	ME8003	MEHK	105-71	MHM2012	SOD	223-83
LT5101	KSC	132-14	MD708	MOTA	98-76	MD3250	MOTA	217-56	ME9001	MEHK	94-10	MHM2013	SOD	223-84
LT5103	KSC	132-15			223-47	MD3250A	MOTA	217-57			209-75	MHM2014	SOD	223-85
LT5106	KSC	132-16	MD708A	MOTA	98-77	MD3250AF	MOTA	217-58	ME9002	MEHK	94-11	MHM2015	SOD	223-86
LT5107	KSC	132-17			217-15	MD3250F	MOTA	217-59			209-91	MHM2016	SOD	223-87
LT5109	KSC	132-18	MD708AF	MOTA	93-105	MD3251	MOTA	217-60	ME9003	MEHK	94-36	MHM2017	SOD	223-88
LT5110	KSC	132-19			217-16	MD3251A	MOTA	217-61			211-63	MHM2101	SOD	223-89
LT5111	KSC	132-20	MD708B	MOTA	98-78	MD3251AF	MOTA	217-62	ME9021	MEHK	93-108	MHM2111	SOD	223-90
LT5112	KSC	132-21			217-17	MD3251F	MOTA	217-63						

# 1. TYPE No. CROSS INDEX

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TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MJ1001	♦MOTA	225-109	ML111B	♦SELB	117-2	MMF6	♦MOTA	123-47	MP8222	MEHK	163-25	MPS6562	♦MOTA	80-23	MJ1800	♦MOTA	173-109	MM380	♦MOTA	64-47	♦MOTA	217-80	MP8223	MEHK	163-26	MPS6563	♦MOTA	80-24	MJ2249	♦MOTA	159-103	MM404	♦MOTA	60-56	MMT70	♦MOTA	92-71	MP8231	MEHK	152-101	MPS6565	♦MOTA	100-83	MJ2250	♦MOTA	159-104			191-64	MMT71	♦MOTA	71-32	MP8232	MEHK	152-102	MPS6566	♦MOTA	100-84	MJ2251	♦MOTA	159-44	MM404A	♦MOTA	60-57	MMT72	♦MOTA	92-88	MP8233	MEHK	152-103	MPS6567	♦MOTA	100-43	MJ2252	♦MOTA	159-45			191-65			209-108	MP8234	MEHK	152-104	MPS6568	♦MOTA	101-6	MJ2253	♦MOTA	141-73	MM709	MOTA	106-4	MMT73	♦MOTA	71-45	MP8235	MEHK	152-105	MPS6568A	♦MOTA	101-7	MJ2254	♦MOTA	141-74	MM869B	♦MOTA	177-66			210-9	MP8511	MEHK	142-57	MPS6569	♦MOTA	100-109	MJ2267	♦MOTA	144-106			210-21	MMT74	♦MOTA	92-9	MP8512	MEHK	142-58	MPS6570	♦MOTA	100-110	MJ2268	♦MOTA	144-107	MM1139	♦MOTA	58-23	MMT75	♦MOTA	71-33	MP8513	MEHK	142-59	MPS6571	♦MOTA	100-66	MJ2500	♦MOTA	225-110	MM1500	MOTA	149-63			185-74	MP8521	MEHK	142-60	MPSA09	♦MOTA	100-51	MJ2501	♦MOTA	226-1	MM1501	MOTA	149-64	MMT76	♦MOTA	185-71	MP8522	MEHK	142-61	MPSA05	♦MOTA	108-50	MJ2801	♦MOTA	170-86	MM1552	MOTA	170-32			185-72	MP8523	MEHK	142-62	MPSA06	♦MOTA	108-51	MJ2840	♦MOTA	175-17	MM1553	MOTA	170-33	MMT806	♦MOTA	92-95	MP8611	MEHK	142-63	MPSA10	♦MOTA	95-74	MJ2841	♦MOTA	175-18	MM1619	MOTA	164-88	MMT807	♦MOTA	92-96	MP8612	MEHK	142-64	MPSA12	TSC	226-22	MJ2901	♦MOTA	144-72	MM1620	♦MOTA	170-46	MMT808	♦MOTA	71-48	MP8613	MEHK	142-65	MPSA13	♦MOTA	108-52	MJ2940	♦MOTA	144-103	MM1755	MOTA	83-2	MMT809	♦MOTA	92-90	MP8621	MEHK	142-66	MPSA14	♦MOTA	108-53	MJ2941	♦MOTA	144-104	MM1756	MOTA	206-9	MMT918	♦MOTA	92-76	MP8622	MEHK	142-67	MPSA20	♦MOTA	96-79	MJ3000	♦MOTA	226-2			83-4	MMT919	♦MOTA	92-78	MP8623	MEHK	142-68	MPSA55	♦MOTA	80-41	MJ3001	♦MOTA	226-3	MM1757	MOTA	83-5	MMT930	♦MOTA	92-79	MPF102	♦MOTA	120-109	MPSA56	♦MOTA	80-42	MJ3010	♦MOTA	172-37	MM1758	MOTA	208-23	MMT2222	♦MOTA	204-21	MPE106	♦NSC	120-110	MPSA65	♦MOTA	80-59	MJ3011	♦MOTA	172-38			208-23	MMT2369	♦MOTA	71-46	MPE107	♦NSC	121-1	MPSA66	♦MOTA	80-60	MJ3101	♦MOTA	159-105	MM1803	♦MOTA	114-82			211-1	MPE111	♦MOTA	121-2	MPSA70	♦MOTA	73-77	MJ3201	♦MOTA	158-81	MM1812	♦MOTA	147-89	MMT2484	♦MOTA	92-77	MPE112	♦MOTA	121-3	MPSH02	♦MOTA	108-109	MJ3202	♦MOTA	158-82	MM1941	♦MOTA	99-49	MMT2857	♦MOTA	92-92	MPE120	♦MOTA	126-28	MPSH04	♦MOTA	97-33	MJ3701	♦MOTA	141-75	MM2258	♦MOTA	147-60	MMT2907	♦MOTA	71-43	MPE121	♦MOTA	126-29	MPSH05	♦MOTA	97-34	MJ3771	♦MOTA	175-19	MM2259	♦MOTA	147-61			204-33	MPE122	♦MOTA	126-30	MPSH07	♦MOTA	109-1	MJ3772	♦MOTA	175-20	MM2260	♦MOTA	147-62	MMT3014	♦MOTA	92-86	MPE161	♦MOTA	118-96	MPSH08	♦MOTA	109-11	MJ3801	♦MOTA	163-54	MM2262	♦MOTA	151-69			209-28	MPMS006	♦MOTA	101-22	MPSH10	♦MOTA	101-28	MJ3802	♦MOTA	163-55	MM2263	♦MOTA	151-70	MMT3546	♦MOTA	71-47	MPS404	♦MOTA	75-44	MPSH11	♦MOTA	101-29	MJ4000	♦MOTA	226-4	MM2483	♦MOTA	102-47			211-90			191-66	MPSH20	♦MOTA	101-27	MJ4001	♦MOTA	226-5	MM2484	♦MOTA	102-49	MMT3798	♦MOTA	71-35	MPS404A	♦MOTA	75-45	MPSH24	♦MOTA	109-13	MJ4010	♦MOTA	226-6	MM2894A	♦MOTA	77-88	MMT3799	♦MOTA	71-36			191-67	MPSH30	♦MOTA	101-1	MJ4011	♦MOTA	226-7			212-5	MMT3823	♦MOTA	121-31	MPS706	♦MOTA	100-79	MPSH31	♦MOTA	101-2	MJ4030	♦MOTA	228-8	MM3000	♦MOTA	147-63	MMT3903	♦MOTA	92-80			205-28	MPSH32	♦MOTA	109-4	MJ4031	♦MOTA	228-9	MM3001	♦MOTA	147-64	MMT3904	♦MOTA	92-83			205-29	MPSH34	♦MOTA	109-15	MJ4032	♦MOTA	228-10	MM3002	♦MOTA	147-65			207-89	MPS834	♦MOTA	101-4	MPSH37	♦MOTA	101-3	MJ4033	♦MOTA	228-11	MM3003	♦MOTA	147-66	MMT3905	♦MOTA	71-41			209-29	MPSH54	♦MOTA	74-18	MJ4034	♦MOTA	228-12	MM3004	♦MOTA	151-72	MMT3906	♦MOTA	204-23	MPS918	♦MOTA	101-23	MPSH55	♦MOTA	74-19	MJ4035	♦MOTA	228-13	MM3005	♦MOTA	153-104	MMT3960	♦MOTA	71-42	MPS2369	♦MOTA	101-20	MPSL01	♦MOTA	100-50	MJ4101	♦MOTA	160-49	MM3006	♦MOTA	153-105	MMT3960A	♦MOTA	212-39			211-2	MPSL07	♦MOTA	75-88	MJ4502	♦MOTA	145-22	MM3007	♦MOTA	153-106			212-39			100-24	MPSL08	♦MOTA	212-28	MJ6700	♦MOTA	143-79	MM3008	♦MOTA	147-67	MMT8015	♦MOTA	92-18	MPS2714	♦MOTA	100-92	MPSL51	♦MOTA	75-51	MJ6701	♦MOTA	143-80	MM3009	♦MOTA	147-68	MMT8016	♦MOTA	135-33			206-18	MPSU01	♦MOTA	157-89	MJ7000	♦MOTA	175-21	MM3725	♦MOTA	151-74	MP110B	♦MOTA	135-34	MPS2715	♦MOTA	100-26	MPSU01A	♦MOTA	157-90	MJ7200	♦MOTA	181-4			204-57	MP1500	♦MOTA	137-9	MPS2716	♦MOTA	100-27	MPSU02	♦MOTA	155-40	MJ7201	♦MOTA	181-5	MM3726	♦MOTA	140-27	MP500A	♦MOTA	137-10	MPS2923	♦MOTA	88-7	MPSU03	♦MOTA	153-107	MJ8100	♦MOTA	140-110	MM4000	♦MOTA	80-80	MP501A	♦MOTA	137-11	MPS2924	♦MOTA	88-8	MPSU04	♦MOTA	153-108	MJ8101	♦MOTA	141-1	MM4001	♦MOTA	139-45	MP502A	♦MOTA	137-12	MPS2925	♦MOTA	88-9	MPSU05	♦MOTA	153-109	MJ8400	♦MOTA	176-77	MM4002	♦MOTA	139-46	MP503A	♦MOTA	137-13	MPS2926	♦MOTA	88-10	MPSU06	♦MOTA	153-110	MJ9000	♦MOTA	176-78	MM4003	♦MOTA	139-47	MP504A	♦MOTA	137-14	MPS3392	♦MOTA	100-108	MPSU07	♦MOTA	154-1	MJE105	♦MOTA	144-58	MM4004	♦MOTA	140-28	MP505A	♦MOTA	137-15	MPS3393	♦MOTA	100-28	MPSU08	♦MOTA	141-23	MJE205	♦MOTA	170-28	MM4005	♦MOTA	140-29	MP506A	♦MOTA	137-16	MPS3394	♦MOTA	100-29	MPSU09	♦MOTA	141-24	MJE340	♦MOTA	161-40	MM4006	♦MOTA	141-76	MP507A	♦MOTA	137-17	MPS3395	♦MOTA	100-30	MPSU10	♦MOTA	140-84	MJE370	♦MOTA	142-46	MM4007	♦MOTA	142-30	MP508A	♦MOTA	137-18	MPS3396	♦MOTA	100-31	MPSU11	♦MOTA	140-63	MJE371	♦MOTA	143-59	MM4008	♦MOTA	143-83	MP509A	♦MOTA	137-19	MPS3397	♦MOTA	100-32	MPSU12	♦MOTA	221-15	MJE520	♦MOTA	162-81	MM4009	♦MOTA	144-40	MP600	♦MOTA	137-20	MPS3398	♦MOTA	100-33	MPSU13	♦MOTA	221-16	MJE521	♦MOTA	165-33	MM4208	♦MOTA	80-22			137-21	MPS3399	♦MOTA	100-34	MPSU14	♦MOTA	221-17	MJE1090	♦MOTA	226-14	MM4209	♦MOTA	77-90	MP601	♦MOTA	133-34	MPS3638A	♦MOTA	75-56	MPSU15	♦MOTA	221-18	MJE1091	♦MOTA	226-15			212-15	MP602	♦MOTA	187-104			201-33	MPSU16	♦MOTA	221-19	MJE1092	♦MOTA	226-16			212-16	MP603	♦MOTA	187-105			203-43	MPSU17	♦MOTA	221-20	MJE1093	♦MOTA	226-17			212-17	MP800	♦MOTA	133-35	MPS3639	♦MOTA	70-109	MQ2219A	♦MOTA	105-96	MJE1100	♦MOTA	226-18	MM4209A	♦MOTA	77-93	MP801	♦MOTA	133-36	MPS3640	♦MOTA	75-86			223-108	MJE1101	♦MOTA	226-19			212-18	MP900	♦MOTA	187-107			208-11			223-109	MJE1102	♦MOTA	226-20	MM4261H	♦MOTA	70-60	MP901	♦MOTA	137-37	MPS3646	♦MOTA	90-31	MQ2904	♦MOTA	79-89	MJE1103	♦MOTA	226-21	MM4429	♦MOTA	151-75	MP902	♦MOTA	137-38			211-28	MQ2905A	♦MOTA	223-110	MJE1290	♦MOTA	144-91	MM4430	♦MOTA	151-76	MP1612	♦MOTA	137-39	MPS3693	♦MOTA	100-81	MQ3467	♦MOTA	79-90	MJE1291	♦MOTA	144-92	MM4545	♦MOTA	141-91	MP1612A	♦MOTA	137-40	MPS3694	♦MOTA	100-82			202-99	MJE1660	♦MOTA	173-79			197-73	MP1612B	♦MOTA	137-41	MPS3702	♦MOTA	75-57	MQ3725	♦MOTA	105-109	MJE1661	♦MOTA	173-80	MM4546	♦MOTA	141-92	MP1613	♦MOTA	137-42	MPS3703	♦MOTA	75-58			224-2	MJE2010	♦MOTA	144-66			197-74	MP2000A	♦MOTA	137-43	MPS3704	♦MOTA	100-58	MQ3762	♦MOTA	80-75	MJE2011	♦MOTA	144-67			197-75			137-44	MPS3705	♦MOTA	100-59			202-100	MJE2020	♦MOTA	170-71			197-76	MP2000	♦MOTA	137-45	MPS3706	♦MOTA	100-60	MQ3799	♦MOTA	72-44	MJE2021	♦MOTA	170-72	MM4645	♦MOTA	140-29	MP2060	♦MOTA	133-42	MPS3707	♦MOTA	100-35			224-3	MJE2360	♦MOTA	163-80			197-77	MP2061	♦MOTA	133-43	MPS3708	♦MOTA	100-36	MQ3799A	♦MOTA	72-45	MJE2361	♦MOTA	163-81	MM4646	♦MOTA	140-30	MP2062	♦MOTA	133-44	MPS3709	♦MOTA	100-37			217-81	MJE2370	♦MOTA	143-60			197-78	MP2063	♦MOTA	133-45	MPS3710	♦MOTA	100-38	MRD14B	♦MOTA	219-75	MJE2371	♦MOTA	143-61	MM4647	♦MOTA	140-31	MP2100A	♦MOTA	135-37	MPS3711	♦MOTA	100-39	MRD100	♦MOTA	83-9	MJE2480	♦MOTA	168-86			195-95			189-72	MPS5172	♦MOTA	92-32	MRD150	♦MOTA	219-76	MJE2481	♦MOTA	168-87	MM5000	♦MOTA	61-29			189-73	MPS5612	♦MOTA	100-94	MRD200	♦MOTA	219-78	MJE2482	♦MOTA	168-88	MM5001	♦MOTA	61-30	MP2200A	♦MOTA	135-38	MPS5613	♦MOTA	100-95	MRD210	♦MOTA	219-79	MJE2483	♦MOTA	168-89	MM5002	♦MOTA	61-31			189-74	MPS5614	♦MOTA	101-8	MRD250	♦MOTA	219-80	MJE2490	♦MOTA	144-19	MM5005	♦MOTA	140-59	MP2300A	♦MOTA	135-39	MPS5615	♦MOTA	75-70	MRD300	♦MOTA	219-81	MJE2491	♦MOTA	144-20	MM5006	♦MOTA	140-60			189-75	MPS5616	♦MOTA	75-71	MRD310	♦MOTA	219-82	MJE2520	♦MOTA	165-34	MM5007	♦MOTA	140-61	MP2400A	♦MOTA	135-40	MPS5617	♦MOTA	75-72	MRD450	♦MOTA	83-77	MJE2521	♦MOTA	165-35	MM8000	♦MOTA	149-65			189-76	MPS5618	♦MOTA	75-82			219-83	MJE2522	♦MOTA	165-36	MM8001	♦MOTA	149-66	MP3730	♦MOTA	132-31	MPS5619	♦MOTA	75-83	MRD600	♦MOTA	219-84	MJE2523	♦MOTA	165-37	MM8003	♦MOTA	151-77	MP3731	♦MOTA

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
MSP25	MST	154-88	MU4891	♦ MOTA	221-24	NN7001	♦ SPR	110-81	OC79	PHIC	65-37	PL1094	♦ TIIF	620-56
MSP25A	MST	158-86	MU4892	♦ MOTA	221-25	NN7002	♦ SPR	110-82	PHIN	VALG	65-41	PL1101	♦ TIIF	129-58
MSP30	MST	154-89	MU4893	♦ MOTA	221-26	NN7003	♦ SPR	110-83	OC80	PHIC	65-41	PL1102	♦ TIIF	69-59
MSP30A	MST	158-87	MU4894	♦ MOTA	221-27	NN7004	♦ SPR	110-84	PHIN	VALG	65-45	PL1103	♦ TIIF	69-60
MSP35	MST	154-90	N1X	TIIF	109-66	NN7005	♦ SPR	110-85	OC83	MULB	65-45	PL1104	♦ TIIF	69-61
MSP35A	MST	158-88	N2XA	TIIF	110-25	NN7500	♦ SPR	81-27	PHIC	PHIC	65-46	PL1111	♦ TIIF	85-31
MSP40	MST	154-91	NF500	♦ NSC	123-48	NN7501	♦ SPR	81-28	OC84	MULB	65-46	PL1112	♦ TIIF	85-32
MSP40A	MST	158-89	NF501	♦ NSC	121-4	NN7502	♦ SPR	81-29	PHIC	PHIC	64-68	PL1113	♦ TIIF	85-33
MSP45	MST	154-92	NF506	♦ NSC	123-49	NN7503	♦ SPR	81-30	OC122	PHIC	64-68	PL4021	♦ TIIF	86-36
MSP45A	MST	158-90	NF510	♦ NSC	126-31	NN7504	♦ SPR	81-31	PHIN	VALG	64-69	PL4022	♦ TIIF	209-76
MSP50	MST	154-93	NF511	♦ NSC	125-95	NN7505	♦ SPR	81-32	OC123	PHIC	64-69	PL4022	♦ TIIF	86-51
MSP50A	MST	158-91	NF520	♦ NSC	123-50	NPC108	♦ NPC	121-9	PHIN	VALG	66-102	PL4023	♦ TIIF	211-3
MSP55	MST	154-94	NF521	♦ NSC	123-51	NPC108A	♦ NPC	121-10	OC139	MULB	66-102	PL4023	♦ TIIF	86-52
MSP55A	MST	158-92	NF522	♦ NSC	121-5	NPC115	♦ NPC	87-10	PHIN	PHIN	66-104	PL4031	♦ TIIF	211-4
MSP60	MST	154-95	NF523	♦ NSC	121-6	NPC167	♦ NPC	86-35	RADF	VALG	66-104	PL4031	♦ TIIF	77-33
MSP60A	♦ MST	158-17	NF530	♦ NSC	123-52	NPC173	♦ NPC	92-101	OC140	MULB	66-104	PL4032	♦ TIIF	205-48
MSP65	MST	154-96	NF531	♦ NSC	123-53	NPC187	♦ NPC	87-15	PHIC	PHIN	66-100	PL4032	♦ TIIF	77-34
MSP70	MST	154-97	NF532	♦ NSC	121-7	NPC188	♦ NPC	90-90	RADF	VALG	66-100	PL4033	♦ TIIF	205-49
MSP70A	♦ MST	158-18	NF533	♦ NSC	121-8	NPC189	♦ NPC	87-14	OC141	MULB	66-100	PL4033	♦ TIIF	77-35
MSP75	MST	154-98	NF550	♦ NSC	120-6	NPC211N	♦ NPC	125-19	PHIN	PHIN	66-100	PL4034	♦ TIIF	205-50
MSP80	MST	154-99		♦ NSC	217-87	NPC212N	♦ NPC	125-20	RADF	VALG	66-100	PL4034	♦ TIIF	77-36
MSP85	MST	154-100	NF4302	♦ NSC	123-54	NPC213N	♦ NPC	125-21	OC169	PHIN	53-88	PL4051	♦ TIIF	205-51
MSP90	MST	154-101	NF4303	♦ NSC	123-55	NPC214N	♦ NPC	125-22	VALG	VALG	55-107	PL4051	♦ TIIF	92-49
MSP95	MST	154-102	NF4304	♦ NSC	123-56	NPC215N	♦ NPC	125-23	OC170	MULB	55-107	PL4052	♦ TIIF	206-64
MSP100	MST	154-103	NKT11	NTLB	55-1	NPC216N	♦ NPC	125-24	PHIN	PHIN	55-108	PL4052	♦ TIIF	92-50
MSP5405	MST	156-110	NKT12	NTLB	55-7	NS1110	♦ NSC	185-8	OC171	MULB	55-108	PL4053	♦ TIIF	206-65
MSP6605	MST	157-1	NKT72	NTLB	55-5			213-3	PHIN	PHIN	71-93	PL4053	♦ TIIF	92-51
MST10	MST	149-71	NKT73	NTLB	55-3	NS1111	♦ NSC	185-9	OC200	MULB	71-93	PL4054	♦ TIIF	206-66
MST10S	♦ MST	112-98	NKT124	♦ NTLB	55-8			213-4	PHIC	PHIC	72-5	PL4054	♦ TIIF	92-68
MST15	MST	149-72			194-13	NS7200	♦ NSC	217-88	OC201	MULB	72-5	PL4055	♦ TIIF	207-110
MST20	MST	149-73	NKT125	♦ NTLB	55-6	NS7201	♦ NSC	217-89	PHIC	PHIC	72-6	PL4055	♦ TIIF	92-52
MST20B	MST	152-106			192-66	NS7300	♦ NSC	217-90	OC202	MULB	72-6	PL4055	♦ TIIF	206-67
MST20S	♦ MST	112-99	NKT126	♦ NTLB	55-4	NS7301	♦ NSC	217-91	PHIC	PHIC	71-94	PL4061	♦ TIIF	88-40
MST25	MST	149-74			191-42	NS7302	♦ NSC	217-92	OC203	MULB	71-94	PL4062	♦ TIIF	88-41
MST30	MST	149-75	NKT135	NTLB	60-3	NS7303	♦ NSC	217-93	PHIC	PHIC	72-102	PMT1767	♦ TIIF	86-71
MST30B	MST	152-107			192-24	NS7304	♦ NSC	217-94	OC204	MULB	72-102	PP3000	TRW	94-45
MST30S	♦ MST	112-100	NKT137	NTLB	60-35	NS7305	♦ NSC	217-95	PHIC	PHIC	72-103	PP3001	PPC	172-39
MST35	MST	149-76			193-8	NS9001	NSC	148-35	OC205	MULB	72-103	PP3001	PPC	172-40
MST40	MST	149-77	NKT210	NTLB	62-14			194-34	PHIC	PHIC	73-3	PP3002	PPC	172-41
MST40B	MST	152-108	NKT211	NTLB	62-15	NS9002	NSC	166-35	OC206	MULB	73-3	PP3003	PPC	172-42
MST40S	♦ MST	112-101	NKT212	NTLB	62-16			194-35	PHIC	PHIC	75-42	PP3004	PPC	172-43
MST45	MST	149-78	NKT213	♦ NTLB	62-17	OC20	MINA	131-89	OC207	MULB	75-42	PP3005	PPC	172-44
MST50	MST	149-79	NKT214	♦ NTLB	62-18	OC22	MULB	129-61	OCP70	PHIC	219-93	PP3006	PPC	147-2
MST50B	MST	152-109	NKT215	♦ NTLB	62-19	PHIN	VALG	129-62	OCP71	MULB	219-94	PP3007	PPC	147-3
MST50S	♦ MST	112-102	NKT216	♦ NTLB	62-20	OC23	MULB	129-63	OS14	PHIC	219-94	PP3008	PPC	147-4
MST55	MST	149-80	NKT217	♦ NTLB	62-21	PHIN	VALG	129-63	OS18	♦ TOJS	219-95	PP3083	PPC	161-41
MST60	MST	149-81	NKT219	♦ NTLB	62-22	OC24	MULB	129-63	VALG	VALG	219-96	PP3084	PPC	161-42
MST60B	MST	152-110	NKT223	♦ NTLB	64-77	PHIN	VALG	130-95	P20	TOJS	219-96	PP3085	PPC	161-43
MST60S	♦ MST	112-103	NKT224	♦ NTLB	64-78	OC25	MINA	130-95	P21	SGSI	219-97	PP3086	PPC	161-44
MST65	MST	149-82	NKT225	♦ NTLB	64-79	MULB	MULB	128-1	P102	SGSI	219-98	PP3087	PPC	161-45
MST70	MST	149-83	NKT229	♦ NTLB	64-80	OC26	PHIC	128-1	P102	♦ SIX	118-63	PP3088	PPC	161-46
MST70B	MST	153-1	NKT261	♦ NTLB	64-83	PHIN	VALG	131-90	P236	♦ SIX	219-99	PP3250	PPC	161-47
MST70S	♦ MST	112-104	NKT262	♦ NTLB	64-84	OC28	MINA	131-90	P237	♦ SIX	219-100	PP3310	PPC	161-48
MST75	MST	149-84	NKT264	♦ NTLB	64-85	MULB	PHIC	189-93	P238	♦ SIX	219-101	PP3312	PPC	161-49
MST80	MST	149-85	NKT270	♦ NTLB	61-110	VALG	VALG	131-91	P346A	♦ SIX	219-102	PPR1006	PPC	157-2
MST85	MST	149-86	NKT271	♦ NTLB	62-38	OC29	MINA	131-91	P1027	SGSI	209-109	PPR1007	PPC	225-18
MST90	MST	149-87	NKT272	♦ NTLB	62-39	MULB	PHIC	189-94	P1028	TSC	118-64	PPR1007	PPC	164-14
MST95	MST	149-88	NKT274	♦ NTLB	62-40	PHIN	VALG	128-6	P1029	TSC	118-65	PPR1008	PPC	225-19
MST100	MST	149-89	NKT275	♦ NTLB	62-41	OC30	PHIN	128-6	P1069E	TSC	118-66	PPR1008	PPC	157-3
MST5404	MST	150-33	NKT281	NTLB	63-40	VALG	VALG	128-7	P1086E	♦ TSC	118-67	PPR1009	PPC	225-20
MT6604	MST	150-34	NKT302	NTLB	65-52	OC30A	VALG	128-8	P1086E	♦ TSC	118-68	PPR1010	PPC	164-15
MT101B	♦ SELB	117-72	NKT304	NTLB	65-53	OC30B	VALG	185-87			185-87	PPR1010	PPC	225-21
MT102B	♦ SELB	117-73	NKT351	NTLB	65-49	OC35	MINA	131-92			186-54	PPR1010	PPC	169-90
			NKT401	NTLB	132-38	MULB	PHIC	189-95	PBC107	ESMF	88-12	PPR1011	PPC	225-22
					189-107	VALG	VALG	131-93	MISI	MISI	88-13	PPR1012	PPC	169-91
MT0404	♦ MEHK	70-53	NKT402	NTLB	132-39	OC36	MINA	189-96	PBC108	ESMF	88-13	PPR1012	PPC	225-23
MT0404-1	♦ MEHK	70-54			189-109	MULB	PHIC	53-69	PBC109	ESMF	88-14	PPR1013	PPC	169-92
MT0404-2	♦ MEHK	70-55			132-40	OC41	MULB	56-12	PBC182	MISI	94-107	PT12	♦ STL	225-24
MT0411	♦ MEHK	69-34	NKT403	NTLB	189-110	OC41N	MINA	53-70	PBC183	MISI	94-108	PT13	♦ STL	225-25
MT0412	♦ MEHK	69-37			132-41	OC42	MULB	56-15	PBC184	ESMF	94-108	PT22	♦ STL	225-26
MT0413	♦ MEHK	69-35	NKT404	NTLB	190-1	OC42N	MINA	53-70		MISI	94-108	PT23	♦ STL	225-27
MT0414	♦ MEHK	69-39			132-42	OC43	MULB	55-74		ESMF	94-108	PT53	♦ STL	225-28
MT0461	♦ MEHK	69-47	NKT405	NTLB	132-43	OC43N	MINA	56-21		MISI	94-109	PT53	♦ STL	225-29
			NKT406	NTLB	189-108	OC44	MULB	56-22		ESMF	94-109	PT53	♦ STL	225-30
					131-85	PHIC	PHIN	56-19	PH241N	MISI	123-57	PT500	♦ STL	225-31
MT0462	♦ MEHK	69-48			131-86	PHIN	VALG	56-18	PH242N	♦ AKER	219-103	PT501	♦ STL	182-34
					131-87	VALG	VALG	56-18	PH243N	♦ AKER	123-58	PT502	♦ STL	182-35
MT0463	♦ MEHK	69-46	NKT450	NTLB	131-88	OC44N	MINA	56-18	PH244N	♦ AKER	123-58	PT600	♦ STL	182-36
MT1060	♦ FSC	99-89	NKT452	NTLB	131-88	OC45	MULB	56-13			219-104	PT600A	♦ STL	182-37
MT1060A	♦ FSC	99-108	NKT453	NTLB	56-3	OC45N	PHIN							

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
PT2660	TRW	155-75	PT7906	TRW	162-88	QD104-71	QDC	99-15	SD1156	TEC	151-86	SDT2112	SOD	179-17
PT2670	TRW	155-76			200-56			217-104	SD1174	TEC	155-82	SDT2150	SOD	179-18
		203-82	PT7907	TRW	162-89	QD104-78	QDC	106-18	SD1177	TEC	155-83	SDT2151	SOD	179-19
PT2909	TRW	176-79			200-57			217-105	SD1180	SSS	151-87	SDT2152	SOD	179-20
PT2920	TRW	183-76	PT7908	TRW	162-90	QD400-71	QDC	72-87	SD1181	SSS	153-3	SDT2205	SOD	180-22
PT2944	TRW	176-80			200-58			217-106	SD1182	SSS	153-4	SDT2305	SOD	180-23
PT2972	TRW	183-77	PT7909	TRW	162-91	QD400-78	QDC	78-1	SD1183	SSS	153-5	SDT3101	KER	144-41
PT2981	TRW	169-94			200-59			217-107	SD5010	SSS	117-34	PIR	197-6	
PT2986	TRW	183-78	PT7910	TRW	162-92	QD401-71	QDC	72-88			218-9	SDT3102	KER	144-42
PT2993	TRW	164-16			200-60			217-108	SD5011	SSS	117-35	PIR	197-7	
		201-52	PT7911	TRW	162-93	QD401-78	QDC	78-2			218-10	SDT3103	KER	144-43
PT3500	TRW	151-78			200-61			217-109	SD5012	SSS	117-36	PIR	197-8	
PT3502	TRW	155-77	PT7912	TRW	168-60	QD402-71	QDC	72-89			218-11	SDT3104	KER	144-44
PT3503	TRW	155-78			201-56			217-110	SD5013	SSS	117-37	PIR	197-9	
PT3986	TRW	184-50	PT7913	TRW	168-61	QD402-78	QDC	78-3			218-12	SDT3105	KER	144-45
PT3993	TRW	176-81			201-57			218-1	SD5014	SSS	117-38	PIR	197-10	
		201-79	PT7914	TRW	168-62	QD403-71	QDC	72-90			218-13	SDT3106	KER	144-46
PT4690	TRW	158-93			201-58			218-2	SD5015	SSS	117-39	PIR	196-57	
PT4816	TRW	115-27	PT7915	TRW	168-63	QD403-78	QDC	78-4			218-14	SDT3107	KER	144-47
PT4925	TRW	154-104			201-59			218-3	SD5050	SSS	120-32	PIR	196-58	
PT4926	TRW	165-29	PT7916	TRW	168-64	QD404-71	QDC	72-91			218-15	SDT3108	KER	144-48
PT4961	TRW	154-105			201-60			218-4	SD5051	SSS	120-33	PIR	196-59	
PT4992	TRW	184-51	PT7917	TRW	168-65	QD404-78	QDC	78-5			218-16	SDT3109	KER	144-49
PT5693	TRW	163-34			201-61			218-5	SDI345	FSC	164-97	PIR	196-60	
PT5902	TRW	176-82	PT7918	TRW	168-66	RA1A	GESY	224-6	SDI445	FSC	143-3	SDT3125	KER	143-13
PT5909	TRW	184-52			201-62	RA1A	GESY	224-7	SDJ345	FSC	164-98	PIR	197-11	
PT5916	TRW	157-4	PT7919	TRW	168-67	RA1B	GESY	224-8	SDJ445	FSC	143-4	SDT3126	KER	143-14
PT5929	TRW	166-36			201-63	RA1C	GESY	224-9	SDK345	FSC	164-99	PIR	197-12	
		200-64	PT7920	TRW	168-68	RA2	GESY	224-10	SDK445	FSC	143-5	SDT3127	KER	143-15
PT5947	TRW	149-17			201-64	RA2A	GESY	224-11	SDL345	FSC	164-100	PIR	196-57	
PT5950	TRW	167-100	PT7921	TRW	173-65	RA2B	GESY	224-12	SDL445	FSC	143-6	SDT3128	KER	143-16
PT5955	TRW	176-83			201-71	RA3	GESY	224-13	SDM345	FSC	164-101	PIR	197-13	
		201-80	PT7922	TRW	173-66	RA3A	GESY	224-14	SDM445	FSC	143-7	SDT3129	KER	143-17
PT5956	TRW	176-84			201-72	RA3B	GESY	224-15	SDM2301	SOD	167-101	PIR	196-58	
		202-50	PT7923	TRW	173-67	RM3005	RAYN	226-23	SDM2302	SOD	167-102	SDT3201	KER	169-96
PT5961	TRW	176-85			201-73	RM3022	RAYN	226-24	SDM2303	SOD	167-103	PIR	197-10	
		202-51	PT7927	TRW	173-68	RS1875	RAYN	145-59	SDM2401	PIR	174-2	SDT3202	KER	169-97
PT5963	TRW	176-86			201-74	RT930H	RAYN	83-44	SDM2402	SOD	174-3	SDT3203	KER	169-98
PT5969	TRW	180-80	PT7928	TRW	173-69	RT1110	RADF	213-5	SDM2403	PIR	174-4	SDT3204	KER	169-99
PT5992	TRW	172-46			201-75	RT1111	RADF	213-6			174-5	SDT3205	KER	169-100
PT5994	TRW	176-87	PT7929	TRW	173-70	RT1116	RADF	114-50			174-6	SDT3206	KER	169-101
PT6618	TRW	152-32			201-76			201-39	SDN345	FSC	164-102	PIR	197-14	
PT6635	TRW	157-74	PT7930	TRW	176-97	S550	ECD	158-94	SDN445	FSC	143-8	SDT3207	KER	169-102
PT6636	TRW	159-24			201-86	S552	ECD	158-95	SDO345	FSC	164-103	PIR	196-86	
PT6669	TRW	150-8	PT7931	TRW	201-87	S704	ECD	151-79	SDO445	FSC	143-9	SDT3208	KER	169-103
PT6905	TRW	176-88			176-99	S708	ECD	155-79	SDP345	FSC	164-104	PIR	196-87	
		201-81	PT7932	TRW	201-88	S715	ECD	224-16	SDP445	FSC	143-10	SDT3209	KER	169-104
PT6905A	TRW	176-89			176-100			153-2	SDT401	SOD	176-108	PIR	196-88	
PT6905B	TRW	201-95	PT7933	TRW	201-89	S1050	ECD	224-17	SDT402	SOD	179-6	SDT3210	KER	169-105
		201-96			176-101	S2002	ECD	160-52	SDT410	SOD	179-7	SDT3211	KER	169-106
PT6905C	TRW	176-91	PT7934	TRW	201-90	S3006	ECD	155-80	SDT411	SOD	191-68	PIR	196-89	
		201-97			176-102	S3010	ECD	150-27			179-8	SDT3212	KER	174-20
PT6907	TRW	170-36	PT7935	TRW	201-91	S3639	SES	151-80	SDT413	SOD	176-109	PIR	197-15	
PT6909	TRW	176-92			201-92	S3640	SES	72-71	SDT423	SOD	192-51	SDT3213	KER	174-21
		201-82	PT7936	TRW	176-103	S3771	SSI	72-72	SDT424	SOD	179-9	PIR	196-89	
PT6910	TRW	176-93			201-93	S15649	FSC	88-99	SDT425	SOD	191-70	SDT3214	KER	174-22
		201-83	PT7937	TRW	176-104	S15650	FSC	88-99	SDT426	SOD	179-10	PIR	196-90	
PT6939	TRW	172-47			201-94	S15651	FSC	90-54	SDT427	SOD	191-71	SDT3215	KER	174-23
		201-84	PT7938	TRW	178-49	S15652	FSC	99-16	SDT428	SOD	179-11	PIR	196-91	
PT6940	TRW	161-89			202-52	S15653	FSC	111-11	SDT429	SOD	191-72	SDT3216	KER	174-24
		200-49	PT7939	TRW	178-50	S15654	FSC	110-102	SDT430	SOD	179-12	PIR	196-92	
PT6941	TRW	162-82			202-53	S17900	FSC	111-85	SDT431	SOD	191-73	SDT3301	KER	143-43
		200-50	PT7940	TRW	178-51	S18000	FSC	206-100			179-13	SDT3302	PIR	198-57
PT6942	TRW	162-83			202-54			81-68	SDT1050	SOD	191-74	SDT3303	KER	143-44
		200-51	PT7941	TRW	178-52	SA310	SPR	69-105	SDT1051	SOD	174-6	SDT3304	PIR	198-58
PT6943	TRW	162-84			202-55	SA311	SPR	69-106	SDT1052	SOD	174-7	SDT3305	KER	143-45
		200-52	PT7942	TRW	178-53	SA312	SPR	69-98	SDT1053	SOD	174-8	SDT3306	PIR	198-59
PT6944	TRW	168-57			202-56	SA313	SPR	69-83	SDT1054	SOD	174-9	SDT3307	KER	143-46
		201-53	PT7943	TRW	178-54	SA314	SPR	69-84	SDT1055	SOD	174-10	SDT3308	PIR	198-60
PT6945	TRW	168-58			202-57	SA315	SPR	69-99	SDT1056	SOD	174-11	SDT3309	KER	143-47
		201-54	PT7944	TRW	178-55	SA316	SPR	69-95	SDT1057	SOD	174-12	SDT3310	PIR	198-61
PT6946	TRW	168-59			202-58	SA0403	FSC	139-51	SDT1058	SOD	174-13	SDT3311	KER	143-48
		201-55	PT7945	TRW	178-56	SA0403A	FSC	139-52	SDT1059	SOD	174-14	SDT3312	PIR	198-62
PT6947	TRW	173-62			202-59	SA410	SPR	69-107	SDT1060	SOD	174-15	SDT3313	KER	143-49
		201-68	PT7946	TRW	176-106	SA411	SPR	69-108	SDT1061	SOD	174-16	SDT3314	PIR	198-63
PT6948	TRW	173-63			202-60	SA412	SPR	69-109	SDT1062	SOD	174-17	SDT3315	KER	143-50
		201-69	PT7947	TRW	176-107	SA413	SPR	69-86	SDT1063	SOD	174-18	SDT3316	PIR	198-64
PT6949	TRW	173-64			201-77	SA414	SPR	69-87	SDT1064	SOD	174-19	SDT3317	KER	143-51
		201-70	PT7948	TRW	176-108	SA415	SPR	69-88	SDT1150	SOD	167-104	SDT3318	PIR	198-65
PT6950	TRW	176-94			201-78	SA416	SPR	69-88	SDT1151	SOD	167-105	SDT3319	KER	140-71
		201-85	PT7950	TRW	162-94	SA0419	FSC	140-36	SDT1152	SOD	167-106	SDT3320	PIR	198-66
PT6951	TRW	176-95			200-62	SA539	SPR	69-82	SDT1153	SOD	167-107	SDT3321	KER	140-72



# 1. TYPE No. CROSS INDEX

				IN TYPE NUMBER SEQUENCE										
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
SDT3409	PIR	186-45	SDT3761	SOD	143-29	SDT5007	KER	153-17	SDT5954	KER	161-65	SDT7019	KER	170-3
	♦SOD	198-74	SDT3762	SOD	143-30		PIR			♦SOD			PIR	
SDT3421	PIR	154-106	SDT3763	SOD	143-31	SDT5005	KER	153-18	SDT5955	KER	161-66	SDT7140	PIR	170-4
	SOD		SDT3764	SOD	143-32		PIR			♦SOD			PIR	
SDT3422	PIR	154-107	SDT3765	SOD	143-33	SDT5006	KER	153-19	SDT5956	KER	161-67	SDT7141	PIR	170-5
	SOD		SDT3766	SOD	143-34		PIR			♦SOD			PIR	
SDT3423	PIR	154-108	SDT3775	SOD	140-55	SDT5007	KER	153-20	SDT6001	KER	164-51	SDT7150	SOD	170-6
	SOD		SDT3776	SOD	140-56		PIR			♦SOD			PIR	
SDT3424	PIR	154-109	SDT3777	SOD	140-57	SDT5008	KER	153-21	SDT6011	KER	164-52	SDT7151	PIR	170-7
	SOD		SDT3778	SOD	140-58		PIR			♦SOD			PIR	
SDT3425	PIR	154-110	SDT3801	SOD	142-47	SDT5009	KER	153-22	SDT6012	KER	164-53	SDT7152	PIR	170-8
	SOD		SDT3802	SOD	142-48		PIR			♦SOD			PIR	
SDT3426	PIR	155-1	SDT3803	SOD	142-49	SDT5010	KER	153-23	SDT6013	KER	164-54	SDT7154	PIR	170-9
	SOD		SDT3804	SOD	142-50		PIR			♦SOD			PIR	
SDT3427	PIR	155-2	SDT3805	SOD	142-51	SDT5011	KER	153-24	SDT6014	KER	164-55	SDT7155	PIR	170-10
	SOD		SDT3806	SOD	142-52		PIR			♦SOD			PIR	
SDT3428	PIR	155-3	SDT3807	SOD	142-53	SDT5012	KER	153-25	SDT6015	KER	164-56	SDT7156	PIR	170-11
	SOD		SDT3825	SOD	144-14		PIR			♦SOD			PIR	
SDT3429	PIR	155-4	SDT3826	SOD	144-15	SDT5013	KER	153-26	SDT6016	KER	164-57	SDT7201	PIR	172-50
	SOD		SDT3827	SOD	144-16		PIR			♦SOD			PIR	
SDT3501	PIR	140-41	SDT3850	SOD	142-87	SDT5014	KER	153-27	SDT6031	KER	164-58	SDT7202	PIR	172-51
	SOD		SDT3851	SOD	142-88		PIR			♦SOD			PIR	
SDT3502	PIR	140-42	SDT3852	SOD	142-89	SDT5015	KER	153-28	SDT6101	KER	153-56	SDT7203	PIR	172-52
	SOD		SDT3875	SOD	144-59		PIR			♦SOD			PIR	
SDT3503	PIR	140-43	SDT3876	SOD	144-60	SDT5051	KER	153-29	SDT6102	KER	153-57	SDT7204	PIR	172-53
	SOD		SDT3877	SOD	144-61		PIR			♦SOD			PIR	
SDT3504	PIR	140-44	SDT3901	KER	145-31	SDT5052	KER	153-30	SDT6103	KER	153-58	SDT7205	PIR	172-54
	SOD			SOD			PIR			♦SOD			PIR	
SDT3505	PIR	140-45	SDT3902	KER	145-32	SDT5053	KER	153-31	SDT6104	KER	157-5	SDT7206	PIR	172-55
	SOD			SOD			PIR			♦SOD			PIR	
SDT3506	PIR	140-46	SDT3903	KER	145-33	SDT5054	KER	153-32	SDT6105	KER	157-6	SDT7207	PIR	172-56
	SOD			SOD			PIR			♦SOD			PIR	
SDT3507	PIR	140-47	SDT3904	KER	145-34	SDT5055	KER	153-33	SDT6106	KER	157-7	SDT7208	PIR	172-57
	SOD			SOD			PIR			♦SOD			PIR	
SDT3508	PIR	140-48	SDT4301	PIR	155-5	SDT5056	KER	153-34	SDT6110	KER	155-84	SDT7209	PIR	172-58
	SOD			SOD			PIR			♦SOD			PIR	
SDT3509	PIR	142-31	SDT4302	PIR	155-6	SDT5501	KER	153-35	SDT6111	KER	155-85	SDT7401	PIR	155-17
	SOD			SOD			PIR			♦SOD			PIR	
SDT3510	PIR	142-32	SDT4303	PIR	155-7	SDT5502	KER	153-36	SDT6112	KER	155-86	SDT7402	PIR	155-18
	SOD			SOD			PIR			♦SOD			PIR	
SDT3511	PIR	142-33	SDT4304	PIR	155-8	SDT5503	KER	153-37	SDT6113	KER	159-108	SDT7403	PIR	155-19
	SOD			SOD			PIR			♦SOD			PIR	
SDT3512	PIR	142-34	SDT4305	PIR	155-9	SDT5504	KER	153-38	SDT6114	KER	159-109	SDT7411	PIR	155-20
	SOD			SOD			PIR			♦SOD			PIR	
SDT3513	PIR	142-35	SDT4306	PIR	155-10	SDT5505	KER	153-39	SDT6115	KER	159-110	SDT7412	PIR	155-21
	SOD			SOD			PIR			♦SOD			PIR	
SDT3514	PIR	142-36	SDT4307	PIR	155-11	SDT5506	KER	153-40	SDT6308	KER	166-46	SDT7413	PIR	155-22
	SOD			SOD			PIR			♦SOD			PIR	
SDT3515	PIR	142-37	SDT4308	PIR	155-12	SDT5507	KER	153-41	SDT6309	KER	166-47	SDT7414	PIR	155-23
	SOD			SOD			PIR			♦SOD			PIR	
SDT3516	PIR	142-38	SDT4309	PIR	155-13	SDT5508	KER	153-42	SDT6310	KER	166-48	SDT7415	PIR	155-24
	SOD			SOD			PIR			♦SOD			PIR	
SDT3550	SOD	140-49	SDT4310	PIR	155-14	SDT5509	KER	153-43	SDT6311	KER	166-49	SDT7416	PIR	155-25
SDT3551	SOD	140-50		SOD			PIR			♦SOD			PIR	
SDT3552	SOD	140-51	SDT4311	PIR	155-15	SDT5510	KER	153-44	SDT6312	KER	166-50	SDT7417	PIR	155-26
SDT3553	SOD	140-52		SOD			PIR			♦SOD			PIR	
SDT3554	SOD	140-53	SDT4312	PIR	155-16	SDT5511	KER	153-45	SDT6313	KER	166-51	SDT7418	PIR	155-27
SDT3555	SOD	141-41		SOD			PIR			♦SOD			PIR	
SDT3575	SOD	141-42	SDT4451	KER	184-64	SDT5512	KER	153-46	SDT6314	KER	166-52	SDT7419	PIR	155-28
SDT3576	SOD	141-43		PIR			PIR			♦SOD			PIR	
SDT3577	SOD	141-44	SDT4452	KER	184-65	SDT5513	KER	153-47	SDT6315	KER	166-53	SDT7511	PIR	162-109
SDT3578	SOD	141-45		PIR			PIR			♦SOD			PIR	
SDT3579	SOD	141-45	SDT4453	KER	184-66	SDT5514	KER	153-48	SDT6316	KER	166-54	SDT7512	PIR	162-110
SDT3601	KER	145-6		PIR			PIR			♦SOD			PIR	
	SOD		SDT4454	KER	184-67	SDT5515	KER	153-49	SDT6408	KER	166-55	SDT7513	PIR	163-1
SDT3602	KER	145-7		PIR			PIR			♦SOD			PIR	
	SOD		SDT4455	KER	153-6	SDT5516	KER	153-50	SDT6409	KER	166-56	SDT7514	PIR	163-2
SDT3603	KER	145-8		PIR			PIR			♦SOD			PIR	
	SOD		SDT4456	KER	153-7	SDT5517	KER	153-51	SDT6410	KER	166-57	SDT7515	PIR	163-3
SDT3604	KER	145-9		PIR			PIR			♦SOD			PIR	
	SOD		SDT4483	KER	153-8	SDT5518	KER	153-52	SDT6411	KER	166-58	SDT7516	PIR	163-4
SDT3701	SOD	141-99		PIR			PIR			♦SOD			PIR	
SDT3702	SOD	141-100	SDT4551	SOD	158-96	SDT5519	KER	153-53	SDT6412	KER	166-59	SDT7517	PIR	163-5
SDT3703	SOD	141-101		SOD			PIR			♦SOD			PIR	
SDT3704	SOD	141-102	SDT4552	SOD	158-97	SDT5520	KER	153-54	SDT6413	KER	166-60	SDT7518	PIR	163-6
SDT3705	SOD	141-103		SOD			PIR			♦SOD			PIR	
SDT3706	SOD	141-104	SDT4553	SOD	158-98	SDT5521	KER	153-55	SDT6414	KER	166-61	SDT7519	PIR	163-7
SDT3707	SOD	141-105		SOD			PIR			♦SOD			PIR	
SDT3708	SOD	141-106	SDT4554	SOD	158-99	SDT5522	KER	161-50	SDT6415	KER	166-62	SDT7520	PIR	163-8
SDT3709	SOD	141-107		SOD			PIR			♦SOD			PIR	
SDT3710	SOD	141-108	SDT4555	SOD	158-100	SDT5901	KER	161-51	SDT6416	KER	166-63	SDT7521	PIR	163-9
SDT3711	SOD	141-109		SOD			PIR			♦SOD			PIR	
SDT3712	SOD	141-110	SDT4611	SOD	160-54	SDT5902	KER	161-52	SDT6901	KER	162-101	SDT7522	PIR	163-10
SDT3713	SOD	142-1		SOD			PIR			♦SOD			PIR	
SDT3714	SOD	142-2	SDT4612	SOD	160-55	SDT5903	KER	161-53	SDT6902	KER	162-102	SDT7523	PIR	163-11
SDT3715	SOD	142-3		SOD			PIR			♦SOD			PIR	
SDT3716	SOD	142-4	SDT4613	SOD	160-56	SDT5904	KER	161-54	SDT6903	KER	162-103	SDT7524	PIR	163-12
SDT3717	SOD	142-5		SOD			PIR			♦SOD			PIR	
SDT3718	SOD	142-6	SDT4614	SOD	160-57	SDT5905	KER	161-55	SDT6904	KER	162-104	SDT7525	PIR	163-13
SDT3719	SOD	142-7		SOD			PIR			♦SOD			PIR	
SDT3720	SOD	142-8	SDT4615	SOD	160-58	SDT5906	KER	161-56	SDT6905	KER	162-105	SDT7526	PIR	163-14
SDT3721	SOD	142-9		SOD			PIR			♦SOD			PIR	
SDT3722	SOD	142-10	SDT4616	SOD	160-59	SDT5907	KER	161-57	SDT6906	KER	162-106	SDT7527	PIR	163-15
SDT3723	SOD	142-11		SOD			PIR			♦SOD			PIR	
SDT3724	SOD	142-12	SDT4617	SOD	160-60	SDT5908	KER	161-58	SDT6907	KER	162-107	SDT7528	PIR	163-16
SDT3725	SOD	142-13		SOD			PIR			♦SOD			PIR	
SDT3726	SOD	142-14	SDT4618	SOD	160-61	SDT5909	KER	161-59	SDT6908	KER	162-108	SDT7529	PIR	163-17
SDT3727	SOD	142-15		SOD			PIR			♦SOD			PIR	
SDT3728	SOD	142-16	SDT4619	SOD	160-62	SDT5910	KER	161-60	SDT7011	KER	169-105	SDT7731	PIR	163-18
SDT3729	SOD	142-17		SOD			PIR			♦SOD			PIR	
SDT3730	SOD	142-18	SDT4901	KER	162-96	SDT								



# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line
SDT7805	KER	170-16	SDT8755	KER	177-39	SE3002	▲CSI	91-18	SFT250	▲NPC	131-99	SL303AT	▲SELB	110-110
	SOD			PTI			▲FSC		SFT251	▲NPC	63-54			218-29
SDT7806	KER	170-17	SDT8757	KER	177-40	SE3005	▲FSC	91-3	SFT252	▲NPC	63-63	SL303BE	▲SELB	111-1
	SOD			PTI		SE3100	▲FSC	91-4	SFT253	ESMF	63-70			218-30
SDT7807	KER	170-18	SDT8758	KER	177-41	SE3646	▲FSC	90-34		▲NPC		SL303BT	▲SELB	111-2
	SOD			PTI				209-32	SFT264	▲NPC	135-41			218-31
SDT7808	KER	170-19	SDT8801	KER	177-42	SE4001	▲CSI	88-64	SFT265	▲NPC	135-42	SL305B	▲SELB	226-25
	SOD			▲SOD	▲FSC		▲NPC		SFT266	▲NPC	135-43	SL354BE	▲SELB	111-3
SDT7809	KER	170-20	SDT8802	KER	177-43	SE4002	▲CSI	88-100	SFT267	▲NPC	135-44			218-32
	SOD			▲SOD	▲FSC		▲NPC		SFT288	ESMF	60-50	SL354BF	▲SELB	111-4
SDT7901	KER	164-17	SDT8803	KER	177-44	SE4010	▲CSI	88-101		▲NPC	194-24			218-33
	SOD			▲SOD	▲FSC		▲NPC		SFT298	ESMF	67-74	SMT100	▲SOD	218-34
SDT7902	KER	164-18	SDT8804	KER	177-45	SE4020	▲FSC	89-92		▲NPC	193-100	SMT101	▲SOD	218-35
	SOD			▲SOD	▲FSC		▲NPC	90-6	SFT306	▲NPC	59-80	SMT102	▲SOD	218-36
SDT7903	KER	164-19	SDT8805	KER	177-46	SE4022	▲FSC	90-7	SFT307	▲NPC	60-13	SMT103	▲SOD	218-37
	SOD			▲SOD	▲FSC		▲NPC	100-48	SFT308	▲NPC	60-42	SMT104	▲SOD	218-38
SDT7904	KER	164-20	SDT8920	KER	182-53	SE4172	▲FSC	90-91	SFT315	▲NPC	57-70	SMT105	▲SOD	218-39
	SOD			PTI		SE5001	▲FSC	90-92	SFT316	ESMF	57-80	SP1	▲NPC	219-107
SDT7905	KER	164-21	SDT8921	KER	182-54	SE5002	▲FSC	90-93		▲NPC		SP2	▲NPC	219-108
	SOD			PTI		SE5003	▲FSC	90-95	SFT317	ESMF	60-63	SP3	▲NPC	219-109
SDT7907	KER	164-22		SOD		SE5010	▲FSC	94-22		▲NPC		SP328F	RAYN	224-18
	SOD			PTI		SE5015	▲FSC	94-16	SFT319	ESMF	60-54	SP328QF	RAYN	224-19
SDT7908	KER	164-23	SDT8922	KER	182-55	SE5020	▲FSC	87-27		▲NPC		SP329F	RAYN	224-20
	SOD			PTI		SE5021	▲FSC	87-28	SFT320	ESMF	60-59	SP329QF	RAYN	224-21
SDT7909	KER	164-24	SDT8923	KER	182-56	SE5022	▲FSC	87-21		▲NPC		SP706F	RAYN	224-22
	SOD			PTI		SE5023	▲FSC	87-22	SFT321	ESMF	62-53	SP708F	RAYN	224-23
SDT7910	KER	164-25		SOD		SE5024	▲FSC	87-23		▲NPC		SP918F	RAYN	224-24
	SOD			PTI		SE5025	▲FSC	93-110	SFT322	ESMF	62-66	SP929QF	RAYN	224-25
SDT8002	KER	177-12	SDT8951	KER	182-57	SE5029	▲FSC	99-30		▲NPC		SP930QF	RAYN	224-26
	SOD			PTI		SE5030A	▲FSC	99-50	SFT323	ESMF	62-86	SP1132F	RAYN	224-27
SDT8003	KER	177-13	SDT8952	KER	182-58	SE5030B	▲FSC	109-12		▲NPC		SP1711F	RAYN	224-28
	SOD			PTI		SE5031	▲FSC	99-31	SFT325	▲NPC	62-77	SP1890F	RAYN	224-29
SDT8012	KER	177-14	SDT8953	KER	182-59	SE5032	▲FSC	90-66	SFT327	▲NPC	59-81	SP1893F	RAYN	224-30
	SOD			PTI		SE5033	▲FSC	91-59	SFT337	▲NPC	62-51	SP2060F	RAYN	218-40
SDT8013	KER	177-15	SDT8954	KER	182-60	SE5036	▲FSC	106-31	SFT352	ESMF	62-67	SP2218AF	RAYN	224-31
	SOD			PTI		SE5037	▲FSC	87-24		▲NPC		SP2218F	RAYN	224-32
SDT8016	KER	177-16	SDT8955	KER	182-61	SE5040	▲FSC	87-25	SFT353	ESMF	62-79	SP2219AF	RAYN	224-33
	SOD			PTI		SE5050	▲FSC	87-26		▲NPC		SP2219F	RAYN	224-34
SDT8016	KER	177-17	SDT9001	KER	153-59	SE5051	▲FSC	87-23	SFT354	ESMF	57-84	SP2221AF	RAYN	224-35
	SOD			PTI		SE5052	▲FSC	87-34		▲NPC		SP2221AQF	RAYN	224-36
SDT8045	KER	177-18	SDT9002	KER	153-60	SE5055	▲FSC	101-54	SFT357	ESMF	57-83	SP2221F	RAYN	224-37
	SOD			PTI		SE5056	▲FSC	95-59		▲NPC		SP2221QF	RAYN	224-38
SDT8070	KER	177-19	SDT9003	KER	153-61	SE6001	▲FSC	95-60	SFT357P	▲NPC	57-82	SP2222AF	RAYN	224-39
	SOD			PTI		SE6002	▲FSC	99-17	SFT358	ESMF	57-90	SP2222AQF	RAYN	224-40
SDT8071	KER	177-20	SDT9004	KER	153-62	SE6020	▲FSC	211-74		▲NPC		SP2222F	RAYN	224-41
	SOD			PTI		SE6021	▲FSC	99-18	SFT367	▲NPC	65-48	SP2222QF	RAYN	224-42
SDT8105	KER	172-71	SDT9005	KER	153-63			211-75	SFT377	▲NPC	68-3	SP2223AF	RAYN	218-41
	SOD			PTI		SE6022	▲FSC	92-69	SFT440	MISI	158-20	SP2369AF	RAYN	224-43
SDT8110	KER	172-72	SDT9006	KER	153-64			211-76		▲NPC		SP2369F	RAYN	224-44
	SOD			PTI		SE6023	▲FSC	92-70	SFT443	MISI	152-18	SP2483QF	RAYN	224-45
SDT8111	KER	172-73		SOD				211-77	SFT443A	MISI	158-21	SP2484F	RAYN	224-46
SDT8112	KER	172-74	SDT9007	KER	153-65			113-79		▲NPC		SP2484QF	RAYN	224-47
	SOD			PTI		SE7001	▲FSC	113-80	SFT445	MISI	114-97	SP2604QF	RAYN	224-48
SDT8113	KER	172-75	SDT9008	KER	153-66	SE7002	▲FSC	158-103		▲NPC		SP2605QF	RAYN	224-49
	SOD			PTI		SE7006	▲FSC	158-109	SFT601	MISI	120-57	SP2904AF	RAYN	224-50
SDT8114	KER	172-76	SDT9009	KER	153-67	SE7020	▲FSC	158-19	SFT602	MISI	120-58	SP2904AQF	RAYN	224-51
	SOD			PTI		SE8001	▲FSC	115-88	SFT603	MISI	120-59	SP2904F	RAYN	224-52
SDT8115	KER	172-77	SDT9010	KER	153-68	SE8002	▲FSC	115-89	SFT604	MISI	120-60	SP2904QF	RAYN	224-53
	SOD			PTI		SE8010	▲FSC	115-41	SFT918	ESMF	218-17	SP2905AF	RAYN	224-54
SDT8116	KER	172-78	SDT9011	KER	153-69	SE8041	▲FSC	114-102		▲NPC		SP2905AQF	RAYN	224-55
	SOD			PTI		SE8042	▲FSC	153-71	SFT918A	MISI	218-18	SP2905F	RAYN	224-56
SDT8131	KER	172-81	SDT9012	KER	153-70	SE8541	▲FSC	120-58		▲NPC		SP2905QF	RAYN	224-57
	SOD			PTI		SE8542	▲FSC	140-11	SFT918B	ESMF	218-19	SP2906AF	RAYN	224-58
SDT8132	KER	172-82	SDT9201	KER	172-84	SES3819	ESMF	121-55		▲NPC		SP2906AQF	RAYN	224-59
	SOD			PTI				65-3	SG0034	▲FSC	161-16	SP2906F	RAYN	224-60
SDT8133	KER	172-83	SDT9202	KER	172-85	SFT124	▲NPC	65-6		▲NPC	199-68	SP2906QF	RAYN	224-61
	SOD			PTI		SFT125	▲NPC	65-7	SG0034A	▲FSC	161-17	SP2907AF	RAYN	224-62
SDT8134	KER	172-84	SDT9203	KER	172-86	SFT125P	▲NPC	65-7		▲NPC	200-78	SP2907AQF	RAYN	224-63
	SOD			PTI		SFT130	▲NPC	65-35	SG0400	▲FSC	142-104	SP2907F	RAYN	224-64
SDT8151	KER	172-85	SDT9204	KER	172-87	SFT131	▲NPC	65-42	SG0400A	▲FSC	142-105	SP2907QF	RAYN	224-65
	SOD			PTI		SFT131P	▲NPC	65-43	SG0403	▲FSC	142-22	SP2920F	RAYN	218-42
SDT8152	KER	172-86	SDT9205	KER	172-88	SFT143	▲NPC	65-4	SG0403A	▲FSC	142-23	SP2946F	RAYN	224-66
	SOD			PTI		SFT144	▲NPC	65-5	SG6207	▲FSC	161-18	SP3019F	RAYN	224-67
SDT8153	KER	172-87	SDT9206	KER	172-89	SFT145	▲NPC	65-36	SG6207A	▲FSC	161-19	SP3020F	RAYN	224-68
	SOD			PTI		SFT146	▲NPC	65-40	SG7207	▲FSC	164-59	SP3115F	RAYN	224-69
SDT8154	KER	172-88	SDT9207	KER	172-90	SFT162	▲NPC	63-97	SG7207A	▲FSC	164-60	SP3116F	RAYN	224-70
	SOD			PTI		SFT163	▲NPC	57-94	SG8207	▲FSC	170-34	SP3133F	RAYN	224-71
SDT8155	KER	172-89	SDT9208	KER	172-91	SFT171	▲NPC	57-1	SG8207A	▲FSC	170-35	SP3134F	RAYN	224-72
	SOD			PTI		SFT172	▲NPC	57-2	SI211N	▲AKER	125-25	SP3135F	RAYN	224-73
SDT8301	KER	177-30	SDT9209	KER	172-92	SFT173	▲NPC	57-3	SI212N	▲AKER	125-26	SP3136F	RAYN	224-74
	SOD			PTI		SFT174	▲NPC	57-4	SI213N	▲AKER	125-27	SP3724QD	RAYN	224-75
SDT8302	KER	177-31	SDT9210	KER	172-93	SFT184	▲NPC	67-49	SI214N	▲AKER	125-28	SP3724QF	RAYN	224-76
	SOD			PTI		SFT186	▲NPC	114-90	SI215N	▲AKER	125-29	SP3725F	RAYN	224-77
SDT8303	KER	177-32	SDT9701	KER	175-23	SFT187	▲NPC	114-51	SI216N	▲AKER	125-30	SP3725QD	RAYN	224-78
	SOD			PTI				130-96	SI231N	▲AKER</				

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line
SPC152-26	SPC 180-49	ST17062	TEC 177-51	STC1015E	SIL 180-59	STC5804	◆SIL 139-81	TCH99	TAGS 76-3				
SPC152-28	SPC 180-50		TEC 193-44	STC1016	◆SIL 180-60	STC5805	◆SIL 139-82						
SPC152-30	SPC 180-51	ST18007	TEC 177-52	STC1016A	◆SIL 180-61	STC5806	◆SIL 139-83	TCH99B	TAGS 193-109				
SPC153-04	SPC 179-21	ST18008	TEC 177-53	STC1016B	◆SIL 180-62	STC5807	◆SIL 139-84						
SPC153-06	SPC 179-22	ST18009	TEC 177-54	STC1016C	◆SIL 180-63	STC7114	◆SIL 168-102	TD100	◆SPR 88-73				
SPC153-08	SPC 179-23	ST18010	TEC 177-55	STC1016D	◆SIL 180-64	STC7115	◆SIL 168-103						
SPC153-10	SPC 179-24	ST18011	TEC 172-95	STC1016E	◆SIL 180-65	STC7116	◆SIL 168-104	TD101	◆SPR 218-58				
SPC153-12	SPC 179-25	ST18012	TEC 172-96	STC1024	◆SIL 168-90	STC7117	◆SIL 168-105						
SPC153-14	SPC 179-26	ST18013	TEC 172-97	STC1080	◆SIL 168-44	STC7518	◆SIL 168-106	TD102	◆SPR 88-42				
SPC153-16	SPC 179-27	ST18014	TEC 172-98	STC1081	◆SIL 168-45	STC7519	◆SIL 168-107						
SPC153-18	SPC 179-28	ST18015	TEC 166-64	STC1082	◆SIL 168-46	STC7520	◆SIL 168-108	TD200	◆SPR 224-82				
SPC153-20	SPC 179-29	ST18016	TEC 166-65	STC1083	◆SIL 168-47	STC7521	◆SIL 168-109						
SPC153-22	SPC 179-30	ST18017	TEC 166-66	STC1084	◆SIL 168-48	STC7644	◆SIL 155-32	TD201	◆SPR 88-74				
SPC153-24	SPC 179-31	ST18018	TEC 166-67	STC1085	◆SIL 168-49	STC7645	◆SIL 155-33						
SPC153-26	SPC 179-32	ST28135	TEC 178-32	STC1094	◆SIL 178-38	STE400	◆GIC 98-80	TD202	◆SPR 218-61				
SPC153-28	SPC 179-33	ST28136	TEC 178-33	STC1201	◆SIL 160-80	STE401	◆GIC 98-81						
SPC153-30	SPC 179-34	ST28137	TEC 178-34	STC1300	◆SIL 163-57	STP20S	◆MST 145-65	TD250	◆SPR 88-75				
SPC154-04	SPC 179-35	ST28138	TEC 178-35	STC1336	◆SIL 163-58	STP30P	◆MST 145-66						
SPC154-06	SPC 179-36	ST28139	TEC 178-36	STC1400	◆SIL 180-66	STP30S	◆MST 145-67	TD400	◆SPR 218-62				
SPC154-08	SPC 179-37	ST28140	TEC 178-37	STC1500	◆SIL 168-71	STP40P	◆MST 145-68						
SPC154-10	SPC 179-38	ST28141	TEC 183-59	STC1550	◆SIL 168-51	STP40S	◆MST 145-69	TD401	◆SPR 70-72				
SPC154-12	SPC 179-39	ST28142	TEC 183-60	STC1551	◆SIL 168-52	STP50P	◆MST 145-70						
SPC154-14	SPC 179-40	ST28143	TEC 183-61	STC1552	◆SIL 168-53	STP50S	◆MST 145-71	TD402	◆SPR 218-63				
SPC154-16	SPC 179-41	ST29045	TEC 145-23	STC1553	◆SIL 168-54	STP60P	◆MST 145-72						
SPC154-18	SPC 179-42	ST29046	TEC 145-24	STC1554	◆SIL 168-55	STP60S	◆MST 145-73	TD500	◆SPR 70-73				
SPC154-20	SPC 179-43	ST29047	TEC 145-25	STC1555	◆SIL 168-56	STP70P	◆MST 145-74						
SPC154-22	SPC 179-44	ST29048	TEC 145-26	STC1726	◆PTI 177-56	STP70S	◆MST 145-75	TD501	◆SPR 224-84				
SPC154-24	SPC 179-45	ST29049	TEC 145-27		◆SIL 177-57	STS1121	◆SEN 172-100						
SPC154-26	SPC 179-46	ST29050	TEC 145-28	STC1728	◆PTI 177-58	STS1122	◆SEN 172-101	TD502	◆SPR 218-66				
SPC154-28	SPC 179-47	ST29051	TEC 145-29		◆SIL 177-59	STS1131	◆SEN 172-102						
SPC154-30	SPC 179-48	ST29052	TEC 145-30	STC1731	◆PTI 177-60	STS1132	◆SEN 172-103	TD550	◆SPR 224-85				
SPC163-04	SPC 182-62	ST29053	TEC 145-31		◆SIL 177-61	STS1133	◆SEN 172-104						
SPC163-06	SPC 182-63	ST40002	◆TEC 142-54	STC1733	◆PTI 177-62	STS1134	◆SEN 172-105	TD600	◆SPR 213-67				
SPC163-08	SPC 182-64		◆TEC 194-108		◆SIL 177-63	STT2400	◆SIL 158-109	TD601	◆SPR 213-70				
SPC163-10	SPC 182-65	ST40003	◆TEC 142-55	STC1736	◆PTI 177-64	STT2401	◆SIL 158-110	TD602	◆SPR 213-71				
SPC163-12	SPC 182-66		◆TEC 194-109		◆SIL 177-65	STT2402	◆SIL 159-1	TD700	◆SPR 213-72				
SPC163-14	SPC 182-67	ST40004	◆TEC 142-56	STC1738	◆PTI 177-66	STT2403	◆SIL 159-2	TD701	◆SPR 213-73				
SPC163-16	SPC 182-68		◆TEC 194-110		◆SIL 177-67	STT2404	◆SIL 159-3	TD702	◆SPR 213-74				
SPC163-18	SPC 182-69	ST54004	◆TEC 142-92	STC1800	◆SIL 158-104	STT2405	◆SIL 159-4	TD2219	◆SPR 90-5				
SPC163-20	SPC 182-70		◆TEC 195-1	STC1850	◆SIL 158-105	STT2406	◆SIL 173-82	TD2905	◆SPR 224-86				
SPC163-22	SPC 182-71	ST54005	◆TEC 142-93	STC1860	◆SIL 158-106	STT2650	◆SIL 173-83						
SPC163-24	SPC 182-72		◆TEC 195-2	STC1861	◆SIL 158-107	STT2651	◆SIL 173-84	TF78/30	SHWG 127-61				
SPC163-26	SPC 182-73	ST54006	◆TEC 142-94	STC1862	◆SIL 158-108	STT2652	◆SIL 173-85	TF78/60	SHWG 127-62				
SPC163-28	SPC 182-74		◆TEC 195-3	STC2103	◆PTI 182-99	STT2653	◆SIL 173-86	TH95	SPR 225-63				
SPC163-30	SPC 182-75	ST72011	◆TEC 143-52		◆SIL 182-100	STT2654	◆SIL 173-87	TH2192	SPR 225-64				
SPC164-04	SPC 182-76	ST72012	◆TEC 143-53	STC2104	◆PTI 182-101	STT2655	◆SIL 173-88	TH2221	◆SPR 225-65				
SPC164-06	SPC 182-77	ST72013	◆TEC 143-54		◆SIL 182-102	STT2800	◆SIL 168-12	TH2221A	◆SPR 225-66				
SPC164-08	SPC 182-78	ST72014	◆TEC 143-55	STC2105	◆PTI 182-103	STT2801	◆SIL 168-13	TH2222	◆SPR 225-67				
SPC164-10	SPC 182-79	ST72015	◆TEC 144-50		◆SIL 182-104	STT2802	◆SIL 168-14	TH2222A	◆SPR 225-68				
SPC164-12	SPC 182-80	ST72016	◆TEC 144-51	STC2106	◆PTI 182-105	STT2803	◆SIL 168-15	TH2369	◆SPR 225-69				
SPC164-14	SPC 182-81	ST72017	◆TEC 144-52		◆SIL 182-106	STT2804	◆SIL 168-16	TH2906A	◆SPR 225-70				
SPC164-16	SPC 182-82	ST72018	◆TEC 145-13	STC2107	◆PTI 182-107	STT2805	◆SIL 168-17	TH2907A	◆SPR 225-71				
SPC164-18	SPC 182-83	ST72019	◆TEC 145-14		◆SIL 182-108	STT2806	◆SIL 168-18	TH2907B	◆SPR 225-72				
SPC164-20	SPC 182-84	ST72020	◆TEC 145-15	STC2108	◆PTI 182-109	STT4451	◆SIL 153-72	TH2926	◆SPR 225-73				
SPC164-22	SPC 182-85	ST72021	◆TEC 145-16		◆SIL 177-62	STT4452	◆SIL 153-73	TH2944	◆SPR 225-74				
SPC164-24	SPC 182-86	ST72022	◆TEC 143-74	STC2220	◆SIL 177-63	STT4453	◆SIL 153-74	TH2945	◆SPR 225-75				
SPC164-26	SPC 182-87		◆TEC 195-4	STC2221	◆SIL 177-64	STT4454	◆SIL 153-75	TH2946	◆SPR 225-76				
SPC164-30	SPC 182-88	ST72037	◆TEC 143-75	STC2222	◆SIL 177-65	STT4455	◆SIL 153-76	TH3638	◆SPR 225-77				
SPC401	SPC 177-47	ST72038	◆TEC 143-76	STC2223	◆SIL 177-66	STT4456	◆SIL 153-77	TH3877	◆SPR 225-78				
SPC402	SPC 179-49		◆TEC 195-6	STC2224	◆SIL 177-67	STT4483	◆SIL 166-71	TH3904	◆SPR 225-79				
SPC410	SPC 179-50	ST72039	◆TEC 139-76	STC2225	◆SIL 177-68	STT6310	◆SIL 166-72	TH4258	◆SPR 225-80				
SPC411	SPC 179-51		◆TEC 195-7	STC2226	◆SIL 177-69	STT6311	◆SIL 166-73	TH4384	◆SPR 225-81				
SPC413	SPC 177-48	ST72040	◆TEC 139-77	STC2227	◆SIL 177-70	STT6312	◆SIL 166-74	TH4386	◆SPR 225-82				
SPC423	SPC 179-52		◆TEC 195-8	STC2228	◆SIL 177-71	STT6313	◆SIL 166-75	TH4413	◆SPR 225-83				
SPC424	SPC 179-53	ST72041	◆TEC 139-78	STC2230	◆SIL 177-72	STT6316	◆SIL 166-76	TH4415	◆SPR 225-84				
SPC425	SPC 179-54		◆TEC 195-9	STC2231	◆SIL 177-73	STT6409	◆SIL 166-77	TH7500	◆SPR 225-85				
SPC430	SPC 180-52	ST74049	◆TEC 157-110	STC2500	◆SIL 183-73	STT6410	◆SIL 166-78	TH7501	◆SPR 225-86				
SPC431	SPC 180-53		◆TEC 197-14	STC2501	◆SIL 183-74	STT6411	◆SIL 166-79	TI92	◆SPR 225-87				
SPC40411	SPC 175-30	ST74050	◆TEC 158-1	STC2502	◆SIL 177-74	STT6413	◆SIL 166-80	TI156	◆SPR 128-101				
SPT3439	◆SSI 164-71		◆TEC 197-15	STC3706	◆SIL 182-105	STT6416	◆SIL 166-81	TI156L	◆SPR 128-102				
SPT3440	◆SSI 151-88	ST74051	◆TEC 158-2	STC3722	◆SIL 182-106	STT9001	◆SIL 153-79	TI159	◆SPR 128-103				
SPT3713	◆SSI 172-94		◆TEC 197-16	STC3723	◆SIL 182-107	STT9002	◆SIL 153-80	TI160	◆SPR 128-104				
SPT3738	◆SSI 160-1	ST75004	◆TEC 141-25	STC3724	◆SIL 182-108	STT9003	◆SIL 153-81	TI161	◆SPR 128-105				
ST20	ROSG 221-28		◆TEC 195-10	STC3725	◆SIL 182-109	STT9004	◆SIL 153-82	TI162	◆SPR 56-101				
ST50	ROSG 221-29	ST75005	◆TEC 141-26	STC3726	◆SIL 183-1	STT9005	◆SIL 153-83	TI163	◆SPR 56-102				
ST10007	◆TEC 145-10		◆TEC 195-11	STC3727	◆SIL 183-2	STT9006	◆SIL 153-84	TI164	◆SPR 60-84				
		ST75006	◆TEC 1										

# 1. TYPE No. CROSS INDEX

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line	TYPE No.	MFRS Pg&Line
T11135	♦ TII 173- 6	TIP36C	♦ TII 144- 86	TIS110	♦ TII 103- 18	TR34	♦ ITC 57- 24	TRS160	♦ ITC 109-101				
T11136	♦ TII 173- 7		♦ TII 170- 24	TIS111	♦ TII 103- 34	TR43	♦ ITC 59- 65	TRS160HP	♦ ITC 151- 90				
T11141	♦ TII 173- 8	TIP41	♦ TII 170- 24	TIS111	♦ TII 103- 66	TR44	♦ ITC 59- 60	TRS160MP	♦ ITC 147- 10				
T11142	♦ TII 173- 9		♦ TII 170- 25	TIS112	♦ TII 206- 39	TR45	♦ ITC 59- 48	TRS175HC	♦ ITC 155- 38				
T11143	♦ TII 173- 10	TIP41A	♦ TII 170- 25	TIS112	♦ TII 77- 37	TR320	♦ ITC 59- 66	TRS180	♦ ITC 109-102				
T11144	♦ TII 173- 11		♦ TII 170- 26	TIS113	♦ TII 205- 30	TR321	♦ ITC 59- 83	TRS180HP	♦ ITC 151- 91				
T11145	♦ TII 173- 12	TIP41B	♦ TII 170- 26	TIS113	♦ TII 111- 73	TR323	♦ ITC 59- 67	TRS180MP	♦ ITC 147- 11				
T11146	♦ TII 173- 13		♦ TII 170- 27	TIS114	♦ TII 204- 60	TR383	♦ ITC 62- 70	TRS200	♦ ITC 109-103				
T11151	♦ TII 173- 14	TIP41C	♦ TII 170- 27	TIS114	♦ TII 111- 74	TR482	♦ ITC 59- 87	TRS200HC	♦ ITC 155- 39				
T11152	♦ TII 173- 15		♦ TII 144- 54	TIS115	♦ TII 204- 61	TR508	♦ ITC 59- 88	TRS200HP	♦ ITC 151- 92				
T11153	♦ TII 173- 16	TIP42	♦ TII 144- 54	TIS115	♦ TII 111- 75	TR650	♦ ITC 59- 58	TRS200MP	♦ ITC 147- 12				
T11154	♦ TII 173- 17		♦ TII 144- 55	TIS116	♦ TII 204- 62	TR653	♦ ITC 59- 59	TRS225	♦ ITC 109-104				
T11155	♦ TII 173- 18	TIP42A	♦ TII 144- 55	TIS116	♦ TII 111- 76	TR721	♦ ITC 59- 82	TRS225HP	♦ ITC 151- 93				
T11156	♦ TII 173- 19		♦ TII 144- 56	TIXM101	♦ TII 204- 63	TR722	♦ ITC 59- 68	TRS225MP	♦ ITC 147- 13				
T13027	♦ TII 135- 45	TIP42B	♦ TII 144- 56	TIXS10	♦ TII 55- 41	TR-C44	♦ ITC 60- 23	TRS250	♦ ITC 109-105				
T13028	♦ TII 135- 46	TIP42C	♦ TII 144- 57	TIXS10	♦ TII 91-100	TR-C45	♦ ITC 59- 98	TRS250HP	♦ ITC 151- 94				
T13029	♦ TII 135- 47	TIP3055	♦ TII 170- 69	TIXS12	♦ TII 147- 71	TR-C70	♦ ITC 58- 74	TRS250MP	♦ ITC 147- 14				
T13030	♦ TII 135- 48	TIS14	♦ TII 123- 73	TIXS13	♦ TII 147- 72	TR-C71	♦ ITC 58- 75	TRS275	♦ ITC 109-106				
T13031	♦ TII 135- 49	TIS18	♦ TII 94- 37	TIXS35	♦ TII 126- 90	TR-C72	♦ ITC 58- 76	TRS275HP	♦ ITC 151- 95				
TIL58	♦ TII 219-110	TIS25	♦ TII 123- 74	TIXS80	♦ TII 123- 77	TRL2014	♦ ITC 147- 98	TRS275MP	♦ ITC 147- 15				
TIL63	♦ TII 220- 1	TIS26	♦ TII 123- 75	TIXS81	♦ TII 123- 78	TRL2015	♦ ITC 184- 40	TRS301	♦ ITC 109-107				
TIL64	♦ TII 220- 2	TIS27	♦ TII 123- 76	TK9201	♦ TEK 173- 20	TRL2254S	♦ ITC 147- 99	TRS301HP	♦ ITC 151- 96				
TIL65	♦ TII 220- 3	TIS34	♦ TII 123- 77	TK30551	♦ TEK 173- 21	TRL2255S	♦ ITC 184- 41	TRS301LC	♦ ITC 148- 27				
TIL66	♦ TII 220- 4	TIS37	♦ TII 123- 78	TK30552	♦ TEK 173- 22	TRL2504	♦ ITC 147- 100	TRS301MP	♦ ITC 147- 16				
TIL67	♦ TII 220- 5	TIS38	♦ TII 123- 79	TK30553	♦ TEK 173- 23	TRL2504S	♦ ITC 147- 101	TRS325	♦ ITC 109-108				
TIL601	♦ TII 220- 6	TIS41	♦ TII 111- 93	TK30554	♦ TEK 173- 24	TRL2505	♦ ITC 184- 42	TRS325HP	♦ ITC 151- 97				
TIL602	♦ TII 220- 7	TIS42	♦ TII 125- 32	TK30555	♦ TEK 173- 25	TRL2505S	♦ ITC 184- 43	TRS325MP	♦ ITC 147- 17				
TIL603	♦ TII 220- 8	TIS44	♦ TII 103- 10	TK30556	♦ TEK 173- 26	TRL2754S	♦ ITC 147- 102	TRS350	♦ ITC 109-109				
TIL604	♦ TII 220- 9	TIS45	♦ TII 204- 9	TK30557	♦ TEK 173- 27	TRL2755S	♦ ITC 184- 44	TRS350HP	♦ ITC 151- 98				
TIL605	♦ TII 220- 10	TIS46	♦ TII 103-107	TK30558	♦ TEK 173- 28	TRL3014	♦ ITC 147- 103	TRS350MP	♦ ITC 147- 18				
TIL606	♦ TII 220- 11	TIS47	♦ TII 208- 47	TK30559	♦ TEK 173- 29	TRL3014S	♦ ITC 147- 104	TRS375	♦ ITC 109-110				
TIL607	♦ TII 220- 12	TIS48	♦ TII 104- 43	TK30560	♦ TEK 173- 30	TRL3015	♦ ITC 184- 45	TRS375HP	♦ ITC 151- 99				
TIL608	♦ TII 220- 13	TIS49	♦ TII 104- 43	TM1613	♦ TEK 173- 31	TRL3015S	♦ ITC 184- 46	TRS375MP	♦ ITC 147- 19				
TIL609	♦ TII 220- 14	TIS50	♦ TII 210- 35	TM1614	♦ TEK 173- 32	TRL3504	♦ ITC 147- 105	TRS401	♦ ITC 110- 1				
TIL610	♦ TII 220- 15	TIS51	♦ TII 104- 44	TM1711	♦ TEK 173- 33	TRL3505	♦ ITC 184- 47	TRS401HP	♦ ITC 151- 100				
TIL611	♦ TII 220- 16	TIS52	♦ TII 209- 92	TM1712	♦ TEK 173- 34	TRL3514S	♦ ITC 148- 33	TRS401LC	♦ ITC 148- 28				
TIL612	♦ TII 220- 17	TIS53	♦ TII 209- 92	TM1713	♦ TEK 173- 35	TRL3515	♦ ITC 184- 48	TRS401MP	♦ ITC 147- 20				
TIL613	♦ TII 220- 18	TIS54	♦ TII 104- 44	TM1714	♦ TEK 173- 36	TRL4014	♦ ITC 147- 106	TRS425	♦ ITC 110- 2				
TIL614	♦ TII 220- 19	TIS55	♦ TII 209- 92	TM1715	♦ TEK 173- 37	TRL4014S	♦ ITC 147- 107	TRS425HP	♦ ITC 151- 101				
TIL615	♦ TII 220- 20	TIS56	♦ TII 209- 92	TM2613	♦ TEK 173- 38	TRL4015	♦ ITC 184- 49	TRS425MP	♦ ITC 147- 21				
TIL616	♦ TII 220- 21	TIS57	♦ TII 209- 92	TM2614	♦ TEK 173- 39	TRL4015S	♦ ITC 148- 84	TRS450	♦ ITC 110- 3				
TIP29	♦ TII 163- 75	TIS58	♦ TII 90- 67	TM2711	♦ TEK 173- 40	TRL4504	♦ ITC 147- 108	TRS451	♦ ITC 110- 4				
TIP29A	♦ TII 163- 76	TIS59	♦ TII 125- 34	TN53	♦ SPR 114- 52	TRL4505	♦ ITC 148- 85	TRS451MP	♦ ITC 147- 22				
TIP29B	♦ TII 163- 77	TIS60	♦ TII 103- 64	TN54	♦ SPR 108- 12	TRL5014	♦ ITC 147- 109	TRS475	♦ ITC 110- 5				
TIP29C	♦ TII 163- 78	TIS61	♦ TII 213- 75	TN59	♦ SPR 114- 53	TRL5014S	♦ ITC 147- 110	TRS475MP	♦ ITC 147- 23				
TIP30	♦ TII 142- 82	TIS62	♦ TII 94- 23	TN60	♦ SPR 200-108	TRL5015	♦ ITC 148- 86	TRS501	♦ ITC 110- 6				
TIP30A	♦ TII 142- 83	TIS63	♦ TII 94- 23	TN61	♦ SPR 108- 13	TRL5015S	♦ ITC 148- 87	TRS501MP	♦ ITC 147- 24				
TIP30B	♦ TII 142- 84	TIS64	♦ TII 94- 23	TN62	♦ SPR 200-109	TRL5505	♦ ITC 148- 88	TRS525	♦ ITC 110- 7				
TIP30C	♦ TII 142- 85	TIS65	♦ TII 125- 36	TN63	♦ SPR 114- 54	TRL5505S	♦ ITC 148- 89	TRS525MP	♦ ITC 147- 25				
TIP31	♦ TII 165- 39	TIS66	♦ TII 125- 37	TN64	♦ SPR 200-110	TRL6014	♦ ITC 148- 90	TRS550	♦ ITC 110- 8				
TIP31A	♦ TII 165- 40	TIS67	♦ TII 125- 38	TN79	♦ SPR 108- 14	TRL6015	♦ ITC 148- 89	TRS550MP	♦ ITC 147- 26				
TIP31B	♦ TII 165- 41	TIS68	♦ TII 125- 39	TN80	♦ SPR 108- 14	TRL6504	♦ ITC 148- 3	TRS575	♦ ITC 110- 9				
TIP31C	♦ TII 165- 42	TIS69	♦ TII 125- 40	TN81	♦ SPR 201- 1	TRL6505	♦ ITC 148- 90	TRS575MP	♦ ITC 147- 27				
TIP32	♦ TII 143- 64	TIS70	♦ TII 125- 41	TP3638	♦ SPR 112- 79	TRL7014	♦ ITC 148- 4	TRS601	♦ ITC 110- 10				
TIP32A	♦ TII 143- 65	TIS71	♦ TII 125- 42	TP3638A	♦ SPR 194- 29	TRL7015	♦ ITC 148- 91	TRS601MP	♦ ITC 147- 28				
TIP32B	♦ TII 143- 66	TIS72	♦ TII 125- 43	TP4123	♦ SPR 107- 1	TRL7504	♦ ITC 148- 5	TRS650	♦ ITC 110- 11				
TIP32C	♦ TII 143- 67	TIS73	♦ TII 125- 44	TP4124	♦ SPR 194- 30	TRL7505	♦ ITC 148- 92	TRS701	♦ ITC 110- 12				
TIP33	♦ TII 170- 65	TIS74	♦ TII 125- 45	TP4125	♦ SPR 113- 42	TRL8014	♦ ITC 148- 6	TRS750	♦ ITC 110- 13				
TIP33A	♦ TII 170- 66	TIS75	♦ TII 125- 46	TP4126	♦ SPR 107- 43	TRL8015	♦ ITC 148- 93	TRS801	♦ ITC 110- 14				
TIP33B	♦ TII 170- 67	TIS76	♦ TII 125- 47	TP4257	♦ SPR 114- 98	TRM2014	♦ ITC 148- 7	TRS1004	♦ ITC 150- 37				
TIP33C	♦ TII 170- 68	TIS77	♦ TII 125- 48	TP4258	♦ SPR 76- 77	TRM2015	♦ ITC 148- 94	TRS1005	♦ ITC 157- 15				
TIP34	♦ TII 144- 68	TIS78	♦ TII 125- 49	TP4274	♦ SPR 201- 34	TRM2254S	♦ ITC 148- 8	TRS1204	♦ ITC 150- 38				
TIP34A	♦ TII 144- 69	TIS79	♦ TII 125- 50	TP4275	♦ SPR 76- 98	TRM2255S	♦ ITC 148- 95	TRS1205	♦ ITC 157- 16				
TIP34B	♦ TII 144- 64	TIS80	♦ TII 125- 51	TP4275	♦ SPR 203- 44	TRM2504S	♦ ITC 148- 9	TRS1404	♦ ITC 150- 39				
TIP34C	♦ TII 144- 65	TIS81	♦ TII 125- 52	TP4275	♦ SPR 103- 67	TRM2504S	♦ ITC 148- 10	TRS1405	♦ ITC 157- 17				
TIP35	♦ TII 173- 72	TIS82	♦ TII 125- 53	TP4275	♦ SPR 103- 109	TRM2505S	♦ ITC 148- 96	TRS1604	♦ ITC 150- 40				
TIP35A	♦ TII 173- 73	TIS83	♦ TII 125- 54	TP4275	♦ SPR 77- 38	TRM2505S	♦ ITC 148- 97	TRS1605	♦ ITC 157- 18				
TIP35B	♦ TII 173- 74	TIS84	♦ TII 125- 55	TP4275	♦ SPR 77- 46	TRM2754S	♦ ITC 148- 11	TRS1804	♦ ITC 150- 41				
TIP35C	♦ TII 173- 75	TIS85	♦ TII 125- 56	TP4275	♦ SPR 71- 11	TRM2755S	♦ ITC 148- 98	TRS1805	♦ ITC 157- 19				
TIP36	♦ TII 144- 89	TIS86	♦ TII 106- 26	TP4275	♦ SPR 211- 14	TRM3014	♦ ITC 148- 12	TRS2004	♦ ITC 150- 42				
TIP36A	♦ TII 144- 90	TIS87	♦ TII 106- 27	TP4275	♦ SPR 71- 16	TRM3014S	♦ ITC 148- 13	TRS2005	♦ ITC 157- 20				
TIP36B	♦ TII 144- 85	TIS88	♦ TII 106- 27	TP4275	♦ SPR 211- 91	TRM3015	♦ ITC 148- 99	TRS2006	♦ ITC 160- 2				
		TIS89	♦ TII 106- 28	TP4275	♦ SPR 90- 55	TRM3015S	♦ ITC 148- 100	TRS2254	♦ ITC 150- 43				
		TIS90	♦ TII 106- 29	TP4275	♦ SPR 209- 78	TRM3504	♦ ITC 148- 14	TRS2255	♦ ITC 157- 21				
		TIS91	♦ TII 106- 30	TP4275	♦ SPR 90- 56	TRM3505	♦ ITC 148- 101	TRS2504	♦ ITC 150- 44				
		TIS92	♦ TII 106- 31	TP4275	♦ SPR 209- 79	TRM3514S	♦ ITC 148- 15	TRS2505	♦ ITC 157- 22				
		TIS93	♦ TII 106- 32	TP4275	♦ SPR 102- 43	TRM3515S	♦ ITC 148- 102	TRS2754	♦ ITC 150- 45				
		TIS94	♦ TII 106- 33	TP4275	♦ SPR 102- 44	TRM4014	♦ ITC 148- 16	TRS2755	♦ ITC 157- 23				
		TIS95	♦ TII 106- 34	TP4275	♦ SPR 102- 45	TRM4014S	♦ ITC 148- 17	TRS2804S	♦ ITC 150- 46				
		TIS96	♦ TII 106- 35	TP4275	♦ SPR 102- 46	TRM4015	♦ ITC 148- 103	TRS2805S	♦ ITC 157- 24				
		TIS97	♦ TII 106- 36	TP4275	♦ SPR 76- 41	TRM4015S	♦ ITC 148- 104	TRS3006	♦ ITC 160- 3				
		TIS98	♦ TII 106- 37	TP4275	♦ SPR 76- 42	TRM4504	♦ ITC 148- 18	TRS3011	♦ ITC 95- 78				
		TIS99	♦ TII 106- 38	TP4275	♦ SPR 76- 43	TRM4505	♦ ITC 148- 105	TRS3012	♦ ITC 95- 79				
		TIS100	♦ TII 106- 39	TP4275	♦ SPR 76- 44	TRM5014	♦ ITC 148- 19	TRS3014	♦ ITC 150- 47				
		TIS101	♦ TII 106- 40	TP4275	♦ SPR 76- 45	TRM5014S	♦ ITC 148- 20	TRS3015	♦ ITC 157- 25				
		TIS102	♦ TII 106- 41	TP4275	♦ SPR 76- 46	TRM5015	♦ ITC 148- 106	TRS3204S	♦ ITC 150- 48				
		TIS103	♦ TII 106- 42	TP4275	♦ SPR 80- 103	TRM5015S	♦ ITC 148- 107	TRS3205S	♦ ITC 157- 26				
		TIS104	♦ TII 106- 43	TP4275	♦ SPR 80- 104	TRM5504	♦ ITC 148- 21	TRS3254	♦ ITC 150- 49				
		TIS105	♦ TII 106- 44	TP4275	♦ SPR 79- 37	TRM5505	♦ ITC 148- 108	TRS3255	♦ ITC 157- 27				
		TIS106	♦ TII 106- 45	TP4275	♦ SPR 79- 38	TRM6014	♦ ITC 148- 22	TRS3501	♦ ITC 95- 77				
		TIS107	♦ TII 106- 46	TP4275	♦ SPR 80- 105	TRM6015	♦ ITC 148- 109	TRS3502	♦ ITC 95- 78				
		TIS108	♦ TII 106- 47	TP4275	♦ SPR 201- 6	TRM6504	♦ ITC 148- 23	TRS3504	♦ ITC 150- 50				
		TIS109	♦ TII 106- 48	TP4275	♦ SPR 80- 106	TRM6505	♦ ITC 148- 110	TRS3505	♦ ITC 157- 28				
				TP4275	♦ SPR 201- 7	TRM7014	♦ ITC 148- 24	TRS3505S	♦ ITC 150- 51				
				TP4275	♦ SPR 79- 39	TRM7015	♦ ITC 148- 1	TRS3604S	♦ ITC 157- 29				
				TP4275	♦ SPR 201- 8								

# 1. TYPE No. CROSS INDEX

				IN TYPE NUMBER SEQUENCE											
TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	TYPE No.	MFRS	Pg&Line	
TR54505	ITC	157-35	TRSP50155	ITC	139-107	UC714	SODI	124-3	ZDT44	FERB	98-10	ZT402	FERB	96-28	
TR54506	ITC	160-6	TRSP5281	ITC	140-103	UC734	SODI	124-4		FERB	98-11	ZT403	FERB	96-29	
TR54754	ITC	150-59	TRSP5282	ITC	140-104	UC734E	SODI	124-5	ZDT45	FERB	98-18	ZT404	FERB	96-30	
TR54755	ITC	157-36	TRSP5415	ITC	140-105	UC755	SODI	120-7		FERB	218-89	ZT600	FERB	115-32	
TR54804S	ITC	150-60	TRSP5416	ITC	140-106	UC756	SODI	120-7	ZM100	FERB	220-23	ZT696	FERB	207-50	
TR54805S	ITC	157-37	TRSP7006	ITC	141-66	UC805	SODI	118-82	ZM110	FERB	220-24	ZT697	FERB	110-36	
TR54926	ITC	155-91	TRSP7006	ITC	141-67	UC807	SODI	119-33	ZT20	FERB	101-73	ZT697	FERB	110-52	
TR54927	ITC	155-92	TRSP8006	ITC	141-68	UC814	SODI	118-83		FERB	201-106	ZT706	FERB	97-78	
TR55006	ITC	160-7	TS2218	TIIF	114-83	UC851	SODI	118-84	ZT21	FERB	201-107	ZT706A	FERB	97-79	
TR55011	ITC	95-83	TS2219	TIIF	104-84	UC854	SODI	118-85			205-31			205-31	
TR55012	ITC	150-61	TS2221	TIIF	105-89	UC855	SODI	118-86	ZT22	FERB	101-75	ZT708	FERB	103-110	
TR55014	ITC	157-38	TS2222	TIIF	105-90	UC1764	SODI	119-2		FERB	101-108	ZT709	FERB	99-51	
TR55015	ITC	157-38	TS2904	TIIF	81-5	UC2139	SODI	126-33	ZT23	FERB	101-76			211-64	
TR55204S	ITC	150-62	TS2905	TIIF	79-6		SODI	224-88		FERB	201-109	ZT1479	FERB	151-103	
TR55205S	ITC	157-39	TS2906	TIIF	79-5	UC2147	SODI	121-103	ZT24	FERB	101-77			190-89	
TR55254	ITC	150-63	TS2907	TIIF	79-52	UC2148	SODI	224-89		FERB	101-77	ZT1480	FERB	151-104	
TR55255	ITC	157-40	TS3	NPC	220-22	UC2149	SODI	126-34	ZT40	FERB	96-68			190-90	
TR55404S	ITC	150-64	TZ81	SPR	102-56		SPR	224-90		FERB	202-1	ZT1481	FERB	151-105	
TR55405S	ITC	157-41	TZ82	SPR	102-57	UC2766	SODI	118-87	ZT41	FERB	96-69			190-91	
TR55501	ITC	95-85	TZ551	SPR	76-99			224-91		FERB	202-2	ZT1482	FERB	151-106	
TR55502	ITC	95-86			203-23	UCX2910	SODI	106-33	ZT42	FERB	96-70			190-92	
TR55504	ITC	150-55	TZ552	SPR	76-100			218-80		FERB	202-3	ZT1483	FERB	160-64	
TR55505	ITC	157-42			203-24	UD3005	SPR	204-13	ZT43	FERB	96-71	ZT1484	FERB	160-65	
TR55754	ITC	150-66	TZ553	SPR	76-101			224-92		FERB	202-4	ZT1485	FERB	160-66	
TR55755	ITC	157-43			203-25	UD3006	SPR	204-14	ZT44	FERB	96-72	ZT1486	FERB	160-67	
TR55804S	ITC	150-67	TZ554	SPR	76-102			224-93		FERB	202-5	ZT1487	FERB	168-39	
TR55805S	ITC	157-44			203-26	UD3007	SPR	204-15	ZT60	FERB	101-78			190-52	
TR56006	ITC	160-8	TZ581	SPR	76-54			213-79		FERB	202-17	ZT1488	FERB	168-40	
TR56011	ITC	95-87	TZ582	SPR	76-55	UPA15	NECJ	218-81	ZT61	FERB	101-79			190-53	
TR56012	ITC	95-88	U110	SIX	118-70	UPA36A	NECJ	222-90		FERB	202-18	ZT1489	FERB	168-41	
TR56014	ITC	150-68	U112	SIX	118-71	UPI404	UPI	60-43	ZT62	FERB	101-80			190-54	
TR56015	ITC	157-45	U114	SIX	118-72	UPI404A	UPI	59-99		FERB	202-19	ZT1490	FERB	168-42	
TR56204S	ITC	150-69	U133	SIX	118-73	UPI706	UPI	98-84	ZT63	FERB	101-81			190-55	
TR56205S	ITC	157-46	U139	SIX	118-74	UPI706A	UPI	97-59		FERB	202-20	ZT1613	FERB	113-81	
TR56504	ITC	150-70	U139D	SIX	118-75	UPI706B	UPI	99-19	ZT64	FERB	101-82	ZT1700	FERB	151-107	
TR56505	ITC	157-47	U146	SIX	118-76	UPI1301	UPI	60-67		FERB	202-21	ZT1701	FERB	160-68	
TR56604S	ITC	150-71	U147	SIX	118-77	UPI1303	UPI	58-77	ZT66	FERB	101-83	ZT1702	FERB	168-31	
TR56605S	ITC	157-48	U148	SIX	118-78	UPI1305	UPI	58-78		FERB	202-22	ZT1708	FERB	97-80	
TR57006	ITC	160-9	U149	SIX	118-79	UPI1307	UPI	58-79	ZT68	FERB	112-10			205-32	
TR57014	ITC	150-72	U168	SIX	118-80	UPI1309	UPI	58-80		FERB	202-23	ZT1711	FERB	113-101	
TR57014S	ITC	150-73	U183	SIX	121-18	UPI1345	UPI	58-81	ZT80	FERB	97-60	ZT2015	FERB	175-31	
TR57015	ITC	157-49	U184	SIX	123-79	UPI1347	UPI	60-4		FERB	202-24	ZT2016	FERB	175-32	
TR57015S	ITC	157-50	U197	SIX	123-80	UPI1352	UPI	59-69	ZT81	FERB	97-61	ZT2102	FERB	147-33	
TR57504	ITC	150-74	U198	SIX	123-81	UPI1353	UPI	62-98		FERB	202-25	ZT2205	FERB	97-81	
TR57505	ITC	157-51	U199	SIX	123-82	UPI2217	UPI	115-28	ZT82	FERB	97-62			205-33	
TR58006	ITC	160-10	U200	SIX	126-76	UPI2218	UPI	115-29		FERB	202-26	ZT2206	FERB	97-82	
TR58014	ITC	150-75	U201	SIX	126-77	UPI2222	UPI	94-106	ZT83	FERB	97-63			205-34	
TR58015	ITC	157-52	U202	SIX	126-78	UPI2222B	UPI	108-103		FERB	202-27	ZT2270	FERB	151-108	
TR5P15X5	ITC	141-6	U221	SIX	126-46	UPI4046	UPI	115-30	ZT84	FERB	97-64	ZT2368	FERB	104-45	
TR5P15X	ITC	140-92	U222	SIX	126-47	UPI4046-46	UPI	106-2		FERB	202-28			209-80	
TR5P20X5	ITC	141-7	U231	SIX	123-83	UPI4047	UPI	115-31	ZT86	FERB	97-65	ZT2369	FERB	104-46	
TR5P20X	ITC	140-93			218-74	UPI4047-46	UPI	106-3		FERB	202-29			211-7	
TR5P25X5	ITC	141-8	U232	SIX	123-84	USA55191/33	none	149-4	ZT87	FERB	97-66	ZT2369A	FERB	104-47	
TR5P25X	ITC	140-94			218-75			199-50		FERB	202-30			211-8	
TR5P30X5	ITC	141-9	U233	SIX	123-85	USA55191/34	none	149-5	ZT88	FERB	97-67	ZT2475	FERB	99-52	
TR5P30X	ITC	140-95			218-76			199-69		FERB	202-31			211-66	
TR5P2006	ITC	141-56	U234	SIX	123-86	USA55191/36	none	197-98	ZT89	FERB	97-68	ZT2476	FERB	110-99	
TR5P2254	ITC	139-57			218-77	UT100	SIX	124-6		FERB	202-32			206-68	
TR5P2254S	ITC	139-58	U235	SIX	123-87	UT101	SIX	124-7	ZT90	FERB	152-19	ZT2477	FERB	110-100	
TR5P2255	ITC	139-90			218-78	V205	SGSI	74-10	ZT91	FERB	152-20			206-69	
TR5P2255S	ITC	139-91	U240	SIX	125-96			201-2	ZT92	FERB	152-21	ZT2708	FERB	90-101	
TR5P2504	ITC	139-59			185-88	V405A	SGSI	75-33	ZT93	FERB	152-22	ZT2857	FERB	91-60	
TR5P2504S	ITC	139-60	U241	SIX	125-97			210-39	ZT94	FERB	152-23	ZT2876	FERB	155-34	
TR5P2505	ITC	139-92			185-89	V410A	SGSI	81-58	ZT95	FERB	152-24	ZT2887	FERB	159-25	
TR5P2505S	ITC	139-93	U242	SIX	125-98	V435	SGSI	73-76	ZT110	FERB	97-69	ZT2938	FERB	98-98	
TR5P2754	ITC	139-61			185-90			207-30		FERB	202-33			211-29	
TR5P2754S	ITC	139-62	U243	SIX	125-99	V435A	SGSI	74-11	ZT111	FERB	97-70	ZT3440	FERB	152-25	
TR5P2755	ITC	139-94			185-91	V654	SGSI	81-88		FERB	202-34	ZT3441	FERB	160-69	
TR5P2755S	ITC	139-95	U244	SIX	126-88	V655	SGSI	70-61	ZT112	FERB	97-71	ZT3442	FERB	173-31	
TR5P3006	ITC	141-57	U257	SIX	121-102	V658	NECJ	94-54		FERB	202-35	ZTX107	FERB	96-73	
TR5P3014	ITC	139-63			218-79	V721	SGSI	75-29	ZT113	FERB	97-72	ZTX108	FERB	96-74	
TR5P3014S	ITC	139-64	U266	SIX	126-89			210-87		FERB	202-36	ZTX109	FERB	96-75	
TR5P3015	ITC	139-96	U273	SIX	123-88	V723	SGSI	77-71	ZT114	FERB	97-73	ZTX114	FERB	98-99	
TR5P3015S	ITC	139-97	U274	SIX	123-89			210-61		FERB	202-37	ZTX300	FERB	97-19	
TR5P3254S	ITC	139-15	U275	SIX	123-90	V741	SGSI	76-63	ZT116	FERB	97-74	ZTX301	FERB	97-20	
TR5P3255S	ITC	139-16	U1277	TSC	123-91	V743	SGSI	77-72		FERB	202-38	ZTX302	FERB	97-21	
TR5P3504	ITC	139-65	U1278	TSC	123-92	V745	SGSI	82-25	ZT117	FERB	97-75	ZTX303	FERB	97-22	
TR5P3504S	ITC	139-17	U1279	TSC	123-93	V761	SGSI	79-7		FERB	202-39	ZTX304	FERB	97-23	
TR5P3505	ITC	139-98	U1280	TSC	123-94	V763	SGSI	79-96	ZT118	FERB	97-76	ZTX310	FERB	97-83	
TR5P3505S	ITC	139-18	U1281	TSC	123-95			207-77		FERB	202-40			204-10	
TR5P3514S	ITC	139-66	U1282	TSC	123-96	V765	SGSI	81-53	ZT119	FERB	97-77	ZTX311	FERB	97-84	
TR5P3515S	ITC	139-99	U1283	TSC	123-97	VX3375	ECD	157-53		FERB	202-41			204-11	
TR5P3743	ITC	140-96	U1284	TSC	123-98	VX3733	ECD	159-58	ZT152	FERB	73-41	ZTX312	FERB	99-20	
TR5P3754S	ITC	139-19	U1285	TSC	123-99	VX3866	ECD	151-102	ZT180	FERB	73-101			209-93	
TR5P3755S	ITC	139-20	U1286	TSC	123-100	XB401	TIIF	153-91		FERB	203-56	ZTX313	FERB	99-32	
TR5P4000	ITC	140-97	U1325	TSC	123-101	XB404	TIIF	159-59	ZT181	FERB	73-102			211-9	
TR5P4001	ITC	140-98	U1714	TSC	123-102	XB408	TIIF	161-90		FERB	203-57	ZTX314	FERB	99-33	
TR5P4002	ITC	140-99	U1715	TSC	126-48	XB433	TIIF	149-19	ZT182	FERB	72-86			211-10	
TR5															

## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub>	TYPICAL h <sub>FE</sub> PARAMETERS						Cob (F)	STRUC-TURE	DWG Y2000 s/a T0200 Ser.	# C O D E
				V <sub>cb</sub>	V <sub>ceo</sub>	V <sub>be</sub>	I <sub>c</sub>		V <sub>cb</sub>	BIAS I <sub>e</sub>	h <sub>fe</sub>	COMMON EMITTER hoe	hie	hre				
1	GT34			25	25	25	10u	5.0	1.0m	20	15	35p	A		T05			
2	2N231	9.0m*		4.5	4.5	3.0m	3.0u	3.0	500u	19	15	60p	A	T024				
3	JAN2N220	20m*	434u	3.0	3.0	12	12u	4.0	500u	40	15	50p	A	T01				
4	OC60	20m*	666u	7.0	3.0	7.0	5.0m	2.0	3.8m	75	60u	2.9k	A	R19				
5	OC57	20m*	666u	7.0	3.0	7.0	10m	5.0	250u	35	80u	4.0k	A	R19				
6	OC58	20m*	666u	7.0	3.0	7.0	10m	5.0	250u	55	80u	4.0k	A	R19				
7	2N175	20m	850k	3.3m	3.3m	10	2.0m	4.0	500u	65	25u	3.5k	A	T040				
8	2N220	20m	850k	3.3m	3.3m	10	2.0m	4.0	500u	65	25u	3.5k	A	T01				
9	OC59	20m	2.2M	666u	7.0	3.0	7.0	3.0u	500u	80	100u	5.1k	A	R19				
10	2N344	20m†	50M*	666u	5.0	5.0	5.0m	3.0u	3.0	500u	22	5.0ub	100	SΔ	T024			
11	2N345	20m†	50M*	666u	5.0	5.0	5.0m	3.0u	3.0	500u	66	5.0ub	100	SΔ	T024			
12	2N346	20m†	75M*	666u	5.0	5.0	5.0m	3.0u	3.0	500u	10	5.0ub	100	SΔ	T024			
13	2N1499†	25m*	625u	6.0	6.0	15	10u	2.5	10m	35	1.5ub	75	AD	T09				
14	JAN2N240	25m	25MΔ	416u	6.0	6.0	10	10u	3.0	500u	16	1.5ub	D	R143				
15	2N128	25m	28MΔ	416u	6.0	6.0	10	10u	3.0	500u	19	1.5ub	D	T024				
16	2N1122†	25m*	40MΔ	625u	12	11	50m	5.0u	2.5	10m	25	4.0u	MA	T024				
17	2N1122A†	25m*	40MΔ	625u	12	11	50m	5.0u	2.5	10m	25	4.0u	MA	T024				
18	JAN2N128	25m	45M*Δ	417u	10	10	50m	4.0u	3.0	500u	19	4.0u	MA	T024				
19	2N393†	25m*	50MΔ	625u	6.0	6.0	50m	5.0u	3.0	500u	155	1.0ub	55	MA	T024			
20	2N1427†	25m*	60M*	625u	6.0	6.0	50m	5.0u	3.0	500u	120	1.0ub	55	MA	T024			
21	2N245†	25m	80MΔ	625u	6.0	6.0	50m	5.0u	2.5	10m	25	1.0ub	55	MA	T024			
22	2N503	25m*	350MΔ	625u	20	20	50m	100u	10	2.0m	45	1.0p	MD	T09				
23	2N252	30m			20	20	50m	10u				1.0p	GD	OV9				
24	2N308	30m			20	20	50m	10u				1.0p	GD	OV9				
25	2N309	30m			20	20	50m	10u				1.0p	GD	OV9				
26	2N310	30m			20	20	50m	10u				1.0p	GD	OV9				
27	2N240	30m	30MΔ	500u	6.0	6.0	15m	3.0u	3.0	500u	30	1.5ub	66	SΔ	T024			
28	2N1109	30m	30M		16	16	5.0m	10u	6.0	50m	20	1.5p	GD	T022				
29	2N1108	30m	35M		16	16	5.0m	10u	6.0	50m	33	1.5p	GD	T022				
30	2N1110	30m	35M		16	16	5.0m	10u	6.0	50m	29	1.5p	GD	T022				
31	2N1111	30m	35M		20	20	5.0m	10u	6.0	50m	25	1.0p	GD	T022				
32	2N1111A	30m	35M		20	20	5.0m	10u	6.0	50m	29	1.5p	GD	T022				
33	2N1111B	30m	35M		20	20	5.0m	10u	6.0	50m	29	1.5p	GD	T022				
34	2N1107	30m	40M		16	16	5.0m	10u	6.0	50m	34	1.5p	GD	T022				
35	2N499	30m*	170MΔ	769u	30	30	50m	100u	15	18	50	1.3p	MD	T01				
36	2N588	30m*	250MΔ	769u	15	15	50m	15u	5.0	3.0m	150	1.3p	MD	T01				
37	2N5044	30m	2.5GΔ	1.2m	15	7.0	30m	6.0u	5.0	3.0m	150	1.3p	A	T072				
38	2N5043	30m	3.0GΔ	1.2m	15	7.0	30m	6.0u	5.0	3.0m	150	1.3p	A	T072				
39	2N77	35m	70M	1.2m	25	25	15m	10u	4.0	7.0m	55	14u	2.7k	3.2	40p	T01		
40	2N105	35m	75M	1.2m	25	25	15m	5.0u	4.0	7.0m	55	16u	2.8k	5.5	17p	T02		
41	2N139	35m	13M		16	12	15m	10u	9.0	1.0m	48	9.5p	AΔ	T040				
42	2N218	35m	13M		16	12	15m	10u	9.0	1.0m	48	9.5p	AΔ	T01				
43	2SA107	35m	20M		6.0	6.0	10m	10u	3.0	1.0m	40	4.0p	D	T044				
44	JAN2N393	35m	30MΔ	476u	8.0	6.0	10	50m	5.0u	3.0	500u	40	4.0p	A	R143			
45	JAN2N1411	35m	30MΔ	460u	8.0	8.0	50m	5.0u	1.0	50m	20	6.0p	A	R139				
46	2SA106	35m	30M		6.0	6.0	10m	10u	3.0	1.0m	50	1.6p	D	T044				
47	2SA105	35m	75M		6.0	6.0	10m	10u	3.0	1.0m	50	1.6p	D	T044				
48	2N768†	35m	175MΔ	476u	12	10	100m	10u	2.0	2.0m	40	1.5p	MD	T018				
49	2N769†	35m	900MΔ	476u	12	7.0	2.0	100m	10u	5.0	2.0m	55	1.5p	MD	T018			
50	2SB302	40m	12M		15	5.0	2.0m	6.0u	6.0	1.0m	80	4.5k	A	T01				
51	2SA448	40m	1.6G		15	5.0	5.0m	10u	3.0	3.0m	40	10p	PL	T017				
52	2N1785	45m	50M*	1.3m	10	10	50m	10u	6.0	1.0m	40	3p	ME	T09				
53	2N1786	45m	50M*	1.3m	10	10	50m	10u	6.0	1.0m	40	3p	ME	T09				
54	2N1787	45m	50M*	1.3m	15	15	50m	10u	6.0	1.0m	25	3p	ME	T09				
55	2N36	50m			20	8.0m		6.0	1.0m	45				OV14				
56	2N37	50m			20	8.0m		6.0	1.0m	30				OV11				
57	2N38	50m			20	8.0m		6.0	1.0m	15				OV11				
58	2N108	50m			20	15m		6.0	1.0m					R108				
59	2SA295	50m	900u		15	15	50m	15u	1.0	10m	50		MD	R48				
60	2SB303	50m			30	25	20m	14u					A	T01				
61	2SB68	50m	50M	833u	105	100m		35	5.0m	60				T05				
62	2SB121	50m	50M	833u	105	100m		35	5.0m	60				T01				
63	2N344	50m	60M		25	8.0m		6.0	1.0m	60				OV15				
64	2N506	50m	40M		32	10m		15	1.0m	40				OV11				
65	2N591	50m	700k	2.8m	32	20m		7.0u	12	2.0m	70			T01				
66	2SB39	50m	85M	833u	10	2.0m		10u	4.0	5.0m	65	25u	3.5k	9.4	40p			
67	2N107	50m	1.0M	833u	12	1.0m		10u	5.0	1.0m	19	1.0ub	32	3.0	40p			
68	2N1265/5	50m	1.0M	833u	12	1.0m		10u	6.0	1.0m	19				R31			
69	OC42	50m*	4.0MΔ		16	15	50m		5.0m	35				R8				
70	OC42	50m*	7.0MΔ		16	15	50m		5.0m	70				R8				
71	2SA116	50m	12M		30	10u		12	12m	15		60u	D	T044				
72	2N398	50m	20M†Δ		105	50		14u	35	5.0m	60		A	T09				
73	2SA113	50m	20M		34	10m		7.0u	12	1.0m	45		A	T044				
74	2SA114	50m	20M		34	10m		7.0u	12	1.0m	40		A	T044				
75	2SA338	50m	20M	1.0m	20	5.0	5.0m	16u	6.0	1.0m	30		D	R18				
76	2SA321	50m	25M	2.0m	20	5.0	10m	12u	6.0	1.0m	40	2.5p	D	T044				
77	GT5148	50m	25M	1.2m	30	1.0		10u	30	1.0m	25	6.0p	MA	T024				
78	2SA115	50m	30M		34	10u		7.0	12m	10		60u	A	T044				
79	2SA322	50m	30M	2.0m	20	5.0	10m	12u	6.0	1.0m	40	3.0p	D	T044				
80	2SA339	50m	30M	1.0m	20	5.0	5.0m	16u	6.0	1.0m	60	2.5p	D	R18				
81	2SA219	50m	40M		20	5.0	10m	12u	6.0	1.0m	50	2.5p	D	T044				
82	2N504	50m	50M*Δ	833u	35	25	1.0	50m	10u	12	1.0m	16	1.0u	40	MD	T01		
83	2SA221	50m	50M		20	15	10m	12u	6.0	1.0m	75	2.5p	D	T044				
84	2SA251†	50m	50M		15	6.0	15	50m	5.0u	1.0	15m	50	2.5p	MD	R48			
85	2SA408†	50m	50M	900u	15	6.0	15	50m	5.0u	1.0	15m	100	3.0p	MD	R48			
86	2SA223	50m	64M		10	5.0	10m	12u	6.0	1.0m	50	2.5p	D	T044				
87	2SA222	50m	70M															





# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	M E X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #/a TO200 Ser.	# C O D E		
					V <sub>bc0</sub> (V)	V <sub>ce0</sub> (V)	V <sub>eb0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)						
1#	NKT11	75m	1.0MΔ	1.5m	0J	18	10	100m	5.00φ	4.5φ	1.0mφ	90 Δ				13pφ	T01	A			
2	2N265	75m	1.5M	2.0m	*J		25 §	50m	16u	5.0	1.0m	115			500nb	29	4.0	R32	A		
3#	NKT73	75m	2.5MΔ	1.5m	0J	15		10m	10m	5.00φ	1.0mφ	25 Δ						T01	A		
4#	NKT126†	75m	3.0MΔ	1.5m	0J	20	20 §	6.0	500m	5.00φ	4.5φ	1.0mφ	75					T05	A		
5#	NKT72	75m	6.2MΔ	1.5m	0J	15		10m	10m	5.00φ	4.5φ	1.0mφ	40 Δ					T01	A		
6#	NKT125†	75m	7.0MΔ	1.5m	0J	20	20 §	6.0	500m	5.00φ	4.5φ	1.0mφ	100					T05	A		
7#	NKT12	75m	7.5MΔ	1.5m	0J	18	10	12	100m	5.00φ	4.5φ	1.0mφ	45 Δ					T01	A		
8#	NKT124†	75m	15MΔ	1.5m	0J	20	20 §	6.0	500m	5.00φ	4.5φ	1.0mφ	150					T05	A		
9#	AF114N	75m	7.5MΔ	1.6m	0J	32	15	1.0	10m	8.00φ	6.0φ	1.0m	150				AD	T044	A		
10#	AF115N	75m	7.5MΔ	1.6m	0J	32	15	1.0	10m	8.00φ	6.0φ	1.0m	150				AD	T044	C		
11#	AF116N	75m	7.5MΔ	1.6m	0J	32	15	1.0	10m	8.00φ	6.0φ	1.0m	150				AD	T044	C		
12#	AF117N	75m	7.5MΔ	1.6m	0J	32	15	1.0	10m	8.00φ	6.0φ	1.0m	150				AD	T044	C		
13	2N1749	75m	80MΔ	1.0m	#S	40	40 φ	1.0	10m	10uφ	6.0φ	1.0mφ	30 Δ		1.0ub	40 φ	2.5pφ	T09	A		
14	2N2199	75m	120MΔ	1.0m	#S	15	10	50	100m	5.00φ	10φ	3.0m	20 Δ				2.8pφ	T09	A		
15	2N2200	75m	120MΔ	1.0m	#S	15	10	50	100m	5.00φ	10φ	3.0m	70 φ				2.8pφ	T09	A		
16	2N1499B†	75m	150MΔ	1.0m	#S	30	20	2.0	100m	3.00φ	.30φ	10mφ	40 Δ				3pφ	T09	A		
17#	AF178	75m	180MΔ	1.6m	0J	25	25	50	10m	50u	12	1.0mφ	20 Δ				7.5pφ	AD	T012	A	
18	2N502A	75m	260MΔ	1.0m	#J	30	30	50	50m	20u	10φ	2.0m	65				1.0p	MD	T09	A	
19	JAN2N2996	75m	400MΔ	1.0m	#S	15	10	.30	50m	5.00φ	6.0φ	4.0mφ	35 Δ				3.0p	φ	T072	G	
20	JAN2N2997	75m	400MΔ	1.0m	#S	30	15	.30	50m	5.00φ	12φ	4.0mφ	50 Δ				1.0pφ	φ	T072	A	
21	2N2795†	75m	450MΔ	1.0m	#S	25	15	2.5	100m		.30φ	10mφ	100 φ				2.5p	D	T018	A	
22	2N2796†	75m	450MΔ	1.0m	#S	20	12	2.0	100m		.30φ	10mφ	60 φ				2.5p	D	T018	A	
23	2N2416	75m	500MΔ	1.0m	#J	15	10	50	20m	5.00φ	6.0φ	2.0mφ	30				1.2p	D	T072	A	
24	T1390	75m	500MΔ	1.0m	#S	18		.30	50m	5.00φ	6.0φ	2.0mφ	40 Δ					EM	T018	A	
25	T1391	75m	500MΔ	1.0m	#S	18		.30	50m	5.00φ	6.0φ	2.0mφ	20 Δ					EM	T018	A	
26	T1400	75m	500MΔ	1.0m	#S	18		.30	50m	5.00φ	6.0φ	2.0mφ	40 Δ					E	R80	X	
27	T1401	75m	500MΔ	1.0m	#S	18		.30	50m	5.00φ	6.0φ	2.0mφ	20 Δ					E	R80	X	
28	T1402	75m	500MΔ	1.0m	#S	18		.30	50m	5.00φ	6.0φ	2.0mφ	20 Δ					E	R80	X	
29	T1403	75m	500MΔ	1.0m	#S	18		.30	50m	5.00φ	6.0φ	2.0mφ	35 Δ					E	R80	X	
30	2N2996	75m	550MΔ	1.0m	#S	15	10	.30	50m	100u	6.0φ	4.0mφ	200			3.0p	DM	T072	G		
31	2N2415	75m	560MΔ	1.0m	#J	15	10	.50	20m	5.00φ	6.0φ	2.0mφ	45			1.2p	φ	T072	G		
32	JAN2N502A	75m	600MΔ	1.0m	#S	30	30	.50	10u	10u	10φ	2.0m	15 Δ				2.0pφ	φ	ZA27	A	
33	JAN2N502B	75m	600MΔ	1.0m	#S	30	30	.50	10u	10u	10φ	2.0m	25 Δ				2.0pφ	φ	ZA27	A	
34	2N2997	75m	600MΔ	1.0m	#S	30	15	.30	50m	100u	12φ	4.0mφ	200				1.8p	DM	T072	G	
35	2N700	75m	800MΔ	1.0m	#J	25	20	.20	50m	2.00φ	6.0φ	2.0m	10		ub	17	1.1p	ME	T072	G	
36	2N700A	75m	800MΔ	1.0m	#J	25	25	.20	100u		6.0	2.0m	4.0 Δ				1.4pφ	ME	T092	G	
37	JAN2N700A	75m	800MΔ	1.0m	#J	25	25	.30	50m	2.00φ	6.0	2.0m	4.0 Δ				1.4pφ	φ	T072	G	
38	2N2998	75m	900MΔ	1.0m	#S	15	12	.30	20m	100u	6.0φ	3.0mφ	200				1.7p	DM	T072	G	
39	2N3267	75m	900MΔ	1.0m	#S	15	8.0	.20	20m	5.00φ	6.0φ	3.0mφ	15 Δ				1.7pφ	φ	T072	G	
40#	GM656A	75m	930M*	1.0m	#A	18	15	.30	50m	5.00φ	12φ	3.0mφ	20 Δ					EM	R80	X	
41	T1XM101	75m	15GΔ	1.0m	#S	15	7.0	.30	50m	6.00φ	5.0φ	2.0mφ	70				3pφ	PE	T072	X	
42	2N2999	75m	16GΔ	1.0m	#S	15	10	.20	20m	100u	6.0φ	3.0mφ	100 φ				1.7p	DM	T072	X	
43	2N370	80m		1.7m	0A	24		.50	10u	10uφ	6.0φ	1.0m	160				30φ	AD	T07	H	
44	2N372	80m		1.7m	0A	24		.50	10u	10uφ	6.0φ	1.0m	70				30φ	AD	T07	H	
45#	2SB470	80m		1.2m	#J	25	18 §	2.5	50m	6.00φ	6.0φ	1.0m	48		40u	5.0k	15	3.5p	D	T044	A
46#	AF170	80m		1.3m	#J	24	24 φ	.50	10m	12uφ	6.0φ	1.0mφ	80				3.5p	D	T044	A	
47#	AF172	80m		1.3m	#J	24	24 φ	.50	10m	12uφ	6.0φ	1.0mφ	70				3.5p	D	T044	A	
48	2N1266	80m	1.0M		#J	10					6.0φ	1.0mφ	48				1.1p	D	T022	A	
49#	AC107	80m	2.0M	1.6m	0J	15	15	5.0	10m	3.00φ	5.0	300u	60				1.4p	A	R9	A	
50#	2SA12H	80m	5.0MΔ			16		12	15m	6.0u	6.0φ	1.0m	60				10p	A	T01	A	
51#	2SA15H	80m	5.0MΔ			16	13	13	15m	4.0u	6.0φ	1.0mφ	70				10p	A	T01	A	
52#	2SA31	80m	5.0M	1.3m	#J	12		.50	10m	10u	6.0φ	1.0m	50		24.u	1.5k	3.2	10p	A	T01	A
53#	2SA36	80m	5.0M	1.3m	#J	16		.50	15m	6.00φ	6.0φ	1.0m	50 *		24.u	1.5k	3.2	10p	A	T01	A
54#	2SA40†	80m	5.0M	1.3m	#J	25	18 §	12	50m	6.00φ	6.0φ	1.0m	65				10p	A	T01	A	
55#	2SA137	80m	5.0M	1.3m	#J	6.0		.50	10m	10u	3.0φ	1.0m	50		32 u	1.6k	4.6	10p	A	T01	A
56#	2SA189	80m	6.0M	1.3m	#J	12		.50	15m	10u	6.0	1.0m	65				10p	A	T01	A	
57	2N409	80m	6.8M	1.5m	0A	13		.50	15m	10uφ	9.0φ	1.0m	48				9.5p	A	T040	A	
58	2N410	80m	6.8M	1.5m	0A	13		.50	15m	10uφ	9.0	1.0m	48				9.5p	A	T01	A	
59#	2SA12	80m	8.0M	1.6m	0A	16		.50	15m	4.0u	6.0φ	1.0mφ	70				11p	A	T01	A	
60#	2SA139†	80m	8.0M	1.3m	#J	30	10	1.0	50m	5.0u	1.0φ	50mφ	70 φ				10p	A	T01	A	
61#	2SB389	80m	8.0M	1.3m	#J	12		.50	10m	6.0u	4.0φ	50mφ	100		25u	8.0k	1.5	9.5p	A	T01	A
62	2N140	80m	10.M	1.3m	0A	16	9.0	.50	15m	10u	9.0φ	60mφ	75 Δ				9.5p	A	T040	A	
63	2N219	80m	10.M	1.3m	0A	16	9.0	.50	15m	10u	9.0φ	60mφ	75 Δ				9.5p	A	T044	A	
64#	2SA30	80m	10.M	1.3m	#J	12		.50	10m	10u	6.0φ	1.0m	75		32.u	2.5k	4.2	10p	A	T01	A
65#	2SA35	80m	10.M	1.3m	#J	16		.50	15m	6.00φ	6.0φ	1.0m	75 *		32.u	2.5k	4.2	10p	A	T01	A
66#	2SA136	80m	10.M	1.3m	#J	6.0		.50	10m	10u	3.0φ	1.0m	75		45.u	2.4k	5.6	13p	A	T01	A
67#	2SA188	80m	10.M	1.3m	#J	12		.50	15m	10u	6.0	1.0m	65				10p	A	T01	A	
68#	2SA385	80m	10M	1.6m	0J	16		.50	10m	12uφ	6.0φ	1.0m	120				8.0p	A	T01	A	
69#	2SA15	80m	12.M			16		.50	15m	6.0u	6.0φ	1.0mφ	60				10p	A	T01	A	
70#	2SA64†	80m	15.M	1.3m	#J	16	12 §	9.0	40m	6.00φ	6.0φ	1.0m	65 *		44u	2.1k	3.9	10p	A	T01	A
71#	2SA138†	80m	15.M	1.3m	#J	20	15	10	25m	5.0u	1.0φ	10mφ	70 φ				10p	A	T01	A	
72	2N411	80m	16MΔ	1.5m	0A	13		.50	15m	10u	9.0φ	600u	75				9.5p	A	T040	A	
73	2N412	80m	16MΔ	1.5m	0A	13		.50	15m	10u	9.0φ	600u	75				9.5p	A	T01	A	
74#	OC43	80m	18MΔ	1.6m	0J	15	15	12	50m	10u	0.0	50m	100 φ				1.7p	A	R8	A	
75#	2SA111	80m	20.M		#S	20			10m	20uφ	9.0	1.0mφ	40				1.7p	D	T044	A	
76#	2SA112	80m	20.M		#S	20			10m	20uφ	9.0	1.0mφ	45				1.7p	D	T044	A	
77#	2SA272	80m																			

# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @25°C (W)		2   DERATE (Hz)		3   ABS MAX RATINGS @25°C (V)			4   MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)			5   TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C E O A D E		
		fab	IN FREE AIR W/°C	M A M P	V <sub>cb</sub>	V <sub>ceo</sub>	V <sub>ebo</sub>	I <sub>c</sub>	I <sub>cb</sub>	I <sub>cb</sub>	BIAS			COMMON EMITTER						
											V <sub>cb</sub>	I <sub>e</sub>	h <sub>fe</sub>	hoe (mhos)					hie (Ω)	hre X.0001
1#	AF166	80m	130M	1.3m	#J	30	30	1.0	10m	8.0u	6.0u	1.5m	85			3.1p	D	TO44		
2#	2SA235	80m	135M			20		1.0	10m	30u	6.0u	1.0m	90			2.1p	ME	TO44		
3#	NKT603F1	80m	140M	1.6m	∅	40	40	1.0	10m	5.0u	4.5u	1.0m	100			3.5p		TO7	H	
4#	NKT613F	80m	140M	1.6m	∅	40	40	1.0	10m	5.0u	4.5u	1.0m	40 Δ			2.0p		TO7	H	
5#	NKT674F	80m	140M	1.6m	∅	20	20	1.0	10m	8.0u	4.5u	1.0m	60 Δ			3.0p		TO7	H	
6#	NKT677F	80m	140M	1.6m	∅	20	20	1.0	10m	8.0u	4.5u	1.0m	60 Δ			3.0p		TO7	H	
7	2N3399	80m	400MΔ	1.1m	#S	20		3.0	7.0m	8.0u	12u	1.5m	10 Δ			2.2p	ME	TO72	G	
8#	2SA434	80m	400M			20		1.0	10m	30u	6.0	3.0m	10 Δ			1.4p	ME	TO7		
9#	2SA435	80m	400M			20		1.0	10m	30u	6.0	3.0m	10 Δ			1.4p	ME	TO18		
10#	2SB335	83m	1.0M	1.6m	∅	20		1.0	60m	10u	6.0u	1.0m	70				A	R18		
11#	2SB336	83m	1.0M	1.6m	∅	20	20	1.0	60m	10u	1.0u	60m	80 Δ				A	R18		
12#	OC41N	83m	3.0MΔ	1.6m	∅	16	15	12	50m	10u	0.0	50m	20 Δ				AΔ	TO1	A	
13#	OC45N	83m	3.0MΔ	1.6m	∅	15	15	12	50m	10u	6.0	1.0m	25 Δ				AΔ	TO1	A	
14	OC46	83m	3.0M		∅	20	20	15	125m	3.0u	5.0	3.0m	80				AΔ	R9		
15#	OC42N	83m	5.5MΔ	1.6m	∅	16	15	15	50m	10u	0.0	50m	40 Δ				AΔ	TO1	A	
16	OC47	83m	5.5M		∅	20	20	15	125m	3.0u	5.0	1.5m	200				AΔ	R9		
17#	2SA145	83m	6.0M	1.6m	∅	15	15	12	10m	12u	6.0	1.0m	50			12p	A	TO1		
18#	OC45	83m	6.0M	1.6m	∅	15	15	12	10m	10u	6.0	1.0m	50			10p	A	R9		
19#	OC44N	83m	7.5MΔ	1.6m	∅	15	15	12	50m	10u	6.0	1.0m	45 Δ				A	TO1	A	
20#	2SA144	83m	12 M	1.7m	J	15	15	12	10m	12u	6.0	1.0m	100			11p	A	TO1		
21#	OC43N	83m	12.MΔ	1.7m	J	15	15	12	50m	10u	0.0	50m	50 Δ				AΔ	TO1	A	
22	OC44	83m	15 M	1.7m	J	15	15	12	10m	10u	2.0	1.0m	100				R9			
23	A411	83m	100MΔ	600	J	40	40	10	10m	6.0u	6.0	1.0m	20 Δ			1.5p	AD	TO72	J	
24#	ASZ20	83m	100M	1.7m	J	40	40	50	25m	4.5u	6.0u	1.0m	45 Δ			2.5p	ADΔ	TO7		
25#	AFZ11	83m	140M	1.7m	J	20	20	#	50m	10u	6.0	1.0m	70			2.0p	AD	TO72	G	
26#	2SA343	83m	150M	1.7m	J	20	20	50	5.0m	12u	6.0	1.0m	100			1.5p	AD	TO7		
27#	AFZ12	83m	180M	1.7m	J	20	20	50	10m	50u	6.0	1.0m	70			2.0p	AD	TO72	G	
28	2N130	85m	700k	2.0m	J	25	22	12	10m	12u	6.0	1.0m	24			40p	A	TO5	A	
29	2N131	85m	800k	2.0m	J	25	15	12	10m	12u	6.0	1.0m	50			40p	A	TO5	A	
30	2N133	85m	800k	2.0m	J	25	15	12	10m	12u	6.0	1.0m	50			40p	A	TO5	A	
31	2N132	85m	1.0M	2.0m	J	25	12	12	10m	12u	6.0	1.0m	90			40p	A	TO5	A	
32	2N207	85m	2.0M	1.2m	J	12	12	12	20m	15u	5.0	1.0m	100			40p	A	TO5	A	
33	2N207A	85m	2.0M	1.2m	J	12	12	12	20m	10u	5.0	1.0m	100			400n	33	TO5	A	
34	2N207B	85m	2.0M	1.2m	J	12	12	12	20m	10u	5.0	1.0m	100			400n	33	TO5	A	
35	2N535	85m	2.0M	833u	J	20	20	20	20m	12u	5.0	1.0m	100			400n	33	TO23	A	
36	2N535A	85m	2.0M	833u	J	20	20	20	20m	12u	5.0	1.0m	100			400n	33	TO23	A	
37	2N535B	85m	2.0M	833u	J	20	20	20	20m	12u	5.0	1.0m	100			400n	33	TO23	A	
38	2N536	85m	2.0M	833u	J	20	20	20	20m	12u	1.0u	30m	150			25p	A	TO23	F	
39	JAN2N987	86m	100M	1.3m	#J	40	40	1.0	10m	8.0u	6.0	1.0m	100			25u	770	615	TO72	
40#	AF186G	90m	2.0M	2.0m	∅	25	25	30	15m	3.5u	5.0	1.0m	15			1.9p	AD	TO12		
41#	AF186W	90m	2.0M	2.0m	∅	25	25	30	15m	3.5u	5.0	1.0m	15			1.9p	AD	TO12		
42	GT1604	90m	50M	1.8m	#S	10			100m	10u	6.0u	2.0m	200			16p	A	TO9		
43#	AC170	90m	1.2M	2.0m	#J	32	15	10	100m	10u	6.0u	2.0m	125			65u	2.5k	5.0	R60	
44#	AC171	90m	1.2M	2.0m	#J	32	15	10	100m	10u	6.0u	2.0m	200			83u	4.0k	6.0	R60	
45	GT1605	90m	6.5M	1.8m	#S	15		1.0	25u	9.0u	1.0m	30 Δ	3.0u			18p	A	TO9		
46	GT1606	90m	10M	1.8m	#S	15		1.0	25u	9.0u	60m	50 Δ	3.0u			18p	A	TO9		
47#	AF256	90m*	3.0M	2.0m	#J	25	18	30	10m	8.0u	12u	1.0m	10 Δ			5p	PL	MM12	A	
48#	2SA447	90m*	650M	3.3m	#J	25	25	30	15m	10u	10u	2.0m	80			1.6p	PL	MM12	A	
49#	AF253	90m*	700M	2.0m	#J	20	15	30	10m	5.0u	12u	2.0m	10 Δ			.4p	PL	MM12	A	
50#	AF252	90m*	750M	2.0m	#J	20	15	30	10m	5.0u	12u	2.0m	10 Δ			.4p	PL	MM12	A	
51#	AF251	90m*	800M	2.0m	#J	20	15	30	10m	5.0u	12u	2.0m	10 Δ			.4p	PL	MM12	A	
52#	ASZ21	94m	300MΔ	2.0m	∅	20	15	30m		5.0	1.0m	30 Δ				4.0p	ADΔ	TO18		
53#	2N987	100m	1.5M		∅	40	40	1.0	10m	8.0u	6.0u	1.0m	40 Δ			4.0p	∅	TO72	J	
54	2N2496	100m	1.6M		∅	40	40	1.0	10m	6.0u	6.0u	1.0m	25 Δ			2.0p	∅	TO72		
55	2N2671	100m	2.0M		∅	25		1.0	10m	8.0u	6.0u	1.0m	40 Δ			2.5p	∅	TO12	G	
56	2N2672	100m	2.0M		∅	25		1.0	10m	8.0u	6.0u	1.0m	40 Δ			2.5p	∅	TO39	A	
57	GT758	100m	500k	2.0m	#S	20		15	200m	25u	4.5	1.0m	15			700nb	30	3.0	TO5	
58	2N63	100m	.80M	1.7m	#J		22	12	10m	20u	6.0	1.0m	22			17u	900	.35	OV3	
59	2N130A	100m	.70M	1.7m	#J		44	12	100m	15u	6.0	1.0m	26						OV16	A
60	2N64	100m	.80M	1.7m	#J		15	12	10m	20u	6.0	1.0m	45						OV3	
61	2N106	100m	.80M	1.7m	#J	15			10m	15u	1.5	50m	45						OV4	
62	2N131A	100m	.80M	1.7m	#J		30	12	100m	15u	6.0	1.0m	45			18u	1.4k	43	OV16	A
63	2N133A	100m	.80M	1.7m	#J		30	12	100m	15u	6.0	1.0m	50			19u	2.5k	.55	OV16	A
64	2N186	100m	.80M	3.0m	#S	25		50	200m	16u	5.0	1.0m	24						R32	
65#	2SB134	100m	800k	1.7	#J	30	30	100	100u	1.5u	500u	70				19u	3.2k	5.3	TO1	A
66#	2SB135	100m	800k	1.7m	#J	30	30	100	100u	6.0u	1.0m	70				21u	2.1k	3.2	TO1	A
67	2N132A	100m	1.0M	1.7m	#J		24	12	100m	15u	6.0	1.0m	90			20u	30k	.56	OV16	A
68	2N187	100m	1.0M	3.0m	#J	25		5.0	200m	16u	5.0	1.0m	36						R32	
69	2N1265	100m	1.0MΔ	1.7m	#S	20	10	10	100m	10u	6.0u	1.0m	50 Δ			40p	25p		TO5	A
70#	2SB57	100m	1.0M	2.2m	∅	30		10	100m	15u	6.0	1.0m	65						R55	
71#	2SB140	100m	1.0M		#J	20		5.0	40m	14u	6.0	1.0m	100			35u	3.0k	8.0	TO1	A
72	2N188	100m	1.2M	3.0m	#S	25		200m	16u	5.0	1.0m	54							R32	
73	2N241	100m	1.3M		#J	25		200m	16u	1.0	100m	73							R32	
74#	2SB443A	100m	2.5M	1.7m	#J	18	18	12	10m	10u	6.0	1.0m	110			43u	3.0k	6.5	TO1	A
75#	2SB444A	100m	2.5M	1.7m	#J	18	18	12	10m	7.0u	6.0	1.0m	120			50u	3.3k	6.8	TO1	A
76#	2SB443B	100m	3.5M	1.7m	#J	18	18	12	10m	7.0u	6.0	1.0m	190			63u	4.8k	8.3	TO1	A
77#	2SB444B	100m	3.5M	1.7m	#J	18	18	12	10m	7.0u	6.0	1.0m	200			68u	5.2k	8.7	TO1	A
78	2N135	100m	4.5M	1.7m	#J	20		50m	5.0u	5.0u	5.0	1.0m	20						R31	
79#	2SA203	100m	5.0M	2.2																

# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	TEMP. RANGE °C	ABS. MAX. RATINGS @25°C				MAX. Icbo @MAX Vcb (A)	TYPICAL h PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #/s/a TO200 Ser.	# E A D E
					BVcbo (V)	BVceo (V)	BEVbo (V)	Ic (A)		BIAS		hoe (mhos)	hie (Ω)	hre (X.0001)					
										Vcb (V)	Ic (A)				hfe				
1#	SFT1171	100m	250MΔ	1.7m	#J	30	20	25m	10u0	9.00	1.5m0	3.5 1Δ	2.5pZ	ME	T033				
2#	SFT1172	100m	250MΔ	1.7m	#J	30	20	25m	10u0	9.00	1.5m0	3.5 1Δ	2.5pZ	ME	T033				
3#	SFT1173	100m	250MΔ	1.7m	#J	30	20	25m	10u0	9.00	1.5m0	3.5 1Δ	2.5pZ	ME	T033				
4#	SFT1174	100m	250MΔ	1.7m	#J	30	20	25m	10u0	9.00	1.5m0	7.0 1Δ	2.5pZ	ME	T033				
5#	2G101	100m	320MΔ	1.7m	#J	15	15	1.0	20m	5.00	2.0m	20	3.5p	ME	T05				
6#	2N2717	100m	390M	2.2m	0J	25	25	15m	8.0u0	100	3.0m	30 1Δ	1.8p	ME	T018	A			
7#	AF121	100m	390M	2.2m	0J	25	25	15m	8.0u0	100	3.0m	30 1Δ	1.8p	ME	T05				
8#	2G102	100m	400MΔ	1.7m	#J	15	15	1.0	20m	5.0	2.0m	20	3.5p	AD	T072	G			
9#	2N3127	100m	400MΔ	1.3m	#S	25	20	.75	50m	5.0u0	100	3.0m0	125	0	AD	T072	G		
10#	JAN2N3127	100m	400MΔ	1.3m	#J	25	20	.75	50m	5.0u0	100	3.0m0	20	0	AD	T072	G		
11#	2SA4131	100m	500MΔ	1.3m	0J	20	15	2.5	30m	5.0u0	1.00	3.0m0	70	1	AD	R96d	G		
12#	2N3281	100m	550MΔ	1.3m	#J	30	15	.50	50m	5.0u0	100	3.0m0	10	Δ	AD	R96d	G		
13#	2N3282	100m	550MΔ	1.3m	#J	30	15	.50	50m	5.0u0	100	3.0m0	10	Δ	AD	R96d	G		
14#	2N3279	100m	600MΔ	1.3m	#J	30	20	1.0	50m	5.0u0	100	3.0m0	10	Δ	AD	R96d	G		
15#	2N3280	100m	600MΔ	1.3m	#J	30	20	1.0	50m	5.0u0	100	3.0m0	10	Δ	AD	R96d	G		
16#	AF121S	105m*	270MΔ	2.3m	#J	32	32	10m	8.0u0	6.00	1.0m0	45	Δ	AD	R90	J			
17#	ASZ20N	110m	40MΔ	1.6m	0J	40	15	25m	5.0u	120	1.5m0	40	1	ME	T044	C			
18#	AFY16	112m*	550MΔ	1.3m	0J	30	25	.50	10m	3.0u	1.00	15	1	ME	T072				
19#	AFY37	112m	600MΔ	1.3m	#J	32	32	.30	20m	40u0	1.00	10m	20	1Δ	ED	T09	A		
20#	2N1450	120m	2.0m	2.0m	#S	30	20	1.0	100m	10u0	1.00	10m0	20	1Δ	ED	R81p	A		
21#	JAN2N1450M1	120m	2.0m	2.0m	#S	30	20	1.0	100m	10u0	1.00	10m0	20	1Δ	ED	R81p	A		
22#	2SB459	120m			#J	30	18	2.5	50m	12u	6.00	1.0m	180		A	T01			
23#	2SB460	120m			#J	40	25	2.5	50m	6.0u	6.00	1.0m	180	78u 52k 1.1	A	T01			
24#	TR34	120m	1.6MΔ	2.0m	#J	40	40	10	150m	20u	6.0	1.0m	15		A	T05			
25#	GET896	120m	1.7MΔ	2.0m	#J	20	15		100m	5.0u0	1.00	25m0	42	1	A	T05	A		
26#	GET897	120m	1.7MΔ	2.0m	#J	20	15		100m	5.0u0	1.00	25m0	65	1	A	T05	A		
27#	GET898	120m	1.7MΔ	2.0m	#J	20	15		100m	5.0u0	1.00	25m0	110	1	A	T05	A		
28#	2SA2081	120m	3.0m	2.0m	#J	20	20	12	400m	20u	3.0	200m	.15	Δ	A	T05			
29#	2N269	120m	4.0MΔ	2.8m	0A	20	25	9.0	100m	20u	3.0	200m	40	0	A	T01	A		
30#	2N2613	120m	4.0MΔ	2.8m	0A	20	25	25	50m	5.0u0	4.00	50m0	120	Δ	A	T01	A		
31#	2N2614	120m	4.0MΔ	2.8m	0A	20	35	5	50m	5.0u0	6.00	1.0m0	100	Δ	A	T01	A		
32#	2SA2121	120m	4.0M	2.0m	#J	25	15	15	100m	20u	3.0	400m0	30	Δ	A	T05			
33#	2N5781	120m	5.0M	2.0m	0A	20	12	400m	20u	30	200m0	15	1	A	T05	A			
34#	2SA2091	120m	5.0M	2.0m	#J	20	15	12	400m	20u	30	200m0	30	Δ	A	T05			
35#	GET880	120m	6.5MΔ	2.0m	#J	20	15	12	500m	5.0u0	25.0	5.0m0	150	1	A	T05	A		
36#	GET887	120m	6.5MΔ	2.0m	#J	20	15	12	500m	5.0u0	25.0	5.0m0	150	1	A	T05	A		
37#	GET881	120m	6.5MΔ	2.0m	#J	25	20	12	500m	5.0u0	6.00	1.0m0	110	1	A	T05	A		
38#	GET891	120m	6.5MΔ	2.0m	#J	25	25	12	500m	5.0u0	25.0	5.0m0	150	1	A	T05	A		
39#	2SB482	120m	7.0MΔ	2.0m	#J	35	25	12	50m	6.0u0	6.00	1.0m0	110	1	A	T01	A		
40#	2SB486	120m	7.0MΔ	2.0m	#J	25	20	12	50m	6.0u0	6.00	1.0m0	110	1	A	T01	A		
41#	GET889	120m	7.5MΔ	2.0m	#J	20	15	12	50m	5.0u0	25.0	5.0m0	150	1	A	T05	A		
42#	2N5791	120m	8.0M	2.0m	0A	20	18	10	400m	20u	30	200m0	30	1	A	T01	A		
43#	2N5831	120m	8.0M	2.0m	0A	20	18	10	400m	20u	30	200m0	30	1	A	T01	A		
44#	2SA538	120m	8.0M	2.3m	0J	25	12	50m	5.0u	6.00	1.0m	70	0	A	T01				
45#	2N1630	120m	10MΔ	2.0m	#J	100	3.0		7.0u0	50	10m0	15	Δ	A	T09	F			
46#	2N2953	120m	10M	385u	#J	30	25	25	150m	5.0u	100	10m0	200	Δ	A	T01	A		
47#	2SA2101	120m	10M	2.0m	#J	20	15	12	400m	5.0u	30	200m	45	Δ	A	T05			
48#	40359	120m	10M	2.7m	#A	20	18	2.5	50m	12u0	6.00	1.0m0	100		A	T01	A		
49#	40395	120m	10M	2.8m	#J	20	18	2.5	50m	12u	6.00	1.0m0	250	Z	A	T01	A		
50#	GET888	120m	10M	2.0m	#J	20	15	100m	5.0u0	6.00	1.0m0	220	Z	A	T05	A			
51#	2N602A	120m	12MΔ		#J	35	25	1.5	50m	5.0u0	1.00	500uΔ	80	Z	A	T09	A		
52#	2N603A	120m	12MΔ		#J	30	20	2.0	50m	5.0u0	1.00	500uΔ	100	Z	A	T09	A		
53#	2N604A	120m	12MΔ		#J	30	20	2.5	50m	5.0u0	1.00	500uΔ	120	Z	A	T09	A		
54#	GET882	120m	12MΔ	2.0m	#J	20	15	12	500m	5.0u0	25.0	5.0m0	150	1	A	T05	A		
55#	GET890	120m	12MΔ	2.0m	#J	20	15	100m	5.0u0	6.00	1.0m0	220	Z	A	T05	A			
56#	GET892	120m	12MΔ	2.0m	#J	25	20	12	500m	5.0u0	25.0	5.0m0	150	1	A	T05	A		
57#	2SA2171	120m	14M	2.0m	#J	25	12	100m	5.0u	30	100m	30	Δ	A	T05				
58#	2N5801	120m	15M	2.0m	0A	20	12	400m	20u	30	400m0	45	1	A	T05	A			
59#	2N5841	120m	18M	2.0m	#A	25	12	100m	20u	20	24m0	60	1	A	T01	A			
60#	2N602	120m	20MΔ	2.0m	#S	20	20	1.0	8.0u0	1.00	500m0	20	Δ	A	T09	A			
61#	GET885	120m	20MΔ	2.0m	#J	20	15	12	500m	5.0u0	25.0	5.0m0	150	1	A	T05	A		
62#	GET895	120m	20MΔ	2.0m	#J	25	20	12	500m	5.0u0	25.0	5.0m0	220	1	A	T05	A		
63#	GT5116	120m	20MΔ	2.0m	#J	15	2.0		10u	1.00	40m	20	1	A	T09				
64#	JAN2N384	120m	25MΔ	1.8m	#S	40	20	50	10m	50u	120	1.5m	20	Δ	A	T044	G		
65#	2N1678	120m	25MΔ	2.0m	0	60	60	4.0	40	25u	5.00	1.0m	25		DΔ	T09			
66#	2N1224	120m	30M	1.6m	#A	40	40	5.0	10m	12u0	120	1.5m	60		D	T012	G		
67#	JAN2N1224	120m	30MΔ	1.6m	#S	40	40	5.0	10m	20u	120	1.5m0	30	Δ	A	T033	G		
68#	2N1226	120m	30M	1.6m	#A	60	60	5.0	10m	12u0	100	1.5m	60		D	T033	G		
69#	2N1395	120m	30M	1.6m	#A	40	40	5.0	10m	12u0	120	1.5m	90		D	T033	G		
70#	SFT315	120m	30M	2.0m	#J	40	40	5.0	10m	15u	9.00	1.0m0	80		D	T044	A		
71#	2N603	120m	40MΔ	2.0m	#S	30	20	1.0	8.0u0	1.00	500u0	30	Δ	A	T09	A			
72#	2N1638	120m	40M	2.0m	#A	34	20	1.0	10m	7.0u0	120	1.0m	75		D	T01	A		
73#	GT5117	120m	40MΔ	2.0m	#J	20	2.0		10u	1.00	40m	20	1	A	T09				
74#	2N1632	120m	45M	2.0m	#A	34	1.0	10m	16u0	120	1.0m	80		D	T01	A			
75#	2N1637	120m	45M	2.0m	#A	34	1.5	10m	5.0u0	120	1.0m	80		D	T01	A			
76#	2N1639	120m	45M	2.0m	#A	34	1.0	10m	7.0u0	120	1.0m	75		D	T01	A			
77#	JAN2N6041	120m	50MΔ	2.0m	#S	30	20	2.0	8.0u0	1.00	500u0	40	Δ	A	R81p	A			
78#	JAN2N1225	120m	50MΔ	1.6m	#S	40	40	5.0	10m	20u	120	1.5m0	30	Δ	A	T033	G		
79#	2N604	120m	60MΔ	2.0m	#S	30	20	2.0	8.0u0	1.00	500u0	40	Δ	A	T09	A			
80#	SFT316	120m	70MΔ	2.0m	#J	20	.50	10m	15u0	6.00	1.0m0	120		D	T044	A			
81#	2SA279	120m*	80M	4.0m	0J	30	.50	30m	6.0u0	2.00	10m0	100	1	AD	T07				
82#	SFT357P	120m	80MΔ	2.0m	#J	30	10	.50	10m	20u	9.00	1.0m0	180		D	T044	A		
83#	SFT357	120m	85MΔ	2.0m	#J	20	.50	10m	15u0	6.00	1.0m0	120		D	T044	A			
84#	SFT354	120m	87MΔ	2.0m	#J	20	.50	10m	15u0	6.00	1.0m0	120		D	T044	A			
85#	2N384	1																	







# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	fab	DERATE IN FREE AIR W/°C	TEMP. M E M A M P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS				Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E		
						BV <sub>cb0</sub> (V)	BV <sub>ce0</sub> (V)	BVe <sub>0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	COMMON EMITTER						
						h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001	h <sub>re</sub> (F)											
1#	2SB32	150m	800K	2.5m	#J	20	25	2.5	50m	14u0	6.00	1.0m	40	16u	1.5k	4.2	A	T01	A	
2#	2SB136	150m	80M	2.5m	#J	20	25	2.5	50m	10u	1.50	50m0	120	16u	1.5k	4.2	A	T01	A	
3#	2SB136A	150m	80M	2.5m	#J	60	40	12	300m	10u0	1.50	50m0	120	16u	1.5k	4.2	A	T01	A	
4#	2SB168	150m	80M	2.5m	#J	9.0	20	2.5	100m	14u	3.00	1.0m	60	20u	1.3k	4.9	A	T01	A	
5#	2SB457	150m	80M	2.5m	#J	30	20	2.5	500m	15u0	1.00	150m0	110	20u	1.3k	4.9	A	T01	A	
6#	2SB457A	150m	80M	2.5m	#J	32	32	6.0	500m	15u0	1.00	150m0	110	20u	1.3k	4.9	A	T01	A	
7	2N45	150m	1.0M	2.0m	#J	45	15	5.0	50m	10u	5.0	1.0m	12				A	T029	A	
8	2N45A	150m	1.0M	2.0m	#J	45	15	5.0	10m	15u	5.0	1.0m0	15	40p			A	T05	A	
9	2N273	150m	1.0M	1.3m	#J	20	30	10	10m	10u	250	50m0	20	40p			A	T05	A	
10	2N398A	150m	1.0M	2.0m	#J	105	105	50	200m	50u	350	5.0m0	65				A	T05	A	
11	JAN2N422	150m	1.0MΔ	2.5m	#S	35	12	10		20u	350	0.0	30	1.0u0	45	30	60p0	R81a	A0	
12	2N565	150m	1.0M	2.5m	#S	30	10	10		25u	5.00	1.0m	55	550nb	30	3.5	30p0	R116	A	
13	2N566	150m	1.0M	2.0m	#S	30	10	10		25u	5.00	1.0m	55	550nb	30	3.5	30p		A	
14#	2SB33	150m	1.0M	2.5m	#J	20	2.5	5.0m	50m	14u0	6.00	1.0m	80	20u	2.6k	5.5	35p	A	T01	A
15#	2SB37	150m	1.0M	2.5m	#J	30	20	12	50m	14u	6.00	1.0m	80	20u	2.6k	5.5	45p	A	T01	A
16#	2SB54	150m	1.0M	3.0m	0J	30	20	12	150m	14u0	6.00	1.0m	140	30u	4.2k	6.0	35p	A	T01	A
17#	2SB55	150m	1.0M	3.0m	0J	60	60	12	150m	14u0	1.00	50m0	80				35p	A	T01	A
18#	2SB56	150m	1.0M	3.0m	0J	30	25	12	150m	14u0	1.00	50m0	80				35p	A	T01	A
19#	2SB56A	150m	1.0M	3.0m	0J	45	45	12	150m	14u0	1.00	50m0	80				35p	A	T01	A
20#	2SB59	150m	1.0M	2.5m	#J	30	20	10	100m	15u	1.00	50m0	70				AΔ	T01	A	
21#	2SB60	150m	1.0M	2.5m	#J	20	2.5	5.0m	50m	14u0	6.0	1.0m	65	300nb	30	3.0		A	T01	A
22#	2SB60A	150m	1.0M	2.5m	#J	20	2.5	5.0m	50m	14u0	1.00	50m0	70				A	T01	A	
23#	2SB61	150m	1.0M	2.5m	#J	30	10	10	50m	10u	6.00	1.0m	85	30u	3.0k	7.0	40p	A	T01	A
24#	2SB65	150m	1.0M	2.5m	#J	30	20	12	100m	15u	6.00	1.0m	65	30u	3.0k	7.0	40p	A	T01	A
25#	2SB169	150m	1.0M	2.5m	#J	9.0	10	2.5	100m	14u	3.00	1.0m	85	24u	2.3k	6.3		A	T01	A
26	MA200	150m	1.0M	2.0m	#J	105	105	10	200m	50u	.350	5.0m0	20				A	T05	A	
27	MA201	150m	1.0M	2.0m	#J	105	105	20	200m	50u	.350	5.0m0	20				A	T05	A	
28	MA202	150m	1.0M	2.0m	#J	105	105	10	200m	50u	.350	5.0m0	40				A	T05	A	
29	MA203	150m	1.0M	2.0m	#J	105	105	20	200m	50u	.350	5.0m0	40				A	T05	A	
30	MA204	150m	1.0M	2.0m	#J	90	90	20	200m	50u	.350	5.0m0	20				A	T05	A	
31	MA205	150m	1.0M	2.0m	#J	75	75	20	200m	50u	.350	5.0m0	20				A	T05	A	
32	MA206	150m	1.0M	2.0m	#J	60	60	10	200m	50u	.350	5.0m0	20				A	T05	A	
33	2N1128	150m	1.2M	2.5m	#J	25	25	10	250m	20u	1.0	2.0m0	120	500nb	14	1.8	45p	A	R2	A
34#	2SB75AH	150m	1.2M	3.0m	0J	45	45	12	100m	6.0u	6.00	1.0m	55	23u	1.6k	3.0	52p	A	T01	A
35#	2SB75H	150m	1.2M	3.0m	0J	30	30	12	100m	6.0u	6.00	1.0m	55	23u	1.6k	3.0	52p	A	T01	A
36#	2SB364	150m	1.2M	3.0m	0J	20	20	12	400m	14u0	.500	100m0	90				50p	A	T01	A
37#	AC116	150m	1.2M	5.0m	0J	45	45	12	100m	15u	6.0	4.0m	90				A	X9		A
38#	AC123	150m	1.2M	5.0m	0J	45	45	12	100m	15u	6.0	4.0m	90				A	X9		A
39	2N369	150m	1.3M	5.0m	0S	30	10	10	50m	10u	5.0	1.0m	95				A	OV9		A
40	2N568	150m	1.5M	2.0m	#S	30	10	10		25u	5.00	1.0m	100	400nb	30	4.0	30p	A	T05	A
41#	2SB66	150m	1.5M	2.0m	#J	45	10	12	70m	14u	6.00	1.0m	70	27u	2.2k	5.0	32p	A	T01	A
42#	2SB77AH	150m	1.5M	3.0m	0J	30	30	12	100m	6.0u	6.00	1.0m	70	26u	1.9k	3.8		A	T01	A
43#	2SB77H	150m	1.5M	3.0m	0J	30	30	12	100m	6.0u	6.00	1.0m0	70	26u	1.9k	3.8		A	T01	A
44#	AC151	150m*	1.5M	3.3m	#J	32	24	10	200m	25u	1.00	2.0m0	110	130u	1.0k	14	27p	A0	T01	A
45#	AC151R	150m*	1.5M	3.3m	#J	32	24	10	200m	100u0	1.00	2.0m0	80	100u	750	9.0	27p	A0	T01	A
46#	ACY23	150m*	1.5M	3.3m	#J	32	30	16	200m	10u0	5.00	1.0m0	100	40u	3.0k	7.0	27p	A	T01	A
47#	ACY32	150m*	1.5M	3.3m	#J	32	30	16	200m	10u0	5.00	1.0m0	100	40u	3.0k	7.0	27p	A0	T01	A
48	TR45	150m	1.5M	2.5m	#J	45	5.0	400m	16u	1.00	2.0m0	20				20p	A	T05	A	
49	2N569	150m	2.0M	2.5m	#S	30	10	10		25u	5.00	1.0m	150	400nb	30	5.0	30p	A	R116	A
50	2N570	150m	2.0M	2.0m	#S	30	10	10		25u	5.00	1.0m	150	400nb	30	5.0	30p	A	T05	A
51#	2SB75	150m	2.0M	2.0m	#S	2.5	25	12	100m	14u	6.00	1.0m0	55	17k	17k	3.0		A	T01	A
52#	2SB75A	150m	2.0M	2.0m	#S	45	45	12	100m	14u	6.00	1.0m0	55	17k	17k	3.0		A	T01	A
53#	2SB77	150m	2.0M	2.5	25	25	12	100m	14u	6.00	1.0m0	70	26u	1.9k	3.8		A	T01	A	
54#	2SB77A	150m	2.0M	2.5	45	45	12	100m	25u	6.00	1.0m0	70	26u	1.9k	3.8		A	T01	A	
55#	2SB439	150m	2.0M	3.0m	0J	30	20	12	150m	14u0	6.00	1.0m	130	45u	4.0k	8.0	30p	A0	T01	A
56#	2SB440	150m	2.0M	3.0m	0J	30	20	12	150m	14u0	6.00	1.0m	130	45u	4.0k	8.0	30p	A0	T01	A
57	GT122	150m	2.0M	2.0m	#S	25	10	10		25u	5.00	1.0m	100	500nb	40	5.0	35p	AΔ	T05	A
58	TR650	150m	2.0M	2.5m	#J	45	25	25	400m	15u0	6.00	1.0m	40				20p	A	T05	A
59	TR653	150m	2.0M	2.5m	#J	30	15	25	400m	15u0	6.00	1.0m	40				20p	A	T05	A
60	TR44	150m	2.2M	2.5m	#J	45	5.0	400m	16u	1.00	2.0m0	30				20p	A	T05	A	
61	2N413A	150m	2.5M	2.5m	#J	30	30	200m	25u	6.00	1.0m0	30				20p	A	T05	A	
62	JAN2N425†	150m	2.5MΔ	2.0m	#S	30	20	400m	3.0u0	.250	1.0mΔ	20				20p0	A	T05	A	
63	2N529	150m	2.5M	1.6m	#S	15	15	20		25u	5.00	1.0mΔ	18	1.0ub	28	3.0	14p	A	T05	A
64	2N1352	150m	2.5MΔ	2.5m	#J	30	20	15	200m	5.0u	6.0	1.0m	70				18p	A	T05	A
65	TR43	150m	2.5M	2.5m	#J	45	5.0	400m	16u	1.00	2.0m0	45				20p	A	T05	A	
66	TR320	150m	2.5MΔ	2.5m	#J	30	5.0	200m	16u	1.00	2.0m0	50				20p	A	T05	A	
67	TR323	150m	2.5M	2.5m	#J	16	5.0	200m	16u	1.00	2.0m0	75				20p	A	T05	A	
68	TR722	150m	2.5MΔ	2.5m	#J	30	10	200m	20u	6.0	1.0m	20				20p	A	T05	A	
69	UPI1352	150m	2.5M	2.5m	#J	30	20	15	200m	5.0u	6.0	1.0m	70				18p	A	OV9	A
70	JAN2N44A	150m	3.0MΔ	2.5m	#J	45	30	5.0	200m	16u	5.00	1.0m	38	1.5u0	38		60p	FA	R32	A
71	JAN2N426†	150m	3.0MΔ	2.0m	#S	30	18	20	400m	3.0u0	.250	1.0mΔ	30				20p0	FA	T05	A
72	2N481	150m	3.0M	2.5m	#J	12	10	20	200m	10u	6.00	1.0m	50				14p	A	T05	A
73	2N520	150m	3.0MΔ	1.6m	#S	15	10	10		25u	4.50	1.0m	40	700nb	30	6.0		A	T05	A
74	2N520A	150m	3.0MΔ	2.0m	#S	25	10	10		25u	.250	2.0m0	100	700nb	30	6.0		AΔ	T05	A
75	2N530	150m	3.0M	1.6m	#S</															





# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE			T M A X P	ABS MAX RATINGS @25°C				MAX. lcbp @MAX Vcb (A)	TYPICAL 'h' PARAMETERS					Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E		
			fab	FREE AIR W/C (Hz)	M A X P		BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS			COMMON EMITTER							
												Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)					hre	
1	JAN2N331	200m	400KΔ	2.7m	#S	30	16	12	200m	10u	6.0φ	1.0mφ	30 Δ	1.0uZb	50 Z	X.0001	50pZ	A	T05	A		
2	2N2042	200m	500KΔ	2.6m	#J	105	105	75	200m	25u	6.0φ	1.0mφ	80	550nb	40		25pZ	A	T05	A		
3	2N2042A	200m	500KΔ	2.7m	#S	105	105	75	200m	25u	6.0	1.0m	20 Δ	7.0uZb	50 Z		25pZ	A	T05	A		
4	MA885	200m	500KΔ	2.6m	#J	50	50	30	500m	100u	6.0φ	1.0m	15 Δ	7.0uZb	40		25p	A	T05	A		
5	2N650	200m	750KΔ	2.7m	#S	45	30	30	500m	100u	6.0φ	1.0m	30 Δ	37 Zb	37 Zb		25pZ	A	T05	A		
6	2N650A	200m	750KΔ	2.7m	#S	45	30	30	500m	100u	6.0φ	1.0m	30 Δ	1.0uZb	37 Zb		25pZ	A	T05	A		
7	JAN2N650A	200m	750KΔ	2.6m	#J	45	30	30	500m	50u	6.0φ	1.0m	30 Δ	700nZb	37 Z	8.0 Z	25pZ	A	T05	A		
8	2N2043	200m	750KΔ	2.6m	#J	105	105	75	200m	25u	6.0φ	1.0mφ	180	550nb	40		25pZ	A	T05	A		
9	2N2043A	200m	750KΔ	2.7m	#S	105	105	75	200m	25u	6.0	1.0m	45 Δ	1.0uZb	50 Z		25pZ	A	T05	A		
10	MA881	200m	750KΔ	2.6m	#J	60	60	15	500m	100u	6.0φ	1.0m	30 Δ	100nZb	40 Z		25p	A	T05	A		
11	MA886	200m	750KΔ	2.6m	#J	50	50	15	500m	100u	6.0φ	1.0m	30 Δ	1.0uZb	40 Z		25p	A	T05	A		
12	2N186A	200m	80M	3.3m	#J	25	25	5.0	200m	16u	1.0φ	100m	24 †	1.2k		40p	A	R32	A			
13	2N189	200m	800K	3.3m	#J	25	25	5.0	200m	16u	5.0	1.0m	32	1.0ub	29	4.0	40p	A	R32	A		
14 #	NKT210	200m	.90MΔ	3.1m	#J	45	30	30	500m	10uφ	0.0φ	25mφ	50 †Δ			60pZ	A	T01	A			
15 #	NKT211	200m	.90MΔ	3.1m	#J	32	30	10.1	500m	10uφ	0.0φ	50mφ	40 †Δ			60pZ	A	T01	A			
16 #	NKT212	200m	.90MΔ	3.1m	#J	32	32	10	500m	10uφ	0.0φ	50mφ	50 †Δ			60pZ	A	T01	A			
17 #	NKT213	200m	.90MΔ	3.1m	#J	32	32	10	250m	10uφ	4.5φ	1.0mφ	50 Δ			60pZ	A	T01	A			
18 #	NKT214	200m	.90MΔ	3.1m	#J	32	32	10	250m	10uφ	4.5φ	1.0mφ	30 Δ			60pZ	A	T01	A			
19 #	NKT215	200m	.90MΔ	3.1m	#J	32	32	10	250m	10uφ	4.5φ	1.0mφ	15 Δ			60pZ	A	T01	A			
20 #	NKT216	200m	.90MΔ	3.1m	#J	32	32	10	250m	10uφ	4.5φ	1.0mφ	50 Δ			60pZ	A	T01	A			
21 #	NKT217	200m	.90MΔ	3.1m	#J	60	40	10	500m	10uφ	0.0φ	25mφ	50 †Δ			60pZ	A	T01	A			
22 #	NKT219	200m	.90MΔ	3.1m	#J	32	32	10	250m	10uφ	4.5φ	1.0mφ	85 Δ			60pZ	A	R31	A			
23	2N187A	200m	1.0M	3.3m	#J	25	25	5.0	200m	16u	1.0φ	100m	36 †		800nb	2.0k	4.0	40p	A	R32	A	
24	2N190	200m	1.0M	3.3m	#J	25	25	5.0	200m	16u	5.0	1.0m	42			40p	A	R32	A			
25	2N322	200m	1.0MΔ	2.7m	#J	18	18	5.0	200m	18u	1.0φ	20mφ	34 †Δ			35pZ	A	T05	A			
26	2N651	200m	1.0MΔ	2.7m	#S	45	30	30	500m	10uφ	6.0φ	1.0m	50 Δ			37 Zb	A	T05	A			
27	2N651A	200m	1.0MΔ	2.7m	#S	45	30	30	500m	10uφ	6.0φ	1.0m	50 Δ			37 Zb	A	T05	A			
28 #	JAN2N651A	200m	1.0MΔ	2.6m	#J	45	30	30	500m	50u	6.0φ	1.0m	50 Δ			700nZb	37 Z	10 Z	25pZ	A		
29 #	2SB415	200m	1.0M	3.3m	#J	32	32	6.0	1	14uφ	0.0	300m	70 †					A	T01	A		
30 #	2SB494	200m	1.0M	3.3m	#J	25	18	6.0	1.0	20uφ	1.0φ	150m	38 †Δ					A	T01	A		
31 #	2SB495	200m	1.0M	3.3m	#J	25	18	6.0	1.0	20uφ	1.0φ	150m	110 †					A	T01	A		
32 #	2SB495A	200m	1.0M	3.3m	#J	25	18	6.0	1.0	20uφ	1.0φ	150m	110 †					A	T01	A		
33 #	HEP630S	200m	1.0M	3.3m	#J	55	40	5.0	30	400mS	10uS	2.0	110 †					A	T05	A		
34 #	HEP630S	200m	1.0M	3.3m	#J	55	40	5.0	30	400mS	10uS	2.0	110 †					A	T05	A		
35 #	MA100	200m	1.0MΔ	2.7m	#J	60	60	15	500m	100u	6.0φ	1.0m	50 Δ			25pZ	A	T05	A			
36 #	MA882	200m	1.0MΔ	2.6m	#J	50	50	15	500m	100u	6.0φ	1.0m	50 Δ			25p	A	T05	A			
37 #	MA887	200m	1.0MΔ	2.6m	#J	50	50	15	500m	100u	6.0φ	1.0m	50 Δ			25p	A	T05	A			
38 #	NKT271	200m	1.0M	3.1m	#J	15	15	5.0	500m	10uφ	1.5φ	5.0mφ	50 †Δ					A	T01	A		
39 #	NKT272	200m	1.0M	3.1m	#J	15	15	5.0	250m	10uφ	4.5φ	1.0mφ	35 Δ					A	T01	A		
40 #	NKT274	200m	1.0M	3.1m	#J	15	15	5.0	250m	10uφ	4.5φ	1.0mφ	85 Δ					A	T01	A		
41 #	NKT275	200m	1.0M	3.1m	#J	15	15	5.0	250m	10uφ	4.5φ	1.0mφ	54 †					A	T01	A		
42	2N188A	200m	1.2M	3.3m	#J	25	25	5.0	200m	16u	1.0φ	100m	54 †					A	R32	A		
43	2N191	200m	1.2M	3.3m	#J	45	30	30	200m	16u	6.0φ	1.0m	60 Δ		600nb	2.6k	4.0	40p	A	R32	A	
44	2N652	200m	1.2MΔ	2.7m	#S	45	30	30	500m	10uφ	6.0φ	1.0m	100 Δ			37 Zb			A	T05	A	
45	2N652A	200m	1.2MΔ	2.7m	#S	45	30	30	500m	10uφ	6.0φ	1.0m	100 Δ			37 Zb			A	T05	A	
46	JAN2N652A	200m	1.2MΔ	2.6m	#J	45	30	30	500m	50u	6.0φ	1.0m	100 Δ			700nZb	37 Z	12 Z	25pZ	A		
47 #	2SB167	200m	1.2M	3.3m	#J	20	20	2.5	500m	20uφ	6.0φ	1.0m	80			38u	2.4k	8.9		A	T01	A
48 #	2SB431	200m	1.2M	3.3m	#J	32	32	12	500m	20uφ	6.0φ	1.0m	80			38u	2.4k	8.9		A	T01	A
49 #	MA883	200m	1.2MΔ	2.6m	#J	50	50	15	500m	100u	6.0φ	1.0m	100 Δ			100nZb	40 Z		25p	A		
50	MA888	200m	1.2MΔ	2.6m	#J	50	50	15	500m	100u	6.0φ	1.0m	100 Δ			1.0uZb	40 Z		25p	A		
51 #	SFT351	200m	1.2M	3.3m	#J	24	25	12	150m	15u	6.0φ	1.0mφ	30			20u	1.0k	2.7		A	T01	A
52 #	2N241A	200m	1.3M	4.0m	#J	25	25	5.0	200m	15u	1.0φ	100mφ	73 †			4.0k			A	R32	A	
53 #	SFT321	200m	1.3M	3.3m	#J	24	25	5.0	250m	15u	1.0φ	100mφ	30 †						A	T01	A	
54 #	2N192	200m	1.5M	5.0m	#J	24	25	5.0	200m	16u	5.0	1.0φ	90			500nb	29	4.0		A	R32	A
55 #	2N323	200m	1.5MΔ	2.7m	#J	18	18	5.0	200m	16u	1.0φ	20mφ	53 †Δ						A	T05	A	
56 #	2N519	200m	1.5M	2.6m	#S	15	15	10	200m	2.0uφ	4.5φ	1.0m	25			700nb	30	3.0		A	T05	A
57 #	2N653	200m	1.5M	2.6m	#S	30	25	25	250m	15uφ	6.0φ	1.0mφ	49			1.8k			A	T05	A	
58	2N1886	200m	1.5M	2.6m	#J	60	45	5.0	500m	50u	6.0φ	1.0mφ	49			500nb	32			A	T05	A
59	2N1191	200m	1.5M	2.9m	#J	40	25	25	200m	15uφ	6.0φ	1.0m	40			1.4k			A	T05	A	
60	2N1451	200m	1.5M	3.3m	#J	45	20	10	400m	15u	2.0φ	20mφ	45 †			1.0ub	40	3.0		A	T05	A
61 #	2SB263	200m	1.5M	3.3m	#J	20	18	2.5	150m	14uφ	6.0φ	1.0m	60			19u	1.6k	4.3		A	T01	A
62 #	2SB324	200m	1.5M	3.3m	#J	22	10	500m	10uφ	1.0φ	300mφ	90 †							A	T01	A	
63 #	HEP250S	200m	1.5M	3.3m	#J	20	20	2.5	200m	15uS	2.0	65 †							A	T05	A	
64 #	HEP250S	200m	1.5M	3.3m	#J	20	20	2.5	200m	15uS	2.0	65 †			</							



# 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. 2		DERATE		T M A P	ABS MAX RATINGS @25°C				MAX I <sub>cb</sub> @MAX V <sub>cb</sub>	TYPICAL h <sub>FE</sub> PARAMETERS						Cob (F)	STRUC TURE	DWG # Y200 s/a TO200 Ser.	C O D E
		COLL. DISS. @25°C (W)	fab (Hz)	IN FREE AIR W/°C	V <sub>bcbo</sub> (V)		V <sub>bcvo</sub> (V)	V <sub>bebo</sub> (V)	I <sub>c</sub> (A)	BIAS			COMMON EMITTER								
										V <sub>cb</sub> (V)		I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	h <sub>re</sub> X.0001					
1	2N1354f	200m	4.5M	3.3m	#J	#J	30	15	20	200m	6.0u	1.0	10m	70	1	90	12p	A	T05	A	
2	2N396A	200m	5.0M	3.3m	#S	#S	30	20	20	200m	6.0u	1.0	10m	30	1	90	20p	A	T05	A	
3	JAN2N396A	200m	5.0M	3.3m	#S	#S	30	20	20	200m	10u	1.0	10m	30	1	90	20p	A	T05	A	
4	2N1280	200m	5.0M	3.3m	#J	#J	16	10	10	400m	10u	1.0	20m	60	1	90	10p	A	T05	A	
5	2N1284	200m	5.0M	3.3m	#J	#J	20	10	10	400m	6.0u	1.0	10m	90	1	90	15p	A	T05	A	
6	2N1348	200m	5.0M	3.3m	#J	#J	40	20	25	400m	10u	1.0	10m	95	1	90	12p	A	T05	A	
7	2N1355f	200m	5.0M	2.6m	#J	#J	30	20	20	200m	6.0u	1.0	10m	80	1	90	12p	A	T05	A	
8	2N1449	200m	5.0M	3.3m	#J	#J	45	25	15	400m	10u	6.0	1.0m	80	1	90	20p	A	T05	A	
9	2N1471	200m	5.0M	3.3m	#J	#J	12	7.0	200m	5.0u	6.0	1.0m	160	1	90	18p	A	T05	A		
10	2N3428	200m	5.0M	2.7m	#S	#S	45	30	30	500m	5.0u	6.0	1.0m	350	1	90	20p	A	T05	A	
11	MA1704	200m	5.0M	2.6m	#J	#J	25	25	35	500m	15u	1.0	100m	150	1	90	20p	A	T05	A	
12	2N414B	200m	7.0M	3.3m	#J	#J	30	20	20	400m	6.0u	6.0	1.0m	60	1	90	12p	A	T05	A	
13	2N414C	200m	7.0M	3.3m	#J	#J	30	20	20	400m	6.0u	6.0	1.0m	60	1	90	12p	A	T05	A	
14	2N1281	200m	7.0M	3.3m	#J	#J	16	10	10	400m	10u	1.0	20m	90	1	90	10p	A	T05	A	
15	2N1350	200m	8.0M	3.3m	#J	#J	50	25	400m	20u	30	10m	95	1	90	12p	A	T05	A		
16	2N1351	200m	8.0M	3.3m	#J	#J	40	20	25	400m	10u	30	10m	65	1	90	12p	A	T05	A	
17	2N1355f	200m	8.0M	3.3m	#J	#J	40	20	20	200m	6.0u	1.0	10m	80	1	90	12p	A	T05	A	
18	2N2172	200m	8.0M	2.6m	#S	#S	20	10	10	400m	6.0u	5.0	1.0m	65	1	90	12p	A	T05	A	
19	2N1282	200m	10M	3.3m	#J	#J	16	15	10	400m	10u	1.0	20m	100	1	90	10p	A	T05	A	
20	2N1316f	200m	10M	3.3m	#J	#J	30	15	20	400m	25u	25	1.0m	100	1	90	14p	A	T05	A	
21	2N1317f	200m	10M	3.3m	#J	#J	20	12	15	400m	25u	25	1.0m	95	1	90	14p	A	T05	A	
22	2N1318	200m	10M	3.3m	#J	#J	10	6.0	8.0	400m	7.0u	25	1.0m	85	1	90	14p	A	T05	A	
23	2N1349	200m	10M	3.3m	#J	#J	40	20	25	400m	10u	30	10m	110	1	90	12p	A	T05	A	
24	2N3971	200m	12M	3.3m	#S	#S	30	15	20	200m	6.0u	1.0	10m	95	1	90	12p	A	T05	A	
25	2N1357f	200m	12M	3.3m	#J	#J	30	15	20	200m	6.0u	1.0	10m	85	1	90	12p	A	T05	A	
26	2N522	200m	18M	2.6m	#S	#S	15	8.0	10	200m	2.0u	4.5	1.0m	120	1	90	12p	A	T05	A	
27	2N523	200m	25M	2.6m	#S	#S	15	6.0	10	200m	2.0u	4.5	1.0m	200	1	90	12p	A	T05	A	
28	2N1204A	200m	220M	2.6m	#S	#S	20	15	4.0	500m	7.0u	10	20m	11	1	90	8p	AD	T039	A	
29	2N1204f	200m	320M	2.7m	#S	#S	20	15	4.0	500m	7.0u	15	400m	35	1	90	7.0p	AD	T039	A	
30	2SB370AH	200m	1.4G	2.6m	#S	#S	32	32	500	25m	1.0	15m	70	1	90	8p	AD	T039	A		
31	2N658f	210m	5.0M	2.9m	#J	#J	30	18	12	1	5.0u	35	50m	50	1	90	12p	FA	T05	A	
32	2N662	210m	8.0M	2.9m	#J	#J	30	14	12	1	5.0u	35	50m	70	1	90	12p	FA	T05	A	
33	2N659f	210m	10M	2.9m	#J	#J	30	16	12	1	5.0u	35	50m	70	1	90	12p	FA	T05	A	
34	2N660f	210m	15M	2.9m	#J	#J	30	14	12	1	5.0u	35	50m	90	1	90	12p	FA	T05	A	
35	2N661f	210m	20M	2.9m	#J	#J	30	9.0	12	1	5.0u	35	50m	120	1	90	12p	FA	T05	A	
36	2N2541f	215m	10M	2.9m	#S	#S	30	14	12	1.0	20u	35	50m	60	1	90	20p	FA	T05	A	
37	AC138	220m	1.5M	3.3m	#J	#J	32	32	10	1.2	14u	6.0	5.0m	100	1	90	100p	A	T01	A	
38	AC139	220m	1.5M	3.3m	#J	#J	32	32	10	1.2	14u	6.0	400m	80	1	90	100p	A	T01	A	
39	AC142	220m	1.5M	3.3m	#J	#J	32	32	10	1.2	14u	6.0	400m	80	1	90	100p	A	T01	A	
40	NKT281	220m	1.5M	3.4m	#J	#J	32	16	10	1.0	10u	0.0	5.0m	55	1	90	100p	ME	T01	A	
41	AF200	225m	2.2m	2.2m	#J	#J	25	25	0.30	10m	10u	12	1.0m	50	1	90	100p	ME	T01	A	
42	AF201	225m	2.2m	2.2m	#J	#J	25	25	0.30	10m	10u	12	1.0m	50	1	90	100p	ME	T01	A	
43	AF202L	225m	2.2m	2.2m	#J	#J	32	32	0.30	10m	10u	12	1.0m	50	1	90	100p	ME	T01	A	
44	2SB178	225m	70M	2.2m	#J	#J	20	20	6.0	300m	20u	1.0	300m	65	1	90	100p	A	T01	A	
45	2SB178A	225m	700k	4.5m	#J	#J	40	40	6.0	300m	300m	20u	1.0	300m	65	1	90	100p	A	T01	A
46	JAN2N526	225m	1.0M	3.0m	#S	#S	45	30	15	500m	10u	5.0	1.0m	44	1	90	40p	A	T05	A	
47	2SB304	225m	1.0M	5.0m	#J	#J	30	20	10	500m	15u	1.0	50m	70	1	90	40p	A	T05	A	
48	2SB304A	225m	1.0M	5.0m	#J	#J	45	30	15	500m	10u	1.0	50m	70	1	90	40p	A	T05	A	
49	2SB376	225m	1.0M	4.5m	#J	#J	20	6.0	300m	20u	5.0	300m	50	1	90	40p	A	T05	A		
50	2SB427	225m	1.0M	5.0m	#J	#J	45	30	15	500m	15u	1.0	100m	60	1	90	40p	A	T05	A	
51	2SB428	225m	1.0M	5.0m	#J	#J	45	30	15	500m	15u	1.0	100m	90	1	90	40p	A	T05	A	
52	2N460	225m	1.2M	3.0m	#J	#J	45	35	10	400m	15u	5.0	1.0m	24	1	90	50p	A	T05	A	
53	SFT221	225m	1.3M	3.7m	#J	#J	30	24	15	250m	15u	1.0	100m	30	1	90	20u	A	T05	A	
54	SFT251	225m	1.3M	3.7m	#J	#J	30	24	15	150m	15u	6.0	1.0m	30	1	90	20u	A	T05	A	
55	2N2431	225m	1.5M	3.4m	#J	#J	32	32	10	1	10u	0.0	40m	90	1	90	100p	A	T01	A	
56	SFT241	225m	1.6M	3.7m	#J	#J	45	35	25	500m	15u	1.0	100m	45	1	90	25p	A	T05	A	
57	2N319	225m	2.0M	3.7m	#J	#J	20	20	200m	16u	1.0	20m	34	1	90	25p	A	T05	A		
58	ASY81	225m	2.0M	3.7m	#J	#J	60	35	25	500m	15u	1.0	100m	60	1	90	32u	A	T05	A	
59	HEP253s	225m	2.0M	2.0m	#J	#J	20	20	2.5	400m	16u	20	40	1	90	25p	A	T05	A		
60	HEP254s	225m	2.0M	2.0m	#J	#J	20	20	2.5	400m	16u	20	40	1	90	25p	A	T05	A		
61	SFT222	225m	2.0M	3.7m	#J	#J	30	24	15	250m	15u	1.0	100m	50	1	90	32u	A	T05	A	
62	SFT243	225m	2.0M	3.7m	#J	#J	60	35	25	500m	15u	1.0	100m	60	1	90	30u	A	T05	A	
63	SFT252	225m	2.0M	3.7m	#J	#J	30	24	15	150m	15u	6.0	1.0m	50	1	90	30u	A	T05	A	
64	2N320	225m	2.5M	3.7m	#J	#J	20	20	200m	16u	1.0	20m	50	1	90	25p	A	T05	A		
65	SFT242	225m	2.5M	3.7m	#J	#J	45	30	25	500m	15u	1.0	100m	70	1	90	35u	A	T05	A	
66	2N321	225m	3.0M	3.7m	#J	#J	20	20	200m	16u	1.0	20m	80	1	90	25p	A	T05	A		
67	2N381	225m	3.0M	3.0m	#J	#J	50	25	20	400m	10u	5.0	1.0m	60	1	90	420u	A	T05	A	
68	2N1924	225m	3.0M	3.6m	#J	#J	60	40	25	500m	10u	5.0	1.0m	44	1	90	30u	A	T05	A	
69	AC184	225m	3.0M	3.0m	#S	#S	32	24	10	500m	15u	1.0	200m	110	1	90	18p	A	T05	A	
70	SFT253	225m	3.0M	3.7m	#J	#J	30	20	15	150m	15u	6.0	1.0m	80	1	90	45u	A	T05	A	
71	2N1925	225m	3.5M	3.6m	#J	#J	60	40	25	500m	10u	5.0	1.0m	64	1	90	35u	A	T05	A	
72	2N461	225m	4.0M	3.0m	#J	#J	45	35	10	400m	15u	5.0	1.0m	49	1	90	1.0ub	A	T05	A	
73	2N1926	225m	4.0M	3.6m	#J	#J	60	40	25	500m	10u	5.0	1.0m	80	1	90	40u	A	T05	A	
74	SFT223	225m	4.0M	3.7m	#J	#J	30	20	15												





## 2. GERMANIUM PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)		2 DERATE IN FREE AIR W/°C		M E M P	ABS MAX RATINGS @25°C				TYPICAL h PARAMETERS							Cob (F)	STRUC-TURE	DWG #/s/a TO200 Ser.	C O D E
		fab	(Hz)	M A X	BVcbo (V)		BVceo (V)	VBebo (V)	Ic (A)	Icbo @MAX Vcb (A)	BIAS			COMMON EMITTER							
											Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	ZSB67	350m	1.0M			#J	55	12	150m	10u	6.0	1.0	45	21u	1.3k	2.1	45p	A	TO1		
2#	ZSB67A	350m	1.0M			#J	60	30	150m	10u	6.0	1.0	45	21u	1.3k	2.1	45p	A	TO1		
3#	SFT124	350m	1.0M	5.9m		#J	24	20	500m	20u	1.0	250m	30	220			60p	A	R13		
4#	SFT143	350m	1.0M	5.9m		#J	45	20	500m	20u	1.0	250m	30	220			60p	A	R13		
5#	SFT144	350m	1.8M	5.9m		#J	45	20	500m	20u	1.0	250m	60	380			60p	A	R13		
6#	SFT125	350m	2.0M	5.9m		#J	24	12	500m	20u	1.0	250m	70	500			500	A	R13		
7#	SFT125P	350m	2.0M	5.9m		#J	30	15	500m	25u	1.0	250m	70	500			7.0p	A	MT30		
8#	2N1692	350m	500M	3.3m		#J	25	25	250m	10u	2.0	10m	180			7.0p	ME	AD	TO7		
9#	AF118	375m	125M	4.0m		#J	70	70	30m	6.0u	2.0	10m	180			2.3p	AD	TO7			
10#	JAN2N1039	400m		5.2m		#J	60	40	20	70u	1.5	500u	2.0			60		A	R81c		
11#	JAN2N1041	400m		5.2m		#J	100	60	20	70u	1.5	500u	2.0			60		A	R81c		
12#	AC124	400m		14m		#J	45	10	10	500u	6.0	50m	85					A	X9		
13#	AC117	400m	10k	14m		#J	30	30	10	500u	6.0	50m	85					A	X9		
14#	KF2000	400m	0.1M	5.6m		#J	80	20	3	100u	50	1	35					A	TO5		
15#	KF2001	400m	0.1M	5.6m		#J	120	20	3	100u	50	1	40					A	TO5		
16#	KF2002	400m	0.1M	5.6m		#J	80	20	3	100u	50	1	35					A	TO5		
17#	KF2003	400m	0.1M	5.6m		#J	120	20	3	100u	50	1	40					A	TO5		
18#	2N1494A	400m	220M	5.3m		#S	20	15	4.0	500m	7.0u	50	200m	25			8p	A	TO31		
19#	2N1494F	400m	320M	5.3m		#S	20	15	4.0	500m	7.0u	1.5	200m	35			7.0p	AD	TO31		
20#	AC139K/AC142K	420m	1.5M	6.7m		#J	40	25	3.0	12	10u	0.0	400m	100			40p	A	TO1		
21#	SFT234	450m	30M	7.7m		#J	80	50	20	1	75u	50	1	40				A	TO11		
22#	SFT234A	450m	30M	7.7m		#J	80	60	20	1	125u	50	50	30				A	TO11		
23#	2SB347	500m	17k	3.3m		#J	32	10	100m	10u	5.0	2.0m	125					A	TO1		
24#	2SB348	500m	17k	3.3m		#J	32	10	100m	10u	5.0	2.0m	180					A	TO1		
25#	ASY76	500m	300k	4.0m		#J	40	32	10	300m	40u	0.0	300m	26				A	TO5		
26#	ASY77	500m	300k	4.0m		#J	60	60	10	300m	40u	0.0	300m	26				A	TO5		
27#	ASY80	500m	700k	4.0m		#J	40	40	20	300m	40u	0.0	300m	5				A	TO5		
28#	SFT232	500m	700k	6.6m		#S	40	30	20	3.0	50u	50	50m	110				A	TO11		
29#	SFT233	500m	700k	6.6m		#S	60	40	20	3.0	50u	50	50m	110				A	TO11		
30#	AC125	500m	1.3M	3.3m		#J	32	32	10	100m	200u	5.0	2.0m	125				A	TO1		
31#	AC126	500m	1.7M	3.3m		#J	32	32	10	100m	200u	5.0	2.0m	100			80u	A	TO1		
32#	AC132-01	500m	2.0M	5.2m		#J	32	12	10	200m	10u	0.0	200m	70			100u	A*	X9c		
33#	2N1496F	500m	150M	6.7m		#J	40	25	4.0	500m	7.0u	50	200m	25			6.5p	A	TO31		
34#	OC74N	550m	8.0k	1.1m		#J	20	10	6.0	300m	20u	6.0	50m	60				A	TO1		
35#	SFT130	550m	1.0M	9.1m		#J	24	12	500m	20u	1.0	250m	30					A	MS5		
36#	SFT145	550m	1.0M	9.1m		#J	45	20	25	500m	20u	1.0	250m	30			220	A	MS5		
37#	OC79	550m	1.2M	1.1m		#J	26	26	200m	10u	6.0	50m	42					A	R8		
38#	AC128	550m	1.5M	3.3m		#J	32	10	1	300m	10u	6.0	50m	55				A	TO1		
39#	OC74	550m	1.5M	1.1m		#J	20	20	300m	10u	6.0	50m	75					A	R8		
40#	SFT146	550m	1.8M	9.1m		#J	45	20	25	500m	20u	1.0	250m	60			380	A	MS5		
41#	OC80	550m	2.0M	9.1m		#J	32	32	20	600m	10u	6.0	50m	85				A	R8		
42#	SFT131	550m	2.0M	9.1m		#J	24	12	500m	20u	1.0	250m	70					A	MS5		
43#	SFT131P	550m	2.0M	9.1m		#J	30	15	15	500m	25u	1.0	250m	70			500	A	MS5		
44#	AFY11	560m	300M	4.0m		#J	30	15	1.0	70m	18u	10	10m	60			1.2p	ME	TO5		
45#	OC83	600m	85M	4.0m		#J	32	20	3.0	500m	100u	6.0	1.0m	90				A	TO1		
46#	OC84	600m	1.0M	4.0m		#J	32	32	10	500m	100u	6.0	1.0m	90				A	TO1		
47#	2SB496	600m	2.0M	4.0m		#J	25	18	2.5	250	14m	1.5	50m	60				A	TO1		
48#	SFT367	650m	4.0M			#J	32	1	1	300m	10	1.0	300m	250				A	R111		
49#	NKT351	700m	1.0M	100m		#J	30	20	5.0	2.5	100u	0.0	1.0	30				A	R56b		
50#	2SB405	720m	700k			#J	25	25	6.0	1.0	50u	1.0	200m	100				A	TO1		
51#	2N6011	750m	10	10m		#J	30	20	20	500m	5.0u	1.0	100m	175			15p	A	MT80		
52#	NKT302	750m	1.0M	11m		#J	60	40	15	2.5	50u	0.0	50m	50				A	R56b		
53#	NKT304	750m	1.0M	11m		#J	30	20	15	2.5	50u	0.0	50m	50				A	R56b		
54#	2N1123	750m	5.0M	10m		#J	45	40	4.0	500m	25u	1.0	100m	70			15p	A	MT80		
55#	JAN2N600T	750m	5.6M	10m		#S	35	35	30	30	25u	1.0	200m	50			20p	A	MT80		
56#	2N600	750m	10.1M	10m		#J	35	35	30	500m	25u	1.0	100m	125			15p	A	MT80		
57#	2N1385	750m	250M	10m		#S	25	10	4.0	100m	10u	10	10m	10			2.5p	EM	X		
58#	GM378A	750m	400M			#J	20	15	30	50m	30m	10	20					A	R80		
59#	2N2929	750m	700M	10m		#S	25	10	75	100m	5.0u	10	10m	10			3p	EM	TO5		
60#	GM290A	750m	700M			#J	20	15	.30	50m	30m	10	20					A	R80		
61#	AC188	800m	1.5M	13m		#J	25	15	10	1	200u	1.0	300m	200			90p	A	R51a		
62#	AC188K	800m	1.5M	13m		#J	25	15	10	1	200u	1.0	300m	200				A	X9a		
63#	AFY19	800m	350M	4.0m		#J	32	32	.50	300m	10u	12	80m	40			12p	AD	TO39		
64#	JAN2N2553	900m		12m		#J	60	40	20	20	70u	1.5	500u	2.0			60	A	MT27		
65#	JAN2N2555	900m		12m		#J	100	60	20	20	70u	1.5	500u	2.0			60	A	MT27		
66#	ASY48	900m	1.2M	3.3m		#J	64	45	16	300m	18u	50	100m	50				A	TO1		
67#	AC121	900m	1.5M	3.3m		#J	20	20	10	300m	25u	50	100m	100				A	TO1		
68#	AC152	900m	1.5M	3.3m		#J	32	24	10	500m	25u	50	100m	75				A	TO1		
69#	ASY70	900m	1.5M	3.3m		#J	32	30	16	300m	18u	50	100m	80				A	TO1		
70#	AC162	900m	1.7M	3.3m		#J	32	24	10	200m	25u	5.0	2.0m	110			80u	A	TO1		
71#	AC163	900m	2.3M	3.3m		#J	32	24	10	200m	25u	5.0	2.0m	160			90u	A	TO1		
72#	AC153K	1.0	1.5M			#J	32	32	1.0	200u	0.0	300m	90					A	TO31		
73#	2N2095	1.0	500M	14m		#S	30	15	1.0	300m	15u	0.0	300m	90			8.0p	A	TO1		
74#	AC153	1.1	1.5M	3.3m		#J	32	32	1.0	1.0	200u	0.0	300m	90				A	TO1		
75#	ACY33	1.1	1.5M	3.3m		#J	32	32	1.0	1.0	50u	0.0	300m	90				A	TO1		
76#	2SA374	1.5	300M			#J	34	50	300m	12u	2.0	150m	100					A	TO5		
77#	2SB492	6.0	700k			#J	25	25	6.0	2.0	50u	1.5	200m	110				A	TO39		



### 3. GERMANIUM NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX COLL. DISS. @25°C (W)	2   DERATE			ABS MAX RATINGS @25°C				MAX. lcbv @MAX Vcb (V)	TYPICAL h PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C E O A D E				
			fab (Hz)	IN FREE AIR W/°C	M E M A X P	VBcbo (V)	VBceo (V)	VBebo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe	h <sub>oe</sub> (mhos)	hie (Ω)	hre (X.0001)								
1	2N1730†	150m		2.5m	#J	25	15	#	20	300m	6.0u	3.0u	100m∅	30	†Δ			20p∇	A	T05	A	As		
2	GT229	150m		2.0m	#S	12				200m	20u	5.0u	1.0m	20					A	T05				
3#	NKT773	150m		2.5m	#J	15	15	§	5.0	300m	15u∅	1.5u∅	50m∅	50	†Δ				A	T01		F		
4	2N1251	150m	75kΔ	2.5m	#J	20	15	§	10	100m	50u	6.0u	1.0m	150					A	TO22		F		
5	2N444A	150m	500kΔ	2.0m	#S	40	25	§	10	100m	4.0u∅	5.0u∅	1.0m	35	Δ		1.0u∇		A	T05		As		
6	GT949	150m	700kΔ	2.0m	#S	30				200m	25u	3.5u	1.0m	30				16p	AΔ	T05				
7	2N35	150m	800k	2.5m	∅J	40				100m	50u	6.0u	1.0m	75			30u	2.5k	6.0	A	TO22		F	
8	2N94	150m	2.0MΔ	2.5m	#J	20	20	§		100m	50u	6.0u	1.0m	50	†			100p	A	TO22		F		
9	2N233	150m	2.0MΔ	1.5m	#J	10	10	§		100m	50u	6.0u	1.0m	3.5	Δ			11p	A	TO22		F		
10	2N233A	150m	2.0MΔ	1.5m	#J	18	18	§	5.0	100m	50u	6.0u	1.0m	15				11p	A	TO22		F		
11	2N445A	150m	2.0MΔ	2.0m	#S	30	18	§	10	100m	4.0u∅	5.0u∅	1.0m	35	Δ		1.0u∇		A	TO5		As		
12#	2SD33	150m	2.0M	2.5m	#J	20	15	§	2.5	50m	14u∅	6.0u∅	1.0m	60					A	TO1				
13#	2SD37	150m	2.0M	2.5m	#J	30	20	§	12	50m	14u∅	6.0u∅	1.0m	60	*		17u	1.7k	3.8	A	TO1			
14#	NKT717	150m	2.0M	2.7m	∅J	45	45	§	10	150m	15u∅	1.5u∅	50m∅	40	†Δ				A	TO1		A		
15	2N364	150m	2.5M	2.0m	#S	30			2.0	50m	10u	5.0	1.0m	15			100nb	55	900m	10p	G	OV9		
16#	2SD195	150m	2.5MΔ	2.0m	#J	20	15	§	15	50m	14u∅	1.0u∅	50m∅	70	†				AΔ	TO1				
17	2N193	150m	3.0M	2.5m	#J	18	18	§	5.0	50m	50u	6.0u	1.0m	7.5					A	TO22		A		
18	2N365	150m	3.0M	2.0m	#S	30			2.0	50m	10u	5.0	1.0m	34			100nb	55	900m	11p	G	OV9		
19	2N679†	150m	3.0M	2.5m	#J	25				25u	50u	3.0m∅	30	†					A	R5				
20	2N1012†	150m	3.0MΔ	2.0m	#S	40	22		35	5.0u∅	.25u∅	100m	40	†Δ					A	T05		As		
21	2N1302†	150m	3.0MΔ	2.5m	#S	25	25		25	300m	6.0u	1.0u	10m∅	20	†Δ				A	T05		As		
22	JAN2N1302	150m	3.0MΔ	2.5m	#S	25	25		25	300m	6.0u	1.0u	10m∅	20	†Δ				A	T05		As		
23	2N1391	150m	3.0MΔ	2.0m	#S	25	18		15	300m	4.0u∅	5.0u∅	1.0m	35	Δ				A	T05		A		
24	2N1993†	150m	3.0MΔ	2.0m	#J	30	18		30	300m	10u∅	1.0u∅	10m∅	50	Δ				A	T05		A∅		
25#	2SD75AH	150m	3.0M	3.0M	∅S	45	30		30	12	100m	6.0u	1.0m	40			15u	1.1k	25	4.2p	A	TO1		
26#	2SD75H	150m	3.0M	3.0M	∅S	30	30		12	100m	10u	6.0u	1.0m	40			15u	1.1k	25	4.2p	A	TO1		
27	2N366	150m	3.5M	2.0m	∅S	30			2.0	50m	10u	5.0	1.0m	95			100nb	55	900m	10p	G	OV9		
28#	2SD77	150m	3.5M			25	25	∅	12	100m	14u	6.0u	1.0m	55			16u	1.6k	3.1		A	TO1		
29#	2SD77A	150m	3.5M			45	45	∅	12	100m	6.0u	1.0m	55				16u	1.6k	3.1		A	TO1		
30#	2SD77AH	150m	3.5M			45	30		12	100m	6.0u	1.0m	55				19u	1.4k	2.7	5.0p	A	TO1		
31#	2SD77H	150m	3.5M			30	30		12	100m	10u	6.0u	1.0m	55			19u	1.4k	2.7	5.0p	A	TO1		
32	2N438†	150m	3.7M	2.0m	#J	30	25		25	300m	6.0u	1.0u	50m	25			1.0ub	27	4.0	15p	A	TO5		
33	2N212	150m	4.0MΔ	1.0m	#A	18	18		5.0	100m	50u	6.0u	1.0m	20					10p	A	TO22		F	
34#	2SD75	150m	4.0M	2.5m	#J	25	25	∅	12	100m	14u	6.0u	1.0m	40			15u	1.2k	3.0		A	TO1		
35#	2SD75A	150m	4.0M	2.5m	#J	45	45	∅	12	100m	25u	6.0u	1.0m	40			15u	1.2k	3.0		A	TO1		
36	GT904	150m	4.0M	2.0m	#S	20				200m	25u	2.0u	1.0m	30	†		500nb				A	TO5		
37	GT948	150m	4.0MΔ	2.0m	#S	20			5.0	200m	20u	3.5u	1.0m	30	†		500nb				AΔ	TO5		
38	2N94A	150m	5.0MΔ	2.5m	#J	20	20	§		100m	50u	6.0u	1.0m	20	†				100p	A	TO22		F	
39	JAN2N388†	150m	5.0MΔ	2.0m	#S	25	20	§	15	200m	10u	5.0u	30m∅	60	†Δ				20p∇	A	TO5		As	
40	2N446A	150m	5.0MΔ	2.0m	#S	30	15		10	4.0u∅	5.0u∅	1.0m	60	Δ		1.0u∇				A	TO5		As	
41	2N1299	150m	5.0M	2.0m	#J	40				40	50u	1.0u	50m∅	35	†Δ					A	TO5		As	
42	2N1304†	150m	5.0MΔ	2.5m	#S	25	20		25	300m	6.0u	1.0u	10m∅	40	†Δ				20p∇	A	TO5		As	
43	JAN2N1304	150m	5.0MΔ	2.5m	#S	25	25		25	300m	6.0u	1.0u	10m∅	40	†Δ				20p∇	A	TO5		As	
44	2N1732	150m	5.0MΔ	2.5m	#S	30	30	#		25	300m	6.0u	1.0u	10m∅	40	†Δ				20p∇	A	TO5		As
45	2N1891*	150m	5.0MΔ	2.5m	#S	25	15		25	300m	5.0u∅	1.5u∅	100m∅	25	†Δ					20p∇	A	TO5		As
46	2N1892†	150m	5.0MΔ	2.5m	#J	30	15		25	300m	6.0u∅	5.0u∅	2.0m∅	30	†Δ					20p∇	A	TO5		As
47	GT167	150m	5.0MΔ	2.0m	#S	25	25		15	25u	1.0u	8.0m	25	†						A	TO5			
48#	NKT734†	150m	5.0M	2.5m	#J	25	20		25	300m	6.0u	1.0u	10m∅	40	†Δ		500nb	28	3.0	16p	A	TO5		A
49#	SFT184	150m	5.0M§Δ	2.5m	#J	15	15			100m	5.0u	6.0u	1.0m	60	Δ					A	TO5			
50	2N377†	150m	6.0M	2.0m	#J	25	20	§	15	200m	10u	50u	30m∅	40	†				15p	A	TO5		A	
51	2N377A†	150m	6.0M	2.0m	#J	40			15	200m	20u∅	1.0u∅	30m∅	20	Δ				15p	A	TO5		As	
52	2N385	150m	6.0M	2.0m	#J	25	25	§	15	200m	10u	7.5u	30m	60	†				15p	AΔ	TO5		A	
53	2N1000†	150m	7.0MΔ	2.0m	#J	40	25		40	15	50u	100m	25	†Δ					20p∇	A	TO5		A	
54	2N385A	150m	8.0M	2.0m	#J	40	15		15	200m	40u	5.0u	30m	70	†				20p∇	AΔ	TO5		A	
55	2N388A†	150m	8.0M	2.0m	#J	40			15	200m	10u∅	5.0u∅	30m∅	60	†Δ				15p	A	TO5		As	
56	2N634	150m	8.0M	2.5m	#J	20	15		15	300m	15u	7.5u	200m∅	15	†Δ				12p	A	TO9		As	
57	2N634A	150m	8.0M	2.5m	#J	25	20	§	25	300m	6.0u∅	1.0u∅	10m∅	55	†				12p	A	TO5		As	
58	2N1624†	150m	8.0M	2.0m	#J	25	25		15	1.0u	50u	30m	120	†					24p	A	TO5		A	
59	2N2085	150m	8.0M	2.0m	#J	33				500m	5.0u∅	.25u∅	10m	100					20p	A	TO5		A	
60	2N447A	150m	9.0MΔ	2.0m	#S	30	12		10	4.0u∅	5.0u∅	1.0m	85	Δ		1.0u∇				A	TO5		As	
61	2N440†	150m	10MΔ	2.0m	#J	30	15		25	300m	10u	1.0u	50m	40	†	1.0ub	27	4.0	15p∇	A	TO5		A	
62	2N440A	150m	10M	2.5m	#J	25	25		25	300m	10u	1.0u	50m∅	70		1.0ub	27	4.0	9.0p	AΔ	TO5		A	
63	2N1114	150m	10M	2.0m	#J	25	15		15	200m	30u	12u∅	20m∅	110	†					A	TO5		A	
64	2N1308†	150m	10MΔ	2.5m	#S	25	15		25	300m	6.0u	1.0u	10m∅	60	†Δ				20p∇	A	TO5		As	
65	JAN2N1306	150m	10MΔ	2.5m	#S	25	25		25	300m	6.0u	1.0u	10m∅	60	†Δ				20p∇	A	TO5		As	
66#	NKT736	150m	10M	2.5m	#J	25	25		25	300m	6.0u	1.0u	10m∅	60	†Δ				20p∇	A	TO5		A	
67	2N635	150m	12M	2.5m	#J	20	15		15	300m	15u	7.5u	200m∅	25	†Δ				12p	A	TO9		As	
68	2N635A	150m	12M	2.5m	#J	25	20	§	15	300m	6.0u∅	1.0u∅	10m∅	100	†				12p	A	TO5		As	
69	2N1605	150m	14M	2.0m	#J	25	24		12	100m	5.0u∅	.25u∅	20m∅	125	†				13p	A	TO5		As	
70	2N1808†	150m																						

### 3. GERMANIUM NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE		T M E A M X P	ABS MAX RATINGS @25°C				MAX. Icbo @MAX Vcb (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O A D E
			fab (Hz)	IN FREE AIR W/°C		BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS			COMMON EMITTER						
									Vcb (V)		Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	2SD128	250m			#J	32	30 §		500m	20∅	1.0∅	20m∅	82 †				A	TO1		
2#	2SD128A	250m			#J	32	30 §		500m	20∅	1.0∅	500m∅	46 †#Δ				A	TO1		
3#	SFT377	250m	1.0M§Δ	3.3m	#S		16	10	600m	10∅	1.0∅	300m∅	50 †*				A	TO1		
4#	2SD34	250m	2.0M	4.2m	#J	20	15 §	2.5	150m	14∅	6.0∅	1.0m	60	20u	1.8k	5.0	A	TO7		
5#	2SD38	250m	2.0M	4.2m	#J	30	20 §	12	150m	16u	6.0∅	1.0m	60 *	20u	1.8k	5.0	A	TO7		
6#	2N1473	250m	8.0M	4.2m	#J	40	40 §	15	400m	5.0u∅	6.0∅	400m	50 †				A	TO5	A§	
7#	AC175	260m	.02M†	4.0m	#J	25	18	10	1	35u∅	1.0∅	300m∅	150 †				A	X9		
8#	AC179	260m	.02M†	4.0m	#J	20	15	10	700m	10u∅	2.0∅	150m∅	60 †Δ				A	X9		
9#	AC141K	260m	3.0M	4.0m	#J	32	32 ∅	10	1.2	14u∅		400m	80 †				A	TO1		
10#	2N2430	280m	2.5M§	2.7m	#	32	32	10	500m	10u	0.0	50m	105			70p	A	TO1	A	
11#	2SD30	300m			#	25			200m	15u	1.5∅	100m	150				A	TO1		
12#	AC181	300m	1.0M§Δ	4.0m	#S	32	24 §	10	1.0	200n	1.0∅	600m∅	110 †#*				A*	R134		
13#	40396/N	300m#∅	2.0M	10m	#J	18	18 §	2.5	500m	14u∅	1.0∅	50m∅	50 †Δ				A	TO1		
14#	2SD96	300m	4.0M		#	25	18 §	2.5	250m	14u	1.5∅	50m∅	90 †				A			
15#	AC127	340m	2.5M§	2.7m	#J	32	32 §	10	500m	10u∅	0.0	20m∅	50 †Δ				A	TO1		
16#	AC127-01	340m*	2.5M§	4.0m	#J	32	12	10	500m	10u∅	0.0	500m∅	50 †			70p§	A	X9c	A	
17#	ASY73†	500m	4.0M§Δ	2.9m	#	30	20	30	400m	3.0u	0.0	.05m	25 †Δ				A	TO5		
18#	ASY74†	500m	6.0M§Δ	2.9m	#	30	20	30	400m	3.0u	0.0	.05m	40 †Δ				A	TO5		
19#	ASY75†	500m	10M§Δ	2.9m	#	30	20	30	400m	3.0u	0.0	.05m	65 †Δ				A	TO5		
20#	AC176	700m	1.0M§Δ	25m	#J	32	32	5.0	1	30u∅	0.0	500m	180 †Δ				A	TO1		
21#	2SD72	720m∅	750k§		#J	25	25 §	6.0	600m	50u	1.0∅	200m∅	80 †				A	TO1		
22#	AC187	800m	1.5M§	13m	#J	25	15	10	1	100u	1.0∅	300m∅	200 †			150p§	A	R51a	A	
23#	AC188/01	800m	1.5M§	6.3u	#J	25	15	10	1	15u∅	1.0∅	50m∅	165 †			110p§	A	X9c	A	
24#	AC187K	800m	3.0M§	13m	#J	25	15	10	1	200u							A	X9a		
25#	AC187/01	800m*	5.0M§	14m	#J	25	15	10	1.0	100u	1.0∅	300m∅	200 †			150p§	A*	X9c	A	



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX COLL. DISS. @25°C (W)	2 DERATE		T M E A M X P	ABS MAX RATINGS @25°C			MAX. lcoB @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a T0200 Ser.	# C O D E							
			fab (Hz)	IN FREE AIR W/°C		BVcbo (V)	BVceo (V)	BVebo (V)		lc (A)	Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)					hre (X.0001)						
1#	BC303	7.0m		40u		90	65	7.0	1.0	20n	100	150m	60													
2#	2S326	50m	1.0M	400u	\$J	6.0	6.0	6.0	10m	10n	3.0	1.0m	80			40p	PLΔ	T039								
3#	2S306	50m	1.5MΔ	400u	\$J	6.0	6.0	6.0	10m	10n	3.0	1.0m	80				A	R51								
4#	2S307	50m	2.0MΔ		\$J	15	15	15	10m	10u	3.0	1.0m	80				A	T05								
5#	2S327	50m	2.0MΔ		\$J	15	15	15	10m	10u	3.0	1.0m	80				A	R51								
6#	BC200	50m	9.0MΔ	625u	\$J	20	20	20	50m	10n	5.0	2.0m	200	†			PE									
7#	A160	50m*	90MΔ	625u	\$J	20	20	5.0	50m	100n	5.0	200u	75			18u	15	13	5.0p	PE	u45	B				
8#	A161	50m*	90MΔ	625u	\$J	20	20	5.0	50m	100n	5.0	200u	140			13u	12k	13	5.0p	PE	u45	B				
9#	A162	50m*	90MΔ	625u	\$J	20	20	5.0	50m	100n	5.0	200u	250			33u	15k	25	5.0p	PE	u45	B				
10#	BC196A	50m*	130MΔ	625u	\$J	30	25	5.0	100m	50n	5.0	2.0m	125	Δ						4.0p	PET	u47	B			
11#	BC196B	50m*	130MΔ	625u	\$J	30	25	5.0	100m	50n	5.0	2.0m	240	Δ						4.0p	PET	u47	B			
12#	BC196VI	50m*	130MΔ	625u	\$J	30	25	5.0	100m	50n	5.0	2.0m	75	Δ						4.0p	PET	u47	B			
13#	BFS14E	50m*	1.6m		\$J	40	40	5.0	50m	5.0	1.0m	70	Δ							7.0p	PE		D			
14#	BFS14F	60m	1.6m		\$J	40	40	5.0	50m	5.0	1.0m	70	Δ							7.0p	PE		D			
15#	BFS14G	60m	1.6m		\$J	40	40	5.0	50m	5.0	1.0m	70	Δ							7.0p	PE		D			
16#	BFS26E	60m	1.6m		\$J	20	20	5.0	150m	1.0	1.0m	50	Δ							7.0p	PE		D			
17#	BFS26F	60m	1.6m		\$J	20	20	5.0	150m	1.0	1.0m	50	Δ							7.0p	PE		D			
18#	BFS26G	60m	1.6m		\$J	20	20	5.0	150m	1.0	1.0m	50	Δ							7.0p	PE		D			
19#	BFS16E	75m	1.3m		\$J	40	30	5.0	50m	10	10	30	Δ							10p	PE		D			
20#	BFS16F	75m	1.3m		\$J	40	30	5.0	50m	10	10	30	Δ							10p	PE		D			
21#	BFS16G	75m	1.3m		\$J	40	30	5.0	50m	10	10	30	Δ							10p	PE		D			
22#	BCZ13	85m#	500kΔ	833u	\$J	20	20	6.0	10m	10n	2.0	1.0m	25							40p	A	R19				
23#	BCZ14	85m#	500kΔ	833u	\$J	20	20	6.0	10m	10n	2.0	1.0m	55							40p	A	R19				
24#	D30A1	90m	1.2m		\$J	25	25	4.0	25	5.0	10m	30	†Δ#							8.0p	PEΔ	u40b	D			
25#	D30A2	90m	1.2m		\$J	25	25	4.0	25	5.0	10m	60	†Δ#							8.0p	PEΔ	u40b	D			
26#	D30A3	90m	1.2m		\$J	25	25	4.0	25	5.0	10m	140	†Δ#							8.0p	PEΔ	u40b	D			
27#	D30A4	90m	1.2m		\$J	25	25	4.0	25	5.0	10m	250	†Δ#							8.0p	PEΔ	u40b	D			
28#	D30A5	90m	1.2m		\$J	25	25	4.0	25	5.0	10m	400	†Δ#							8.0p	PEΔ	u40b	D			
29	3N1233	100m	6.0MΔ	571u	\$S	30	25	20m	10n	1.0	1.5	20u	50	†						10p	A	T072	GD			
30	2N2177	100m	8.0M	666u	\$J	6.0	6.0	6.0	50m	1.0n	1.5	20u	50	†						10p	A	T05				
31	2N2178	100m	8.0M	666u	\$J	6.0	6.0	6.0	50m	1.0n	1.5	20u	50	†						10p	A	T08	A			
32	2N2175	100m	10MΔ	666u	\$J	6.0	6.0	6.0	50m	1.0n	1.5	20u	50	†						10p	A	T05	A			
33	2N2176	100m	10MΔ	666u	\$J	6.0	6.0	6.0	50m	1.0n	1.5	20u	50	†						10p	A	T08	A			
34#	MT0411	100m	30MΔ	800u	\$J	20	20	6.0	10m	6.0	1.0m	60	Δ							5.0p	PL	u81	B			
35#	MT0413	100m	30MΔ	800u	\$J	20	20	6.0	10m	6.0	1.0m	50	Δ							8.0p	PL	u81	B			
36#	2N1677	100m	32MΔ	833u	\$S	4.5	4.5	50m	100n	3.0	1.0m	50								1.5ub	A	T05	A			
37#	MT0412	100m	40MΔ	800u	\$J	20	20	6.0	10m	6.0	1.0m	150	Δ							1.0uZb	35	10	5.0p	PL	u81	B
38	2N1676	100m	42MΔ	833u	\$S	4.5	4.5	50m	100n	3.0	1.0m	10								1.0uZb	35	10	5.0p	PL	u81	B
39#	MT0414	100m	60MΔ	800u	\$J	25	20	4.0	2.0u	5.0	1.0m	200								12u	15k	20	7.0p	PE	u81	B
40#	2SA609	100m	80MΔ		\$J	30	15	5.0	100m	1.0u	6.0	1.0m	80	†						12p	PE	R145	D			
41#	2SA608†	100m	180MΔ		\$J	30	20	5.0	50m	1.0n	1.0	100	†							12p	PE	R145	D			
42#	BCW29	110m	150MΔ	1.1m	\$J	30	20	5.0	50m	100n	5.0	10u	90	†						7.0p	PE	u56	A			
43#	BCW29R	110m	150MΔ	1.1m	\$J	30	20	5.0	50m	100n	5.0	10u	90	†						7.0p	PE	u56	A			
44#	BCW30	110m	150MΔ	1.0m	\$J	30	20	5.0	50m	100n	5.0	10u	150	†						7.0p	PE	u56	A			
45#	BCW30R	110m	150MΔ	1.1m	\$J	30	20	5.0	50m	100n	5.0	10u	150	†						7.0p	PE	u56	A			
46#	MT0463	125m	300MΔ	1.0m	\$J	30	20	5.0	10n	1.0	1.0m	50	Δ							8.0p	PE	u81	B			
47#	MT0461†	125m	350MΔ	1.0m	\$J	60	50	6.0	10n	1.0	1.0m	110	†							3.5p	PL	u81	B			
48#	MT0462†	125m	350MΔ	1.0m	\$J	50	40	6.0	10n	1.0	1.0m	200	†							3.5p	PL	u81	B			
49#	BF316	130m	700MΔ	1.0m	\$J	40	35	4.0	15m	10	1.0	50	†							50ft	PL	T072				
50#	BF272	130m	1.0GΔ	1.0m	\$J	40	35	4.0	15m	10	2.5m	60	†							100ft	PL	T072				
51#	BFV34	150m	1.1m		\$S	15	10	15	100m	10n	50	1.0m	80	Δ						10p	PE	u34b	P			
52#	BFV35	150m	1.1m		\$S	25	20	25	100m	10n	50	1.0m	40	Δ						10p	PE	u34b	P			
53#	BFV36	150m	1.1m		\$S	40	35	40	100m	10n	50	1.0m	30	Δ						10p	PE	u34b	P			
54#	PL1031	150m	1.0m		\$J	60	40	5.0	20n	10	1.0m	25	Δ							8.0p	PE	u50	A			
55#	PL1032	150m	1.0m		\$J	60	60	5.0	10n	10	1.0m	40	Δ							8.0p	PE	u50	A			
56#	PL1033	150m	1.0m		\$J	60	40	5.0	20n	10	1.0m	50	Δ							8.0p	PE	u50	A			
57#	PL1034	150m	1.0m		\$J	60	60	5.0	10n	10	1.0m	100	Δ							8.0p	PE	u50	A			
58#	PL1101	150m	1.0m		\$J	25	20	5.0	50	10m	1.0m	20	Δ							5.0p	PE	u50	A			
59#	PL1102	150m	1.0m		\$J	25	20	5.0	50	10m	1.0m	40	Δ							5.0p	PE	u50	A			
60#	PL1103	150m	1.0m		\$J	25	20	5.0	1.0	10m	1.0m	15	Δ							5.0p	PE	u50	A			
61#	PL1104	150m	1.0m		\$J	25	20	5.0	1.0	10m	1.0m	30	Δ							5.0p	PE	u50	A			
62	SA539	150m			\$J	25	20	50m	10n	50	5.0m	10	Δ							9.0p	PE	T018	A			
63	SA540	150m			\$J	10	6.0	50m	10n	50	5.0m	10	Δ							9.0p	PE	T018	A			
64	2N923	150m	800kΔ	833u	\$	40	25	40	50m	50u	6.0	1.0m	21							40ub	2.1k	75	20p	A	T018	A
65	2N924	150m	800kΔ	833u	\$	40	25	40	50m	50u	6.0	1.0m	47							40ub	2.1k	75	20p	A	T018	A
66	2N925	150m	800kΔ	833u	\$	50	40	50	50m	50u	6.0	1.0m	17							40ub	2.1k	75	20p	A	T018	A
67	2N926	150m	800kΔ	833u	\$	50	40	50	50m	50u	6.0	1.0m	38							40u	2.1k	75	20p	A	T018	A
68	2N927	150m	800kΔ	833u	\$	70	60	70	50m	50u	6.0	1.0m	15							40u	2.1k	75	20p	A	T018	A
69	2N928	150m	800kΔ	833u	\$	70	60	70	50m	50u	6.0	1.0m	34							40u	2.1k	75	20p	A	T018	A
70	2N2332	150m	1.0m		\$J	15	5.0	15	100m	50u											20p	A	T018	A		
71	2N2333	150m	1.0m		\$J	15	5.0	15	100m	50u											20p	A	T018	A		
72	2N2334	150m	1.0m		\$J	30	15	30	100m																	

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	3	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)		2 DERATE IN FREE AIR W/C (Hz)		ABS MAX RATINGS @ 25°C				MAX. l <sub>co</sub> @ MAX V <sub>cb</sub>		TYPICAL 'h' PARAMETERS							Cob (F)	STRUC TURE	DWG # Y200 s/a TO200 Ser.	# E D	C O D E
			fab	FREE AIR W/C	M A M X P	V <sub>cb</sub>	V <sub>ceo</sub>	V <sub>ebo</sub>	I <sub>c</sub>	I <sub>co</sub>	BIAS			COMMON EMITTER										
											V <sub>cb</sub>	I <sub>co</sub>	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)								
1		2N859T	150m	14m	1.3m	\$A	40	40	25	50m	1.0u	.50	5.0m	35	†				5.0p	PA	T018	A	A	
2		2N860T	150m	14m	1.3m	\$A	25	25	25	50m	1.0u	.50	5.0m	20	†				5.0p	PA	T018	A	A	
3		2N862T	150m	14m	1.3m	\$A	30	30	30	50m	1.0u	.50	5.0m	20	†				5.0p	PA	T018	A	A	
4		2N2280	150m	16m	1.3m	\$J	10	6.0	10	50m	3.0n	.50	5.0m	10	Δ			10pZ	E	T018	A	A		
5		2N1118A	150m	18m	1.3m	\$J	25	25	10	50m	1.0u	6.0	1.0m	25		1.5ub	50		6.0p	A	T05	A	A	
6		2N2165	150m	18m	1.3m	\$S	30	30	30	50m	2.0n	6.0	1.0m	25				6.0p	A	T05	A	A		
7		2N2166	150m	18m	1.3m	\$S	15	15	15	50m	2.0n	6.0	1.0m	25				6.0p	S	T05	A	A		
8		2N1119T	150m	20m	1.3m	\$J	10	10	10	50m	.50	5.0	1.5m	25	†			6.0p	S	T05	A	A		
9		2N2162	150m	20m	1.3m	\$S	30	30	30	50m	1.0n	3.0	1.0m	35				6.0p	S	T05	A	A		
10		2N2163	150m	20m	1.3m	\$S	15	15	15	50m	1.0n	3.0	1.0m	35				6.0p	A	T05	A	A		
11		2N2377	150m	20m	1.3m	\$S	25	25	10	50m	1.0u	6.0	1.0m	15	Δ			12pZ	A	T018	A	A		
12		2N2378	150m	20m	1.3m	\$S	10	10	10	50m	1.0n	.50	1.5m	25	†			12pZ	A	T018	A	A		
13		2N1118	150m	21m	1.3m	\$J	25	25	10	50m	1.0u	6.0	1.0m	30		35u	1.4k	3.5	6.0p	PA	T05	A	A	
14		2N8611	150m	22m	1.3m	\$A	25	25	20	50m	1.0u	.50	5.0m	35	†			5.0p	PA	T018	A	A		
15		2N8631	150m	22m	1.3m	\$A	15	15	10	50m	1.0u	.50	5.0m	35	†			5.0p	PA	T018	A	A		
16		2N864T	150m	22m	1.3m	\$A	6.0	6.0	6.0	50m	100n	.50	5.0m	35	†			5.0p	PA	T018	A	A		
17	#	2SA542	150m	30m	1.3m	\$J	30	25	5.0	50m	50n	1.0	500	160	†			8.0pZ	PE	u23a	A	C		
18	#	BFV25	150m	30m	1.1m	\$S	60	45	6.0	30m	50n	5.0	1.0m	60	Δ			6.0pZ	PE	u34b	P	P		
19	#	BFV26	150m	30m	1.1m	\$S	60	45	6.0	30m	50n	5.0	1.0m	150	Δ			6.0pZ	PE	u34b	P	P		
20		2N2167	150m	36m	1.3m	\$S	12	12	12	50m	2.0n	6.0	1.0m	38				6.0p	S	T05	A	A		
21		2N2164	150m	44m	1.3m	\$S	12	12	12	50m	2.0n	3.0	1.0m	40				6.0p	S	T05	A	A		
22		2N865T	150m	52m	1.3m	\$A	10	6.0	10	50m	100n	.50	5.0m	75	†			5.0p	PA	T018	A	A		
23	#	2SA429	150m	100m	1.5m	\$J	150	150	3.0	30m	1.0u	2.0	2.0m	60	†			4.0p	PL	R67a	A	B		
24	#	2SA628T	150m	100m	1.5m	\$J	30	25	4.0	100m	1.0u	6.0	1.0m	100	†				PE	T092	D	D		
25	#	2SA628AT	150m	100m	1.5m	\$J	60	60	4.0	100m	1.0u	6.0	1.0m	100	†				PE	T092	D	D		
26	#	2SA629	150m	100m	1.5m	\$J	30	25	4.0	30m	1.0u	6.0	1.0m	200	†				PE	T092	D	D		
27	#	BCW56	150m	130m	2.0m	\$J	80	60	6.0	100m	10u	5.0	2.0m	125	Δ*			4.5p	PE	MM13	F	F		
28	#	BCW57	150m	130m	2.0m	\$J	50	45	6.0	100m	10u	5.0	2.0m	125	Δ*			4.5p	PE	MM13	F	F		
29	#	BCW58	150m	130m	2.0m	\$J	30	20	5.0	100m	10u	5.0	2.0m	125	Δ*			4.5p	PE	MM13	F	F		
30	#	BCW59	150m	130m	2.0m	\$J	30	20	5.0	100m	10u	5.0	2.0m	125	Δ*			4.5p	PE	MM13	F	F		
31	#	2SA480	150m	140m	1.1m	\$J	30	20	5.0	100m	3.0u	3.0	1.0m	60	†			5.0pZ	PE	T018	Ø	P		
32	#	BFV30T	150m	140m	1.1m	\$J	20	15	4.0	100m	50n	1.0	50m	15	Δ			7.0pZ	PE	u34b	Ø	P		
33	#	BFV33	150m	140m	1.0m	\$J	25	20	5.0	50m	1.0u	1.0	10m	30	Δ			5.0pZ	PE	u34b	Ø	P		
34	#	2SA564	150m	150m	1.5m	\$J	25	25	5.0	50m	1.0u	5.0	2.0m	200	†				PE	T092	B	B		
35	#	2SA564A	150m	150m	1.5m	\$J	45	45	5.0	50m	1.0u	5.0	2.0m	200	†				PE	T092	B	B		
36	#	BFV20	150m	150m	1.0m	\$J	40	30	5.0	600m	50n	1.0	150m	40	Δ			10pZ	PE	u34b	P	P		
37	#	BFV21	150m	150m	1.0m	\$J	40	30	5.0	600m	50n	1.0	150m	100	Δ			10pZ	PE	u34b	P	P		
38	#	BFV22	150m	150m	1.0m	\$J	50	50	5.0	600m	50n	1.0	150m	80	Δ			10pZ	PE	u34b	P	P		
39	#	BCW61A	150m	180m	1.2m	\$J	32	32	5.0	100m	20n	5.0	2.0m	200		18	2.7k	1.5	6.0pZ	PE	u56a	A	A	
40	#	BCW61BT	150m	180m	1.2m	\$J	32	32	5.0	100m	20n	5.0	2.0m	260		24	3.6	2.0	6.0pZ	PE	u56a	A	A	
41	#	BCW61CT	150m	180m	1.2m	\$J	32	32	5.0	100m	20n	5.0	2.0m	330		30	4.5	2.0	6.0pZ	PE	u56a	A	A	
42	#	BCW61DT	150m	180m	1.2m	\$J	32	32	5.0	100m	20n	5.0	2.0m	520		50	7.5	3.0	6.0pZ	PE	u56a	A	A	
43	#	BF532P	150m	200m	1.2m	\$	45	45	5.0	200m	20n	1.0	50m	30	Δ			10p	PE	u17c	E	E		
44	#	BF533P	150m	200m	1.2m	\$	45	45	5.0	200m	20n	1.0	50m	60	Δ			10p	PE	u17c	E	E		
45	#	BF534P	150m	200m	1.2m	\$	45	45	5.0	200m	20n	1.0	50m	100	Δ			10p	PE	u17c	E	E		
46	#	BFV31T	150m	350m	1.1m	\$J	12	12	4.0	200m	150n	1.0	30m	30	Δ			8.0pZ	PE	u34b	P	P		
47	#	BFV32T	150m	350m	1.1m	\$J	10	10	3.5	200m	200n	1.0	30m	20	Δ			8.0pZ	PE	u34b	P	P		
48	#	2N4411	150m	400m	1.3m	\$J	15	12	5.0	25m	5.0n	5.0	500	40	Δ			700fZ	PE	T072	P	G		
49	#	BFV29T	150m	400m	1.1m	\$S	20	15	5.0	200m	50n	5.0	10m	30	Δ			4.5p	PE	u34b	P	E		
50	#	BSV55APt	150m	400m	1.2m	\$						5.0	30m	30	Δ			6.0p		u17c	P	E		
51	#	BSV55Pt	150m	400m	1.2m	\$						5.0	30m	40	Δ			6.0p		u17c	P	E		
52	#	BF516	150m	850m	1.4m	\$J	40	35	6.0	20m	50n	1.0	3.0m	25	Δ			300f	PL	T072	A	B		
53	#	MT0404	180m	150m	1.4m	\$J	25	25	4.0	100n	5.0	5.0	50m	30	Δ			12pZ	PL	u81	A	B		
54	#	MT0404-1	180m	200m	1.4m	\$J	40	30	5.0	50n	1.0	1.0	10m	20	Δ			10pZ	PL	u81	A	B		
55	#	MT0404-2	180m	200m	1.4m	\$J	40	30	5.0	50n	1.0	1.0	10m	40	Δ			10pZ	PL	u81	A	B		
56	#	2N4248	200m	2.0m	2.0m	\$J	40	40	5.0	100m	10n	5.0	1.0m	50	Δ			6.0p	Ø	R124	A	A		
57	#	2N4249	200m	2.0m	2.0m	\$J	60	60	5.0	100m	10n	5.0	1.0m	100	Δ			6.0p	Ø	R124	A	A		
58	#	2N4250	200m	2.0m	2.0m	\$J	40	40	5.0	100m	10n	5.0	1.0m	250	Δ			6.0p	Ø	R124	A	A		
59	#	2N4250A	200m	2.0m	2.0m	\$J	60	60	5.0	100m	10n	5.0	1.0m	250	Δ			6.0p	Ø	R124	A	A		
60	#	MM4261H	200m	1.1m	1.1m	\$J	15	15	4.5	30m	10n	5.0	1.0m	250	Δ			2.5p	Ø	T072	DR	DR		
61	#	V655	200m	2.0m	2.0m	\$J	35	35	5.0	50n	5.0	1.0m	135	†		15u	5.2k	1.8	4.0p	PL	T0106	A	A	
62	#	BC153	200m	40	2.0m	\$J	40	40	5.0	500p	5.0	1.0m	135	†	#			6.0pZ	DPL	R97a	A	A		
63	#	2N2370	200m	1.0m	1.1m	\$J	15	15	15	50m	50u	4.0	25m	15	Δ			15pZ	A	T05	A	A		
64	#	2N2371	200m	1.0m	1.1m	\$J	15	15	15	50m	50u	4.0	25m	20	Δ			15pZ	A	T05	A	A		
65	#	2SA494GR	200m	10m	2.0m	\$J	35	30	5.0	30m	500n	6.0	100u	220		2.8u	14k	1.0	PE	R67a	A	B		
66	#	2SA494O	200m	10m	2.0m	\$J	35	30	5.0	30m	500n	6.0	100u	90		1.1u	8.0k	900m	PE	R67a	A	B		
67	#	2SA494Y	200m	10m	2.0m	\$J	35	30	5.0	30m	500n	6.0	100u	140		1.6u	11k	950m	PE	R67a	A	B		
68	#	AT450Z	200m	20m	1.6m	\$J	30	30	5.0	50m	20n	1.0	1.0m	60	Δ			6.0pZ	PE	MM12a	D	D		
69	#	AT451	200m	20m	1.6m	\$J	30	30	5.0	50m	20n	1.0	1.0m	200	Δ			6.0pZ	PE	MM12a	D	D		
70	#	AT452	200m	20m	1.6m	\$J																		

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @ 25°C (W)	2 DERATE IN FREE AIR W/°C	M A X P	ABS MAX RATINGS @ 25°C				MAX. lcco @ Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #	C O D E				
					VbVco	VcVco	VcVbo	Ic		Vcb	le	hfe	hoe (mhos)	hie (Ω)	hre X.0001								
1	2N4389T	200m	400mSΔ	2.0m	Δ	J	12	12	4.0	100m	10n#	1.00	1.0m	180	1#	6.0p	Δ	R124	A				
2	2N4916T	200m	400mSΔ	2.0m	Δ	J	30	30	5.0	100m	25n#	1.00	1.0m	60	1Δ	4.5p	Δ	R124	A				
3	2N5140T	200m	400mSΔ	2.0m	Δ	J	50	50	4.0	50m	50n#	1.00	1.0m	140	1#	5.0p	Δ	TO106	A				
4#	2S548	200m	400mSΔ	2.0m	Δ	J	50	35	5.0	100m	10u	6.00	1.0m	100		3.0p	Δ	R110	A				
5	2N4122T	200m	450mSΔ	2.0m	Δ	J	40	40	5.0	100m	25n#	1.00	1.0m	150	Δ	4.5p	Δ	R124	A				
6	2N4917T	200m	450mSΔ	2.0m	Δ	J	30	30	5.0	100m	25n#	1.00	1.0m	150	Δ	4.5p	Δ	R124	A				
7	2N3639T	200m	500mSΔ	2.0m	Δ	J	6.0	6.0	4.0	80m	50n#	1.00	50m	20	Δ	3.5p	Δ	R110	A				
8	2N3640T	200m	500mSΔ	2.0m	Δ	J	12	12	4.0	80m	50n#	1.00	50m	20	Δ	3.5p	Δ	R110	A				
9	2N4257T	200m	500mSΔ	2.0m	Δ	J	6.0	6.0	4.5	50m	10n	3.00	10m	30	Δ	3.0p	Δ	R124	A				
10	2N4257AT	200m	500mSΔ	2.0m	Δ	J	6.0	6.0	4.5	50m	10n	3.00	10m	15	Δ	3.0p	Δ	R124	A				
11	TP4257	200m	500mSΔ	2.0m	Δ	J	6.0	6.0	4.5	50m	10n	3.00	10m	12	Δ	4.5p	Δ	R124	A				
12	2N5055T	200m	550mSΔ	2.0m	Δ	J	12	12	4.5	100m	50n#	5.00	1.0m	30	Δ	3.0p	Δ	R110	A				
13	2N4258T	200m	700mSΔ	2.0m	Δ	J	12	12	4.5	50m	10n	3.00	1.0m	30	Δ	3.0p	Δ	R124	A				
14	2N4258AT	200m	700mSΔ	2.0m	Δ	J	12	12	4.5	50m	10n	3.00	1.0m	30	Δ	3.0p	Δ	R124	A				
15	2N4313T	200m	700mSΔ	2.0m	Δ	J	12	12	4.5	100m	50n#	5.00	30m	30	Δ	4.5p	Δ	R124	A				
16	TP4258T	200m	700mSΔ	2.0m	Δ	J	12	12	4.5	50m	10n	5.00	1.0m	15	Δ	3.0p	Δ	R110	A				
17	2N4958	200m	1.0GΔ	1.1m	S	S	30	30	3.0	30m	100n	100	2.0m	20	Δ	800f	Δ	TO72	G				
18	2N4959	200m	1.0GΔ	1.1m	S	S	30	30	3.0	30m	100n	100	2.0m	20	Δ	800f	Δ	TO72	G				
19	2N4957	200m	1.2GΔ	1.1m	S	S	30	30	3.0	30m	100n	100	2.0m	20	Δ	800f	Δ	TO72	G				
20	JAN2N4957	200m	1.2GΔ	1.1m	S	A	30	30	3.0	30m	100n	100	5.0m	30	Δ	800f	Δ	TO72	G				
21	EN2894AT	200m	1.2G	2.0m	Δ	J	12	12	4.5	50m	50n#	1.00	100m	30	#	4.5p	Δ	TO106	A				
22	MD4957*	200m	1.5G	1.1m	S	J	30	30	3.0	30m	100n	100	2.0m	20	Δ	400f	Δ	L17k	A				
23	2N4260	200m	1.6GΔ	1.1m	S	S	15	15	4.5	30m	5.0n#	1.00	1.0m	25	Δ	3.0p	Δ	TO72	G				
24	2N4261	200m	2.0GΔ	1.1m	S	S	15	15	4.5	30m	5.0n#	1.00	1.0m	25	Δ	3.0p	Δ	TO72	G				
25	MM4049	200m	4.0GΔ	1.1m	S	J	15	10	4.5	30m	10n	2.00	25m	80	Δ	1.2p	Δ	AN	TO72	G			
26#	BC257	220m	1.30M	2.2m	Δ	J	45	45	5.0	100m	100n	5.00	2.0m	260	Δ	6.0p	Δ	PE	TO92	A			
27#	BC258	220m	1.30M	2.2m	Δ	J	25	25	5.0	100m	100n	5.00	2.0m	500	Δ	6.0p	Δ	PE	TO92	A			
28#	BC259	220m	1.30M	2.2m	Δ	J	20	20	5.0	100m	100n	5.00	2.0m	500	Δ	6.0p	Δ	PE	TO92	A			
29#	BC157	220m	2.00M	2.2m	Δ	J	45	45	6.0	100m	50n	5.00	2.0m	50	Δ	6.0p	Δ	PE	MM10	A			
30#	BC158	220m	2.00M	2.2m	Δ	J	20	20	5.0	100m	100n	5.00	2.0m	50	Δ	6.0p	Δ	PE	MM10	A			
31#	BC159	220m	2.00M	2.2m	Δ	J	20	20	5.0	100m	50n	5.00	2.0m	240	Δ	6.0p	Δ	PE	MM10	A			
32	MMT71	225m	2.0m	2.0m	T	J	25	20	4.0	50m	50n	5.00	2.0m	150	Δ	2.0p	Δ	AN	u43	C			
33	MMT75t	225m	2.0m	2.0m	T	J	30	20	5.0	200m	100n	1.00	50m	20	Δ	5.0p	Δ	AN	u43	C			
34	GT1844	225m	2.0m	1.8m	S	S	60	60	3.0	50m	50n	100	1.0m	15		1.0ub	35	20	A	TO5	A		
35	MMT3798	225m	40MΔ	2.0m	T	J	60	60	3.0	50m	50n	100	1.0m	275		18u	8.0k	2.0	4.0p	Δ	AN	u43	D
36	MMT3799	225m	40MΔ	2.0m	T	J	60	60	3.0	50m	50n	100	1.0m	475		30u	16k	4.0	4.0p	Δ	AN	u43	D
37	A3T2906T	225m	200MΔ	1.8m	S	S	60	40	5.0	500m	20n	100	1.0m	25	Δ	12p	Δ	PE	u44	A			
38	A3T2906AT	225m	200MΔ	1.8m	S	S	60	60	5.0	500m	10n	100	1.0m	40	Δ	12p	Δ	PE	u44	A			
39	A3T2907T	225m	200MΔ	1.8m	S	S	60	40	5.0	500m	20n	100	1.0m	50	Δ	12p	Δ	PE	u44	A			
40	A3T2907AT	225m	200MΔ	1.8m	S	S	60	60	5.0	500m	10n	100	1.0m	100	Δ	12p	Δ	PE	u44	A			
41	MMT3905t	225m	200MΔ	2.0m	T	J	40	40	5.0	200m	50n	1.00	1.0m	50	Δ	5.0p	Δ	AN	u23c	F			
42	MMT3906t	225m	250MΔ	2.0m	T	J	40	40	5.0	200m	50n	1.00	1.0m	100	Δ	5.0p	Δ	AN	u23c	F			
43	MMT2907t	225m	260M	2.0m	T	J	60	40	5.0	600m	50n	100	1.0m	50	Δ	4.8p	Δ	AN	u43	D			
44	A3T2894t	225m	400MΔ	1.8m	S	S	12	12	4.0	200m	2.0u	500	30m	30	#	6.0p	Δ	PE	u44	A			
45	MMT731	225m	400MΔ	2.0m	T	J	8.0	8.0	4.0	200m	100n	1.00	1.0m	30	Δ	5.0p	Δ	AN	u43	C			
46	MMT2389t	225m	500MΔ	2.0m	T	J	40	15	4.5	200m	100n	1.00	1.0m	120	#	4.0p	Δ	AN	u43	D			
47	MMT3816t	225m	700MΔ	2.0m	T	J	15	12	4.5	250m	100n	1.00	1.0m	30	#	6.0p	Δ	AN	u43	C			
48	MMT808	225m	2.5G	2.0m	T	J	8.0	5.0		10m	1.0u	1.00	1.0u	65	t	420f	Δ	AN	u43	C			
49	MMT809	225m	2.5G	2.0m	T	J	8.0	5.0		10m	1.0u	1.00	1.0u	70	t	470f	Δ	AN	u43	C			
50#	BCY29	230m*	500k	2.2m	S	J	60	60	30	50	100n	6.00	6.00	25		30u	100	3.0	45p	Δ	TO5	A	
51	2N3342t	250m	1.6m	1.6m	S	S	20	8.0	20	50m	20n	1.00	5.0m	30	Δ	10p	Δ	A	TO5	A			
52#	2S4539	250m	2.5m	2.5m	Δ	J	60	45	5.0	200m	200n	1.00	10m	40	Δ						TO92	B	
53#	2S4545	250m	1.6m	1.6m	S	J	70	60	5.0	200m	100n	1.00	5.0m	80	t						TO92	B	
54	2N3401Δ	250m	100kΔ	2.0m	S	S	25	25	25	100m	100n	5.00	1.0m	4.0	Δ	15p	Δ	Δ	TO5	A			
55	2N327A	250m	200k	1.8m	S	J	50	40	20	50m	100n	5.00	3.0m	15	t	35u	1.0k		7.0p	Δ	FA	TO5	A
56	2N1034	250m	200k	1.8m	S	J	50	40	20	50m	1.0u	6.0	1.0m	15		15u	900		7.0p	Δ	FA	TO5	A
57	2N1275	250m	200k	1.8m	S	J	100	80	60	50m	1.0u	5.00	1.0m	15	t	11u	1.5k	7.5	6.0p	Δ	FA	TO5	A
58	2N1855	250m	200k	1.8m	S	J	125	100	125	50m	1.0u	5.00	1.0m	15	t	11u	1.5k	7.5	5.0p	Δ	FA	TO5	A
59	2N1854	250m	250k	1.8m	S	J	100	80	100	50m	1.0u	5.00	1.0m	30	t	11u	1.5k	7.5	5.0p	Δ	FA	TO5	A
60	2N1856	250m	250k	1.8m	S	J	125	100	125	50m	1.0u	5.00	1.0m	30	t	11u	1.5k	7.5	5.0p	Δ	FA	TO5	A
61	2N328A	250m	300k	1.8m	S	J	50	35	20	50m	100n	5.00	3.0m	30	t	40u	1.7k		7.0p	Δ	FA	TO5	A
62	2N1035	250m	300k	1.8m	S	J	50	50	20	50m	1.0u	6.0	1.0m	30	t	40u	1.7k		7.0p	Δ	FA	TO5	A
63	2N1037	250m	300k	1.8m	S	J	50	35	20	50m	1.0u	6.00	1.0m	25		20u	1.4k		7.0p	Δ	FA	TO5	A
64	2N1623	250m	300k	1.8m	S	J	50	20	20	50m	1.0u	6.00	1.0m	25	t	35u	1.0k		7.0p	Δ	FA	TO5	A
65	2N1036	250m	500k	1.8m	S	J	50	30	20	50m	1.0u	6.0	1.0m	60		50u	2.5k		7.0p	Δ	FA	TO5	A
66	2N1843	250m	700k	1.8m	S	J	25	25	20	50m	1.0n	6.00	1.0m	18		35ub			5.0p	Δ	A	TO5	A
67	2N2002	250m	800k	1.6m	S	J	30	5.0	30	100m	1.0n	6.0	1.0m			20p	Δ	A	20p	Δ	A	TO5	A
68	2N2003	250m	800k	1.6m	S	J	30	5.0	30	100m	3.0n	6.0	1.0m			20p	Δ	A	20p	Δ	A	TO5	A
69	2N2004	250m	800k	1.6m	S	J	50	15	50	100m	5.0u	6.00	1.0m			8.0p	Δ	A	8.0p	Δ	A	TO5	A
70	2N2005	250m	800k	1.6m	S	J	50	15	50	100m	5.0u	6.0	1.0m			10p	Δ	A	10p	Δ	A	TO5	A
71	2N2006	250m	800k	1.6m	S	J	60	35	60	100m	5.0u	6.0	1.0m			10p	Δ	A	10p	Δ	A	TO5	A
72	2N2																						

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX COLL. DISS. @25°C (W)	2 fab	DERATE IN FREE AIR W/C	TEMPERATURE M A X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS					Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	REMARKS	
						BV <sub>ceo</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ceo</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER						
											V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)					h <sub>re</sub> X.0001
1	2N3345	250m	2.0M	1.7m	SS	50	50	50	50m	5n	500	1.0m	15	1Δ	25p	Δ	T05	A		
2	2N3346	250m	2.0M	1.7m	SS	50	50	50	50m	5n	500	1.0m	25	1Δ	25p	Δ	T05	A		
3	BCY34	250m	2.4M	2.0m	SJ	32	32	16	100m	.05u	6.0	1.0m	35		25u	1.4k	6.0	A		
4	BCY32	250m	2.5M	2.0m	SJ	64	64	32	100m	.05u	6.0	1.0m	55		30u	1.7k	5.0	A		
5	OC201	250m	3.2M	2.0m	SJ	25	20	10	50m	.50u	6.0	1.0m	40		80u	2.5k	7	A		
6	OC202	250m	3.2M	2.0m	SJ	15	10	10	50m	.50u	6.0	1.0m	70		42u	2.1k	6.0	A		
7	2N1027	250m	4.0M	1.6m	SJ	18	15	18	100m	.25u	6.0	1.0m	30		1.4ub	35	10	A		
8	2N1219	250m	5.0M	1.7m	SJ	30	25	20	100m	.10u	.25	5.0m	18	1Δ	15p	Δ	T05	A		
9	2N1221	250m	5.0M	1.7m	SJ	30	25	10	100m	.10u	6.0	1.0m	18	1Δ	15p	Δ	T05	A		
10	2N1028	250m	6.0M	1.6m	SJ	18	10	12	100m	.25u	6.0	1.0m	9.0	Δ	1.4ub	35	10	A		
11	2N942	250m	10.M	1.7m	SS	25	8.0	25	50m	2.5u	6.0	1.0m	50		7.0p	Δ	T018	A		
12	2N1918	250m	10.M	1.7m	SS	25	8.0	25	50m	2.5u	6.0	1.0m	50		7.0p	Δ	T05	A		
13	2N941	250m	12.M	1.7m	SS	25	8.0	25	50m	2.5u	6.0	1.0m	50		7.0p	Δ	T018	A		
14	2N3812*	250m	30M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	15k	25	A		
15	2N3813*	250m	30M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
16	2N3814*	250m	30M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	15k	25	A		
17	2N3815*	250m	30M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
18	2N3816*	250m	30M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	15k	25	A		
19	2N3817*	250m	30M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
20	ZTX530	250m	30M	2.5m	ΔA	30	30	5.0	500m	200n	5.0	100u	60	Δ	8.0p	PL	X59	F		
21	ZTX531	250m	30M	2.5m	ΔA	45	45	5.0	500m	200n	5.0	100u	60	Δ	8.0p	PL	X59	F		
22	2N4288	250m	40M	2.0m	SS	30	25	6.0	100m	50n	5.0	1.0m	60	Δ	10u	12	1.2	A		
23	2N4289	250m	40M	2.0m	SS	60	45	7.0	100m	10n	5.0	1.0m	60	Δ	10u	12	1.2	A		
24	AT454	250m	40M	2.5m	ΔJ	30	30	5.0	50u	20n	10	100u	60	Δ	6.0p	PE	MM12	A		
25	AT455	250m	40M	2.5m	ΔJ	45	45	5.0	50u	20n	10	100u	60	Δ	6.0p	PE	MM12	A		
26	2N2802*	250m	60M	1.6m	SS	25	20	5.0	30m	10n	5.0	1.0m	20	Δ	1.0u	12	12	A		
27	2N2803*	250m	60M	1.6m	SS	25	20	5.0	30m	10n	5.0	1.0m	20	Δ	1.0u	12	12	A		
28	2N2804*	250m	60M	1.6m	SS	25	20	5.0	30m	10n	5.0	1.0m	20	Δ	1.0u	12	12	A		
29	2N2805*	250m	60M	1.6m	SS	25	20	5.0	30m	10n	5.0	1.0m	40	Δ	1.0u	12	12	A		
30	2N2806*	250m	60M	1.6m	SS	25	20	5.0	30m	10n	5.0	1.0m	40	Δ	1.0u	12	12	A		
31	2N2807*	250m	60M	1.6m	SS	25	20	5.0	30m	10n	5.1	1.0m	40	Δ	1.0u	12	12	A		
32	2N3800*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	30k	25	A		
33	2N3801*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
34	2N3802*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	30k	25	A		
35	2N3803*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
36	2N3804*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	30k	25	A		
37	2N3804A*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	30k	25	A		
38	2N3805*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
39	2N3805A*	250m	100M	1.4m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
40	2N3816A*	250m	100M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	150	Δ	60u	15k	25	A		
41	2N3817A*	250m	100M	1.5m	SS	60	60	5.0	50m	.01u	10	1.0m	300	Δ	60u	40k	25	A		
42	2N4290	250m	100M	2.0m	SS	30	20	5.0	600m	500n	5.0	1.0m	60	Δ	10u	12	1.2	A		
43	2N4291	250m	100M	2.0m	SS	40	30	6.0	600m	200n	5.0	1.0m	60	Δ	10u	12	1.2	A		
44	MQ3799*	250m	100M	1.5m	SJ	60	60	5.0	50m	.01u	10	1.0m	500		12u	12k	2.5	A		
45	MQ3799A*	250m	100M	1.5m	SJ	60	60	5.0	50m	.01u	10	1.0m	500		12u	12k	2.5	A		
46	BC158A	250m	150M	2.5m	ΔJ	30	25	5.0	100m	100n	5.0	2.0m	125	Δ	4.5p	PET	MM10	A		
47	BC158B	250m	150M	2.5m	ΔJ	30	25	5.0	100m	100n	5.0	2.0m	240	Δ	4.5p	PET	MM10	A		
48	BC159A	250m	150M	2.5m	ΔJ	25	20	5.0	100m	100n	5.0	2.0m	125	Δ	4.5p	PET	MM10	A		
49	BC159B	250m	150M	2.5m	ΔJ	25	20	5.0	100m	100n	5.0	2.0m	240	Δ	4.5p	PET	MM10	A		
50	2SA402	250m	200M	60	SJ	35	30	100m	1.0u	6.0	2.0m	200	†	6.0p	PE	T018	A			
51	2SA522	250m	200M	1.7m	SJ	25	20	5.0	100m	1.0u	10	10m	50		4.0p	PE	T018	A		
52	2SA522A	250m	200M	1.7m	SJ	50	40	5.0	100m	1.0u	10	10m	50		4.0p	PE	T018	A		
53	AT331	250m	200M	2.5m	ΔJ	20	4.0	250m	.50u	2.0	150m	35	†Δ	25p	PL	L17d	A			
54	MD2904AF*	250m	200M	1.4m	SJ	60	60	5.0	600m	.02u	10	150m	40	†#	8p	ANΔ	L17d	A		
55	MD2904F*	250m	200M	1.4m	SJ	60	60	5.0	600m	.02u	10	150m	40	†#	8p	ANΔ	L17d	A		
56	MD2905AF*	250m	200M	1.4m	SJ	60	60	5.0	600m	.02u	10	150m	100	†#	8p	ANΔ	L17d	A		
57	MD2905F*	250m	200M	1.4m	SJ	60	60	5.0	600m	.02u	10	150m	100	†#	8p	ANΔ	L17d	A		
58	MD3133F*	250m	200M	1.4m	SJ	50	35	4.0	600m	.05u	10	150m	40	†#Δ	10p	ANΔ	T089	A		
59	MD3134F*	250m	200M	1.4m	SJ	50	35	4.0	600m	.05u	10	150m	100	†#Δ	10p	ANΔ	T089	A		
60	2SA4991	250m	250M	1.6m	SJ	50	40	5.0	100m	500n	1.0	10m	30	†A*	5.0p	PE	T018	A		
61	2SA5001	250m	250M	1.6m	SJ	30	20	5.0	100m	500n	1.0	10m	30	†A*	5.0p	PE	T018	A		
62	2N4940*	250m	300M	1.5m	SS	50	40	5.0	50m	0.2u	10	1.0m	50	Δ	50u	10k	10	A		
63	2N4941*	250m	300M	1.5m	SS	50	40	5.0	50m	0.2u	10	1.0m	50	Δ	50u	10k	10	A		
64	ME0463†	250m	300M	2.0m	SJ	30	20	* 5.0	10n	1.0	100u	30	†	4.0p	PE	R110c	A			
65	BF450	250m	325M	2.3m	SJ	40	40	4.0	25m	50n	1.0	1.0m	60	†	350ft	PE	X64c	A		
66	BF451	250m	325M	2.3m	SJ	40	40	4.0	25m	50n	1.0	1.0m	30	†	350ft	PE	X64c	A		
67	ME0461†	250m	350M	2.0m	SJ	60	50	* 6.0	10n	1.0	100u	40	†	3.5p	PE	R110c	A			
68	ME0462†	250m	350M	2.0m	SJ	50	40	* 6.0	10n	1.0	100u	80	†	3.5p	PE	R110c	A			
69	ZTX510†	250m	400M	2.5m	ΔA	12	12	4.0	200m	#100n	1.0	100m	20	†Δ#	6.0p	PL	X59	A		
70	BF324	250m	450M	2.3m	SJ	30	30	4.0	25m	50n	1.0	4.0m	50		100ft	PE	X64c	A		
71	S3639	250m	500M	2.5m	ΔS	6.0	6.0	4.0	40	0.1u	30	10m	30	†Δ	5.5p	PEΔ	T092	A		
72	S3640	250m	500M	2.5m	ΔS	12	12	4.0	80m	.01u	3.0	10m	30	†Δ	5.5p	PEΔ	T092	A		
73	ME0491†	250m	750M	2.0m	SJ	30	20	* 5.0	10u	1.0	1.0m	40	†	3.0p	PE	R110c	A			
74	ME0492†	250m	750M	2.0m	SJ	25	16	* 5.0	10u	1.0	1.0m	50	†	3.0p	PE	R110c	A			
75	ME0493†	250m	750M	2.0m	SJ	15	12	* 5.0	10u	1.0	1.0m	40	†	3.0p	PE	R110c	A			
76	BC201	260m	100M	1.2m	ΔJ	5.0	5.0	5.0	50m	10u	5.0	.25m	630	*†	u32	PE	B	B		
77	BC202	260m	100M	1.2m	ΔJ	30	20	5.0	50m	10u	5.0	.25m	630	*†	u32	PE	B	B		
78	BC203	260m	100M	1.2m	ΔJ	45	30	5.0	50m	10u	5.0	.25m	630	*†	u32	PE	B	B		
79	BCY27	275m	1.0M	2.2m	SJ</															



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C (Hz)	M E M P	ABS MAX RATINGS @25°C				MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG Y2000 s/a TO200 Ser.	# C E O A D E		
					Vbcco (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS Vcb (V)	le (A)	hfe					COMMON EMITTER hoe (mhos)	hie (Ω)
1#	2S3020	300m	80mS	1.7m	SS	40	40	20	100m	10u	6.0∅	10m∅	11	40p	A∅	ZA11		
2#	2S3021	300m	80mS	1.7m	SS	15	15	10	100m	10u	6.0∅	10m∅	11	40p	A∅	ZA11		
3#	OC206	300m	85mS	2.5m	SJ	32	32	12	250m	50u	1.0∅	150m∅	16 tΔ			R8		
4#	2N3842∅	300m	1.0mS	2.4m	SS	120	120	120	100m	20m	5.0∅	1.0m∅	10 tΔ	9p∅	A		T018 A	
5#	2S321	300m	1.0M	1.7m	∇J	80	80	30	50m	10u	6.0	1.0m	15	40p	A		R51	
6#	2S322	300m	1.0M	2.4m	∇J	40	40	20	50m	10u	6.0	1.0m	20	40p	A		R51	
7#	2S303	300m	1.2M	1.7m	SJ	25	25	20	100m	10u	6.0	1.0m	35	40p	A		T05	
8#	2S3030	300m	1.2M	1.7m	SS	25	25	10	100m	10u	6.0∅	10m∅	19	40p	A∅		ZA11	
9#	2N3841∅	300m	1.5mS	1.7m	SS	100	100	80	100m	2n∅	5.0∅	1.0m∅	20 tΔ	9p∅	A		T018 A	
10#	2S323	300m	2.0M	2.4m	∇J	25	25	20	50m	10u	6.0	1.0m	35	40p	A		R51	
11#	2S324	300m	3.0M	2.4m	∇J	15	15	15	50m	10u	6.0	1.0m	75	40p	A		R51	
12#	2S304	300m	3.5M	1.7m	SJ	15	15	15	100m	10u	6.0	1.0m	75	40p	A		T05	
13#	2S3040	300m	3.5M	1.7m	SJ	15	15	10	100m	10u	6.0∅	10m∅	39	40p	A∅		ZA11	
14#	3N90∅	300m	6.0mS	1.7m	SS	50	30	20m	0.1u∅					10p∅	Δ		T072 GD∅	
15#	3N91∅	300m	6.0mS	1.7m	SS	50	30	20m	0.1u∅					10p∅	Δ		T072 GD∅	
16#	3N92∅	300m	6.0mS	1.7m	SS	50	30	20m	0.1u∅					10p∅	Δ		T072 GD∅	
17#	3N93∅	300m	6.0mS	1.7m	SS	50	30	20m	0.1u∅					10p∅	Δ		T072 GD∅	
18#	JAN3N93∅	300m	6.0mS	1.7m	SS	50	50	20m	10n∅					10p∅	Δ		T072 GD∅	
19#	3N94∅	300m	6.0mS	1.7m	SS	50	50	20m	0.1u∅					10p∅	Δ		T072 GD∅	
20#	3N95∅	300m	6.0mS	1.7m	SS	50	50	20m	0.1u∅					10p∅	Δ		T072 GD∅	
21#	3N129∅	300m	8.0mS	1.6m	SS	20	10	20m	1.0n					10p∅	Δ		T072 GC∅	
22#	3N130∅	300m	8.0mS	1.6m	SS	30	20	20m	1.0n					10p∅	Δ		T072 GC∅	
23#	3N131∅	300m	8.0mS	1.6m	SS	40	30	20m	1.0n					10p∅	Δ		T072 GC∅	
24#	3N132∅	300m	8.0mS	1.6m	SS	50	40	20m	1.0n					10p∅	Δ		T072 GC∅	
25#	3N133∅	300m	8.0mS	1.6m	SS	60	50	20m	1.0n					10p∅	Δ		T072 GC∅	
26#	3N134∅	300m	8.0mS	1.7m	SS	20	15	20m	0.1u					12p∅	Δ		T072 GC∅	
27#	3N135∅	300m	8.0mS	1.7m	SS	40	30	20m	0.1u					12p∅	Δ		T072 GC∅	
28#	3N136∅	300m	8.0mS	1.7m	SS	60	50	20m	0.1u					12p∅	Δ		T072 GC∅	
29#	2N864A1	300m	12M	1.6m	SS	6.0	6.0	6.0	100m	1.0n	6.0∅	1.0m	25 Δ	700	9.0p∅		T018	
30#	JAN3N108∅	300m	12M	1.6m	SS	50	20	20m	250p∅					10p∅			T072 GC	
31#	3N114∅	300m	12M	1.7m	SS	30	12	20m	0.1u∅					10p∅			T072 GD∅	
32#	3N115∅	300m	12M	1.7m	SS	30	12	20m	0.1u∅					10p∅			T072 GD∅	
33#	3N116∅	300m	12M	1.7m	SS	30	12	20m	0.1u∅					10p∅			T072 GD∅	
34#	3N117∅	300m	12M	1.6m	SS	50	20	20m	1.0n∅					10p∅			T072 GD∅	
35#	3N118∅	300m	12M	1.7m	SS	50	20	20m	0.1u∅					10p∅			T072 GD∅	
36#	3N119∅	300m	12M	1.7m	SS	50	20	20m	0.1u∅					10p∅			T072 GD∅	
37#	2N885A1	300m	24M	1.6m	SS	10	6.0	1.0	100m	1.0n	6.0∅	1.0m	100 Δ	700	9.0p∅		T018	
38#	2H1254†	300m	25M	2.0m	SA	25	5	50	200n∅		10	2.0m	25	b	30 ∅		T018	
39#	2H1256†	300m	25M	2.0m	SA	35	5	50	200n∅		10	2.0m	25	b	30 ∅		T018	
40#	2H1258†	300m	25M	2.0m	SA	25	5	50	200n∅		10	2.0m	25	b	30 ∅		T018	
41#	ZT152	300m	30M	2.4m	SA	25	20	15	500m		6.0∅	100m	35 t		5.0p		T018	
42#	2H1255†	300m	40M	2.0m	SA	25	5	50	200n∅		10	2.0m	55	b	30 ∅		T018	
43#	2H1257†	300m	40M	2.0m	SA	35	5	50	200n∅		10	2.0m	55	b	30 ∅		T018	
44#	2H1259†	300m	40M	2.0m	SA	25	5	50	200n∅		10	2.0m	55	b	30 ∅		T018	
45#	2SA637	300m	40M	2.0m	SJ	150	150	50	50m	1.0u∅	3.0∅	15m∅	30 tΔ				A∅	
46#	HT100†	300m	40M	2.0m	SA	20	20	50	50m	200n∅	1.0	2.0m	11 t	b	30 ∅		T018	
47#	HT101†	300m	40M	2.0m	SA	20	20	50	50m	200n∅	1.0	10m∅	35 tΔ	b	30 ∅		T018	
48#	2N2862	300m	45M	1.7m	SS	25	20	50	100m	0.1u∅	5.0∅	1.0m∅	25 Δ	50u∅	5k∅		A∅	
49#	2N2861	300m	60M	1.7m	SS	25	20	50	100m	0.1u∅	5.0∅	1.0m∅	50 Δ	50u∅	5k∅		A∅	
50#	2N3347*	300m	60M	2.0m	SS	60	45	60	60	10m∅	5.0∅	1.0m∅	60 Δ	100u	1.5k	6.0p∅		
51#	2N3348*	300m	60M	2.0m	SS	60	45	60	60	10m∅	5.0∅	1.0m∅	60 Δ	100u	1.5k	6.0p∅		
52#	2N3349*	300m	60M	2.0m	SS	60	45	60	60	10m∅	5.0∅	1.0m∅	60 Δ	100u	1.5k	6.0p∅		
53#	2N3350*	300m	60M	2.0m	SS	60	45	60	60	10m∅	5.0∅	1.0m∅	150 Δ	100u	3.7k	6.0p∅		
54#	2N3351*	300m	60M	2.0m	SS	60	45	60	60	10m∅	5.0∅	1.0m∅	150 Δ	100u	3.7k	6.0p∅		
55#	2N3352*	300m	60M	2.0m	SS	60	45	60	60	10m∅	5.0∅	1.0m∅	150 Δ	100u	3.7k	6.0p∅		
56#	BC137	300m	60M	3.0m	∇J	40	40	4.0	600m	0.5u∅	10∅	10m∅	85	130u	400	1.4	10p∅	DPE R97
57#	BC138	300m	60M	3.0m	∇J	40	25	5.0	100m	5.0 ∅			40 tΔ				T018 A	
58#	EN1492	300m	60M	3.0m	∇J	50	35	5.0	50	1.0u∅	10∅	150m∅	30 t#Δ	1.0u∅/b	35 ∅	8.0 ∅	45p∅	DPE TO106
59#	2SA561	300m	70M	3.0m	∇J	50	50	5.0	150m	100n∅	1.0∅	20m∅	100 t				20p∅	PE R67a
60#	2SA562	300m	70M	3.0m	∇J	30	30	5.0	400m	100n∅	1.0∅	100m∅	40 tΔ*				13p	PE R67a
61#	2N3638†	300m	100M	3.0m	∇J	25	25	4.0	500m	35n∅	1.0∅	10m∅	25 Δ	1.2m∅	2.0k∅	26 ∅	20p∅	R110a A
62#	2N5120*	300m	100M	1.7m	SS	45	45	7.0	10m	100p∅	5.0∅	10u∅	100 tΔ				800fs∅	L17c
63#	2N5121*	300m	100M	1.7m	SS	45	45	7.0	10m	100p∅	5.0∅	10u∅	100 tΔ				800fs∅	L17c
64#	2N5122*	300m	100M	1.7m	SS	45	45	7.0	10m	100p∅	5.0∅	10u∅	50 tΔ				800fs∅	L17c
65#	2N5142†	300m	100M	2.9u	∇J	20	20	4.0	500m	0.5u∅	10∅	300m∅	15 t#Δ				10p∅	T0105 A
66#	2SA502	300m	100M	3.0m	∇J	80	70	3.0	50m	1.0u	1.0∅	20m∅	60 t				7.0p	EP R67a
67#	2SA604	300m	100M	2.4m	SJ	120	100	5.0	30m	1.0u#	3.0∅	1.0m∅	40 tΔ				5p∅	PE TO18 A∅
68#	2SA605	300m	100M	2.4m	SJ	180	160	6.0	50m	50n	3.0∅	1.0m∅	50 tΔ				5.0p∅	PE TO18 A∅
69#	CS3702	300m	100M	3.0m	SS	40	25	5.0	200m	100n∅	5.0∅	50m∅	300 #∅				12p∅	TO106
70#	CS3703	300m	100M	3.0m	SS	50	30	5.0	200m	100n∅	5.0∅	50m∅	150 #∅				12p∅	TO106
71#	CS5447	300m	100M	2.3m	SJ	40	25	5.0	200m	100n	5.0	50m	30				12f	TO106 A
72#	CS5448	300m	100M	2.3m	SJ	50	30	5.0	200m	100n	5.0	50m	30				12f	TO106 A
73#	GI3702	300m	100M	3.0m	∇J	40	25	5.0	100m	1.0u∅	5.0∅	50m∅	60 tΔ#				12p∅	R97d
74#	GI3703	300m	100M	3.0m	∇J	50	30	5.0	100m	1.0u∅	5.0∅	50m∅	30 tΔ#				12p∅	R97d
75#	NKT20329	300m	100M	2.0m	SJ	30	30	4.0	100m	0.1u∅	10∅	0.1m∅	60 t				4.0p	TO18 A∅
76#	V435†	300m	100M	3.0m	∇J	20	20	5.0	50	100n∅	10∅	10m∅	40 tΔ				12p∅	PE R97
77#	MPSA70	300m	125M	2.7m	TJ	40	40	4.0	100m	100n	10∅	5.0m∅	40 tΔ*				4.0p∅	AN TO92 A
78#	BC179A	300m	130M	2.0m	SJ	25	20	5.0	100m	100n∅	5.0∅	2.0m∅	125 Δ				4.5p	PE TO18 A∅
79#	BC307Δ	300m	130M	2.2m	SJ	45	50	5.0	100m	100n	5.0	2.0m∅	222 *	25u	2.7k	3.0	6.0p∅	PE X64a C
80#	BC308Δ	300m	130M	2.2m	SJ	25	50	5.0	100m	100n	5.0	2.0m∅	222 *	25u	2.7k	3.0	6.0p∅	PE X64a C



# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C	T M A X P	ABS MAX RATINGS @25°C				Ic	Icbo @MAX Vcb (V)	TYPICAL h PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a Ser.	# C O D E
					BVcbo (V)	BVceo (V)	BVebo (V)	hfe			Vcb (V)	le (A)	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	Z12841	300m	150mΔ	2.4m	\$J	45	45	4.0	500m#	50n	6.0p	1.0m	90				15p	PL	R81k	A
2#	Z12871	300m	150mΔ	2.4m	\$J	25	25	4.0	500m#	50n	6.0p	1.0m	90				15p	PL	R81k	A
3#	Z1X500	300m	150mΔ	3.0m	\$A	25	25	5.0	500m#	200n	6.0p	1.0m	50 Δ				6.0p	PL	X59	F
4#	Z1X501	300m	150mΔ	3.0m	\$A	35	35	5.0	500m#	200n	6.0p	1.0m	50 Δ				6.0p	PL	X59	F
5#	Z1X502	300m	150mΔ	3.0m	\$A	35	35	5.0	500m#	200n	6.0p	1.0m	100 Δ				6.0p	PL	X59	F
6#	Z1X503	300m	150mΔ	3.0m	\$A	45	45	5.0	500m#	200n	6.0p	1.0m	50 Δ				6.0p	PL	X59	F
7#	Z1X504	300m	150mΔ	3.0m	\$A	70	70	5.0	500m#	200n	6.0p	1.0m	50 Δ				6.0p	PL	X59	F
8	2N4888	300m	160mΔ	3.0m	\$J	150	150	6.0	100m	.05u	10p	1.0m	500 Δ	40u	20k		4p	PL	R124	A
9	2N4889	300m	160mΔ	3.0m	\$J	150	150	6.0	100m	.01u	10p	1.0m	400 Δ	25u	12k	5	4p	PL	R124	A
10#	V205T	300m	160mΔ	2.0m	\$A	15	10	3.0	100m	.02u	10p	2.0m	55 Δ				8.0p	DPE	TO18	A
11#	V435A	300m	170mΔ	3.0m	\$J	35	35	5.0	100m	.10u	10p	1.0m	40 Δ				6.0p	PE	R97	A
12#	BC250A	300m	180mΔ	3.0m	\$J	20	20	5.0	100m	.10u	10p	1.0m	35 Δ				4.0p	PE	X64	A
13#	BC250B	300m	180mΔ	3.0m	\$J	20	20	5.0	100m	.10u	10p	1.0m	80 Δ				4.0p	PE	X64	A
14#	BC250C	300m	180mΔ	3.0m	\$J	20	20	5.0	100m	.10u	10p	1.0m	200 Δ				4.0p	PE	X64	A
15#	BC260A	300m	180mΔ	2.0m	\$J	20	20	5.0	100m	.10u	10p	1.0m	35 Δ				4.0p	PE	TO18	A
16#	BC260B	300m	180mΔ	2.0m	\$J	20	20	5.0	100m	.10u	10p	1.0m	80 Δ				4.0p	PE	TO18	A
17#	BC260C	300m	180mΔ	2.0m	\$J	20	20	5.0	100m	.10u	10p	1.0m	200 Δ				4.0p	PE	TO18	A
18	MP5H54	300m	185mΔ	2.7m	\$T	80	80	4.0	100m	.50n	10p	1.0m	70 Δ	6.0u			1.0p	AN	TO92	A
19	MP5H55	300m	185mΔ	2.7m	\$T	80	80	4.0	100m	.50n	10p	1.5m	70 Δ	6.0u			1.0p	AN	TO92	A
20	CS4012T	300m	190m	3.0m	\$J	25	25	4.0	500m		5.0p	4.0m	70 Δ	60u	1.5k	250m	6.0p	E	TO105	A
21	CS4013T	300m	190m	3.0m	\$J	25	25	4.0	500m		5.0p	4.0m	160 Δ	60u	1.5k	250m	6.0p	E	TO105	A
22#	BC187	300m	191mΔ	2.0m	\$J	30	25	5.0	100m	100n	10p	2.0m	140 Δ				4.5p	PE	TO18	A
23	2N2411T	300m	200mΔ	1.7m	\$S	25	20	5.0	100m	.01u	5.0p	1.0m	35 Δ				3.7p	PE	TO18	A
24	2N2412T	300m	200mΔ	1.7m	\$S	25	20	5.0	100m	.01u	5.0p	1.0m	55 Δ				3.7p	PE	TO18	A
25	2N3644T	300m	200mΔ	3.0m	\$J	45	45	5.0	500m	.35n	10p	1.0m	80 Δ				8.0p	PE	R110a	A
26	2N3645T	300m	200mΔ	3.0m	\$J	60	60	5.0	500m	.35n	10p	1.0m	80 Δ				8.0p	PE	R110a	A
27	2N4142T	300m	200mΔ	3.0m	\$J	60	40	5.0	200m	.50n	10p	1.50m	120 Δ				8.0p	PE	R110	A
28	2N4143T	300m	200mΔ	3.0m	\$J	60	40	5.0	200m	.50n	10p	1.50m	300 Δ				8.0p	PE	R110	A
29	2N4228	300m	200mΔ	3.0m	\$J	60	40	5.0	200m	.50n	10p	1.50m	150 Δ				8.0p	PE	R110	A
30#	2SA467	300m	200mΔ	3.0m	\$J	40	30	5.0	400m	.50u	1.0p	1.00m	100 Δ				10p	PE	R67a	B
31#	AT410	300m	200mΔ	2.4m	\$J	30	30	5.0	500m	200n	10p	1.50m	30 Δ				8.0p	PE	MM12aD	A
32#	AT412	300m	200mΔ	2.4m	\$J	45	45	5.0	500m	200n	10p	1.50m	30 Δ				8.0p	PE	MM12aD	A
33#	AT413	300m	200mΔ	2.4m	\$J	45	45	5.0	500m	200n	10p	1.50m	100 Δ				8.0p	PE	MM12aD	A
34#	AT414	300m	200mΔ	2.4m	\$J	30	30	5.0	500m	200n	10p	1.50m	100 Δ				8.0p	PE	MM12aD	A
35#	AT415	300m	200mΔ	2.4m	\$J	30	30	5.0	500m	200n	10p	1.50m	30 Δ				8.0p	PE	MM12aD	A
36#	AT416	300m	200mΔ	2.4m	\$J	45	45	5.0	500m	200n	10p	1.50m	30 Δ				8.0p	PE	MM12aD	A
37#	AT417	300m	200mΔ	2.4m	\$J	45	45	5.0	500m	200n	1.0p	50m	100 Δ				8.0p	PE	MM12aD	A
38#	AT418	300m	200m	2.4m	\$J	30	30	5.0	500m	200n	1.0p	50m	100 Δ				8.0p	PE	MM12aD	A
39#	AT419	300m	200m	2.4m	\$J	30	30	5.0	500m	200n	1.0p	150m	90 Δ				8.0p	PE	MM12aD	A
40#	BC116	300m	200mΔ	3.0m	\$J	45	40	5.0	500m	.50n	10p	1.00m	20 Δ				5.0p	DPE	R97	A
41#	BC126	300m	200mΔ	3.0m	\$J	35	30	5.0	600m	.05u	10p	1.0m	20 Δ				5.0p	DPE	R97	A
42#	BC177	300m	200mΔ	2.0m	\$J	45	45	5.0	100m	.05u	5.0p	2.0m	240 Δ				5.0p	PE	TO18	A
43#	BC177A	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	.05u	5.0p	2.0m	180				4.0p	E	TO18	A
44#	BC177B	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	.05u	5.0p	2.0m	290				4.0p	E	TO18	A
45#	BC177V	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	.05u	5.0p	2.0m	75				4.0p	E	TO18	A
46#	BC177VI	300m	200mΔ	2.0m	\$J	50	45	5.0	100m	.05u	5.0p	2.0m	110				4.0p	E	TO18	A
47#	BC178	300m	200mΔ	2.0m	\$J	20	20	5.0	100m	.10u	5.0p	2.0m	240 Δ				4.0p	PE	TO18	A
48#	BC178A	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	.10u	5.0p	2.0m	180				4.0p	PE	TO18	A
49#	BC178B	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	.10u	5.0p	2.0m	290				4.0p	E	TO18	A
50#	BC178V	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	.10u	5.0p	2.0m	75				4.0p	E	TO18	A
51#	BC178VI	300m	200mΔ	2.0m	\$J	30	25	5.0	100m	.10u	5.0p	2.0m	110				4.0p	E	TO18	A
52#	BC179	300m	200mΔ	2.0m	\$J	20	20	5.0	100m	.05u	5.0p	2.0m	240 Δ				4.0p	PE	TO18	A
53#	BC179B	300m	200mΔ	2.0m	\$J	25	20	5.0	100m	.05u	5.0p	2.0m	290				4.0p	E	TO18	A
54#	BC204A	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	.50n	5.0p	2.0m	125 Δ				4.0p	PE	R110	A
55#	BC204B	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	.50n	5.0p	2.0m	240 Δ				4.0p	PE	R110	A
56#	BC204V	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	.50n	5.0p	2.0m	50 Δ				4.0p	PE	R110	A
57#	BC204VI	300m	200mΔ	3.0m	\$J	45	45	5.0	100m	.50n	5.0p	2.0m	75 Δ				4.0p	PE	R110	A
58#	BC205A	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.10u	5.0p	2.0m	125 Δ				4.0p	PE	R110	A
59#	BC205B	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.10u	5.0p	2.0m	240 Δ				4.0p	PE	R110	A
60#	BC205V	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.10u	5.0p	2.0m	50 Δ				4.0p	PE	R110	A
61#	BC205VI	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.10u	5.0p	2.0m	75 Δ				4.0p	PE	R110	A
62#	BC206B	300m	200mΔ	3.0m	\$J	20	20	5.0	100m	.50n	5.0p	2.0m	240 Δ				4.0p	PE	R110	A
63#	BC212Kt	300m	200mΔ	3.0m	\$J	60	50	5.0	200m	.15n	5.0p	2.0m	50 Δ				10p	PE	X64a	A
64#	BC212KAt	300m	200mΔ	3.0m	\$J	60	50	5.0	200m	.15n	5.0p	2.0m	100 Δ				10p	PE	X64a	A
65#	BC212KBT	300m	200mΔ	3.0m	\$J	60	50	5.0	200m	.15n	5.0p	2.0m	200 Δ				10p	PE	X64a	A
66#	BC212Lt	300m	200mΔ	3.0m	\$J	60	50	5.0	200m	.15n	5.0p	2.0m	50 Δ				10p	PE	X20	B
67#	BC212LAT	300m	200mΔ	3.0m	\$J	60	50	5.0	200m	.15n	5.0p	2.0m	100 Δ				10p	PE	X20	B
68#	BC212LBT	300m	200mΔ	3.0m	\$J	60	50	5.0	200m	.15n	5.0p	2.0m	200 Δ				10p	PE	X20	B
69#	BC213Kt	300m	200mΔ	3.0m	\$J	45	30	5.0	200m	.15n	5.0p	2.0m	70 Δ				10p	PE	X64a	A
70#	BC213KAt	300m	200mΔ	3.0m	\$J	45	30	5.0	200m	.15n	5.0p	2.0m	100 Δ				10p	PE	X64a	A
71#	BC213KBT	300m	200mΔ	3.0m	\$J	45	30	5.0	200m	.15n	5.0p	2.0m	200 Δ				10p	PE	X64a	A
72#	BC213KCT	300m	200mΔ	3.0m	\$J	45	30	5.0	200m	.15n	5.0p	2.0m	350 Δ				10p	PE	X64a	A
73#	BC213Lt	300m	200mΔ	3.0m	\$J	45	30	5.0	200m	.15n	5.0p	2.0m	70 Δ				10p	PE	X20	B
74#	BC213LAT	300m	200mΔ	3.0m																

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)		2 fab (Hz)		DERATE IN FREE AIR W/C		TEMPERATURE (°C)	ABS MAX RATINGS @25°C			MAX I <sub>c</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUCTURE	DWG #/s/a TO200 Ser.	C O D E
		V <sub>cb</sub>	V <sub>ce</sub>	V <sub>eb</sub>	I <sub>c</sub>	h <sub>FE</sub>	BIAS			COMMON EMITTER									
							V <sub>cb</sub>		I <sub>e</sub>	h <sub>FE</sub>	h <sub>oe</sub>		h <sub>ie</sub>	h <sub>re</sub>					
1#	BFW90†	300m	200m	3.0m	200	3.0m	200	40	40	5.0	500m	500n	10m	150	18p†	PLT	MM10	A	
2#	BFW91†	300m	200m	3.0m	200	3.0m	200	20	20	5.0	500m	500n	10m	150	18p†	PLT	MM10	A	
3#	G13644†	300m	200m	3.0m	200	3.0m	200	45	45	5.0	500m	03u†	10m	100	8p†	PLT	TO18	A	
4#	BFX12	300m	210m	2.0m	210	2.0m	210	20	15	5.0	100m	01u	35m	20	10m	PE	TO18	A	
5#	BSY40†	300m	210m	2.0m	210	2.0m	210	20	20	5.0	100m	01u	50m	40	10m	PE	TO18	A	
6#	BFW87†	300m	230m	3.0m	230	3.0m	230	60	60	5.0	500m	500n	5.0m	220	95u	PLT	MM10	A	
7#	BFW89†	300m	230m	3.0m	230	3.0m	230	40	40	5.0	500m	500n	5.0m	220	95u	PLT	MM10	A	
8#	BFX13	300m	230m	2.0m	230	2.0m	230	15	15	5.0	100m	01u	35m	50	10m	PE	TO18	A	
9#	BSY41†	300m	230m	2.0m	230	2.0m	230	25	20	5.0	100m	01u	50m	60	10m	PE	TO18	A	
10	CS3906†	300m	250m	2.4m	250	2.4m	250	40	40	5.0	200m	50n	10m	100	4.5p	DPL	R97a	A	
11	G13638†	300m	250m	3.0m	250	3.0m	250	25	25	4.0	500m	03u†	3.0m	50m	1.0	1.2m	EA	R97d	A
12	G13638A†	300m	250m	3.0m	250	3.0m	250	25	25	4.0	500m	03u†	3.0m	50m	1.5	1.2m	EA	R97d	A
13#	BSW21	300m	300m	2.0m	300	2.0m	300	25	25	5.0	200m	50u	4.5m	2.0m	130	E	TO18	A	
14#	BSW21A	300m	300m	2.0m	300	2.0m	300	50	50	5.0	200m	50u	4.5m	2.0m	130	E	TO18	A	
15#	BSW22	300m	300m	2.0m	300	2.0m	300	25	25	5.0	200m	50u	4.5m	2.0m	250	E	TO18	A	
16#	BSW22A	300m	300m	2.0m	300	2.0m	300	50	50	5.0	200m	50u	4.5m	2.0m	250	E	TO18	A	
17#	BSW44	300m	300m	3.0m	300	3.0m	300	25	25	5.0	200m	50u	4.5m	2.0m	130	E	R110	A	
18#	BSW44A	300m	300m	3.0m	300	3.0m	300	50	50	5.0	200m	50u	4.5m	2.0m	130	E	R110	A	
19#	BSW45	300m	300m	3.0m	300	3.0m	300	25	25	5.0	200m	50u	4.5m	2.0m	250	E	R110	A	
20#	BSW45A	300m	300m	3.0m	300	3.0m	300	50	50	5.0	200m	50u	4.5m	2.0m	250	E	R110	A	
21	2N4451†	300m	400m	1.7m	400	1.7m	400	12	12	4.0	100m	08u	50m	30m	40	6p	PE	TO46	A
22	2N4453†	300m	400m	1.7m	400	1.7m	400	18	18	5.0	200m	01u	50m	30m	40	6p	PE	TO46	A
23	JAN2N4453†	300m	400m	1.7m	400	1.7m	400	25	18	5.0	200m	10n	5.0m	10m	40	6p	PE	TO46	A
24#	BFV81†	300m	400m	1.7m	400	1.7m	400	12	12	4.0	200m	10u	30m	10m	30	6p	PE	u26a	B
25#	BFV81A†	300m	400m	1.7m	400	1.7m	400	12	12	4.0	200m	10u	30m	10m	25	6p	PE	u26a	B
26#	BFV81B†	300m	400m	1.7m	400	1.7m	400	20	15	5.0	200m	10u	50m	10m	40	4.5p	PE	u26a	B
27#	BSV55†	300m	400m	2.4m	400	2.4m	400	50	50	5.0	200m	08u	50m	30m	40	6.0p	PE	u34	A
28#	BSV55A†	300m	400m	2.4m	400	2.4m	400	50	50	5.0	200m	08u	50m	30m	30	6.0p	PE	u34	A
29#	V721†	300m	480m	1.7m	480	1.7m	480	6.0	6.0	4.0	100m	01u	1.0m	10m	50	3.0p	PE	TO18	A
30	2N3304†	300m	500m	1.7m	500	1.7m	500	6.0	6.0	4.0	100m	01u	1.0m	10m	63	3.5p	PE	TO18	A
31	2N5040	300m	500m	3.0m	500	3.0m	500	25	25	4.0	1	0.05u	1.0m	150m	30	35p	DPE	R124	A
32	2N5041	300m	500m	3.0m	500	3.0m	500	40	40	5.0	1	0.05u	1.0m	150m	40	35p	DPE	R124	A
33#	V405A†	300m	550m	2.0m	550	2.0m	550	12	12	4.0	100m	100n	2.0m	5.0m	35	6.0p	DPE	TO18	A
34	2N4207†	300m	650m	1.7m	650	1.7m	650	6.0	6.0	4.5	50m	01u	30m	10m	50	3p	DPE	TO18	A
35	2N4208†	300m	700m	1.7m	700	1.7m	700	12	12	4.5	50m	01u	30m	10m	30	3p	DPE	TO18	A
36	FT1702†	300m	700m	1.7m	700	1.7m	700	12	12	4.0	50m	01u	30m	10m	63	4p	DPE	TO18	A
37	2N4209†	300m	850m	1.7m	850	1.7m	850	15	15	4.5	50m	01u	30m	10m	50	3p	DPE	TO18	A
38	MD5000*	300m	900m	1.9m	900	1.9m	900	20	15	5.0	50m	10n	1.0m	3.0m	50	1.7p	AN	L66b	A
39	MD5000A*	300m	900m	1.9m	900	1.9m	900	20	15	5.0	50m	10n	1.0m	3.0m	50	1.7p	AN	L66b	A
40	MD5000B*	300m	900m	1.9m	900	1.9m	900	20	15	5.0	50m	10n	1.0m	3.0m	50	1.7p	AN	L66b	A
41	2N4080	300m	1.0G	1.7m	1.0G	1.7m	1.0G	20	15	3.0	50m	01u	1.0m	3.0m	20	1.7p	AN	TO72	G
42#	OC207	310m	2.0m	2.5m	2.0m	2.5m	2.0m	50	50	12	250m	50u	6.0m	10m	50	100p	A	R8	
43#	HEP739s	310m	4.0m	2.8m	4.0m	2.8m	4.0m	35	25	15	150m	100n	1.0m	250	20p	AN	TO92	A	
44	MPS404†	310m	4.0m	2.8m	4.0m	2.8m	4.0m	25	24	12	150m	100n	1.5m	12m	30	20p	AN	TO92	A
45	MPS404A†	310m	4.0m	2.8m	4.0m	2.8m	4.0m	35	25	15	150m	100n	1.5m	12m	30	20p	AN	TO92	A
46	2N5086	310m	4.0m	2.8m	4.0m	2.8m	4.0m	50	50	3.0	50m	05u	5.0m	1.0m	150	4p	EA	TO92	A
47	2N5087	310m	4.0m	2.8m	4.0m	2.8m	4.0m	50	50	3.0	50m	05u	5.0m	1.0m	250	4p	EA	TO92	A
48	CS5086	310m	4.0m	2.8m	4.0m	2.8m	4.0m	50	50	3.0	50m	50n	5.0m	1.0m	150	4p	EA	TO106	A
49	CS5087	310m	4.0m	2.8m	4.0m	2.8m	4.0m	50	50	3.0	50m	50n	5.0m	1.0m	250	4p	EA	TO106	A
50	2N5226	310m	50m	2.8m	50m	2.8m	50m	25	25	4.0	500m	30u	10m	50m	30	20p	AN	TO92	A
51	MPSL51	310m	60m	2.8m	60m	2.8m	60m	100	100	4.0	600m	1.0u	10m	1.0m	20	8.0p	AN	TO92	A
52	2N5221	310m	100m	2.8m	100m	2.8m	100m	15	15	3.0	500m	10u	10m	50m	30	15p	EA	TO92	A
53	2N5227	310m	100m	2.8m	100m	2.8m	100m	30	30	3.0	50m	10u	10m	2.0m	50	5p	EA	TO92	A
54	2N5400	310m	100m	2.8m	100m	2.8m	100m	130	120	5.0	600m	100n	10m	1.0m	30	6.0p	EA	TO92	A
55	2N5401	310m	100m	2.8m	100m	2.8m	100m	160	150	5.0	600m	50n	10m	1.0m	40	6.0p	EA	TO92	A
56	MPS33638†	310m	100m	2.8m	100m	2.8m	100m	25	25	4.0	500m	04u	10m	10m	20	20p	EA	TO92	A
57	MPS3702	310m	100m	2.8m	100m	2.8m	100m	25	25	5.0	200m	10u	5.0m	50m	60	12p	EA	TO92	A
58	MPS3703	310m	100m	2.8m	100m	2.8m	100m	50	30	5.0	200m	10u	5.0m	50m	30	12p	EA	TO92	A
59#	HEP717s	310m	120m	2.8m	120m	2.8m	120m	25	25	4.0	100m	100n	1.5m	350	3.5p	EA	TO92	A	
60	2N4402†	310m	150m	2.8m	150m	2.8m	150m	40	40	5.0	600m	1u	1.0m	10m	30	8.5p	EA	TO92	A
61	MPS33638A†	310m	150m	2.8m	150m	2.8m	150m	25	25	4.0	500m	04u	10m	10m	100	1.2m	EA	TO92	A
62	2N3905†	310m	200m	2.8m	200m	2.8m	200m	40	40	5.0	200m	05u	10m	1.0m	50	4.5p	EA	TO92	A
63	2N4125	310m	200m	2.8m	200m	2.8m	200m	30	30	4.0	200m	05u	10m	2.0m	50	4.5p	EA	TO92	A
64	2N4403†	310m	200m	2.8m	200m	2.8m	200m	40	40	5.0	600m	1u	1.0m	10m	60				

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	M E A M X P	ABS MAX RATINGS @25°C					MAX. Icbo @MAX Vcb (A)	TYPICAL h PARAMETERS				Cob (F)	STRUC-TURE	DWG Y200 s/a To200 Ser.	L E O A D E		
					Vcbo (V)	Vceo (V)	Vebo (V)	Ic (A)	Icbo (A)		Vcb (V)	le (A)	hfe	COMMON EMITTER					hoe (mhos)	hie (Ω)
1#	BCY97	350m	15 MΔ	2.9m	SJ	90	90	30	50m	2nφ	6.0φ	1.0mφ	42			4pφ	PEφ	T018	Aφ	
2#	TCH981	350m	15 MΔ	2.9m	SJ	40	40	20	50m	2nφ	6.0φ	1.0mφ	125			4pφ	PEφ	T018	Aφ	
3#	TCH991	350m	15 MΔ	2.9m	SJ	70	70	30	50m	2nφ	6.0φ	1.0mφ	125			4pφ	PEφ	T018	Aφ	
4#	BFS37	350m	30MΔ	2.3m	SJ	45	45	5.0	500m#	10n	5.0φ	100uφ	100 Δ†			8.0pφ	MEφ	u53	F	
5#	BFS37A	350m	30MΔ	2.3m	SJ	30	30	5.0	500m#	100n	5.0φ	100uφ	100 Δ†			8.0pφ	MEφ	u53	F	
6#	2N1196	350m	40MΔ	2.0m	SA	70	70	4.0	15m	250nφ	10	2.0m	10			4.0pφ	MEφ	T05	A	
7	2N5254*	350m	40MΔ	3.4m	ΔJ	40	40	5.0	50m	0.1uφ	5.0φ	1.0mφ	70 Δ			70uφ	25kφ	12 φ	L17t	A
8	2N5255*	350m	40MΔ	3.4m	ΔJ	40	40	5.0	50m	0.1uφ	5.0φ	1.0mφ	175 Δ			70uφ	25kφ	12 φ	L17t	A
9	2N5256*	350m	40MΔ	3.4m	ΔJ	40	40	5.0	50m	0.1uφ	5.0φ	1.0mφ	175 Δ			70uφ	25kφ	12 φ	L17t	A
10	2N1197	350m	45MΔ	2.0m	SA	70	70	4.0	15m	250nφ	10	2.0m	10			300nb	20	600m	T05	A
11#	BFS44	350m	60MΔ	2.3m	SJ	60	60	3.0	1.0 #	100nφ	10φ	10mφ	25 Δ†			25pφ	MEφ	u53	F	
12#	BFS45	350m	60MΔ	2.3m	SJ	60	60	3.0	1.0 #	100nφ	10φ	10mφ	35 Δ†			25pφ	MEφ	u53	F	
13	2N4354†	350m	100MΔ	3.4m	ΔJ	60	60	5.0	500m	0.5uφ	10φ	10mφ	25 Δ†			3pφ	MEφ	R124	A	
14	2N4355†	350m	100MΔ	3.4m	ΔJ	60	60	5.0	500m	0.5uφ	10φ	10mφ	60 Δ†			3pφ	MEφ	R124	A	
15	2N4356†	350m	100MΔ	3.4m	ΔJ	80	80	5.0	500m	0.5uφ	10φ	10mφ	25 Δ†			3pφ	MEφ	R124	A	
16#	BFS40	350m	150MΔ	2.3m	SJ	45	45	3.0	500m#	500n	6.0φ	100uφ	20 Δ†			5.0pφ	MEφ	u53	F	
17#	BFS40A	350m	150MΔ	2.3m	SJ	25	25	3.0	500m#	500n	6.0φ	100uφ	50 Δ†			5.0pφ	MEφ	u53	F	
18#	BFS41	350m	150MΔ	2.3m	SJ	45	45	3.0	500m#	50n	6.0φ	100uφ	40 Δ†			5.0pφ	MEφ	u53	F	
19#	2V205*	350m	160MΔ	2.3m	SJ	15	15	3.0	0.5uφ	10n	1.0φ	1.0mφ	42 †			8.0pφ	DPEφ	L17a	A	
20	2N3673†	350m	200MΔ	2.0m	SS	60	60	5.0	600m	10nφ	10φ	10mφ	55 Δ†			9pφ	DPEφ	T046	A	
21	2N4452†	350m	200MΔ	2.0m	SJ	45	45	5.0	600m	0.1uφ	10φ	10mφ	135 Δ†			8pφ	DPEφ	T046	A	
22#	BCY72	350m	200MΔ	2.0m	SJ	25	25	5.0	200m#	100nφ	1.0φ	10mφ	50 Δ†			11pφ	PE	T018	φ	
23#	BCY70	350m	250MΔ	2.0m	SJ	50	50	4.0	200m#	10nφ	1.0φ	10mφ	50 Δ†			11pφ	PE	T018	φ	
24	MD3467F†	350m	250MΔ	2.0m	SJ	40	40	5.0	1	100nφ	1.0φ	500mφ	40 †#			11pφ	AN	L17d	φ	
25	MD3762F†	350m	250MΔ	2.0m	SJ	40	40	5.0	1.5	100nφ	2.0φ	1	40 †#			11pφ	AN	L17d	φ	
26#	BCY71	350m	300MΔ	2.0m	SJ	45	45	5.0	200m#	0.1uφ	1.0φ	10mφ	100 †			11pφ	PEφ	T018	A	
27#	BCY71A	350m	380MΔ	2.0m	SJ	45	45	5.0	200m	500n	10φ	1.0mφ	260			30u	5.8k	3.5	T018	A
28#	BSV37†	350m	400MΔ	2.3m	SJ	12	12	4.0	500m#	100n	5.0φ	30mφ	40 Δ†			6.0pφ	PE	u53	F	
29	2N4058	360m	2.9m	SS	30	30	6.0	30m	10uφ	5.0φ	10mφ	100 Δ				†	T092	B		
30	2N4059	360m	2.9m	SS	30	30	6.0	30m	10uφ	5.0φ	10mφ	45 Δ				†	T092	B		
31	2N4060	360m	2.9m	SS	30	30	6.0	30m	10uφ	5.0φ	10mφ	45 Δ				†	T092	B		
32	2N4061	360m	2.9m	SS	30	30	6.0	30m	10uφ	5.0φ	10mφ	90 Δ				†	T092	B		
33	2N4062	360m	2.9m	SS	30	30	6.0	30m	10uφ	5.0φ	10mφ	180 Δ				†	T092	B		
34	2N5354	360m	3.6m	SS	25	25	4.0	500m	10u	10φ	2.0mφ	32 Δ				8pφ	MEφ	T098	B	
35	2N5355	360m	3.6m	SS	25	25	4.0	500m	10u	10φ	2.0mφ	80 Δ				8pφ	MEφ	T098	B	
36	2N5356	360m	3.6m	SS	25	25	4.0	500m	10u	10φ	2.0mφ	200 Δ				8pφ	MEφ	T098	B	
37	2N5365	360m	3.6m	SS	40	40	4.0	500m	10u	10φ	2.0mφ	32 Δ				8pφ	MEφ	T098	B	
38	2N5366	360m	3.6m	SS	40	40	4.0	500m	10u	10φ	2.0mφ	80 Δ				8pφ	MEφ	T098	B	
39	2N5367	360m	3.6m	SS	40	40	4.0	500m	10u	10φ	2.0mφ	200 Δ				8pφ	MEφ	T098	B	
40	LDS257	360m	2.9m	SJ	20	15	10	30m	10nφ	5.0φ	1.0mφ	60 Δ†				10pφ	PEΔ	T0122	P	
41#	TPS6516	360m	2.8m	SJ	40	40	4.0	100m	50nφ	10φ	2.0mφ	50 †				4.0pφ	PL	X55a	A	
42#	TPS6517	360m	2.8m	SJ	40	40	4.0	100m	50nφ	10φ	2.0mφ	90 †				4.0pφ	PL	X55a	A	
43#	TPS6518	360m	2.8m	SJ	40	40	4.0	100m	50nφ	10φ	2.0mφ	150 †				4.0pφ	PL	X55a	A	
44#	TPS6519	360m	2.8m	SJ	25	25	4.0	100m	50nφ	10φ	2.0mφ	250 †				4.0pφ	PL	X55a	A	
45#	TPS6522	360m	2.8m	SJ	25	25	4.0	100m	50nφ	10φ	2.0mφ	200 †				4.0pφ	PLφ	X55a	A	
46#	TPS6523	360m	2.8m	SJ	25	25	4.0	100m	50nφ	10φ	2.0mφ	300 †				4.0pφ	PLφ	X55a	A	
47#	BC326	360m	12MΔ	2.0m	SJ	60	60	6.0	50m	10nφ	5.0φ	1.0mφ	150 Δ			40uφ	24kφ	8.0 φ	T018	A
48#	BC325	360m	15MΔ	2.0m	SJ	60	60	6.0	50m	10nφ	5.0φ	1.0mφ	80 Δ			30uφ	13kφ	8.0 φ	T018	A
49	2N3962	360m	40MΔ	2.0m	SJ	60	60	6.0	200m	0.1uφ	5.0φ	1.0mφ	100 Δ			40uφ	17kφ	10 φ	T018	A
50	2N3963	360m	40MΔ	2.0m	SJ	80	80	6.0	200m	0.1uφ	5.0φ	1.0mφ	100 Δ			40uφ	17kφ	10 φ	T018	A
51#	BFW20	360m	40MΔ	2.0m	SJ	60	60	6.0	200m	0.1uφ	5.0φ	1.0mφ	300			19u	8k	10 φ	T018	A
52#	BFW21	360m	40MΔ	2.0m	SJ	80	80	6.0	50m	0.2uφ	5.0φ	1.0mφ	300			19u	8k	10 φ	T018	A
53#	BFX37	360m	40MΔ	2.0m	SJ	60	60	6.0	50m	0.2uφ	5.0φ	1.0mφ	200 †			5.0pφ	DPLφ	T018	A	
54	TZ581	360m	40MΔ	2.8m	SJ	40	30	5.0	500m	10nφ	5.0φ	1.0mφ	325			5.0pφ	DPLφ	T098	B	
55	TZ582	360m	40MΔ	2.8m	SJ	40	30	5.0	500m	10nφ	5.0φ	1.0mφ	225			5.0pφ	DPLφ	T098	B	
56	2N3039†	360m	50MΔ	2.4m	SS	50	35	5.0	500m	0.2uφ	10φ	10mφ	20 Δ			250uφ	600 φ	4.0pφ	T050	A
57	2N3040†	360m	50MΔ	2.4m	SS	40	30	5.0	500m	0.2uφ	10φ	10mφ	40 Δ			500uφ	1.2kφ	4.0pφ	T050	A
58	2N3964	360m	50MΔ	2.0m	SJ	45	45	6.0	200m	0.1uφ	5.0φ	1.0mφ	250 Δ			50uφ	20kφ	10 φ	T018	A
59	2N3965	360m	50MΔ	2.0m	SJ	60	60	6.0	200m	0.1uφ	5.0φ	1.0mφ	250 Δ			50uφ	20kφ	10 φ	T018	A
60#	BFW22	360m	50MΔ	2.0m	SJ	45	45	6.0	200m	0.1uφ	5.0φ	1.0mφ	360			25u	10k	10 φ	T018	A
61#	BFW23	360m	50MΔ	2.0m	SJ	60	60	6.0	200m	0.1uφ	5.0φ	1.0mφ	360			25u	10k	10 φ	T018	A
62	TIS38	360m	50MΔ	2.9m	SS	35	32	4.0	50m	0.1uφ	9.0φ	1.0mφ	25 †			1.7pφ	PE†	T092	B	
63#	V741	360m	60MΔ	6.8m	SJ	30	30	5.0	50u	5.0uφ	5.0φ	5.0uφ	180 †			22u	6.6	3.8	T018	A
64	TIS37	360m	80MΔ	2.9m	SS	35	32	6.0	50m	10uφ	9.0φ	1.0mφ	45 †			1.7pφ	PE†	T092	B	
65	TIS104	360m	90MΔ	2.8m	SS	60	60	6.0	50m	50nφ	5.0φ	1.0mφ	210			4.0pφ	PE†	X55	A	
66	2N869	360m	100MΔ																	

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE @25°C (Hz)	T ABS MAX RATINGS @25°C										TYPICAL h' PARAMETERS										Cob (F)	STRUC-TURE	DWG Y200 Ser.	# C O D E
				M E A X P		BVcbo (V)		BVceo (V)		Vbeo (V)		Ic (A)		Icbo @MAX Vcb (A)		BIAS			COMMON EMITTER								
				V	W/C	V	V	V	A	V	A	V	A	V	A	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)								
1	A5T3905f	360m	200MΔ	2.8m	SS	40	40	5.0	200m	50n#	100	1.0m	50 Δ	40uZ	8.0kZ	5.0 Z	4.5pZ	PE10	X55	A	A						
2	A5T3906f	360m	200MΔ	2.8m	SS	40	40	5.0	200m	50n#	100	1.0m	100 Δ	60uZ	12kZ	10 Z	4.5pZ	PE10	X55	A	A						
3#	AT430	360m	200MΔ	2.0m	SJ	30	30	5.0	500m	200n#	100	150m	30 Δ				8.0pZ	PE	TO18	A	A						
4#	AT431	360m	200MΔ	2.0m	SJ	45	45	5.0	500m	200n	100	150m	30 Δ				8.0pZ	PE	TO18	A	A						
5#	AT432	360m	200MΔ	2.0m	SJ	30	30	5.0	500m	200n	100	150m	100 Δ				8.0pZ	PE	TO18	A	A						
6#	AT433	360m	200MΔ	2.0m	SJ	45	45	5.0	500m	200n	100	150m	100 Δ				8.0pZ	PE	TO18	A	A						
7#	AT434	360m	200MΔ	2.0m	SJ	30	30	5.0	500m	200n	100	150m	30 Δ				8.0pZ	PE	TO18	A	A						
8#	AT435	360m	200MΔ	2.0m	SJ	45	45	5.0	500m	200n	100	150m	30 Δ				8.0pZ	PE	TO18	A	A						
9#	AT436	360m	200MΔ	2.0m	SJ	25	25	4.0	500m	200n	2.0	250m	40 Δ				8.0pZ	PE	TO18	A	A						
10#	AT437	360m	200M	2.0	SJ	30	30	5.0	500m	200n	1.0	50m	100 fΔ#					PE	TO18	A	A						
11#	AT438	360m	200M	2.0	SJ	45	45	4.0	500m	200n	1.0	50m	100 fΔ#					PE	TO18	A	A						
12#	BFV86f	360m	200MΔ	500u	SS	60	40	5.0	600m	.02u	100	1.0m	50 fΔ				8pZ	PE	u26a	B	B						
13#	BFV86A†	360m	200MΔ	500u	SS	60	60	5.0	600m	.01u	100	1.0m	100 fΔ				8pZ	PE	u26a	B	B						
14#	BFV86B†	360m	200MΔ	500u	SS	60	40	5.0	600m	.02u	100	1.0m	25 fΔ				8pZ	PE	u26a	B	B						
15#	BFV86C†	360m	200MΔ	500u	SS	60	60	5.0	600m	.01u	100	1.0m	40 fΔ				8pZ	PE	u26a	B	B						
16	BSX36†	360m	200M	2.0m	SJ	40	40	5.0	500m	.01u	100	.01m	50 f				8pZ	DPE	TO18	A	A						
17▼	GET2904†	360m	200MΔ	3.6m	Δ	60	40	5.0	350m	20n	100	100u	20 fΔ				8.0pZ	PE	X105	F	F						
18▼	GET2905†	360m	200MΔ	3.6m	Δ	60	40	5.0	350m	50n	100	100u	35 fΔ				8.0pZ	PE	X105	F	F						
19▼	GET2906†	360m	200MΔ	3.6m	Δ	60	40	5.0	350m	20n	100	100u	20 fΔ				8.0pZ	PE	X93a	F	F						
20▼	GET2907†	360m	200MΔ	3.6m	Δ	60	40	5.0	350m	50n	100	100u	35 fΔ				8.0pZ	PE	X93a	F	F						
21	LDA450	360m	200MΔ	2.9m	SJ	45	30	5.0		10n	100	1.0m	35 fΔ				8pZ	PE	u34	P	P						
22	LDA451	360m	200MΔ	2.9m	SJ	45	30	5.0		10n	100	1.0m	75 fΔ				8pZ	PE	u34	P	P						
23	LDA452†	360m	200MΔ	2.9m	SJ	45	30	5.0	300m	10n	100	150m	40 fΔ#				8pZ	PE	u34	P	P						
24	LDA453†	360m	200MΔ	2.9m	SJ	45	30	5.0	300m	10n	100	150m	100 fΔ#				8pZ	PE	u34	P	P						
25#	ME0404-1	360m	200MΔ	2.8m	SJ	40	30	5.0		50n	1.0	1.0m	20 fΔ				10pZ	PE	R110c	A	A						
26#	ME0404-2	360m	200MΔ	2.8m	SJ	40	30	5.0		50n	1.0	1.0m	40 fΔ				10pZ	PE	R110c	A	A						
27#	ME501Δ	360m	200MΔ	2.7m	SJ	25		12	500m	100n	1.0	50m	10 fΔ#				13pZ	PEΔ	TO106	A	A						
28#	ME502	360m	200MΔ	2.9m	SJ	25	20	12	500m	10u	1.0	50m	20 fΔ#				13pZ	PEΔ	TO106	A	A						
29#	ME503	360m	200MΔ	2.9m	SJ	30	30	30	500m	.10u	5.0	50m	40 fΔ#				13pZ	PEΔ	R110	A	A						
30#	ME511	360m	200MΔ	2.9m	SJ	50		40	500m	10u	1.0	50m	10 fΔ#				13pZ	PEΔ	TO106	A	A						
31#	ME512	360m	200MΔ	2.9m	SJ	50		40	500m	.10u	1.0	50m	20 fΔ#				13pZ	PEΔ†	TO106	A	A						
32#	ME513	360m	200MΔ	2.8m	SJ	70	60	60	500m	100n	5.0	50m	40 fΔ#				13pZ	PEΔ	R110	A	A						
33#	PL4031†	360m	200MΔ	2.4m	SS	60	40	5.0	600m	20n	100	1.0m	25 fΔ				8pZ	PE	u51	A	A						
34#	PL4032†	360m	200MΔ	2.4m	SS	60	60	5.0	600m	10n	100	1.0m	40 fΔ				8pZ	PE	u51	A	A						
35#	PL4033†	360m	200MΔ	2.4m	SS	60	40	5.0	600m	20n	100	1.0m	50 fΔ				8pZ	PE	u51	A	A						
36#	PL4034†	360m	200MΔ	2.4m	SS	60	60	5.0	600m	10n	100	1.0m	100 fΔ				8pZ	PE	u51	A	A						
37	TIS112†	360m	200MΔ	2.8m	SS	60	40	5.0	600m	20n	100	100u	35 fΔ				8.0pZ	PE†	X55	A	A						
38▼	TP4125	360m	200MΔ	2.8m	SJ	30	30	4.0	200m	50n	1.0	2.0m	50 fΔ#				4.5pZ	PL	X55a	A	A						
39	2N3248†	360m	250MΔ	2.0m	SJ	15	12	5.0	200m	.05u#	1.0	10m	50 fΔ#				8pZ	PE	TO18	A	A						
40	2N3250†	360m	250MΔ	2.0m	SJ	50	40	5.0	200m	.02u#	1.0	1.0m	50 fΔ				40uZ	EA	TO18	A	A						
41	2N3250A†	360m	250MΔ	2.0m	SJ	60	60	5.0	200m	.02u#	1.0	1.0m	50 fΔ#				40uZ	EA	TO18	A	A						
42	JAN2N3250A†	360m	250MΔ	2.0m	SS	60	60	5.0	200m	20n	100	1.0m	50 Δ				40uZ	EA	TO18	A	A						
43	2N3545†	360m	250MΔ	2.0m	SJ	20	20	5.0	200m	.01u#	1.0	1.0m	40 fΔ				8pZ	PE	TO18	A	A						
44	2N5383	360m	250M			40	40				1.0	1.0m	100 fΔ				4.5pZ	PE	X55	A	A						
45	TIS61	360m	250M	2.9m	SJ	40	25	5.0	400m	.01u	2.0	50m	155 f†				1.0	PE	T092	A	A						
46▼	TP4126	360m	250MΔ	2.8m	SJ	25	25	4.0	200m	50n	1.0	2.0m	120 fΔ#				4.5pZ	PL	X55a	A	A						
47	JAN2N2604	360m	300MΔ	2.0m	SJ	80	60	6.0	30m	40n	5.0	1.0m	350 fΔ				6.0pZ	PE	T046	A	A						
48	JAN2N2605	360m	300MΔ	2.0m	SJ	70	60	6.0	30m	40n	5.0	1.0m	600 fΔ				6.0pZ	PE	T046	A	A						
49	2N3249†	360m	300MΔ	2.0m	SJ	15	12	5.0	200m	.05u#	1.0	10m	100 fΔ#				8pZ	PE	TO18	A	A						
50	2N3251†	360m	300MΔ	2.0m	SJ	50	40	5.0	200m	.02u#	1.0	1.0m	100 Δ				60uZ	EA	TO18	A	A						
51	2N3251A†	360m	300MΔ	2.0m	SJ	60	60	5.0	200m	20n	1.0	1.0m	100 fΔ#				60uZ	EA	TO18	A	A						
52	JAN2N3251A†	360m	300MΔ	2.0m	SS	60	60	5.0	200m	20n	100	1.0m	100 Δ				60uZ	EA	TO18	A	A						
53	GET3638†	360m	300M	3.6m	Δ	25	25	4.0	350m	35n	100	10m	25 fΔ				10pZ	PE	TO18	A	A						
54	GET3638A†	360m	300M	3.6m	Δ	25	25	4.0	350m	35n	100	10m	100 Δ				10pZ	PE	TO18	A	A						
55	MD1T3251	360m	300M		SA	50	40	5.0	200m		20	10m	3.0 Δ				6.0pZ	PE	TO122	P	P						
56#	ME0401†	360m	300M	2.8m	SJ	60	50	5.0	600m	5.0u	100	100u	30 f				8.0pZ	PE	R110c	A	A						
57#	ME0402†	360m	300M	2.8m	SJ	60	50	5.0	600m	5.0u	100	100u	50 f				8.0pZ	PE	R110c	A	A						
58	2N3829†	360m	350MΔ	2.4m	SS	35	35	5.0	200m	3u	.40	30m	30 fΔ#				6pZ	PE	TO18	A	A						
59	JAN2N869A†	360m	400MΔ	2.1m	SJ	25	18	5.0		10n	5.0	10m	40 fΔ#				6.0pZ	PE	TO18	A	A						
60	2N2894†	360m	400MΔ	2.0m	SJ	12	12	4.0	200m	.08u	.50	30m	40 fΔ#				6pZ	PE	TO18	A	A						
61	2N3012†	360m	400MΔ	2.0m	SJ	12	12	4.0	200m		.50	30m	30 fΔ#				6pZ	PE	TO18	A	A						
62	2N3576†	360m	400MΔ	2.4m	SS	20	15	5.0	200m	.01u	.50	10m	40 fΔ				4.6pZ	PE	TO18	A	A						
63	2N4034†	360m	400MΔ	2.0m	SJ	40	40	5.0	100m	15n	1.0	1.0m	50 Δ				24uZ	EA	TO18	A	A						
64#	BSV21†	360m	400MΔ	2.0m	SJ	12	12	5.0	200m	80n	.30	10m	25 fΔ#				6pZ	PE	TO18	A	A						
65#	ME6101†	360m	400M	2.8m	SJ	70	50	6.0	500m	50n	1.0	100u	30 f				5.0pZ	PE	R110c	A	A						
66▼	MM869B†	360m	400MΔ	2.1m	SJ	30	30	5.0	200m	25u	.30	10m	30 fΔ				6.0pZ	PE	AN	TO18	A	A					
67	TIS50†	360m	400MΔ	2.9m	SJ	12	12	4.0	200m	1u†	1.0	100m	20 fΔ#				6pZ	PE	T092	A	A						
68	2N4035†	360m	450MΔ	2.0m	SJ	40	40	5.0	100m	15n	1.0	1.0m	150 Δ				40uZ	EA	TO18	A	A						
69	2N5244†	360m	450MΔ	2.0m	SJ	40	40	5.0	100m	15n	1.0	1.0m	150 fΔ				3.5pZ	PE	TO18	A	A						
70#	ME6102†	360m	450M	2.8m	SJ	60	45	6.0		50n	1.0	100u	50 f				5.0pZ	PE	R110c	A	A						
71#	V723†	360m	450M		SJ						1.0	10m	130 f				3.0pZ	PE	TO18	A	A						
72#</																											







# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	M E M P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E	
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	2N2597	400m	80.Ms	4.3m	SJ	80	60	6.0	25nΩ	5.0Ω	5.0mΩ	80 Δ	18k	4.0p	PL	T046	A			
2	2N2598	400m	80.Ms	4.3m	SJ	125	80	7.0	25nΩ	5.0Ω	5.0mΩ	20 Δ	12k	4.0p	PL	T046	A			
3	2N2599	400m	80.Ms	4.3m	SJ	125	80	7.0	25nΩ	5.0Ω	5.0mΩ	40 Δ	15k	4.0p	PL	T046	A			
4	2N2600	400m	80.Ms	4.3m	SJ	125	80	7.0	25nΩ	5.0Ω	5.0mΩ	80 Δ	18k	4.0p	PL	T046	A			
5	2N3579	400m	80MsΔ	2.2m	SS	60	60	6.0	30m	5.0Ω	1.0mΩ	120 t	1.0uZb	35	10	6.0pZ	T046	A		
6	2N3580	400m	80MsΔ	2.2m	SS	60	60	6.0	30m	5.0Ω	1.0mΩ	240 t	1.0uZb	35	10	6.0pZ	T046	A		
7#	V761	400m	90Ms	2.0m	S	25	25	5.0	100m	5.0Ω	1.0Ω	100 t	130u	1.2k	2.6	8.0p	PE	T018	A	
8	2N722A	400m	96MΔ	2.6m	SJ	50	35	5.0	600m	1.0Ω	10Ω	150mΩ	20 t	1.0uZb	35	8.0	4.0pZ	PL	T046	A
9	2N1131/46	400m	96MΔ	2.3m	SJ	50	35	5.0	600m	1.0Ω	10Ω	150mΩ	20 t	1.0uZb	35	8.0	4.0pZ	PL	T046	A
10	2N1132/46	400m	96MΔ	2.3m	SJ	50	35	5.0	600m	1.0Ω	10Ω	150mΩ	20 t	1.0uZb	35	8.0	4.0pZ	PL	T046	A
11	2N1132A46	400m	96MΔ	2.3m	SJ	60	40	5.0	600m	1.0Ω	10Ω	150mΩ	20 t	1.0uZb	35	8.0	4.0pZ	PL	T046	A
12	2N1132B46	400m	96MΔ	2.3m	SJ	70	50	6.0	600m	1.0Ω	10Ω	150mΩ	20 t	1.0uZb	35	8.0	4.0pZ	PL	T046	A
13	2N2590	400m	100Ms	4.3m	SJ	100	60	7.0	25nΩ	5.0Ω	5.0mΩ	40 Δ	35u	450	5pZ	PL	T046	A		
14	2N2591	400m	100Ms	4.3m	SJ	100	60	7.0	25nΩ	5.0Ω	5.0mΩ	70 Δ	55u	700	5pZ	PL	T046	A		
15	2N2592	400m	100Ms	4.3m	SJ	100	60	7.0	25nΩ	5.0Ω	5.0mΩ	115 Δ	80u	1.0k	5pZ	PL	T046	A		
16	2N2593	400m	100Ms	4.3m	SJ	100	60	7.0	25nΩ	5.0Ω	5.0mΩ	160 Δ	105u	1.4k	5pZ	PL	T046	A		
17	2N2604	400m	100Ms	4.3m	SJ	60	45	6.0	10nΩ	5.0Ω	1.0mΩ	60 Δ	1.0ub	30	10	4.0p	PL	T046	A	
18	2N2605	400m	100Ms	4.3m	SJ	60	45	6.0	10nΩ	5.0Ω	1.0mΩ	150 Δ	1.0ub	30	10	4.0p	PL	T046	A	
19	2N2927/46	400m	100MsΔ	2.3m	SJ	25	25	4.0	500m	0.2Ω	1.0Ω	50mΩ	30 tΔ	1.2mZ	15kZ	26 Z	20pZ	PE	T046	A
20	2N5117*	400m	100MsΔ	2.3m	SS	45	45	7.0	10m	100pΩ	5.0Ω	10uΩ	100 tΔ				800fZ	PE	L17c	A
21	2N5118*	400m	100MsΔ	2.3m	SS	45	45	7.0	10m	100pΩ	5.0Ω	10uΩ	100 tΔ				800fZ	PE	L17c	A
22	2N5119*	400m	100MsΔ	2.3m	SS	45	45	7.0	10m	100pΩ	5.0Ω	10uΩ	100 tΔ				800fZ	PE	L17w	A
23	2N5123*	400m	100MsΔ	2.3m	SS	45	45	7.0	10m	100pΩ	5.0Ω	10uΩ	100 tΔ				800fZ	PE	L17w	A
24	2N5124*	400m	100MsΔ	2.3m	SS	45	45	7.0	10m	100pΩ	5.0Ω	10uΩ	100 tΔ				800fZ	PE	L17w	A
25	2N5125*	400m	100MsΔ	2.3m	SJ	45	45	7.0	10m	100pΩ	5.0Ω	10uΩ	50 tΔ				800fZ	PE	L17w	A
26#	AT390	400m	100MsΔ	2.3m	SJ	40	40	5.0	1.0	200n	1.0Ω	50mΩ	40 Δ				20pZ	PE	T018	A
27#	AT391	400m	100MsΔ	2.3m	SJ	60	60	5.0	1.0	200n	1.0Ω	50mΩ	40 Δ				20pZ	PE	T018	A
28#	AT392	400m	100MsΔ	2.3m	SJ	80	80	5.0	1.0	200n	1.0Ω	50mΩ	40 Δ				20pZ	PE	T018	A
29#	AT393	400m	100MsΔ	2.3m	SJ	40	40	5.0	1.0	200n	1.0Ω	50mΩ	100 Δ				20pZ	PE	T018	A
30#	AT394	400m	100MsΔ	2.3m	SJ	60	60	5.0	1.0	200n	1.0Ω	50mΩ	100 Δ				20pZ	PE	T018	A
31#	AT395	400m	100MsΔ	2.3m	SJ	80	80	5.0	1.0	200n	1.0Ω	50mΩ	100 Δ				20pZ	PE	T018	A
32#	AT396	400m	100MsΔ	2.3m	SJ	40	40	5.0	1.0	200n	1.0Ω	50mΩ	40 Δ				20pZ	PE	T018	A
33#	AT397	400m	100MsΔ	2.3m	SJ	60	60	5.0	1.0	200n	1.0Ω	50mΩ	40 Δ				20pZ	PE	T018	A
34#	AT398	400m	100MsΔ	2.3m	SJ	80	80	5.0	1.0	200n	1.0Ω	50mΩ	40 Δ				20pZ	PE	T018	A
35#	BC192	400m	100MsΔ	2.2m	SJ	25	25	5.0	500m	100nΩ	5.0Ω	50mΩ	60 tΔ				12p	PE	T018	A
36#	NKT20339	400m	100Ms	2.3m	SJ	45	40	5.0	500m	0.1Ω	10Ω	20 tΔ				6.0p	PE	T018	A	
37#	Q54	400m	100MsΔ	2.2m	SJ	75	45	5.0	600m	10nΩ	5.0Ω	1.0mΩ	55	900nb	27	12	10pZ	PE	T018	A
38	TQ54A	400m	100MsΔ	2.2m	SJ	80	75	5.0	600m	10nΩ	5.0Ω	1.0mΩ	55	900nb	27	12	10pZ	PE	T018	A
39	TQ60t	400m	100MsΔ	2.2m	SJ	40	30	5.0	600m	20nΩ	5.0Ω	1.0mΩ	30 Δ	500nZb	35 Z		10pZ	PE	T018	A
40	TQ60At	400m	100MsΔ	2.2m	SJ	60	60	5.0	600m	20nΩ	5.0Ω	1.0mΩ	30 Δ	500nZb	35 Z		10pZ	PE	T018	A
41	TQ62t	400m	100MsΔ	2.2m	SJ	40	30	5.0	600m	20nΩ	5.0Ω	1.0mΩ	30 Δ	500nZb	35 Z		10pZ	PE	T08	A
42	TQ62At	400m	100MsΔ	2.2m	SJ	60	60	5.0	600m	20nΩ	5.0Ω	1.0mΩ	30 Δ	500nZb	35 Z		10pZ	PE	T018	A
43	TQ64t	400m	100MsΔ	2.2m	SJ	20	20	5.0	600m	100nΩ	5.0Ω	1.0mΩ	20 Δ	500nZb	35 Z		10pZ	PE	T018	A
44	TQ64At	400m	100MsΔ	2.2m	SJ	30	30	5.0	600m	100nΩ	5.0Ω	1.0mΩ	35	500nZb	35 Z		10pZ	PE	T018	A
45	2N2800/46	400m	120MsΔ	2.3m	SJ	50	35	5.0	800	100nΩ	10Ω	100mΩ	20 Δ	25pZ			25pZ	PE	T046	A
46	2N2801/46	400m	120MsΔ	2.3m	SJ	50	35	5.0	800	100nΩ	10Ω	100mΩ	30 Δ	25pZ			25pZ	PE	T046	A
47	2N3081/46	400m	150MsΔ	2.3m	SJ	70	50	6.0	600	10nΩ	10Ω	150 t	30 tΔ	13pZ			13pZ	PE	T046	A
48	2N3497t	400m	150MsΔ	2.3m	SS	120	120	4.5	100m	10uΩ	10Ω	10mΩ	40 Δ	300uZ	12kZ	2 Z	6pZ	PE	T018	A
49	2N5146t	400m	150MsΔ	2.3m	SJ	40	40	5.0	15	10uΩ	2.0Ω	1.0Ω	20 tΔ	830m	203	33	20pZ	PE	L56	A
50#	AT399	400m	150M	2.3m	SJ	70	70	5.0	1.0	200nΩ	5.0Ω	50mΩ	150 t				20pZ	PE	T018	A
51#	T52907	400m	150MsΔ	2.3m	SJ	60	30	5.0	600m	20nΩ	10Ω	10mΩ	35 t				12pZ	PE	T018	A
52#	T52907	400m	150MsΔ	2.3m	SJ	60	30	5.0	600m	20nΩ	10Ω	10mΩ	75 t				12pZ	PE	T018	A
53	2N2906t	400m	200MsΔ	2.2m	SS	60	40	5.0	600m	0.2Ω	10Ω	1.0mΩ	25 tΔ				8pZ	PE	T018	A
54	JAN2N2906t	400m	200MsΔ	2.2m	SS	60	40	5.0	600m	0.2Ω	10Ω	1.0mΩ	25 tΔ				8pZ	PE	T018	A
55	2N2906At	400m	200MsΔ	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	1.0mΩ	40 tΔ				8pZ	PE	T018	A
56	JAN2N2906At	400m	200MsΔ	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	1.0mΩ	40 tΔ				8pZ	PE	T018	A
57	2N2907t	400m	200MsΔ	2.2m	SS	60	40	5.0	600m	0.2Ω	10Ω	1.0mΩ	30 tΔ				8pZ	PE	T018	A
58	JAN2N2907t	400m	200MsΔ	2.2m	SS	60	40	5.0	600m	0.2Ω	10Ω	1.0mΩ	50 tΔ				8pZ	PE	T018	A
59	2N2907At	400m	200MsΔ	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	1.0mΩ	100 tΔ				8pZ	PE	T018	A
60	JAN2N2907At	400m	200MsΔ	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	1.0mΩ	100 tΔ				8pZ	PE	T018	A
61	2N3135t	400m	200MsΔ	2.3m	SS	50	35	4.0	600m	0.5Ω	10Ω	150mΩ	40 t#Δ				10pZ	EA	T018	A
62	2N3136t	400m	200MsΔ	2.3m	SS	50	35	4.0	600m	0.5Ω	10Ω	150mΩ	100 t#Δ				10pZ	EA	T018	A
63	2N3485At	400m	200Ms	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	10mΩ	40 tΔ				8pZ	EA	T046	A
64	JAN2N3485At	400m	200Ms	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	10mΩ	40 tΔ				8pZ	EA	T046	A
65	2N3486At	400m	200Ms	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	10mΩ	100 tΔ				8pZ	EA	T046	A
66	JAN2N3486At	400m	200Ms	2.2m	SS	60	60	5.0	600m	0.1Ω	10Ω	10mΩ	100 tΔ				8pZ	EA	T046	A
67	2N3496t	400m	200MsΔ	2.3m	SS	80	80	4.5	100m	10uΩ	10Ω	10mΩ	40 Δ	300uZ	12kZ	2 Z	7pZ	PE	T018	A
68	2N3504t	400m	200MsΔ	4.0m	SJ	45	45	5.0	600m	0.1uΩ	10Ω	10mΩ	35 Δ	800uZ	23kZ	15 Z	8pZ	PE	T018	A
69	2N3505t	400m	200MsΔ	4.0m	SJ	60	60	5.0	600m	0.1uΩ	10Ω	10mΩ	35 Δ	800uZ	23kZ	15 Z	8pZ	PE	T018	A
70	2N3672t	400m	200MsΔ	2.3m	SS	60	50	5.0	600m	10nΩ	10Ω	10mΩ	55 tΔ				9pZ	PE	T018	A
71	2N4015*	400m	200MsΔ	2.3m	SJ	60	60	5.0	300m	0.1Ω	10Ω	1.0mΩ	135 Δ	80uZ	12kZ	15 Z	8pZ	PE	L17k	A
72	2N4016*	400m	200MsΔ	2.3m	SJ	60														

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	M E A M X P	ABS MAX RATINGS @25°C					MAX. lcoBc @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC TURE	DWG Y200 s/a TO200 Ser.	# L E O D E
						V <sub>cb0</sub> (V)	V <sub>ceo</sub> (V)	V <sub>bo</sub> (V)	I <sub>c</sub> (A)	I <sub>coBc</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	2N1259†	450m	40MΔ	3.0m	SS	50	50	5.0	100m	200n	1.0	10m	25	Δ				10p	PL	T05	∅
2	2N1255†	450m	50MΔ	3.0m	SS	30	30	5.0	100m	200n	1.0	10m	40	Δ				10p	PL	T05	A
3	2N1257†	450m	50MΔ	3.0m	SS	40	40	5.0	100m	200n	1.0	10m	40	Δ				10p	PL	T05	A
4	2N1258†	450m	50MΔ	3.0m	SS	30	30	5.0	100m	200n	1.0	10m	75	Δ				10p	PL	T05	A
5	2N2393	450m	50MΔ	3.0m	SJ	50	35	5.0	300m	1.0	5.0	1.0m	15	Δ	1.0uZb	35	8.0	45p	PL	u25	A
6	2N2394	450m	60MΔ	3.0m	SJ	50	35	5.0	300m	1.0	5.0	1.0m	25	Δ	1.0uZb	35	8.0	45p	PL	u25	A
7	2V435*	450m	170MΔ	2.6m	SJ	25	25	4.5	0.2u	10	1.0	10m	130		130u	1.2k	2.6	20p	DPE	L17a	∅
8	2N5811	500m		4.5m	TJ	35	25	5.0	750m	100n	2.0	2.0m	60	Δ				15p	PL	X55a	B
9	2N5813	500m		4.5m	TJ	35	25	5.0	750m	100n	2.0	2.0m	150	Δ				15p	PL	X55a	B
10	2N5815	500m		4.5m	TJ	50	40	5.0	750m	100n	2.0	2.0m	60	Δ				15p	PL	X55a	B
11	2N5817	500m		4.5m	TJ	50	40	5.0	750m	100n	2.0	2.0m	100	Δ				15p	PL	X55a	B
12	2N5819	500m		4.5m	TJ	50	40	5.0	750m	100n	2.0	2.0m	150	Δ				15p	PL	X55a	B
13	2N5821	500m		4.5m	TJ	70	60	5.0	750m	100n	2.0	2.0m	60	Δ				15p	PL	X55a	B
14	2N5823	500m		4.5m	TJ	70	60	5.0	750m	100n	2.0	2.0m	100	Δ				15p	PL	X55a	B
15#	BFX30	500m		3.4m	SJ	65	65	5.0	600m	0.7u	4.0	10m	50	Δ				12p	PE	T05	A
16	MD2904*	500m	200mΔ	2.9m	SJ	60	40	5.0	600m	20n#	1.0	150m	40	#			8.0p	AN	L17k	∅	
17	2N5110	500m	1.0MΔ	3.3m	SJ	40	40	10	1	75u	10	100m	10	Δ			500p	AN	T05	A	
18	2N5111	500m	1.0MΔ	3.3m	SJ	80	80	10	1	75u	10	100m	10	Δ			500p	AN	T05	A	
19	2N3910	500m	4.0MΔ	2.9m	SS	60	50	5.0	200m	50n	5.0	1.0m	40	Δ				8p	PL	T046	A
20	2N3911	500m	8.0MΔ	2.9m	SS	60	40	4.0	200m	5n	5.0	1.0m	60	Δ				8p	PL	T046	A
21	2N3912	500m	10MΔ	2.9m	SS	60	30	3.0	200m	5n	5.0	1.0m	90	Δ				8p	PL	T046	A
22	MM4052	500m	12MΔ	2.8m	SJ	30	30	3.0	500m	500p	1.0	10m	20	Δ				10p	PL	T046	A
23	MPS6562	500m	60MΔ	4.5m	TJ	25	25	4.0	600m	1.0u	1.0	10m	35	Δ				30p	AN	T092	A
24	MPS6563	500m	60MΔ	4.5m	TJ	20	20	4.0	600m	1.0u	1.0	10m	35	Δ				30p	AN	T092	A
25	D29E8	500m	80MΔ	4.5m	TJ	70	60	5.0	750m	100n	2.0	2.0m	40	Δ				15p	PE	T098	B
26	D29E9	500m	80MΔ	4.0m	SJ	70	60	5.0	750m	100n	2.0	2.0m	60	Δ				15p	PE	T098	B
27#	2SA532	500m	90MΔ	4.5m	SJ	50	50	4.0	200m	1.0u	6.0	5.0m	80	Δ				15p	PL	T039	∅
28	2N3806*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	150	Δ	60uZ	30kZ	25	4p	∅	L17k	∅
29	2N3807*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	300	Δ	60uZ	40kZ	25	4p	∅	L17k	∅
30	2N3808*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	150	Δ	60uZ	30kZ	25	4p	∅	L17k	∅
31	2N3809*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	300	Δ	60uZ	40kZ	25	4p	∅	L17k	∅
32	2N3810*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	150	Δ	60uZ	30kZ	25	4p	∅	L17k	∅
33	2N3810A*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	150	Δ	60uZ	30kZ	25	4p	∅	L17k	∅
34	2N3811*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	300	Δ	60uZ	40kZ	25	4p	∅	L17k	∅
35	2N3811A*	500m	100MΔ	2.9m	SS	60	60	5.0	50m	0.1u	1.0	1.0m	300	Δ	60uZ	40kZ	25	4p	∅	L17k	∅
36	2N4026†	500m	100MΔ	2.9m	SJ	60	60	5.0	1	0.5u	5.0	10m	30	Δ				20p	PL	T018	A
37	2N4027†	500m	100MΔ	2.9m	SJ	80	80	5.0	1	0.5u	5.0	10m	30	Δ				20p	PL	T018	A
38#	BFX29	500m	100MΔ	3.4m	SJ	60	60	5.0	600m	0.7u	1.0	10m	50	Δ				12p	PE	T05	A
39#	D29E1	500m	100MΔ	4.0m	SJ	35	25	5.0	750m	100n	2.0	2.0m	60	Δ				15p	PE	T098	B
40	D29E4	500m	100MΔ	4.5m	TJ	50	40	5.0	750m	100n	2.0	2.0m	60	Δ				15p	PE	T098	B
41	MPSA55	500m	100MΔ	4.5m	TJ	60	60	4.0	500m	100n	1.0	10m	50	Δ			6.5p	AN	T092	A	
42	MPSA56	500m	100MΔ	4.5m	TJ	80	80	4.0	500m	100n	1.0	10m	50	Δ			6.5p	AN	T092	A	
43	2N2837†	500m	120MΔ	2.9m	SS	50	35	5.0	800m	1.0u	1.0	10m	20	Δ				25p	PL	T018	A
44	2N2838†	500m	120MΔ	2.9m	SS	50	35	5.0	800m	1.0u	1.0	10m	30	Δ				25p	PL	T018	A
45	D29E5	500m	120MΔ	4.5m	TJ	50	40	5.0	750m	100n	2.0	2.0m	100	Δ				15p	PE	T098	B
46	D29E10	500m	120MΔ	4.0m	SJ	70	60	5.0	750m	100n	2.0	2.0m	100	Δ				15p	PE	T098	B
47#	BFX11*	500m	130MΔ	2.2m	SJ	45	45	4.5	10n	10	5.0	1.0m	200	Δ			8.0p	DPE	L2d	∅	
48#	D29E2	500m	135MΔ	4.0m	SJ	35	25	5.0	750m	100n	2.0	2.0m	150	Δ				15p	PE	T098	B
49	D29E6	500m	135MΔ	4.5m	TJ	50	40	5.0	750m	100n	2.0	2.0m	150	Δ				15p	PE	T098	B
50	2N3765†	500m	150MΔ	2.9m	SS	60	60	5.0	1.5	1u#	1.0	500m	35	Δ				15p	PL	T046	A
51	JAN2N3765†	500m	150MΔ	2.8m	SJ	60	60	5.0	1.5	100n	1.0	10m	35	Δ				15p	PL	T046	A
52	2N4028†	500m	150MΔ	2.9m	SJ	60	60	5.0	1	0.5u	5.0	10m	75	Δ				20p	PL	T018	A
53	2N4029†	500m	150MΔ	2.9m	SJ	80	80	5.0	1	0.5u	5.0	10m	75	Δ				20p	PL	T018	A
54#	BFS96	500m	150MΔ	3.3m	SA	60	30	5.0	1.0	100n	1.0	150m	40	#				15p	PL	X59	F
55#	BFS97	500m	150MΔ	3.3m	SA	60	40	5.0	1.0	100n	1.0	150m	100	#				15p	PL	X59	F
56#	BFS98	500m	150MΔ	3.3m	SA	60	50	5.0	1.0	100n	1.0	150m	40	#				15p	PL	X59	F
57	D29E7	500m	150MΔ	4.5m	TJ	50	40	5.0	750m	100n	2.0	2.0m	250	Δ				15p	PE	T098	B
58	2N5243†	500m	170MΔ	5.0m	S	30	30	5.0	500m	100n	1.0	50m	25	#				35p	PL	T0105	A
59	MPSA65	500m	175MΔ	4.5m	TJ	30	30	8.0	300m	100n	5.0	10m	50k	Δ				2.5p	∅	T092	A
60	MPSA66	500m	175MΔ	4.5m	TJ	30	30	8.0	300m	100n	5.0	10m	75k	Δ				2.5p	∅	T092	A
61	2N3764†	500m	180MΔ	2.9m	SS	40	40	5.0	15	1u#	1.0	500m	35	Δ				15p	PL	T046	A
62	2N5795†	500m	200MΔ	2.9m	SS	60	60	5.0	600m	20n	1.0	1.0m	40	Δ				8.0p	∅	L2d	∅
63	2N5796†	500m	200MΔ	2.9m	SS	60	60	5.0	600m	20n	1.0	1.0m	100	Δ				8.0p	∅	L2d	∅
64	2N5843*	500m	200MΔ	2.9m	SS	50	40	5.0	50m	10n	1.0	10m	50	Δ	40uZ	6.0kZ	10	7.0p	*	L2g	∅
65#	BFW31†	500m	200MΔ	4.0m	SA	50	30	5.0	700m	500n	1.0	10m	40	Δ	250uZ	4.0kZ	6.0	7.0p	PE	T018	A
66	MD2904A*	500m	200MΔ	2.9m	SJ	60	60	5.0	600m	20n#	1.0	150m	40	#				8.0p	AN	L17k	∅
67	MD2905*	500m	200MΔ	2.9m	SJ	60	40	5.0	600m	20n#	1.0	150m	100	#				8.0p	AN	L17k	∅
68	MD2905A*	500m	200MΔ	2.9m	SJ	60	60	5.0	600m	20n#	1.0	150m	100	#				8.0p	AN	L17k	∅
69	MD1333*	500m	200MΔ	2.9m	SJ	50	35	4.0	600m	0.5u	1.0	150m	40	#				10p	PL	L17c	∅
70	MD1334*	500m	200MΔ	2.9m	SJ	50	35	4.0	600m	0.5u	1.0	150m	100	#				10p	PL	L17c	∅
71	2N6011†	500m	240MΔ	4.0m	SJ	50	40	5.0	800m	10n	1.0	1.0m	90	Δ	120uZ	12kZ		15p	∅	X55a	A
72	2																				

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M A P	ABS MAX RATINGS @25°C			MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS					Cob (F)	STRUC TURE	DWG #	C O D E	
					BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER						
									V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>	hoe (mhos)	hie (Ω)					hre (X.0001)
1#	ZSA509	800m	140M	3.4m	35	30	5.0	100n	2.0	5.0	100	100	30	22p	EP	H67a	A	
2	2N3081	600m	150M	3.4m	70	50	6.0	600n	1.0	15.0	30	30	13p	PE	T05	A		
3	2N34951	600m	150M	3.4m	120	120	4.5	100n	1.0	10.0	40	40	6p	PE	T05	A		
4#	HEP51s	600m	150M	3.4m	30	25	4.0	600n	1.0	20	80	80	12p	PE	T05	A		
5#	TS2904	600m	150M	3.4m	60	30	5.0	600n	1.0	10.0	35	35	12p	PE	T039	A		
6#	TS2905	600m	150M	3.4m	60	30	5.0	600n	1.0	10.0	75	75	12p	PE	T039	A		
7#	BFX36*	600m	160M	2.2m	60	60	6.0	200n	5.0	1.0	700	700	6.0p	DPE	L2b	A		
8	2N2904T	600m	200M	3.4m	60	40	5.0	600n	1.0	1.0	25	25	8.0p	PE	T05	A		
9	JAN2N2904T	600m	200M	3.4m	60	40	5.0	600n	1.0	1.0	25	25	8.0p	PE	T05	A		
10	2N2904AT	600m	200M	3.4m	60	60	5.0	600n	1.0	1.0	40	40	8.0p	PE	T05	A		
11	JAN2N2904AT	600m	200M	3.4m	60	60	5.0	600n	1.0	1.0	40	40	8.0p	PE	T05	A		
12	2N2905T	600m	200M	3.4m	60	40	5.0	600n	1.0	1.0	50	50	8.0p	PE	T05	A		
13	JAN2N2905T	600m	200M	3.4m	60	40	5.0	600n	1.0	1.0	50	50	8.0p	PE	T05	A		
14	2N2905AT	600m	200M	3.4m	60	60	5.0	600n	1.0	1.0	100	100	8.0p	PE	T05	A		
15	JAN2N2905AT	600m	200M	3.4m	60	60	5.0	600n	1.0	1.0	100	100	8.0p	PE	T05	A		
16	2N3133T	600m	200M	3.4m	50	35	4.0	600n	0.5	15.0	40	40	10p	PE	T05	A		
17	2N3134T	600m	200M	3.4m	50	35	4.0	600n	0.5	15.0	100	100	10p	PE	T05	A		
18	2N3494T	600m	200M	3.4m	80	80	4.5	100n	1.0	10.0	40	40	7.0p	PE	T05	A		
19	2N3671T	600m	200M	3.4m	60	50	5.0	600n	1.0	10.0	55	55	9.0p	PE	T05	A		
20#	BSV42	600m	200M	4.5m	70	70	5.0	500n	2.0	15.0	110	110	8.0p	PE	T039	A		
21#	BSV43A	600m	200M	4.5m	60	60	5.0	500n	2.0	15.0	80	80	8.0p	PE	T039	A		
22#	BSV43B	600m	200M	4.5m	60	60	5.0	500n	2.0	15.0	200	200	8.0p	PE	T039	A		
23#	BSV44A	600m	200M	4.5m	60	40	5.0	500n	2.0	15.0	80	80	8.0p	PE	T039	A		
24#	BSV44B	600m	200M	4.5m	60	40	5.0	500n	2.0	15.0	200	200	8.0p	PE	T039	A		
25#	BSV45A	600m	200M	4.5m	30	30	5.0	500n	2.0	15.0	80	80	8.0p	PE	T039	A		
26#	BSV45B	600m	200M	4.5m	30	30	5.0	500n	2.0	15.0	200	200	8.0p	PE	T039	A		
27#	NN7500	600m	200M	4.8m	50	30	5.0	750n	1.0	35.0	50	50	12p	PLT	X55a	A		
28#	NN7501	600m	200M	4.8m	50	30	5.0	750n	1.0	35.0	75	75	12p	PLT	X55a	A		
29#	NN7502	600m	200M	4.8m	50	30	5.0	750n	1.0	35.0	125	125	12p	PLT	X55a	A		
30#	NN7503	600m	200M	4.8m	60	40	5.0	750n	1.0	35.0	50	50	12p	PLT	X55a	A		
31#	NN7504	600m	200M	4.8m	60	40	5.0	750n	1.0	35.0	75	75	12p	PLT	X55a	A		
32#	NN7505	600m	200M	4.8m	60	40	5.0	750n	1.0	35.0	125	125	12p	PLT	X55a	A		
33#	TM1614	600m	200M	2.2m	60	50	5.0	600n	0.5	15.0	40	40	8.0p	PE	T05	A		
34#	TM1712	600m	200M	2.2m	60	40	5.0	600n	0.5	15.0	100	100	8.0p	PE	T05	A		
35	MD3467T	600m	250M	3.4m	40	40	5.0	1.0	0.9	500.0	40	40	11p	AN	L17k	A		
36	MD3762T	600m	250M	3.4m	40	40	5.0	1.0	1.0	2.0	10	10	11p	AN	L17k	A		
37	TIS93	625m	5.0m	5.0m	40	40	4.0	400n	1.0	2.0	50	50	180	PE	X55	A		
38	HS5811	700m	6.3m	6.3m	35	25	5.0	750n	1.0	2.0	60	60	15p	PE	X103	A		
39	HS5813	700m	6.3m	6.3m	35	25	5.0	750n	1.0	2.0	150	150	15p	PE	X103	A		
40	HS5815	700m	6.3m	6.3m	50	40	5.0	750n	1.0	2.0	60	60	15p	PE	X103	A		
41	HS5817	700m	6.3m	6.3m	50	40	5.0	750n	1.0	2.0	100	100	15p	PE	X103	A		
42	HS5819	700m	6.3m	6.3m	50	40	5.0	750n	1.0	2.0	150	150	15p	PE	X103	A		
43	HS5821	700m	6.3m	6.3m	70	60	5.0	750n	1.0	2.0	60	60	15p	PE	X103	A		
44	HS5823	700m	6.3m	6.3m	70	60	5.0	750n	1.0	2.0	100	100	15p	PE	X103	A		
45	2N3931	700m	40M	4.0M	180	180	6.0	100n	1.0	1.0	100	100	7.0p	PE	T039	A		
46	2N4358	700m	40M	4.0M	240	240	6.0	100n	0.2	1.0	100	100	7.0p	PE	T039	A		
47#	BC139	700m	40M	4.0M	40	40	5.0	0.2	0.2	300.0	40	40	10p	DPE	T05	A		
48	2N3224	700m	60M	4.6m	100	100	6.0	100n	5.0	1.0	20	20	20p	PE	T05	A		
49#	BFW44	700m	60M	4.0m	150	150	6.0	0.1	0.1	10.0	40	40	7.0p	PE	T039	A		
50#	BFX91	700m	60M	4.0m	180	180	6.0	0.1	0.1	1.0	170	170	5.0p	PE	T05	A		
51	2N3225	700m	60M	4.6m	100	100	6.0	100n	5.0	1.0	40	40	20p	PE	T05	A		
52#	D29E9J1	700m	80M	5.6m	70	60	5.0	750n	2.0	2.0	60	60	15p	PE	X28	A		
53#	V765	700m	80M	4.5m	120	120	5.0	100n	1.0	25.0	140	140	3.0p	PE	T039	A		
54#	BC143	700m	100M	4.0m	60	60	5.0	0.5	0.5	200.0	20	20	20p	PE	T05	A		
55#	D29E1J1	700m	100M	5.6m	35	25	5.0	750n	1.0	2.0	60	60	15p	PE	X28	A		
56#	D29E10J1	700m	120M	5.6m	70	60	5.0	750n	1.0	2.0	100	100	15p	PE	X28	A		
57#	D29E2J1	700m	135M	5.6m	35	25	5.0	750n	1.0	2.0	150	150	15p	PE	X28	A		
58#	V410A	700m	170M	4.0m	35	35	4.0	1.0	1.0	50.0	40	40	20p	PE	T039	A		
59	2N3502T	700m	200M	4.0m	45	45	5.0	600n	0.1	10.0	35	35	8.0p	PE	T05	A		
60	2N3503T	700m	200M	4.0m	60	60	5.0	600n	0.1	10.0	35	35	8.0p	PE	T05	A		
61#	AT480	700m	200M	4.0m	30	30	5.0	500n	200n	15.0	30	30	8.0p	PE	T039	A		
62#	AT481	700m	200M	4.0m	45	45	5.0	500n	200n	15.0	30	30	8.0p	PE	T039	A		
63#	AT482	700m	200M	4.0m	30	30	5.0	500n	200n	15.0	100	100	8.0p	PE	T039	A		
64#	AT483	700m	200M	4.0m	45	45	5.0	500n	200n	15.0	100	100	8.0p	PE	T039	A		
65#	AT484	700m	200M	4.0m	30	30	5.0	500n	200n	15.0	30	30	8.0p	PE	T039	A		
66#	AT485	700m	200M	4.0m	45	45	5.0	500n	200n	15.0	30	30	8.0p	PE	T039	A		
67#	BSW231	700m	200M	4.0m	60	50	5.0	600n	0.1	15.0	40	40	8.0p	PE	T05	A		
68	S18000T	700m	200M	4.0m	60	50	5.0	600n	0.1	10.0	110	110	6.0p	PE	T05	A		
69#	BFY641	700m	250M	4.0m	40	40	5.0	1.0	0.3	10.0	200	200	110u	DPE	T05	A		
70	2N4872T	700m	900M	4.0m	12	12	4.5	50m	0.1	3.0	10	10	2.0p	PE	T018	A		
71#	2SA546	750m	80M	5.0m	70	60	5.0	1	3.0	3.0	25	25	5.0p	PE	T039	A		
72#	2SA546A	750m	80M	5.0m	90	80	5.0	1	3.0	3.0	25	25	5.0p	PE	T039	A		
73	2N5855	750m	100M	6.8m	60	60	5.0	1.0	100n	1.0	50	50	15p	PE	T0105	A		
74	2N5857	750m	100M	6.8m	80	80	5.0	1.0	100n	1.0	50	50	15p	PE	T0105	A		
75#	BC160-6	750m	100M	5.0m	40	40	5.0	1.0	100n	1.0	100	100	20p	PE				

# 4. SILICON PNP - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1] MAX. COLL. DISS. @25°C (W)	2] DERATE IN FREE AIR W/°C	M E A M X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O A D E	
					BV <sub>cb0</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)		BIAS			COMMON EMITTER							
										V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre X.0001					
1#	BC361-6	800m	100MΔ	4.5m	Δ	80	60	5.0	500m	100nΔ	5.0Δ	50mΔ	40	1Δ			10p	PE	T039	AΔ
2#	BC361-10	800m	100MΔ	4.5m	Δ	60	60	5.0	500m	100nΔ	5.0Δ	50mΔ	63	1Δ			10p	PE	T039	AΔ
3#	BFX38	800m	100MΔ	4.5m	Δ	55	55	5.0	1.0	50nΔ	5.0Δ	100uΔ	65	1			15p	DPE	T05	Δ
4#	BFX39	800m	100MΔ	4.5m	Δ	55	55	5.0	1.0	50nΔ	5.0Δ	100uΔ	65	1			15p	DPE	T05	Δ
5#	BFX40	800m	100MΔ	4.5m	Δ	75	75	5.0	1.0	50nΔ	5.0Δ	100uΔ	125	1			15p	DPE	T05	Δ
6#	BFX41	800m	100MΔ	4.5m	Δ	75	75	5.0	1.0	50nΔ	5.0Δ	100uΔ	125	1			15p	DPE	T05	Δ
7#	BSV831	800m	100MΔ	4.0m	Δ	90	80	5.0	1.0	10u	.50Δ	150mΔ	70	1			25p	PE	T039	A
8#	BSX40	800m	100MΔ	4.5m	Δ	30	30	5.0	500m	25nΔ	10Δ	10mΔ	40	1Δ			10p	PE	T039	AΔ
9#	2N28001	800m	120MΔ	4.5m	Δ	50	35	5.0	800m	10u#	10Δ	10mΔ	20	Δ			25p	PE	T05	AΔ
10	2N28011	800m	120MΔ	4.5m	Δ	50	35	5.0	800m	10u#	10Δ	10mΔ	30	Δ			25p	PE	T05	AΔ
11	2N30721	800m	130MΔ	4.5m	Δ	60	60	4.0	500m	.01uΔ	10Δ	10mΔ	25	Δ	1.2m	1.5k	10p	PE	T05	AΔ
12	2N31201	800m	130MΔ	4.5m	Δ	45	45	4.0	500m	.01uΔ	10Δ	10mΔ	25	Δ	1.2m	1.5k	10p	PE	T05	AΔ
13#	2SA5031	800m	130MΔ	5.3m	Δ	60	50	5.0	600m	.50uΔ	2.0Δ	150mΔ	30	1Δ			18p	PE	T039	AΔ
14#	2SA5041	800m	130MΔ	5.3m	Δ	40	30	5.0	600m	.50uΔ	2.0Δ	150mΔ	30	1Δ			18p	PE	T039	AΔ
15	2N40321	800m	150MΔ	4.5m	Δ	60	60	5.0	1	.05uΔ	5.0Δ	10mΔ	75	1Δ			20p	PE	T05	AΔ
16	2N40331	800m	150MΔ	4.5m	Δ	80	80	5.0	1	.05uΔ	5.0Δ	10mΔ	75	1Δ			20p	PE	T05	AΔ
17#	2SA560	800m	150MΔ	4.5m	Δ	80	60	5.0	800m	.50uΔ	2.0Δ	150mΔ	60	1			19p	PE	T039	AΔ
18#	BFX74A	800m	150MΔ	4.5m	Δ	60	60	5.0		.05uΔ	10Δ	150mΔ	50	1#			15p	PE	T05	AΔ
19#	BSX41	800m	150MΔ	4.5m	Δ	30	30	5.0	500m	25nΔ	10Δ	10mΔ	100	1Δ			10p	PE	T039	AΔ
20#	2SA5711	800m	200MΔ	5.6m	Δ	60	45	5.0	1.0	100nΔ	10Δ	50mΔ	40	1Δ			25p	PE	T05	Δ
21#	BC116A	800m	200MΔ	8.0m	Δ	45	40	5.0		50n	10Δ	10mΔ	70	1Δ			6.0p	PE	T0105	A
22#	BC126A	800m	200MΔ	3.0m	Δ	40	40	5.0	600m	50n	10Δ	10mΔ	85	1			7.0p	PE	T0105	A
23#	BC287	800m	200MΔ	4.5m	Δ	60	60	5.0	1.0	500nΔ	2.0Δ	500mΔ	40	1			13p	DPE	T05	Δ
24#	BCW45	800m	200MΔ	4.5m	Δ	70	55	5.0	1.0	100n	1.0Δ	200mΔ	40	1			3.0p	PE	T039	A
25#	V745	800m	240MΔ	8.0m	Δ	50	40	5.0		100u	10Δ	50mΔ	95	1			15p	PE	T039	A
26#	BC231M	800m	250MΔ	5.3m	Δ	40	30	5.0	400m	100nΔ	5.0Δ	50mΔ	100	1Δ*			6.0p	PE	T039	AΔ
27#	BF323	800m	250MΔ	5.3m	Δ	30	25	3.0	600m		10Δ	10mΔ	300	1Δ*			6.0p	PE	T039	AΔ
28	SE8541	800m	250MΔ	4.5m	Δ	30	30	5.0	1.0	50n	1.0Δ	150mΔ	70	1#			20p	DPL	T039	A
29	2N5042	800m	500MΔ	4.5m	Δ	40	40	5.0	1	.05uΔ	1.0Δ	150mΔ	40	1#			35p	EM	T039	AΔ
30#	2SA257	5.0 Δ	80MΔ		Δ	50	40	5.0	2.0	5.0u	2.0Δ	200mΔ	50	1			40p	EM	T05	Δ
31#	2SA258	5.0 Δ	80MΔ		Δ	50	40	5.0	2.0	5.0u	2.0Δ	100mΔ	70	1			40p	EM	T05	Δ
32#	2SA527	5.0 Δ	80MΔ		Δ	50	40	5.0	2.0	5.0u	2.0Δ	200mΔ	50	1			40p	EM	T05	Δ
33#	2SA528	5.0 Δ	80MΔ		Δ	50	40	5.0	2.0	5.0u	2.0Δ	100mΔ	70	1			40p	EM	T05	Δ
34#	BF440	225	250MΔ	2.3m	Δ	40	40	4.0	25m	100nΔ	10Δ	1.0mΔ	60	1Δ			280ft	PE	X76	G
35#	BF441	225	250MΔ	2.3m	Δ	40	40	4.0	25m	100nΔ	10Δ	1.0mΔ	30	1Δ			280ft	PE	X76	G



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M E M P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUC-TURE	DWG #	C O D E					
					V <sub>cb</sub> (V)	V <sub>ce</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>					COMMON EMITTER				
													hoe (mhos)	hie (Ω)	hre (X.0001)						
1	2N622		300kΔ	2.8m	Δ	50	30	20	50m	100n	1.50	500uΔ	25	↑	70pZ	FA	T05	A			
2	MM1755		250MΔ		Δ	60	30	5.0		.01uZ	100	150mZ	40	↑	8pZ		T046				
3	MM1756†		250MΔ		Δ	75	40	6.0		.01uZ	100	150mZ	40	↑	8pZ		T046				
4	MM1757		250MΔ		Δ	60	30	5.0		.01uZ	100	150mZ	100	↑	8pZ		T046				
5	MM1758†		300MΔ		Δ	75	40	6.0		.01uZ	100	150mZ	100	↑	8pZ		T046				
6	2N1247	30m	5.0M	1.0m	Δ	6.0	6.0	2.0		5.0n	3.00	5.0mZ	15	↑	12p		T05	A			
7	2N1248	30m	5.0M	1.1m	Δ	6.0	6.0	1.0		1.0n	3.00	2.0uZ	15	↑			T05	A			
8	2N1249	30m	5.0M	250u	Δ	6.0		2.0	5.0m		3.0	2.0uZ	38				T05	A			
9	MRD100*	50m			Δ	80	40			100nΔ					7.0p	ANT	u43	B			
10	MRD150*	50m			Δ	700u				100nΔ						ANT	u43	B			
11#	BC156A	50m	50MΔ	625u	Δ	5.0	5.0	5.0	50m	100n	1.00	500uZ	85	Δ		PE	u47a	B			
12#	BC156B	50m	50MΔ	625u	Δ	5.0	5.0	5.0	50m	100n	1.00	500uZ	200	Δ		PE	u47a	D			
13#	BC156C	50m	50MΔ	625u	Δ	5.0	5.0	5.0	50m	100n	1.00	500uZ	470	Δ		PE	u47a	D			
14#	BFY87	50m	50MΔ	625u	Δ	25	15	5.0		100n	1.00	500uZ	40	Δ		PE	u47a	D			
15#	BFY87A	50m	50MΔ	625u	Δ	25	15	5.0		100n	1.00	500uZ	55	Δ		PE	u47a	D			
16	A141	50m*	150MΔ	625m	Δ	20	20	4.0	50m	100n	500	200uZ	130		15u	20k	15	4.0p	PE	u45	
17	A142	50m*	150MΔ	625m	Δ	20	20	4.0	50m	100n	500	200uZ	220		20u	30k	25	4.0p	PE	u45	
18	A143	50m*	150MΔ	625m	Δ	20	20	4.0	50m	100n	500	200uZ	380		35u	45k	40	4.0p	PE	u45	
19	BC112	50m*	150MΔ	625u	Δ	20	20	4.0	50m	100n	500	200uZ	80	↑					PE	u40a	
20#	BC146	50m*	150MΔ	625u	Δ	20	20	4.0	50m	100n	500	200uZ	220		2.0u	30k	25	4.0p	PE	u45	
21#	BF230	50m*	200MΔ	625u	Δ	30	20	5.0	30m	100n	1.00	1.0mZ	67	↑					PE	u47	
22#	BSW12†	50m*	200MΔ	625u	Δ	40	20	5.0	200m	0.5uZ	1.00	1.0mZ	40	↑					PE	u47	
23#	BF229	50m*	200MΔ	625u	Δ	30	20	5.0	30m	100n	1.00	1.0mZ	115	↑					PE	u47	
24#	BC197A	50m	300MΔ	500u	Δ	50	45	6.0	100m	5.0uZ	5.00	2.0	125	Δ		18m	3.0k	1.0	2.5p	PE	u47a
25#	BC197B	50m	300MΔ	500u	Δ	50	45	6.0	100m	5.0uZ	5.00	2.0	240	Δ		30m	5.0k	1.3	2.5p	PE	u47a
26#	BC198A	50m	300MΔ	500u	Δ	30	20	5.0	100m	5.0uZ	5.00	2.0	125	Δ		18m	3.0k	1.0	2.5p	PE	u47a
27#	BC198B	50m	300MΔ	500u	Δ	30	20	5.0	100m	5.0uZ	5.00	2.0	240	Δ		30m	5.0k	1.3	2.5p	PE	u47a
28#	BC198C	50m	300MΔ	500u	Δ	30	20	5.0	100m	5.0uZ	5.00	2.0	470	Δ		50m	7.5k	2.3	2.5p	PE	u47a
29#	BC199B	50m	300MΔ	500u	Δ	30	20	5.0	100m	5.0uZ	5.00	2.0	240	Δ		30m	5.0k	1.3	2.5p	PE	u47a
30#	BC199C	50m	300MΔ	500u	Δ	30	20	5.0	100m	5.0uZ	5.00	2.0	470	Δ		50m	7.5k	2.3	2.5p	PE	u47a
31#	BSW11†	50m*	400MΔ	625u	Δ	25	15	5.0	200m	1.0uZ	1.00	1.0mZ	50	↑					PE	u47	
32	2SC656	50m	550MΔ		Δ	10	2.0	2.0	5.0m	1.0u	1.00	5.0mZ	130						PE	u38	
33#	BFS13E	60m		1.7m	Δ	40	40	6.0		50n	5.00	1.0mZ	100	Δ					PE		
34#	BFS13F	60m		1.7m	Δ	40	40	6.0		50n	5.00	1.0mZ	100	Δ					PE		
35#	BFS13G	60m		1.7m	Δ	40	40	6.0		50n	5.00	1.0mZ	100	Δ					PE		
36#	BFS15E	60m		1.7m	Δ	40	30	5.0		50n	100	1.0mZ	55	Δ					PE		
37#	BFS15F	60m		1.7m	Δ	40	30	5.0		50n	100	1.0mZ	55	Δ					PE		
38#	BFS15G	60m		1.7m	Δ	40	30	5.0		50n	100	1.0mZ	55	Δ					PE		
39#	BFS27E	60m		1.7m	Δ	20	20	5.0		15u	1.00	1.0mZ	50	Δ					PE		
40#	BFS27F	60m		1.7m	Δ	20	20	5.0		15u	1.00	1.0mZ	50	Δ					PE		
41#	BFS27G	60m		1.7m	Δ	20	20	5.0		15u	1.00	1.0mZ	50	Δ					PE		
42#	2SC250	60m	170MΔ		Δ	20	2.0	2.0	25m	2.0uZ	6.00	2.0mZ	45						PE		
43	2N1267	65mΔ		769u	Δ	20	2.0	2.0	100m	.70u	1.00	2.0mZ	11	↑					PE		
44	RT930H	70m	30MΔ		Δ	45	5.0	5.0		.01u	5.00	.01mZ	100	↑					PE		
45	2N821†	75m	1.2m	#	S	30	25	25	400m	1.0uZ	1.00	5.0mZ	40	↑					PE		
46	2SC655	75m	80MΔ		Δ	10	2.0	2.0	10m	1.0u	5.00	2.0mZ	250		35u	3.5k	2.5	4.5p	PE	u38	
47	2N1268	80m		769u	Δ	20	2.0	2.0	100m	.70u	1.00	2.0mZ	20					1.5p	D	T09	
48#	BFX75	80m	230MΔ		Δ	30	5.0	5.0	30 #			1.0mZ	280	↑					PE		
49#	BFX76	80m	230MΔ		Δ	30	5.0	5.0	30 #			1.0mZ	110	↑					PE		
50	2SC186	85m	250MΔ		Δ	20	15	2.0	25m	2.0uZ	6.00	2.5mZ	50					4.0p	PL	T01	
51	2SC187	85m	250MΔ		Δ	20	15	2.0	25m	2.0uZ	6.00	2.5mZ	50					4.0p	PL	T01	
52	D26B1	90m	1.2m	#	S	40	15	4.5		400nZ	1.00	1.0mZ	20	↑				4.0p	PE	u40	
53	D26B2	90m	1.2m	#	S	40	15	4.5		400nZ	1.00	1.0mZ	40	↑				4.0p	PE	u40	
54#	D26C1	90m	1.2m	#	J	25	25	5.0		25nZ	5.00	1.0mZ	30	↑				8.0p	PE	u40b	
55#	D26C2	90m	1.2m	#	J	25	25	5.0		25nZ	5.00	1.0mZ	60	↑				8.0p	PE	u40b	
56#	D26C3	90m	1.2m	#	J	25	25	5.0		25nZ	5.00	1.0mZ	140	↑				8.0p	PE	u40b	
57#	D26C4	90m	1.2m	#	J	25	25	5.0		25nZ	5.00	1.0mZ	250	↑				8.0p	PE	u40b	
58#	D26C5	90m	1.2m	#	J	25	25	5.0		25nZ	5.00	1.0mZ	400	↑				8.0p	PE	u40b	
59	D26E2	90m	1.2m	#	J	18	18	5.0		25n	2.50	100uZ	70	↑				4.0p	PE	u40	
60	D26E3	90m	1.2m	#	J	18	18	5.0		25n	2.50	100uZ	70	↑				4.0p	PE	u40	
61	D26E4	90m	1.2m	#	J	18	18	5.0		25n	2.50	100uZ	115	↑				4.0p	PE	u40	
62	D26E5	90m	1.2m	#	J	18	18	5.0		25n	2.50	100uZ	180	↑				4.0p	PE	u40	
63	D26E6	90m	1.2m	#	J	18	18	5.0		25n	2.50	100uZ	40	↑				4.0p	PE	u40	
64	D26E7	90m	1.2m	#	S	18	18	5.0	100m	25n	2.50	100uZ	280	↑				4.0p	PE	u40	
65	D26G1	90m	30MΔ		Δ	30	15	3.0		0.1u	1.00	3.0mZ	20	↑				1.7p	PE	u40	
66	BC121	90m	1.1m	#	J	5.0	5.0	5.0	50m	10nZ	5.00	25mZ	50						PE	u32	
67	BC122	90m	30MΔ		Δ	30	20	5.0	50m	10nZ	5.00	25mZ	50						PE	u32	
68	BC123	90m	30MΔ		Δ	45	30	5.0	50m	10nZ	5.00	25mZ	50						PE	u32	
6																					



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE (Hz)	T ABS MAX RATINGS @25°C (V)	TYPICAL 'h' PARAMETERS										Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E			
					MAX. RATING @25°C			BIAS			COMMON EMITTER										
					IBVcbo (V)	ICVceo (V)	IEVbeo (V)	IC (A)	ICbco (A)	ICleo (A)	Vcb (V)	le (A)	hfe	hoe (mhos)					hie (Ω)	hre (X.0001)	
1#	BC194T	100m*	250MΔ	1.2m	Δ	40	25	5.0	800m	100m∅	100m∅	100	1.0m∅	25	Δ	80p	PE	u30b	D		
2#	2SC752	100m	300MΔ	1.0m	Δ	30	12	4.0	100m	100m∅	100m∅	1.0m	80		4.0p	PE	R67a	B			
3#	2SC429	100m	380MΔ	1.0m	Δ	25	12	2.0	10m	500m∅	100m∅	1.0m	27		2.0p	PE	u23	B			
4#	2SC785	100m	400MΔ	1.0m	Δ	40	30	4.0	20m	500m∅	6.0m	1.0m	25	Δ*	5.5u	800	85	PE	R67a	B	
5#	2SC430	100m	420MΔ	1.0m	Δ	25	12	2.0	10m	1.0m∅	6.0m	1.0m	46		6.0u	1.3k	85	PE	u23	B	
6#	2SC763	100m	470MΔ	1.0m	Δ	25	12	3.0	20m	500m∅	6.0m	1.0m	70	↑	1.5p	PE	T092	D			
7#	2SC784	100m	500MΔ	1.0m	Δ	40	30	4.0	20m	500m∅	6.0m	1.0m	25	Δ*	1.5p	PE	R67a	B			
8#	2SC800	100m	600MΔ	800u	Δ	30	25	4.0	10m	1.0u	6.0m	2.0m	80	↑	5.0p	PE	u23	B			
9#	MT3001	100m	600MΔ	800u	Δ	30	12	3.0	20m	200m∅	100m∅	8.0m	50	↑	1.4p	PE	u81	B			
10#	2SC535	100m	700MΔ	1.0m	Δ	30	20	4.0	20m	50u	6.0m	1.0m	35	Δ	90p	PE	u81	B			
11#	2SC271	100m	800MΔ	1.0m	Δ	25	12	3.0	20m	1.0u∅	6.0m	2.0m	70		1.0p	PE	u23a	B			
12#	MT9001T	100m	800MΔ	800u	Δ	40	40	4.5	200m	50m∅	1.0m	10m	40	Δ	4.0p	PE	u81	B			
13#	MT9002*	100m	800MΔ	800u	Δ	30	30	4.5	200m	50m∅	1.0m	10m	30	Δ	4.0p	PE	u81	B			
14#	MT9003†	100m	800MΔ	800u	Δ	18	12	4.0	4.0	500m∅	5.0m	10m	25	Δ	4.0p	PE	u81	B			
15#	MT3002	100m	900MΔ	800u	Δ	30	12	3.0	20m	200m∅	100m∅	8.0m	50	↑	1.3p	PE	u81	B			
16#	MT3011	100m	900MΔ	800u	Δ	20	12	3.0	20m	500m∅	100m∅	8.0m	50	↑	1.4p	PE	u81	B			
17#	2SC289	100m	1.1GΔ	1.0m	Δ	25	12	3.0	10m	1.0u∅	6.0m	2.0m	70		1.0p	PE	u23	C			
18#	2SC272	100m	1.2GΔ	1.0m	Δ	25	12	3.0	20m	1.0u∅	6.0m	2.0m	70		1.0p	PE	u23	C			
19#	BC155A	105m	50MΔ	1.3m	Δ	5.0	5.0	5.0	50m	100n	1.0m	500m	85	Δ		PE	u30b	D			
20#	BC155B	105m	50MΔ	1.3m	Δ	5.0	5.0	5.0	50m	100n	1.0m	500m	200	Δ		PE	u30b	D			
21#	BC155C	105m	50MΔ	1.3m	Δ	5.0	5.0	5.0	50m	100n	1.0m	500m	470	Δ		PE	u30b	D			
22#	BFY68	105m	50MΔ	1.3m	Δ	25	15	5.0	100n	100n	1.0m	500m	40	Δ		PE	u30b	D			
23#	BFY69A	105m	50MΔ	1.3m	Δ	25	15	5.0	100n	100n	1.0m	500m	55	Δ		PE	u30b	D			
24	2N1270	110m	769u	SS	Δ	20	2.0	2.0	100m	70u	1.0m	2.0m	11		1.5p	PE	T09	A∅			
25#	BFS18	110m	200MΔ	1.1m	Δ	30	20	5.0	30m	100m∅	100m∅	1.0m	35	Δ	1.0p	PE	u56	A			
26#	BFS18R	110m	200MΔ	2.0m	Δ	30	20	5.0	30m	100m∅	100m∅	1.0m	35	Δ	850ft	PE	u56	C			
27#	2SC170	110m	250MΔ	1.1m	Δ	25	20	3.0	50m	50u∅	6.0m	10m	60		5.0p	PL	T018	B			
28#	BFS19	110m	260MΔ	1.1m	Δ	30	20	5.0	30m	100m∅	100m∅	1.0m	65	Δ	1.0p	PE	u56	A			
29#	BFS19R	110m	260MΔ	2.0m	Δ	30	20	5.0	30m	100m∅	100m∅	1.0m	65	Δ	850ft	PE	u56	C			
30#	BCW31	110m	300MΔ	1.1m	Δ	30	20	5.0	50m	100m∅	5.0m	10u	90	↑	4.0p	PE	u56	A			
31#	BCW31R	110m	300MΔ	1.1m	Δ	30	20	5.0	50m	100m∅	5.0m	10	90	↑	2.5p	PE	u56	C			
32#	BCW32	110m	300MΔ	1.1m	Δ	30	20	5.0	50m	100m∅	5.0m	10u	150	↑	4.0p	PE	u56	A			
33#	BCW32R	110m	300MΔ	1.1m	Δ	30	20	5.0	50m	100m∅	5.0m	10	150	↑	2.5p	PE	u56	C			
34#	BCW33	110m	300MΔ	1.1m	Δ	30	20	5.0	50m	100m∅	5.0m	10u	270	↑	4.0p	PE	u56	A			
35#	BCW33R	110m	300MΔ	1.1m	Δ	30	20	5.0	50m	100m∅	5.0m	10	270	↑	2.5p	PE	u56	C			
36#	BFS20	110m	450MΔ	1.1m	Δ	30	20	4.0	25m	100m∅	100m∅	7.0m	85	↑	800fs	PE	u56	A			
37#	BFS20R	110m	450MΔ	2.0m	Δ	30	20	4.0	25m	100m∅	100m∅	7.0m	40	Δ	350ft	PE	u56	C			
38#	BSV521	110m	500MΔ	1.1m	Δ	20	12	5.0	50m	100m∅	1.0m	50m	25	Δ	4.0p	PE	u56	A			
39#	BSV521R	110m	500MΔ	1.1m	Δ	20	12	5.0	50m	100m∅	1.0m	50m	25	Δ	4.0p	PE	u56	C			
40#	BFS17R	110m	1.0GΔ	1.1m	Δ	30	15	2.5	25m	10m∅	1.0m	2.0m	20	Δ	1.5p	PE	u56	C			
41#	BFS17	110m	1.3GΔ	1.1m	Δ	25	15	2.5	25m	10m∅	1.0m	25m	20	Δ	1.5p	PE	u56	A			
42#	2SC29	115m	100M	909u	Δ	40	4.0	2.0	25m	1.0u∅	100m∅	10m	30		4.0p	ME	T05	B			
43#	2SC929	120m	300MΔ	1.1m	Δ	15	10	5.0	30m	1.0u	6.0m	1.0m	100	↑	1.6p	PE	R145	D			
44#	2SC930	120m	300MΔ	1.1m	Δ	15	10	5.0	30m	1.0u	6.0m	1.0m	80	↑	1.6p	PE	R145	D			
45#	2SC772†	120m	350MΔ	1.1m	Δ	15	5.0	3.0	30m	1.0u	6.0m	1.0m	45	↑	1.5p	PE	R145	D			
46#	2SC668	120m	550MΔ	1.1m	Δ	15	3.0	3.0	30m	1.0u	6.0m	1.0m	60	↑	1.1p	PL	R145	D			
47#	2SC674	120m	750MΔ	1.1m	Δ	15	3.0	3.0	30m	1.0u	6.0m	1.0m	80	↑	1.1p	PL	R145	D			
48#	2SC705	120m	800MΔ	1.1m	Δ	15	3.0	3.0	30m	1.0u	6.0m	1.0m	80	↑	1.1p	PL	R145	D			
49	KD5000	125m	2.0m∅	SS	Δ	20	10	2.0	15m	50m∅	1.0m	3.0m	20	Δ		GD	X72a	V			
50#	2S005	125m	30 Δ	1.0m	Δ	40	1.0	2.0	20m	1.0m∅	2.0	1.0m	100		200nb	50	2.0	1.6p	GD	T05	A
51	2N1586	125m	5.0MΔ	2.0m	Δ	15	10	1.0	25m	1.0u	5.0m	1.0m	90	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
52	2N1587	125m	5.0MΔ	2.0m	Δ	30	20	1.0	25m	1.0u	5.0m	1.0m	90	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
53	2N1588	125m	5.0MΔ	2.0m	Δ	60	40	1.0	25m	1.0u	5.0m	1.0m	90	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
54	2N1589	125m	5.0MΔ	2.0m	Δ	15	10	1.0	25m	1.0u	5.0m	1.0m	25	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
55	2N1590	125m	5.0MΔ	2.0m	Δ	30	20	1.0	25m	1.0u	5.0m	1.0m	25	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
56	2N1591	125m	5.0MΔ	2.0m	Δ	60	40	1.0	25m	1.0u	5.0m	1.0m	25	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
57	2N1592	125m	5.0MΔ	2.0m	Δ	15	10	1.0	25m	1.0u	5.0m	1.0m	70	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
58	2N1593	125m	5.0MΔ	2.0m	Δ	30	20	1.0	25m	1.0u	5.0m	1.0m	70	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
59	2N1594	125m	5.0MΔ	2.0m	Δ	60	40	1.0	25m	1.0u	5.0m	1.0m	70	Δ	1.5uZb	100	12	30pZ	GD	OV9a	A
60	2N264	125m	10M	1.0m	Δ	45	4.0	2.0	20m	1.0u	5.0	10m	20	Δ		G	OV1				
61	2N337	125m	20M	1.0m	Δ	45	30	1.0	20m	1.0u∅	20	1.0m	22		200nb	50	2.0	2.0p	GD	T05	A
62	JAN2N337†	125m	20MΔ	1.0m	Δ	45	45	1.0	20m	1.0u∅	20	1.0m	20	Δ	1.0uZb	80	20	3.0pZ	GD	T05	A
63	2N1104	125m	20MΔ	1.0m	Δ	45	35	1.0	20m	1.0u∅	20	1.0m	40	Δ	1.0uZb	80	20	3.0pZ	GD	T043	A
64#	2S014	125m	20M	1.0m	Δ	40	20	1.0	20m	1.0u∅	20	1.0m	65		200nb	50	3.0	2.0p	GD	R30	A
65	T1493	125m	20M	1.2m	Δ	40	20	1.0	20m	2.0u∅	5.0m	10m	15	Δ	200n	30	2.0	2.0p	G	T05	A
66	T1494	125m	20M	1.2m	Δ	40	20	1.0	20m	2.0u∅	5.0m	10m	40	Δ	200n	30	2.0	2.0p	G	T05	A
67	T1495	125m	20M	1.2m	Δ	40	20	1.0	20m	2.0u∅	5.0m	10m	120	Δ	200n	30	2.0	2.0p	G	T05	A
68	2N338	125m	30M	1.0m	Δ	45	30	1.0	20m	1.0u∅	20	1.0m	24		200n	50	3.0	2.0p	GD	T05	A
69	JAN2N338†	125m	30MΔ	1.0m	Δ	45	45	1.0	20m	1.0u∅	20	1.0m	40	Δ	1.0uZb	80	20	3.0pZ	GD	T05	A
70	JAN3N35	125m	70MΔ	1.7m	Δ	30	30	1.0	50m	50m∅	200m∅	1.3m	10	Δ		\$	T012	GA			
71	3N34	125m	100M	1.0m	Δ	30	30	1.0	20m	40m∅	200m∅	1.3m	25		1.5p	GD	T012	GA			
72#	BSW69	125m	130MΔ	1.6m	Δ	150	5.0	100m	0.7u	0.0	3.0m	30	Δ		Δ	MM13	E				
73	3N35	125m	150M	1.0m	Δ	30	30	1.0	20m	40m∅	200m∅	1.3m	25		1.5p	GD	T012	GA			
74#	BFX45†	125m#																			

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/C	TEMPERATURE M A M X P	ABS MAX RATINGS @25°C						MAX. lcbx @MAX Vcb (A)	BIAS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/A TO200 Ser.	C O D E		
						BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)	Vcb (V)	Ic (A)		hfe	hoe (mhos)	hie (Ω)	hre (X.0001)	Cob (F)							
																	hfe	hoe					hie	hre
1#	ZSC640	150m			\$J	30	25	5.0	100m	10u	3.0	5.0m	300	1					PE	u23a	C			
2#	BFV16	150m			\$J	100		3.0			1.0	30m	20	Δ					PE	u34b	P			
3#	BFV511	150m		1.2m	\$J	60	30	5.0	800m	50u	1.0	150m	50	Δ				8pZ	PE	u34b	P			
4#	BFV531	150m		1.2m	\$J	60	30	5.0	800m	50u	1.0	150m	50	Δ				8pZ	PE	u34b	P			
5#	BFV60	150m		1.0m	\$J	30	30	5.0	30m	0.5u	5.0	10m	100	Δ				8pZ	PE	u34b	P			
6#	BFV61	150m		1.0m	\$J	30	30	5.0	30m	0.5u	5.0	10m	100	Δ				8pZ	PE	u34b	P			
7#	BFV62	150m		1.2m	\$J	60	50	6.0	50m	0.5u	5.0	10m	100	Δ				6pZ	PE	u34b	P			
8#	PL1021	150m		1.0m	\$S	40	15	4.5		4u	1.0	10m	20	Δ				4pZ	PE	u50	F			
9#	PL1022	150m		1.0m	\$S	40	15	4.5		4u	1.0	10m	40	Δ				4pZ	PE	u50	F			
10#	PL1023	150m		1.0m	\$S	40	15	4.5		4u	1.0	10m	40	Δ				4pZ	PE	u50	F			
11#	PL1024	150m		1.0m	\$S	20	12	5.0		1.0u	35	10m	20	Δ				5pZ	PE	u50	F			
12#	PL1025	150m		1.0m	\$S	20	12	5.0		1.0u	35	10m	40	Δ				5pZ	PE	u50	F			
13#	PL1026	150m		1.0m	\$S	30	12	5.0		4u	35	10m	30	Δ				4pZ	PE	u50	F			
14#	PL1051	150m		1.0m	\$S	60	30	5.0		10u	10	10m	25	Δ				8pZ	PE	u50	F			
15#	PL1052	150m		1.0m	\$S	75	40	6.0		10u	10	10m	25	Δ				8pZ	PE	u50	F			
16#	PL1053	150m		1.0m	\$S	60	30	5.0		10u	10	10m	50	Δ				8pZ	PE	u50	F			
17#	PL1054	150m		1.0m	\$S	75	40	6.0		10u	10	10m	50	Δ				8pZ	PE	u50	F			
18#	PL1055	150m		1.0m	\$S	60	30	5.0		10u	10	10m	12	Δ				8pZ	PE	u50	F			
19#	PL1061	150m		1.0m	\$S	45	45	*	5.0		5.0	10u	40	Δ				8pZ	PL	u50	F			
20#	PL1062	150m		1.0m	\$S	45	45	*	5.0		5.0	10u	100	Δ				8pZ	PL	u50	F			
21#	PL1063	150m		1.0m	\$S	60	60	*	6.0		5.0	10u	100	Δ				6pZ	PL	u50	F			
22#	PL1064	150m		1.0m	\$S	25	25	*	5.0		5.0	10u	180	Δ				8pZ	PL	u50	F			
23#	PL1065	150m		1.0m	\$S	60	60	*	6.0		5.0	10u	40	Δ				6pZ	PL	u50	F			
24#	PL1066	150m		1.0m	\$S	25	25	*	5.0		5.0	10u	40	Δ				8pZ	PL	u50	F			
25#	PL1067	150m		1.0m	\$S	25	25	*	5.0		5.0	10u	100	Δ				8pZ	PL	u50	F			
26#	PL1081	150m		1.0m	\$S	60	40	*	5.0		10u	150m	20	Δ	#				PL	u50	F			
27#	PL1082	150m		1.0m	\$S	60	40	*	5.0		10u	150m	40	Δ	#				PL	u50	F			
28#	PL1083	150m		1.0m	\$S	75	50	*	7.0		10u	150m	100	Δ	#				PL	u50	F			
29#	PL1084	150m		1.0m	\$S	75	50	*	7.0		10u	150m	40	Δ	#				PL	u50	F			
30#	PL1085	150m		1.0m	\$S	120	100	*	7.0		10u	150m	40	Δ	#				PL	u50	F			
31#	PL1111	150m		1.0m	\$S	30	15	3.0		1n	1.0	3.0m	20	Δ				1.7pZ	PE	u50	F			
32#	PL1112	150m		1.0m	\$S	30	15	3.0		10n	1.0	3.0m	20	Δ				1.7pZ	PE	u50	F			
33#	PL1113	150m		1.0m	\$S	30	13	3.0		10n	1.0	4.0m	20	Δ				2.5pZ	PE	u50	F			
34	JAN2N117	150m	1.0MΔ	1.2m	\$S	30		1.0		1.0u	5.0	1.0m	9	Δ				1.5uZb	90	5.0	20	Δ	OV6	F
35	JAN2N118	150m	2.0MΔ	1.2m	\$S	30		1.0		1.0u	5.0	1.0m	18	Δ				1.5uZb	90	10	20	Δ	OV6	F
36	JAN2N119	150m	2.0MΔ	1.2m	\$S	30		1.0		1.0u	5.0	1.0m	37	Δ				1.5uZb	90	15	20	Δ	OV6	F
37	JAN2N333	150m	2.5MΔ	1.0m	\$S	45	45	1.0		500n	5.0	1.0m	44	Δ				1.2uZb	80	10	15	Δ	TO5	A
38	JAN2N335	150m	2.5MΔ	1.0m	\$S	45	45	1.0		500n	5.0	1.0m	90	Δ				1.2uZb	80	10	15	Δ	TO5	A
39	JAN2N336	150m	2.5MΔ	1.0m	\$S	45	45	1.0		500n	5.0	1.0m	270	Δ				1.2uZb	80	10	15	Δ	TO5	A
40	2N3268	150m	2.5MΔ	1.0m	\$S	45	45	1.0	25m	500n	5.0	1.0m	40	Δ				1.2uZb	80	10	15	Δ	TO5	A
41	2N117	150m	4.0M	1.0m	\$S	45		1.0	25m	2.0u	5.0	1.0m	15				400nb	42	1.2	7.0p	G	OV6	A	
42	2N160	150m	4.0M	1.0m	\$S	40		1.0	25m	1.0u	5.0	1.0m	15				400nb			7.0p	G	OV9	A	
43	2N160A	150m	4.0M	1.0m	\$S	40		1.0	25m	1.0u	5.0	1.0m	15				400nb			7.0p	G	OV9	A	
44#	2S001	150m	4.0MΔ	769u	\$J	45		1.0	25m	30n	5.0	1.0m	14				400nb	42	1.2	7.0p	G	TO5	A	
45#	2S002	150m	4.0MΔ	769u	\$J	45		1.0	25m	30n	5.0	1.0m	25				400nb	42	2.5	7.0p	G	TO5	A	
46#	2S004	150m	4.0MΔ	769u	\$J	45		1.0	25m	30n	5.0	1.0m	50				400nb	42	4.0	7.0p	G	TO5	A	
47#	2N118	150m	5.0M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	29				400nb	42	2.5	7.0p	G	OV6	A	
48	2N161	150m	5.0M	1.0m	\$S	40		1.0	25m	1.0u	5.0	1.0m	30				400nb			7.0p	G	OV9	A	
49	2N161A	150m	5.0M	1.0m	\$S	40		1.0	25m	1.0u	5.0	1.0m	30				400nb			7.0p	G	OV9	A	
50	2N119	150m	6.0M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	63				400nb	42	4.0	7.0p	G	OV6	A	
51	2N163	150m	6.0M	1.0m	\$S	40		1.0	25m	1.0u	5.0	1.0m	78				400nb			7.0p	G	OV9	A	
52	2N163A	150m	6.0M	1.0m	\$S	40		1.0	25m	1.0u	5.0	1.0m	78				400nb			7.0p	G	OV9	A	
53	2N332	150m	6.0M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	15				500nb	55	2.0	7.0p	G	TO5	A	
54	2N120	150m	7.0M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	200				400nb	42	4.0	7.0p	G	OV6	A	
55	2N118A	150m	8.0M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	90	Δ			1.2uZb	80	10	20pZ	G	OV6	A	
56	2N162	150m	8.0M	1.0m	\$J	40		1.0	25m	1.0u	5.0	1.0m	28	Δ						28	Δ	TO22	A	
57	2N162A	150m	8.0M	1.0m	\$J	40		1.0	25m	1.0u	5.0	1.0m	28	Δ						28	Δ	TO22	A	
58	2N333	150m	8.0M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	29				500nb	55	3.7	7.0p	G	TO5	A	
59	TI492	150m	8.0M	1.4m	\$J	40	20	1.0	25m	2.0u	5.0	1.0m	30				500nb	55	3.7	10p	G	TO5	A	
60	2N334	150m	10M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	54				500nb	55	3.5	7.0p	G	TO5	A	
61#	2S003	150m	10MΔ	769u	\$J	45		1.0	25m	30n	5.0	1.0m	25				400nb	42	2.0	7.0p	G	TO5	A	
62#	BCY87*	150m	10MΔ	1.0m	\$J	45	40	5.0	30m	5.0n	10	50n	100	Δ				3.5p	PL*	3.5p	PL*	L17u	A	
63#	BCY88*	150m	10MΔ	1.0m	\$J	45	40	5.0	30m	25n	10	0.5m	100	Δ				3.5p	PL*	3.5p	PL*	L17u	A	
64#	BCY89*	150m	10MΔ	1.0m	\$J	45	40	5.0	30m	0.1u	10	0.5m	100	Δ				3.5p	PL*	3.5p	PL*	L17u	A	
65	2N335	150m	11M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	63				300nb	55	6.0	10p	G	TO5	A	
66	2N1149	150m	12M	1.0m	\$S	45		1.0	25m	2.0u	5.0	1.0m	13				400nb	42	1.2	7.0p	G	OV9	A	
67	2N336	150m	13M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	200				250nb	55	7.0	7.0p	G	TO5	A	
68	2N1150	150m	13M	1.0m	\$S	45		1.0	25m	2.0u	5.0	1.0m	24				400nb	42	2.5	7.0p	G	OV9	A	
69	2N1151	150m	14M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	39				400nb	42	4.0	7.0p	G	OV9	A	
70	2N1152	150m	15M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.0m	49				400nb	42	4.0	7.0p	G	OV9	A	
71	2N1309A	150m	15.4M	2.5m	\$J	35	35	300m	6.0u	1.0	10m	80	Δ							20pZ	Δ	TO5	A	
72	2N1153	150m	16M	1.0m	\$J	45		1.0	25m	2.0u	5.0	1.												

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	3 TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE fab (Hz)	T M A M E X P	ABS MAX RATINGS @25°C				MAX. Icbo @MAX Vcb (A)	TYPICAL h <sub>FE</sub> PARAMETERS					Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C E O A D E			
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS		COMMON EMITTER									
										Vcb (V)	Ic (A)	hoe (mhos)	hie (Ω)	hre (X.0001)							
1#	BFV10	150m	200MΔ	1.0m	Δ	50	30	5.0	800m	.05uΩ	100	10mΩ	30	1Δ	12pZ	PE	u34b	P			
2#	BFV11	150m	200MΔ	1.0m	Δ	50	30	5.0	800m	.05uΩ	100	10mΩ	70	1Δ	12pZ	PE	u34b	P			
3#	BFV40	150m	200MΔ	1.0m	Δ	25	18	5.0	200m	.50uΩ	1.0	10mΩ	20	1Δ	6pZ	PEΔ	u34b	P			
4#	BFV49†	150m	200MΔ	1.2m	Δ	25	15	5.0	200m	.50uΩ	1.0	10mΩ	30	1Δ		PE	u34b	P			
5	BSX53†	150m	200MΔ	1.3m	Δ						1.0	50mΩ	50	Δ	5.0p	NPE	TO18				
6	BSX54†	150m	200MΔ	1.3m	Δ						1.0	50mΩ	50	Δ	5.0p	NPE	TO18				
7#	BSY95	150m	200MΔ	1.0m	Δ	20	15	5.0	100m	.05uΩ	10	10mΩ	50	1Δ	6pZ	PEΔ	TO18	A			
8#	2SC829	150m	230MΔ	1.5m	Δ	30	20	5.0	30m	10u	10	1.0m	40	1Δ	1.3p†	PE	TO92	B			
9	BF115Z	150m*	230MΔ	2.0m	Δ	50	30	5.0	30m	10u	100	1.0mΩ	165	Z†	650ft	PE	TO72	J			
10#	2SC33	150m	250MΔ	1.2m	Δ	45	20	3.0	50m	10u	100	5.0m	55		3.0p	PE	TO5				
11#	BCW60A†	150m*	250MΔ	1.2m	Δ	32	5.0	100m	20n	5.0	2.0m	200			4.5pZ	PE	u56a	A			
12#	BCW60B†	150m*	250MΔ	1.2m	Δ	32	5.0	100m	20n	5.0	2.0m	260			4.5pZ	PE	u56a	A			
13#	BCW60C†	150m*	250MΔ	1.2m	Δ	32	5.0	100m	20n	5.0	2.0m	330			4.5pZ	PE	u56a	A			
14#	BCW60D†	150m*	250MΔ	1.2m	Δ	32	5.0	100m	20n	5.0	2.0m	520			4.5pZ	PE	u56a	A			
15#	BFV12	150m	250MΔ	1.0m	Δ	60	35	5.0	800m	.05uΩ	10	1.0mΩ	40	1Δ	10pZ	PE	u34b	P			
16#	BFV41	150m	250MΔ	1.0m	Δ	20	12	4.5	200m	1.0u	.35	10mΩ	30	1Δ	5pZ	PEΔ	u34b	P			
17#	BFV45	150m	250MΔ	1.2m	Δ	35	15	5.0	200m	.08uΩ	1.0	10mΩ	30	1Δ	5pZ	PEΔ	u34b	P			
18#	BFV54	150m	250MΔ	1.2m	Δ	60	30	5.0	5.0u	10	150mΩ	30	1#	Δ	8pZ	PE	u34b	P			
19#	BCW46	150m#	300MΔ	2.0m	Δ	80	60	6.0	100m	10u	5.0	2.0m	240	Δ*	30u	4.5k	2.0	2.5p	PE	MM13	F
20#	BCW47	150m#	300MΔ	2.0m	Δ	50	45	6.0	100m	10u	5.0	2.0m	240	Δ*	30u	4.5k	2.0	2.5p	PE	MM13	F
21#	BCW48	150m#	300MΔ	2.0m	Δ	30	20	5.0	100m	10u	5.0	2.0m	240	Δ*	30u	4.5k	2.0	2.5p	PE	MM13	F
22#	BCW49	150m#	300MΔ	2.0m	Δ	30	20	5.0	100m	10u	5.0	2.0m	240	Δ*	30u	4.5k	2.0	2.5p	PE	MM13	F
23#	BFV43†	150m	300MΔ	1.2m	Δ	30	12	4.0	200m	.50uΩ	1.0	30mΩ	30	1Δ	5pZ	PE	u34b	P			
24#	BFV44†	150m	300MΔ	1.2m	Δ	30	15	4.0	200m	.50uΩ	1.0	30mΩ	30	1Δ	5pZ	PE	u34b	P			
25#	BFV46†	150m	300MΔ	1.2m	Δ	35	15	5.0	200m	.08uΩ	1.0	100mΩ	30	1Δ	5pZ	PE	u34b	P			
26#	2SC739	150m	350MΔ	1.5m	Δ	25	12	4.0	20m	1.0u	6.0	1.0m	60	1#	1.5p	PE†	TO92	P			
27#	2N3493	150m	400MΔ	833u	Δ	12	8.0	5.0	25m	5n#	5.0	50mΩ	40	1Δ	.7pZ	Δ	R96d	C			
28#	2SC269†	150m	400MΔ	1.2m	Δ	25	20	5.0	150m	1.0u	1.0	10mΩ	90	1	3.5p	PE	u23a	D			
29#	2SC738	150m	400MΔ	1.5m	Δ	25	12	4.0	20m	1.0u	6.0	1.0m	60	1#	1.5p	PE†	TO92	C			
30#	BF252	150m	400MΔ	1.0m	Δ	40	40	4.0	200m	100n	10	2.0m	30	1Δ		DPL	TO72				
31#	BFV42†	150m	400MΔ	1.2m	Δ	35	15	4.5	200m	.40uΩ	1.0	10mΩ	30	1Δ	4pZ	PE	u34b	P			
32#	BFV47	150m	400MΔ	1.2m	Δ	30	12	5.0	200m	.40uΩ	.35	10mΩ	30	1Δ	4pZ	PE	u34b	P			
33#	BSV53P†	150m	400M	1.2m	Δ						1.0	10mΩ	40	1Δ	4.0p	PE	u17c	E			
34#	BSV54P†	150m	400M	1.2m	Δ						1.0	10mΩ	20	1Δ	4.0p	PE	u17c	E			
35	NPC167	150m	400MΔ	1.0m	Δ	40	30	4.0	25m	.01u	10	4.0m	57		1.3p	PL	TO72	J			
36#	PL4021†	150m	400MΔ	1.0m	Δ	40	15	* 4.5	200m	.40uΩ	1.0	10mΩ	20	1Δ	4pZ	PE	u51				
37#	2SC921	150m	450MΔ	1.0m	Δ	25	12	4.0	10m	100n	3.0	500mΩ	65	1	1.5pZ	PE	u23a	C			
38#	2SC605	150m	480MΔ	1.0m	Δ	30	30	4.0	20m	.20uΩ	1.0	2.0m	60	1	1pZ	PL	u23a	C			
39#	2SC389	150m	500MΔ	1.2m	Δ	20	15	3.0	20m	.10u	5.0	4.0m	50		1pZ	PL	TO72				
40#	2SC657	150m	500MΔ	1.0m	Δ	18	18	3.0	30m	.20uΩ	1.0	4.0m	50	1	1.1p	D	u37				
41#	2SC927	150m	500MΔ	1.0m	Δ	30	15	3.0	20m	1.0u	6.0	1.0m	80	1	1.0p	PL	TO104				
42#	2SC928	150m	500MΔ	1.0m	Δ	30	15	3.0	20m	1.0u	6.0	1.0m	80	1	1.0p	PL	TO104				
43#	2SC1035	150m	500MΔ	1.0m	Δ	30	15	3.0	20m	1.0u	6.0	1.0m	70	1	1.0p	PL	TO104				
44#	2SC1036	150m	500MΔ	1.0m	Δ	30	15	3.0	20m	1.0u	6.0	1.0m	70	1	1.0p	PL	TO104				
45#	BF288	150m	500MΔ	1.0m	Δ	40	40	4.0	20m	50n	7.0	1.0m	65	1Δ		DPE	TO72				
46#	BF344	150m	500MΔ	1.0m	Δ	30	20	4.0	50m	10u	10	1.0m	90	1Δ		PE	TO18	C			
47#	BF345	150m	500MΔ	1.0m	Δ	30	20	4.0	50m	10u	10	1.0m	40	1Δ		PE	TO18	C			
48#	BFV27†	150m	500MΔ	1.2m	Δ	15	6.0	4.0		.10uΩ	1.0	30mΩ	15	1#	3pZ	PE	u34b	C			
49#	BFV28†	150m	500MΔ	1.7m	Δ	15	6.0	4.0	50m	10u	.40	1.0m	15	1#	3pZ	PE	u34b	P			
50#	BFV80	150m	500MΔ	1.2m	Δ	25	12	3.0	50m	.50uΩ	1.0	3.0m	20	1Δ	1.7p	PE	u34b	P			
51#	PL4022†	150m	500MΔ	1.0m	Δ	40	15	* 4.5	200m	.40uΩ	1.0	10mΩ	40	1Δ	4pZ	PE	u51				
52#	PL4023†	150m	500MΔ	1.0m	Δ	40	15	* 4.5	200m	.40uΩ	1.0	100mΩ	20	1Δ	4pZ	PE	u51	C			
53#	2SC606	150m	530MΔ	1.0m	Δ	30	30	4.0	20m	.20uΩ	1.0	2.0m	60	1	1pZ	PL	u23a	B			
54#	2SC382	150m	550MΔ	1.4m	Δ	40			50m	500n	10	4.0m	80		1.6pZ	PE	R67a	C			
55#	2SC463H	150m	550MΔ	1.0m	Δ	35	35	4.0	20m	100u	10	2.0m	5	5	6pZ	PE	TO72	G			
56#	BF200	150m	550MΔ	1.0m	Δ	30	20	3.0	20m	10u	10	3.0m	16	Δ	.90p	PL	TO72	G			
57#	BF303	150m	550MΔ	1.0m	Δ	40	30	3.0	50m	6.0	6.0	1.0m	140	1		PL	TO72	C			
58#	BF304	150m	550MΔ	1.0m	Δ	40	30	3.0	50m	6.0	6.0	1.0m	30	1Δ		PL	TO72	C			
59#	2SC287A	150m	600MΔ	1.0m	Δ	35	15	4.0	20m	.20uΩ	10	5.0m	80	1	1pZ	PE	u23	C			
60#	2SC382G	150m	600MΔ	1.5m	Δ	40	2.0	2.0	50m	.50uΩ	10	4.0m	30	1Δ	1.5p	PE†	R67a	B			
61#	2SC382R	150m	600MΔ	1.5m	Δ	40	2.0	2.0	50m	.50uΩ	10	4.0m	30	1Δ	1.5p	PE†	R67a	B			
62#	2SC762	150m	600MΔ	1.0m	Δ	30	20	3.0	20m	100u#	10	2.0m	13	1Δ	280ft	PL	TO72	G			
63#	2SC997	150m	600MΔ	1.0m	Δ	40	30	25m	25n	10	10	4.0m	70	1	1.5p	PL	TO72	G			
64	A481	150m	600MΔ	1.0m	Δ	30	20	3.0	20m						28p	PL†	TO72				
65	BF181	150m	600MΔ	1.0m	Δ	30	20	3.0	20m						.28p†	PL	TO72				
66#	BF251	150m	600MΔ	1.0m	Δ	30	30	4.0		50n	10	4.0m	30	1Δ		DPL	TO72				
67#	BF270	150m	600MΔ	1.0m	Δ	40	40	4.0	20m	10	10	4.0m	50	1		PL	TO72	J			
68#	BF302	150m	600MΔ	1.0m	Δ	40	30	3.0	50m	6.0	6.0	1.0m	35	1Δ		PE	TO72	C			
69#	BFV59	150m	600MΔ	1.3m	Δ	25	13	3.0	50m	.05uΩ	10	4.0m	20	1Δ	2.5p	PE	u34b	P			
70#	BFW63	150m	600MΔ	1.0m	Δ	40	30	4.0		.5uΩ	10	4.0m	70	1#	2p†	DPL	TO72	J			
71#	PL4112	150m	600MΔ	1.0m	Δ	30	15	3.0	200m	10n	1.0	3.0m	20	1Δ	2.0pZ	PE	u51				
72#	2SC707	150m	650MΔ	1.0m	Δ	20	20	3.0	20m	100u	10	2.0m	50	1	40p	PE					
73#	2SC707H	150m	650MΔ	1.0m	Δ	20	20	2.0	20m	100u	10	2.0m	50	1	40p	PE					
74#	2SC947	150m	650MΔ	1.0m	Δ	25	20	3.0	20m	100u#	10	2.0m	20	1	330ft	PL	TO72	G			
75#	2SC1047	150m	650MΔ	1.5m	Δ	30	20	3.0	15m	10u	6.0	1.0m	40	1Δ	800ft	PE	TO92	B			
76	A482	150m	650MΔ	1.0m	Δ	25	20	3.0	15m	50n	10	2.0m	16	1	1.1p	PE	TO72	G			
77	A484	150m	650MΔ	1.0m	Δ	30	20	3.0	20m		10	3.0m	30	1	.28p†	PL	TO72	G			
78#	BF182	150m	650MΔ	1.0m	Δ	25	20	3.0	15m		10	3.0m	30	1	.33p†	PL	TO72	G			

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN AIR W/°C	M A M P	ABS MAX RATINGS @25°C				MAX. lobo @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG #/a TO200 Ser	C O D E
						BVcbo (V)	BVceo (V)	BVebo (V)	lc (A)		Vcb (V)	le (A)	hfe				
1	K5012	150m	1.4G	1.1m	SJ	25	12	2.5	50n	1.0	3.0m	100	†	800f	D	T050	C
2	K5503C	150m	1.5G	1.2m	SJ	20	12	2.0	.30u	6.0	10m	15	Δ	E1	u35		
3	2SC988	150m	3.0G	1.2m	SJ	20	15	3.0	50u	10	10m	30	Δ	PE	T072	G	
4	2SC989F	150m	3.0G	1.2m	SJ	20	12	3.0	1.0u	1.0	30m	30	Δ	PE	X79	CZ	
5	2SC988A	150m	3.5G	840m	SJ	20	15	3.0	500n	10	10m	30	Δ	PE	T072	G	
6	2SC988B	150m	3.5G	840m	SJ	20	15	3.0	500n	10	10m	30	Δ	PE	T072	G	
7	2SC987	150m	4.5G	1.2m	SJ	20	15	3.0	.50u	10	10m	30	Δ	PE	X80	GJ	
8	A495	160m	220m	2.0m	†J	30	20	5.0	30m	10	1.0m	67	†	PE	MM10	C	
9	BF255Z	160m*	220m	2.0m	†J	30	20	5.0	30m	10	1.0m	67	†	PE	X73	C	
10	NPC115	160m	270m	1.1m	†S	50	30	5.0	30m	50u	10	1.0m	45	†Δ	PE	X73	J
11	BF254Z	160m*	280m	2.0m	†J	30	20	5.0	30m	10	1.0m	45	†	PE	T072	C	
12	BSW13f	160m	280m	2.0m	†J	20	15	5.0	50m	500n	.35	10m	40	†Δ	PE	u32	
13	A494	160m	300m	2.0m	†J	30	20	5.0	30m	10	1.0m	115	†	PE	MM10	C	
14	NPC189	160m	300m	1.1m	†S	50	30	5.0	.50u	10	1.0m	45	†Δ	E	T072	J	
15	NPC187	160m	500m	1.1m	†S	40	30	5.0	.01u	10	4.0m	30	†Δ	E	T072	J	
16	2SC593	165m	150m	1.0m	SJ	50	30	5.0	1.0u	10	1.0m	40	†Δ	PE	T072	G	
17	2N4433	165m	200m	1.1m	SJ	50	30	5.0	.01u	10	1.0m	50	†Δ	PE	T072	J	
18	2N1272	170m	769u	1.2m	†S	20	20	2.0	.70u	10	2.0m	50	†	D	T09	A	
19	2N4259	175m	1.1m	1.2m	†S	40	30	2.5	10n	8.0	2.0m	70	†Δ	PE	R115	G	
20	BSX38	175m*	200m	1.7m	SJ	35	30	5.0	.05u	50	10m	65	†Δ	PL	T018		
21	SE5022	175m	300m	1.1m	SJ	20	20	3.0	50n	5.0	4.0m	40	†#	DPL	T072	G	
22	SE5023	175m	300m	1.1m	SJ	20	20	3.0	50n	5.0	4.0m	40	†#	DPL	T072	G	
23	SE5024	175m	300m	1.2m	SJ	20	20	3.0	.05u	5.0	4.0m	40	†#	DPL	T072	G	
24	SE5040	175m	300m	1.1m	SJ	30	30	3.0	50n	10	4.0m	80	†	DPL	T072	J	
25	SE5050	175m	300m	1.2m	SJ	20	20	3.0	.05u	5.0	4.0m	40	†#	DPL	T072	G	
26	SE5051	175m	300m	1.2m	SJ	20	20	3.0	.05u	5.0	4.0m	40	†#	DPL	T072	G	
27	SE5020	175m	375m	1.2m	SJ	20	20	3.0	.05u	5.0	4.0m	40	†#	DPL	T072	G	
28	SE5021	175m	375m	1.2m	SJ	20	20	3.0	.05u	5.0	4.0m	40	†#	DPL	T072	G	
29	BF222	175m	400m	1.1m	SJ	50	50	4.0	1.0u	7.0	2.0m	20	†#	DPE	T072	G	
30	BF166	175m	500m	1.2m	SJ	40	40	3.0	.10u	12	2.5m	50	†#	DPE	T072	G	
31	BF175	175m	500m	1.2m	SJ	40	40	3.0	.10u	12	2.5m	70	†#	DPE	T072	G	
32	FT118	175m	500m	1.2m	†J	20	20	3.0	.05u	10	2.0m	80	†	DPL	T072	J	
33	SE5052	175m	500m	1.2m	SJ	20	20	3.0	.05u	10	2.0m	80	†	DPL	R96	G	
34	SE5055	175m	500m	1.1m	SJ	20	20	3.0	50n	10	2.0m	80	†	DPL	T072	J	
35	BF161	175m	550m	1.2m	SJ	50	50	3.0	.05u	24	1.5m	70	†#	PL	T072	J	
36	BFX31	175m	550m	1.0m	SJ	30	30	3.0	.05u	12	4.0m	80	†#	DPE	T072	J	
37	BF155	175m	600m	1.2m	SJ	40	40	3.0	.10u	12	2.5m	70	†#	DPE	T072	J	
38	40242	180m	1.2m	1.2m	SJ	45	45	4.5	.02u	6.0	1.0m	80	†	PL	T0104	G	
39	40243	180m	1.2m	1.2m	SJ	45	45	4.5	.02u	6.0	1.0m	80	†	PL	T0104	G	
40	40244	180m	1.2m	1.2m	SJ	45	45	4.5	.02u	6.0	1.0m	65	†	PL	T0104	G	
41	40245	180m	1.2m	1.2m	SJ	45	45	4.5	.02u	6.0	1.0m	130	†	PL	T0104	G	
42	40246	180m	1.2m	1.2m	SJ	45	45	4.5	.02u	6.0	1.0m	55	†	PL	T0104	G	
43	2SC402A	180m	140m	1.2m	†J	50	50	4.0	100n	2.0	1.0m	30	†Δ	EM	u37		
44	2SC403A	180m	140m	1.2m	†J	50	50	4.0	100n	2.0	1.0m	60	†	EM	u37		
45	2SC631	180m	140m	1.2m	†J	25	25	6.0	100n	2.0	1.0m	350	†	EM	u37		
46	2SC632	180m	140m	1.2m	†J	40	40	6.0	100n	2.0	1.0m	350	†	EM	u37		
47	2SC633	180m	140m	1.2m	†J	25	25	6.0	100n	2.0	1.0m	90	†	EM	u37		
48	2SC634	180m	140m	1.2m	†J	40	40	6.0	100n	2.0	1.0m	90	†	EM	u37		
49	MT6003	180m	150m	1.4m	SJ	25	25	4.0	100n	5.0	50m	30	†Δ	PE	u81	B	
50	BC167Δ	180m	300m	2.2m	†J	45	45	6.0	100m	5.0	2.0m	330	†	PE	T092		
51	BC168Δ	180m	300m	2.2m	†J	20	20	5.0	100m	5.0	2.0m	330	†	PE	T092		
52	BC169Δ	180m	300m	2.2m	†J	20	20	5.0	100m	5.0	2.0m	330	†	PE	T092		
53	2N5181	180m	400m	1.2m	†S	45	45	3.0	50m	.02u	1.0m	27	†Δ	PL	T0104	J	
54	2N5182	180m	400m	1.2m	†S	35	35	3.0	4.0m	.03u	1.0m	27	†Δ	PL	T0104	J	
55	AT345	180m	400m	1.2m	SJ	45	45	3.0	20m	100n	10	35	†#Δ	PL	T0104	G	
56	AT346	180m	400m	1.2m	SJ	45	45	3.0	20m	100n	10	35	†#Δ	PL	T0104	G	
57	AT355	180m	400m	1.2m	SJ	20	20	3.0	20m	100n	10	35	†#Δ	PL	T0104	G	
58	AT356	180m	400m	1.2m	SJ	20	20	3.0	20m	100n	10	35	†#Δ	PL	T0104	G	
59	2SC682	180m	550m	1.2m	SJ	20	20	3.0	30m	100u	10	2.0m	5.5	†	PE	47p	
60	2SC683	180m	550m	1.2m	SJ	20	20	3.0	20m	100u	10	2.0m	5.5	†	PE	47p	
61	2N5180	180m	650m	1.2m	†S	30	15	2.0	.50u	8.0	2.0m	20	†Δ	PL	T0104	G	
62	40238	180m	800m	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	170	†	PL	T0104	G
63	40239	180m	800m	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	170	†	PL	T0104	G
64	40240	180m	800m	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	275	†	PL	T0104	G
65	40235	180m	1.0G	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	170	†	PL	T0104	G
66	40236	180m	1.0G	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	275	†	PL	T0104	G
67	40237	180m	1.0G	1.2m	SJ	45	45	4.5	50m	1.0u	6.0	1.0m	275	†	PL	T0104	G
68	2N2711	200m	2.7m	2.7m	†J	18	18	5.0	100m	500n	4.5	2.0m	30	†Δ	PL	R67	B
69	2N2712	200m	2.7m	2.7m	†J	18	18	5.0	100m	500n	4.5	2.0m	75	†Δ	PL	R67	B
70	2N2713	200m	2.7m	2.7m	†J	18	18	5.0	200m	500n	4.5	2.0m	30	†Δ	PL	R67	B
71	2N2714	200m	2.7m	2.7m	†J	18	18	5.0	200m	500n	4.5	2.0m	75	†Δ	PL	R67	B
72	2N2715	200m	2.6m	2.6m	†S	18	18	5.0	50m	50u	4.5	2.0m	30	†Δ	PL	R67	B
73	2N2716	200m	2.6m	2.6m	†S	18	18	5.0	50m	50u	4.5	2.0m	80	†Δ	PL	R67	B
74	2N3390	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	40	†Δ	PL	R67	B
75	2N3391	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	250	†Δ	PL	R67	B
76	2N3391A	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	250	†Δ	PL	R67	B
77	2N3392	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	150	†Δ	PL	R67	B
78	2N3393	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	90	†Δ	PL	R67	B
79	2N3394	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	55	†Δ	PL	R67	B
80	2N3395	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	150	†Δ	PL	R67	B
81	2N3396	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	90	†Δ	PL	R67	B
82	2N3397	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	55	†Δ	PL	R67	B
83	2N3398	200m	2.6m	2.6m	†S	25	25	5.0	100m	100n	4.5	2.0m	55	†Δ	PL	R67	B
84	2N3721	200m	2.6m	2.6m	†S	18	18	5.0	100m	500n	10	2.0m	60	†Δ	PL	R67	B
85	2N3877	200m	2.6m	2.6m	†S	70	70	4.0	50m	500n	4.5	2.0m	20	†Δ	PL	R67	B
86	2N3877A	200m	2.6m	2.6m	†S	85	85	4.0	50m	500n	4.5	2.0m	20	†Δ	PL	R67	B
87	2N3900	200m	2.6m														



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/C (Hz)	M A M X P	ABS MAX RATINGS @25°C				MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O A D E
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	GI2926	200m	2.7m	#J	25	18			.50u	100	2.0m	470				12p	PL*	T018	A
2	GI3392	200m	2.7m	#J	25	25			.10u	4.50	2.0m	500				10p	PL*	T018	A
3#	MD2974*	200m	1.6m	#J	45	45	6.0	30m	10n	5.00	1.0m	150	Δ				PL*	R148a	A
4#	MD2975*	200m	1.6m	#J	45	45	6.0	30m	10n	5.00	1.0m	300	Δ				PL*	R148a	A
5#	MD2978*	200m	1.6m	#J	60	60	6.0	30m	2.0n	5.00	1.0m	150	Δ				PL*	R148a	A
6#	MD2979*	200m	1.6m	#J	60	60	6.0	30m	2.0n	5.00	1.0m	300	Δ				PL*	R148a	A
7	MPS2923	200m	2.7m	#J	25	25	5.0	100m	.50u	100	2.0m	90	Δ			12p	DEΔ	X20b	A
8	MPS2924	200m	2.7m	#J	25	25	5.0	100m	.50u	100	2.0m	150	Δ			12p	DEΔ	X20b	A
9	MPS2925	200m	2.7m	#J	25	25	5.0	100m	.50u	100	2.0m	235	Δ			12p	DEΔ	X20b	A
10	SA2253	200m		#J	40				.05u	5.00	1.0m	25	†				PL	L2	A
11#	2SC466	200m	400mS	#J	30	12	2.0	20m	500n	6.00	1.0m	40				850f	PE	T103a	B
12#	PBC107	200m	150 Δ	#J	45	45	5.0	100m	100n	5.00	2.0m	125	Δ	60u	8.5k	1.8	PE	T098	B
13#	PBC108	200m	150 Δ	#J	20	20	5.0	100m	100n	5.00	2.0m	125	Δ	110u	15k	2.0	PE	T098	B
14#	PBC109	200m	150 Δ	#J	20	20	5.0	100m	100n	5.00	2.0m	240	Δ	110u	15k	2.5	PE	T098	B
15#	CS411	200m	350 Δ	#J	40	15	5.0	500mS	500n	4.00	30m	60	†			3.3p	PE	R97a	A
16	2N470	200m	8.0mS	Δ	15	15	2.0	25m	500n	5.00	1.0m	10	Δ	1.5u	90	5.0	GD	T05	A
17	2N471	200m	8.0mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	10	Δ	1.5u	90	5.0	GD	T05	A
18	2N471A	200m	8.0mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	6.0	Δ	1.2u	70	5.0	GD	T05	A
19	2N472	200m	8.0mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	10	Δ	1.5u	90	5.0	GD	T05	A
20	2N472A	200m	8.0mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	10	Δ	1.5u	90	5.0	GD	T05	A
21	2N473	200m	8.0mS	Δ	15	15	2.0	25m	500n	5.00	1.0m	6.0	Δ	600nb	70	5.0	GD	T05	A
22	2N474	200m	8.0mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	10	Δ	1.5u	90	5.0	GD	T05	A
23	2N474A	200m	8.0mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	10	Δ	1.5u	90	5.0	GD	T05	A
24	2N475	200m	8.0mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	20	Δ	1.2u	70	5.0	GD	T05	A
25	2N475A	200m	8.0mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	35	Δ	600nb	70	5.0	GD	T05	A
26	2N479A	200m	8.0mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	70	Δ	1.2u	70	5.0	GD	T05	A
27	2N480A	200m	8.0mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	70	Δ	1.2u	70	5.0	GD	T05	A
28	2N542A	200m	8.0mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	80	Δ			20p	GD	T05	A
29	2N543A	200m	8.0mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	140	Δ	600nb	50	5.0	GD	T05	A
30	2N476	200m	12mS	Δ	15	15	2.0	25m	500n	5.00	1.0m	30	Δ	1.5u	90	5.0	GD	T05	A
31	2N477	200m	12mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	30	Δ	1.5u	90	5.0	GD	T05	A
32	2N478	200m	20mS	Δ	15	15	2.0	25m	500n	5.00	1.0m	40	Δ	1.5u	90	5.0	GD	T05	A
33	2N479	200m	20mS	Δ	30	30	2.0	25m	500n	5.00	1.0m	40	Δ	1.5u	90	5.0	GD	T05	A
34	2N480	200m	20mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	40	Δ	1.5u	90	5.0	GD	T05	A
35	2N1674	200m	20mS	Δ	45	45	2.0	25m	500n	5.00	1.0m	50	Δ	1.5u	90	5.0	GD	T05	A
36#	BC114	200m	20mS	Δ	30	25	6.0		.05u	100	0.5m	200	†			4p	DPL	R97a	A
37	EN930	200m	30mS	Δ	45	45	5.0	30m	50n	5.00	1.0m	600	Δ	1.0u	32	6.0	DPE	T0106	A
38	LID929	200m	30mS	Δ	45	45	5.0	30m	20n	5.00	1.0m	60	Δ	1.0u	32	6.0	PL*	T0122	P
39	LID930	200m	30mS	Δ	45	45	5.0	30m	20n	5.00	1.0m	150	Δ	1.0u	32	6.0	PL*	T0122	P
40#	PL4061	200m	30mS	Δ	45	45	5.0	30m	10n	5.00	1.0m	40	Δ			8p	PL*	u51	A
41#	PL4062	200m	30mS	Δ	45	45	5.0	30m	10n	5.00	1.0m	100	Δ			8p	PL*	u51	A
42	TD101*	200m	30mS	Δ	60	30	5.0	500m	10n	5.00	1.0m	120	Δ	200nb	32	8.0	PL*	L2z	A
43	TD102*	200m	30mS	Δ	60	30	5.0	500m	10n	5.00	1.0m	120	Δ	200nb	32	8.0	PL*	L2z	A
44	TD201*	200m	30mS	Δ	60	30	5.0	500m	10n	5.00	1.0m	120	Δ	200nb	32	8.0	PL*	L2z	A
45	TD202*	200m	30mS	Δ	60	30	5.0	500m	10n	5.00	1.0m	120	Δ	200nb	32	8.0	PL*	L2u	A
46	2N541	200m	39mS	Δ	15	15	2.0		500n	6.00	1.0m	130	Δ	150nb	45	3.6	GD	T05	A
47	2N542	200m	39mS	Δ	30	30	2.0		500n	6.00	1.0m	130	Δ	150nb	45	3.6	GD	T05	A
48	2N543	200m	39mS	Δ	45	45	2.0		500n	6.00	1.0m	130	Δ	150nb	45	3.6	GD	T05	A
49	2N3565	200m	40mS	Δ	30	25	6.0	50m	.05u	5.00	1.0m	120	Δ	35u	20k	6.0	PE	R97a	A
50	2N4966	200m	40mS	Δ	50	40	6.0	30m	25n	5.00	1.0m	500	Δ	1.0u	32	6.0	PE	T0106	A
51	2N4967	200m	40mS	Δ	50	40	6.0	30m	25n	5.00	1.0m	950	Δ	1.0u	32	6.0	PE	T0106	A
52	2N4968	200m	40mS	Δ	30	25	6.0	30m	50n	5.00	1.0m	500	Δ	1.0u	32	6.0	PE	T0106	A
53	2N5133	200m	40mS	Δ	20	18	3.0	50m	.05u	5.00	1.0m	50	Δ			5p	PE	T0106	A
54	3N120	200m	40mS	Δ	30	20	10m	10m	.01u	5.00	1.0m	100	Δ			10p	GC	T072	GC
55	3N121	200m	40mS	Δ	30	20	10m	10m	.01u	5.00	1.0m	100	Δ			10p	GC	T072	GC
56	JAN3N127	200m	40mS	Δ	30	20	10m	10m	.01u	5.00	1.0m	100	Δ			10p	GC	T072	GC
57	A1109	200m	40mS	Δ	45	5.0			.10u	5.00	1.0m	70	Δ			8p	PL	T018	A
58	A1341	200m	40mS	Δ	75	5.0			.01u	5.00	1.0m	50	Δ			10p	PL	T018	A
59	BC132	200m	40mS	Δ	30	25	6.0		.05u	5.00	1.0m	280	Δ	11u	7.5k	3.0	PE	R97a	A
60	CS4003	200m	40mS	Δ	30	25	6.0		.50n	5.00	1.0m	150	†	10u	7.0k	5.0	PE	T0106	A
61	CS4060	200m	40mS	Δ	40	40	5.0		10n	5.00	1.0m	50	Δ			6.0p	PL*	R124	A
62	CS4061	200m	40mS	Δ	40	40	5.0		10n	5.00	1.0m	250	Δ			6.0p	PL*	R124	A
63	S15650	200m	40mS	Δ	30	25	6.0		.05u	5.00	1.0m	150	Δ	11u	7.5k	3.0	DPL	T0106	A
64	SE4001	200m	40mS	Δ	30	25	6.0		20u	5.00	1.0m	280	Δ	11u	7.5	3.0	DPL	R124	A
65▼	A643L*	200m	50mS	Δ	30	30	5.0	30m	100n	5.00	1.0m	150	†			3.5p	PL	X56a	A
66▼	A643S*	200m	50mS	Δ	30	30	5.0	30m	100n	5.00	1.0m	150	†			3.5p	PL	X56a	A
67▼	A644L*	200m	50mS	Δ	30	30	5.0	30m	100n	5.00	1.0m	300	†			3.5p	PL	X56a	A
68▼	A644S*	200m	50mS	Δ	30	30	5.0	30m	100n	5.00	1.0m	300	†			3.5p	PL	X56a	A
69▼	A645L*	200m	50mS	Δ	30	30	5.0	30m	100n	5.00	1.0m	600	†			3.5p	PL	X56a	A
70▼	A645S*	200m	50mS	Δ	30	30	5.0	30m	100n	5.00	1.0m	600	†			3.5p	PL	X56a	A
71#	C407	200m	50mS	Δ	120	120	5.0		.20u	5.00	3.0m	18	†			6.0p	PL	R97	A
72	CS4062	200m	50mS	Δ	60	60	5.0		10n	5.00	1.0m	350	Δ			6.0p	PL	R124	A
73	TD100*	200m	50mS	Δ	60	30	5.0	500m	10n	5.00	1.0m	350	Δ	90nb	26	5.0p	PL*	L2u	A
74	TD200*	200m	50mS	Δ	60	30	5.0	500m	10n	5.00	1.0m	350	Δ	90nb	26	5.0p	PL*	L2z	A
75	TD250*	200m	50mS	Δ	60	30	5.0	500m	10n	5.00	1.0m	350	Δ	90nb	26	5.0p	PL*	L2z	A
76	2N2453*	200m	60mS	Δ	60	30	7.0	50m	5.0n	5.00	1.0m	150	Δ	30u	5.0k	6.0p	*	L2t	A
77	2N2453A*	200m	60mS	Δ	80	50	7.0	50m	5.0n	5.00	1.0m	150	Δ	30u	5.0k	6.0p	*	L2t	A
78</																			



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C (Hz)	TEMP. RANG. (°C)	ABS. MAX. RATINGS @25°C				MAX. lcho @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# LEAD CODE			
					Vbvo (V)	Vcvo (V)	Vbevo (V)	Ic (A)		Vcb (V)	Ic (A)	hfe					COMMON EMITTER		
													hoe (mhos)	hie (Ω)	hre (X.0001)				
1#	ME4103	200m	90M	1.6m	SJ	50	40*	5.0	10n	5.0	1.0m	200	3.5p	PE	R110c	A			
2	2N3854	200m	100M	2.7m	SS	18	18	4.0	100m	500n	4.5	70	3.5p	PE	R67	B			
3	2N3854A	200m	100M	2.7m	SS	30	30	4.0	100m	500n	4.5	70	3.5p	PE	R67	B			
4	2N5131	200m	100M	2.0m	J	20	15	3.0	200m	0.5u	1.0	25	6p	PE	TO106	A			
5#	2SC713†	200m	100M	2.0m	J	30	25	4.0	100m	1.0u	6.0	90	2.5p	PE	TO92	B			
6#	2SC780	200m	100M	2.0m	J	70	70	2.0	20m	5.0u	10	60	5.0p	PE	R67a	B			
7	CS3854	200m	100M	2.7m	SJ	18	18	4.0	100m	50u	4.5	70	3.5p	PE	R97a	B			
8	CS3854A	200m	100M	2.7m	SJ	30	30	4.0	100m	50u	4.5	70	3.5p	PE	R97a	B			
9#	ME1075	200m	100M	1.6m	SJ	75	75*	4.0	100m	500n	10	20	6.0p	PL	R110c	A			
10#	2SC941	200m	120M	2.0m	J	35	30	4.0	20m	100n	12	60	2.7p	PE	R67a	A			
11	2N3845	200m	126M	2.7m	S	30	30	4.0	100m	50u	4.5	60	4p	PE	TO98	B			
12	2N3845A	200m	126M	2.7m	S	30	30	4.0	100m	50u	4.5	60	4p	PE	TO98	B			
13	CS3845	200m	126M	2.7m	S	30	30	4.0	100m	50u	4.5	60	4p	PE	R97a	B			
14	2N3855	200m	130M	2.7m	SS	18	18	4.0	100m	500n	4.5	70	3.5p	PE	R67	B			
15	2N3855A	200m	130M	2.7m	SS	30	30	4.0	100m	500n	4.5	70	3.5p	PE	R67	B			
16	CS3855	200m	130M	2.7m	S	18	18	4.0	100m	50u	4.5	70	3.5p	PE	R97a	B			
17	CS3855A	200m	130M	2.7m	S	30	30	4.0	100m	50u	4.5	70	3.5p	PE	R97a	B			
18	2N3858	200m	135M	2.6m	J	30	30	4.0	100m	50u	4.5	100	2.5p	PE	TO98	B			
19	2N3859	200m	135M	2.6m	J	30	30	4.0	100m	50u	4.5	100	2.5p	PE	TO98	B			
20	2N3860	200m	135M	2.6m	J	30	30	4.0	100m	50u	4.5	100	2.5p	PE	TO98	B			
21	CS3859	200m	135M	2.6m	J	30	30	4.0	100m	50u	4.5	100	2.5p	PE	R97a	B			
22	CS3860	200m	135M	2.6m	J	30	30	4.0	100m	50u	4.5	100	2.5p	PE	R97a	B			
23	2N3856	200m	140M	2.7m	SS	18	18	4.0	100m	500n	4.5	70	3.5p	PE	R67	B			
24	2N3856A	200m	140M	2.7m	SS	30	30	4.0	100m	500n	4.5	70	3.5p	PE	R67	B			
25	2N4436†	200m	150M	2.0m	J	60	30	5.0	500m	50n	10	40	8.0p	PE	R124	A			
26	2N4969†	200m	150M	2.0m	S	50	30	5.0	500m	50n	10	20	8.0p	PE	TO106	A			
27	2N5127	200m	150M	2.0m	J	20	12	3.0	100m	0.5u	10	20	3.5p	PE	TO106	A			
28	2N5128	200m	150M	2.0m	J	15	12	3.0	500m	50n	10	25	10p	PE	TO105	A			
29#	2SC369	200m	150M	2.0m	J	25	25	5.0	100m	100n	10	250	1.5p	PE	R67a	B			
30#	2SC369G/BL	200m	150M	2.0m	J	25	18	5.0	100m	100n	10	250	1.5p	PE	R67a	B			
31#	2SC369G/GR	200m	150M	2.0m	J	25	18	5.0	100m	100n	10	150	1.5p	PE	R67a	B			
32#	2SC370	200m	150M	2.0m	J	30	25	4.0	100m	1.0u	6.0	10	2.5p	PE	R67a	B			
33#	2SC371	200m	150M	2.0m	J	30	25	4.0	100m	1.0u	6.0	10	2.5p	PE	R67a	B			
34#	2SC372	200m	150M	2.0m	J	30	25	4.0	100m	1.0u	6.0	10	2.5p	PE	R67a	B			
35#	2SC373	200m	150M	2.0m	J	30	25	4.0	100m	1.0u	6.0	10	2.5p	PE	R67a	B			
36#	2SC374	200m	150M	2.0m	J	30	25	4.0	100m	1.0u	6.0	10	2.0p	PE	R67a	B			
37#	2SC378	200m	150M	2.0m	J	35	30	4.0	30m	5.0u	2.0	40	2.0p	PE	R67a	B			
38#	2SC711	200m	150M	2.0m	J	30	25	4.0	50m	100n	6.0	300	2.5p	PE	TO92	D			
39#	2SC711A	200m	150M	2.0m	J	50	45	4.0	50m	100n	6.0	200	2.5p	PE	TO92	D			
40#	2SC712	200m	150M	2.0m	J	30	25	4.0	100m	1.0u	6.0	10	2.5p	PE	TO92	D			
41#	2SC868†	200m	150M	2.0m	J	130	50	5.0	30m	100n	6.0	35	2.5p	PE	TO92	D			
42#	2SC869†	200m	150M	2.0m	J	160	50	5.0	30m	100n	6.0	35	2.5p	PE	TO92	D			
43#	2SC870	200m	150M	2.0m	J	30	25	4.0	30m	1.0u	6.0	250	5.0u	75k	3.5	2.5p	PE	TO92	D
44#	2SC871	200m	150M	2.0m	J	30	25	4.0	30m	1.0u	6.0	350	5.0u	75k	3.5	2.5p	PE	TO92	D
45#	2SC903	200m	150M	2.0m	J	35	30	4.0	300m	1.0u	2.0	100	8.0p	PE	TO92	D			
46#	2SC904	200m	150M	2.0m	J	50	45	4.0	300m	1.0u	2.0	100	8.0p	PE	TO92	D			
47#	2SC905	200m	150M	2.0m	J	65	60	4.0	300m	1.0u	2.0	100	8.0p	PE	TO92	D			
48#	BC171	200m	150M	2.0m	J	45	45	5.0	100m	15n	5.0	275	6.0p	PE	X64	A			
49#	BC172	200m	150M	2.0m	J	20	20	5.0	100m	15n	5.0	380	6.0p	PE	X64	A			
50#	BC173	200m	150M	2.0m	J	20	20	5.0	100m	15n	5.0	465	6.0p	PE	X64	A			
51	2SC174	200m	170M	1.3m	SJ	30	25	3.0	25m	1.0u	6.0	45	1.5p	PL	TO92	G			
52	2SC56	200m	180M	2.1m	J	20	20	5.0	100m	10u	6.0	80	2.3p	PL	R127	A			
53#	2SC281H	200m	180M	2.0m	S	30	20	5.0	100m	10u	6.0	90	7.0p	PM	TO1	A			
54#	2SC350	200m	180M	2.0m	S	30	20	5.0	100m	10u	6.0	90	7.0p	PM	TO1	A			
55#	2SC350H	200m	180M	2.0m	S	30	20	5.0	100m	10u	6.0	90	7.0p	PM	TO1	A			
56	2N2921	200m	200M	2.6m	S	25	25	5.0	100m	500n	10	35	12p	PL	R67	B			
57	2N2922	200m	200M	2.6m	S	25	25	5.0	100m	500n	10	55	12p	PL	R67	B			
58	2N2923	200m	200M	2.6m	S	25	25	5.0	100m	500n	10	90	12p	PL	R67	B			
59	2N2924	200m	200M	2.6m	S	25	25	5.0	100m	500n	10	150	12p	PL	R67	B			
60	2N2925	200m	200M	2.6m	S	25	25	5.0	100m	500n	10	235	12p	PL	R67	B			
61	2N2926	200m	200M	2.6m	S	18	18	5.0	100m	500n	10	470	12p	PL	R67	B			
62	2N3691	200m	200M	2.0m	J	35	20	4.0	30m	50u	10	40	3.5p	PE	R110	A			
63	2N3692	200m	200M	2.0m	J	35	20	4.0	30m	50u	10	40	3.5p	PE	R110	A			
64	2N3693	200m	200M	2.0m	J	45	45	4.0	30m	50u	10	40	6.0p	PE	R110	A			
65	2N3694	200m	200M	2.0m	J	45	45	4.0	30m	50u	10	100	6.0p	PE	R110	A			
66	2N4970†	200m	200M	2.0m	S	50	30	5.0	500m	0.5u	10	350	8p	PE	TO106	A			
67	2N5132	200m	200M	2.0m	J	20	20	3.0	30m	0.5u	10	20	3.5p	PE	TO106	A			
68#	2SC174A	200m	200M	1.3m	SJ	60	20	5.0	25m	1.0u	6.0	45	1.5p	PL	TO72	G			
69#	2SC206	200m	200M	1.3m	SJ	20	20	5.0	25m	2.0u	6.0	35	1.5p	PL	TO72	G			
70#	2SC371G	200m	200M	2.0m	J	35	30	5.0	100m	50u	1.0	100	3.5p	PE	R67a	B			
71#	2SC372G	200m	200M	2.0m	J	35	30	5.0	100m	50u	1.0	100	3.5p	PE	R67a	B			
72#	2SC373G	200m	200M	2.0m	J	35	30	5.0	100m	50u	1.0	125	3.5p	PE	R67a	B			
73#	2SC394	200m	200M	2.0m	J	35	30	4.0	100m	50u	12	25	2.0p	PE	R67a	B			
74	2SC561	200m	200M	2.0m	J	20	20	2.0	25m	2.0u	6.0	35	2.0p	PL	R127	A			
75#	2SC710	200m	200M	2.0m	J	30	25	4.0	30m	1.0u	6.0	90	2.0p	PE	TO92	D			
76#	BC118	200m	200M	2.0m	J	45	45	4.0	100m	10u	5.0	110	3.5p	DPE	R97a	A			
77#	BC134	200m	200M	2.0m	J	45	45	4.0	100n	10u	5.0	230	3.5p	DPE	R97a	A			
78#	BC135	200m	200M	2.0m	J	45	45	5.0	0.5u	10u	5.0	110	3.5p	DPE	R97a	A			
79#	BC207	200m	200M	2.0m	J	50	45	5.0	100m	15n	5.0	250	20u	4.0k	2.7	3.1p	PE	R110	A
80#	BC207A	200m	200M	2.0m	J	50	45	5.0	100m	15n	5.0	190	13u	3.0k	1.7	3.1p	PE	R110	A
81#	BC207B	200m	200M	2.0m	J	50	45	5.0	100m	15n	5.0	300	26u	4.8k	3.7	3.1p	PE	R110	A
82#	BC208	200m	200M	2.0m	J	25	20	5.0	100m	15n	5.0	370	30u	5.5k	3.1	3.1p	PE	R110	A
83#	BC208A	200m	200M	2.0m	J	25	20	5.0	100m	15n	5.0	190	13u	3.0k	1.7	3.1p	PE	R110	A
84#	BC208B	200m	200M	2.0m	J	25	20	5.0	100m	15n	5.0	300	26u	4.8k	2.7	3.1p	PE	R110	A
85#	BC208C	200m	200M	2.0m	J	25	20	5.0	100m	15n	5.0	500	34u	7.0k	3.8	3.1p	PE	R110	

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	T M A M X P	ABS MAX RATINGS @25°C					MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C E O A D E	
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)	BIAS le (A)		hfe	COMMON EMITTER						
					(V)	(V)	(V)	(A)	(A)		(hfe)	hoe (mhos)	hie (Ω)					hre (X.0001)
1#	2SC380	200m	250mS	2.0m	35	30	4.0	30m	50n	120	2.0m	40	1A*	2.0p	PE1	R67a	B	
2#	2SC398	200m	250mS	1.6m	SJ	20	20	3.0	20m	.05u	5.0	4.0m	20	1A	PE0	T072	G	
3#	2SC399	200m	250mS	1.6m	SJ	20	20	3.0	20m	.05u	5.0	4.0m	20	1A	PE0	T072	G	
4	EN2222	200m	250mS	2.0m	SJ	60	30	*I	800m	.05u	100	1.0m	35	1A	DPEΔ	T0106	A	
5	TD2219*	200m	250mS	1.6m	SJ	60	30	5.0	500m	1.0n	100	15.0m	100	1A	PLΔ	L2u	T0106	A
6	SE4021	200m	250mS	2.0m	SJ	45	45	8.0	50m	2.0n	100	1.0m	1.0k	74u	DPE0	T0106	A	
7	SE4022	200m	280mS	5.0m	SJ	30	30	5.0	50m	2.0n	100	1.0m	1.6k	120u	DPE0	T0106	A	
8	EN7441	200m	382mS	2.0m	SJ	30	12	*I	200m	1.0u	.25p	1.0m	20	1A	DPE	T0106	A	
9	2N3289	200m	300mS	1.1m	SJ	30	15	3.0	50m	.01u	100	2.0m	10	Δ	DPE	T072	G	
10	2N3290	200m	300mS	1.1m	SJ	30	15	3.0	50m	.01u	100	2.0m	10	Δ	0	T072	G	
11	2N3605T	200m	300mS	2.7m	SS	18	14	5.0	200m	500n	1.0	1.0m	30	1A	0	R67	B	
12	2N3606T	200m	300mS	2.7m	SS	18	14	5.0	200m	500n	1.0	1.0m	30	1A	0	R67	B	
13	2N3607T	200m	300mS	2.7m	SS	18	14	5.0	200m	500n	1.0	1.0m	30	1A	0	R67	B	
14	2N5126	200m	300mS	2.0m	SJ	20	20	3.0	30m	.05u	10	4.0m	15	Δ	0	T0106	A	
15#	2SC35	200m	300mS	2.0m	SJ	30	20	4.0	100m	500n	100	2.0m	90	0	PE	R67a	B	
16#	2SC488H†	200m	300mS	3.3m	SJ	40	15	5.0	200m	25u	1.0	1.0m	35	1A*	PE	R92a	A	
17	A1170	200m	300mS	1.1m	SJ	15	10	2.0	20m	.01u	100	3.0m	20	1A	PL	T018	A	
18#	BF153	200m	300mS	2.0m	SJ	30	12	2.0	100m	1.0u	6.0	3.0m	20	1A	PE	R97a	A	
19	CS3605†	200m	300mS	1.6m	SJ	18	14	5.0	200m	500n	1.0	1.0m	30	1A	DPL	R91a	A	
20	CS3606†	200m	300mS	1.6m	SJ	18	14	5.0	200m	500n	1.0	1.0m	30	1A	DPL	R91a	A	
21	CS3607†	200m	300mS	1.6m	SJ	18	14	5.0	200m	500n	1.0	1.0m	30	1A	DPL	R91a	A	
22	EN708†	200m	300mS	2.0m	SJ	40	15	5.0	0.5u	1.0	1.0	1.0m	30	1#Δ	DPE	T0106	A	
23	EN914†	200m	300mS	2.0m	SJ	40	15	5.0	1.0u	1.0	1.0	1.0m	30	1#Δ	DPE	T0106	A	
24	2N3287	200m	350mS	1.1m	SJ	40	20	3.0	50m	.01u	100	2.0m	15	Δ	0	T072	G	
25	2N3288	200m	350mS	1.1m	SJ	40	20	3.0	50m	.01u	100	2.0m	15	Δ	0	T072	G	
26	2N3646†	200m	350mS	2.0m	SJ	40	15	5.0	200m	500n	4.0	3.0m	30	1#Δ	0	R110	A	
27	2N4134	200m	350mS	1.1m	SJ	30	30	3.0	30m	.05u	5.0	4.0m	200	1	0	T072	G	
28	EN3009†	200m	350mS	2.0m	SJ	40	15	4.0	50u	.40p	4.0	3.0m	30	1#Δ	DPE	T0106	A	
29	EN3013†	200m	350mS	2.0m	SJ	40	15	5.0	30u	.40p	4.0	3.0m	30	1#Δ	DPE	T0106	A	
30	EN3014†	200m	350mS	2.0m	SJ	40	15	5.0	30u	.40p	4.0	3.0m	30	1#Δ	DPE	T0106	A	
31	MPS3646†	200m	350mS	2.0m	SJ	40	15	5.0	200m	5u	4.0	3.0m	30	1A	EA	T092	A	
32	SE1001	200m	350mS	2.0m	SJ	45	45	4.0	50u	1.0	110	10m	110	0	DPL0	T0106	A	
33	SE1002	200m	350mS	2.0m	SJ	45	45	4.0	500n	1.0	145	10m	145	0	DPL	T0106	A	
34	SE3646†	200m	350mS	2.0m	SJ	40	15	5.0	500n	.40p	30m	60	1	0	DPE	T0106	A	
35#	2SC864	200m	360mS	1.6m	SJ	40	30	4.0	25m	1n	7.0m	39	1A	PE	T072	G		
36#	2N5684	200m	400mS	2.0m	S	30	15	4.0	100m	.05u	100	15m	20	#1Δ	PE	R97a	A	
37	2N3688	200m	400mΔ	2.0m	SJ	40	40	4.0	30m	50u	100	4.0m	30	1A	0	R110	A	
38	2N3689	200m	400mΔ	2.0m	SJ	40	40	4.0	30m	50u	100	4.0m	30	1A	0	R110	A	
39	2N3690	200m	400mΔ	2.0m	SJ	40	40	4.0	30m	50u	100	4.0m	30	1A	0	R110	A	
40	2N4274†	200m	400mS	2.0m	SJ	30	12	4.5	100m	10u	1.0	100m	18	#1Δ	0	R110	A	
41	2N4275†	200m	400mS	2.0m	SJ	30	12	4.5	100m	10u	1.0	100m	18	#1Δ	0	R110	A	
42#	2N4294†	200m	400mS	1.6m	SS	30	12	4.5	200m	400n	1.0	1.0m	30	1A	0	u29	B	
43#	2SC464	200m	400mS	1.1m	SJ	30	12	2.0	20m	500n	6.0	1.0m	40	0	PE0	R103a	B	
44#	2SC465	200m	400mS	1.1m	SJ	30	12	2.0	20m	500n	6.0	1.0m	40	0	PE0	R103a	B	
45#	2SC752G†	200m	400mS	2.0m	SJ	40	15	5.0	200m	25u	1.0	1.0m	20	1A*	PE†	R67a	B	
46#	2SC980	200m	400mS	2.0m	SJ	70	50	5.0	100m	1.0u	1.0	1.0m	70	1	PE	R67a	B	
47#	2SC980A/G	200m	400mS	2.0m	SJ	90	70	5.0	100m	500n	1.0	1.0m	40	1A	PE	R67a	B	
48#	BF196	200m*	400mS	2.5m	SJ	40	30	4.0	25m	4.0m	10	4.0m	80	1	PL	MM10	B	
49#	BFX18	200m	400mS	1.1m	SJ	35	35	4.0	50n	120	3.0m	20	1A	PL	T0118	G		
50#	BFX19	200m	400mS	1.1m	SJ	35	35	4.0	50n	120	3.0m	20	1A	PL	R038	A		
51#	BFX20	200m	400mS	1.1m	SJ	35	35	4.0	50n	120	3.0m	20	1A	PL	T0118	G		
52#	BFX21	200m	400mS	1.1m	SJ	35	35	4.0	50n	120	3.0m	20	1A	PL	T0118	G		
53	EN3011†	200m	400mS	2.0m	SJ	30	30	5.0	4.4u	.35p	10m	30	1#Δ	DPE	T0106	A		
54	S15657	200m	400mS	2.0m	SJ	40	15	4.0	0.5u	1.0	2.0m	70	1#	DPE	T0106	A		
55#	TP4274†	200m	400mS	2.0m	SJ	30	12	4.5	100m	10u	1.0	1.0m	35	1A#	PL	X55a	A	
56#	TP4275†	200m	400mS	2.0m	SJ	40	15	4.5	100m	10u	1.0	1.0m	35	1A#	PL	X55a	A	
57	2N4135	200m	425mS	1.1m	SJ	30	30	3.0	30m	.05u	5.0	4.0m	200	1	0	T072	G	
58	2N5130	200m	450mS	2.0m	SJ	30	12	1.0	50m	.05u	100	8.0m	12	Δ	0	T0106	A	
59#	2N4295†	200m	500mS	1.6m	SS	40	15	5.0	200m	100n	1.0	100m	40	1A	0	u29	B	
60#	2SC384	200m	500mS	2.0m	SJ	20	18	2.0	50m	50u	6.0	1.0m	50	1*	PE	R67a	B	
61#	2SC933†	200m	500mS	2.0m	SJ	50	30	5.0	300m	1.0u	5.0	2.0m	100	1	PE	T0104	A	
62#	2SC934†	200m	500mS	2.0m	SJ	20	15	5.0	300m	1.0u	5.0	2.0m	100	1	PE	T0104	A	
63	D1666	200m	500mS	2.6m	SJ	30	12	3.0	25m	500n	10	5.0m	20	1A	PE	T098	B	
64	EN2369A†	200m	500mS	2.0m	SJ	40	40	4.5	200m	40u	35.0	1.0m	40	1#Δ	DPE	T0106	A	
65#	NKT35219	200m	500mS	1.1m	SJ	20	15	3.0	50m	10u	10	1.0m	20	1A	0	T072	G	
66#	SE5032	200m	500mS	1.8m	TA	40	30	*I	100n	100	5.0m	80	1	DPE0	T0106	C		
67	TIS56	200m	500mS	1.3m	SA	30	20	3.0	30m	.05u	100	4.0m	20	1A	PL	T072	A	
68	TIS57	200m	500mS	1.3m	SA	30	20	3.0	30m	.05u	100	4.0m	20	1A	PL	T072	A	
69#	BF197	200m*	550mS	2.5m	SJ	40	30	4.0	25m	4.0m	10	7.0m	85	1	PE	MM10	B	
70	2N917A	200m	600mS	1.1m	SS	30	15	3.0	50m	1n	1.0	3.0m	20	1#Δ	0	T072	G	
71	2N918	200m	600mS	1.1m	SS	30	15	3.0	50m	.01u	1.0	3.0m	20	1A	0	T072	G	
72	JAN2N918	200m	600mS	1.1m	SJ	30	15	3.0	50m	10n	1.0	3.0m	20	1A	0			

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	T M A X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# L O A D E	
						V <sub>bcvo</sub> (V)	V <sub>ce0</sub> (V)	V <sub>be0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	BF158	200m	800M	2.0m	J	30	12	2.0	10m	1.0	4.0m	50	1#				80p	DPE	R97a		
2	BF159	200m	800M	2.0m	J	40	20	2.0	10m	1.0	4.0m	50	1#				80p	DPE	R97a		
3	SE3005	200m	800M	2.0m	J	30	15	4.0	10m	1.0	5.0m	45	1#				85p	DPE	TO106	A	
4	SE3100	200m	800M	1.8m	A	30	30	3.0	20m	1.0	5.0m	80	1#				500fs	DPE	TO106	C	
5	SE5036	200m	800M	1.3m	S	35	30	3.0	50m	1.0	5.0m	70	1#				220fs	DPE	TO72	J	
6	2N3600	200m	850M	1.1m	S	30	15	3.0	0.1u	6.0	2.0m	200	1#				1p	PE	TO72	A	
7	2N5179	200m	900M	1.1m	S	20	12	2.5	50m	2.0	2.0m	25	Δ				1.0p	PE	TO72	G	
8	2SC251	200m	900M	1.6m	S	30	15	3.0	30m	1.0u	6.0	5.0	50				1.0p	PE	TO72	G	
9	2SC251A	200m	900M	1.6m	S	30	15	3.0	30m	1.0u	6.0	5.0	50				1.0p	PE	TO72	G	
10	2SC252	200m	900M	1.6m	S	30	15	3.0	30m	1.0u	6.0	5.0	50				1.0p	PE	TO72	G	
11	2SC253	200m	900M	1.6m	S	30	15	3.0	30m	1.0u	6.0	5.0	50				1.0p	PE	TO72	G	
12	BFX73	200m	900M	1.1m	S	30	15	3.0	50m	1.0u	1.0	3.0	50	1#			1.0p	DPE	TO72	G	
13	BFY88	200m	900M	1.3m	J	40	25	3.5	25m	0.5u	1.0	5.0m	30	1#			8.0p	PE	TO18		
14	CS4001	200m	900M	2.0m	J	30	12	2.0	50m	1.0	8.0m	50	1#		18u	2.7k	1.5	1.3p	PE	TO106	A
15	ME3002	200m	900M	1.6m	S	30	12	3.0	100m	2.0	8.0m	50	1#				1.3p	PE	R110C	A	
16	ME3011	200m	900M	1.6m	S	30	12	2.0	100m	5.0u	1.0	8.0m	50	1#			1.4p	PL	R110C	A	
17	SE3001	200m	900M	2.0m	J	30	12	2.0	50m	1.0	8.0m	50	1#				1.7p	DPLT	TO106		
18	SE3002	200m	900M	2.0m	J	30	12	2.0	50m	1.0	8.0m	50	1#				1.7p	DPLT	TO106		
19	JAN2N2857	200m	1.0G	1.1m	S	30	15	3.0	40m	1.0	6.0	2.0m	25	Δ			1.0p	PE	TO72	G	
20	2N3572	200m	1.0G	1.1m	S	25	13	3.0	50m	0.1u	6.0	5.0m	20	Δ			1.0p	PE	TO72	G	
21	2N3681	200m	1.0G	1.1m	S	10	7.0	2.0	25m	0.1u	6.0	2.0m	20	Δ			7p	PE	TO72	G	
22	2N3683	200m	1.0G	1.1m	S	30	12	2.0	30m	5.0u	1.0	8.0m	30	Δ			2.0p	PE	TO72	G	
23	2N5031	200m	1.0G	1.1m	S	15	10	3.0	20m	1.0	6.0	1.0m	25	Δ			1.5p	PE	TO72	G	
24	2N5032	200m	1.0G	1.1m	S	15	10	3.0	20m	1.0	6.0	1.0m	25	Δ			1.5p	PE	TO72	G	
25	2SC567	200m	1.0G	1.1m	S	30	15	3.0	20m	1.0u	6.0	2.0m	40	Δ			1.0p	PE	TO72	G	
26	2SC611	200m	1.0G	1.6m	∅	20	15	3.0	20m	1.0u	1.0	2.0m	80				2p	PE	TO72	G	
27	40294	200m	1.0G	1.1m	S	30	15	2.5	40m	0.1u	1.0	3.0m	150	1#			1.5p	DPE	TO72	G	
28	A490	200m	1.0G	1.1m	S	30	15	2.5	25m	1.0	1.5m	20	Δ				1.5p	PE	TO72	G	
29	BFY90	200m	1.0G	1.1m	S	30	15	2.5	25m	1.0	2.0m	25	Δ				800p	PE	TO72	G	
30	BFY90Z	200m	1.0G	1.1m	S	30	15	2.5	20m	1.0	2.0m	50	Δ				1.8p	PE	TO18		
31	BFY90B	200m	1.0G	1.1m	S	28	15	2.5	20m	1.0	3.0m	20	Δ				1.7p	PE	TO72	G	
32	K2109	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
33	K2110	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
34	K2111	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
35	K2112	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
36	K2113	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
37	K2114	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
38	K2115	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
39	K2116	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
40	K2117	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
41	K2118	200m	1.0G	1.1m	S	30	15	2.5	10m	1.0	3.0m	30	Δ				1.0p	PE	TO72	G	
42	K2119	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
43	K2120	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
44	K2121	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
45	K2122	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
46	K2123	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
47	K2124	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
48	K2125	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
49	K2126	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
50	K2127	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.0p	PE	TO72	G	
51	K2601C	200m	1.0G	2.0m	J	20	10	2.0	20m	1.0u	1.0	3.0m	50	1#			2p	PE	u35		
52	K2602C	200m	1.0G	2.0m	J	20	10	2.0	20m	1.0u	1.0	3.0m	50	1#			2p	PE	u35		
53	K2603C	200m	1.0G	2.0m	J	20	10	2.0	20m	1.0u	1.0	3.0m	50	1#			2p	PE	u35		
54	K2604C	200m	1.0G	2.0m	J	20	10	2.0	20m	1.0u	1.0	3.0m	50	1#			2p	PE	u35		
55	K2615	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.5p	PE	TO72	G	
56	K2616	200m	1.0G	1.1m	S	30	12	2.0	300m	1.0	3.0m	20	Δ				1.5p	PE	TO72	G	
57	MM8006	200m	1.0G	1.1m	S	15	10	3.0	20m	1.0	1.0m	25	Δ				1.1p	PE	TO72	G	
58	MM8007	200m	1.0G	1.1m	S	15	10	3.0	20m	1.0	1.0m	25	Δ				1.1p	PE	TO72	G	
59	SE5035	200m	1.0G	1.3m	A	40	30	4.0	50m	0.5u	1.0	5.0m	80	1#			220fs	DPE	TO72	J	
60	ZT2857	200m	1.0G	1.1m	S	30	15	2.5	20m	0.1u	6.0	2.0m	50	Δ			1.8p	PE	TO72		
61	ZTX325	200m	1.0G	1.3m	S	30	15	2.5	50m	1.0	1.0	2.0m	25	Δ			800ft	PL	X59	F	
62	ZTX326	200m	1.0G	1.3m	S	25	12	2.5	50m	1.0	1.0	2.0m	25	Δ			800ft	PL	X59	F	
63	2SC313	200m	1.1G	1.2m	S	30	19	2.0	50m	0.5u	1.0	1.0m	40	1#			1.0p	PE	R92b	H	
64	2SC684	200m	1.1G	1.1m	S	30	19	2.0	50m	5.0u	1.0	1.0m	40	1#			1.1p	PE			
65	2SC717	200m	1.1G	1.1m	S	30	19	2.0	50m	5.0u	1.0	1.0m	11				1.0p	PE			
66	A485	200m	1.1G	1.1m	S	30	15	2.5	25m	1.0	1.0	2.0m	150	1#			1.5p	PE	TO72	G	
67	2N2708	200m	1.2G	1.1m	S	35	20	3.0	0.1u	1.5	2.0m	180	1#				1.5p	PE	TO72	G	
68	2N3571	200m	1.2G	1.1m	S	25	15	3.0	50m	0.1u	6.0	5.0m	20	Δ				PE	TO72	G	
69	2N3880	200m	1.2G	1.1m	S	30	15	2.5	0.5u	6.0	3.0m	50	Δ				75p	PE	TO72	G	
70	40295	200m	1.2G	1.1m	S	35	20	3.0	40m	0.1u	2.0	2.0m	200	1#			1.5p	PE	TO72	G	
71	BFX89	200m	1.2G	1.1m	S	15	15	2.5	25m	0.1u	1.0	2.0m	25	Δ			6p	PE	TO72	G	
72	2N3953	200m	1.3G	1.1m	S	15	15	2.5	30m	1.0u	6.0	2.0m	40	Δ			1.8p	PE	TO72	G	
73	2N5024	200m	1.3G	1.1m	S	20	10	4.0	15m	1.0u	1.0	1.0m	25	Δ			1.5p	PE	TO72	G	
74	2N5053	200m	1.3G	1.1m	S	30	15	3.0	25m	0.1u	5.0	2.0m	25	Δ			1.5p	PE	TO72	G	
75	2SC568	200m	1.3G	1.1m	S	30	15	3.0	20m	5.0u	6.0	2.0m	80	Δ			65p	PE	TO72	G	
76	2SC612	200m	1.3G	1.3m	∅	35	15	2.0	20m	1.0u	1.0	2.0m	80				2p	PE	TO72	G	

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	TEMPERATURE °C	ABS. MAX. RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC. TURE	DWG # Y200 s/a TO200 Ser.	CODE
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1	K2115B	200m	1.7Gs	1.1m	SJ	30	15	2.5	10n	1.0	3.0m	30 Δ				1.0p		TO72	G	
2	K2116B	200m	1.7Gs	1.1m	SJ	30	15	2.5	10n	1.0	3.0m	30 Δ			1.0p		TO72	G		
3	K2117B	200m	1.7Gs	1.1m	SJ	30	15	2.5	10n	1.0	3.0m	30 Δ			1.0p		TO72	G		
4	K2118B	200m	1.7Gs	1.1m	SJ	30	15	2.5	10n	1.0	3.0m	30 Δ			1.0p		TO72	G		
5	K2119B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
6	K2120B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
7	K2121B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
8	K2122B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
9	K2123B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
10	K2124B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
11	K2125B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
12	K2126B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
13	K2127B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.0p		TO72	G		
14	K2615B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.5p		TO72	G		
15	K2616B	200m	1.7Gs	1.1m	SJ	30	12	2.0	300n	1.0	3.0m	20 Δ			1.5p		TO72	G		
16	2N2857	200m	1.9Gs	1.1m	SS	30	15	2.5	40m	0.1u	6.0	2.0m	50 Δ		1p		TO72	G		
17	2N3839	200m	2.0Gs	1.1m	SS	30	15	2.5	40m	0.1u	1.0	3.0m	30 Δ		1p		TO72	G		
18	MMT8015	200m	2.0Gs	2.0m	TJ	15	10	3.0	20m	10n	6.0	1.0m	25 Δ		500f		u43	C		
19#	BFS58	200m	2.4Gs	1.6m	SA	25	15	3.0	50m	20n	6.0	5.0m	20 Δ		600f	PE	u51	A		
20	2N5835	200m	2.5Gs	1.1m	SS	15	10	3.5	15m	10n	6.0	10m	25 Δ		800f	PE	u51	A		
21#	BFW99	200m	3.0Gs	1.4m	SJ	12	12	3.5	20m	50n	6.0	5.0m	90		1p	PE	u51	A		
22#	2SC985	200m	3.2Gs	1.6m	SJ	20	15	3.0	40m	50u	5.0	15m	30 Δ		1p	PE	X80	G		
23#	AT25	200m	3.5Gs	1.1m	SJ	20	15	3.0	100m	20n	10	10m	75 Δ		500f	PE	u51	A		
24#	AT25A	200m	3.5Gs	1.1m	SJ	20	15	3.0	100m	20n	10	10m	75 Δ		500f	PE	u51	A		
25#	AT25B	200m	3.5Gs	1.1m	SJ	20	15	3.0	100m	20n	10	10m	75 Δ		500f	PE	u51	A		
26#	AT101	200m	4.0Gs	1.1m	SJ	20	15	3.0	30m	20n	10	3.0m	50 Δ		350f	PE	u77c	Y		
27#	AT101A	200m	4.0Gs	1.1m	SJ	20	15	3.0	30m	20n	10	3.0m	50 Δ		350f	PE	u77c	Y		
28#	AT140	200m	4.0Gs	1.1m	SJ	20	12	3.0	30m	10n	10	3.0m	50 Δ		300f	PE	u77d	Y		
29#	AT141	200m	4.0Gs	1.1m	SJ	20	12	3.0	30m	10n	10	3.0m	50 Δ		300f	PE	u77d	Y		
30#	DC5001X	200m	4.0Gs	1.6m	SJ	20	15	4.0	20m	500n	10	10m	40		450f	PL	MM16	Y		
31#	2SC987A	200m	4.5Gs	880m	SJ	20	15	3.0	30m	500n	10	10m	30 Δ		500f	PE	X80	G		
32	MP55172	210m	120m	1.9m	TJ	25	25	5.0	100m	10n	10	10m	100 Δ		10p	AN	TO92	B		
33#	BSW191	215m*	300m	1.7m	SJ	35	30	5.0	100m	05u	1.0	10m	40 Δ		6p	PE	TO18	A		
34	2N5136	220m	40m	2.2m	Δ	30	20	3.0	500m	1.0u	1.0	150m	20 Δ		35p	DPL	TO105	A		
35	EN870	220m	50m	2.1m	Δ	100	60	7.0	100m	10n	5.0	1.0m	175 Δ		20p	DPL	TO106	A		
36	2N4944	220m	60m	2.2m	Δ	80	40	5.0	50m	05u	1.0	150m	40 Δ		25p	DPL	TO106	A		
37	2N4945	220m	60m	2.2m	Δ	80	60	5.0	50m	05u	1.0	150m	100 Δ		20p	DPL	TO106	A		
38	2N4946	220m	60m	2.2m	Δ	80	40	5.0	50m	05u	1.0	150m	100 Δ		25p	DPL	TO106	A		
39	EN718A	220m	60m	2.1m	Δ	75	40	*7.0	50m	50n	5.0	1.0m	25 Δ		25p	DPL	TO106	A		
40	EN871	220m	60m	2.1m	Δ	100	60	7.0	100n	5.0	1.0m	400 Δ		500n	DPL	TO105	A			
41	EN956	220m	70m	2.1m	Δ	75	40	*7.0	100n	5.0	1.0m	50 Δ		500n	DPL	TO106	A			
42#	BF195	220m	200m	2.2m	Δ	30	20	5.0	30m	10n	10	1.0m	67 Δ		850f	PE	MM10	C		
43#	BF255Δ	220m	200m	2.2m	Δ	30	20	5.0	30m	10n	10	1.0m	67 Δ		850f	PE	MM10	C		
44#	BF333	220m	200m	2.2m	Δ	30	20	5.0	30m	10n	10	1.0m	67 Δ		850f	PE	MM10	C		
45#	BC167Δ	220m	250m	2.2m	Δ	45	45	5.0	100m	700p	5.0	2.0m	125 Δ*		125 Δ*	PE	X73	D		
46#	BC168Δ	220m	250m	2.2m	Δ	20	20	5.0	100m	1.0n	5.0	2.0m	125 Δ*		125 Δ*	PE	X73	D		
47	BC237Δ	220m	250m	2.2m	Δ	45	45	5.0	100m	700p	5.0	2.0m	125 Δ*		125 Δ*	PE	X73	D		
48	BC238Δ	220m	250m	2.2m	Δ	20	20	5.0	100m	1.0n	5.0	2.0m	125 Δ*		125 Δ*	PE	X73	D		
49#	FL40511	220m	250m	1.5m	SS	60	30	5.0	800m	10n	10	1.0m	12 Δ		8p	PE	u51	A		
50#	FL40521	220m	250m	1.5m	SS	75	40	6.0	800m	10n	10	1.0m	30 Δ		8p	PE	u51	A		
51#	FL40531	220m	250m	1.5m	SS	60	30	5.0	800m	10n	10	1.0m	25 Δ		8p	PE	u51	A		
52#	FL40551	220m	250m	1.5m	SS	60	30	5.0	800m	10n	10	1.0m	50 Δ		8p	PE	u51	A		
53#	BF194	220m	280m	2.2m	Δ	30	20	5.0	30m	10n	10	1.0m	115 Δ		850f	PE	MM10	C		
54#	BF254Δ	220m	280m	2.2m	Δ	30	20	5.0	30m	10n	10	1.0m	115 Δ		850f	PE	X64b	C		
55#	BF332	220m	280m	2.2m	Δ	30	20	5.0	30m	10n	10	1.0m	115 Δ		850f	PE	MM10	C		
56#	BC147A	220m	300m	2.2m	Δ	50	45	6.0	100m	5.0u	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE	MM10	A
57#	BC147B	220m	300m	2.2m	Δ	50	45	6.0	100m	5.0u	5.0	2.0m	220	18u	2.7k	1.5	2.5p	PE	MM10	A
58#	BC147C	220m	300m	2.2m	Δ	50	45	6.0	100m	5.0u	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE	MM10	A
59	BC148A	220m	300m	2.2m	Δ	30	20	5.0	100m	20n	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE	MM10	A
60#	BC148B	220m	300m	2.2m	Δ	30	20	5.0	100m	5.0u	5.0	2.0m	220	18u	2.7k	1.5	2.5p	PE	MM10	A
61#	BC148C	220m	300m	2.2m	Δ	30	20	5.0	100m	5.0u	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE	MM10	A
62#	BC148D	220m	300m	2.2m	Δ	30	20	5.0	100m	5.0u	5.0	2.0m	330	60u	8.7k	3.0	2.5p	PE	MM10	A
63	BC149A	220m	300m	2.2m	Δ	30	20	5.0	100m	20n	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE	MM10	A
64#	BC149B	220m	300m	2.2m	Δ	30	20	5.0	100m	5.0u	5.0	2.0m	330	30u	4.5k	2.0	2.5p	PE	MM10	A
65#	BC149C	220m	300m	2.2m	Δ	30	20	5.0	100m	5.0u	5.0	2.0m	600	30u	4.5k	3.0	2.5p	PE	MM10	A
66#	BC169Δ	220m	300m	2.2m	Δ	20	20	5.0	100m	1.0n	5.0	2.0m	240 Δ*		240 Δ*	PE	X73	A		
67#	BC239Δ	220m	300m	2.2m	Δ	20	20	5.0	100m	1.0n	5.0	2.0m	240 Δ*		240 Δ*	PE	X73	A		
68#	PL40511	220m	300m	1.5m	SS	75	40	6.0	800m	10n	10	1.0m	50 Δ		8p	PE	u51	A		
69#	SE60221	220m	400m	2.2m	Δ	60	60	6.5	1.0u	10	10	1.0m	100 Δ		11p	DPE	TO106	A		
70	SE60231	220m	400m	2.2m	Δ	80	80	6.5	1.0u	10	10	1.0m	120 Δ		11p	DPE	TO106	A		
71	MMT70	225m	2.0m	2.0m	TJ	25	20	5.0	50m	50n	5.0	2.0m	150 Δ		8.0p	AN	u43	C		
72	MMT76t	225m	2.0m	2.0m	TJ	30	20	5.0	200m	100n	1.0	50m	30 Δ		5.0p	AN	u43	C		
73	A3T928	225m	30m	1.8m	SS	45	45	6.0	50m	01u	5.0	1.0m	60 Δ	40u	11k	8	6p	PLT	u44	A
74	A3T930	225m	30m	1.8m	SS	45	45	6.0	50m	01u	5.0	1.0m	150 Δ	60u	18k	8	6p	PLT	u44	A
75	A3T2484	225m	60m	1.8m	SS	60	60	6.0	50m	01u	5.0	1.0m	150 Δ	100u	30k	8	6p	PLT	u44	A
76	MMT930	225m	60m	2.0m	TJ	60	45	6.0	50m	10n	5.0	1.0m	150 Δ		6p	ANT	u43	D		
77	MMT2484	225m	60m	2.0m	TJ	60	60	6.0	50m	10n	5.0	1.0m	250 Δ		6p	ANT	u43	D		
78#	2SC28	225m	100m	1.8m	SJ	40	40	5.0	50m	1.0u	10									



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	T M A P X	ABS MAX RATINGS @25°C				MAX I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E
						BV <sub>cb0</sub> (V)	BV <sub>ce0</sub> (V)	BV <sub>eb0</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)				
1#	ZSD227	250m		2.0m	§	30	15	5.0	300m	100n	1.0	300m	120	†				PE	T092	B
2#	BSW32	250m		2.0m	§	100	80	6.0	30m	1.0u	5.0	10m	40	Δ			PE	T092		
3#	BSW70	250m		1.7m	§	100	60	5.0	50m	1.0u#	5.0	20m	50	Δ			PE	T018	A0	
4	CS2711	250m		2.0m	§	18	18	5.0	100m	50u	4.5	2.0m	30	Δ			DPLT	T0106	A	
5	CS2712	250m		2.0m	§	18	18	5.0	100m	50u	4.5	2.0m	80	Δ			DPLT	T0106	A	
6	CS2713	250m		2.0m	§	18	18	5.0	200m	50u	4.5	2.0m	30	Δ			DPLT	T0106	A	
7	CS2714	250m		2.0m	§	18	18	5.0	200m	50u	4.5	2.0m	80	Δ			DPLT	T0106	A	
8	CS2715	250m		2.0m	§	18	18	5.0	50m	50u	4.5	2.0m	30	Δ			DPLT	T0106	A	
9	CS2716	250m		2.0m	§	18	18	5.0	50m	50u	4.5	2.0m	80	Δ			DPLT	T0106	A	
10	CS2921	250m		2.0m	§	25	25	5.0	100m	50u	10	2.0m	35	Δ			PLT	T0106	A	
11	CS2922	250m		2.0m	§	25	25	5.0	100m	50u	10	2.0m	55	Δ			PLT	T0106	A	
12	CS2923	250m		2.0m	§	25	25	5.0	100m	50u	10	2.0m	90	Δ			PLT	T0106	A	
13	CS2924	250m		2.0m	§	25	25	5.0	100m	50u	10	2.0m	150	Δ			PLT	T0106	A	
14	CS2925	250m		2.0m	§	25	25	5.0	100m	50u	10	2.0m	235	Δ			PLT	T0106	A	
15	CS3390	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	400	Δ			PLT	T0106	A	
16	CS3391	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	250	Δ			PLT	T0106	A	
17	CS3391A	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	250	Δ			DPLT	T0106	A	
18	CS3392	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	150	Δ			PLT	T0106	A	
19	CS3393	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	90	Δ			PLT	T0106	A	
20	CS3394	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	55	Δ			PLT	T0106	A	
21	CS3395	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	150	Δ	*		DPL	R97a	A	
22	CS3396	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	90	Δ	*		DPL	R97a	A	
23	CS3397	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	55	Δ	*		DPL	R97a	A	
24	CS3398	250m		2.0m	§	25	25	5.0	100m	10u	4.5	2.0m	55	Δ	*		DPL	R97a	A	
25	CS3707	250m		2.0m	§	30	30	6.0	30m	10u	5.0	10m	100	Δ			DPL	T0106	A	
26	CS3708	250m		2.0m	§	30	30	6.0	30m	10u	5.0	10m	45	Δ			DPL	T0106	A	
27	CS3709	250m		2.0m	§	30	30	6.0	30m	10u	5.0	10m	45	Δ			DPL	T0106	A	
28	CS3710	250m		2.0m	§	30	30	6.0	30m	10u	5.0	10m	90	Δ			DPL	T0106	A	
29	CS3711	250m		2.0m	§	30	30	6.0	30m	10u	5.0	10m	180	Δ			DPL	T0106	A	
30	2N619	250m	20M	1.9m	§	50	20	20	50m	10u	1.5	5.0m	14				A			
31	2N620	250m	30M	1.9m	§	50	20	20	50m	10u	1.5	5.0m	25				A			
32	2N621	250m	40M	1.9m	§	50	20	20	50m	10u	1.5	5.0m	50				A			
33	2N6217	250m	1.0MΔ	2.0m	§	25	25	20	100m	10u	6.0	1.0m	25	Δ			A			
34	T1S108	250m	3.5MΔ	2.0m	§	40	30	4.0	50m	50n	10	4.0m	25	Δ			A			
35#	ZTX330	250m	30MΔ	2.5m	§	40	30	5.0	500m	200n	5.0	100u	60	Δ			PLT	X55	C	
36#	ZTX331	250m	30MΔ	2.5m	§	45	45	5.0	500m	200n	5.0	1.0m	60	Δ			PLT	X59	F	
37#	2N4286	250m	40MΔ	2.0m	§	30	25	6.0	100m	50n	5.0	1.0m	60	Δ			PLT	u29	B	
38#	2N4287	250m	40MΔ	2.0m	§	45	45	7.0	100m	10n	5.0	1.0m	60	Δ			PLT	u29	B	
39#	ME4001	250m	40MΔ	2.0m	§	30	25	8.0	50n	10	1.0m	60	Δ				PE	R110c	A	
40	2N2981*	250m	50MΔ	1.4m	§	100	60	7.0	500m	0.1u	5.0	1.0m	40	Δ			PE	L2j	A	
41	2N2982*	250m	50MΔ	1.4m	§	100	60	7.0	500m	0.1u	5.0	1.0m	40	Δ			PE	L2j	A	
42#	BSV51	250m	50MΔ	2.0m	§	100	80	7.0	200m#	100n	2.0	15m	30	Δ			PE	MM11	A	
43	2N2972	250m	60MΔ	1.4m	§	45	45	6.0	30m	10n	5.0	10u	60	Δ			PLT	L2j	A	
44	2N2973	250m	60MΔ	1.4m	§	45	45	6.0	30m	10n	5.0	10u	150	Δ			PLT	L2j	A	
45	2N2974*	250m	60MΔ	1.4m	§	45	45	6.0	30m	10n	5.0	10u	60	Δ			PLT	L2j	A	
46	2N2975*	250m	60MΔ	1.4m	§	45	45	6.0	30m	10n	5.0	10u	150	Δ			PLT	L2j	A	
47	2N2976*	250m	60MΔ	1.4m	§	45	45	6.0	30m	10n	5.0	10u	60	Δ			PLT	L2j	A	
48	2N2977*	250m	60MΔ	1.4m	§	45	45	6.0	30m	10n	5.0	10u	150	Δ			PLT	L2j	A	
49	2N2978*	250m	60MΔ	1.4m	§	60	60	6.0	30m	2.0n	5.0	10u	80	Δ			PLT	L2j	A	
50	2N2979*	250m	60MΔ	1.4m	§	60	60	6.0	30m	2.0n	5.0	10u	150	Δ			PLT	L2j	A	
51	2N2980*	250m	60MΔ	1.4m	§	100	60	7.0	500m	2.0n	5.0	1.0m	50	Δ			PLT	L2j	A	
52#	AT353	250m	60MΔ	2.0m	§	45	45	6.0	30m	100n	10	1.0m	80	#	†		PE	MM12a	D	
53#	AT354	250m	60MΔ	2.0m	§	45	45	6.0	30m	100n	10	1.0m	200	#	†		PE	MM12a	D	
54#	ME4002	250m	60MΔ	2.0m	§	30	25	8.0	50n	10	1.0m	200	†				PE	R110c	A	
55#	ME4003	250m	60MΔ	2.0m	§	30	25	8.0	50n	10	1.0m	300	†				PE	R110c	A	
56	2N3793	250m	100MΔ	2.5m	§	40	20	5.0	500m	50u	10	1.0m	10	Δ				u29		
57	2N3794	250m	100MΔ	2.5m	§	40	20	5.0	500m	50u	10	1.0m	35	Δ				u29		
58#	AT329	250m	100M	2.5m	§	20	20	5.0	250m	50u	2.0	15m	80	#	†		PLT	MM12a	D	
59#	2SC368	250m	150M	1.7m	§	25	25	5.0	100m	10u	1.0	250	†				PE	T018	B	
60#	2SC899	250m	150MΔ	1.7m	§	50	25	5.0	30m	100n	3.0	500u	115	†			PE	T092	B	
61	2N957	250m	200MΔ	2.0m	§	40	20	5.0	100m	10u	5.0	10m	45	#	†		PLT	T018	A0	
62	2N3825	250m	200MΔ	2.5m	§	30	15	4.0	100m	10u	10	2.0m	20	Δ			PE	X20		
63#	2SC395A†	250m	200MΔ	2.0m	§	20	12	5.0	400m	1.0u	1.0	10m	60	†			PE	T018	A0	
64#	2SC714†	250m	200M	2.5m	§	70	40	5.0	200m	10u	6.0	10m	60	#			PE	T092	D	
65#	2SC944†	250m	200MΔ	2.5m	§	60	40	8.0	100m	100n	10	2.0m	60	Δ			PE	T092	B	
66	MD2218AF*	250m	200MΔ	1.5m	§	75	40	6.0	600m	15n#	10	150m	40	#	†		ANΔ	L17d		
67	MD2218F*	250m	200MΔ	1.5m	§	60	30	5.0	600m	20n#	10	150m	40	#	†		ANΔ	L17d		
68#	ME1001	250m	200MΔ	2.0m	§	45	45	4.0	50n	10	10m	40	Δ				PL	R110c	A	
69#	ME1002	250m	200MΔ	2.0m	§	45	45	4.0	50n	10	10m	100	Δ				PL	R110c	A	
70	SE1010	250m	200MΔ	2.5m	§	30	15	4.0	50u	10	2.0m	35	#	†			DPE	T0106		
71#	AT326	250m	220M	2.5m	§	30	25	6.0	30m	10u	10	1.0m	60	#	†		PE	MM12a	D	
72#	AT327	250m	220M	2.5m	§	30	25	6.0	30m	10u	10	1.0m	200	#	†		PE	MM12a	D	
73#	AT328	250m	220M	2.5m	§	30	25	6.0	30m	10u	10	1.0m	200	#	†		PE	MM12a	D	
74#	AT330	250m	220M	2.5m	§	30	25	6.0	30m	10u	10	1.0m	60	#	†		PE	MM12a	D	
75#	AT337	250m	220M	2.5m	§	30	25	6.0	30m	10u	10	1.0m	350	#	†		PE	MM12a	D	
76#	AT318	250m	230M	2.5m	§	45	30	5.0	30m	50u	12	2.0m	40	#	†		PLT	MM12a	D	
77#	AT319	250m	230M	2.5m	§	45	30	5.0	30m	50u	12	2.0m	40	#	†		PLT	MM12a	D	
78#	AT321	250m	230M	2.5m	§	45	30	5.0	30m	50u	12	2.0m	100	#	†		PLT	MM12a	D	
79#	AT322	250m	230M	2.5m	§	35	20	5.0	30m	50u	12	2.0m	40	#	†		PLT	MM12a	D	
80#	AT323	250m	230M	2.5m	§	35	20													



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M E M P	ABS MAX RATINGS @25°C			Ic (A)	MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 /s/a TO200 Ser.	# C O A D E			
					BVcbo (V)	BVceo (V)	BVebo (V)			Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)							
1	TIS64	250m	300MΔ	2.0m	Δ	30	12	3.0	30m	10u0	100	4.0m	20	1Δ			X55	A				
2	CS7061	250m	320MΔ	2.0m	Δ	25	20	3.0	30m	05u0	100	10m	20	1#Δ			R97a	A				
3	2SC39A	250m	350MΔ	2.0m	Δ	25	15	3.0	50m	10u0	6.0	10m	120			T018	A					
4	CS2369T	250m	350MΔ	2.0m	Δ	40	15	4.5	500m	40u0	100	10m	3.5	Δ			R97a	A				
5	BF335	250m	370MΔ	2.5m	Δ	40	30	4.0	25m	10u0	100	1.0m	35	Δ			MM10	A				
6	A496	250m	400MΔ	2.5m	Δ	40	30	4.0	25m	10u0	100	4.0m	27	Δ			MM10	C				
7	BF198	250m	400MΔ	2.5m	Δ	40	30	4.0	25m	100n0							X76	C				
8	BF240	250m*	400MΔ	2.3m	Δ	40	40	4.0	25m	100n0							X64c	C				
9	BF241	250m*	400MΔ	2.3m	Δ	40	40	4.0	25m	100n0							X64c	C				
10	ME9001T	250m	400MΔ	2.0m	Δ	40	15	4.5	300m	1.00	100	10m	40	1Δ			R110c	A				
11	ME9002T	250m	400MΔ	2.0m	Δ	30	12	4.5	300m	1.00	100	10m	30	1Δ			R110c	A				
12	TIS63	250m	400MΔ	2.0m	Δ	30	12	3.0	30m	10u0	100	4.0m	20	1Δ			X55	A				
13	BF334	250m	430MΔ	2.5m	Δ	40	30	4.0	25m	10u0	100	1.0m	65	1Δ			MM10	A				
14	BF176	250m	450MΔ	2.5m	Δ	40	40	4.0	40	50n0	100	10m	65	1#			R97	A				
15	BF310	250m	450MΔ	2.5m	Δ	40	30	4.0	25m	60n0	100	4.0m	28	1Δ			X76	A				
16	SE5015	250m	450MΔ	2.0m	Δ	20	20	3.0	50m	50n0	5.0	4.0m	50	1#			T092	C				
17	2SC39	250m	500MΔ	2.0m	Δ	25	15	3.0	50m	10u0	6.0	1.0m	50				T018	A				
18	BF306	250m	500MΔ	1.6m	Δ	45	15	5.0	50m	10u0	100	7.0m	39	1Δ			T072	C				
19	MD2369AF*	250m	500MΔ	1.5m	Δ	40	15	5.0	500m	03u0	1.00	10m	40	1Δ	#		T089	A				
20	MD2369BF*	250m	500MΔ	1.5m	Δ	40	15	5.0	500m	03u0	1.00	10m	40	1Δ	#		T089	A				
21	MD2369F*	250m	500MΔ	1.5m	Δ	40	15	5.0	500m	03u0	1.00	10m	40	1Δ	#		T089	A				
22	SE5010	250m	500MΔ	2.0m	Δ	30	30	3.0	30m	50n0	5.0	4.0m	75	1#			T092	C				
23	TIS62	250m	500MΔ	2.0m	Δ	30	12	3.0	30m	10u0	100	4.0m	30	1Δ			X55	A				
24	A497	250m	550MΔ	2.5m	Δ	40	25	4.0	25m	10u0	100	7.0m	115	1			MM10	C				
25	BF199	250m	550MΔ	2.5m	Δ	40	25	4.0	25m	500n	100	1.0m	20	1#	Δ		X76	C				
26	2N4254	250m	600MΔ	2.0m	Δ	30	18	4.0	50m	10u0	100	2.0m	50	1Δ			T092	B				
27	2N4255	250m	600MΔ	2.0m	Δ	30	18	4.0	50m	10u0	100	2.0m	30	1Δ			T092	B				
28	2N4996	250m	600MΔ	2.0m	Δ	30	18	4.0	50m	10u0	100	2.0m	50	1Δ			X55	A				
29	2N4997	250m	600MΔ	2.0m	Δ	30	18	4.0	50m	10u0	100	2.0m	30	1Δ			X55	A				
30	AT340	250m	600MΔ	1.4m	Δ	30	19	4.0	50m	500n	100	1.0m	20	1#	Δ		TO104	G				
31	AT344	250m	600MΔ	1.4m	Δ	30	19	4.0	50m	500n	100	1.0m	20	1#	Δ		TO104	G				
32	G13793	250m	600MΔ	2.5m	Δ	40	20	5.0	50m	50u0	100	10m	120	1Δ			TO18	A				
33	MD918AF*	250m	600MΔ	1.5m	Δ	30	15	5.0	50m	01u0	5.00	1.0m	50	1Δ			T089	A				
34	MD918BF*	250m	600MΔ	1.5m	Δ	30	15	5.0	50m	01u0	5.00	1.0m	50	1Δ			T089	A				
35	MD918F*	250m	600MΔ	1.5m	Δ	30	15	5.0	50m	01u0	5.00	1.0m	50	1Δ			T089	A				
36	ME9003T	250m	600MΔ	2.0m	Δ	18	12	4.0	30m	10u0	5.00	10m	100	1Δ			R110c	A				
37	TIS18	250m	600MΔ	2.0m	Δ	25	13	3.0	30m	50u0	100	1.0m	20	1#	Δ		X20	F				
38	ZTX320	250m	600MΔ	2.5m	Δ	30	15	3.0	200n	1.00	3.0m	3.0m	20	1			X59	F				
39	ZTX321	250m	600MΔ	2.5m	Δ	30	15	3.0	200n	1.00	3.0m	3.0m	20	1			X59	F				
40	TIS84	250m	650MΔ	2.0m	Δ	40	30	4.0	50m	50n0	100	4.0m	30	1Δ			X55	A				
41	CS3662	250m	700MΔ	2.0m	Δ	30	12	3.0	25m	50u0	100	8.0m	20	1Δ			TO106	A				
42	CS3663	250m	700MΔ	2.0m	Δ	18	12	3.0	25m	50u0	100	8.0m	20	1Δ			TO106	A				
43	BF329	250m	730MΔ	2.5m	Δ	40	30	4.0	50m	10u0	6.00	1.0m	10	1			MM10	C				
44	2SC40	250m	750MΔ	2.0m	Δ	25	15	3.0	50m	10u0	6.00	1.0m	50				TO18	A				
45	PMT1767	250m0	750MΔ	2.0m	Δ	25	15	3.0	200m	50u0	3.00	10m	50				ZA8	C				
46	BF330	250m	1.0GΔ	2.5m	Δ	40	25	4.0	25m	10u0	100	7.0m	38	1Δ			MM10	C				
47	2N4251T	250m	1.3GΔ	1.4m	Δ	15	10	4.5	100m	1.00	5.00	5.0m	32	1Δ			TO46	A				
48	MT1061	250m	1.3GΔ	1.7m	Δ	30	14	4.0	80m	05u0	5.00	5.0m	45	1			TO72	A				
49	MT1061A	250m	1.5GΔ	1.7m	Δ	30	14	4.0	80m	05u0	5.00	5.0m	75	1			TO72	A				
50	MT1063	250m	1.5GΔ	1.7m	Δ	30	14	4.0	80m	05u0	5.00	5.0m	75	1			u49	A				
51	A430	250m	1.6GΔ	1.4m	Δ	20	10	2.5	50m	50n0	5.00	25m	25	1Δ			TO72	A				
52	BFW30	250m	1.6GΔ	1.4m	Δ	20	10	2.5	50m	50n0	5.00	50	25	1Δ			TO72	G				
53	2SC1090	250m	3.0GΔ	700m	Δ	20	12	3.0	50m	1.00	1.00	30m	30	1Δ			u78	G				
54	V658	250m	3.0GΔ	1.4m	Δ	20	12	3.0	50m	1.00	5.00	20m	100	1			X89	F				
55	2N5761	250m	3.7GΔ	2.0m	Δ	20	15	3.0	30m	500n0	100	10m	30	1Δ			X80a	S				
56	BFY85*	260m				45	45	5.0	100m	01u0	100	50	50	1Δ			L2t	A				
57	BFY86*	260m				45	45	5.0	100m	01u0	100	50	50	1Δ			L2t	A				
58	BCY59	260m	50.MΔ	2.0m	Δ	45	45	5.0	100m	10n0	500	01m	100				TO18	A				
59	BFY80	260m	50MΔ	2.0m	Δ	100	90	3.0	50m	10u0	100	2.0m	30	1Δ			TO18	A				
60	BSY62	260m*	200MΔ	2.0m	Δ	25	15	5.0	200m	50u0	1.00	10m	40	1			TO18	A				
61	FT107A	260m	200MΔ	2.0m	Δ	60	60	8.0	50m	2.0n0	100	1.0m	335			24u	8.5k	7.0	2.5p	DPE0	TO18	A
62	FT107B	260m	260MΔ	2.0m	Δ	45	45	8.0	50m	2.0n0	100	1.0m	1.0k			74u	28k	23	2.5p	DPE0	TO18	A
63	FT107C	260m	280MΔ	2.0m	Δ	30	30	8.0	50m	2.0n0	100	1.0m	1.6k			120u	39k	33	2.5p	DPE0	TO18	A
64	A473	260m	550MΔ	1.5m	Δ	40	25	4.0	25m	100n0	100	7.0m	88						2.1p	PE0	TO72	J
65	BF173	260m	550MΔ	1.5m	Δ	40	25	4.0	25m	100n0	100	7.0m	15	1Δ						PE0	TO72	J
66	BF562	260m*	580MΔ	1.5m	Δ	40	25	4.0	25m	100n0	100	2.0	20	1						PE0	TO72	J
67	2N1990W	300m		3.0m	Δ	100	75	5.0	50m	10u0	500	2.0m	25	1Δ						PE0	R110	A
68	2S741A	300m				30	30	3.0	50m	100u	5.00	3.0m	5.0	Δ						PE0	TO18	A
69	2S742A	300m				15	15	3.0	50m	100u	5.00	3.0m	5.0	Δ						PE0	TO18	A
70	2S743A	300m				30	30	3.0	50m	100u	5.00	3.0m	5.0	Δ						PE0	TO18	A
71	2S744A	300m				30	30	3.0	50m	100u	5.00	3.0m	20	Δ						PE0	TO18	A
72	2S745A	300m				30	30	3.0	50m	100u	5.00	3.0m	20	Δ						PE0	TO18	A
73	2S746A	300m				15	15	3.0	50m	100u	5.00	3.0m	20	Δ						PE0	TO18	A
74	2SC538	300m		2.0m	Δ	25	25	5.0	50m	01u0	500	2.0m	250							PE0	TO18	A
75	2SC538A	300m		2.0m	Δ	25	25	5.0	50m	01u0	500	2.0m	250							PE0	TO18	A
76	2SC538Ht	300m		2.0m	Δ	25	25	5.0	50m	01u0	500	2.0m	250							PE0	TO18	A
77	2SC689Ht	300m		2.0m	Δ	40	15	5.0	50m	25u0	1.00	10m	40	1Δ					3.5p	PE0	TO18	A
78	2SC913T	300m		8.3m	Δ	40	35	5.0	300m	10u0	1.00	10m	45	1Δ						PE0	TO18	A
79	2SC914T	300m			Δ					10u0	1.00	30m	45	1Δ						PE0	TO18	A
80	2SC915T	300m			Δ					10u0	1.00	30m	45	1Δ								

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	TEMP. RANGE (°C)	ABS. MAX. RATINGS @25°C				MAX. I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C E A D E						
						V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre										
1	2N4879*	300m	15M	1.7m	SS	55	55	7.0	10m	1m	5.0	1.0m	175	Δ			8p	Δ	L2p							
2	2N4880*	300m	15M	1.7m	SS	45	45	7.0	10m	1m	5.0	1.0m	100	Δ			8p	Δ	L2p							
3	2N2432	300m	20M	2.0m	SS	30	30	15	100m	0.1u	5.0	1.0m	50	Δ			12p	Δ	TO18	A						
4	2N2432A	300m	20M	2.0m	SS	45	45	18	100m	0.1u	5.0	1.0m	50	Δ			12p	Δ	TO18	A						
5	2N4138	300m	20M	2.0m	SS	30	30	15	100m	0.1u	5.0	1.0m	50	Δ			12p	Δ	TO46	A						
6	2N4878*	300m	20M	1.7m	SS	60	60	7.0	10m	1m	5.0	1.0m	225	Δ			8p	Δ	L2p							
7#	BFV89	300m	20M	2.0m	SS	30	30	15	100m	0.1u	5.0	1.0m	50	Δ			12p	Δ	u26a	B						
8#	BFV89A	300m	20M	2.0m	SS	45	45	18	100m	0.1u	5.0	1.0m	50	#			12p	Δ	u26a	B						
9	2N754	300m	30M	3.0m	SS	60	60	3.0	50m	1.0u	10	5.0m	20	Δ			10p	Δ	TO18	A						
10	2N755	300m	30M	3.0m	SS	100	80	3.0	50m	1.0u	10	5.0m	20	Δ			10p	Δ	TO18	A						
11	2N839	300m	30M	3.0m	SJ	45	45	2.0	50m	1.0u	5.0	1.0m	20	Δ		1.2u	7b	80	80	TO18	A					
12	2N840	300m	30M	3.0m	SJ	45	45	2.0	50m	1.0u	5.0	1.0m	40	Δ		1.2u	7b	80	80	TO18	A					
13	2N842	300m	30M	2.0m	SJ	45	45	2.0	50m	1.0u	5.0	1.0m	20	Δ		350nb	40	40	2.0	2.0	6.0p	Δ	TO18	A		
14	2N929	300m	30M	2.0m	SJ	45	45	5.0	30m	10u	5.0	1.0m	60	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	TO18	A	
15	2N930	300m	30M	2.0m	SJ	45	45	5.0	30m	10u	5.0	1.0m	150	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	TO18	A	
16	2N1390	300m	30M	2.0m	SJ	20	20	2.0	50m	80u	5.0	10m	15	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	TO5	A	
17	2N2387	300m	30M	2.0m	SJ	45	45	5.0	30m	10n	5.0	1.0m	60	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	u25		
18	2N2388	300m	30M	2.0m	SJ	45	45	5.0	30m	10n	5.0	1.0m	150	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	u25		
19#	2S501	300m	30M	2.0m	SJ	25	25	5.0	30m	10n	5.0	10u	40	Δ									8.0p	Δ	TO18	
20#	2S502	300m	30M	2.0m	SJ	25	25	5.0	30m	10n	5.0	10u	100	Δ									8.0p	Δ	TO18	
21#	2S503	300m	30M	2.0m	SJ	25	25	5.0	30m	10n	5.0	10u	180	Δ									8.0p	Δ	TO18	
22	3N74	300m	30M	2.0m	SS	50	50	18	20m	0.1u	5.0											8p	Δ	TO72	GC	
23	JAN3N74	300m	30M	1.7m	SJ	50	50	20	20m	10n	5.0											8p	Δ	TO72	GC	
24	3N75	300m	30M	2.0m	SS	50	50	18	20m	0.1u	5.0											8p	Δ	TO72	GC	
25	JAN3N75	300m	30M	1.7m	SJ	50	50	20	20m	10n	5.0											8p	Δ	TO72	GC	
26	3N76	300m	30M	2.0m	SS	50	50	18	20m	0.1u	5.0											8p	Δ	TO72	GC	
27	JAN3N76	300m	30M	1.7m	SJ	50	50	20	20m	10n	5.0											8p	Δ	TO72	GC	
28	3N77	300m	30M	2.0m	SS	40	40	12	20m	0.1u	5.0											8p	Δ	TO72	GC	
29	3N78	300m	30M	2.0m	SS	40	40	12	20m	0.1u	5.0											8p	Δ	TO72	GC	
30	3N79	300m	30M	2.0m	SS	45	45	12	20m	0.2u	5.0											10p	Δ	TO72	GC	
31#	BFV85D	300m	30M	50u	SJ	45	45	5.0	30m	10n	5.0	10u	60	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	u26a	B	
32#	BFV85E	300m	30M	50u	SJ	45	45	5.0	30m	10n	5.0	10u	150	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	u26a	B	
33#	2N2639*	300m	31M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	65	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2t		
34	2N2640*	300m	31M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	65	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2t		
35	2N2641*	300m	31M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	65	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2t		
36	2N2642*	300m	31M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	130	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2t		
37	2N2643*	300m	31M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	130	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2t		
38	2N2644*	300m	31M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	130	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2t		
39	JAN2N2639*	300m	32M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	65	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2b		
40	JAN2N2642*	300m	32M	2.0m	SS	45	45	5.0	30m	10n	5.0	1.0m	130	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	L2b		
41	2N841	300m	40M	3.0m	SS	45	45	2.0	50m	1.0u	5.0	1.0m	80	Δ		1.2u	7b	80	40	2.0	2.0	8.0p	Δ	TO18	A	
42	2N841/46	300m	40M	2.3m	SS	45	45	2.0	50m	1.0u	5.0	1.0m	140	Δ		350nb	40	40	2.0	2.0	8.0p	Δ	TO18	A		
43	2N843	300m	40M	2.0m	SJ	45	45	2.0	50m	1.0u	5.0	1.0m	140	Δ		350nb	40	40	2.0	2.0	8.0p	Δ	TO18	A		
44	2N1389	300m	40M	2.0m	SJ	50	50	1.5	50m	50u	5.0	10m	40	Δ								4.0p	Δ	TO18	A	
45	JAN2N2432	300m	40M	1.7m	SS	30	30	3.0	100m	10n	5.0	1.0m	80	Δ								1.2p	Δ	TO18	A	
46	JAN2N2432A	300m	40M	1.7m	SS	45	45	3.0	100m	10n	5.0	1.0m	80	Δ								1.2p	Δ	TO18	A	
47	2N3566	300m	40M	3.0m	S	40	30	5.0	200m	0.5u	10	10m	150	#	Δ							2.5p	Δ	PE	R97	
48	2N3567	300m	40M	3.0m	S	30	25	4.0	200m	0.3u	10	10m	50	#	Δ							2.5p	Δ	PE	R97	
49	2N3568	300m	40M	2.8m	S	30	25	3.0	200m	1.0u	10	15m	200	#	Δ							3.5p	Δ	PE	R97	
50	2N3569	300m	40M	2.8m	S	30	25	3.0	200m	1.0u	10	15m	200	#	Δ							3.5p	Δ	PE	R97	
51#	BC115	300m	40M	3.0m	S	40	30	5.0	50m	10u	10	10m	200	#	Δ							1.2p	Δ	DPL	R97	
52#	BC117	300m	40M	3.0m	S	120	120	5.0	50m	10u	10	10m	30	#	Δ							6.0p	Δ	DPL	R97	
53#	BC125	300m	40M	3.0m	S	50	30	5.0	50m	0.5u	10	10m	20	#	Δ							6.0p	Δ	DPE	R97	
54#	BC145	300m	40M	3.0m	S	120	120	5.0	50m	10u	10	5.0m	30	#	Δ							6.0p	Δ	DPE	R97	
55#	BSY89	300m	40M	2.0m	SJ	25	18	7.0	100m	0.1u	5.0	1.0m	150	Δ								1.5p	Δ	PE	TO18	A
56#	FT021	300m	40M	2.5m	SS	50	30	6.0	300m	10u	15	6.0m	20	Δ		50u	650					4.0p	Δ	TO46		
57#	FT024	300m	40M	2.5m	SS	50	30	6.0	300m	10u	15	6.0m	45	Δ		50u	650					4.0p	Δ	TO46		
58#	HT400	300m	40M	2.0m	SA	20	20	5.0	50m	200n	1.0	10m	35	Δ		b	30					2.0p	Δ	PL	TO18	
59	SE6001	300m	40M	2.0m	SJ	40	30	5.0	50m	200n	1.0	10m	50	#	Δ							2.5p	Δ	PL	TO105	
60	SE602	300m	40M	3.0m	SJ	40	30	5.0	50m	50u	10	10m	150	#	Δ							2.5p	Δ	PL	TO105	
61	2N2693†	300m	42M	2.0m	SS	45	30	7.0	50m	0.1u	1.0	0.1m	20	Δ								5.0p	Δ	PL	TO18	A
62	2N2694†	300m	42M	2.0m	SS	45	20	10	50m	0.1u	1.0	0.1m	20	Δ								5.0p	Δ	PL	TO18	A
63	JAN2N929	300m	45M	2.0m	SJ	60	45	6.0	30m	10n	5.0	1.0m	60	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	TO18	A	
64#	BFX92	300m	45M	2.0m	SJ	50	45	6.0	30m	10n	5.0	1.0m	65	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	DPL	TO18	A
65#	BFX93	300m	45M	2.0m	SJ	50	45	6.0	30m	10n	5.0	1.0m	150	Δ		1.0u	7b	32	32	6.0	6.0	8.0p	Δ	DPL	TO18	A
66#	2N844	300m	50M	2.0m	SJ																					

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @25°C (W)	2   DERATE IN FREE AIR W/C (Hz)	T   M A M P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS						Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E			
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	COMMON EMITTER hoe (mhos)	hie (Ω)	hre (X.0001)							
1	2N3569	300m	60MSΔ	3.0m	Δ	80	40	5.0	500m	5.0u	1.0u	150m	40	1#Δ	20p	PL	T0105	A				
2	2N3680*	300m	60MSΔ	2.0m	Δ	60	50	6.0	30m	.01u	5.0u	1.0m	300	Δ	6p	PL	L2t					
3	2N3907*	300m	60MSΔ	2.0m	Δ	60	45	6.0	30m	10n	5.0u	1.0m	120	Δ	6.0p	PL	L2t					
4	2N3908*	300m	60MSΔ	2.0m	Δ	60	60	6.0	30m	2.0n	5.0u	1.0m	200	Δ	6.0p	PL	L2t					
5	A311	300m	60MSΔ	2.0m	Δ	80	3.0	5.0	500m	.50u	1.0u	10m	20	Δ	4p	PL	T05	A				
6#	BC395	300m	60M	3.0m	Δ	80	70	5.0	500m	1.0u	10m	10m	40	Δ	20p	PE	T0105	A				
7#	BFV85F	300m	60MSΔ	500u	Δ	60	60	6.0	50m	.01u	5.0u	1.0m	80	Δ	6p	PL	u26a	B				
8#	BFV85G	300m	60MSΔ	500u	Δ	60	60	6.0	50m	.01u	5.0u	1.0m	150	Δ	6p	PL	u26a	B				
9#	BFY10	300m	60MSΔ	2.0m	Δ	45	45	5.0	50m	2.0u	5.0	5.0m	20	Δ	3p	ME	T05					
10#	BFY11	300m	60MSΔ	2.0m	Δ	45	45	5.0	50m	2.0u	5.0	5.0m	35	Δ	3p	ME	T05					
11#	BSX21	300m	60MSΔ	2.0m	Δ	120	80	5.0	50m	40u	3.0u	4.0m	40	Δ	3.6p	DM	T018	∅				
12#	BSY10	300m	60MΔ	2.0m	Δ	45	5.0	5.0	50m	5.0	10m	45	Δ		ME	T05						
13#	C424	300m	60MSΔ	3.0m	Δ	40	30	6.0		.20u	1.0u	50m	50	Δ	25p	PL	R97					
14	CS4005	300m	60MSΔ	3.0m	Δ	80	40	5.0		50n	1.0u	150m	80	Δ	13p	EΔ	T0105	A				
15	CS4006	300m	60MSΔ	3.0m	Δ	80	60	5.0		50n	1.0u	150m	80	Δ	13p	EΔ	T0105	A				
16	CS4007	300m	60MSΔ	3.0m	Δ	80	40	5.0		50n	1.0u	150m	150	Δ	18p	EΔ	R97	A				
17	EN1613	300m	60MSΔ	3.0m	Δ	75	40	*Δ	7.0	50n	5.0u	1.0m	25	Δ	25p	DPL	T0105	A				
18	2N2692	300m	66.MS	2.0m	Δ	45	30	10	50m	.01u	1.0u	10m	90	Δ	5p	PEΔ	T018	A∅				
19	JAN2N702†	300m	70MSΔ	1.7m	Δ	40	25	5.0	30m	100n	5.0u	10m	20	Δ	500n	DPL	T018	A∅				
20	JAN2N703†	300m	70MSΔ	1.7m	Δ	40	25	5.0	30m	100n	5.0u	10m	20	Δ	500n	DPL	T018	A∅				
21#	2S1011	300m	70MSΔ	2.0m	Δ	25	25	5.0	50m	.50u	5.0u	10m	20	Δ	6p	DM	T018					
22	EN1711	300m	70MSΔ	3.0m	Δ	75	40	*Δ	7.0	50n	5.0u	1.0m	50	Δ	500n	DPL	T0105	A				
23#	FT025	300m	70MSΔ	2.5m	Δ	50	30	6.0	100m	100u	15u	6.0m	20	Δ	70u	400	T046					
24#	FT026	300m	70MSΔ	2.5m	Δ	50	30	6.0	100m	100u	15u	6.0m	45	Δ	70u	700	T046					
25#	ZT202	300m	70MSΔ	4.0m	Δ	30	20	5.0	50m	1.0u	6.0u	1.0m	30	Δ	2.5u	1.3k	1.1	8.0p	T05	∅		
26#	ZT203	300m	70MSΔ	4.0m	Δ	30	20	5.0	50m	1.0u	6.0u	1.0m	50	Δ	2.5u	1.6k	1.1	8.0p	T05	∅		
27#	ZT204	300m	70MSΔ	4.0m	Δ	30	20	5.0	50m	1.0u	6.0u	1.0m	100	Δ	2.5u	1.9k	1.1	8.0p	T05	∅		
28#	ZT402	300m	70MSΔ	4.0m	Δ	30	20	5.0	50m	1.0u	6.0u	1.0m	30	Δ	2.5u	1.3k	1.1	8.0p	T05	∅		
29#	ZT403	300m	70MSΔ	4.0m	Δ	30	20	5.0	50m	1.0u	6.0u	1.0m	50	Δ	2.5u	1.6k	1.1	8.0p	T018	∅		
30#	ZT404	300m	70MSΔ	4.0m	Δ	30	20	5.0	50m	1.0u	6.0u	1.0m	100	Δ	2.5u	1.9k	1.1	8.0p	T018	∅		
31	2N1388	300m	75.M	2.0m	Δ	45	45	1.5	50m	.50u	5.0u	10m	15	Δ	4.0p	PD∅	T05					
32	2N2720*	300m	80MSΔ	1.7m	Δ	80	60	6.0	40m	10n	5.0u	1.0m	30	Δ	1.0u	Zb	32	5.0	6.0p	PE	T05	A
33	2N2721*	300m	80MSΔ	1.7m	Δ	80	60	6.0	40m	10n	5.0u	1.0m	30	Δ	1.0u	Zb	32	5.0	6.0p	PE	T05	A
34	2N3587*	300m	80MSΔ	1.7m	Δ	60	45	5.0	500m	10n	15u	1.0m	80	Δ	8.0p	PE	L2t					
35#	2SC732	300m	80.MS	3.0m	Δ	35	30	5.0	100m	.10u	6.0u	2.0m	1.2k	Δ	10p	PE	R67a	B				
36#	2SC733	300m	80MSΔ	3.0m	Δ	35	30	5.0	100m	.10u	6.0u	2.0m	70	Δ	7.0p	PE	R67a	B				
37	A301	300m	80MSΔ	2.0m	Δ	40	4.0	40m		.50u	10u	3.0m	200	Δ	3p	PL	T018					
38	A310	300m	80MSΔ	2.0m	Δ	135	3.0			.50u	10u	10m	20	Δ	4p	PL	T05	A				
39#	BFW57	300m	80MSΔ	3.0m	Δ	80	60	500m		.50u	10u	10m	110		7.0p	PE	MM10	A				
40#	BFW58	300m	80MSΔ	3.0m	Δ	80	60	6.0	500m	.50u	10u	10m	75		7.0p	PE	MM10	A				
41#	BFW59	300m	80MSΔ	3.0m	Δ	40	35	6.0	500m	.50u	10u	10m	110		7.0p	PE	MM10	A				
42#	BFW60	300m	80MSΔ	3.0m	Δ	40	35	6.0	500m	.50u	10u	10m	75		7.0p	PE	MM10	A				
43	2N2569∅	300m	100MSΔ	2.0m	Δ	20	5.0	100m		.01u	10u	1.0m	50	Δ	10p	PE	T018	A∅				
44	2N2570∅	300m	100MSΔ	2.0m	Δ	20	5.0	100m		.01u	10u	1.0m	50	Δ	10p	PE	T018	A∅				
45	2N2722*	300m	100MSΔ	1.7m	Δ	45	45	5.0	40m	1.0n	5.0u	100u	100	Δ	1.0u	Zb	32	6.0	6.0p	PE	T05	A
46	2N2938†	300m	100M	2.0m	Δ	25	13	5.0	500m		.35u	10m	125	Δ	3.5p	PE∅	T052					
47#	2SC587	300m	100MS		Δ	45	35	5.0	30m	.01u	10u	2.0m	300		6p	PE	T018					
48#	2SC587A	300m	100MS		Δ	45	35	5.0	30m	.01u	10u	2.0m	300		6p	PE	T018					
49#	BC110	300m	100MS	2.0m	Δ	80	80	8.0	50m	.10u	100n	1.0u	35	Δ	4.0p	PE	T018	A				
50#	BC170A	300m	100MS	3.0m	Δ	20	20	5.0	100m	100n	1.0u	1.0m	80	Δ	4.0p	PE	X64	A				
51#	BC170B	300m	100MS	3.0m	Δ	20	20	5.0	100m	100n	1.0u	1.0m	80	Δ	4.0p	PE	X64	A				
52#	BC170C	300m	100MS	3.0m	Δ	20	20	5.0	100m	100n	1.0u	1.0m	200	Δ	4.0p	PE	X64	A				
53#	BCY42	300m	100MSΔ	5.0m	Δ	40	25	5.0	100m	25n	5.0u	1.0m	45	Δ	6p	PE	T018	A∅				
54#	BCY43	300m	100MSΔ	5.0m	Δ	40	25	5.0	100m	25n	5.0u	1.0m	75	Δ	6p	PE	T018	A∅				
55#	BSY79	300m	100MS	2.0m	Δ	120	5.0	30m		05u	1.0u	1.0m	30	Δ	4.0p	PE	T018	A∅				
56	CS3704	300m	100MSΔ	2.4m	Δ	50	30	5.0	800m	.10u	2.0u	50m	100	Δ	12p	DPL	T0106	A				
57	CS3705	300m	100MS	2.4m	Δ	50	30	5.0	800m	.10u	2.0u	50m	150	Δ	12p	DPL	R97a	A				
58	CS3706	300m	100MS	2.4m	Δ	50	30	5.0	800m	.10u	2.0u	50m	600	Δ	12p	DPL	R97a	A				
59	CS5449	300m	100MSΔ	2.3m	Δ	50	30	5.0	800m	100n	2.0u	50	100	Δ	12p	PE	T0106	A				
60	CS5450	300m	100MSΔ	2.3m	Δ	50	30	5.0	800m	100n	2.0u	50	50	Δ	12p	PE	T0106	A				
61	CS5451	300m	100MSΔ	2.3m	Δ	40	20	5.0	800m	100n	2.0u	50	50	Δ	12p	PE	T0106	A				
62#	FOS100	300m	100MSΔ	2.0m	Δ	15	15	4.5	100m	.50u	5.0u	10m	50	Δ	8.0p	PE	T018	A∅				
63	GI3704	300m	100MSΔ	3.0m	Δ	50	30	5.0		.10u	2.0u	50m	300	Δ	12p	PE	R97d					
64	GI3705	300m	100MSΔ	3.0m	Δ	50	30	5.0		.10u	2.0u	50m	150	Δ	12p	PE	R97d					
65	GI3706	300m	100MSΔ	3.0m	Δ	40	20	5.0		.10u	2.0u	50m	300	Δ	12p	PE	R97d					
66#	NKT10419	300m	100MS	2.0m	Δ	25	25	5.0	100m	.01u	10u	0.1m	120	Δ	4.0p	PE	T018	A∅				
67#	NKT10519	300m	100MS	2.0m	Δ	25	25	5.0	100m	.01u	10u	0.1m	240	Δ	4.0p	PE	T018	A∅				
68#	ZT401	300m	110MS	2.5m	Δ	20	20	6.0	50m	500n	6.0u	1.0m	30	Δ	2.5u	1.3k	1.1	5.0p	T018			
69#	ZT411	300m	110MS	2.5m	Δ	20	20	6.0	50m	500n	6.0u	1.0m	30	Δ	2.5u	1.3k	1.1	5.0p	T018			
70#	ZT421	300m	110MS	2.5m	Δ	45	45	6.0	50m	500n	6.0u	1.0m	50	Δ	2.5u	1.6k	1.1	5.0p	T018			
71#	ZT431	300m	110MS	2.5m	Δ	45	45	6.0	50m	500n	6.0u	1.0m	50	Δ	2.5u	1.6k	1.1	5.0p	T018			
72#	ZT441	300m	110MS	2.5m	Δ	45	45	6.0	50m	500n	6.0u	1.0m	65	Δ	2.5u	2.0k	1.1	5.0p	T018			
73#	ZTX107	300m	115MS	3.0m	Δ	45	45	5.0	100m	#200n	5.0u	2.0m	125	Δ*	30u	4.8k	4.1	4.5p	PL	X59	F	
74#	ZTX108	300m	115MS	3.0m	Δ																	

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. @25°C (W)	2 DERATE IN (Hz)	ABS MAX RATINGS @25°C				MAX. lcbomax Vcb (A)	TYPICAL h PARAMETERS			COMMON EMITTER			Cob (F)	STRUCTURE	DWG # Y2000 Ser	# s/a TO200	C O D E		
				ME (V)	EM (V)	BE (V)	IC (A)		Vcb (V)	Ic (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)							
1#	BC268	300m	150m	10u	#J	30	30	6.0	1	15n	5.0	2.0m	400	30u	4.0k	5.6	PE	TO18			
2#	BC269	300m	150m	10u	#J	30	30	6.0	1	15n	5.0	2.0m	500	40u	6.0k	7.0	PE	TO18			
3#	BC270	300m	150m	10u	#J	30	30	6.0	1	20u	5.0	2.0m	400	30u	4.0k	5.6	PE	TO18			
4#	BCW36	300m	150m	2.4m	\$J	60	45	5.0	600m	10n	5.0	100m	100	5.0u	40k	10	PE	TO18			
5#	BCY69	300m	150m	2.0m	\$J	20	20	5.0	100m	150n	5.0	2.0m	75	40	TA	PE	TO18				
6#	BFS29	300m	150m	2.4m	\$J	45	45	5.0	200m	20n	15	100m	40	TA	PE	TO18					
7#	BFS30	300m	150m	2.4m	\$J	45	45	5.0	200m	20n	15	100m	60	TA	PE	TO18					
8#	BFS31	300m	150m	2.4m	\$J	45	45	5.0	200m	20n	15	100m	80	TA	PE	TO18					
9#	BFY39	300m	150m	2.0m	\$J	45	25	5.0	100m	50u	10	100m	35	TA	PL	TO18					
10#	BFY39/I	300m	150m	2.0m	\$J	45	25	5.0	100m	0.5u	10	100m	20	TA	PL	TO18	A				
11#	BFY39/II	300m	150m	2.0m	\$J	45	25	5.0	100m	0.5u	10	100m	20	TA	PL	TO18	A				
12#	BFY39/III	300m	150m	2.0m	\$J	45	25	5.0	100m	0.5u	10	100m	40	TA	PL	TO18	A				
13#	SA2738*	300m	150m	2.0m	\$J	50	30	6.0		2n	5.0	0.1m	75	TA		3p	L2t				
14#	SA2739*	300m	150m	2.0m	\$J	50	30	6.0		2n	5.0	0.1m	75	TA		3p	L2t				
15#	ZDT10	300m	150m	2.4m	\$J	10	10	5.0	50m	0.1u	6.0	20m	20	TA		8p	L2h				
16#	ZDT11	300m	150m	2.4m	\$J	10	10	5.0	50m	0.1u	6.0	20m	20	TA		8p	L2h				
17#	ZDT20	300m	150m	2.4m	\$J	35	35	5.0	50m	0.1u	6.0	20m	20	TA		8p	L2h				
18#	ZDT21	300m	150m	2.4m	\$J	35	35	5.0	50m	0.1u	6.0	20m	20	TA		8p	L2h				
19#	ZTX300	300m	150m	3.0m	\$A	25	25	5.0	500m	20n	6.0	10m	50	TA		6.0p	PL	X59			
20#	ZTX301	300m	150m	3.0m	\$A	35	35	5.0	500m	20n	6.0	10m	50	TA		6.0p	PL	X59			
21#	ZTX302	300m	150m	3.0m	\$A	35	35	5.0	500m	20n	6.0	10m	100	TA		6.0p	PL	X59			
22#	ZTX303	300m	150m	3.0m	\$A	45	45	5.0	500m	20n	6.0	10m	50	TA		6.0p	PL	X59			
23#	ZTX304	300m	150m	3.0m	\$A	70	70	5.0	500m	20n	6.0	10m	50	TA		6.0p	PL	X59			
24#	ZSC248	300m	170m	2.0m	\$J	70	60	5.0	50m	1.0u	6.0	2.5m				2.5p	PL	TO18			
25#	ZSC318	300m	170m	2.0m	\$J	50	30	5.0	100m	20u	3.0	1.0m	90	TA		3.0p	PL	TO18			
26#	ZSC318A	300m	170m	2.0m	\$J	50	30	5.0	100m	20u	3.0	1.0m	90	TA		4.5p	PL	TO18			
27#	BSY72	300m	170m	2.0m	\$J	25	18	5.0	100m	10u	1.0	1.0m	80	TA	8.0u	5.0k	1.2	6.0p	PE	TO18	
28#	BSY74	300m	170m	2.0m	\$J	40	32	7.0	250m	0.5u	1.0	1.0m	80	TA	7.0u	5.0k	1.0	5.0p	PE	TO18	
29#	BSY76	300m	170m	2.0m	\$J	80	64	7.0	250m	0.5u	1.0	1.0m	80	TA	5.5u	5.0k	80	4.0p	PE	TO18	
30#	BSY78	300m	170m	2.0m	\$J	80	64	7.0	250m	0.5u	1.0	1.0m	80	TA	5.5u	5.0k	80	4.0p	PE	TO18	
31#	ZSC855	300m	180m	2.7m	TJ	80	80	4.0	100m	1.0m	6.0	10m	30	TA		1.0p	P	TO1			
32#	ZSC917	300m	180m	2.7m	TJ	80	80	4.0	100m	1.0m	6.0	10m	30	TA		1.0p	P	TO1			
33#	MP5H4	300m	180m	2.7m	TJ	80	80	4.0	100m	50n	10	1.5m	120	TA	2.0u	1.0p	AN	TO92	A		
34#	MP5H5	300m	180m	2.7m	TJ	80	80	4.0	100m	50n	10	1.5m	150	TA	2.0u	1.0p	AN	TO92	A		
35#	JAN2N706t	300m	200m	2.0m	\$S	25	15	5.0	100m	100n	1.0	10m	30	TA		6.0p	ME	TO18	A		
36#	2N706At	300m	200m	2.0m	\$J	25	15	5.0	100m	10u	1.0	10m	20	TA		3.5p	ME	TO18	A		
37#	2N783t	300m	200m	2.0m	\$J	40	20	5.0	200m	25u	1.0	10m	20	TA		3.5p	ME	TO18	A		
38#	2N783t	300m	200m	2.0m	\$J	30	15	5.0	200m	25u	1.0	10m	25	TA		3.5p	ME	TO18	A		
39#	2N1708t	300m	200m	2.0m	\$S	25	20	5.0	200m	25u	1.0	10m	20	TA		6.0p	PE	TO46	A		
40#	2N2205t	300m	200m	2.0m	\$S	25	20	5.0	200m	25u	1.0	10m	20	TA		6.0p	PE	TO18	A		
41#	2N2206t	300m	200m	2.0m	\$S	25	20	5.0	200m	25u	1.0	10m	20	TA		6.0p	PE	TO46	A		
42#	ZSC478	300m	200m	1.7m	\$J	50	50	5.0	120m	1.0u	12	20m	20	TA		4.0p	PE	TO18	A		
43#	ZSC895	300m	200m	2.0m	\$J	55	30	5.0	200m	1.0u	10	5.0m	70	TA		3.5p	PE	TO46	A		
44#	BC174A	300m	200m	3.0m	\$J	64	64	5.0	100m	15n	5.0	2.0m	125	TA	18u	2.7k	1.5	4.0p	PE	X64	
45#	BC174B	300m	200m	3.0m	\$J	64	64	5.0	100m	15n	5.0	2.0m	240	TA	30u	4.5k	2.0	4.0p	PE	X64	
46#	BC190A	300m	200m	2.0m	\$J	70	64	5.0	100m	15n	5.0	2.0m	125	TA	18u	2.7k	1.5	4.5p	PE	TO18	
47#	BC190B	300m	200m	2.0m	\$J	70	64	5.0	100m	15n	5.0	2.0m	240	TA	30u	4.5k	2.0	4.5p	PE	TO18	
48#	BFY255	300m	200m	2.0m	\$J	30	20	5.0	30m	100	1.0	10m	67	TA		850ft	PE	X93	C		
49#	BSY255	300m	200m	2.0m	\$J	25	20	5.0	100m	10u	10	10m	35	TA		2.3p	PL	TO18			
50#	BSX24	300m	200m	2.0m	\$J	32	32	5.0	100m	0.5u	5.0	10m	35	TA		5.0p	PE	TO18			
51#	BSX26t	300m	200m	2.0m	\$J	30	20	5.0	100m	0.1u	0.0	10m	40	TA		5p	PE	TO18	A		
52#	BSX26t	300m	200m	2.0m	\$J	30	20	5.0	100m	0.1u	0.0	10m	60	TA		5p	PE	TO18	A		
53#	BSX89t	300m	200m	2.0m	\$J	25	15	5.0	500m	50u	1.0	10m	20	TA		2.5p	DPE	TO18	A		
54#	BSY26t	300m	200m	2.0m	\$J	20	15	6.0	100m	25n	2.0	10m	20	TA		6.0p	PE	TO18	A		
55#	BSY27t	300m	200m	2.0m	\$J	20	15	6.0	100m	25n	2.0	10m	40	TA		6.0p	PE	TO18	A		
56#	BSY95A	300m	200m	2.0m	\$J	20	15	5.0	100m	0.5u	1.0	10m	50	TA		6p	PE	TO18	A		
57#	ME2001	300m	200m	2.0m	\$J	35	25	4.0	40m	50n	1.0	10m	40	TA		5.0p	DPL	R110c	A		
58#	ME2002	300m	200m	2.0m	\$J	35	25	4.0	40m	50n	1.0	10m	100	TA		5.0p	DPL	R110c	A		
59#	UPI706A	300m	200m	2.0m	\$J	25	20	5.0	100m	10u	1.0	10m	20	TA		3.5p	ME	TO18	A		
60#	ZT80t	300m	200m	2.4m	\$J	25	25	4.0	500m	50u	6.0	1.0m	55	TA	5.3u	2.4k	1.5	4.5p	PL	TO18	A
61#	ZT81t	300m	200m	2.4m	\$J	45	35	4.0	500m	50u	6.0	1.0m	55	TA	5.3u	2.4k	1.5	4.5p	PL	TO18	A
62#	ZT82t	300m	200m	2.4m	\$J	45	35	4.0	500m	50u	6.0	1.0m	90	TA	5.9u	3.2k	1.8	4.5p	PL	TO18	A
63#	ZT83t	300m	200m	1.8m	\$J	60	45	5.0	500m	0.5u	6.0	1.0m	55	TA	5.3u	2.4k	1.5	4.5p	PL	TO18	A
64#	ZT84t	300m	200m	1.8m	\$J	60	45	5.0	500m	0.5u	6.0	1.0m	90	TA	5.9u	3.2k	1.8	4.5p	PL	TO18	A
65#	ZT86t	300m	200m	1.8m	\$J	100	80	5.0	500m	0.5u	6.0	1.0m	55	TA	5.3u	2.4k	1.5	4.5p	PL	TO18	A
66#	ZT87t	300m	200m	2.4m	\$J	25	25	4.0	500m	50u	6.0	1.0m	90	TA	5.9u	3.2k	1.8	4.5p	PL	TO18	A
67#	ZT88t	300m	200m	1.8m	\$J	100	80	5.0	500m	0.5u	6.0	1.0m	90	TA	5.9u	3.2k	1.8	4.5p	PL	TO18	A
68#	ZT89t	300m	200m	1.7m	\$J	70	70	5.0	500m	500n	6.0	1.0m	90	TA	5.9u	3.2k	1.8	4.5p	PL	TO18	A
69#	ZT110t	300m	200m	2.5m	\$J	25	25	4.0	500m	500n	6.0	1.0m	55	TA	5.3m	2.4k	1.5	4.5p	PL	TO46	
70#	ZT111t	300m	200m	2.5m	\$J	45	35	4.0	500m	500n	6.0	1.0m	55	TA	5.3m	2.4k	1.5	4.5p	PL	TO46	
71#	ZT112t	300m	200m	2.5m	\$J	45	35	4.0	500m	500n	6.0	1.0m	90	TA	5.9m	3.2k	1.8	4.5p	PL	TO46	
72#	ZT113t	300m	200m	1.7m	\$J	60	45	5.0	500m	50n	6.0	1.0m	55	TA	5.3m	2.4k	1.5	4.5p	PL	TO46	
73#	ZT114t	300m	200m	1.7m	\$J	60	45	5.0	500m	50n	6.0	1.0m	90	TA	5.9m	3.2k	1.8	4.5p	PL	TO46	
74#	ZT116t	300m	200m	1.7m	\$J	100	80	5.0	500m	50n	6.0	1.0m	55	TA	5.3m	2.4k	1.5	4.5p	PL	TO46	
75#	ZT117t	300m	200m	2.5m	\$J	25	25	4.0	500m	500n	6.0	1.0m	90	TA	5.9m	3.					



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DEPRATE IN FREE AIR W/°C	T M A M E X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG Y200 #/a TO200 Ser.	# L E O D E	
					V <sub>ce</sub> (V)	V <sub>ceo</sub> (V)	V <sub>beo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					COMMON EMITTER
										BIAS			COMMON EMITTER				
										V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>	hoe (mhos)	hie (Ω)	hre (X.0001)		
1#	BSX77†	300m	250m	2.0m	5J	40	20	5.0	100m	0.05u	10	150m	80 †				AØ
2	GI3641	300m	250m	3.0m	5J	60	30	5.0		0.05u	10	150m	40 †				AØ
3	GI3643	300m	250m	3.0m	5J	60	30	5.0		0.05u	10	150m	40 †				AØ
4#	BF254*	300m	280m	3.0m	5J	30	20	5.0	30m	1.0m	115 †						AØ
5	JAN2N744†	300m	280m	2.0m	5J	20	15	5.0	200m	500n	3.5	10m	40 †				AØ
6#	BSX78†	300m	285m	2.0m	5J	40	20	5.0	100m	0.05u	5.0	10m	120 †				AØ
7#	ZDT40*	300m	290m	2.0m	5J	45	35	4.0	500m	50u	6.0	10m	200 †				AØ
8#	ZDT41*	300m	290m	2.0m	5J	60	45	7.0	500m	0.05u	6.0	10m	170 †				AØ
9#	ZDT42*	300m	290m	2.0m	5J	60	60	7.0	500m	0.05u	6.0	1.0m	180 †				AØ
10#	ZDT44*	300m	290m	2.0m	5J	60	60	7.0	500m	0.05u	6.0	1.0m	180 †				AØ
11#	ZDT45*	300m	290m	2.0m	5J	100	70	7.0	500m	0.05u	6.0	1.0m	60 †				AØ
12	2N988	300m	300m	6.7k	5J	20	10	3.0	220m	500n	1.0	10m	20 †				AØ
13	2N989	300m	300m	6.7k	5J	20	10	3.0	220m	500n	1.0	10m	20 †				AØ
14	2N1708A†	300m	300m	1.7m	5J	40	15	5.0	500m	25n	1.0	10m	30 †				AØ
15	2N3261†	300m	300m	2.0m	5S	40	15	6.0	500m		1.0	200m	20 †				AØ
16	2N3425*	300m	300m	1.7m	5J	40	15	5.0		25n	1.0	10m	20 †				AØ
17#	2S95A†	300m	300m	1.7m	5S	20	15	5.0	200m	50n	0.35	1.0m	30 †				AØ
18#	2SC383	300m	300m	3.0m	5J	75	40	3.0	50m	25u	13	12m	20 †				AØ
19#	2SC388A	300m	300m	3.0m	5J	25	25	3.0	50m	2.5n	12	12m	20 †				AØ
20#	2SC735	300m	300m	3.0m	5J	35	30	5.0	400m	1.0u	1.0	100m	40 †				AØ
21	40405	300m	300m	2.0m	5J		16	6.0	500m	4.0u	1.0	100m	20 †				AØ
22	40519	300m	300m	2.0m	5J		16	5.0	500m	25n	1.0	50m	20 †				AØ
23	40637	300m	300m	2.0m	5J		30	5.0	100m								AØ
24#	A134	300m	300m	3.0m	5J	90	50	8.0	100m	15u	5.0	2.0m	415 †				AØ
25#	A135	300m	300m	3.0m	5J	90	50	8.0	100m	15u	5.0	2.0m	650 †				AØ
26#	A136	300m	300m	3.0m	5J	90	50	8.0	100m	15u	5.0	2.0m	900 †				AØ
27#	A137	300m	300m	3.0m	5J	45	30	5.0	100m	15u	5.0	2.0m	415 †				AØ
28#	A138	300m	300m	3.0m	5J	45	30	5.0	100m	15u	5.0	2.0m	650 †				AØ
29#	A139	300m	300m	3.0m	5J	45	30	5.0	100m	15u	5.0	2.0m	900 †				AØ
30	A157A	300m	300m	2.0m	5J	50	45	5.0	100m	15u	5.0	2.0m	220 †				AØ
31	A157B	300m	300m	2.0m	5J	50	45	5.0	100m	15u	5.0	2.0m	330 †				AØ
32	A158B	300m	300m	2.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	330 †				AØ
33	A158C	300m	300m	2.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	600 †				AØ
34	A159B	300m	300m	2.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	330 †				AØ
35	A159C	300m	300m	2.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	600 †				AØ
36#	AT406	300m	300m	2.4m	5J	50	30	5.0	500m	200n	1.0	50m	100 †				AØ
37#	AT407	300m	300m	2.4m	5J	50	45	5.0	500m	200n	1.0	50m	100 †				AØ
38#	BC107A	300m	300m	2.0m	5J	45	45	5.0	100m	15n	5.0	2.0m	180 †				AØ
39#	BC107B	300m	300m	2.0m	5J	45	45	5.0	100m	15n	5.0	2.0m	290 †				AØ
40#	BC108A	300m	300m	3.3m	5J	20	20	5.0	100m	15n	5.0	2.0m	180 †				AØ
41#	BC108B	300m	300m	2.0m	5J	20	20	5.0	100m	15n	5.0	2.0m	290 †				AØ
42#	BC108C	300m	300m	2.0m	5J	20	20	5.0	100m	15n	5.0	2.0m	520 †				AØ
43#	BC109B	300m	300m	2.0m	5J	20	20	5.0	100m	15n	5.0	2.0m	290 †				AØ
44#	BC109C	300m	300m	2.0m	5J	20	20	5.0	100m	15n	5.0	2.0m	520 †				AØ
45#	BC173B	300m	300m	3.0m	5J	20	20	5.0	100m	15n	5.0	2.0m	240 †				AØ
46#	BC173C	300m	300m	3.0m	5J	20	20	5.0	100m	15n	5.0	2.0m	450 †				AØ
47#	BC237%	300m	300m	3.0m	5J	50	45	6.0	100m	15u	5.0	2.0m	125 †				AØ
48	BC237A	300m	300m	3.0m	5J	50	45	6.0	100m	15u	5.0	2.0m	220 †				AØ
49	BC237B	300m	300m	3.0m	5J	50	45	6.0	100m	15u	5.0	2.0m	330 †				AØ
50#	BC238%	300m	300m	3.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	125 †				AØ
51#	BC238A	300m	300m	3.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	220 †				AØ
52	BC238B	300m	300m	3.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	330 †				AØ
53	BC238C	300m	300m	3.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	600 †				AØ
54#	BC239%	300m	300m	2.2m	5J	20	20	5.0	50m	200p	5.0	2.0	330 †				AØ
55#	BC239%	300m	300m	3.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	240 †				AØ
56	BC239B	300m	300m	3.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	330 †				AØ
57	BC239C	300m	300m	3.0m	5J	30	20	5.0	100m	15u	5.0	2.0m	600 †				AØ
58#	BCW54	300m	300m	2.0m	5J	64	64	5.0	100m	15n	5.0	2.0m	220 †				AØ
59#	BCW55	300m	300m	2.0m	5J	64	64	5.0	100m	15n	5.0	2.0m	330 †				AØ
60	BF165	300m	300m	3.0m	5J	30	15	4.0		1.0u	1.0	2.0m	35 †				AØ
61#	BFV83	300m	300m	588u	5J	40	15	5.0	25n		1.0	500u	15 †				AØ
62#	BFV83A†	300m	300m	588u	5J	40	20	5.0	25n		1.0	10m	30 †				AØ
63#	BSW42†	300m	300m	3.0m	5J	25	25	5.0	200m	50u	4.5	2.0m	130 †				AØ
64#	BSW42A†	300m	300m	3.0m	5J	25	25	5.0	200m	50u	4.5	2.0m	130 †				AØ
65#	BSW43†	300m	300m	3.0m	5J	25	25	5.0	200m	50u	4.5	2.0m	300 †				AØ
66#	BSW43A†	300m	300m	3.0m	5J	25	25	5.0	200m	50u	4.5	2.0m	300 †				AØ
67#	BSX51†	300m	300m	2.0m	5A	25	25	5.0	200m	500n	4.5	2.0m	130 †				AØ
68#	BSX51A†	300m	300m	2.0m	5A	50	50	7.0	200m	500n	4.5	2.0m	130 †				AØ
69#	BSX52†	300m	300m	2.0m	5A	25	25	5.0	200m	500n	4.5	2.0m	300 †				AØ
70#	BSX52A†	300m	300m	2.0m	5A	50	50	7.0	200m	500n	4.5	2.0m	300 †				AØ
71#	BSX90†	300m	300m	2.0m	5J	20	12	5.0	200m	1.0u	0.35	10m	20 †				AØ
72#	BSX91†	300m	300m	2.0m	5J	20	12	5.0	200m	1.0u	0.35	10m	40 †				AØ
73#	BSY17	300m*	300m	2.0m	5J	20	12	5.0	200m	25n	0.35	10m	40 †				AØ
74#	BSY18	300m*	300m	2.0m	5J	20	12	5.0	200m	25n	0.35	10m	80 †				AØ
75#	BSY63	300m*	300m	2.0m	5J	40	15	5.0	200m	25n	1.0	10m	75 †				AØ
76	MD708*	300m	300m	1.9m	5J	40	15	5.0	200m	20n	1.0	10m	40 †				AØ
77	MD708A*	300m	300m	1.9m	5J	40	15	5.0	200m	20n	1.0	10m	40 †				AØ
78	MD708B*	300m	300m	1.9m	5J	40	15	5.0	200m	20n	1.0	10m	40 †				AØ
79	QD100-71*	300m	300m	1.7m	5S	25	15	6.5	20m	1.0n	5.0	10u	150 †				AØ
80	STE400	300m	300m	3.0m	5J	40	30	5.0		0.05u	1.0	2.0m	150 †				AØ
81	STE401	300m	300m	3.0m	5J	30	25	5.0		0.05u	1.0	2.0m	360 †				AØ
82	2N708†	300m	320m	2.0m	5J	25	20	3.0		0.05u	1.0	10m	20 †				AØ
83#	BSY70	300m	320m	2.0m	5J	25	20	3.0		50n	1.0	10m	20 †				AØ
84#	UPI706	300m	320m	2.0m	5J	25	20	4.0		54m	1.0	10m	20 †				AØ
85#	2S131	300m	35														



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX COLL. DISS @25°C (W)	2 fab	DERATE IN FREE AIR W/°C	TEMPERATURE M A X P	ABS MAX RATINGS @25°C			MAX. I <sub>c</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E		
						V <sub>cb0</sub> (V)	V <sub>ceo</sub> (V)	V <sub>be0</sub> (V)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>					COMMON EMITTER	
													hoe (mhos)	hie (Ω)	hre (X.0001)			
1	2N3339†	300m	400MΔ	1.7m	Δ	40	40	4.0	25n	100	4.0m	30	1Δ	1.6p	PL	TO72	G	
2	2N5186†	300m	400MΔ	1.7m	Δ	10	5.0	3.0	300m	5.0u	1.0	10m	25	1Δ	TO52	A		
3	2N5187†	300m	400MΔ	1.7m	Δ	10	5.0	3.0	500m	4.5u	1.0	10m	30	1Δ	TO52	A		
4#	2SC356†	300m	400MΔ	2.0m	Δ	30	15	5.0	200m	1.0u	1.0	10m	60	†	TO46	A		
5#	2SC979	300m	400MΔ	2.0m	Δ	30	15	5.0	100m	1.0u	1.0	10m	70	†	TO18	A		
6	BF154	300m	400MΔ	3.0m	Δ	30	20	4.0	500m	5.0u	1.0	10m	50	1#	R97	A		
7#	BFV87†	300m	400MΔ	5.88u	Δ	40	40	4.5	100m	1.0u	1.0	10m	20	†#Δ	u26a	B		
8#	BFY19	300m	400MΔ	2.0m	Δ	30	20	3.0	100m	1.0u	9.0	10m	10	†	TO18	B		
9#	BFY79	300m	400MΔ	1.7m	Δ	30	30	4.0	25n	100	4.0m	30	1Δ	†	TO72	G		
10#	BSV53†	300m	400M	2.4m	Δ	45	45	6.5	20m	200p	1.0	10m	40	†	u34	G		
11#	BSV54†	300m	400M	2.4m	Δ	45	45	6.5	20m	200p	1.0	10m	20	†	u34	G		
12	QD101-71*	300m	400MΔ	1.7m	Δ	30	30	6.5	20m	200p	5.0	10u	150	†	L2p	G		
13	QD102-71*	300m	400MΔ	1.7m	Δ	30	30	6.5	20m	200p	5.0	10u	200	†	L2p	G		
14	QD103-71*	300m	400MΔ	1.7m	Δ	30	30	6.5	20m	200p	5.0	10u	200	†	L2p	G		
15	QD104-71*	300m	400MΔ	1.7m	Δ	30	30	6.5	20m	200p	5.0	10u	200	†	L2p	G		
16	S15658	300m	400MΔ	3.0m	Δ	40	15	4.0	1	10u	100	1.0m	100	†	TO106	A		
17	SE6020†	300m	400MΔ	5.9m	Δ	60	60	6.5	1	10u	100	1.0m	100	†	TO105	A		
18	SE6021†	300m	400MΔ	5.9m	Δ	80	80	6.5	1	10u	100	1.0m	120	†	TO5	A		
19#	UPI706B	300m	400M	2.0m	Δ	25	15	5.0	500m#	10u	1.0	10m	40	†	TO18	A		
20#	ZTX312†	300m	400MΔ	3.0m	Δ	30	12	5.0	200m#	200n	1.0	10m	40	†	X59	F		
21	2N835†	300m	450MΔ	2.0m	Δ	25	20	3.0	200m	50u	1.0	10m	40	†	TO18	A		
22#	2SC595†	300m	450MΔ	2.4m	Δ	30	20	5.0	200m	1.0u	1.0	10m	80	†	TO18	A		
23#	BF314	300m	450MΔ	2.4m	Δ	30	30	4.0	25m	60n	10	4.0	28	†	X76	C		
24	2N834†	300m	500MΔ	2.0m	Δ	40	30	5.0	200m	50u	1.0	10m	40	†	TO18	A		
25	2N449†	300m	500MΔ	1.7m	Δ	15	15	4.5	200m	40u	3.5	10m	40	†#Δ	TO46	A		
26	JAN2N449†	300m	500MΔ	1.7m	Δ	15	15	4.5	50m	10u	1.0	10m	40	†	TO18	A		
27#	2SC79	300m	500MΔ	2.0m	Δ	15	15	4.5	50m	1.0u	6.0	1.0m	50	†	TO18	A		
28#	BFV87A†	300m	500MΔ	5.88u	Δ	40	40	4.5	500m	4.0u	1.0	10m	40	†#Δ	u26a	B		
29#	BFV87B†	300m	500MΔ	5.88u	Δ	40	40	4.5	200m	3.0u	.35	10m	40	†#Δ	u26a	B		
30#	SE5029	300m	500MΔ	2.7m	Δ	35	30	3.0	200n	100	5.0m	70	†	TO105	C			
31#	SE5031	300m	500MΔ	2.7m	Δ	40	30	3.0	500m#	200n	1.0	10m	40	†	TO105	C		
32#	ZTX313†	300m	500MΔ	3.0m	Δ	40	15	5.0	500m#	200n	1.0	10m	40	†	X59	F		
33#	ZTX314†	300m	500MΔ	3.0m	Δ	40	15	5.0	500m#	200n	1.0	10m	40	†	X59	F		
34	2N4104	300m	540MΔ	2.0m	Δ	60	60	10	50m	0.1u	5.0	1.0m	1.4k	†	TO18	A		
35#	2SC601†	300m	580MΔ	2.0m	Δ	15	15	5.0	100m	10u	1.0	10m	60	†	TO18	A		
36	2N849	300m	600MΔ	2.0m	Δ	25	15	5.0	50m	10u	1.0	10m	80	†	u4	A		
37	2N850	300m	600MΔ	2.0m	Δ	25	15	5.0	50m	10u	1.0	10m	80	†	u4	A		
38	2N3010†	300m	600MΔ	1.7m	Δ	15	6.0	4.0	50m	10u	4.0	1.0m	15	†	TO18	A		
39	2N3423*	300m	600MΔ	1.7m	Δ	30	15	3.0	50m	0.1u	3.0	3.0m	20	†	L2†	A		
40	2N3424*	300m	600MΔ	1.7m	Δ	30	15	3.0	50m	0.1u	3.0	3.0m	20	†	L2†	A		
41	2N3544	300m	600MΔ	2.0m	Δ	25	25	3.0	100m	1.0u	10	10m	25	†	TO18	A		
42	BSX44	300m	600MΔ	1.7m	Δ	15	15	4.0	200m#	10u	10	20m	30	†	TO18	A		
43	FT709†	300m	600MΔ	1.7m	Δ	40	20	5.0	50u	100	40	10m	30	†#	TO18	A		
44	G13794	300m	600MΔ	3.0m	Δ	30	15	5.0	50m	1.0u	15	10m	600	†#	TO18	A		
45#	HEP709s	300m	600MΔ	3.0m	Δ	30	15	5.0	50m	1.0u	15	10m	120	†	TO72	A		
46	MD918*	300m	600MΔ	1.9m	Δ	30	15	5.0	50m	10n	5.0	1.0m	50	†	L86a	A		
47	MD918A*	300m	600MΔ	1.9m	Δ	30	15	5.0	50m	10n	5.0	1.0m	50	†	L86a	A		
48	MD918B*	300m	600MΔ	1.9m	Δ	30	15	5.0	50m	10n	5.0	1.0m	50	†	L86a	A		
49	MM194†	300m	600MΔ	2.0m	Δ	30	30	3.0	200m	10u	1.0	10m	50	†	TO18	A		
50#	SE5030A	300m	600MΔ	2.7m	Δ	45	40	4.5	50n	15	7.0m	80	†	TO105	C			
51#	ZT709†	300m	600MΔ	1.7m	Δ	15	6.0	4.0	0.5u	50	10m	55	†	TO18	A			
52#	ZT2475†	300m	800MΔ	1.7m	Δ	15	6.0	4.0	0.5u	40	20m	50	†	R64	A			
53	2N709†	300m	800MΔ	1.7m	Δ	15	6.0	4.0	0.5u	50	10m	55	†	TO18	A			
54	2N709A†	300m	800MΔ	1.7m	Δ	15	6.0	4.0	5.0m	50	10m	60	†	TO18	A			
55	2N2475†	300m	800MΔ	1.7m	Δ	15	6.0	4.0	10u	40	20m	50	†	R64	A			
56	2N2615	300m	800MΔ	1.7m	Δ	30	15	3.0	10u	1.0	3.0m	20	†#Δ	TO18	A			
57#	BSX27†	300m	800MΔ	1.7m	Δ	15	6.0	4.0	10u	40	10m	80	†#	DPE	TO18	A		
58	2N851	300m	900MΔ	2.0m	Δ	20	12	5.0	200m	10u	3.5	10m	40	†	EΔ	TO50	C	
59	2N852	300m	900MΔ	2.0m	Δ	20	12	5.0	200m	10u	3.5	10m	80	†	EΔ	TO50	C	
60	2N2616	300m	900MΔ	1.7m	Δ	30	15	3.0	50m	0.1u	1.0	3.0m	50	†	PE	TO18	DA	
61	2N2729	300m	900MΔ	1.7m	Δ	30	15	3.0	50m	0.1u	1.0	3.0m	50	†	PE	TO46	A	
62	2N5200s	300m	900MΔ	1.7m	Δ	20	20	4.5	100m	0.1u	5.0	50m	45	†	PE	TO46	A	
63#	BFY78	300m	900MΔ	1.7m	Δ	25	12	3.0	50m	0.2u	1.0	3.0m	50	†	DPE	TO18	A	
64	2N2784†	300m	1.0GΔ	1.7m	Δ	15	6.0	4.0	5n	50	10m	120	†	PE	TO18	A		
65#	BFV98	300m	1.0GΔ	1.7m	Δ	38	18	4.0	10n	6.0	50m	35	†	PE	MT59e	GC		
66	K2101	300m	1.0GΔ	1.7m	Δ	30	10	2.5	10n	1.0	3.0m	30	†	PE	TO50	C		
67	K2102	300m	1.0GΔ	1.7m	Δ	30	10	2.5	10n	1.0	3.0m	30	†	PE	TO50	C		
68	K2103	300m	1.0GΔ	1.7m	Δ	30	10	2.5	10n	1.0	3.0m	30	†	PE	TO50	C		
69	K2104	300m	1.0GΔ	1.7m	Δ	30	10	2.5	10n	1.0	3.0m	30	†	PE	TO50	C		
70	K2105	300m	1.0GΔ	1.7m	Δ	30	10	2.5	10n	1.0	3.0m	30	†	PE	TO50	C		
71	K2106	300m	1.0GΔ	1.7m	Δ	30	10	2.5	10n	1.0	3.0m	30	†	PE	TO50	C		
72	K2107	300m	1.0GΔ	1.7m	Δ	30	10	2.5	10n	1.0	3.0m	30	†	PE	TO50	C		
73	K2108	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO50	C		
74	K2523	300m	1.0GΔ	1.7m	Δ	20	10	2.0	30u	1.0	3.0m	20	†	PE	TO72	G		
75	K2601	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO50	C		
76	K2602	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO50	C		
77	K2603	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO50	C		
78	K2604	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO50	C		
79	K2610	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO18	A		
80	K2611	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO18	A		
81	K2612	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO18	A		
82	K2613	300m	1.0GΔ	1.7m	Δ	20	10	2.0	100n	1.0	3.0m	20	†	PE	TO18	A		
83	2N5201s	300m	1.1GΔ	1.7m	Δ	20	20	4.5	100m	0.1u	5.0	50m	65	†	PE	TO46	A	
84	2N3633†	300m	1.3GΔ	1.7m	Δ	15	6.0	4.0	50m	5.0n	50	10m	50	†	PE	TO18	A	
85#	BFX53	300m	1.3GΔ	2.5m	Δ	20	12	2.5	25m	10n	1.0	25m	15	†	PE	u68	C	
86#	K2524	300m	1.3GΔ	1.7m	Δ	25	10	2.0	10u	10	8.0m	20	†	PE	TO18	A		
87	K2524	30																

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1. MAX. COLL. DISS. @25°C (W)	2. DERATE IN FREE AIR W/°C	M E A M X P	ABS MAX RATINGS @25°C			Ic (A)	MAX Icb @MAX Vcb (A)	TYPICAL h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #/a Y200 Ser.	# C O D E	
					VbVco (V)	VbVce (V)	VbVbe (V)			Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre X.0001					
1	K2102B	300m	1.7Gs	1.7m	SJ	30	10	2.5	10n∅	1.0∅	3.0m∅	30 Δ			1.0pZ		T050	C		
2	K2103B	300m	1.7Gs	1.7m	SJ	30	10	2.5	10n∅	1.0∅	3.0m∅	30 Δ			1.0pZ		T050	C		
3	K2104B	300m	1.7Gs	1.7m	SJ	30	10	2.5	10n∅	1.0∅	3.0m∅	30 Δ			1.0pZ		T050	C		
4	K2105B	300m	1.7Gs	1.7m	SJ	30	10	2.5	10n∅	1.0∅	3.0m∅	30 Δ			1.0pZ		T050	C		
5	K2106B	300m	1.7Gs	1.7m	SJ	30	10	2.5	10n∅	1.0∅	3.0m∅	30 Δ			1.0pZ		T050	C		
6	K2107B	300m	1.7Gs	1.7m	SJ	30	10	2.5	10n∅	1.0∅	3.0m∅	30 Δ			1.0pZ		T050	C		
7	K2108B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			1.0pZ		T050	C		
8	K2526	300m∅	1.7Gs	1.7m	SJ	20	10	2.0	30u∅	1.0∅	3.0m∅	20 Δ			1.5pZ		T072	C		
9	K2601B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			1.5pZ		T050	C		
10	K2602B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			1.5pZ		T050	C		
11	K2603B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			1.5pZ		T050	C		
12	K2604B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			1.5pZ		T050	C		
13	K2610B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			2.0pZ		T018	A∅		
14	K2611B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			2.0pZ		T018	A∅		
15	K2612B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			2.0pZ		T018	A∅		
16	K2613B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			2.0pZ		T018	A∅		
17	K2614B	300m	1.7Gs	1.7m	SJ	20	10	2.0	100n∅	1.0∅	3.0m∅	20 Δ			2.0pZ		T018	A∅		
18	2N5762	300m	3.3Gs	2.4m	S	20	15	3.0	40m	500n∅	10∅	15m∅	30 Δ		800fZ		X80a	S		
19#	2SC985A	300m	3.7Gs	590m	SJ	20	15	3.0	40m	500n∅	10∅	15m∅	30 Δ		1.0 Z	PE	X80	GJ		
20	2N5088	310m		3.6m	TS	35	30	3.0	50m	05u∅	5.0∅	1.0m∅	350 Δ		4pZ		T092	A		
21	2N5089	310m		3.6m	TS	30	25	3.0	50m	05u∅	5.0∅	1.0m∅	450 Δ		4pZ		T092	A		
22	CS5088	310m		3.6m	TS	35	30	3.0	50m	05u∅	5.0∅	1.0m∅	350 Δ		4.0pZ		T0106	A		
23	CS5089	310m		3.6m	TS	30	25	3.0	50m	05u∅	5.0∅	1.0m∅	450 Δ		4.0pZ		T0106	A		
24	MPS2711	310m		2.9m	TJ	18		5.0					30 Δ		4pZ	AN	T092	A		
25	MPS2712	310m		2.9m	TJ	18		5.0					75 Δ		4pZ	AN	T092	A		
26	MPS2715	310m		2.9m	TJ	18		5.0					30 Δ		3.5pZ	AN	T092	A		
27	MPS2716	310m		2.9m	TJ	18		5.0					75 Δ		3.5pZ	AN	T092	A		
28	MPS3392	310m		2.9m	TJ	25		5.0					300 Δ		3.5pZ	AN	T092	A		
29	MPS3393	310m		2.9m	TJ	25		5.0					180 Δ		3.5pZ	AN	T092	A		
30	MPS3394	310m		2.9m	TJ	25		5.0					170 Δ		3.5pZ	AN	T092	A		
31	MPS3395	310m		2.9m	TJ	25		5.0					150 Δ		3.5pZ	AN	T092	A		
32	MPS3396	310m		2.9m	TJ	25		5.0					90 Δ		3.5pZ	AN	T092	A		
33	MPS3397	310m		2.9m	TJ	25		5.0					500 Δ		3.5pZ	AN	T092	A		
34	MPS3398	310m		2.9m	TJ	25		5.0					800 Δ		3.5pZ	AN	T092	A		
35	MPS3707	310m		2.9m	TJ	30		6.0					400 Δ		AN	AN	T092	A		
36	MPS3708	310m		2.9m	TJ	30		6.0					660 Δ		AN	AN	T092	A		
37	MPS3709	310m		2.9m	TJ	30		6.0					165 Δ		AN	AN	T092	A		
38	MPS3710	310m		2.9m	TJ	30		6.0					330 Δ		AN	AN	T092	A		
39	MPS3711	310m		2.9m	TJ	30		6.0					180 Δ		AN	AN	T092	A		
40	MPS6511	310m		2.8m	TJ	30	20	3.0	100m	05u∅	10∅	10m∅	25 Δ		2.5pZ	EA	T092	A		
41	MPS6544	310m		2.9m	TJ	60		4.0								AN	T092	A		
42	MPS6545	310m		2.9m	TJ	60		4.0								AN	T092	A		
43	MPS6567	310m		2.9m	TJ	40		5.0								AN	T092	A		
44	2N5209	310m	30MsΔ	2.8m	TS	50	50	4.5	50m	50n∅	5.0∅	1.0m∅	150 Δ		7pZ		T092	A		
45	2N5210	310m	30MsΔ	2.8m	TS	50	50	4.5	50m	50n∅	5.0∅	1.0m∅	250 Δ		4.0pZ		T092	A		
46#	HEP545	310m	30Ms	3.0m	TJ	30	20	5.0	200m	200n∅	20		350 Δ				T092	A		
47#	HEP731	310m	30Ms	3.0m	TJ	20	20	4.0	25m	500n∅	5.0		130 Δ				T092	A		
48#	SE4172	310m	40MsΔ	3.0m	TJ	20	20	5.0	100n∅	100n∅	10∅	10m∅	50 Δ		10pZ	DPL∅	T0106	A		
49	2N5225	310m	50MsΔ	2.8m	TS	25	25	4.0	500m	30u∅	10∅	50m∅	30 Δ		20pZ		T092	A		
50	MPSL01	310m	60MsΔ	2.8m	TJ	140	120	5.0	600m	1.0u∅	10∅	1.0m∅	30 Δ		8.0pZ	AN	T092	A		
51	MPS-A09	310m	80Ms	2.8m	TJ	50	50	5.0	50m	10u∅	5.0∅	10m∅	100 Δ		5pZ	AN	T092	A		
52	2N5220	310m	100MsΔ	2.8m	TS	15	15	3.0	500m	10u∅	10∅	50m∅	30 Δ		10pZ		T092	A		
53	2N5550	310m	100MsΔ	2.8m	TS	160	140	6.0	600m	100n∅	10∅	1.0m∅	50 Δ		6.0pZ		T092	A		
54	2N5551	310m	100MsΔ	2.8m	TS	180	160	6.0	600m	50n∅	10∅	1.0m∅	50 Δ		6.0pZ		T092	A		
55#	HEP733	310m	100Ms	2.8m	TJ	30	20	4.0	100m	500n∅	5.0		95 Δ				T092	A		
56#	HEP737	310m	100Ms	2.8m	TJ	30	25	4.0	100m	100u∅	5.0		600 Δ				T092	A		
57#	HEP738	310m	100Ms	2.8m	TJ	45	40	5.0	100m	50n∅	5.0		250 Δ				T092	A		
58	MPS3704	310m	100MsΔ	2.8m	TJ	50	30	5.0	600m	10u∅	2.0∅	50m∅	100 Δ#		12pZ	AN	T092	A		
59	MPS3705	310m	100MsΔ	2.8m	TJ	50	30	5.0	600m	10u∅	2.0∅	50m∅	50 Δ#		12pZ	AN	T092	A		
60	MPS3706	310m	100MsΔ	2.8m	TJ	40	20	5.0	600m	10u∅	2.0∅	50m∅	30 Δ#		12pZ	AN	T092	A		
61	2N5219	310m	150MsΔ	2.8m	TS	20	15	3.0	100m	10u∅	10∅	2.0m∅	35 Δ		4pZ		T092	A		
62	2N5223	310m	150MsΔ	2.8m	TS	25	20	3.0	100m	10u∅	10∅	2.0m∅	30 Δ		4pZ		T092	A		
63#	HEP735	310m	150Ms	2.8m	TJ	45	40	6.0	600m	100n∅	20		30 Δ				T092	A		
64#	HEP736	310m	150Ms	2.8m	TJ	55	50	6.0	600m	100n∅	20		140 Δ				T092	A		
65#	HEP730	310m	175Ms	2.8m	TJ	30	25	4.5	50m	100n∅	15		600 Δ				T092	A		
66	MPS6571	310m	175Ms	2.8m	TJ	20	20	3.0	50m	50n∅	5.0∅	100u∅	250 Δ		4.5pZ	AN	X20d	A		
67	2N4400T	310m	200MsΔ	2.8m	TS	60	40	6.0	600m	10u∅	10∅	10m∅	20 Δ		30uZ	7.5kZ	8 Z	7pZ	T092	A
68#	HEP55	310m	200Ms	2.8m	TJ	30	25	4.0	200m	100n∅	20		350 Δ				T092	A		
69#	HEP722	310m	200Ms	2.8m	TJ	25	25	4.0	100m	100n∅	15		90 Δ				T092	A		
70#	HEP723	310m	200Ms	2.8m	TJ	25	25	4.0	100m	100n∅	15		160 Δ				T092	A		
71#	HEP724	310m	200Ms	2.8m	TJ	25	25	4.0	100m	100n∅	15		250 Δ				T092	A		
72#	HEP725	310m	200Ms	2.8m	TJ	25	25	4.0	100m	100n∅	15		350 Δ				T092	A		
73#	HEP726	310m	200Ms	2.8m	TJ	25	25	4.0	100m	100n∅	15		50 Δ				T092	A		
74#	HEP727	310m	200Ms	2.8m	TJ	45	40	4.0	100m	50n∅	5.0		180 Δ				T092	A		
75#	HEP728	310m	200Ms	2.8m	TJ	45	40	4.0	100m	50n∅	5.0		180 Δ				T092	A		
76#	HEP729	310m	200Ms	2.8m	TJ	45	45	4.0	100m	50n∅	30		100 Δ				T092	A		
77#	HEP732	310m	200Ms	2.8m	TJ	20	20	4.0	25m	50n∅	5.0		45 Δ				T092	A		
78#	HEP734	310m	200Ms	2.8m	TJ	40	20	4.0	25m	50n∅	5.0		75 Δ				T092	A		
79	MPS706T	310m	200MsΔ	2.8m	TJ	25	15	3.0	500n∅	1.0∅	10m∅	20 Δ#		6.0pZ	AN	X20d	A			
80	MPS706AT	310m	200MsΔ	2.8m	TJ	25	15	3.0	500n∅	1.0∅	10m∅	20 Δ#		6.0pZ	AN	X20d	A			
81	MPS3693	310m	200MsΔ	2.8m	TJ	45	45	4.0	05u∅	10∅	10m∅	40 Δ		3.5pZ	EA	T092	A			
82	MPS3694	310m	200MsΔ	2.8m	TJ	45	45	4.0	05u∅	10∅	10m∅	100 Δ		3.5pZ	EA	T092	A			
83	MPS6565	310m	200MsΔ	2.9m	TJ	60		4.0												

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/C	TEMPERATURE RANGE (°C)	ABS MAX RATINGS @25°C				MAX. lcbo @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser	# C O D E	
						Vcbo (V)	Vceo (V)	Vbebo (V)	Ic (A)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	MPSH30	310m	300MΔ	2.8m	TJ	20	20	3.0	50n	5.0	4.0m	20 tΔ				650fs	AN	T092	C		
2	MPSH31	310m	300MΔ	2.8m	TJ	20	20	3.0	50n	5.0	4.0m	20 tΔ				650fs	AN	T092	C		
3	MPSH37	310m	300MΔ	2.8m	TJ	40	40	5.0	50n	10.0	5.0m	25 tΔ				700ft	AN	T092	C		
4	MPS834†	310m	350MΔ	2.8m	TJ	40	30	∅	5.0	200m	1.0	10m	25 tΔ #			4p	EA	T092	A		
5	MPS6540	310m	350MΔ	2.8m	TJ	30	30	4.0	10.0	10.0	2.0m	25 tΔ			65p	EA	T092	A			
6	MPS6568	310m	375MΔ	2.8m	TJ	20	20	3.0	50n	5.0	4.0m	20 tΔ			500fs	AN	T092	A			
7	MPS6568A	310m	375MΔ	2.8m	TJ	20	20	3.0	50n	5.0	4.0m	20 tΔ			650fs	AN	T092	A			
8	MPS6514	310m	390M	2.8m	TJ	40	25	4.0	100m	0.5u	10.0	2.0m	150 tΔ			3.5p	EA	T092	A		
9	MPS6515	310m	390M	2.8m	TJ	40	25	4.0	100m	0.5u	10.0	2.0m	250 tΔ			3.5p	EA	T092	A		
10	MPS6520	310m	390M	2.8m	TJ	40	25	4.0	100m	0.5u	10.0	2.0m	200 tΔ			3.5p	EA	T092	A		
11	MPS6521	310m	390M	2.8m	TJ	40	25	4.0	100m	0.5u	10.0	2.0m	300 tΔ			3.5p	EA	T092	A		
12	MPS6530	310m	390M	2.8m	TJ	60	40	5.0	600m	0.5u	1.0	100m	85 t			3.5p	EA	T092	A		
13	MPS6531	310m	390M	2.8m	TJ	60	40	5.0	600m	0.5u	1.0	100m	150 t			3.5p	EA	T092	A		
14	MPS6532	310m	390M	2.8m	TJ	50	30	5.0	600m	1.0u	1.0	100m	30 tΔ			3.5p	EA	T092	A		
15	2N5222	310m	450MΔ	2.8m	TS	20	15	2.0	5.0m	10.0u	10.0	4.0m	20 tΔ			1.3p		T092	A		
16	2N5830	310m	500MΔ	2.8m	TJ	120	100	5.0	600m	50n	10.0	1.0m	60 tΔ	40u	6.0k	4.0p		T0106	A		
17	2N5831	310m	500MΔ	2.8m	TJ	160	140	5.0	600m	50n	10.0	1.0m	60 tΔ	40u	6.0k	4.0p		T0106	A		
18	2N5832	310m	500MΔ	2.8m	TJ	160	140	5.0	600m	50n	10.0	1.0m	125 tΔ	40u	6.0k	4.0p		T0106	A		
19	2N5833	310m	500MΔ	2.8m	TJ	200	180	6.0	600m	10n	10.0	1.0m	50 tΔ	40u	6.0k	4.0p		T0106	A		
20	MPS2369†	310m	500MΔ	2.8m	TJ	40	15	*	4.5	500m	40u	10m	40 t#Δ			4p	AN	T092	A		
21	HEP718s	310m	600M		TJ	30	20	\$	4.0	100m	40n	15	80 t					T092	A		
22	MPM5006	310m	600M	2.8m	TJ	40	40	4.0	100m	50n	10.0	4.0m	30 tΔ			1.1p		T092	A		
23	MPS918	310m	600MΔ	2.8m	TJ	30	15	3.0	100m	10n	8.0m	20 tΔ			1.7p	AN	T092	A			
24	MPS3563	310m	600MΔ	2.8m	TJ	30	12	2.0	50n	10.0	8.0m	20 tΔ #			1.7p	AN	T092	A			
25	MPS6546	310m	600MΔ	2.9m	TJ	35	3.0									35p	AN	T092	A		
26	MPS6547	310m	600MΔ	2.9m	TJ	35	3.0									45p	AN	T092	A		
27	MPSH20	310m	620M	2.8m	TJ	40	30	4.0	100m	50n	10.0	4.0m	25 tΔ			500fs	EA	T092	C		
28	MPSH10	310m	650MΔ	2.8m	TJ	30	25	3.0	100n	10.0	4.0m	60 tΔ			700fs	E	T092	C			
29	MPSH11	310m	650MΔ	2.8m	TJ	30	25	3.0	100n	10.0	4.0m	60 tΔ			700fs	E	T092	C			
30	HEP719s	310m	700M		TJ	30	30	\$	4.0	100m	50n	15	130 t					T092	A		
31	MPS6507	310m	700MΔ	2.8m	TJ	30	20	3.0	100m	0.5u	10.0	2.0m	25 tΔ			2.5p	EA	T092	A		
32	MPS6542	310m	700MΔ	2.9m	TJ	30	3.0									1.5p	AN	T092	A		
33	HEP56s	310m	750M		TJ	30	20	\$	2.5	100m	200n	20	70 t					T092	A		
34	MPS6543	310m	750MΔ	2.9m	TJ	35	3.0											T092	A		
35	HEP720s	310m	800M		TJ	30	20	\$	3.0	100m	100n	30	40 t					T092	A		
36	2SC631A	320m	140M		ΔJ	25	25	6.0	200m	200n	3.0	1.0m	129 tΔ			7.0p	ME	u37			
37	2SC632A	320m	140M		ΔJ	50	50	6.0	200m	200n	3.0	1.0m	129 tΔ			7.0p	ME	u37			
38	2SC633A	320m	140M		ΔJ	25	25	6.0	200m	200n	3.0	1.0m	65 tΔ			7.0p	ME	u37			
39	2SC634A	320m	140M		ΔJ	50	50	6.0	200m	200n	3.0	1.0m	65 tΔ			7.0p	ME	u37			
40	2N5027†	320m	250MΔ	3.4m	ΔJ	30	5.0	350m	25u	10.0	150m	50 t#Δ				8p		T098	B		
41	2N5028†	320m	250MΔ	3.4m	ΔJ	30	5.0	350m	25u	10.0	150m	100 t#Δ				8p		T098	B		
42	2N3605A†	320m	300MΔ	3.3m	ΔJ	40	15	5.0	200m	25n	1.0	10m	30 tΔ			6.0p		T098	B		
43	2N3606A†	320m	300MΔ	3.3m	ΔJ	40	15	5.0	200m	25n	1.0	10m	30 tΔ			6.0p		T098	B		
44	2N5232	330m	3.3m	SS	70	50	5.0	100m	0.3u	5.0	2.0m	250 tΔ			4p	PE	T098	B			
45	2N5232A	330m	3.3m	ΔJ	70	50	5.0	100m	0.3u	5.0	2.0m	250 tΔ			4p	PE	T098	B			
46	2N5233	330m	3.3m	SS	80	60	6.0	100m	0.3u	5.0	10m	100 tΔ			4p		T098	B			
47	2N5234	330m	3.3m	SS	80	60	6.0	100m	0.3u	5.0	10m	250 tΔ			4p		T098	B			
48	2N5235	330m	3.3m	SS	80	60	6.0	100m	0.3u	5.0	10m	400 tΔ			4p		T098	B			
49	2N5249	330m	3.3m	SS	70	50	5.0	100m	0.3u	5.0	2.0m	400 tΔ			4p		T098	B			
50	2N5249A	330m	3.3m	SS	70	50	5.0	100m	30n	5.0	2.0m	400 tΔ			4.0p		T098	B			
51	2N5309	330m	3.3m	SS	70	50	5.0	100m	0.1u	5.0	0.1m	66 tΔ			4p		T098	B			
52	2N5310	330m	3.3m	SS	70	50	5.0	100m	0.1u	5.0	0.1m	110 tΔ			4p		T098	B			
53	2N5311	330m	3.3m	SS	70	50	5.0	100m	0.1u	5.0	0.1m	250 tΔ			4p		T098	B			
54	SE5056	330m	300MΔ	2.7m	SJ	20	20	3.0	50n	10.0	2.0m	80 t			250fs	DPL	∅	T0105	C		
55	BF121	330m	350M	3.3m	ΔJ	30	4.0	25m	10.0	4.0m	30 tΔ				220ft	PLT	X65a	A			
56	BF127	330m	350M	3.3m	ΔJ	30	4.0	25m	10.0	4.0m	30 tΔ				220ft	PLT	X65a	A			
57	BF125	330m	450M	3.3m	ΔJ	30	4.0	30m	10.0	7.0m	35 tΔ				300ft	PET	X65a	A			
58	BF123	330m	550M	3.3m	ΔJ	30	4.0	30m	10.0	7.0m	35 tΔ				300ft	PET	X65a	A			
59	2C415*	340m	100M	2.3m	SJ	45	25	4.5	300m	0.1u	5.0	10.0	250 t			6p	DPL	L2b			
60	2N5456†	340m	450MΔ	1.9m	SJ	25	25	4.5	300m	50n	1.0	100m	30 tΔ #			6p		T052	A		
61	2SC727	350m	20M	2.3m	SJ	100	100	3.0	100m	1.0u	4.0	10m	90 t*	12u	1.2k	1.0	9.0p	D	T018		
62	2SC728†	350m	20M	2.3m	SJ	200	200	6.0	100m	1.0u	4.0	10m	90 t*			9.0p	D	T018			
63	BFS36	350m	30MΔ	2.3m	SJ	45	45	5.0	500m	10n	5.0	10.0	100 tΔ			8.0p		u53	F		
64	BFS36A	350m	30MΔ	2.3m	SJ	30	30	5.0	500m	10n	5.0	10.0	100 tΔ			8.0p		u53	F		
65	2N3246	350m	60M	2.0m	ΔA	60	45	10	50m	1.0n	5.0	10.0	150 tΔ	1.0u	28	6.0	5.0p	PL	T018	A	
66	BFS42	350m	60MΔ	2.3m	SJ	60	30	5.0	1.0	100n	10.0	10m	25 tΔ			25p		u53	F		
67	BFS43	350m	60MΔ	2.3m	SJ	60	60	5.0	1.0	100n	10.0	10m	35 tΔ			25p		u53	F		
68	2N2509	350m	80.M	2.0m	SJ	125	80	7.0	10u	5.0	10m	40 tΔ			6.0p	PL	T018	A			
69	2N2510	350m	80.M	2.0m	SJ	100	65	7.0	10u	5.0	10m	150 tΔ			6.0p	PL	T018	A			
70	2N2511	350m	80.M	2.0m	SJ	80	50	7.0	10u	5.0	10m	240 tΔ			6.0p	PL	T018	A			
71	2SC283	350m	80MΔ	2.3m	SJ	50	20	5.0	100m	10u	8.0	10m	170 t			10p		T01			
72	2SC317H†	350m	100MΔ	2.3m	SJ	70	50	5.0	100m	10u	6.0	10m	80 t*				DPM	T01	A		
73	ZT20†	350m	110M	2.7m	SJ	20	6.0	50m	500n	6.0	1.0m	30		2.5u	1.3k	1.1	5.0p		T05		
74	ZT21†	350m	110M	2.7m	SJ	20	6.0	50m	500n	6.0	1.0m	30		2.5u	1.3k	1.1	5.0p		T05		
75	ZT22†	350m	110M	2.7m	SJ	45	45	6.0	50m	500n	6.0	1.0m	50		2.5u	1.6k	1.1	5.0p		T05	
76	ZT23†	350m	110M	2.7m	SJ	45	45	6.0	50m	500n	6.0	1.0m	50		2.5u	1.6k	1.1	5.0p		T05	
77	ZT24†	350m	110M	2.7m	SJ	45	45	6.0	50m	500n	6.0	1.0	65		2.5u	2.0k	1.1	5.0p		T05	
78	ZT60†	350m	120MΔ	2.7m	SJ	25	25	4.0	500m	500n	6.0	1.0	55			8.0p	PE	T05			
79	ZT61†	350m																			

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. 2		DERATE		T ABS MAX RATINGS @25°C		MAX.		TYPICAL 'h' PARAMETERS							Cob	STRUC-TURE	DWG #/a TO200 Ser.	# C O A D E
		COLL. DISS. @25°C (W)	fab (Hz)	IN FREE AIR W/°C	M A M P X	BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)	Icbo @Vcb (A)	BIAS			COMMON EMITTER						
											Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)				
1#	2SC205	350m	350M	2.3m	SJ	80		5.0	200m	.02u	6.0	1.0m	60				4.0p	PE	T018	
2#	2SC230	350m	350M	2.3m	SJ	80		3.0	200m	.02u	6.0	1.0m	60				4.0p	PE	T018	
3#	2SC237	350m	450M	2.3m	SJ	25			300m	.05u	6.0	1.0m	80				5.0p	PE	T018	
4#	2SC239	350m	450M	2.3m	SJ	35			300m	.05u	6.0	1.0m	80				5.0p	PE	T018	
5#	BSV351	350m	500M	2.3m	SJ	40	15	5.0	500m	.40n	1.0	1.0m	40 Δ				4.0p		u53	F
6#	BFS46	350m	600M	2.3m	SJ	30	15	3.0	500m	.10n	1.0	3.0m	20 Δ				1.7p		u53	F
7#	BFS46A	350m	600M	2.3m	SJ	30	15	3.0	500m	.10n	1.0	3.0m	20 Δ				1.7p		u53	F
8#	BSV361	350m	600M	2.3m	SJ	15	6.0	4.0	500m	.50n	1.40	2.0m	30 Δ				3.0p	PE	u53	F
9#	BF311	350m	750M	3.0m	SJ	35	25	4.0	40m	.50n	1.0	15m	40 Δ				3p		X76	C
10#	BFS85	350m	1.0G	2.3m	SJ	25	12	2.5	50m	.10u	1.0	2.0m	25 Δ				800f	PL	u76	F
11#	BFS88	350m	1.0G	2.3m	SJ	30	15	2.5	50m	.10u	1.0	2.0m	25 Δ				800f	PL	u76	F
12	K2503	350m	1.6G	2.0m	SJ	25	10	2.0		.10u	1.0	8.0m	20 Δ				2p		T050	C
13	K2509	350m	1.6G	2.0m	SJ	30	10	2.0		.10u	1.0	8.0m	20 Δ				2p		T050	C
14	2N5842	350m	1.7G	2.0m	S	20	10	3.0	100m	20n	4.0	25m	25 Δ				1.5p		T072	G
15	2N5841	350m	2.0G	2.0m	S	20	10	3.0	100m	20n	4.0	25m	25 Δ				1.5p		T072	G
16	2N2483	360m	2.1m	SJ	60	60	6.0	50m	.01u	5.0	1.0m	80 Δ				30u		T018	A	
17	2N2484	360m	2.1m	SJ	60	60	6.0	50m	.01u	5.0	1.0m	150 Δ				40u		T018	A	
18	2N3414	360m	2.6m	SJ	25	25	5.0	500m	100n	4.5	2.0m	75 Δ						R67	B	
19	2N3415	360m	2.6m	SJ	25	25	5.0	500m	100n	4.5	2.0m	180 Δ						R67	B	
20	2N3416	360m	2.6m	SJ	50	50	5.0	500m	100n	4.5	2.0m	75 Δ						R67	B	
21	2N3417	360m	2.6m	SJ	50	50	5.0	500m	100n	4.5	2.0m	100 Δ						R67	B	
22	2N3707	360m	2.9m	S	30	30	6.0	30m	.10u	5.0	1.0m	100 Δ						T092	B	
23	2N3708	360m	2.9m	S	30	30	6.0	30m	.10u	5.0	1.0m	45 Δ						T092	B	
24	2N3709	360m	2.9m	S	30	30	6.0	30m	.10u	5.0	1.0m	45 Δ						T092	B	
25	2N3710	360m	2.9m	S	30	30	6.0	30m	.10u	5.0	1.0m	90 Δ						T092	B	
26	2N3711	360m	2.9m	S	30	30	6.0	30m	.10u	5.0	1.0m	180 Δ						T092	B	
27	2N4269	360m	2.0m	S	200	140	15	30m	1.0u	10	1.0m	200					5p		T018	A
28	2N4424	360m	2.9m	SJ	40	40	5.0	500m	.10u	4.5	2.0m	180 Δ						T098	B	
29	2N5418	360m	3.6m	S	25	25	4.0	500m	100n	10	2.0m	25 Δ					8.0p		T098	B
30	2N5419	360m	3.6m	S	25	25	4.0	500m	100n	10	2.0m	70 Δ					8.0p		T098	B
31	2N5420	360m	3.6m	S	25	25	4.0	500m	100n	10	2.0m	150 Δ					8.0p		T098	B
32	2N5824	360m	3.6m	J	50	40	5.0	100m	50n	5.0	2.0m	60 Δ					4.0p		X55a	B
33	2N5825	360m	3.6m	J	50	40	5.0	100m	50n	5.0	2.0m	100 Δ					4.0p		X55a	B
34	2N5826	360m	3.6m	J	50	40	5.0	100m	50n	5.0	2.0m	150 Δ					4.0p		X55a	B
35	2N5827	360m	3.6m	J	50	40	5.0	100m	50n	5.0	2.0m	250 Δ					4.0p		X55a	B
36	2N5827A	360m	3.6m	J	50	40	5.0	100m	50n	5.0	2.0m	250 Δ					4.0p		X55a	B
37	2N5828	360m	3.6m	J	50	40	5.0	100m	50n	5.0	2.0m	400 Δ					4.0p		X55a	B
38	2N5828A	360m	3.6m	J	50	40	5.0	100m	50n	5.0	2.0m	400 Δ					4.0p		X55a	B
39#	BF237	360m	2.9m	S	45	30	4.0	30m	.10u	10	1.0m	30 Δ						PL	X55	
40	BF238	360m	2.9m	S	45	30	4.0	30m	.10u	10	1.0m	70 Δ						PE	X55	
41	CS4424	360m	2.9m	J	40	40	5.0	500m	.10u	4.5	2.0m	180							R97a	P
42	LDS207	360m	2.9m	J	20	10	5.0	30m	100n	5.0	1.0m	75 Δ						PE	T0122	
43	TPS6512	360m	2.8m	J	40	30	4.0	100m	50n	10	2.0m	50 Δ					3.5p	PL	X55a	A
44	TPS6513	360m	2.8m	J	40	30	4.0	100m	50n	10	2.0m	90 Δ					3.5p	PL	X55a	A
45	TPS6514	360m	2.8m	J	40	25	4.0	100m	50n	10	2.0m	150 Δ					3.5p	PL	X55a	A
46	TPS6515	360m	2.8m	J	40	25	4.0	100m	50n	10	2.0m	250 Δ					3.5p	PL	X55a	A
47	MM2483	360m	12M	2.1m	SJ	60	60	6.0	50m	.01u	5.0	1.0m	80 Δ				50u		T018	A
48	2N2484A	360m	15M	2.0m	SJ	60	60	6.0	50m	.01u	5.0	1.0m	150 Δ				40u		T018	A
49	MM2484	360m	15M	2.1m	SJ	60	60	6.0	50m	.01u	5.0	1.0m	150 Δ				50u		T018	A
50	A130	360m	20M	2.0m	SJ	90	80	4.0		5.0u	5.0	1.0m	20 Δ					PL	T05	A
51	A132	360m	30M	2.0m	SJ	90		4.0				10m	20 Δ					PL	T05	A
52	2N3037	360m	50M	2.4m	S	120	70	7.0	500m	.01u	10	10m	30 Δ				100u		T050	A
53	2N3038	360m	50M	2.4m	S	100	60	7.0	500m	.01u	10	10m	60 Δ				200u		T050	A
54#	BSX25	360m	50M	2.1m	SJ	40	25	5.0		.05u	10	5.0m	30 Δ					PL	T018	
55#	BSY93	360m	50M	2.0m	SJ	60	40	5.0		20n	2.0	10m	50 Δ					PL	T018	
56	TZ81	360m	50M	2.8m	SJ	60	30	5.0	500m	10n	5.0	1.0m	350				90nb		T098	B
57	TZ82	360m	50M	2.8m	SJ	60	30	5.0	500m	10n	5.0	1.0m	250				90nb		T098	B
58#	BFY76	360m	55M	2.0m	SJ	45	45	6.0	50m	20n	5.0	1.0m	300				11u		T018	A
59	JAN2N2484	360m	60M	2.0m	SJ	60	60	6.0	50m	10u	5.0	1.0m	250 Δ				40u		T018	A
60	2N3077	360m	60M	2.0m	SJ	80	60	7.0	50m	.01u	5.0	.01m	80 Δ						T018	A
61	2N3078	360m	60M	2.0m	SJ	80	60	7.0	50m	.01u	5.0	.01m	25 Δ						T018	A
62	2N3117	360m	60M	2.0m	SJ	60	60	6.0	50m	.01u	5.0	1.0m	400 Δ				40u		T018	A
63#	BFY77	360m	60M	2.1m	SJ	45	45	6.0	50m	.02u	5.0	1.0m	450				15u		T018	A
64	GET2484	360m	60M	3.6m	J	60	60	6.0	100m	50n	5.0	1.0m	150 Δ						X93	F
65	MD1T2484	360m	60M	3.6m	A	60	60	6.0	50m	10n	5.0	500u	2.0 Δ						T0122	P
66#	BFX92A	360m	69M	2.0m	SJ	60	60	6.0	50m	.01u	5.0	1.0m	280				11u		T018	A
67#	C1003	360m	70M	2.1m	SJ	60	60	8.0	50m	20n	5.0	1.0m	150 †				15m		T018	A
68#	BFX93A	360m	78M	2.0m	SJ	60	60	6.0	50m	10n	5.0	1.0m	400				15u		T018	A
69#	BC285	360m	80M	2.0m	SJ	120	120	5.0	100m	100n	30	5.0m	30 Δ				5.0m		T018	A
70	GET929	360m	90M	3.6m	J	70	50	5.0	100m	10n	5.0	10u	60 Δ						T018	A
71	GET930	360m	90M	3.6m	J	70	50	5.0	100m	10n	5.0	10u	100 Δ						T018	A
72	2N3704	360m	100M	2.9m	S	50	30	5.0	800m	10u	2.0	50m	300 †						T092	B
73	2N3705	360m	100M	2.9m	S	50	30	5.0	800m	10u	2.0	50m	150 †						T092	B
74	2N3706	360m	100M	2.9m	S	40	20	5.0	800m	10u	2.0	50m	600 †						T092	B
75	2N5449	360m	100M	2.9m	S	50	30	5.0	800m	10u	2.0	50m	100 †						X55	A
76	2N5450	360m	100M	2.9m	S	50	30	5.0	800m	10u	2.0	50m	50 †						X55	A
77	2N5451	360m	100M	2.9m	S	40	20	5.0	800m	10u	2.0	50m	30 †						X55	A
78	A306	360m	100M	2.0m	SJ	25	20	5.0		10n	5.0	1.0m	100 Δ				1.0u		T018	A
79	A307	360m	100M	2.0m																



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M E X P	ABS MAX RATINGS @25°C				MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC TURE	DWG Y200 s/a TO200 Ser.	# L E A D E				
					Vbvc0 (V)	lVce0 (V)	Vbe0 (V)	lc (A)		Vcb (V)	le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)								
1#	BFV88†	360m	200MΔ	500u	Δ	60	40	5.0	800m	100	10m0	75	1#				11pZ	PE	u26a	B			
2	BFY26	360m	200MΔ	2.1m	Δ	60	40	6.0	200m	0.1u	9.00	10m0	60	1			5.5pZ	PL	TO18				
3#	BSS79†	360m	200MΔ	1.3m	Δ	60	40	6.0	200m	0.1u	1.00	50m0	50	Δ			5.0pZ	NPE	TO18				
4	LDA404†	360m	200MΔ	2.9m	Δ	60	30	5.0	300m	10n0	100	150m0	40	1#	Δ		8.0pZ	PE	u34	P			
5	LDA405†	360m	200MΔ	2.9m	Δ	60	30	5.0	300m	10n0	100	150m0	100	1#	Δ		8.0pZ	PE	u34	P			
6	LDS208†	360m	200MΔ	2.9m	Δ	60	30	5.0	300m	10n0	100	10m0	70	1#	Δ		8.0pZ	PE	u34c	P			
7	LDS210†	360m	200MΔ	2.9m	Δ	60	30	5.0	500m	50n0	1.00	150m0	30	1#	Δ		6.0pZ	PE	u34c	P			
8#	ME6001	360m	200MΔ	2.8m	Δ	40	30	*	5.0	50n0	1.00	1.0m0	20	1	Δ		10pZ	PE	R110c	A			
9#	ME6002	360m	200MΔ	2.8m	Δ	40	30	*	5.0	50n0	1.00	1.0m0	40	1	Δ		10pZ	PE	R110c	A			
10	TIS44†	360m	200MΔ	2.9m	Δ	25	20	3.0	50u	50u0	1.00	10m0	20	1#	Δ		6pZ	PE	T092				
11	TIS97	360m	200MΔ	2.8m	Δ	60	40	6.0	200m	10u0	5.00	100u0	440			11u	115k	30	4.0pZ	PE10	X55	A	
12	TIS98	360m	200MΔ	2.8m	Δ	80	60	6.0	200m	10u0	5.00	1.0m0	240			6.0u	6.4k	1.5	4.0pZ	PE10	X55	A	
13	TIS99	360m	200MΔ	2.8m	Δ	80	65	6.0	200m	10u0	5.00	1.0m0	130			50u	500	900m	4.0pZ	PE10	X55	A	
14	TIS106	360m	200MΔ	2.8m	Δ	80	65	6.0	200m	50n0	5.00	1.0m0	235			9.0u	6.0k	1.5	4.0pZ	PE1	X55	A	
15	TIS107	360m	200MΔ	2.8m	Δ	80	40	6.0	200m	50n0	5.00	1.0m0	105			7.5u	3.0k	800m	4.0pZ	PE1	X55	A	
16	TIS110†	360m	200MΔ	2.8m	Δ	70	40	6.0	800m	100n0	1.00	5.0m0	20	Δ		30uZ	7.5kZ	8.0	6.5pZ	PE1	X55	A	
17	2N915	360m	250MΔ	2.0m	Δ	60	50	5.0	5.0	0.1u0	5.00	5.0m0	50	Δ		125uZ	7.5kZ	2kZ	3.5pZ	PE	TO18	A0	
18	2N2656	360m	250MΔ	2.0m	Δ	25	15	5.0	200m	50u0	1.00	10m0	40	Δ				5.0pZ				TO18	A0
19	2N2845†	360m	250MΔ	2.0m	Δ	60	30	*	5.0	20u0	1.00	150m0	30	1#	Δ		8pZ				TO18	A0	
20	2N2847†	360m	250MΔ	2.0m	Δ	60	20	5.0	5.0	0.20u0	1.00	150m0	40	1#	Δ		8pZ				TO18	A0	
21	2N3301†	360m	250MΔ	2.0m	Δ	60	30	5.0	500m	0.1u0	1.00	110m0	25	Δ			8pZ				TO18	A0	
22	2N3302†	360m	250MΔ	2.0m	Δ	60	30	5.0	500m	0.1u0	1.00	110m0	50	Δ			8pZ				TO18	A0	
23	2N3946†	360m	250MΔ	2.0m	Δ	60	40	6.0	200m	0.1u0	1.00	1.0m0	50	Δ		30uZ	6kZ	10	4pZ	EA	TO18	A0	
24	2N4450†	360m	250MΔ	2.0m	Δ	60	30	5.0	500m	10u0	1.00	1.0m0	50	Δ			8pZ				TO18	A0	
25	2N4951†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	0.5u0	1.00	150m0	60	1#	Δ		8pZ				TO98	B	
26	2N4952†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	0.5u0	1.00	150m0	100	1#	Δ		8pZ				TO98	B	
27	2N4953†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	0.5u0	1.00	150m0	200	1#	Δ		8pZ				TO98	B	
28	2N4954†	360m	250MΔ	2.9m	Δ	40	30	5.0	500m	0.5u0	1.00	150m0	60	1#	Δ		8pZ				TO98	B	
29	2N5368†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	50n0	1.00	1.0m0	20	Δ			8pZ				X93	A	
30	2N5369†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	50n0	1.00	1.0m0	50	Δ			8pZ				X93	A	
31	2N5370†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	50n0	1.00	1.0m0	75	Δ			8pZ				X93	A	
32	2N5371†	360m	250MΔ	2.9m	Δ	40	30	5.0	500m	50n0	1.00	1.0m0	20	Δ			8pZ				X93	A	
33	2N5380	360m	250MΔ	2.9m	Δ	40	40	5.0	5.0	0.1u0	1.00	1.0m0	50	Δ			8pZ				X55	A	
34	A5T2222†	360m	250MΔ	2.8m	Δ	60	30	5.0	800m	10n0	1.00	100u0	35	Δ			8.0pZ	PE1	X55	A			
35	A5T3903†	360m	250MΔ	2.8m	Δ	60	40	6.0	200m	50n0	1.00	1.0m0	50	Δ		40uZ	8.0kZ	5.0	4.0pZ	PE1	X55	A	
36#	AT420	360m	250MΔ	2.1m	Δ	50	30	5.0	500m	200n0	1.00	150m0	30	Δ			8.0pZ	PE	TO18		A0		
37#	AT421	360m	250MΔ	2.1m	Δ	50	30	5.0	500m	200n0	1.00	150m0	100	Δ			8.0pZ	PE	TO18		A0		
38#	AT422	360m	250MΔ	2.1m	Δ	50	45	5.0	500m	200n0	1.00	150m0	30	Δ			8.0pZ	PE	TO18		A0		
39#	AT423	360m	250MΔ	2.1m	Δ	50	45	5.0	500m	200n0	1.00	150m0	100	Δ			8.0pZ	PE	TO18		A0		
40#	AT424	360m	250MΔ	2.1m	Δ	50	30	5.0	500m	200n0	1.00	150m0	30	Δ			8.0pZ	PE	TO18		A0		
41#	AT425	360m	250MΔ	2.1m	Δ	50	45	5.0	500m	200n0	1.00	150m0	30	Δ			8.0pZ	PE	TO18		A0		
42#	BFV85†	360m	250MΔ	4.17u	Δ	60	30	5.0	800m	0.1u0	1.00	1.0m0	25	Δ			8pZ				u26a	B	
43#	BFV85A†	360m	250MΔ	4.17u	Δ	75	40	6.0	800m	0.1u0	1.00	1.0m0	50	Δ		35uZ	8.0kZ	8	8pZ	PE0	u26a	B	
44#	BFV85B†	360m	250MΔ	4.17u	Δ	60	30	5.0	800m	0.1u0	1.00	1.0m0	50	Δ			8pZ	PE	u26a	B			
45#	BFV88A†	360m	250MΔ	500u	Δ	60	40	5.0	800m	25u0	1.00	10m0	50	Δ			8pZ	PE	u26a	B			
46#	BFV88B†	360m	250MΔ	500u	Δ	60	40	5.0	800m	25u0	1.00	10m0	50	Δ			8pZ	PE	u26a	B			
47#	BFV88C†	360m	250MΔ	500u	Δ	60	30	5.0	800m	200u0	1.00	150m0	30	1#	Δ		8pZ	PE	u26a	B			
48#	BFY27	360m	250MΔ	2.0m	Δ	70	50	5.0	5.0	0.1u0	5.00	10m0	40	1#	Δ		3.5pZ	PL	TO18				
49#	BSV85†	360m	250MΔ	2.2m	Δ	50	30	5.0	1.0	1.0u0	1.00	150m0	80	1	Δ		8.0pZ	PE	TO18		A		
50#	BSW41†	360m	250MΔ	2.1m	Δ	40	25	5.0	300m	50u0	1.00	10m0	30	1#	Δ		8.0pZ	PE	TO18		A0		
51	CS5368†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	50n0	1.00	1.0m0	20	Δ			8.0pZ	PE	TO106				
52	CS5369†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	50n0	1.00	1.0m0	50	Δ			8.0pZ	PE	TO106				
53	CS5370†	360m	250MΔ	2.9m	Δ	60	30	5.0	500m	50n0	1.00	1.0m0	50	Δ			8.0pZ	PE	TO106				
54	CS5371†	360m	250MΔ	2.9m	Δ	40	30	5.0	500m	50n0	1.00	1.0m0	20	Δ			8.0pZ	PE	TO106				
55	GET2221†	360m	250MΔ	3.6m	Δ	60	30	5.0	400m	10n0	1.00	150m0	20	Δ			8pZ	PEΔ	TO18				
56	GET2221A†	360m	250MΔ	3.6m	Δ	75	40	5.0	400m	10n0	1.00	100u0	20	Δ		60	8.0pZ	PE	X93	F			
57	GET2222	360m	250MΔ	3.6m	Δ	60	30	5.0	400m	10n0	1.00	150m0	50	Δ			8pZ	PEΔ	TO18				
58	LDA400†	360m	250MΔ	2.9m	Δ	35	35	5.0	30m	10n0	5.00	10u0	40	Δ			6.0pZ	PE0	u34	P			
59	LDA400MP*	360m	250MΔ	2.9m	Δ	35	35	5.0	30m	10n0	5.00	10u0	40	Δ			6.0pZ	PE0	u34	P			
60	LDA401	360m	250MΔ	2.9m	Δ	35	35	5.0	30m	10n0	5.00	10u0	100	Δ			6.0pZ	PE0	u34	P			
61	LDA401MP*	360m	250MΔ	2.9m	Δ	35	35	5.0	30m	10n0	5.00	10u0	100	Δ			6.0pZ	PE0	u34	P			
62	LDA402	360m	250MΔ	2.9m	Δ	35	35	5.0	30m	100n	5.00	1.0m0	100	Δ			6.0pZ	PE	u34	P			
63	LDA403	360m	250MΔ	2.9m	Δ	35	35	5.0	30m	100n	5.00	1.0m0	270	Δ			6.0pZ	PE	u34	P			
64	TIS68	360m	250MΔ	2.9m	Δ	40	25	5.0	400m	10n0	2.00	50m0	160	1*			PE	TO92					
65	TIS109†	360m	250MΔ	2.8m	Δ	60	30	5.0	800m	100n0	1.00	100u0	20	Δ			10pZ	PE1	X55	A			
66	TIS111†	360m	250MΔ	2.8m	Δ	60	40	6.0	800m	100n0	1.00	1.0m0	40	Δ		30uZ	15kZ	8.0	6.5pZ	PE1	X55	A	
67	TP4123	360m	250MΔ	2.8m	Δ	40	30	5.0	200m	50n0	1.00	2.0m0	50	1#	Δ		4.0pZ	PL0	X55a	A			
68#	BF291	360m	260M	2.0m	Δ	50	40	5.0	100m	10n	1.00	10m0	100	1	Δ		3.5pZ	PE	TO18		A		
69	JAN2N708†	360m	300MΔ	2.0m	Δ	40																	



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN fab (Hz)	T M E A M X P	ABS MAX RATINGS @25°C					MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C E O A D E			
					BV <sub>cb0</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)	I <sub>cb0</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>	hoe (mhos)	hie (Ω)	X.0001							
					h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>		h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>	h <sub>FE</sub>							
1	2N706C†	360m	320MΔ	2.0m	§J	40	15	5.0	50m	1.0u	1.0u	10m	20 Δ				5pZ	ND	T018	A			
2	2N913	360m	350M		§J	40	15	5.0		1.0u	1.0u	10m	75 †				6.0p	PLE	T018	A			
3	2N2501†	360m	350MΔ	2.0m	§J	40	15	5.0		.05u	1.0u	10m	150 †				2.8p	PE	T018	A			
4	2N3009†	360m	350MΔ	2.0m	§J	40	15	4.0	200m	.50u	.40u	30m	30 †#Δ				5pZ	PE	T052	A			
5	2N3013†	360m	350MΔ	2.0m	§J	40	15	5.0	200m	.30u	.40u	30m	30 †#Δ				5pZ	PE	T052	A			
6	JAN2N3013†	360m	350MΔ	2.0m	§J	40	20	5.0	300m	.40u	.40u	30m	35 †#Δ				5.0pZ	PE	T052	A			
7	2N3014†	360m	350MΔ	2.0m	§J	40	20	5.0	200m	.30u	.40u	30m	30 †#Δ				5pZ	PE	T052	A			
8	2N3211	360m	350MΔ	2.1m	§J	40	15	6.0	500m	1.0u	1.0u	10m	50 †				4pZ	PE	T018	A			
9	2N3510†	360m	350MΔ	2.0m	§S	40	10	6.0	500m	.25n	.10u	15m	25 †				4pZ	PE	T052	A			
10	2N4420†	360m	350MΔ	2.8m	§S	40	20	5.0	200m	.50n	.40u	30m	30 †#Δ				5.0pZ	PE	X55	A			
11	2N4422†	360m	350MΔ	2.8m	§S	40	15	5.0	200m	.50n	.40u	30m	30 †#Δ				5.0pZ	PE	X55	A			
12#	2SC172A	360m	350MΔ	2.0m	§J	40	20	5.0	50m	.25n	.60u	10m	60				7.0pZ	PL	T018	A			
13#	BSV59†	360m	350MΔ		§					1.0u	500m	50 †					1.0p	PE	T018	A			
14#	BSX88A†	360m	350MΔ	2.0m	§J	40	20	5.5		.30u	1.0u	10m	50 †#				3.0p	DPE	T018	A			
15#	C722†	360m	350MΔ		§					1.0u	10m	120 †					3.0p	PE	T018	A			
16#	C742	360m	350MΔ	6.8m	§J	30	30	5.0		200p	5.0u	10m	200 †				2.6p	PL	T039	A			
17	GET2369†	360m	350MΔ	3.6m	†J	40	15	5.0	200m	.10u	1.0u	10m	40 †				4.5p	PEA	T018	A			
18	GET3013†	360m	350MΔ	3.6m	†J	40	15	5.0	200m	.1u	.40u	30m	30 †				4.5p	PEA	T018	A			
19	GET3014†	360m	350MΔ	3.6m	†J	40	20	5.0	200m	.1u	.40u	30m	30 †				4.5p	PEA	T018	A			
20	GET3646†	360m	350MΔ	3.6m	†J	40	15	5.0	200m	.1u	.40u	30m	30 †				4.5p	PEA	T018	A			
21	TIS52	360m	350MΔ	2.9m	§J	40	20	5.0	200m	.5u	1.0u	300m	25 †#Δ				5pZ	PE	T092	A			
22	TIS55	360m	350MΔ	2.9m	§J	40	15	5.0	200m	.5u	1.0u	300m	15 †#Δ				5pZ	PE	T092	A			
23#	BFY74	360m	360MΔ	2.1m	§J	60	45	5.0		.01u	5.0u	5.0m	90				3.0p	DPL	T018	A			
24#	BFY75	360m	360MΔ	2.1m	§J	60	45	5.0		.01u	5.0u	5.0m	130				3.0p	DPL	T018	A			
25#	BSX87†	360m	370MΔ	2.0m	§J	40	15	5.0		.25n	1.0u	10m	55 †#				4.5p	DPE	T018	A			
26#	BF291A	360m	380MΔ	2.0m	§J	50	40	5.0	100m	.10n	1.0u	10m	60 †				3.5p	DPE	T018	A			
27#	BF291B	360m	380MΔ	2.0m	§J	50	40	5.0	100m	.10n	1.0u	10m	100 †				3.5p	DPE	T018	A			
28#	BF293A	360m	380MΔ	2.0m	§J	50	45	5.0	100m	.10u	1.0u	10m	170 †				2.7p	PL	T018	A			
29#	BF293D	360m	380MΔ	2.0m	§J	50	45	5.0	100m	.10u	1.0u	10m	100 †				2.7p	PL	T018	A			
30	2N921†	360m	400MΔ	63u	§J	50	20	5.0	200m	.10u	1.0u	10m	4.0				4.0p	ME	T018	A			
31	2N922	360m	400MΔ	2.0m	§J	50	20	5.0	200m	.10u	1.0u	10m	4.0				4.0p	ME	T018	A			
32	2N3011†	360m	400MΔ	2.0m	§J	30	12	5.0	200m	.40u	.35u	10m	30 †#Δ				4pZ	PE	T018	A			
33	2N4419†	360m	400MΔ	2.9m	§S	30	12	4.5	200m	.40u	1.0u	10m	30 †#Δ				4pZ	PE	X55	A			
34#	2SC67†	360m	400MΔ		§J	40	40	5.0	200m	.10u	1.0u	10m	80 †					PE	T018	A			
35#	2SC68†	360m	400MΔ		§J	40	15	5.0	200m	.10u	1.0u	10m	100 †					PE	T018	A			
36#	BF225	360m	400MΔ	2.9m	§S	50	40	4.0		.10u	1.0u	4.0m	75 †				3.5p	PE	T018	A			
37#	BFW68†	360m	400MΔ	2.0m	§J	50	40	5.0		.01u	5.0u	5.0m	50 †				125uZ	2kZ	5Z	3.0p	DPE	T018	A
38#	BSV89†	360m	400MΔ		§					1.0u	1.0u	10m	40				4.0p	PE	T018	A			
39#	BSV90†	360m	400MΔ		§					1.0u	1.0u	10m	40				4.0p	PE	T018	A			
40#	BSV91†	360m	400MΔ		§					1.0u	1.0u	10m	40				4.0p	PE	T018	A			
41#	BSX88†	360m	400MΔ	2.0m	§J	40	15	5.0		.25n	1.0u	10m	45 †#				4.0p	DPE	T018	A			
42#	C1001†	360m	400MΔ		§					1.0u	1.0u	10m	40				4.0p	PE	T018	A			
43	TIS47†	360m	400MΔ	2.9m	§J	40	15	4.5	200m	.40u	2.0u	100m	10 †#Δ				4pZ	PE	T092	A			
44	TIS51†	360m	400MΔ	2.9m	§J	30	12	5.0	200m	.40u	2.0u	100m	12 †#Δ				4pZ	PE	T092	A			
45#	ZT2368†	360m	400MΔ		§	40		4.5			1.0u	10m	20 †					PL	T018	A			
46#	ZT2369†	360m	400MΔ		§	40		4.5			1.0u	10m	40 †					PL	T018	A			
47#	ZT2369A†	360m	400MΔ		§	40		4.5			1.0u	10m	40 †					PL	T018	A			
48#	2SC300	360m	420MΔ	2.0m	§J	25	15	5.0	100m	.50u	1.0u	10m	50 †#				3.5p	PE	T018	A			
49#	2SC301	360m	420MΔ	2.0m	§J	25	15	5.0	100m	.01u	1.0u	10m	50 †#				3.5p	PE	T018	A			
50#	2SC302	360m	420MΔ	2.0m	§J	50	20	5.0	100m	.01u	1.0u	10m	50 †#				3.5p	PE	T018	A			
51#	C720†	360m	420MΔ		§					1.0u	1.0u	10m	60 †				4.5p	PE	T018	A			
52	2N3511†	360m	450MΔ	2.0m	§S	40	15	6.0	500m	.25n	.10u	150m	30 †				4pZ	PE	T052	A			
53#	C740	360m	450MΔ	6.8m	§J	30	30	5.0		200n	5.0u	1.0m	260 †				3.0p	PL	T018	A			
54	2N708†	360m	480MΔ	2.0m	§S	40	15	5.0		.25n	1.0u	10m	30 †#Δ				6.0pZ	PL	T018	A			
55	2N914†	360m	480MΔ	2.0m	§J	40	15	5.0		.25n	1.0u	10m	55 †#				4.5p	PE	R64	A			
56	2N914/46	360m	480MΔ	2.0m	§J	40	15	5.0		.25n	1.0u	10m	30 †				6.0p	PE	T046	A			
57	2N743A†	360m	500MΔ	2.0m	§J	40	15	5.0		1.0u	.35u	10m	20 †				3pZ	PE	T018	A			
58	2N744A†	360m	500MΔ	2.0m	§J	40	15	5.0		1.0u	.35u	10m	40 †				3pZ	PE	T018	A			
59	2N834A	360m	500MΔ	2.0m	§J	40	30	5.0	200m	.50u	1.0u	10m	25 †				4pZ	PE	T018	A			
60	2N915A	360m	500MΔ	2.1m	§J	70	50	5.0		.2n	5.0u	5.0m	50 †				3pZ	PE	T018	A			
61	2N916A	360m	500MΔ	2.1m	§J	60	30	5.0		.2n	5.0u	5.0m	50 †				3pZ	PE	T018	A			
62	2N916B	360m	500MΔ	2.1m	§J	60	30	5.0		.2n	5.0u	5.0m	50 †				3pZ	PE	T018	A			
63	2N2369A†	360m	500MΔ	2.0m	§J	40	15	4.5	200m	.40u	.35u	10m	40 †#Δ				4pZ	PE	T018	A			
64	JAN2N2369A†	360m	500MΔ	2.0m	§J	40	15	4.5		.30u	1.0u	10m	40 †				4.0p	PE	T018	A			
65	2N2710†	360m	500MΔ	2.0m	§J	40	20	5.0	500m	.03u	1.0u	10m	40 †				4pZ	PE	T018	A			
66	2N3227†	360m	500MΔ	2.0m	§J	40	20	6.0	200m	.20u	1.0u	10m	100 †#				4pZ	PE	T018	A			
67	2N4137†	360m	500MΔ	2.0m	§J	40	40	4.5	200m	.30u	.35u	10m	40 †#				4pZ	DPE	T018	A			
68	2N4418†	360m	500MΔ	2.9m	§S	40	15	4.5	200m	.40u	1.0u	10m	40 †#Δ				4pZ	PE	X55	A			
69#	2SC764†	360m	500MΔ		§J					1.0u	1.0u	10m	40 †				4.0pZ	PE	T018	A			
70#	BFX43	360m	500MΔ	2.0m	§J	30	15	4.0	125m	100n	1.0u	10m	20 †					PE	T018	A			
71#	BFX44	360m	500MΔ	2.0m	§J	40	15	4.0	125m	100n	1.0u	10m	40 †					PE	T018	A			
72#	BSV92†	360m	500MΔ		§					1.0u	1.0u	10m	70				4.0p	PE	T018	A			
73#	LDS200†	360m	500MΔ	2.9m	§J	30	15	4.5		.50n	1.0u	10m	20 †				4.0pZ	PE	T0122	P			
74#	LDS201†	360m	500MΔ	2.9m	§J	30	15	4.5		.50n	1.0u	10m	40 †				4.0pZ	PE	T0122	P</			

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M E A M X P	ABS MAX RATINGS @25°C					MAX. lco Vcb (A)	TYPICAL h' PARAMETERS			Cob (F)	STRUC TURE	DWG Y200 s/a TO200 Ser.	# L E O A D E
					VbVco (V)	VbVceo (V)	VbVbeo (V)	Ic (A)	hfe		BIAS Vcb (V)	le (A)	COMMON EMITTER hoe (mhos)				
1#	ZSC918	375m	400m	2.2m	20	20	3.0	30m	200m	10	4.0m	20	1	450ft	DM	T0104	A
2#	BCY58	390m	150m	2.2m	32	32	7.0	200m	0.1u	5.0	2.0	330		PE	T018	A	
3#	BCY58B	390m	150m	2.2m	32	32	7.0	200m	0.1u	5.0	2.0m	200		PE	T018	A	
4#	BCY58C	390m	150m	2.2m	32	32	7.0	200m	0.1u	5.0	2.0m	260		PE	T018	A	
5#	BCY58D	390m	150m	2.2m	32	32	7.0	200m	0.1u	5.0	2.0m	330		PE	T018	A	
6#	BCY58E	390m	150m	2.2m	32	32	7.0	200m	0.1u	5.0	2.0m	520		PE	T018	A	
7#	BCY59A	390m	150m	2.2m	45	45	7.0	200m	0.1u	5.0	2.0m	200		PE	T018	A	
8#	BCY59B	390m	150m	2.2m	45	45	7.0	200m	0.1u	5.0	2.0m	260		PE	T018	A	
9#	BCY59C	390m	150m	2.2m	45	45	7.0	200m	0.1u	5.0	2.0m	330		PE	T018	A	
10#	BCY59D	390m	150m	2.2m	45	45	7.0	200m	0.1u	5.0	2.0m	520		PE	T018	A	
11	2N4074	400m	3.3m	4.0m	40	40	8.0	300m	10n	12	10m	400	∇	PE	R123	A	
12	2N5998	400m	4.0m	4.0m	35	25	5.0	500m	30n	2.0	10m	150	∇	PE	T098	B	
13	2N6008	400m	4.0m	4.0m	35	25	5.0	500m	30n	2.0	10m	250	∇	PE	T098	B	
14	2SC814	400m	4.0m	4.0m	30	18	5.0	500m	200n	5.0	50m	150	∇	PE	X28a	B	
15	2SC853	400m	4.0m	4.0m	70	60	5.0	200m	100n	1.0	50m	80	∇	PE	X28a	B	
16	2SC881	400m	4.0m	4.0m	60	45	5.0	200m	100n	1.0	50m	80	∇	PE	X28a	B	
17	2SD228	400m	4.0m	4.0m	30	15	5.0	300m	100n	1.0	300m	120	∇	PE	X28a	B	
18	BC282	400m	2.2m	2.2m	60	30	5.0	600m	50n	5.0	50m	50	∇	DPE	T018	A	
19	MD113704	400m	4.0m	4.0m	50	30	5.0	200m	100n	2.0	50m	100	∇	PE	T0122	P	
20	2N5066	400m	5.0m	2.3m	30	20	3.0	100m	1.0n	5.0	1.0m	30	∇	PE	T046	A	
21	BF250	400m	20m	2.7m	15	15	3.0	600m		5.0	0.1m	30	∇	PE	T018	A	
22	2N929/46	400m	30m	3.0m	45	45	5.0	30m	10n	5.0	1.0	60	∇	PL	T046	A	
23	2N930/46	400m	30m	3.0m	45	45	5.0	30m	10n	5.0	1.0m	150	∇	PL	T046	A	
24	2N930A/46	400m	30m	3.0m	60	45	6.0	30m	2.0n	5.0	1.0m	150	∇	PL	T046	A	
25	2N2514	400m	30m	2.3m	80	60	6.0	100m	5.0n	5.0	1.0m	15	∇	PE	T046	A	
26	BFV98	400m	30m	2.6m	45	45	5.0	30	50n	5.0	10u	100	∇	PE	L56f	A	
27	BFV98N	400m	30m	2.6m	45	45	5.0	30	50n	5.0	10u	100	∇	PE	L56g	A	
28	2N719	400m	40m	3.75m	120	80	5.0	2.0	10n	5.0	5.0m	25	∇	PE	T018	A	
29	C400	400m	40m	2.7m	60	30	4.0	100n	10	10	100m	40	∇	PE	T018	A	
30	2N720	400m	50m	3.75m	120	80	5.0	2.0	10n	5.0	5.0m	45	∇	PE	T018	A	
31	2N909	400m	50m	2.6m	60	30	5.0	1.0	10n	5.0	1.0m	40	∇	PE	T018	A	
32	2N2350t	400m	50m	2.3m	60	40	5.0	1.0	10n	5.0	1.0m	100	∇	PE	T046	A	
33	2N2350At	400m	50m	2.3m	60	40	5.0	1.0	10n	5.0	1.0m	100	∇	PE	T046	A	
34	2N2351t	400m	50m	2.3m	80	50	8.0	1.0	10n	5.0	1.0m	100	∇	PE	T046	A	
35	2N2351At	400m	50m	2.3m	80	50	8.0	1.0	10n	5.0	1.0m	100	∇	PE	T046	A	
36	2N2352t	400m	50m	2.3m	60	40	5.0	1.0	10n	5.0	1.0m	20	∇	PE	T046	A	
37	2N2352At	400m	50m	2.3m	60	40	5.0	1.0	10n	5.0	1.0m	20	∇	PE	T046	A	
38	2N2364t	400m	50m	2.3m	120	80	7.0	1.0	10n	5.0	1.0m	40	∇	PE	T046	A	
39	2N2364At	400m	50m	2.3m	120	80	7.0	1.0	10n	5.0	1.0m	40	∇	PE	T046	A	
40	2N2520	400m	50m	4.3m	60	60	8.0	5.0n	5.0	5.0	1.0m	18	∇	PL	T046	A	
41	2N2521	400m	50m	4.3m	60	60	8.0	5.0n	5.0	5.0	1.0m	36	∇	PL	T046	A	
42	2N2522	400m	50m	4.3m	60	60	8.0	5.0n	5.0	5.0	1.0m	76	∇	PL	T046	A	
43	2N2909	400m	50m	2.3m	60	40	7.0	1.0	10n	5.0	1.0m	30	∇	PE	T046	A	
44	2N2515	400m	60M	2.3m	80	60	6.0	100m	5n	5.0	1.0m	30	∇	PE	T046	A	
45	40234	400m	60M	3.3m	18	18	5.0	100m	50u	10	2.0m	80	∇	PE	R92	A	
46	AT380	400m	60m	2.3m	60	40	6.0	1.0	200n	1.0	50m	40	∇	PE	T018	A	
47	AT381	400m	60m	2.3m	86	60	6.0	1.0	200n	1.0	50m	40	∇	PE	T018	A	
48	AT382	400m	60m	2.3m	100	80	6.0	1.0	200n	1.0	50m	40	∇	PE	T018	A	
49	AT383	400m	60m	2.3m	60	40	6.0	1.0	200n	1.0	50m	100	∇	PE	T018	A	
50	AT384	400m	60m	2.3m	80	60	6.0	1.0	200n	1.0	50m	100	∇	PE	T018	A	
51	AT385	400m	60m	2.3m	100	80	6.0	1.0	200n	1.0	50m	100	∇	PE	T018	A	
52	AT386	400m	60m	2.3m	60	40	6.0	1.0	200n	1.0	50m	40	∇	PE	T018	A	
53	AT387	400m	60m	2.3m	80	60	6.0	1.0	200n	1.0	50m	40	∇	PE	T018	A	
54	AT388	400m	60m	2.3m	100	80	6.0	1.0	200n	1.0	50m	40	∇	PE	T018	A	
55	C441	400m	60m	2.3m	45	45	5.0	50n	5.0	5.0	1.0m	290	∇	PE	T018	A	
56	2N717t	400m	64M	2.6m	60	40	5.0	1.0	10n	5.0	1.0m	20	∇	PE	T018	A	
57	2N3340t	400m	70m	2.6m	30	20	5.0	30m	1n	1.0	0.1m	40	∇	PE	T046	A	
58	2N718t	400m	80M	2.6m	60	40	5.0	1.0	10n	5.0	1.0m	40	∇	PE	T018	A	
59	2N3056	400m	80m	2.2m	100	60	7.0	1.0	10n	5.0	1.0m	30	∇	PE	T046	A	
60	2N3056A	400m	80m	2.2m	140	80	7.0	1.0	10n	5.0	1.0m	30	∇	PE	T046	A	
61	2N2516	400m	99M	2.3m	80	60	8.0	100m	5n	5.0	1.0m	60	∇	PE	T046	A	
62	2N2518	400m	100m	4.3m	125	80	8.0	5n	5.0	5.0	5.0m	40	∇	PE	T046	A	
63	2N2519	400m	100m	4.3m	125	80	8.0	5n	5.0	5.0	5.0m	80	∇	PE	T046	A	
64	2N2523	400m	100m	4.3m	60	45	6.0	2.0n	5.0	5.0	1.0m	60	∇	PL	T046	A	
65	2N2524	400m	100m	4.3m	60	45	6.0	2.0n	5.0	5.0	1.0m	150	∇	PL	T046	A	
66	2N3057	400m	100m	2.3m	100	60	7.0	10n	5.0	5.0	1.0m	100	∇	PL	T046	A	
67	2N3057A	400m	100m	2.3m	140	80	7.0	1.0	10n	5.0	1.0m	80	∇	PE	T046	A	
68	JAN2N3057A	400m	100m	2.2m	140	80	7.0	1.0	10n	5.0	1.0m	80	∇	PE	T046	A	
69	2N4315*	400m	100m	2.6m	30	25	5.0	50m	0.1u	5.0	0.1m	100	∇	PE*	L2b	A	
70	ME8002	400m	100m	3.2m	120	80	7.0	10n	10	10	100m	25	∇	PE	R110d	A	
71	ME8003	400m	100m	3.2m	80	60	7.0	10n	10	10	100m	50	∇	PE	R110d	A	
72	2S102	400m	120m	2.6m	60	45	4.5	50m	25u	5.0	10m	40	∇	ME	T018	A	
73	2S731	400m	120m	5.6m	30	30	3.0	50m	1.0u	5.0	5.0m	40	∇	ME	T018	A	
74	2S732	400m	120m	5.6m	30	30	3.0	50m	1.0u	5.0	5.0m	60	∇	ME	T018	A	
75	2S733	400m	120m	5.6m	30	30	3.0	50m	1.0u	5.0	5.0m	100	∇	ME	T018	A	
76	2S103	400m	135m	2.6m	60	45	4.5	50m	25u	5.0	10m	65	∇	ME	T018	A	
77	2N2310t	400m	150m	2.9m	60	8.0	8.0	10u	10	10	200m	20	∇	PL	T046	A	
78	2N2311t	400m	150m	2.9m	100	8.0	8.0	10u	10	10	200m	20	∇	PL	T046	A	
79	2N2312t	400m	150m	2.9m	60	8.0	8.0	10u	10	10	200m	60	∇	PL	T046	A	
80	2N2313t	400m	150m	2.9m	100	8.0	8.0	10u	10	10	200m	60	∇	PL	T046	A	
81	2N2314	400m	150m	2.8m	60	8.0	8.0	1.0u	10	10	15m	45	∇	PL	T046	A	
82	2N2315t	400m	150m	2.6m	60	5.0	5.0	1.0u	10	10	150m	70	∇	PL	T046	A	
83	2N2459	400m	150m	4.3m	100	60	8.0	2n	5.0	5.0	5.0m	40	∇	PL	T046	A	
84	2N2460	400m	150m	4.3m	100	60	8.0	2n	5.0	5.0	5.0m	70	∇	PL	T046	A	
85	2N2461	400m	150m	4.3m	100	60	8.0	2n	5.0	5.0	5.0m	120	∇	PL	T046	A	
86	2N2462	400m	150m	4.3m	100	60	8.0	2n	5.0	5.0	5.0m	170	∇	PL	T046	A	
87	2N4100*	400m	150m	4.3m	55	55	7.0										

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	M E M A P	ABS. MAX. RATINGS @25°C				Ic (A)	Max. lco @MAX Vcb (V)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG Y200 s/a T0200 Ser.	# L E O D E
						Vcbo (V)	Vceo (V)	Vbeo (V)	Vcb (V)			le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	TM2711	400m	250MΔ	1.4m	Δ	60	30	5.0	800m	0.5uΩ	100	150m	100	10	100	100	8pZ	PE	T018	A	
2#	UPI4046-46	400m	250M	4.5m	#J	60	35	6.0	500m	1.7uΩ	1.0	100m	150	10	100	12p	PE	T041	A		
3#	UPI4047-46	400m	250M	4.5m	#J	70	40	6.0	500m	1.7uΩ	1.0	100m	150	10	100	10p	PE	T046	A		
4#	MM709	400m	300MΔ	2.3m	Δ	15	8.0	4.0	20m	1.0nΩ	5.0	10m	15	10	40uZ	3pZ	ANΔ	T052	A		
5#	QD100-78*	400m	300MΔ	2.3m	Δ	25	15	6.5	20m	1.0nΩ	5.0	10m	150	10	40uZ	3.0pZ	*DPL	L2d	A		
6#	2C444*	400m	350MΔ	2.6m	Δ	50	35	4.0	20m	25nΩ	5.0	5.0m	80	10	30u	3.0p	Δ	L2b	A		
7#	2N3647	400m	350MΔ	2.3m	Δ	40	10	6.0	500m	25nΩ	1.0	150m	150	10	100uZ	4.5k	Δ	T05	A		
8#	2N6000†	400m	350MΔ	4.0m	Δ	35	25	5.0	500m	10nΩ	1.0	1.0m	70	10	80uZ	10kZ	Δ	X55a	A		
9#	2N6004†	400m	350MΔ	4.0m	Δ	50	40	5.0	500m	10nΩ	1.0	1.0m	70	10	80uZ	10kZ	Δ	X55a	A		
10#	BFR11†	400m	350MΔ	2.6m	Δ	40	15	5.0	200m	.50uΩ	1.0	30m	30	10	5pZ	5pZ	PE	T018	A		
11#	BFV92†	400m	350MΔ	2.6m	Δ	40	15	5.0	200m	.50uΩ	1.0	30m	30	10	5pZ	5pZ	PE	L56f	A		
12#	BFV92N†	400m	350MΔ	2.6m	Δ	40	15	5.0	200m	.50uΩ	1.0	30m	30	10	5pZ	5pZ	PE	L56g	A		
13#	C762	400m	350MΔ	2.3m	Δ	25	40	5.0	200uS	1.0	50m	110	10	400u	350	5.0p	PL	T018	A		
14#	2N706B46	400m	400MΔ	3.3m	Δ	25	20	5.0	10u	1.0	10m	40	10	40u	350	4.5p	PE	T046	A		
15#	QD101-78*	400m	400MΔ	2.3m	Δ	45	45	6.5	20m	20pΩ	5.0	10u	150	10	40uZ	2.0pZ	*	L2d	A		
16#	QD102-78*	400m	400MΔ	2.3m	Δ	30	30	6.5	20m	20pΩ	5.0	10u	200	10	40uZ	2.0pZ	*	L2d	A		
17#	QD103-78*	400m	400MΔ	2.3m	Δ	45	45	6.5	20m	20pΩ	5.0	10u	200	10	40uZ	2.0pZ	*	L2d	A		
18#	QD104-78*	400m	400MΔ	2.3m	Δ	45	45	6.5	20m	20pΩ	5.0	10u	200	10	40uZ	2.0pZ	*	L2d	A		
19#	2N834/46†	400m	450MΔ	2.5m	Δ	40	30	5.0	200m	50nΩ	1.0	10	40	10	2.8p	ME	T046	A			
20#	2N835/46†	400m	450MΔ	2.5m	Δ	25	20	3.0	200m	50nΩ	1.0	10	40	10	2.8p	ME	T046	A			
21#	2N3648	400m	450MΔ	2.3m	Δ	40	15	6.0	500m	25n	1.0	150m	120	10	4.0p	Δ	T046	A			
22#	2N6002†	400m	450MΔ	4.0m	Δ	35	25	5.0	500m	10nΩ	1.0	1.0m	175	10	100uZ	4.5k	25	6.0pS	X55a		
23#	2N6006†	400m	450MΔ	4.0m	Δ	50	40	5.0	500m	10nΩ	1.0	1.0m	175	10	100uZ	15kZ	25	6.0pS	X55a		
24#	2N3508†	400m	500MΔ	2.3m	Δ	50	40	20	6.0	200m	2.0uΩ	1.0	10m	40	100uZ	15kZ	25	6.0pS	X55a		
25#	2N3509†	400m	500MΔ	2.3m	Δ	40	20	6.0	200m	2.0uΩ	1.0	10m	100	10	4pZ	Δ	T046	A			
26#	TIS86	400m	500MΔ	3.2m	Δ	30	30	4.0	50m	1.0uΩ	1.0	4.0m	40	10	PE†	PE†	X55	A			
27#	TIS87	400m	500MΔ	3.2m	Δ	45	45	4.0	50m	1.0uΩ	1.0	12m	30	10	PE†	PE†	X55	C			
28#	2N2369/46	400m	600MΔ	2.3m	Δ	40	15	4.5	500m	400nΩ	1.0	10m	40	10	4.0p	PE	T046	A			
29#	BFV97	400m	600MΔ	2.6m	Δ	30	15	3.0	50m	.05uΩ	1.0	3.0m	20	10	1.7pZ	PE	L56f	A			
30#	BFV97N	400m	600MΔ	2.6m	Δ	30	15	3.0	50m	.05uΩ	1.0	3.0m	20	10	1.7pZ	PE	L56g	A			
31#	SE5037	400m	600MΔ	2.2m	Δ	45	40	4.0	50m	50nΩ	1.0	10m	80	10	850f	DPE	T018	A			
32#	TIS105	400m	600MΔ	3.2m	Δ	45	45	4.0	50m	50nΩ	1.0	10m	30	10	700fS	PE†	X55	C			
33#	UCX2910*	400m	600MΔ	2.2m	Δ	30	15	4.0	50m	1pΩ	1.0	3.0m	40	10	pZ	PLΔ	L2d	A			
34#	2N917/46	400m	800MΔ	2.2m	Δ	30	15	3.0	1.0nΩ	1.0	3.0m	20	10	1.7pZ	PLΔ	T046	A				
35#	2N709A46†	400m	1.0G	2.3m	Δ	15	6.0	4.0	5.0nΩ	50	10m	60	10	3.0pZ	PE	T046	A				
36#	2N2784/46†	400m	1.0G	2.3m	Δ	15	6.0	4.0	5nΩ	50	10m	120	10	3pZ	PE	T046	A				
37#	JAN2N3959	400m	1.0GΔ	2.2m	Δ	20	12	4.5	1.0uΩ	1.0	10m	60	10	2.5pZ	Δ	T018	A				
38#	K2607	400m	1.0G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
39#	K2608	400m	1.0G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
40#	K2609	400m	1.0G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
41#	2N709/46†	400m	1.2G	2.2m	Δ	15	6.0	4.0	50nΩ	50	10m	55	10	3.0pZ	Δ	T046	A				
42#	2N3959†	400m	1.3GΔ	2.3m	Δ	20	12	4.5	5nΩ	1.0	10m	400	10	2.5pZ	Δ	T018	A				
43#	JAN2N3960	400m	1.3GΔ	2.2m	Δ	20	12	4.5	1.0uΩ	1.0	10m	60	10	2.5pZ	Δ	T018	A				
44#	K2502	400m	1.3G	2.0m	Δ	25	10	2.0	10uΩ	10	8.0m	20	10	2pZ	Δ	T046	A				
45#	K2507	400m	1.3G	2.0m	Δ	30	10	2.0	10uΩ	10	8.0m	20	10	2pZ	Δ	T046	A				
46#	K2607A	400m	1.4G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
47#	K2608A	400m	1.4G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
48#	K2609A	400m	1.4G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
49#	2N3960†	400m	1.6GΔ	2.3m	Δ	20	12	4.5	5nΩ	1.0	10m	400	10	2.5pZ	Δ	T018	A				
50#	K2607B	400m	1.7G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
51#	K2608B	400m	1.7G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
52#	K2609B	400m	1.7G	2.3m	Δ	20	10	2.0	100nΩ	1.0	3.0m	20	10	2.0pZ	Δ	T046	A				
53#	AT50	400m	3.5G	2.2m	Δ	20	12	3.0	100m	20nΩ	10	15m	75	10	500fS	PE	u77b	Y			
54#	AT51	400m	3.5G	2.2m	Δ	20	12	3.0	100m	20nΩ	10	15m	75	10	500fS	PE	u77b	Y			
55#	AT52	400m	3.5G	2.2m	Δ	20	12	3.0	100m	20nΩ	10	15m	75	10	500fS	PE	u77b	Y			
56#	AT201A	400m	4.0G	2.2m	Δ	20	15	3.0	100m	20nΩ	7.0	15m	50	10	500fS	PE	u77c	Y			
57#	AT240	400m	4.0G	2.2m	Δ	20	12	3.0	100m	20nΩ	10	15m	50	10	500fS	PE	u77b	Y			
58#	AT240A	400m	4.0G	2.2m	Δ	20	12	3.0	100m	20nΩ	7.0	15m	50	10	500fS	PE	u77d	Y			
59#	AT241	400m	4.0G	2.2m	Δ	20	12	3.0	100m	20nΩ	10	15m	50	10	500fS	PE	u77b	Y			
60#	AT242	400m	4.0G	2.2m	Δ	20	12	3.0	100m	20nΩ	10	15m	50	10	500fS	PE	u77b	Y			
61#	2C425*	430m	70.MS	2.9m	Δ	75	7.0	7.0	1.0uΩ	.02uΩ	10	50m	100	10	13p	DPL	L2b	A			
62#	CS1990	450m	3.5m	2.9m	Δ	100	40	3.0	1.0uΩ	10uΩ	10	30	20	10	10	Δ	T0105	A			
63#	2N2395	450m	40MΔ	2.6m	Δ	60	40	5.0	300m	0.1uΩ	10	150m	40	10	30pZ	PL	u25	A			
64#	2N2396	450m	50MΔ	2.6m	Δ	60	40	5.0	300m	0.1uΩ	10	150m	40	10	30pZ	PL	u25	A			
65#	2N2389†	450m	60MΔ	2.5m	Δ	75	50	7.0	500m	10nΩ	10	5.0m	35	10	25pZ	PL	u25	A			
66#	2N2390	450m	70MΔ	2.5m	Δ	75	50	7.0	500m	10nΩ	10	5.0m	70	10	25pZ	PL	u25	A			
67#	2N3728*	450m	80MΔ	2.6m	Δ	60	30	5.0	500m	0.1uΩ	10	1.0m	50	10	8pZ	Δ	L2				

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	COLL. DISS. @25°C (W)	fab	DERATE IN FREE AIR W/°C	M A M X P	ABS MAX RATINGS @25°C				Ic (A)	Icbo @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # s/a TO200 Ser	# C O D E
						Vcbo (V)	BVceo (V)	BVebo (V)	Vcb (V)			le (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1	TN641	500m	20M\$Δ	2.8m	\$J	20	20	5.0	800m	100n	5.0	1.0m	65 Δ	100nb	26	2.0	8.0pZ	PE	TO18	A	
2	40080	500m	27.M*	2.9m	\$J	45	30	5.0	250m	10u	5.0	1.0m	20 Δ	15u	2.5	2.0pZ	DPL	TO5	A		
3	2N337A	500m	30.M	3.3m	\$J	45	35	2.5	20m	50u	20	1.0m	55	13u	2.5	2.0pZ	D	TO5	A		
4	2N1140	500m	35M\$Δ	5.0m	\$J	40	40	5.0	15u	10n	6.0	1.0m	20 Δ	15 Δ	2.5	2.0pZ	PL	R81a	A		
5	2N719A	500m	40M\$Δ	350m	\$J	120	60	7.0	1.0 #	1.0n	5.0	1.0m	15 Δ	40 #	2.5	85pZ	PL	TO18	A		
6	2N730f	500m	40M\$Δ	3.3m	\$J	60	40	5.0	1.0n	1.0u	10	150m	10 Δ	10 #	2.5	35pZ	D	TO18	A		
7	JAN2N912	500m	40M\$Δ	2.8m	\$J	100	60	7.0	20m	15n	5.0	5.0	20 Δ	25uZ	500	1.5 Zb	D	TO18	A		
8	2N338A	500m	45.M	3.3m	\$J	45	35	2.5	20m	50u	20	1.0m	99	3.0k	2.6	2.0pZ	D	TO5	A		
9	2N929A	500m	45M\$Δ	2.8m	\$S	60	45	6.0	30m	2.0n	5.0	1.0m	60 Δ	1.0uZb	6.0	6.0pZ	∅	TO18	A		
10	2N930A	500m	45M\$Δ	2.8m	\$S	60	45	6.0	30m	2.0n	5.0	1.0m	150 Δ	1.0uZb	32 Z	6.0 Z	∅	TO18	A		
11	2N930B	500m	45M\$Δ	2.8m	\$S	60	45	6.0	30m	2.0n	5.0	1.0m	150 Δ	1.0uZb	32 Z	6.0 Z	∅	TO18	A		
12	2N560f	500m	50.M	4.0m	\$J	60	60	8.0	100m	1.0u	5.0	1.0m	20 Δ	1.0uZb	32 Z	6.0 Z	D	TO29	A		
13	2N731f	500m	50M\$Δ	3.3m	\$J	60	40	5.0	1.0u	10	10	150m	80 #	1.0uZb	80 Z	10 Z	PE	TO18	A		
14	2N756	500m	50M\$Δ	2.8m	\$A	45	45	6.0	100m	200n	5.0	1.0m	30	1.0uZb	80 Z	10 Z	ME	TO18	A		
15	2N757	500m	50M\$Δ	2.8m	\$A	45	45	6.0	100m	200n	5.0	1.0m	30	1.0uZb	80 Z	10 Z	ME	TO18	A		
16	2N758	500m	50M\$Δ	2.8m	\$A	45	45	8.0	100m	200n	5.0	1.0m	54	1.0uZb	80 Z	10 Z	ME	TO18	A		
17	2N758B	500m	50M\$Δ	2.8m	\$S	60	60	8.0	100m	5.0n	5.0	1.0m	18 Δ	1.0uZb	35 Z	6.0 Z	ME	TO18	A		
18	2N759	500m	50M\$Δ	2.8m	\$A	45	45	8.0	100m	200n	5.0	1.0m	63	1.0uZb	80 Z	10 Z	ME	TO18	A		
19	2N759B	500m	50M\$Δ	2.8m	\$S	60	60	8.0	100m	5.0n	5.0	1.0m	36 Δ	1.0uZb	35 Z	6.0 Z	ME	TO18	A		
20	2N760	500m	50M\$Δ	2.8m	\$A	45	45	8.0	100m	200n	5.0	1.0m	204	1.0uZb	80 Z	10 Z	ME	TO18	A		
21	2N760B	500m	50M\$Δ	2.8m	\$S	60	60	8.0	100m	5.0n	5.0	1.0m	76 Δ	1.0uZb	35 Z	6.0 Z	ME	TO18	A		
22	2N870	500m	50M\$Δ	2.8m	\$J	100	60	7.0	10n	30 Δ	5.0	1.0m	30 Δ	500nZb	30 Z	1.2 Z	∅	TO18	A		
23	2N911	500m	50M\$Δ	2.8m	\$J	100	60	7.0	25n	36 Δ	5.0	1.0m	36 Δ	50uZ	1.0k	5.0pZ	∅	TO18	A		
24	JAN2N911	500m	50M\$Δ	2.8m	\$J	100	60	7.0	15n	36 Δ	5.0	1.0m	40 Δ	50uZ	1.0kZ	1.7 Zb	∅	TO18	A		
25	2N981	500m	50M\$Δ	2.8m	\$A	80	80	8.0	100m	1.0u	5.0	1.0m	36 Δ	1.0uZb	80 Z	10 Z	∅	TO18	A		
26	2N2223*	500m	50M\$Δ	2.8m	\$J	100	60	7.0	500m	10n	5.0	1.0m	40 Δ	500nZb	30 Z	3.0 Z	∅	L2t	A		
27	2N2223A*	500m	50M\$Δ	2.8m	\$J	100	60	7.0	500m	10n	5.0	1.0m	40 Δ	500nZb	30 Z	3.0 Z	∅	L2t	A		
28	2N2414	500m	50M\$Δ	2.8m	\$J	60	28	5.0	500m	25n	10	1.0m	50 Δ	1.0uZb	8.0 Z	5.0 Z	∅	L2t	A		
29	2N2427	500m	50.M	2.8m	\$J	40	4.0	4.0	50m	50u	3.0	.01m	20 †	500nZb	34 Z	5.0 Z	∅	TO18	A		
30	2N2645	500m	50M\$Δ	2.8m	\$J	75	50	7.0	10n	10n	5.0	1.0m	75 Δ	500nZb	34 Z	5.0 Z	∅	TO18	A		
31	2N3241A	500m	50M\$Δ	3.0m	\$S	30	25	7.5	200m	10u	12	10m	100 Δ	350uZ	1kZ	2.0pZ	∅	TO104	A		
32	2N3242A	500m	50M\$Δ	3.0m	\$S	40	40	8.0	300m	10n	12	10m	125 Δ	350uZ	1.5k	2.0pZ	∅	TO104	A		
33	2N4068	500m	50M\$Δ	3.3m	\$S	150	150	5.0	200m	0.5u	10	30m	30 Δ	3.5pZ	3.5pZ	3.5pZ	∅	TO104	A		
34	2N5184	500m	50M\$Δ	3.3m	\$S	150	150	5.0	50m	10u	10	50m	30 Δ	3.5pZ	3.5pZ	3.5pZ	∅	TO104	A		
35	40397	500m	50.MS	3.3m	\$J	25	7.5	7.5	200m	10u	12	10m	200	120u	1.2k	2.5	PE	R123	A		
36	40398	500m	50.MS	3.3m	\$J	25	7.5	7.5	200m	10u	12	10m	200	75u	600	1.2	PE	R123	A		
37	40399	500m	50.MS	3.3m	\$J	18	7.0	7.0	200m	50u	12	10m	375	120u	1.2k	2.5	PE	R123	A		
38	40400	500m	50.MS	3.3m	\$J	18	7.0	7.0	200m	50u	12	10m	200	75u	600	1.2	PE	R123	A		
39#	BCW25*	500m	50M	2.8m	\$S	60	50	5.0	500m	100n	5.0	100u	25 † Δ	15pZ	15pZ	15pZ	PL*	L2	A		
40#	BCW26	500m	50M	2.8m	\$S	60	50	5.0	500m	100n	5.0	100u	25 † Δ	15pZ	15pZ	15pZ	PL*	L2	A		
41#	BCW50	500m	50M	1.0m	\$S	120	120	5.0	200m	10n	10	10m	35 †	15pZ	15pZ	15pZ	PL*	L2	A		
42	MD1T1893	500m	50M\$	2.8m	\$A	120	80	7.0	10n	10n	10	50m	2.5 †	15pZ	15pZ	15pZ	PL*	TO18	A		
43	TN80	500m	50M\$Δ	2.8m	\$J	30	20	5.0	1.0n	1.0n	1.0	100u	75 † Δ	10pZ	10pZ	10pZ	PE	TO18	A		
44	2N718A	500m	60M\$Δ	350m	\$J	75	32	7.0	10n	10n	5.0	1.0m	100 Δ	500nZb	8.0 Z	3.0 Z	∅	TO18	A		
45	JAN2N718A	500m	60M\$Δ	2.8m	\$J	75	30	7.0	500m	10n	5.0	1.0m	100 Δ	500nZb	8.0 Z	1.5 Z	∅	TO18	A		
46	JAN2N720A	500m	60M\$Δ	2.8m	\$J	120	80	7.0	500m	10n	5.0	1.0m	100 Δ	500nZb	1.5kZ	6.0pZ	∅	TO18	A		
47	2N735A	500m	60M\$Δ	2.8m	\$S	80	60	6.0	50m	5.0n	5.0	5.0m	40 Δ	1.5kZ	6pZ	6pZ	∅	TO18	A		
48	2N739A	500m	60M\$Δ	3.4m	\$S	125	80	8.0	50m	5n	5.0	5.0m	40 Δ	1.5kZ	6pZ	6pZ	∅	TO18	A		
49	JAN2N757A	500m	60M\$Δ	2.8m	\$S	75	60	6.0	100m	10u	5.0	1.0m	18 Δ	1.0uZb	80 Z	10 Z	∅	TO18	A		
50	JAN2N759A	500m	60M\$Δ	2.8m	\$S	75	60	8.0	100m	10u	5.0	1.0m	36 Δ	1.0uZb	80 Z	10 Z	∅	TO18	A		
51	JAN2N760A	500m	60M\$Δ	2.8m	\$S	75	60	8.0	100m	10u	5.0	1.0m	76 Δ	1.0uZb	80 Z	10 Z	∅	TO18	A		
52	2N871	500m	60M\$Δ	2.8m	\$J	100	60	7.0	10n	10n	5.0	1.0m	50 Δ	300nZb	30 Z	1.5 Z	∅	TO18	A		
53	JAN2N910	500m	60M\$Δ	2.8m	\$J	100	60	7.0	15n	5.0	5.0	1.0m	80 Δ	100uZ	1.6kZ	3.0 Zb	∅	TO18	A		
54	2N2060*	500m	60M\$Δ	2.9m	\$J	100	60	7.0	500m	2n	5.0	1.0m	50 Δ	16uZ	4kZ	15pZ	∅*	L2t	A		
55	2N2060A*	500m	60M\$Δ	3.4m	\$J	100	60	7.0	500m	2n	5.0	1.0m	50 Δ	16uZ	4kZ	15pZ	∅*	L2t	A		
56	2N2060B*	500m	60M\$Δ	2.9m	\$J	100	60	7.0	500m	2n	5.0	1.0m	50 Δ	16uZ	4kZ	15pZ	∅*	L2t	A		
57#	2SC848	500m	60.MS	3.3m	\$J	30	20	5.0	200m	10u	4.0	1.0m	160 †	16uZ	4kZ	15pZ	∅*	L2t	A		
58#	2SC849f	500m	60.MS	3.3m	\$J	30	20	5.0	300m	50u	4.0	1.0m	160 †	16uZ	4kZ	15pZ	∅*	L2t	A		
59	40231	500m	60M\$	3.3m	\$J	18	18	5.0	100m	500n	10	2.0m	175	22p	22p	22p	PL	R92	A		
60	40232	500m	60M\$	3.3m	\$J	18	18	5.0	100m	500n	10	2.0m	175	22p	22p	22p	PL	R92	A		
61	40233	500m	60M\$	3.3m	\$J	18	18	5.0	100m	250n	10	2.0m	175	22p	22p	22p	PL	R92	A		
62#	BC284	500m	60M\$	1.0m	\$S	40	40	5.0	200m	5n	10	10m	100 † Δ	60u	1.0k	1.5	PE	TO18	A		
63#	BC284A	500m	60M\$	2.8m	\$J	40	40	5.0	200m	5n	10	10m	100 † Δ	60u	1.0k	1.5	PE	TO18	A		
64#																					



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE IN FREE AIR W/°C	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #	# C O A D E			
				V <sub>ce0</sub> (V)	I <sub>c</sub> (A)	P <sub>tot</sub> (W)	BIAS			h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001	h <sub>fe</sub>	h <sub>oe</sub> (mhos)					h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001	
							V <sub>cb</sub> (V)		I <sub>e</sub> (A)												h <sub>fe</sub>
1	40354	500m	100mS	3.3m	5.0	150	5.0	100m	100	10m	55	1	2.8pS			R115	A				
2	BFX70*	500m	100mS	2.8m	5.0	100	6.0	500m	2.0m	5.0	80	9.0u	2.3k		DPL*	L2b	A				
3	BFX71*	500m	100mS	2.8m	5.0	100	6.0	500m	10m	5.0	125	200nb	27	900m	DPL*	L2b	A				
4	BFX72*	500m	100mS	2.8m	5.0	100	6.0	500m	10m	5.0	125	200nb	27	900m	DPL*	L2b	A				
5	BFX99*	500m	100mS	2.8m	5.0	100	6.0	500m	2.0m	5.0	50	16	4.0k	10		L2b	A				
6	BSX70	500m	100mS	2.8m	5.0	75	3.0	500u	10m	5.0	40	500n	34	3.0	25pS	PE	TO18	A			
7	BSX71	500m	100mS	2.8m	5.0	75	3.0	500u	10m	5.0	40	500n	34	3.0	25pS	PE	TO18	A			
8	D33D21	500m	100mS	4.0m	5.0	35	25	5.0	100n	2.0	60	2.0	2.0	5.0	15pS	PE	TO98	B			
9	D33D24	500m	100mS	4.5m	5.0	50	4.0	750m	2.0	2.0	60	2.0	2.0	5.0	15pS	PET	TO98	B			
10	NKT10339	500m	100mS	3.3m	5.0	45	30	5.0	0.1u	1.0	50	1.0	1.0	10p		TO18	A				
11	NKT10439	500m	100mS	3.3m	5.0	45	30	5.0	0.1u	1.0	100	1.0	1.0	10p		TO18	A				
12	TN54	500m	100mS	2.8m	5.0	75	45	800m	10m	5.0	55	200n	35	1.2	8.0p	PE	TO18	A			
13	TN60†	500m	100mS	2.8m	5.0	40	30	800m	20m	5.0	140	100n	27	3.2	8.0p	PE	TO18	A			
14	TN62†	500m	100mS	2.8m	5.0	40	30	800m	20m	5.0	50	900nb	26	3.2	8.0p	PE	TO18	A			
15	2N956	500m	110mS	2.8m	5.0	75	5.0	7.0	10m	5.0	50	500n	34	5.0	25pS	PE	TO18	A			
16	2N2895	500m	120mS	2.9m	5.0	120	65	7.0	2n	5.0	50	5.0	5.0	5.0	15pS	PL	TO18	A			
17	2N2896	500m	120mS	2.9m	5.0	140	90	7.0	0.1u	5.0	50	5.0	5.0	5.0	15pS	PL	TO18	A			
18	2N2898	500m	120mS	2.9m	5.0	120	65	1.0	2n	5.0	50	5.0	5.0	5.0	15pS	PL	TO46	A			
19	2N2899	500m	120mS	2.9m	5.0	140	90	1.0	0.1u	5.0	50	5.0	5.0	5.0	15pS	PL	TO46	A			
20	2N4384	500m	120mS	2.8m	5.0	40	30	800m	10m	5.0	10k	200n	32	3.2	8.0p		TO18	A			
21	2N4386	500m	120mS	2.8m	5.0	40	30	800m	10m	5.0	10k	200n	32	3.2	8.0p		TO18	A			
22	D33D25	500m	120mS	4.5m	5.0	50	40	750m	2.0	2.0	100	2.0	2.0	5.0	15pS	PET	TO98	B			
23	D33D30	500m	120mS	4.0m	5.0	70	60	750m	100n	2.0	100	2.0	2.0	5.0	15pS	PE	TO98	B			
24	2N1613/46	500m	130m	4.5m	5.0	75	5.0	500m	10m	1.0	80	1.0	1.0	10p	25pS	PLT	TO46	B			
25	D33D22	500m	135mS	4.5m	5.0	35	25	750m	100n	2.0	150	2.0	2.0	5.0	15pS	PE	TO98	B			
26	D33D26	500m	135mS	4.5m	5.0	50	40	750m	2.0	2.0	150	2.0	2.0	5.0	15pS	PE	TO98	B			
27	2N2463	500m	150mS	3.4m	5.0	100	60	8.0	2n	5.0	40	3.0u	800		5pS	PL	TO18	A			
28	2N2464	500m	150mS	3.4m	5.0	100	60	8.0	2n	5.0	70	6.0u	1.2k		5pS	PL	TO18	A			
29	2N2465	500m	150mS	3.4m	5.0	100	60	8.0	2n	5.0	120	9.0u	1.8k		5pS	PL	TO18	A			
30	2N2466	500m	150mS	3.4m	5.0	100	60	8.0	2n	5.0	170	12.0u	2.4k		5pS	PL	TO18	A			
31	25C27	500m	150m	4.0m	5.0	60		100m	1.0u	1.0	50			4.0p	ME	TO5	A				
32	25C797	500m	150mS	3.3m	5.0	60	35	500m	5.0u	2.0	30			5.0p	PE	TO5	A				
33	D33D27	500m	150mS	4.5m	5.0	50	40	750m	2.0	2.0	250	2.0	2.0	5.0	15pS	PET	TO98	B			
34	2N1711/46	500m	160m	4.5m	5.0	75	50	500m	10m	1.0	130	23u	4.4k	7.3	25pS	PL	TO46	B			
35	25C249	500m	170mS	2.0m	5.0	70	60	5.0	1.0u	6.0	60			3.2p	PL	TO5	A				
36	25C875	500m	170mS	2.0m	5.0	75	75	4.0	1.0u	6.0	100			5.0p	PL	TO39	A				
37	25C876	500m	170mS	2.0m	5.0	50	40	500m	1.0u	6.0	100			5.0p	PL	TO39	A				
38	JAN2N1493	500m	175mS	2.8m	5.0	100	#	4.5	1.0u	2.0	50			5.0p	PL	R81a	A				
39	2N752	500m	200mS	2.9m	5.0	85	45	8.0	1.0u	1.0	40			5pS	PL	TO18	A				
40	2N1682	500m	200mS	3.0m	5.0	25	12	3.0	5.0u	1.0	20			6pS	PL	TO5	A				
41	2N5845†	500m	200mS	4.5m	5.0	50	* 6.0	600m	500n	1.0	50			9.0pS	PL	TO92	A				
42	40458†	500m	200mS	3.3m	5.0	60	40	8.0	0.1u	1.0	175	75m	600	1.2	20pS	DPE	R123	A			
43	BFS59	500m	200mS	3.3m	5.0	60	30	5.0	1.0 #	100n	130	47u	450	1.5	15pS	PLT	X59	F			
44	BFS60	500m	200mS	3.3m	5.0	60	40	5.0	1.0 #	100n	130	47u	450	1.5	15pS	PLT	X59	F			
45	BFS61	500m	200mS	3.3m	5.0	80	60	5.0	1.0 #	100n	130	47u	450	1.5	15pS	PLT	X59	F			
46	BFW32†	500m	200mS	4.0m	5.0	30	5.0	700m	500n	1.0	40	250u	4.0k	6.0	7.0p	PE	TO18	A			
47	BSW26†	500m	200mS	2.9m	5.0	50	4.0	4.0	1.0u	2.0	20			10pS	PE	TO18	A				
48	MD2218*	500m	200mS	2.9m	5.0	60	30	5.0	20n	1.0	40			8.0p	AN	L17k	A				
49	MD2218A*	500m	200mS	2.9m	5.0	75	40	6.0	600m	15n	100			8.0p	AN	L17k	A				
50	MPSA05	500m	200mS	4.5m	5.0	60	60	4.0	500m	10n	50			6.0p	AN	TO92	A				
51	MPSA06	500m	200mS	4.5m	5.0	80	80	4.0	500m	10n	50			6.0p	AN	TO92	A				
52	MPSA13	500m	200mS	4.5m	5.0	30	30	1.0	300m	10n	5.0k			5.0p	AN	TO92	A				
53	MPSA14	500m	200mS	4.5m	5.0	30	30	1.0	300m	10n	5.0k			5.0p	AN	TO92	A				
54	NKT12329	500m	200mS	3.3m	5.0	30	20	4.0	500m	0.1u	100			8pS	PL	TO18	A				
55	NKT12429	500m	200mS	3.3m	5.0	30	20	4.0	500m	0.1u	100			8pS	PL	TO18	A				
56	25C796	500m	230mS	3.3m	5.0	40	30	2.0	500m	5.0u	15m			5.0p	PE	TO5	A				
57	2N1491	500m	250m	3.3m	5.0	30	30	1.0	100m	10u	50			5.0p	DPL	TO39	A				
58	2N2220	500m	250mS	3.3m	5.0	60	30	5.0	800m	10n	12			8.0p	PL	TO18	A				
59	2N2221	500m	250mS	3.3m	5.0	60	30	5.0	800m	10n	25			8.0p	PL	TO18	A				
60	JAN2N2221†	500m	250mS	3.3m	5.0	60	30	5.0	800m	10n	25			8.0p	PL	TO18	A				
61	2N2221A†	500m	250mS	3.3m	5.0	75	40	6.0	800m	0.1u	30			8pS	PL	TO18	A				
62	JAN2N2221A†	500m	250mS	3.3m	5.0	75	50	6.0	800m	10n	30			8.0p	PL	TO18	A				
63	2N2222	500m	250mS	3.3m	5.0	60	30	5.0	800m	10n	50			8.0p	PL	TO18	A				
64	JAN2N2222†	500m	250mS	3.3m	5.0	60	30	5.0	800m	10n	50			8.0p	PL	TO18	A				
65	JAN2N2222A†	500m	250mS	3.3m	5.0	75	50	6.0	800m	10n	50			8.0p	PL	TO18	A				
66	2N2539†	500m	250mS	2.9m	5.0	60	30	5.0	800m	25u	20			8pS	PL	TO18	A				
67	2N2540†	500m	250mS	2.9m	5.0	60	30	5.0	800m	25u	35			8pS	PL	TO18	A				
68	2N2790†	500m	250mS	3.3m	5.0	75	35	5.0	800m	10n	30			8.0p	PL	TO18	A				
69	2N2791†	500m	250mS	3.3m	5.0	75	35	5.0	800m	10n	75			8.0p	PL	TO18	A				
70	2N2792†	500m	250mS	3.3m	5.0	75	35	5.0	800m	10n	50			8.0p	PL	TO18	A				
71	2N3409*	500m	250mS	2.9m	5.0	60	30	5.0	500m	0.1u	40			8pS	PL	L2y	A				
72	2N3410*	500m	250mS	2.9m	5.0	60	30	5.0	500m	0.1u	40			8pS	PL	L2y	A				
73	2N3411*	500m	250mS	2.9m	5.0	60	30	5.0	500m	0.1u	40			8pS	PL	L2y	A				
74	2N3737†	500m	250mS	2.9m	5.0	75	50	5.0	1.5	20u	35			9pS	PL	TO46	A				
75	JAN2N3737†	500m	250mS	2.9m	5.0	75	50	5.0	1.5	250n	35			9.0p	PL	TO46	A				
76	2N4961†	500m	250mS	4.5m	5.0	80	80	6.5	1.0	10n	60			15pS	PL	TO39	A				
77	2N4963†	500m	250mS	4.5m	5.0	80	80	6.5	1.0	10n	60			15pS	PL	TO18	A				
78	JAN2N5581†	500m	250mS	2.2m	5.0	75	50	6.0	800m	10n	30			8.0p	PL	TO46	A				
79	JAN2N5582†	500m	250mS	2.2m	5.0	75	50	6.0	800m	10n	50			8.0p	PL	TO46	A				
80	2N5793†	500m	250mS	2.9m	5.0	75	40	6.0	600m	10n	25			8.0p							



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	T M E A M P X	ABS MAX RATINGS @25°C			MAX I <sub>cb</sub> @ MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUC-TURE	DWG Y200 s/a T0200 Ser.	# C O D E	
					V <sub>cb</sub> (V)	V <sub>ceo</sub> (V)	V <sub>ebo</sub> (V)		I <sub>c</sub> (A)	V <sub>cb</sub> (V)	I <sub>e</sub> (A)					h <sub>fe</sub>
								BIAS		COMMON EMITTER						
										hoe (mhos)	hie (Ω)	hre X.0001				
1	MPSH07	500m	400M	4.5m	TJ	30	30	3.0	50n	100	3.0m	20	150n	20k	T092	A
2	2N60121	500m	420M	4.0m	SJ	40	40	5.0	10n	100	1.0m	155	20k	X55a	A	
3	2N60161	500m	420M	4.0m	TJ	70	60	5.0	10n	100	1.0m	155	20k	X55a	A	
4	MPSH32	500m	440M	4.5m	SJ	40	30	4.0	50n	5.0	4.0m	35	20k	T092	C	
5	2N5851	500m	500M	2.9m	SJ	30	15	4.5	100m	1.0	10m	40	20k	T072	G	
6	2SC4231	500m	500M	4.5m	SJ	40	40	5.0	300m	1.0	20m	80	20k	T039	C	
7	2SC4251	500m	500M	2.8m	SJ	20	20	5.0	300m	1.0	20m	80	20k	T039	C	
8	MD2369*	500m	500M	2.8m	SJ	40	15	5.0	500m	30n	10m	40	20k	L66a	A	
9	MD2369A*	500m	500M	2.8m	SJ	40	15	5.0	500m	30n	10m	40	20k	L66a	A	
10	MD2369B*	500m	500M	2.8m	SJ	40	15	5.0	500m	30n	10m	40	20k	L66a	A	
11	MPSH08	500m	500M	4.5m	TJ	30	30	3.0	50n	100	3.0m	20	20k	T092	A	
12	SE5030B	500m	600M	4.5m	TJ	45	40	4.5	100n	150	7.0m	80	20k	T0105	C	
13	MPSH24	500m	620M	4.5m	TJ	40	30	4.0	100m	50n	100	8.0m	30	T092	C	
14	2N5852	500m	700M	2.9m	SJ	30	15	4.5	100m	1.0	10m	40	20k	T072	C	
15	MPSH34	500m	720M	4.5m	TJ	45	45	4.0	100m	50n	150	7.0m	40	T092	C	
16	ZTX327	500m	800M	3.3m	SJ	55	30	3.5	400m	20n	20	20	150n	X59	F	
17	JAN2N2060*	540m	60M	8.3m	SJ	100	60	7.0	20n	5.0	1.0m	50	40k	L2b	B	
18	2N3402	560m	4.4m	4.4m	SJ	25	25	5.0	500m	100n	2.0m	75	20k	X28	B	
19	2N3403	560m	4.4m	4.4m	SJ	25	25	5.0	500m	100n	2.0m	180	20k	X28	B	
20	2N3404	560m	4.4m	4.4m	SJ	50	50	5.0	500m	100n	4.5m	75	20k	X28	B	
21	2N3405	560m	4.4m	4.4m	SJ	50	50	5.0	500m	100n	4.5m	100	20k	X28	B	
22	2N4425	560m	4.5m	4.5m	SJ	40	40	5.0	500m	10u	4.5m	2.0m	180	X28	B	
23	CS4425	560m	4.5m	4.5m	SJ	40	40	5.0	500m	10u	4.5m	2.0m	180	R97a	A	
24	BSX721	575m	250M	1.7m	SA	100	100	3.0	1.0	1.0	150m	20	80p	T05	A	
25	2N4270	580m	3.3m	3.3m	SS	200	140	15	30m	10u	10m	200	5p	T05	A	
26	BC1001	590m	4.5m	4.5m	SJ	350	300	7.0	150m	0.6u	20	40	100p	T05	A	
27	2N5451	600m	7.7m	7.7m	SS	60	60	10	500m	25u	6.0	500m	15	T05	A	
28	JAN2N5451	600m	7.6m	7.6m	SS	60	60	10	500m	25u	6.0	500m	15	T05	A	
29	2N5461	600m	5.6m	5.6m	SS	30	30	6.0	800m	15u	6.0	500m	15	T05	A	
30	2N1564	600m	4.0m	4.0m	SS	80	60	5.0	50m	1.0u	5.0	20	1.2k	T05	A	
31	2N1565	600m	4.0m	4.0m	SS	80	60	5.0	50m	1.0u	5.0	40	1.5k	T05	A	
32	2N1566	600m	4.0m	4.0m	SS	80	60	5.0	50m	1.0u	5.0	80	1.8k	T05	A	
33	2N1572	600m	4.0m	4.0m	SS	125	80	5.0	50m	1.0u	5.0	20	1.2k	T05	A	
34	2N1573	600m	4.0m	4.0m	SS	125	80	5.0	50m	1.0u	5.0	40	1.5k	T05	A	
35	2N1574	600m	4.0m	4.0m	SS	125	80	5.0	50m	1.0u	5.0	80	1.8k	T05	A	
36	2N1990	600m	4.8m	4.8m	SJ	100	30	3.0	1	10u	10	20	10p	T05	A	
37	2N1990S	600m	4.7m	4.7m	SS	100	30	3.0	1	10u	10	20	10p	T05	A	
38	BSX12A	600m	25	15	SA	25	15	4.0	1.0	1.0	10m	20	10p	T039	A	
39	SL301C*	600m	4.0m	4.0m	SA	25	10	4.3	50m	5.0	1.0m	20	10p	L44a	A	
40	SL301CE*	600m	4.0m	4.0m	SA	25	10	4.3	50m	5.0	1.0m	20	10p	L44b	A	
41	T1481	600m	6.0m	6.0m	SA	80	70	1.0	80m	10	5.0m	90	10p	R147	A	
42	DT16101	600m	50M	5.0m	SA	25	15	4.0	250m	8.0u	6.0	200m	10	T05	A	
43	2N28581	600m	1.0M	9m	SJ	100	80	10	3	4.0	1	20	10p	T05	A	
44	2N28591	600m	1.0M	9m	SJ	120	100	10	3	4.0	1	20	10p	T05	A	
45	DT10031	600m	1.0M	6.2m	SA	200	200	5.0	300m	6.0	6.0	36	10p	T05	A	
46	T1496	600m	1.0M	5.9m	SA	70	65	5.0	80m	2.0u	5.0	3.0m	10	T05	A	
47	2N1615	600m	2.0M	5.6m	SS	100	100	8.0	200m	2.0u	10	5.0m	25	T05	A	
48	2N2038	600m	2.0M	5.6m	SS	45	45	4.0	500m	15u	6.0	200m	12	T05	A	
49	2N2039	600m	2.0M	5.6m	SS	75	75	4.0	500m	15u	6.0	200m	12	T05	A	
50	2N2040	600m	2.0M	5.6m	SS	45	45	4.0	500m	15u	6.0	200m	30	T05	A	
51	2N2041	600m	2.0M	5.6m	SS	75	75	4.0	500m	15u	6.0	200m	30	T05	A	
52	2N551	600m	3.0M	5.6m	SS	60	60	6.0	200m	15u	6.0	50m	20	T05	A	
53	2N552	600m	3.0M	5.6m	SS	30	30	6.0	200m	15u	6.0	50m	20	T05	A	
54	2N1055	600m	3.0M	5.6m	SS	100	100	6.0	200m	15u	6.0	50m	20	500	T05	A
55	2N547	600m	4.0M	5.6m	SS	60	60	6.0	800m	15u	6.0	500m	20	T05	A	
56	2N548	600m	4.0M	5.6m	SS	30	30	6.0	800m	15u	6.0	500m	20	T05	A	
57	2N549	600m	4.0M	5.6m	SS	60	60	6.0	800m	15u	6.0	500m	20	T05	A	
58	2N550	600m	4.0M	5.6m	SS	30	30	6.0	800m	15u	6.0	500m	20	T05	A	
59	2N1052	600m	4.0M	3.4m	SJ	180	180	6.0	10u	6.0	200m	35	5p	T05	A	
60	2N1053	600m	4.0M	3.4m	SJ	200	200	6.0	10u	6.0	200m	35	5p	T05	A	
61	2N1054	600m	4.0M	3.4m	SJ	125	115	6.0	50u	20	100m	40	10p	T05	A	
62	2N1117	600m	4.0M	5.6m	SS	60	60	6.0	800m	15u	6.0	200m	40	10p	T05	A
63	2N2198	600m	4.0M	5.6m	SS	80	80	7.0	200m	15u	6.0	100m	35	120p	T05	A
64	2S711	600m	5.0M	833u	SA	40	40	8.0	200m	10u	10	200m	40	8.0	T05	A
65	2S712	600m	5.0M	833u	SA	40	40	8.0	200m	10u	10	200m	40	4.0	T05	A
66	N1X	600m	5.0M	4.0m	SA	80	75	5.0	50m	1.0	5.0	2.0m	20	4.0	T05	A
67	2N1116	600m	6.0M	5.6m	SS	60	60	6.0	800m	15u	6.0	500m	40	100p	T05	A
68	2SC65	600m	2.0M	3.4m	SA	130	130	3.0	50m	1.5u	20	5.0m	20	10p	T05	A
69	2N33881	600m	3.6M	4.0m	SA	125	100	6.0	2.5m	2.0u	1.5	2.5m	60	35p	T05	A
70	2N3389T	600m	3.6M	4.0m	SA	195	160	6.0	7.0m	2.0u	2.0	7.0m	60	35p	T05	A
71	2N1953	600m	4.0M	4.0m	SJ	20	20	3.0	1	7.0u	2.0	1.0m	70	45p	T05	A
72	2N1983	600m	4.0M	4.7m	SJ	50	25	5.0	1.0	5.0u	5.0	1.0m	35	45p	T05	A
73	2N1984	600m	4.0M	4.7m	SJ	50	25	5.0	1.0	5.0u	5.0	1.0m	15	45p	T05	A
74	2N1985	600m	4.0M	4.7m	SJ	50	25	5.0	1.0	5.0u	10	150m	60	35p	T05	A
75	2N1986	600m	4.0M	5.0m	SJ	50	25	5.0	1.0	5.0u	10	150m	20	35p	T05	A
76	2N1987	600m	4.0M	4.8m	SJ	50	25	5.0	1.0	5.0u	10	150m	20	35p	T05	A
77	2N1988	600m	4.0M	4.7m	SJ	100	45	5.0	1.0	5.0u	5.0	1.0m	20	20p	T05	A
78	2N1989	600m	4.0M	4.7m	SJ	100	45	5.0	1.0	5.0u	5.0	1.0m	10	20p		

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C	M E X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb0</sub> @MAX V <sub>cb</sub> (A)	TYPICAL h <sub>FE</sub> PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200	# E O A D E	
					BV <sub>cb0</sub> (V)	BV <sub>ceo</sub> (V)	BV <sub>ebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>FE</sub>	h <sub>oe</sub> (mhos)	h <sub>ie</sub> (Ω)	h <sub>re</sub> X.0001					
1	TRS401	600m	50MΔ 4.0m	SJ	400	400	6.0	2.0	4.0	50m	30	1#Δ				40p	ME	T05	A	
2	TRS425	600m	50MΔ 4.0m	SJ	425	425	6.0	3.0	4.0	50m	22	1#Δ				40p	ME	T05	A	
3	TRS450	600m	50MΔ 4.0m	SJ	450	450	6.0	2.0	4.0	50m	65	1#				14p	ME	T05	A	
4	TRS451	600m	50MΔ 4.0m	SJ	450	450	6.0	2.0	4.0	50m	30	1#Δ				40p	ME	T05	A	
5	TRS475	600m	50MΔ 4.0m	SJ	475	475	6.0	2.0	4.0	50m	22	1#Δ				40p	ME	T05	A	
6	TRS501	600m	50MΔ 4.0m	SJ	500	500	6.0	2.0	4.0	50m	30	1#Δ				40p	ME	T05	A	
7	TRS525	600m	50MΔ 4.0m	SJ	525	525	6.0	2.0	4.0	50m	22	1#Δ				40p	ME	T05	A	
8	TRS550	600m	50MΔ 4.0m	SJ	550	550	6.0	2.0	4.0	50m	22	1#Δ				40p	ME	T05	A	
9	TRS575	600m	50MΔ 4.0m	SJ	575	575	6.0	2.0	4.0	50m	22	1#Δ				40p	ME	T05	A	
10	TRS601	600m	50MΔ 4.0m	SJ	600	600	6.0	2.0	4.0	50m	30	1#Δ				40p	ME	T05	A	
11	TRS650	600m	50MΔ 4.0m	SJ	650	650	6.0	1.0	5.0	25m	25	1#Δ				14p	ME	T05	A	
12	TRS701	600m	50MΔ 4.0m	SJ	700	700	6.0	1.0	5.0	25m	25	1#Δ				14p	ME	T05	A	
13	TRS750	600m	50MΔ 4.0m	SJ	750	750	6.0	1.0	5.0	25m	25	1#Δ				14p	ME	T05	A	
14	TRS801	600m	50MΔ 4.0m	SJ	800	800	6.0	1.0	5.0	25m	25	1#Δ				14p	ME	T05	A	
15	JAN2N6971	600m	60MΔ 4.0m	SJ	60	40	5.0	100	1.0	150m	40	1#Δ				25p	ME	T05	A	
16	2N1944	600m	60MΔ 4.0m	SJ	20	20	5.0	1.0	2.0	1.0m	300	↑				20p	ME	T05	A	
17	2N1945	600m	60MΔ 4.0m	SJ	30	30	8.0	1.0	2.0	1.0m	300	↑				20p	ME	T05	A	
18	2N1946	600m	60MΔ 4.0m	SJ	40	40	10	1.0	2.0	1.0m	300	↑				20p	ME	T05	A	
19	2N1947	600m	60MΔ 4.0m	SJ	20	20	5.0	1.0	2.0	100m	650	↑				20p	ME	T05	A	
20	2N1948	600m	60MΔ 4.0m	SJ	30	30	8.0	1.0	2.0	100m	650	↑				20p	ME	T05	A	
21	2N1949	600m	60MΔ 4.0m	SJ	40	40	10	1.0	2.0	100m	650	↑				20p	ME	T05	A	
22	2N1950	600m	60MΔ 4.0m	SJ	20	20	5.0	1.0	2.0	100m	375	↑				20p	ME	T05	A	
23	2N1951	600m	60MΔ 4.0m	SJ	30	30	8.0	1.0	2.0	100m	375	↑				20p	ME	T05	A	
24	2N1952	600m	60MΔ 4.0m	SJ	40	40	10	1.0	2.0	100m	375	↑				20p	ME	T05	A	
25#	N2XA	600m	60MΔ 4.0m	SJ	60	40	5.0	50m	1.0	3.0	50m	40				ME	T05	A		
26	2N696†	600m	64MΔ 4.0m	SS	60	40	5.0	1.0	1.0	150m	30	#Δ				35p	ME	T05	A	
27	2N1252†	600m	64MΔ 4.0m	SJ	30	20	5.0	1.0	1.0	150m	25	1#				45p	ME	T05	A	
28	2N3881	600m	70MΔ 3.3m	SS	60	35	5.0	1.0	1.0	5.0	200	50	Δ			25p	ME	T05	A	
29	TRS100	600m	70MΔ 4.5m	SJ	150	135	5.0	1.0	3.5	60m	40	↑				15p	ME	T05	A	
30	TRS101	600m	70MΔ 4.5m	SJ	180	115	5.0	1.0	5.0	60m	35	↑				15p	ME	T05	A	
31	2N697†	600m	80MΔ 4.0m	SJ	60	40	5.0	1.0	1.0	150m	40	#Δ		12u	2.2k	3.6	35p	ME	T05	A
32	2N1253†	600m	80MΔ 4.0m	SJ	30	20	5.0	1.0	1.0	150m	45	1#				45p	ME	T05	A	
33#	ZSC497	600m	80MΔ 5.0m	SJ	100	80	5.0	800m	1.0	2.0	200m	70				30p	PL	T039	G	
34#	ZSC498	600m	80MΔ 5.0m	SJ	80	50	5.0	800m	1.0	2.0	200m	70				30p	PL	T039	G	
35#	BFW29	600m	80MΔ 4.0m	SJ	50	30	6.0	400m	1.0	1.0	150m	70	↑		50u	650	25p	PL	T05	A
36#	ZT696	600m	80MΔ 4.0m	SA	60	40	5.0	500m	1.0	1.0	150m	40	↑			20p	PL	T05	A	
37	2N1838†	600m	90MΔ 4.0m	SJ	45	20	5.0	500m	1.5	1.0	100m	40	Δ			27p	ME	T05	A	
38	2N1839†	600m	90MΔ 4.0m	SJ	45	20	4.5	500m	1.5	1.0	100m	12	Δ			27p	ME	T05	A	
39	2N1840†	600m	90MΔ 4.0m	SJ	25	15	5.0	500m	300	1.0	150m	10	Δ			27p	ME	T05	A	
40#	BFX74	600m	90MΔ 3.4m	SJ	50	35	5.0	500m	1.0	1.0	5.0	60		600nb	6.2	2.0	31p	DPL	T05	A
41#	BSY24†	600m	90MΔ 5.0m	SA	40	20	6.0	500m	1.0m	9.0	2.0	30				23p	PE	T05	A	
42	2N1566A	600m	100MΔ 4.0m	SS	80	60	8.0	100m	50	5.0	1.0	60	Δ			6p	PE	T05	A	
43	2N1958†	600m	100MΔ 4.0m	SJ	60	40	5.0	500m	50	1.0	150m	20	Δ			18p	ME	T05	A	
44	2N1958A†	600m	100MΔ 4.0m	SJ	60	40	5.0	1	2.0	1.0	150m	20	Δ			14p	ME	T05	A	
45	2N1959†	600m	100MΔ 4.0m	SJ	60	40	5.0	500m	50	1.0	150m	40	Δ			14p	ME	T05	A	
46	2N1959A†	600m	100MΔ 4.0m	SJ	60	40	5.0	1	2.0	1.0	150m	40	Δ			14p	ME	T05	A	
47	2N2237†	600m	100MΔ 5.0m	SS	40	20	6.0	500m	0.5	1.0	100m	40	#Δ			35p	ME	T05	A	
48	2N2380†	600m	100MΔ 4.0m	SJ	80	40	5.0	500m	4.0	5.0	150m	20	#Δ			14p	ME	T05	A	
49	2N2380A†	600m	100MΔ 4.0m	SJ	80	40	5.0	500m	4.0	5.0	150m	20	#Δ			14p	ME	T05	A	
50#	ZSC509	600m	100MΔ 4.0m	SJ	35	30	5.0	500m	100	2.0	500m	100	↑			11p	EP	T05	A	
51#	BFW37	600m	100MΔ 4.0m	SJ	130	130	5.0	200m	5n	15	6.0	60		50u	600	6.0p	PE	T05	A	
52#	ZT697	600m	100MΔ 4.0m	SA	60	40	5.0	500m	1.0	1.0	150m	75	↑			20p	PL	T05	A	
53#	ZSC983	600m	120MΔ 4.0m	SJ	250	150	5.0	500m	100	5.0	10m	80	↑			5.5p	PL	u83	B	
54#	ZSC1166	600m	120MΔ 4.0m	SJ	70	50	5.0	200m	100	1.0	50m	100	↑			20p	PL	u83	B	
55#	A777	600m	120MΔ 4.5m	SJ	100	60	5.0	50m	4.0m*							1.8p	PL	T039	A	
56#	A778	600m	120MΔ 4.5m	SJ	185	115	5.0	50m	4.0m*							1.8p	PL	T039	A	
57#	A779	600m	120MΔ 4.5m	SJ	250	115	5.0	50m	4.0m*							1.8p	PL	T039	A	
58#	BF177	600m	120MΔ 4.5m	SJ	85	60	5.0	50m	4m*	20	15m	20	Δ			2.5p	PL	T05	A	
59#	BF178	600m	120MΔ 4.5m	SJ	145	115	5.0	50m	4m*	20	30m	20	Δ			2.5p	PL	T05	A	
60#	BF179	600m	120MΔ 4.5m	SJ	225	115	5.0	50m	4m*	15	20m	20	Δ			2.5p	PL	T05	A	
61#	BFW36	600m	120MΔ 4.0m	SJ	180	180	6.0	400m	100	2.0	200m	50	↑	40u	500	25p	PE	T05	A	
62	2N1837†	600m	140MΔ 4.0m	SJ	80	30	8.0	500m	50	1.0	150m	40	Δ			18p	ME	T05	A	
63	2N1644	600m	150MΔ 4.0m	SJ	60		5.0		1.0	1.0	150m	75	↑			20p	PL	T05	A	
64	2N2086†	600m	150MΔ 4.0m	SJ	120	80	5.0	500m	2.0	1.5	150m	20	Δ			12p	ME	T05	A	
65	2N2087†	600m	150MΔ 4.0m	SJ	120	80	5.0	500m	2.0	1.0	150m	40	Δ			12p	ME	T05	A	
66	2N2309	600m	150MΔ 5.0m	SJ	30	30	5.0		5.0	4.0	200	50	↑	b	150	25p	PL	T05	A	
67	2N2479†	600m	150MΔ 4.0m	SA	80	40	5.0	500m	4.0	1.5	150m	30	Δ			14p	PE	T05	A	
68#	ZSC188	600m	150MΔ 4.0m	SJ	40	25	3.0	500m	1.0	6.0	10m	50	↑			9.0p	PE	T05	A	
69#	ZSC189†	600m	150MΔ 4.0m	SJ	60	40	5.0	500m	1.0	1.0	150m	40	↑			9.0p	PL	T05	A	
70	ZSC247	600m	150MΔ 4.0m	SJ	100		3.0	100m	1.0	6.0	2.0m	60				3.0p	PL	T05	A	
71#	ZSC500	600m	175MΔ 6.7m	SJ	120	120	5.0	20m	1.0	3.0	3.0m	140		100nb	28	800m	3.5p	PL	T039	A
72#	ZSC46†	600m	180MΔ 4.0m	SJ	60	50	5.0	300m	100	6.0	1.0m	50		100nb	28	800m	15p	ME	T05	A
73#	ZSC48†	600m	180MΔ 4.9m	SJ	120	80	5.0	300m	100	6.0	1.0m	50				15p	ME	T05	A	
74#	ZSC190†	600m	180MΔ 4.0m	SJ	60	40	5.0	500m	1.0	1.0	150m	75	↑			9.0p	PL	T05	A	
75	2N2478†	600m	200MΔ 4.0m	SA	120	40	5.0	500m	2.0	1.5	150m	30	Δ			12p	PE	T05	A	
76	2N3426†	600m	200MΔ 3.4m	SJ	25	12	4.0	1	100	5.0	10m	20	#Δ			25p	PL	R94	A	
77#	ZSC588	600m	200MΔ 4.0m	SJ	30	20	5.0	100m	1.0	1.0	10m	100				5p	PE	T0		

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	MAX. COLL. DISS. @25°C (W)	DERATE (Hz)	IN FREE AIR W/°C	M E X P	ABS MAX RATINGS @25°C				MAX. lcb0 @MAX Vcb (A)	TYPICAL 'h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG #/s/a TO200 Ser.	# C O A D E		
						BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		Vcb (V)	Ie (A)	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)						
1#	SL303BE*	600m	400MΔ	4.0m	SA	30	12	4.6	50m	1.0n	5.0	100u	10 tΔ				2.0p	PE	L43b			
2#	SL303BT*	600m	400MΔ	4.0m	SA	30	12	4.6	50m	1.0n	5.0	100u	10 tΔ				2.0p	PE	L43a			
3#	SL354BE*	600m	400MΔ	4.0m	SA	30	12	4.6	50m	1.0n	5.0	100u	10 tΔ				2.0p	PE	L67			
4#	SL354BF*	600m	400MΔ	4.0m	SA	30	12	4.6	50m	1.0n	5.0	100u	10 tΔ				2.0p	PE	L67			
5	2N3303†	600m	450MΔ	4.0m	SA	25	12	4.0	1	30u	5.0	300m	60 #†				15p	PE	R83a			
6#	2SC998	600m	450MΔ	4.0m	SJ	40	40	4.0	400m	2.0u	5.0	50m	50 t				3p	PE	T039			
7	2N5236§	600m	500MΔ	3.4m	SJ	40	20	4.0	150m	1.0u	5.0	50m	30 t#Δ				5.0p	PE	T039	A		
8#	2SC991	600m	500MΔ		SJ	36	36	4.0	400m	1.0u	3.0	100m	30 t				5.0p	PE	T039	A		
9#	2SC992	600m	500MΔ		SJ	36	36	4.0	600m	1.0u	3.0	100m	30 t				5.0p	PE	T039	A		
10#	2SC994	600m	500MΔ		SJ	36	15	3.0	100m	1.0u	3.0	100m	70 t				4p	DPE	T05	A		
11	S15659	600m	500MΔ	3.4m	SJ	40	20	4.0	.05u	5.0	50m	70 t#				15p	DPE	R83a	A			
12	2N5065†	600m	550MΔ	3.4m	SJ	25	15	4.0	500m	100u	5.0	300m	50 t#				15p	DPE	T05	A		
13#	BFY63	600m	750MΔ	3.4m	SJ	30	15	4.0	150m	0.5u	5.0	50m	70 t#				2.8p	DPE	T05	A		
14	2N3137	600m	800M	3.4m	SJ	40	20	4.0	150m	0.5u	10	50m	70 t#				3.5p	PE	T05	A		
15#	BFW19	600m	800M	3.4m	SJ	40	20	4.0	300m	0.1u	5.0	50m	70 t#				3.5p	PE	T05	A		
16#	2SC823	600m	1.0GΔ		SJ	30	19	3.0	60m	1.0u	1.0	100t				1.3p	PE	T033				
17#	2SC1164	600m	1.4G§		SJ	40	35	3.0	300m	100n	10	15m	15 tΔ				3.0p	EP	R115a	G		
18	TIS92	625m		5.0m	SJ	40	40	5.0	400m	10u	2.0	50m	160 t					PEt	X55	A		
19	TIS100	625m	80M§	5.0m	SS	180	180	5.0	100m	50n	1.0	1.0m	40 t				2.8p	PEt	X55	A		
20	TIS101	625m	80M§	5.0m	SS	150	150	5.0	100m	50n	1.0	1.0m	45 t				2.8p	PEt	X55	A		
21	2N5961	625m	100MΔ	5.0m	SS	60	60	8.0	50m	2.0u	5.0	10m	150 Δ				4.0p	PL	T092	A		
22	2N5962	625m	100MΔ	5.0m	SS	45	45	8.0	50m	2.0u	5.0	10m	600 Δ				4.0p	PL	T092	A		
23	2N5963	625m	150MΔ	4.3m	SS	30	30	8.0	50m	2.0u	5.0	10m	1.2k Δ				4.0p	PL	T092	A		
24#	BFY65	630m	50MΔ	4.3m	SJ	100	90	7.0	50m	1.0u	1.0	2.0m	30 tΔ					PL	T05			
25#	2SC216	650m	4.3m	SJ	50	50	5.0	300m	1.0u	1.0	50m	50 t						PLΔ	T05			
26#	2SC217	650m	4.3m	SJ	25	25	5.0	300m	1.0u	1.0	50m	50 t						PLΔ	T05			
27#	2SC218	650m	4.3m	SJ	80	80	5.0	300m	1.0u	1.0	50m	50 t						PLΔ	T05			
28#	2SC226	650m	4.3m	SJ	50	50	5.0	700m	1.0u	1.0	100m	50 t						PEΔ	T05			
29#	2SC227	650m	4.3m	SJ	25	25	5.0	700m	1.0u	1.0	100m	50 t						PEΔ	T05			
30#	2SC228	650m	4.3m	SJ	80	80	5.0	700m	1.0u	1.0	100m	50 t						PEΔ	T05			
31#	2SC231	650m	4.3m	SJ	50	50	5.0	700m	1.0u	1.0	150m	40 t						EMΔ	T05			
32#	2SC232	650m	4.3m	SJ	25	25	5.0	700m	1.0u	1.0	150m	40 t						EMΔ	T05			
33#	2SC233	650m	4.3m	SJ	80	80	5.0	700m	1.0u	1.0	150m	40 t						EMΔ	T05			
34#	2SC210	650m	150M§	4.3m	SJ	50	50	5.0	500m	1.0u	1.0	20m	50				15p	PL	T05			
35#	2SC211	650m	150M§	4.3m	SJ	25	25	5.0	500m	1.0u	1.0	20m	50				15p	PL	T05			
36#	2SC212	650m	150M§	4.3m	SJ	80	80	5.0	500m	1.0u	1.0	20m	50				15p	PL	T05			
37#	2SC220	650m	150M§	4.3m	SJ	50	50	7.0	700m	1.0u	1.0	20m	50				15p	PE	T05			
38#	2SC221	650m	150M§	4.3m	SJ	25	25	7.0	700m	1.0u	1.0	20m	50				15p	PE	T05			
39#	2SC222	650m	150M§	4.3m	SJ	80	80	7.0	700m	1.0u	1.0	20m	50				15p	PE	T05			
40#	2SC200	650m	350M§	4.3m	SJ	40	40	5.0	300m	0.2u	6.0	1.0m	60				4.0p	PE	T05			
41#	2SC201	650m	350M§	4.3m	SJ	20	20	3.0	300m	1.0u	6.0	1.0m	60				4.0p	PE	T05			
42#	2SC202	650m	350M§	4.3m	SJ	80	80	5.0	300m	0.2u	6.0	1.0m	60				4.0p	PE	T05			
43#	2SC824	680m	1.0GΔ	2.2u	SJ	50	25	3.0	120m	10u	10	30m	100 t				3p	PE	T033			
44#	BF117	680m	80M§	4.5m	SJ	140	140	5.0	100m	10n	10	30m	25 tΔ				2.0p	PE	T039	A		
45#	BF137	680m	95M§	4.5m	SJ	160	160	5.0	100m	10n	10	30m	25 tΔ				2.0p	PE	T039	A		
46#	H55810	700m	6.3m	TJ	35	25	5.0	750m	100n	2.0	2.0m	60 tΔ					15p	PE	X103	A		
47	H55812	700m	6.3m	TJ	35	25	5.0	750m	100n	2.0	2.0m	150 tΔ					15p	PE	X103	A		
48	H55814	700m	6.3m	TJ	50	40	5.0	750m	100n	2.0	2.0m	60 tΔ					15p	PE	X103	A		
49	H55816	700m	6.3m	TJ	50	40	5.0	750m	100n	2.0	2.0m	100 tΔ					15p	PE	X103	A		
50	H55818	700m	6.3m	TJ	50	40	5.0	750m	100n	2.0	2.0m	150 tΔ					15p	PE	X103	A		
51	H55820	700m	6.3m	TJ	70	60	5.0	750m	100n	2.0	2.0m	60 tΔ					15p	PE	X103	A		
52	H55822	700m	6.3m	TJ	70	60	5.0	750m	100n	2.0	2.0m	100 tΔ					15p	PE	X103	A		
53	2N5964	700m	1.0M§	6.3m	TJ	160	150	5.0	600m	50n	5.0	1.0m	50 tΔ				4.0p	PE	T0105	A		
54	2N5965	700m	1.0M§	6.3m	TJ	200	180	5.0	600m	50n	5.0	1.0m	50 tΔ				4.0p	PE	T0105	A		
55#	2SC827	700m	2.0M§	4.8m	SJ	200	200	4.0	100m	5.0u	10	50m	360 t*				6.0p	D	T05	A		
56#	2SC826	700m	2.0M§	4.8m	SJ	100	60	6.0	300m	1.0u	4.0	50m	100 t*				10p	D	T05	A		
57#	2SC827†	700m	2.0M§	4.8m	SJ	100	60	6.0	500m	1.0u	4.0	50m	100 t*				10p	D	T05	A		
58#	BC144	700m	40MΔ	4.0m	SJ	60	40	5.0	0.2u	1.0	300m	40 t					25p	DPE	T05			
59#	BFY67A	700m*	60MΔ	4.5m	SJ	60	40	5.0	1.0 #	75n	10	5.0m	35 Δ					PLΔ	T05			
60#	BFY67C	700m*	60MΔ	4.5m	SJ	50	25	5.0	1.0 #	20n	10	5.0m	30 Δ					PLΔ	T05			
61#	BFY68A	700m*	70MΔ	4.5m	SJ	60	40	5.0	1.0 #	75n	10	5.0m	70 Δ					PLΔ	T05			
62#	BFY33	700m*	80M§	4.5m	SJ	50	30	5.0	500m	0.2u	10	5.0m	35 Δ				18p	PL	T05			
63#	BFY34	700m*	80M§	4.5m	SJ	75	50	5.0	500m	0.1u	10	5.0m	35 Δ				18p	PL	T05			
64#	D33D29J1	700m	80MΔ	5.6m	SJ	70	60	5.0	750m	100n	2.0	2.0m	60 tΔ				15p	PE	X28	B		
65#	2SC798	700m	90M§	4.8m	SJ	60	35	4.0	1.5	5.0u	20	15m	50				9.0p	DPL	T05	A		
66#	BFX68	700m	100M§	4.0m	SJ	75	50	7.0	0.1u	5.0	1.0m	115				23 u	4.4	7.3	18p	DPL	A	
67#	BFY46	700m*	100M§	4.5m	SJ	75	50	7.0	500m	0.1u	10	5.0m	70 Δ				18p	PL	T05			
68#	BSX95†	700m*	100MΔ	4.5m	SJ	75	30	7.0	500m	10n	5.0	1.0m	40 Δ				500n	34	3.0	25p	PE	A
69#	BSX98†	700m*	100MΔ	4.5m	SJ	75	30	7.0	500m	10n	5.0	1.0m	50 Δ				500n	34	5.0	25p	PE	A
70#	D33D21J1	700m	100MΔ	5.6m	SJ	35	25	5.0	750m	100n	2.0	2.0m	60 tΔ					15p	PE	X28	B	
71#	D33D30J1	700m	120MΔ	5.6m	SJ	70	60	5.0	750m	100n	2.0	2.0m	100 tΔ					15p	PE	X28	B	
72#	D33D22J1	700m	135MΔ	5.6m	SJ	35	25	5.0	750m	100n	2.0	2.0m	150 tΔ					15p	PE	X28	B	
73#	TIS113†	700m	200MΔ	5.6m	SS	50	30	6.0	500m	1.7u	1.0	100m	60 t#Δ				12p	PEt	X55	A		
74	TIS114†	700m	200MΔ	5.6m	SS	50	30	6.0	500m	1.7u	1.0	100m	50 t#Δ				12p	PEt	X55	A		
75	TIS115†	700m	200MΔ	5.6m	SS	80	50	6.0	500m	1.7u	1.0	100m	60 t#Δ				10p	PEt	X55	A		

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL DISS. @25°C (W)	2 fab (Hz)	DERATE IN FREE AIR W/°C	T M A M X P	ABS MAX RATINGS @25°C				MAX. I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C E O A D E
						V <sub>bcvo</sub> (V)	V <sub>bcvo</sub> (V)	V <sub>bebo</sub> (V)	I <sub>c</sub> (A)		V <sub>cb</sub> (V)	I <sub>e</sub> (A)	h <sub>fe</sub>				
1#	BC141-10*	750m	50MΔ	5.0m	Δ	100	60	7.0	1.0	100n	1.0	1.0	20 †	25p	PEΔ	T039	A
2#	BC141-16*	750m	50MΔ	5.0m	Δ	100	60	7.0	1.0	100n	1.0	1.0	30 †	25p	PEΔ	T039	A
3#	2SC116T	750m	60MΔ	5.0m	Δ	75	50	5.0	200m	5.0m	2.0	200m	8.0 †Δ			T039	A
4#	2SC116	750m	70MΔ	5.0m	Δ	50	50	5.0	200m	1.0u	6.0	10m	3.5		EM	T05	∅
5#	2SC154H	750m	80MΔ	6.8m	Δ	120	70	5.0	100m	100u	6.0	10m	35 †Δ			T039	A
6#	2N5856	750m	100MΔ	6.8m	Δ	60	60	5.0	1.0	100n	1.0	10m	50 †Δ#	15p	ME	T0105	A
7#	2N5858	750m	100MΔ	6.8m	Δ	80	80	5.0	1.0	100n	1.0	10m	50 †Δ#	15p	ME	T0105	A
8#	2SC150	750m	100MΔ	6.8m	Δ	20	20	5.0	100m	1.0u	6.0	10m	50	7.0p	ME	T05	∅
9#	2SC154C	750m	120MΔ	6.8m	Δ	200	200	6.0	100m	100m	1.0	25m	30 †Δ			T039	∅
10#	ZT68	750m	120MΔ	4.3m	Δ	100	80	5.0	500m	50n	6.0	10m	35 †Δ	8.0p	PE	T05	∅
11#	2SC151	750m	130MΔ	4.0	Δ	40	40	5.0	100m	1.0u	6.0	10m	50	7.0p	ME	T05	∅
12#	2SC150T	750m	150MΔ	5.0	Δ	50	25	5.0	100m	1.0u	6.0	10m	7.0	7.0p	EM	T05	∅
13#	2SC152	750m	160MΔ	6.0	Δ	60	60	5.0	100m	1.0u	6.0	10m	50	7.0p	ME	T05	∅
14#	2SC805	750m	160MΔ	5.0m	Δ	100	100	5.0	200m	1.0u	5.0	30m	100 †	3p	D	T05	∅
15#	2SC352	750m	170MΔ	5.0m	Δ	50	30	5.0	100m	20u	3.0	1.0m	90 †	3.0p	PE	T05	∅
16#	2SC352A	750m	170MΔ	5.0m	Δ	50	30	5.0	100m	20u	3.0	1.0m	90 †	4.5p	D	T05	∅
17#	2SC353	750m	170MΔ	5.0m	Δ	100	60	5.0	100m	20u	3.0	1.0m	90 †	3.0p	D	T05	∅
18#	2SC353A	750m	170MΔ	5.0m	Δ	100	60	5.0	100m	20u	3.0	1.0m	90 †	4.5p	D	T05	∅
19#	2SC470	750m	170MΔ	5.0m	Δ	150	130	5.0	100m	1.0u	5.0	3.0m	60 †	2.0p	PE	T05	∅
20#	2SC31	750m	200MΔ	5.0m	Δ	60	25	5.0	200m	1.0u	1.0	10m	35 †	4.0p	PE	T05	∅
21#	2SC456	750m	200MΔ	6.3m	Δ	50	50	1.5	600m	1.0u	6.0	80m	20 †	1.0p	PE	T05	A
22#	2SC501	750m	200MΔ	5.0m	Δ	60	30	5.0	300m	1.0u	1.0	10m	80	7p	DPL	T039	A
23#	2SC507	750m	200MΔ	5.0m	Δ	170	120	5.0	80m	1.0u	5.0	10m	70 †	5.0p	DPL	T039	A
24#	2SC589	750m	200MΔ	5.0m	Δ	165	150	5.0	80m	2.0u	2.0	3.0m	40	4p	D	T05	∅
25#	2SC594	750m	200MΔ	5.0m	Δ	60	30	5.0	200m	1.0u	1.0	10m	60	4.0p	PE	T05	A
26#	2SC708	750m	200MΔ	5.0m	Δ	60	80	4.0	1	1	4.0	50m	35 †Δ			T039	∅
27#	2SC708A	750m	200MΔ	5.0m	Δ	90	50	4.0	1	1	4.0	50m	35 †Δ			T039	∅
28#	2SC154	750m	220MΔ	5.0m	Δ	120	70	5.0	100m	1.0u	1.0	10m	11	60p	DΔ	T05	∅
29#	2SC32	750m	250MΔ	5.0m	Δ	60	25	5.0	200m	1.0u	1.0	10m	60	4.0p	PE	T05	∅
30#	2SC58A	750m	250MΔ	6.3m	Δ	135	120	5.0	50m	1.0u	1.0	10m	65 †	3.0p	ME	T05	∅
31#	2SC526	750m	250MΔ	5.0m	Δ	165	150	5.0	55m	2.0u	2.0	45m	20 †Δ	3.5p	EM	T05	A
32#	2SC652	750m	800MΔ	5.9m	Δ	40	20	3.0	300m	1.0u	1.0	100m	20 †#Δ	2.5p	PE	T05	A
33#	2SC556	750m	850MΔ	6.3m	Δ	40	20	2.0	400m	25u	15	50m	45	3.8p	PE	T039	A
34#	2SC651	750m	1.1G	5.0m	Δ	45	22	4.0	300m	100n	1.0	100m	80	3.5p	PE	T05	∅
35	KD2541	750m	1.2G	4.3m	Δ	25	12	2.0	40m	15u	10	8.0m	20 †Δ	1p	PE	X72	U
36	KD2540	750m	1.5G	4.3m	Δ	25	12	2.0	40m	15u	10	8.0m	20 †Δ	1p	PE	X72	U
37	AT220	750m	4.0G	4.2	Δ	20	15	3.0	200m	20n	1.0	15m	20 †Δ	500f	PE	u77e	GA
38	2N1943	800m	4.5m	4.5	Δ	60	60	8.0	500m	10u	6.0	1.0m	12 †Δ			T05	∅
39	2N5189	800m	4.5m	4.5	Δ	60	55	5.0	2.0	100u	1.0	1.0	15 †Δ			T05	∅
40	2N5262†	800m	5.7m	5.7	Δ	75	50	5.0	2.0	100u	1.0	500m	40 †Δ			T05	∅
41#	2SC1072†	800m			Δ						1.0	500m	35 †Δ	12p	PE	R81e	A
42#	2SC1072A†	800m			Δ						1.0	500m	35 †Δ	3.0p	PE	R81e	A
43#	11112†	800m		5.6m	Δ		90	4.0		1.0u	1.0	10m	30 †Δ			R100	A
44#	BC312	800m			Δ	100	100	5.0	150m	100n	1.0	30m	130 †	5.3u	PL	T05	A
45#	BFY41	800m		4.5m	Δ	120	120	5.0	600m	1.0u	1.0	50m	35 †Δ			T05	∅
46#	BSV69†	800m		4.6m	Δ	45	40	6.0	1.0	250	1.0	500m	50 †Δ	10p	PEΔ	T039	A
47#	C428	800m		4.5m	Δ	40	30	5.0	50	100u	1.0	10m	150 †	14p	PE	T039	A
48#	C744	800m		8.0m	Δ	60	60	5.0	5.0	100u	1.0	50m	175 †	14p	PE	T039	A
49#	BC313	800m	200	5.3m	Δ	70	40	7.0	1.0	100u	1.0	300m	40 †Δ	7.0p	PE	T05	∅
50	2N1445	800m	75k	4.5m	Δ	120	120	8.0	750m	100u	1.0	200m	80 †Δ#			T05	∅
51	2N4237	800m	1.0MΔ	4.5m	Δ	50	40	6.0	1	100u	1.0	100m	30 †Δ	100p	PE	T05	A
52	2N4238	800m	1.0MΔ	4.5m	Δ	80	60	6.0	1	100u	1.0	100m	30 †Δ	100p	PE	T05	A
53	2N4239	800m	1.0MΔ	4.5m	Δ	100	80	6.0	1	100u	1.0	100m	30 †Δ	100p	PE	T05	A
54#	DT1510†	800m	1.0M	5.0m	Δ	30	20	8.0	300m	4.0u	6.0	300m	25 †	500u		T05	∅
55#	DT1511†	800m	1.0M	5.0m	Δ	60	40	8.0	300m	4.0u	6.0	300m	25 †	500u		T05	∅
56#	DT1512†	800m	1.0M	5.0m	Δ	100	70	8.0	300m	4.0u	6.0	300m	25 †	500u		T05	∅
57#	DT1520†	800m	2.0M	5.0m	Δ	30	20	8.0	300m	4.0u	6.0	300m	120 †	800u		T05	∅
58#	DT1521†	800m	2.0M	5.0m	Δ	60	40	8.0	300m	4.0u	6.0	300m	120 †	800u		T05	∅
59#	DT1522†	800m	2.0M	5.0m	Δ	100	70	8.0	300m	4.0u	6.0	300m	120 †	800u		T05	∅
60#	JAN2N497	800m	15MΔ	4.5m	Δ	60	60	8.0	100u	100u	1.0	50m	10 †Δ			T05	A
61	JAN2N498	800m	15MΔ	4.5m	Δ	100	100	8.0	100u	100u	1.0	50m	10 †Δ			T05	A
62	JAN2N656	800m	15MΔ	4.5m	Δ	60	60	8.0	100u	100u	1.0	50m	40 †Δ			T05	A
63	JAN2N657	800m	15MΔ	4.5m	Δ	100	100	8.0	100u	100u	1.0	50m	40 †Δ			T05	A
64	JAN2N3439†	800m	15MΔ	4.5m	Δ	450	350	7.0	1.0	500u	1.0	20m	40 †Δ	10		T05	A
65	JAN2N3440†	800m	15MΔ	4.5m	Δ	300	250	7.0	1.0	500u	1.0	20m	40 †Δ	10		T05	A
66	MJ420	800m	15MΔ	5.3m	Δ	275	250	6.0	100m	100u	2.0	10m	25 †Δ	12p	DM	T05	C
67	MJ421	800m	15MΔ	5.3m	Δ	350	325	6.0	100m	100u	2.0	10m	25 †Δ	12p	DM	T05	C
68	2N1714	800m	16MΔ	5.3m	Δ	60	60	6.0	750m	2.0u	5.0	200m	20 †#Δ	50p	DM	T05	A
69	JAN2N1714	800m	16MΔ	5.2m	Δ	60	60	6.0	750m	1.0u	5.0	200m	20 †#Δ	50	DM	T05	A
70	2N1715	800m	16MΔ	5.3m	Δ	100	60	6.0	750m	2.0u	5.0	200m	20 †#Δ	50p	DM	T05	A
71	JAN2N1715	800m	16MΔ	5.2m	Δ	100	60	6.0	750m	1.0u	5.0	200m	20 †#Δ	50	DM	T05	A
72	2N1716	800m	16MΔ	5.3m	Δ	60	60	6.0	750m	2.0u	5.0	200m	40 †#Δ	50p	DM	T05	A
73	JAN2N1716	800m	16MΔ	5.2m	Δ	60	60	6.0	750m	1.0u	5.0	200m	40 †#Δ	50	DM	T05	A
74	2N1717	800m	16MΔ	5.3m	Δ	100	60	6.0	750m	2.0u	5.0	200m	40 †#Δ	50p	DM	T05	A
75	JAN2N1717	800m	16MΔ	5.2m	Δ	100	60	6.0	750m	1.0u	5.0	200m	40 †#Δ	50	DM	T05	A
76#	2SC484	800m	20MΔ	6.7m	Δ	150	110	5.0	1.5	100u	2.0	200m	30 †*Δ			T039	A
77#	2SC485	800m	20MΔ	6.7m	Δ	120	80	5.0	1.5	100u	2.0	200m	30 †*Δ			T039	A
78#	2SC486	800m	20MΔ	6.7m	Δ	80	50	5.0	1.5	100u	2.0	200m	30 †*Δ			T039	A
79	TN63†	800m	20MΔ	4.5m	Δ	20	20	5.0	800m	100n	5.0	1.0m	65	100nb	PE	T05	A
80	2N2008†	800m	30MΔ	4.7m	Δ	175	110	8.0	2.0u	50	5.0	50m	65	250nb	PE	T05	A
81	A5T5058	800m	30MΔ	6.4m	Δ	300	300	7.0	150m	50n	25	100m					



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	T M E A M P X	ABS MAX RATINGS @25°C				MAX. Ic (A)	TYPICAL h' PARAMETERS			COMMON EMITTER			Cob (F)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O A D E	
					BVcbo (V)	BVceo (V)	BVebo (V)	lcbo (A)		BIAS			COMMON EMITTER							
					Vcb	Vce	Veb	Vcb		Vcb	le	hfe	hoe (mhos)	hie (Ω)	hre (X.0001)					
1#	AT366	800m	45mΔ	4.5m	SJ	80	60	8.0	3.0	1.0	2.0	1.0	30 Δ			120pZ	PL	T018	A0	
2#	AT367	800m	45mΔ	4.5m	SJ	100	80	8.0	3.0	1.0	2.0	1.0	30 Δ			120pZ	PL	T018	A0	
3#	AT368	800m	45mΔ	4.5m	SJ	120	100	8.0	3.0	1.0	2.0	1.0	30 Δ			120pZ	PL	T018	A0	
4	2N697A†	800m	50mΔ	4.5m	SJ	60	35	5.0	1.0	100nZ	5.0	1.0m	25 Δ	500nZb	30 Z	5.0 Z	35pZ	Δ	T05	A0
5	2N699A	800m	50mΔ	5.2m	SJ	120	80	5.0	5.0	500nZ	5.0	1.0m	35 Δ	500nZb	30 Z	2.5 Z	20pZ	Δ	T05	A0
6	2N1889	800m	50mΔ	4.5m	SJ	100	60	7.0	1.0	10nZ	5.0	1.0m	30 Δ	500nZb	30 Z	1.2 Z	15pZ	Δ	T05	A0
7	2N1893	800m	50mΔ	4.5m	SJ	120	80	7.0	500m	10nZ	5.0	1.0m	30 Δ	500nZb	30 Z	1.2 Z	15pZ	Δ	T05	A0
8	2N1974	800m	50mΔ	4.5m	SJ	100	60	7.0	25nZ	10nZ	5.0	1.0m	36 Δ	500nZb	10kZ	5.0 Z	15pZ	Δ	T05	A0
9	2N2049	800m	50mΔ	4.5m	SJ	75	50	7.0	500m	10nZ	5.0	1.0m	75 Δ	500nZb	34 Z	5.0 Z	25pZ	Δ	T05	A0
10	2N2192†	800m	50mΔ	4.5m	SJ	60	40	5.0	1.0	0.1uZ	10	10m	75 Δ			20pZ	Δ	T05	A0	
11	2N2192A†	800m	50mΔ	4.5m	SJ	60	40	5.0	1.0	10nZ	10	10m	75 Δ			20pZ	Δ	T05	A0	
12	2N2192B†	800m	50mΔ	4.5m	SJ	60	40	5.0	1.0	0.1uZ	10	10m	75 Δ			20pZ	Δ	T05	A0	
13	2N2193†	800m	50mΔ	4.5m	SJ	80	50	8.0	1.0	0.1uZ	10	10m	30 Δ			20pZ	Δ	T05	A0	
14	2N2193A†	800m	50mΔ	4.5m	SJ	80	50	8.0	1.0	0.1uZ	10	10m	30 Δ			20pZ	Δ	T05	A0	
15	2N2193B†	800m	50mΔ	4.5m	SJ	80	50	8.0	1.0	0.1uZ	10	10m	30 Δ			20pZ	Δ	T05	A0	
16	2N2194†	800m	50mΔ	4.5m	SJ	60	40	5.0	1.0	0.1uZ	10	10m	15 Δ			20pZ	Δ	T05	A0	
17	2N2194A†	800m	50mΔ	4.5m	SJ	60	40	5.0	1.0	0.1uZ	10	10m	15 Δ			20pZ	Δ	T05	A0	
18	2N2194B†	800m	50mΔ	4.5m	SJ	60	40	5.0	1.0	0.1uZ	10	10m	15 Δ			20pZ	Δ	T05	A0	
19	2N2243	800m	50mΔ	4.5m	SJ	120	80	7.0	1.0	0.1uZ	10	10m	30 Δ			15pZ	Δ	T05	A0	
20	2N2243A	800m	50mΔ	4.5m	SJ	120	80	7.0	1.0	0.1uZ	10	10m	30 Δ			15pZ	Δ	T05	A0	
21	2N2443	800m	50mΔ	4.5m	SJ	120	100	7.0	1.0	0.1uZ	5.0	1.0m	30 Δ	50uZ	1.0kZ	15pZ	Δ	T05	A0	
22	2N2868	800m	50mΔ	4.5m	SJ	60	40	7.0	1.0	0.1uZ	10	10m	30 Δ			20pZ	Δ	T05	A0	
23	2N2890†	800m	50mΔ	5.0m	SJ	100	80	5.0	100nZ	100nZ	10	50m	30 Δ			120pZ	Δ	T05	A0	
24	2N2891†	800m	50mΔ	5.0m	SJ	100	80	5.0	100nZ	100nZ	10	50m	50 Δ			120pZ	Δ	T05	A0	
25	2N3036†	800m	50mΔ	4.5m	SS	120	80	7.0	1.2	0.1uZ	10	10m	40 Δ	120uZ	900 Z	15pZ	Δ	T05	A0	
26♦	2N4895†	800m	50mΔ	4.5m	SJ	120	60	6.0	5.0	1.0m	2.0	2.0	40 Δ			80pZ	Δ	T039	C0	
27♦	2N4897†	800m	50mΔ	4.5m	SJ	150	80	6.0	5.0	1.0m	2.0	2.0	40 Δ			80pZ	Δ	T039	C0	
28#	2SC516	800m	50m	5.2m	SJ	100	60	5.0	1.5	500nZ	2.0	200m	60 †			25p	D	T05	A	
29#	2SC516A	800m	50m	5.2m	SJ	140	100	5.0	1.5	500nZ	2.0	200m	60 †			25p	D	T05	A	
30#	BFW33	800m	50mΔ	4.5m	SJ	120	80	7.0	1.0	0.1uZ	10	150m	40 †#	11u	2.8k	15pZ	PL	T05	A0	
31#	BFX84	800m	50mΔ	4.5m	SJ	100	60	6.0	1.0	0.5uZ	10	10m	20 †			PE	PE	T05	A0	
32#	BFX85	800m	50mΔ	4.5m	SJ	100	60	6.0	1.0	0.5uZ	10	10m	50 †			PE	PE	T05	A0	
33#	BFX86	800m	50mΔ	4.5m	SJ	40	35	6.0	1.0	0.5uZ	10	10m	50 †			PE	PE	T05	A0	
34#	BFY51†	800m	50mΔ	4.5m	SJ	60	60	6.0	1.0	500n	6.0	10m	60	35u	220	700m	PE	PE	T05	A0
35#	BFY52†	800m	50mΔ	4.5m	SJ	40	40	6.0	1.0	500n	6.0	10m	120	70u	400	1.3	PE	PE	T05	A0
36#	BFY53	800m	50mΔ	4.5m	SJ	30	20	6.0	1.0	1.0	6.0	150m	30 †			12pZ	PE	T05	A0	
37#	BSV60†	800m	50mΔ	4.5m	SJ	45	40	5.0	3.0	100	2.0	2.0	50 †			75pZ	PE	T039	A	
38#	BSY45	800m	50.0M	4.5m	SJ						10	150m	80 †#			15pZ	PL	T05	A0	
39#	BSY46†	800m	50.0M	4.5m	SJ						10	150m	80 †#			20pZ	PE	T05	A0	
40#	BSY91	800m	50mΔ	4.5m	SJ	40	25	5.0		50nZ	10	5.0m	30 †			25pZ	PL	T05	A0	
41#	BSY92	800m	50mΔ	4.5m	SJ	60	40	5.0		20nZ	2.0	10m	50 †			25pZ	PL	T05	A0	
42	TN79	800m	50mΔ	4.7m	SJ	30	20	5.0		10nZ	1.0	100uZ	75 †			10pZ	PE	T05	A0	
43#	BF157B	800m	54m	4.5m	SJ	175	175	5.0		100u	10	30m	60 †			6.0p	PE	T039	A	
44	2N1420A	800m	60mΔ	4.5m	SJ	60	40	7.0	1.0	0.1uZ	10	10m	35 †			25pZ	PL	T05	A0	
45	2N1613	800m	60mΔ	4.5m	SJ	75	50	7.0	1.0	0.1uZ	5.0	1.0m	30 Δ	500nZb	34 Z	3.0 Z	25pZ	PL	T05	A0
46	JAN2N1613	800m	60mΔ	4.5m	SJ	75	30	7.0	500m	10nZ	5.0	1.0m	100 Δ	1.0uZb	8.0 Z	3.0 Z	25pZ	Δ	T05	A0
47	2N1890	800m	60mΔ	4.5m	SJ	100	60	7.0	1.0	10nZ	5.0	1.0m	50 Δ	300nZb	30 Z	1.5 Z	15pZ	Δ	T05	A0
48	JAN2N1893	800m	60mΔ	4.5m	SJ	120	80	7.0	500m	10nZ	5.0	1.0m	100 Δ	500nZb	8.0 Z	1.5 Z	15pZ	Δ	T05	A0
49	2N1973	800m	60mΔ	4.5m	SJ	100	60	7.0	25nZ	10nZ	5.0	1.0m	76 Δ	100uZb	1.8kZ	15pZ	Δ	T05	A0	
50	2N2297	800m	60mΔ	4.5m	SJ	80	35	7.0	1.0	0.1uZ	10	150m	40 †#			12pZ	Δ	T05	A0	
51	2N3108†	800m	60mΔ	4.5m	SJ	100	60	7.0	1.0	0.1uZ	10	10m	20 †			20pZ	Δ	T05	A0	
52	2N3110†	800m	60mΔ	4.5m	SJ	80	40	7.0	1.0	0.1uZ	10	10m	20 †			25pZ	Δ	T05	A0	
53	2N3122	800m	60mΔ	4.5m	SJ	50	30	5.0	500m	2.0uZ	5.0	300m	25 †#			25pZ	Δ	T05	A0	
54#	2SC5100†	800m	60m	5.3m	SJ	140	100	5.0	1.5	1.0uZ	2.0	200m	50 †			25p	DPL	T039	A0	
55#	2SC510R†	800m	60m	5.3m	SJ	140	100	5.0	1.5	1.0uZ	2.0	200m	30 †			25p	DPL	T039	A0	
56#	2SC5110†	800m	60m	5.3m	SJ	120	80	5.0	1.5	1.0uZ	2.0	200m	50 †			25p	DPL	T039	A0	
57#	2SC511R†	800m	60m	5.3m	SJ	120	80	5.0	1.5	1.0uZ	2.0	200m	30 †			25p	DPL	T039	A0	
58#	2SC5120†	800m	60m	5.3m	SJ	100	60	5.0	1.5	1.0uZ	2.0	200m	50 †			25p	DPL	T039	A0	
59#	2SC512R†	800m	60m	5.3m	SJ	100	60	5.0	1.5	1.0uZ	2.0	200m	30 †			25p	DPL	T039	A0	
60#	2SC5130†	800m	60m	5.3m	SJ	70	40	5.0	1.5	1.0uZ	2.0	200m	50 †			25p	DPL	T039	A0	
61#	2SC513R†	800m	60m	5.3m	SJ	70	40	5.0	1.5	1.0uZ	2.0	200m	30 †			25p	DPL	T039	A0	
62#	AT470	800m	60mΔ	4.5m	SJ	60	40	6.0	1.0	200n	1.0	60m	40 Δ			25pZ	PE	T039	A0	
63#	AT471	800m	60mΔ	4.5m	SJ	80	60	6.0	1.0	200n	1.0	60m	40 Δ			25pZ	PE	T039	A0	
64#	AT472	800m	60mΔ	4.5m	SJ	100	80	6.0	1.0	200n	1.0	60m	40 Δ			25pZ	PE	T039	A0	
65#	AT473	800m	60mΔ	4.5m	SJ	60	40	6.0	1.0	200n	1.0	60m	100 Δ			25pZ	PE	T039	A0	
66#	AT474	800m	60mΔ	4.5m	SJ	80	60	6.0	1.0	200n	1.0	60m	100 Δ			25pZ	PE	T039	A0	
67#	AT475	800m	60mΔ	4.5m	SJ	100	80	6.0	1.0	200n	1.0	60m	100 Δ			25pZ	PE	T039	A0	
68#	AT476	800m	60mΔ	4.5m	SJ	60	40	6.0	1.0	200n	1.0	60m	40 Δ			25pZ	PE	T039	A0	
69#	AT477	800m	60mΔ	4.5m	SJ	80	60	6.0	1.0	200n	1.0	60m	40 Δ			25pZ	PE	T039	A0	
70#	AT478	800m	60mΔ	4.5m	SJ	100	80	6.0	1.0	200n	1.0	60m	40 Δ			25pZ	PE	T039	A0	
71	BF156	800m	60.0M	4.5m	SJ	120	120	5.0	5.0	1.0uZ	5.0	10m	50			6.0p	DPL	T05	A0	
72	BF157	800m	60.0M	4.5m	SJ	150	150	5.0	5.0	1.0uZ	10	10m	60 †#			6.0p	DPL	T05	A0	
73#	BFY40	800m	60.0M	4.5m	SJ	60	30	7.0	800m	10uZ	10	50m	50 †	3.0u	2.5k	.20	14p	PL	T05	A0
74#	BFY43	800m	60.0M	5.3m	SJ	140	50	5.0	100m	10uZ	10	10m	25 †			6pZ	PL	T05	A0	
75#																				



# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR W/°C (Hz)	M A M X P	ABS MAX RATINGS @25°C				MAX. l c b o @ MAX Vcb (A)	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC TURE	DWG # Y2000 s/a TO200 Ser.	# E A D E					
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS		COMMON EMITTER									
					Vcb (V)	Ie (A)	hfe	hoe (mhos)		hie (Ω)	hre (X.0001)										
1#	BSW66Δ†	800m	80MΔ	4.5m	SJ	100	100	6.0	1.0	100u	5.0∅	1.0∅	15 tΔ	35pS/∅	PE	T05	A∅				
2#	BSW66Z†	800m	80M†		SJ						5.0∅	1.0∅	30 Δ	35pS/∅	PE	T039	A∅				
3#	BSW67Δ†	800m	80MΔ	4.5m	SJ	120	120	6.0	1.0	100u	5.0∅	1.0∅	15 tΔ	35pS/∅	PE	T05	A∅				
4#	BSW67Z†	800m	80M†		SJ						5.0∅	1.0∅	30 Δ	35pS/∅	PE	T039	A∅				
5#	BSW68Δ†	800m	80MΔ	4.5m	SJ	150	150	6.0	1.0	100u	5.0∅	1.0∅	15 tΔ	35pS/∅	PE	T05	A∅				
6#	BSW68Z†	800m	80M†		SJ						5.0∅	1.0∅	30 Δ	35pS/∅	PE	T039	A∅				
7#	C426†	800m	80MΔ	4.5m	SJ	60	30	5.0		100∅	5.0∅	1.0m∅	60 t#	8.0u	1.8k	2.1	12p DPE	T05	A∅		
8#	FT34C†	800m	80MΔ	4.5m	SJ	150	80	6.0		100∅	5.0∅	2∅	85 t#				12p DPE	T05	A∅		
9#	FT34D†	800m	80MΔ	4.5m	SJ	120	60	6.0		100∅	5.0∅	2∅	210 t#				12p DPE	T05	A∅		
10#	BC369A	800m	84 MΔ	4.5m	SJ	80	40	7.0		0.1u∅	5.0∅	1.0m∅	70 t#	8.0u	1.8k	2.1	13p DPL∅	T05	A∅		
11#	BC310	800m	86 MΔ		SJ	70	70	5.0	1.0	50n	10∅	10m∅	110 t				12p PE	T05	A		
12#	BF174	800m	86 MΔ	4.5m	SJ	150	150	6.0		0.1u∅	10∅	25m∅	20 Δ	2.6p			12p PE	T05	A		
13#	BFV56†	800m	86 MΔ	4.5m	SJ	80	45	5.0		0.5u∅	10∅	10m∅	40 t	12p			12p DPE	T05	A∅		
14#	BFV56A	800m	86 MΔ	4.5m	SJ	80	55	7.0		0.5u∅	1.0∅	150m∅	70 t#	12p			12p PE	T039	A∅		
15#	C764	800m	88 MΔ	4.5m	SJ	120	120	5.0		1.0u∅	10∅	25m∅	70 t	6.0p			12p PL	T039	A		
16#	2N2440	800m	90MΔ	4.5m	SJ	120	80	7.0	500m	100∅	10∅	5.0m∅	70 Δ	500nZb	30 ∅	2.5 ∅	15p∅	Δ	T05	A∅	
17#	2SC108A	800m	90MΔ	187	SJ	90	55	5.0	800m	1.0u∅	2.0∅	200m∅	80 t	20p			12p PE	T039	A		
18#	2SC109A	800m	90MΔ	156	SJ	50	40	5.0	800m	1.0u∅	2.0∅	200m∅	80 t	20p			12p PE	T039	A		
19#	BFR20	800m	90MΔ	28m	SJ	35	75 ∅	7.0		10n	1.0∅	150m∅	90 tΔ	8.0u	2.0k	2.1	13p PE	T039	A		
20#	BFR2	800m	90MΔ	28m	SJ	70	120 ∅	7.0		10n	1.0∅	150m∅	40 tΔ				13p PE	T039	A		
21#	2N1893A	800m	100MΔ	4.5m	SJ	140	80	7.0	500m	10n∅	5.0∅	1.0m∅	30 Δ	500nZb	30 ∅	1.2	8.0p∅	Δ	T05	A∅	
22#	2N2330∅	800m	100MΔ	5.3m	SS	30	20	5.0	500m	0.1u∅	1.0∅	10m∅	50 Δ				10p∅		T05	A∅	
23#	2N3019	800m	100MΔ	4.5m	SJ	140	80	7.0	1.0	0.1u∅	5.0∅	1.0m∅	80 Δ				12p∅		T05	A∅	
24#	JAN2N3019	800m	100MΔ	4.5m	SJ	140	80	7.0	1.0	10nS	5.0∅	1.0m∅	80 Δ				12p∅		T05	A∅	
25#	2SC995	800m	100MΔ		SJ	300	300	5.0	100m	100n∅	1.0∅	50m∅	80 t	5.5p∅			12p DPL	T039	A		
26#	AT475	800m	100MΔ	4.4m	SJ	80	70	6.0	1.0	200n	1.0∅	50m∅	40 tΔ#				15p∅		PE	T039	A
27#	BC286	800m	100MΔ	4.5m	SJ	70	60	5.0	1.0	20nS	2.0∅	500m∅	20 tΔ#				12p		DPE	T05	
28#	BC323	800m	100MΔ	4.5m	SJ	100	∅	5.0	5.0	100u	1.0∅	500m∅	160 t	8.0p			10p PE	T039	A		
29#	BC324	800m	100MΔ	4.5m	SJ	85	55	5.0	1.0	100u	1.0∅	50m∅	20 t	25p			10p PE	T039	A		
30#	BC340.6	800m	100MΔ	4.5m	SJ	40	40	5.0	500m	100nS	5.0∅	50m∅	40 tΔ	10p			10p PE	T039	A∅		
31#	BC340.10	800m	100MΔ	4.5m	SJ	40	40	5.0	500m	100nS	5.0∅	50m∅	63 tΔ	10p			10p PE	T039	A∅		
32#	BC340.16	800m	100MΔ	4.5m	SJ	40	40	5.0	500m	100nS	5.0∅	50m∅	100 tΔ	10p			10p PE	T039	A∅		
33#	BC341.6	800m	100MΔ	4.5m	SJ	60	60	5.0	500m	100nS	5.0∅	50m∅	40 tΔ	10p			10p PE	T039	A∅		
34#	BC341.10	800m	100MΔ	4.5m	SJ	60	60	5.0	500m	100nS	5.0∅	50m∅	63 tΔ	10p			10p PE	T039	A∅		
35#	BF108	800m	100MΔ	4.5m	SS	135	§	3.0		1.0u∅	10∅	30m∅	50 t	3p∅			12p PL	T05	A∅		
36#	BF305	800m	100MΔ	4.5m	SJ	160	150	5.0	50m	10∅	10∅	15m	30 tΔ				12p PL	T039	A		
37#	BFR19	800m	100MΔ	28m	SJ	35	75 ∅	7.0		10n	1.0∅	500m∅	30 tΔ	8.5u	2.2k	2.4	12p PE	T039	A		
38#	BSX22	800m	100MΔ	5.3m	SJ	40	32	5.0	1.5	2.0∅	500m∅	35 tΔ	20p				20p PE	T05			
39#	BSX23	800m	100MΔ	5.3m	SJ	90	65	5.0	1.5	2.0∅	500m∅	35 tΔ	20p				20p PE	T05			
40#	BSY51†	800m	100MΔ	4.5m	SJ	60	25	5.0	500m	100n∅	10∅	150m∅	40 tΔ	10p			10p PE	T039	A∅		
41#	BSY52†	800m	100MΔ	4.5m	SJ	60	25	5.0	500m	100n∅	10∅	150m∅	100 tΔ	10p			10p PE	T039	A∅		
42#	BSY53†	800m	100MΔ	4.5m	SJ	75	30	7.0	750m	10n∅	10∅	150m∅	40 tΔ	10p			10p PE	T039	A∅		
43#	BSY54†	800m	100MΔ	4.5m	SJ	75	30	7.0	750m	10n∅	10∅	150m∅	100 tΔ	10p			10p PE	T039	A∅		
44#	BSY55†	800m	100MΔ	4.5m	SJ	120	80	7.0	500m	10n∅	10∅	150m∅	40 tΔ	10p			10p PE	T039	A∅		
45#	BSY56†	800m	100MΔ	4.5m	SJ	120	80	7.0	500m	10n∅	10∅	150m∅	100 tΔ	10p			10p PE	T039	A∅		
46#	BSY87	800m	100MΔ	4.5m	SJ	100	60	7.0	500m	10n∅	10∅	150m∅	40 tΔ	10p			10p PE	T039	A∅		
47#	BSY88	800m	100MΔ	4.5m	SJ	100	60	7.0	500m	10n∅	10∅	150m∅	100 tΔ	10p			10p PE	T039	A∅		
48#	BSY90	800m	100MΔ	4.5m	SJ	60	25	5.0	500m	10n∅	10∅	150m∅	250 tΔ	10p			10p PE	T039	A∅		
49#	CP409†	800m	100MΔ	4.5m	SJ	60	60	5.0	1	10u∅	10∅	1∅	130 t#				12p DPE	T05	A∅		
50#	RT1116†	800m	100MΔ		SJ	120	40 §	7.0		20n∅	1.0∅	150m∅	30 tΔ	15 ∅			12p PE	T05	∅		
51#	SFT187	800m	100MΔ	4.5m	SJ	135	135 §	3.0		1.0u∅	10∅	30m∅	50 t	3.0p∅			12p PE	T05	∅		
52#	TN53	800m	100MΔ	4.5m	SJ	75	45	5.0	800m	10n∅	5.0∅	1.0m∅	55	200nZb	35 ∅	1.2 ∅	8.0p∅	PEΔ	T05	A	
53#	TN59†	800m	100MΔ	4.5m	SJ	40	30	5.0	800m	20n∅	5.0∅	1.0m∅	140	100nZb	27	3.2	8.0p∅	PE∅	T05	A	
54#	TN61†	800m	100MΔ	4.5m	SJ	40	30	5.0	800m	20n∅	5.0∅	1.0m∅	50	900nZb	26	3.2	8.0p∅	PE∅	T05	A	
55#	BF119	800m	110MΔ	5.2m	SJ	160	160 §	5.0	100m	50n∅	10∅	30m∅	25 tΔ	3.5p			10p PE	T039	A∅		
56#	BF257	800m	110MΔ		SJ	160	160 §	5.0	100m	50n∅	10∅	30m∅	25 Δ†	5.5p			10p PE	T05	A		
57#	BF258	800m	110MΔ		SJ	250	250 §	5.0	100m	50n∅	10∅	30m∅	25 Δ†	5.5p			10p PE	T05	A		
58#	BF259	800m	110MΔ		SJ	300	300 §	5.0	100m	50n∅	10∅	30m∅	25 Δ†	5.5p			10p PE	T05	A		
59#	2N4383	800m	120MΔ	4.7m	SS	40	30	5.0	800m	10n∅	5.0∅	1.0m∅	10K∅	200nZb	32 ∅		8.0p∅	∅	T05	A	
60#	2N4385	800m	120MΔ	4.7m	SS	40	30	5.0	800m	10n∅	5.0∅	1.0m∅	10K∅	200nZb	32 ∅		8.0p∅	∅	T05	A	
61#	2SC309†	800m	120MΔ	4.5m	SJ	120	80	5.0	500m	1.0u∅	10∅	150m∅	65 t#	10p			10p PLΔ	T05	A∅		
62#	2SC310†	800m	120MΔ	4.5m	SJ	140	100	5.0	500m	0.1u∅	10∅	150m∅	65 t#	10p			10p PLΔ	T05	A∅		
63#	2SC788	800m	120MΔ		SJ	250	150	5.0	50m	1u∅	5.0∅	10m∅	100 t	4.0p			12p PL	T05	A		
64#	BF118	800m	120MΔ	5.0m	SJ	250	240	5.0	100m	50n∅	10∅	30m∅	25 tΔ	2.0pS			12p PL	T05	A		
65#	BFW45	800m	120MΔ	4.5m	SJ	165	130	5.0	50m	10u∅	20∅	50m∅	20 tΔ	4pS			12p PL	T039	A∅		
66#	MA8001	800m	130MΔ	4.7m	SJ	40	30	5.0	800m	500n∅	10∅	150m∅	30 tΔ#	15ub	4.9k	4.2	12p∅	PEΔ	T05		
67#	MA8002	800m	130MΔ	4.7m	SJ	120	80	7.0	800m	10n∅	10∅	150m∅	40 tΔ#	500nZb	30 ∅	1.5 ∅	10p∅	PEΔ	T05		
68#	MA8003	800m	130MΔ	4.7m	SJ	80	60	7.0	800m	10n∅	10∅	150m∅	100 tΔ#	500nZb	30 ∅	1.5 ∅	10p∅	PEΔ	T05		
69#	2N1837A†	800m	140MΔ	5.3m	SJ	80	30	8.0	500m	50u∅	10∅	150m∅	40 tΔ	18p∅			12p PL	T05	A∅		
70#	2N2863	800m	150MΔ	4.5m	SS	60	25	5.0	1	50u∅	15∅	10m∅	20 tΔ	13p∅			10p∅		T05	A∅	
71#	2N2864	800m	150MΔ	4.5m	SS	60	25	5.0	1	50u∅	15∅	10m∅	12 tΔ	13p∅			10p∅		T05	A∅	
72#																					

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1   MAX. COLL. DISS. @25°C (W)	2   DERATE IN FREE AIR (Hz)	M E A M P	ABS MAX RATINGS @25°C				MAX. Icbo @MAX Vcb	TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG #	C E O A D E	
					BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)		BIAS							
										Vcb (V)	Ie (A)	hfe					hoe (mhos)
1	2N2224	800m	250mΔ	5.3m	SJ	65	40	5.0	500m	10nφ	100φ	35	1Δ#	8.0pφ	Δ	T05	Aφ
2	2N2537†	800m	250mΔ	4.5m	SJ	60	30	5.0	800m	25uφ	10φ	1.0mφ	20	1Δ	8pφ	T05	Aφ
3	2N2538†	800m	250mΔ	4.5m	SJ	60	30	5.0	800m	25uφ	10φ	1.0mφ	20	1Δ	8pφ	T05	Aφ
4	2N2787†	800m	250mΔ	5.2m	SJ	75	35	5.0	800m	10nφ	20φ	20mφ	30	Δ	200nφ	T05	Aφ
5	2N2788†	800m	250mΔ	5.2m	SJ	75	35	5.0	800m	10nφ	20φ	20mφ	75	Δ	200nφ	T05	Aφ
6	2N2789†	800m	250mΔ	5.2m	SJ	75	35	5.0	800m	10nφ	20φ	20mφ	150	Δ	200nφ	T05	Aφ
7	2N2846†	800m	250mΔ	4.5m	SJ	60	30	5.0	20uφ	10φ	150mφ	30	1Δ#	8pφ	T05	Aφ	
8	2N2848†	800m	250mΔ	4.5m	SJ	60	20	5.0	20uφ	10φ	150mφ	40	1Δ#	8pφ	T05	Aφ	
9	2N3015†	800m	250mΔ	4.5m	SJ	60	30	5.0	20uφ	10φ	150mφ	30	1Δ#	8pφ	T05	Aφ	
10	2N3299†	800m	250mΔ	4.5m	SJ	60	30	5.0	500m	0.1uφ	10φ	10mφ	20	Δ	8pφ	T05	Aφ
11	2N3300†	800m	250mΔ	4.5m	SJ	60	30	5.0	500m	0.1uφ	10φ	10mφ	35	Δ	8pφ	T05	Aφ
12	2N3326†	800m	250mΔ	5.3m	SJ	60	45	5.0	800m	0.1uφ	10φ	10mφ	35	Δ	8pφ	T05	Aφ
13	2N3512†	800m	250mΔ	4.5m	SS	60	35	5.0	500m	1.0φ	500mφ	10	1Δ#	10pφ	T05	Aφ	
14	2N3678†	800m	250mΔ	4.5m	SJ	75	55	6.0	800m	0.1uφ	10φ	150mφ	40	1Δ#	8pφ	T05	Aφ
15	2N4046†	800m	250mΔ	4.5m	SJ	50	30	6.0	500m	1.7uφ	1.0φ	100mφ	150	1Δ#	12pφ	T05	Aφ
16	2N4047†	800m	250mΔ	4.5m	SJ	80	50	6.0	500m	1.7uφ	1.0φ	100mφ	150	1Δ#	10pφ	T05	Aφ
17	2N4960†	800m	250mΔ	4.5m	SJ	60	60	6.5	1	0.1uφ	10φ	10mφ	60	1Δ	15pφ	T039	Aφ
18	2N4962†	800m	250mΔ	2.9m	SJ	60	60	6.5	1	0.1uφ	10φ	10mφ	60	1Δ	15pφ	T039	Aφ
19#	2SC97†	800m	250mΔ	5.3m	SJ	60	30	5.0	1	1.0uφ	10φ	150mφ	60	1Δ#	20pφ	PE	T05
20#	2SC502	800m	250mΔ	6.7m	SJ	60	60	5.0	1	10uφ	5.0φ	200mφ	30	1Δ#	13pφ	PE	T039
21#	BF322	800m	250mΔ	5.3m	SJ	30	25	3.0	600m	1.0φ	10φ	300	1Δ#	6.0pφ	PE	T039	
22#	BFX17	800m	250mΔ	4.5m	SJ	60	40	6.0	10	2.0uφ	1.0φ	100mφ	35	1Δ#	12pφ	PE	T05
23#	BFX96	800m	250mΔ	4.5m	SJ	60	30	5.0	800m	0.1uφ	10φ	150mφ	40	1Δ#	8pφ	PE	T05
24#	BFX96A	800m	250m	4.5m	SJ	60	30	5.0	10n	10φ	150mφ	40	1Δ#	8.0pφ	PE	T039	
25#	BFX97	800m	250mΔ	4.5m	SJ	60	30	5.0	800m	0.1uφ	10φ	150mφ	100	1Δ#	8pφ	PE	T05
26#	BFX97A	800m	250m	4.5m	SJ	60	30	5.0	10n	10φ	150mφ	100	1Δ#	8.0pφ	PE	T039	
27	PT4816	800m	250mΔ	5.3m	SJ	60	30	4.0	0.5uφ	10φ	10mφ	40	1Δ	8.0pφ	PE	T05	
28#	UPI2217	800m	250m	5.3m	#J	65	30	5.0	800m	14mφ	10φ	10mφ	18	1Δ	8.0pφ	T05	Aφ
29#	UPI2218	800m	250m	5.3m	#J	65	30	5.0	800m	14mφ	10φ	10mφ	30	1Δ	8.0pφ	T05	Aφ
30#	UPI4046	800m	250m	4.5m	#J	60	35	6.0	500m	1.7uφ	1.0φ	100mφ	150	1Δ#	2.0pφ	T05	Aφ
31#	UPI4047	800m	250m	4.5m	#J	70	40	6.0	500m	1.7uφ	1.0φ	100mφ	150	1Δ#	10pφ	T05	Aφ
32#	ZT600†	800m	300mΔ	4.5m	SS	24	20	5.0	1.0 #	1.0uφ	1.0φ	150mφ	50	1Δ	12pφ	PL	T05
33	2N2219A†	800m	300mΔ	5.3m	SJ	75	40	6.0	800m	0.1uφ	10φ	10mφ	40	1Δ	8pφ	T05	Aφ
34	2N3722†	800m	300mΔ	4.5m	SJ	80	60	6.0	500m	5.0uφ	1.0φ	10mφ	25	1Δ#	10pφ	T05	Aφ
35	2N3723†	800m	300mΔ	4.5m	SJ	100	80	6.0	500m	5.0uφ	1.0φ	10mφ	25	1Δ#	9pφ	T05	Aφ
36	2N3724†	800m	300mΔ	4.5m	SJ	50	30	6.0	500m	1.7uφ	1.0φ	100mφ	60	1Δ#	12pφ	T05	Aφ
37	2N3725†	800m	300mΔ	4.5m	SJ	80	50	6.0	500m	1.7uφ	1.0φ	100mφ	60	1Δ#	10pφ	T05	Aφ
38	2N5145†	800m	300mΔ	4.5m	SJ	50	30	6.0	500m	1.7uφ	1.0φ	10mφ	30	1Δ#	12pφ	T039	Aφ
39#	BC232M	800m	300mΔ	5.3m	SJ	40	30	5.0	400m	100nφ	2.0φ	50mφ	100	1Δ#	6.0pφ	PE	T039
40#	C651	800m	300mΔ	4.5m	SJ	55	35	6.0	500m	5.0uφ	1.0φ	100mφ	70	1Δ	7.0pφ	PE	T039
41	SE8010	800m	300mΔ	4.5m	SJ	100	60	5.0	500m	5.0uφ	1.0φ	100mφ	40	1Δ#	9pφ	DPE	T039
42#	BSX30†	800m	330mΔ	5.3m	SJ	60	30	5.0	200nφ	10φ	150mφ	63	1Δ#	5.0pφ	DPE	T05	
43#	2SC97A†	800m	350mΔ	5.3m	SJ	80	45	5.0	1	50uφ	1.0φ	500mφ	40	1Δ#	10pφ	PE	T039
44#	2SC319	800m	350mΔ	5.3m	SJ	40	20	4.0	300m	1.0uφ	10φ	100mφ	20	1Δ#	10pφ	PE	T033
45#	2SC781	800m	350mΔ	5.3m	SJ	75	40	5.0	1	1.0uφ	10φ	150mφ	80	1Δ	11pφ	PE	T05
46#	BFR10†	800m	350mΔ	5.3m	SJ	50	28	5.0	20nφ	10φ	150mφ	60	1Δ	5.0pφ	PE	T039	
47#	BFY72	800m	350mΔ	5.3m	SJ	75	40	6.0	0.1uφ	10φ	10mφ	90	1Δ#	5.0pφ	DPE	T05	
48#	2N2217A	800m	400mΔ	4.5m	SJ	75	40	6.0	0.1uφ	10φ	150mφ	40	1Δ#	4.0pφ	PE	T05	
49	2N2883	800m	400mΔ	4.5m	SJ	40	20	4.0	300m	5.0uφ	10φ	100mφ	20	1Δ#	10pφ	PE	T05
50	2N2884	800m	400mΔ	4.5m	SJ	40	20	4.0	300m	5.0uφ	10φ	100mφ	20	1Δ#	10pφ	PE	T05
51	2N5188†	800m	400mΔ	4.5m	SS	60	25	5.0	1	50uφ	50φ	150mφ	25	1Δ	10pφ	T039	Aφ
52#	2SC138	800m	400mΔ	5.3m	SJ	60	30	5.0	500m	1.0uφ	10φ	30mφ	50	1Δ#	4.0pφ	PE	T033
53#	2SC138A	800m	400mΔ	5.3m	SJ	60	35	5.0	500m	1.0uφ	10φ	30mφ	50	1Δ#	4.0pφ	PE	T033
54#	2SC139	800m	400mΔ	5.3m	SJ	60	30	5.0	500m	1.0uφ	10φ	30mφ	50	1Δ#	4.0pφ	PE	T033
55#	2SC320	800m	400mΔ	5.3m	SJ	40	20	4.0	500m	1.0uφ	10φ	100mφ	20	1Δ#	10pφ	PE	T033
56#	2SC596	800m	400mΔ	5.3m	SJ	60	30	5.0	500m	50uφ	10φ	30mφ	50	1Δ#	6.0pφ	PE	T033
57#	BSV77†	800m	400mΔ	5.3m	SJ	60	30	5.0	500m	50uφ	10φ	100mφ	60	1Δ	4.8pφ	PE	T039
58#	BSV95†	800m	400mΔ	5.3m	SJ	60	30	5.0	500m	50uφ	10φ	100mφ	60	1Δ	4.8pφ	PE	T039
59#	BSX32†	800m	450mΔ	4.5m	SJ	65	40	6.0	1.0	4.0uφ	1.0φ	10mφ	60	1Δ#	5.0pφ	DPE	T05
60#	BSX59†	800m	475mΔ	4.5m	SJ	70	45	5.0	1	50uφ	1.0φ	500mφ	25	1Δ	5.8pφ	PE	T05
61#	BSX60†	800m	475mΔ	4.5m	SJ	70	30	5.0	1	50uφ	1.0φ	500mφ	30	1Δ	5.8pφ	PE	T05
62#	BSX61†	800m	475mΔ	4.5m	SJ	70	45	5.0	1	50uφ	1.0φ	500mφ	25	1Δ	5.8pφ	PE	T05
63#	2SC566	800m	500mΔ	4.5m	SJ	50	40	4.0	300m	2.0uφ	10φ	100mφ	50	1Δ#	4pφ	PE	T033
64#	2SC654	800m	500mΔ	4.5m	SJ	40	35	3.0	300m	2.0uφ	15φ	50mφ	40	1Δ#	3.5pφ	PE	T033
65#	2SC741	800m	500mΔ	4.5m	SJ	40	40	3.0	300m	1.0uφ	10φ	100mφ	30	1Δ#	3pφ	PE	T039
66	2N5106S	800m	900mΔ	4.5m	SJ	60	30	5.0	500m	0.1uφ	10φ	150mφ	100	1Δ#	8pφ	PE	T039
67#	2SC385A	800m	1.0G\$	500	#J	30	15	3.0	50m	500nφ	3.0φ	8.0mφ	40	1Δ	1.0pφ	PE	R67a
68#	2SC387A	800m	1.0G\$	500	#J	30	15	3.0	50m	500nφ	3.0φ	8.0mφ	40	1Δ	1.0pφ	PE	R67a
69	A230	800m	1.0G\$	4.0m	SJ	40	30	3.5	200m	5.0φ	5.0φ	25	1Δ	3.0pφ	PE	T039	
70#	2N2849-1	850m\$	30k\$Δ	66m	SS	100	80	5.0	3.0	100nφ	1.0φ	1.0φ	100	1Δ#	125pφ	PE	T05
71	2N2850-1†	850m\$	30k\$Δ	66m	SS	100	80	5.0	3.0	100nφ	1.0φ	1.0φ	40	1Δ#	125pφ	PE	MT26
72	2N2851-1†	850m\$	30k\$Δ	66m	SS	100	80	5.0	3.0	100nφ	1.0φ	1.0φ	40	1Δ#	125pφ	PE	T05
73	2N2852-1†	850m\$	30k\$Δ	66m	SS	100	80	5.0	3.0	100nφ	1.0φ	1.0φ	20	1Δ#	125pφ	PE	T05
74	2N2853-1†	850m\$	30k\$Δ	66m	SS	60	40	5.0	3.0	100nφ	1.0φ	1.0φ	40	1Δ#	125pφ	PE	T05
75	2N2855-1†	850m\$	30k\$Δ	66m	SS	60	40	5.0	3.0	100nφ	1.0φ	1.0φ	40	1Δ#	125pφ	PE	T05
76	2N2856-1†	850m\$	30k\$Δ	66m	SS	60	40	5.0	3.0	100nφ	1.0φ	1.0φ	20	1Δ#	125pφ	PE	T05
77	2N2849†	850m	30M\$Δ	5.0m	SS	100	80	5.0	3.0	100nφ	1.0φ	1.0φ	100	1Δ#	125pφ	PE	R61
78	2N2850†	850m	30M\$Δ	5.0m	SS	100	80	5.0	3.0	100nφ	1.0φ	1.0φ	40	1Δ#	125pφ	PE	R61
79	2N2851†	850m	30M\$Δ	5.0m	SS	100	80	5.0	3.0	100nφ							

# 5. SILICON NPN - LOW POWER TRANSISTORS

IN ORDER OF (1) MAX COLLECTOR DISSIPATION  
(2) fab & (3) TYPE No.

LINE No.	TYPE No.	1 MAX. COLL. DISS. @25°C (W)		2 DERATE IN FREE AIR W/°C		TEMPERATURE °C	ABS MAX RATINGS @25°C				MAX. Ic @ MAX Vcb (A)	TYPICAL h <sub>FE</sub> PARAMETERS			Cob (F)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	# L C O A D E		
		fab	IN (Hz)	M A X P	BVcbo (V)		BVceo (V)	Vbebo (V)	Ic (A)	BIAS		COMMON EMITTER								
										Vcb (V)		Ic (A)	hoe (mhos)	hie (Ω)					hre (X.0001)	
1	2N342B	1.0	6.0M	7.6m	7.6m	85	85	2.0	80m	1.0u	10	5.0m	21	2.0u	30	3.0	20p	G	TO11	A
2	2N343B	1.0	6.0M	7.6m	7.6m	85	85	2.0	60m	1.0u	10	5.0m	59	2.0u	30	3.0	20p	G	TO11	A
3#	2SC802t	1.0	180M	6.6m	6.6m	60	35	4.0	500m	5.0u	4.0	150m	30	2.0u	30	3.0	5.0p	PL	T05	A
4	BF140R,S	1.0	180M	5.5m	5.5m	135	155	3.0	1.0u	1.0u	10	10m	40					PL	ZA29	∅
5	BF155R,S	1.0	180M	5.5m	5.5m	135	155	3.0	1.0u	1.0u	10	10m	40					PL	ZA29	∅
6	2N3833	1.0	1.0G	6.6m	6.6m	25	15	1.0	100m	20n	12	30m	20				1.7p	PL	X60	∅
7	2N3834	1.0	1.0G	6.6m	6.6m	25	15	1.0	100m	20n	12	30m	20				1.7p	PL	X60	∅
8	2N3835	1.0	1.0G	6.6m	6.6m	25	15	1.0	100m	20n	12	30m	20				1.7p	PL	X60	∅
9	KD4002	1.0	1.2G	6.6m	6.6m	40	25	2.5	120m	1.0u	6.0	50m	20				3.5p		X72	V
10	KD4001	1.0	1.5G	6.6m	6.6m	40	25	2.5	120m	1.0u	6.0	50m	20				3.5p		X72	V
11	KD4501	1.0	1.5G	5.5m	5.5m	30	12	2.5	120m	300n	10	50m	30				3.5p		X72	U
12	KD4502	1.0	1.5G	5.5m	5.5m	25	12	2.5	120m	300n	10	50m	30				3.5p		X72	U
13	2N717A†	1.8	200M			75	70	3.0										PL	TO18	A
14	2N339A	3.0	10M			60	60	3.0		1.0u	10	1.0m	53	2.0u	30	3.0			TO11	A
15	2N340A	3.0	10M			85	85	3.0		1.0u	10	1.0m	53	2.0u	30	3.0			TO11	A
16	2N341A	3.0	10M			125	125	3.0		1.0u	10	1.0m	53	2.0u	30	3.0			TO11	A
17	2N1206	3.0	20M	2.8m	2.8m	60	60	3.0		1.0u	10	5.0m	35	2.0u	30	3.0			TO5	A
18	2N1207	3.0	20M	2.8m	2.8m	125	125	3.0		1.0u	10	5.0m	35	2.0u	30	3.0			TO5	A
19#	2SC614	7.5	200M			80	4.0	1.5	1.0u	10	250m	80	1				12p	PE	TO39	A
20#	2SC615	7.5	200M			30	4.0	1.5	1.0u	10	250m	80	1				12p	PE	TO39	A
21	2N3832t	200	800M	1.1	1.1	15	6.0	4.0	35m	10n	50	2.0m	125						TO72	G
22▼	2N2854-1	850M	30k	66m	66m	60	40	5.0	3.0	100n	1.0	1.0	100				125p	PE	TO5	A



# 6. SILICON FIELD EFFECT TRANSISTORS - P CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVICE DISS @ 25°C (W)	MAX. Vp (V)	MAX. Id @ 0 Vds (A)	ABS Vdss (V)	MAX. RATINGS @ 25°C		MAX. Id(ON) @ Vgs=0		TEST COND		PARAMETERS @ 25°C				DERATE		STRUCTURE	Y200 s/a TO200 Ser.	E O A D E	
						BVdss (V)	BVgss (V)	Id (A)	Ig (A)	Vgs @ Vds=0 (V)	Vds (V)	COMMON SOURCE		f(on) (MHz)	Cis (pF)	FREE AIR W/C (°C)	MAX TEMP (°C)				
												gfs (mhos)	Yos (mhos)								
1	JAN2N3329	300m	5.0t	15	20	10m	3.0m	10n	20	10	1.0m	2.0m	20u	1.0k	20p#	2.0m	200S	#0	T072	DG	
2	2N3330	300m	6.0t	15	20	10m	6.0m	10n	20	20	1.5m	3.0m	40u	80k	20p#	2.0m	200S	#0	T072	DG	
3	JAN2N3330	300m	6.0t	15	20	10m	6.0m	10n	20	10	1.5m	3.0m	40u	800	20p#	2.0m	200S	#0	T072	DG	
4	2N3331	300m	8.0t	15	20	10m	15m	10n	50	10	2.0m	4.0m	100u	60k	20p#	2.0m	200S	#0	T072	DG	
5	JAN2N3331	300m	8.0t	15	20	10m	15m	10n	10	10	2.0m	4.0m	100u	600	20p#	2.0m	200S	#0	T072	DG	
6	2N3332	300m	6.0t	15	20	10m	6.0m	10n	10	10	1.0m	2.2m	20u	20u	20p#	2.0m	200S	#0	T072	DG	
7	JAN2N3332	300m	6.0t	15	20	10m	6.0m	10n	10	10	1.0m	2.2m	20u	800	20p#	2.0m	200S	#0	T072	DG	
8	2N3376	300m	5.0	5.0	30	100m	50m	6m% 43.0n	0.0	10	.80m	2.3m†		1.5kt	3.0pΔ	2.0m	200S	#0	T072	DG	
9	2N3378	300m	5.0	5.0	30	100m	50m	6m% 43.0n	0.0	10	1.5m	2.3m†		.75kt	3.0pΔ	2.0m	200S	#0	T072	DG	
10	2N3380	300m	9.5	5.0	30	100m	50m	20m% 43.0n	0.0	10	1.5m	3m†		.60kt	3.0pΔ	2.0m	200S	#0	T072	DG	
11	2N3382	300m	5.0	5.0	30	100m	50m	30m% 15n	0.0	10	4.5m	13m†		.30kt	6.0pΔ	2.0m	200S	#0	T072	DG	
12	2N3384	300m	5.0	5.0	30	100m	50m	30m% 15n	0.0	10	7.5m	13m†		.18kt	6.0pΔ	2.0m	200S	#0	T072	DG	
13	2N3386	300m	9.5	5.0	30	100m	50m	50m% Δ 15n	0.0	10	7.5m	15m†		.15kt	6.0pΔ	2.0m	200S	#0	T072	DG	
14	2N3578	300m	4.0t	5.0	20	50m	50m	4.5m	0.0	5.0	1.2m	3.5m	15u		65p#	2.0m	200S	PL	T018	DA	
15	2N3909	300m	8.0t	10	20	20	10m	15m	10n	0.0	1.0m	5.0m	100u		32p#	2.0m	200S	PL	T072	DH	
16	2N3909A	300m	8.0	10	20	20	10m	15m	10n	0.0	2.2m	5.0m	100u		9p#	2.0m	200S	PL	T072	DG	
17	2N3993	300m		Δ	25	25	10m	10m	10n	0.0	6.0m	12m			16p#	2.0m	200S	PL	T072	DG	
18	2N3993A	300m		Δ	25	25	10m	10m	10n	0.0	7.0m	12m			12p#	2.0m	200S	PL	T072	DG	
19	2N3994	300m		Δ	25	25	10m	2.0m	1.2n	0.0	4.0m	12m			16p#	2.0m	200S	PL	T072	DG	
20	2N3994A	300m	8.0t	10Δ	30	20	10m	2.0m	1.2n	0.0	5.0m	10m			12p#	2.0m	200S	PL	T072	DG	
21	2N4088	300m		10Δ	30	20	10m	15m	10n	0.0	1.0m	1.6m	60u		10p#	1.7m	200C	PL	T072	DH	
22	2N4089	300m	5.0t	10Δ	30	20	10m	8.0m	10n	0.0	.80m	1.3m	40u		10p#	1.7m	200C	PL	T072	DH	
23	2N4090	300m	3.0t	10Δ	30	20	10m	2.5m	10n	0.0	.50m	.90m	20u		10p#	1.7m	200C	PL	T072	DH	
24	2N4352†	300m	5.0Δ	10Δ	30	30	30m	10n	10p	0.0				600	5.0p#	1.7m	200S	PL	T072	DR	
25	2N4381	300m	5.0t	15Δ	25	25		12m	1.0n	0.0	15	2.0m	6.0m	75u*	20p#	2.0m	175J		T018	DG	
26	2N4382	300m	9.0t	15Δ	25	25		30m	1.0n	0.0	15	4.0m	8.0m	100u*	20p#	2.0m	175J		T018	DG	
27	2N5020	300m	1.5†	15Δ	25	25		1.2m	1.0n	0.0	15	1.0m	3.5m	20u	1.0kt	25p#	2.0m	175J		T018	DA
28	2N5021	300m	2.5†	15Δ	25	25		3.5m	1.0n	0.0	15	1.5m	5.0m	20u	1.3kt	25p#	2.0m	175J		T018	DA
29	2N5471	300m	4.0t	15	40	40		.06mΔ	50p	0.0	15	.06m	.18m†	1.0u*	5p#	2.0m	200S		T072	DG	
30	2N5472	300m	4.0t	15	40	40		120uΔ	500p	0.0	15	90u	225u*	1.0u*	5.0p#	2.0m	200S		T072	DG	
31	2N5473	300m	6.0t	15	40	40		.25mΔ	50n	0.0	15	.12m	.30m†	2.5u*	5p#	2.0m	200S		T072	DG	
32	2N5474	300m	7.0t	15	40	40		.5mΔ	50n	0.0	15	.16m	.40m†	2.5u*	5p#	2.0m	200S		T072	DG	
33	2N5475	300m	8.0t	15	40	40		1mΔ	50n	0.0	15	.20m	.50m†	5.0u*	5p#	2.0m	200S		T072	DG	
34	2N5476	300m	9.0t	15	40	40		2mΔ	50n	0.0	15	.28m	.65m†	10u*	5p#	2.0m	200S		T072	DG	
35	3N89Q	300m	4.0	5.0	40	50m		2.5m	5.0n	0.0	5.0	.45m	1.3m		.90p#	2.0m	200S		T072	DR	
36	3N155†	300m	3.2Δ	10*	35	50		5.0m	1.0n	0.0					60kt	5.0p#	1.7m	175J		T072	DR
37	3N155A†	300m	3.2†	10*	35	50	30m	5.0m	1.0n	0.0					.30kt	5.0p#	1.7m	175J		T072	DR
38	3N156†	300m	5.0Δ	10*	35	50			1.0n	0.0					.60kt	5.0p#	1.7m	175J		T072	DG
39	3N156A†	300m	5.0†	10*	35	50	30m		1.0n	0.0					.30kt	5.0p#	1.7m	175J		T072	DG
40	3N157	300m	3.2Δ	15*	35	25	30m		.01n	15	1.0	4.0	60u		5.0p#	1.7m	175J		T072	DG	
41	3N157A	300m	3.2†	15*	35	25	30m		.01n	15	1.0	4.0	60u		5.0p#	1.7m	175J		T072	DG	
42	3N158	300m	5.0Δ	15*	35	25	30m	5.0m	.01n	20	1.0	4.0	60u		5.0p#	1.7m	175J		T072	DR	
43	3N158A	300m	5.0†	15*	35	25	30m		.01n	20	1.0	4.0	60u		5.0p#	1.7m	175J		T072	DR	
44	3N165V	300m	5.0Δ	15*	40	40	50m	30m	10p	10	1.5m	3.0m	300u	300	3.0p#	2.4m	200S		T018	DA	
45	3N166†	300m	5.0Δ	15*	40	40	50m	30m	10p	10	1.5m	3.0u	300u	300	3.0p#	2.4m	200S		T018	DA	
46	3N181†	300m	4.0Δ	10*	30	30Δ	100m	100u	500p						40%	2.5p#	2.4m	200S		T072	DM
47	3N182†	300m	5.0Δ	10*	30	30Δ	100m	100u	2.5n						60%	25p#	2.4m	200S		T072	DM
48	3N183†	300m	6.0Δ	10*	25	25Δ	100m	100u	10n						75%	30p#	2.4m	200S		T072	DM
49	3N184†	300m	3.0Δ	10*	35	35Δ	50m	1.0m	15m#0						15%	9.0p#	2.4m	200S		T072	DM
50	3N185†	300m	3.0Δ	10*	30	30Δ	50m	1.0m	15m#0						15%	10p#	2.4m	200S		T072	DM
51	3N186†	300m	3.5Δ	10*	25	25Δ	50m	1.0m	10m#0						20%	11p#	2.4m	200S		T072	DM
52	3N188V	300m	5.0Δ	15*	40	40Δ	50m	1.0m	20p	10	1.5m	4.0m	300u*	300	4.5p#	2.4m	200S		T072	DA	
53	3N189V	300m	5.0Δ	15*	40	40Δ	50m	1.0m	20p	10	1.5m	4.0m	300u*	300	4.5p#	2.4m	200S		T072	DA	
54	3N190V	300m	5.0Δ	15*	40	40Δ	50m	1.0m	20p	10	1.5m	4.0m	300u*	300	4.5p#	2.4m	200S		T072	DA	
55	3N191V	300m	5.0Δ	15*	40	40Δ	50m	1.0m	20p	10	1.5m	4.0m	300u*	300	4.5p#	2.4m	200S		T072	DA	
56	FP4339	300m	3.0	3.0	40	40	50m	50m	1.5m	30n	0.0	15	.80m	2.4m	1.7k	7.0p#	2.0m	175		T072	DG
57	FP4340	300m	3.0	3.0	40	40	50m	50m	3.5m	30n	0.0	15	1.3m	3.0m	1.5k	7.0p#	2.0m	175		T072	DG
58	FT3909	300m	8.0t	10	20	20	50m	100u	15m	0.0	10	1.0m	5.0m	100u		3.2p#	2.0m	125J	DPL	T018	DA
59	MEM100†	300m	3.0Δ	10*	35	35	50m	100u	2.0n	0.0				150	9.0p#	2.0m	200S		T072	DM	
60	MEM101†	300m	3.0Δ	10*	30	30	50m	100u	5.0n	0.0				175	10p#	2.0m	200S		T072	DM	
61	MEM102†	300m	3.2Δ	10*	25	25	50m	100u	10n	0.0				200	11p#	2.0m	200S		T072	DM	
62	MEM560	300m	3.2Δ	10*																	



# 6. SILICON FIELD EFFECT TRANSISTORS - P CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVICE DISS @25°C (W)	MAX. Vp		ABS MAX RATINGS@25°C		MAX. Id		MAX. Ig		MAX. Id(ON)@ Vgs=0 & Vds>Vp		MAX. Igss@ Vgs>Vp & Vds=0		TEST COND		PARAMETERS @25°C				DERATE		STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C A D E
			Id=0 (V)	& Vds (V)	V (V)	V (V)	(A)	(A)	(A)	(A)	(V)	(V)	(V)	(V)	gfs (mhos)	Yos	r(DS) on (Ω)	MAX Cis (F)	IN FREE AIR W/°C	MAX TEMP (°C)					
																	MIN	MAX	mhos						
1	M164	375m	5.0Δ	*	30	30					30m	10p	10∅	15	1.0m	4.0m	300u	300%	2.9p#	3.0m	150J	*	TO72	DM	
2	UC1764	375m	5.0Δ	*	30	30					3.0m∅#	10p	10∅	15	1.0m	4.0m	300u	300kΔ	3.0p#	3.0m	200S	*	TO72	DS	
3	3N1491	400m	6.0Δ	20*							16m#	10m	10∅	15	1.0m	4.0m	300u	25k†	3.0p∅	2.6m	175J	*∇	TO72	DM	
4	3N1501	400m	6.0Δ	20*							16m#	10m	10∅	15	1.0m	4.0m	300u	25k†	3.0p∅	2.6m	175J	*∇	TO72	DM	
5	2N2386	500m	8.0	12*							15mΔ	10m	0.0	10	1.0m	2.2m	30uΔ	10uΔ	50p#	3.3m	200S	#	TO5	DA∅	
6	2N2386A	500m									15mΔ	10m	0.0	10	2.2m	5.0m	10uΔ	10p#	10p#	3.3m	200S	#	TO5	DA∅	
7	2N2497	500m	5.0	15							3.0m	10n	1∅	10	1.0m	2.0m	20u%	1.0k	32p#	3.3m	300S	∅#	R82	DA∅	
8	JAN2N2497	500m	5.0†	15	20						3.0m	10n	1∅	10	1.0m	2.0m	20u	1.0k	32p#	3.3m	200S	∅#	TO5	DA∅	
9	2N2498	500m	6.0	15							6.0m	10n	2∅	10	1.5m	3.0m	40u%	80k	32p#	3.3m	300S	∅#	R82	DA∅	
10	JAN2N2498	500m	6.0†	15	20						6.0m	10n	1∅	10	1.5m	3.0m	40u	80k	32p#	3.3m	200S	∅#	TO5	DA∅	
11	2N2499	500m	8.0	15							15m	10n	5∅	10	2.0m	4.0m	100u%	60k	32p#	3.3m	300S	∅#	R82	DA∅	
12	JAN2N2499	500m	8.0†	15	20						15m	10n	1∅	10	2.0m	4.0m	100u%	60k	32p#	3.3m	200S	∅#	TO5	DA∅	
13	2N2500	500m	6.0	15							6.0m	10n	1∅	10	1.0m	2.2m	20u%	20u	32p#	3.3m	300S	∅#	R82	DA∅	
14	JAN2N2500	500m	6.0†	15	20						6.0m	10n	1∅	10	1.0m	2.2m	20u	80k	32p#	3.3m	200S	∅#	TO5	DA∅	
15	2N5114†	500m	10†	15							90m	50n			1.0m	2.2m	20u	80k	25p#	3.0m	200S	∇#	TO18	DA∅	
16	2N5115†	500m	6.0†	15							60m	50n			1.0m	2.2m	20u	10k%	25p#	3.0m	200S	∇#	TO18	DA∅	
17	2N5116†	500m	4.0†	15							25m	50n			1.0m	2.2m	20u	15k%	25p#	3.0m	200S	#	TO18	DA∅	
18	M106	500m	6.0Δ	*	30	30	50m	100u	10m	100p	10m	10p	10	10	2.0n			120 †	500†	6.7m	125J	*§	L51b		
19	M107	500m	6.0Δ	*	30	30	50m	100u	10m	100p	10m	10p	10	10	2.0n			120 †	500†	6.7m	125J	*§	L70		
20	M108	500m	8.0Δ	*	30	30	50m	100u	10m	10p	10m	10p	10	10	2.0n			120 †	500†	6.7m	125J	*§	L70a		
21	2N4066†	600m	6.0Δ	15*	30	25	200m		50m		50m		15	15	1.5m		300u%	50k	7.0p#	4.0m	175J	∇	L18a		
22	2N4067†	600m	6.0Δ	15*	30	25	200m	10m	50m	10m	8.0m#		15	15	2.5m		300u%	25k%	7.0p#	4.0m	175J	∇	L18a		
23	3N1471	600m	6.0Δ	20*							8.0m#							50k†	2.0p∅	4.0m	175J	*∇	L18a		
24	3N1481	600m	6.0Δ	20*							8.0m#							50k†	2.0p∅	4.0m	175J	*∇	L18a		
25#	F10049*	600m	6.0Δ		30	25	200m		50m∅				15	20	2.0m			125k	5p#	4.0m	175J	DPL*∇	L18a		
26	MEM400†	600m	4.0Δ	10*	30	30	100m	100u	500p									40	25p#	4.0m	200S	*Δ	TO33	DM	
27	MEM401†	600m	5.0Δ	10*	30	30	100m	100u	25n									60	25p#	4.0m	200S	*Δ	TO33	DM	
28	MEM402†	600m	6.0Δ	10*	25	25	100m	100u	10n									75	30p#	4.0m	200S	*Δ	TO33	DM	
29	MEM517	600m	5.0Δ	*	30	25	250m	1.0m	60m*	1.0n	10n	10	10	10	12mΔ			1.0k	10p†*	170u	125J	*	TO33	DM	
30	MEM517A	600m	5.0Δ	*	30	25	250m	1.0m	60m*	1.0n	10n	10	10	10	12mΔ			1.0k	10p†*	170u	125J	*	TO5	DC∅	
31	MFE3020†	600m	6.0Δ	15*	25	25	200m		10n	10p	15	15	15	500u				500%	7.0p#	4.0m	175J	∇*	L18a		
32	MFE3021†	600m	6.0Δ	15*	25	25	200m		10n	10p	15	15	15	500u				250%	7.0p#	4.0m	175J	∇*	L18a		
33	UC807	600m	12	15							125m#	2.0n	0.0	15	2.5m	25m		400 †	30p*			PE	∇*	TO72	
34	2N5018†	1.8 Δ	10†	15Δ	30	30		10m	10m		10m#	2.0n						.07k†	45p#	10m	200S		TO18	DA∅	
35	2N5019†	1.8 Δ	5.0†	15Δ	30	30		10m	10m		5.0m#	2.0n						.15k†	45p#	10m	200S		TO18	DA∅	
36	3N162†	2.0 Δ	5.0Δ	10*	30	25Δ	250m		25m									100	20p#	20m	150S	*	TO33	DM	
37	MEM515	2.0	3.0Δ	10*	30	35	700m	1.0m	10n	500p					12m			15	50p#	175S	*Δ	TO33	DM		
38	MEM517C	45	5.0†	*	25	25	250m	100u	50n	1.0n			10	10	12mΔ			45	15pΔ	600m	100J	*	L75	DM	



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVICE DISS @25°C (W)	MAX. Vp		ABS MAX RATINGS @25°C				MAX. Id		MAX. Id(ON) @ Vgs=0 & Vgs>Vp		MAX. Igss @ Vp & Vgs=0		TEST COND				PARAMETERS @25°C				DERATE IN		STRUC-TURE	DWG #	FL C	E O D E
			Id=0 (V)	Vds (V)	Vds (V)	BVdss (V)	BVgss (V)	Id (A)	Ig (A)	Id(ON) (A)	Id(ON) (A)	Igss (A)	Vgs (V)	Vds (V)	Vgs (V)	Vds (V)	COMMON SOURCE		rDS(on) (Ω)	MAX. Cis (F)	FREE AIR W/°C	MAX TEMP (°C)						
																	gfs (mhos)	MAX (mhos)					gfs (mhos)	MAX (mhos)				
1	MPP107	200m	6.0	15	25	25	30m	10m	20m	100n	0.0	15	4.0m	8.0m	75u*			5.0p#	2.0m	125J	∅	T072	DH	DD				
2	MPP111	200m	10t	10Δ	20	20	10m	10m	20mΔ	100n	0.0	10	5.0out	3.0mΔ	20u*			4.5p#	2.0m	125J	∅	T092	DD	DD				
3	MPP112	200m	10t	10Δ	25	25	10m	10m	25mΔ	100n	0.0	10	1.0mt	7.5m				8.0p#	2.0m	125J	∅	T092	DH	DD				
4	NF501	200m	8.0	15	15	15Δ	10m	10m	30 %	50n	0.0	10	4.5 Δ	10m				3.0 #	2.0m	125J	#	T072	DH	DD				
5	NF522	200m	8.0	15	20	20Δ	1.0m	1.0m	10m	10n	0.0	15	500u	2.0mΔ				4.0p#	2.0m	125J	#	T072	DH	DD				
6	NF523	200m	8.0	15	20	20Δ	1.0m	2.0m	10m	10n	0.0	15	400u	1.2mΔ				4.0p#	2.0m	125J	#	T072	DH	DD				
7	NF532	200m	8.0	15	20	20Δ	1.0m	10m	8.0n	10n	0.0	15	500u	2.0mΔ				4.0p#	2.0m	125J	#	T018	DB	DB				
8	NF533	200m	8.0	15	20	20Δ	1.0m	2.0m	8.0n	10n	0.0	15	400u	1.2mΔ				4.0p#	2.0m	125J	#	T018	DB	DB				
9	NPC108	200m	6.0	15Δ	25Δ	25	10m	25m%	1.0n	0.0	15	4.0mt	8.0m%	100			5.0p#	2.0m	125S	PET	∅	R110	DB	DB				
10	NPC108A	200m	5.0	15Δ	25Δ	25	10m	25m%	1.0n	0.0	15	4.0mt	8.0m%	100			5.0p#	2.0m	125S	PET	∅	R110	DB	DB				
11#	SES3819	200m	7.5	15	25	25	10m	20m	2.0n	0.0	15	2.0	6.5	50m			8.0p	2.0	200J	PL	1#	T098	DB	DB				
12#	SI231N	200m	.70%	5.0	15Δ	15Δ	150u	1.0n	0.0	0.0	10	14.0u	500u				6.0p#	1.1	200J	PL		T018	DB	DB				
13#	SI232N	200m	1.0%	5.0	15Δ	15Δ	300u	1.0n	0.0	0.0	10	28.0u	800u				6.0p#	1.1	200J	PL		T018	DB	DB				
14#	SI233N	200m	1.4%	5.0	15Δ	15Δ	600u	1.0n	0.0	0.0	10	40.0u	1.0m				6.0p#	1.1	200J	PL		T018	DB	DB				
15#	SI234N	200m	2.0%	5.0	15Δ	15Δ	1.5m	1.0n	0.0	0.0	10	65.0u	1.5m				6.0p#	1.1	200J	PL		T018	DB	DB				
16#	SI235N	200m	3.5%	5.0	15Δ	15Δ	3.0m	1.0n	0.0	0.0	10	90.0u	2.0m				6.0p#	1.1	200J	PL		T018	DB	DB				
17#	SI236N	200m	5.0%	5.0	15Δ	15Δ	6.0m	1.0n	0.0	0.0	10	1.3m	3.0m				6.0p#	1.1	200J	PL		T018	DB	DB				
18#	U183	200m	8.0	15	25	25	10m	20m	2.0n	0.0	15	1.6m%			50u%			8.0p#	2.0m	150S	#	T072	DH	DB				
19	3N1751	225m	2.0Δ	10*	30	35	50m	50m	5.0n	200p							200 %	5.0p#	1.8m	200S	*	T072	DR	DR				
20	3N1761	225m	2.5Δ	10*	25	30	50m	50m	10n	200p							300 %	1.8m	200S	*	T072	DR	DR					
21	3N1771	225m	3.5Δ	10*	20	20	50m	50m	25n	200p							500 %	7.0p#	1.8m	200S	*	T072	DR	DR				
22	M116	225m	5.0Δ	*	30	30	100u	100u		10p							100 t	7.0p#	2.2m	125J	*	T072	DM	DR				
23	M117	225m	5.0Δ	*	30	30	50m	100u		1.0p							100 t	7.0p#	2.2m	125J	*	T072	DR	DR				
24	MEM2001	225m	1.6Δ	10*	35	35	50m	50m									200	5.0p#	1.5m	200S	*	T022	DR	DR				
25	MEM2011	225m	2.5Δ	10*	30	30	50m	50m									300	5.0p#	1.5m	200S	*	T022	DR	DR				
26	MEM2021	225m	3.5Δ	10*	20	20	50m	50m									500	7.0p#	1.5m	200S	*	T022	DR	DR				
27	MEM557C	225m	4.0t	15Δ	20	5.0			30m	100p	10∅	15	6.0m	8.0mΔ			200 t	5.0p#	1.5m	125J	*	T072	DR	DW				
28	MEM5621	225m	4.0Δ	4.0*	20	10			10n	10p	2.0∅	10	6.0m				150 t	4.0p#	2.2m	125J	*	T072	DR	DR				
29	MEM563	225m	4.0Δ	4.0*	20	10			10n	10p	2.0∅	10	2.0m				50 t	5.0p#	2.2m	125J	*	T072	DR	DR				
30	MEM564C	225m	4.0Δ	20Δ	20	15			30m	10n	4.0	15	8.0m	12mΔ				8.0p#	2.2m	125J	*	T072	DR	DX				
31	MMT3823	225m	8.0t	15Δ	30	30	25m	10m	20m%	1.0n	0.0	15	3.0m%	8.0mt	25u*			4.0p#	2.0m	135J	*	T072	DD	DD				
32#	3SK37	230m	3.0t	10∅	20t	8.0	50	10m	10m*	1.0u	5.0∅	10	7.0m%	9.5mΔ	400u			4.0p#	2.2m	150S	*	u43	DD	DX				
33	2N3921	250m	3.0t	10	10	50	50	10m	250p	1.0n	0.0	10	1.5	7.5	35u			18p	1.7m	200S	∅	L21	DD	DX				
34	2N3922	250m	3.0t	10	50	50	10m	250p		1.0n	0.0	10	1.5	7.5	35u			18p	1.7m	200S	∅	L21	DD	DX				
35	2N3934	250m	3.0t	10	50	50	1.3m	100p		400p	0.0	10	300u	900u	10u			7.0p	1.7m	200S	∅	L21	DD	DX				
36	2N3935	250m	3.0t	10	50	50	1.3m	100p		400p	0.0	10	300u	900u	10u			7.0p	1.7m	200S	∅	L21	DD	DX				
37	2N3954*	250mΔ	4.5t	20Δ	50	50		50m	5.0m	.10n	0.0	20	1.0m	3.0m	35u			4.0p#	2.9m	200S	∅	L61a	DB	DB				
38	2N3954A*	250mΔ	4.5t	20Δ	50	50		50m	5.0m	.10n	0.0	20	1.0m	3.0m	35u			4p#	2.9m	200S	∅	L61a	DB	DB				
39	2N3955*	250mΔ	4.5t	20Δ	50	50		50m	5.0m	.10n	0.0	20	1.0m	3.0m	35u			4.0p#	2.9m	200S	∅	L61a	DB	DB				
40	2N3955A*	250mΔ	4.5t	20Δ	50	50		50m	5.0m	.10n	0.0	20	1.0m	3.0m	35u			4.0p#	2.9m	200S	∅	L61a	DB	DB				
41	2N3956*	250mΔ	4.5t	20Δ	50	50		50m	5.0m	.10n	0.0	20	1.0m	3.0m	35u			4.0p#	2.9m	200S	∅	L61a	DB	DB				
42	2N3957*	250mΔ	4.5t	20Δ	50	50		50m	5.0m	.10n	0.0	20	1.0m	3.0m	35u			4.0p#	2.9m	200S	∅	L61a	DB	DB				
43	2N3958*	250mΔ	4.5t	20Δ	50	50		50m	5.0m	.10n	0.0	20	1.0m	3.0m	35u			4.0p#	2.9m	200S	∅	L61a	DB	DB				
44	2N5045*	250m	4.5t	15	50	50		30m	8.0m	.25n	0.0	15	1.5m	6.0m	25u			8.0p#	1.7m	200S	#	L21	DB	DB				
45	2N5046*	250m	4.5t	15	50	50		30m	8.0m	.25n	0.0	15	1.5m	6.0m	25u			8.0p#	1.7m	200S	#	L21	DB	DB				
46	2N5047*	250m	4.5t	15	50	50		30m	8.0m	.25n	0.0	15	1.5m	6.0m	25u			8.0p#	1.7m	200S	#	L21	DB	DB				
47	2N5196*	250m	4.0t	20Δ	50	50		50m	7.0m	.25p	0.0	20	1.0m	4.0m	50u%			6.0p#	2.0m	200S	#	L61	DB	DB				
48	2N5197*	250m	4.0t	20Δ	50	50		50m	7.0m	.25p	0.0	20	1.0m	4.0m	50u%			6.0p#	2.0m	200S	#	L61	DB	DB				
49	2N5198*	250m	4.0t	20Δ	50	50		50m	7.0m	.25p	0.0	20	1.0m	4.0m	50u%			6.0p#	2.0m	200S	#	L61	DB	DB				
50	2N5199*	250m	4.0t	20Δ	50	50		50m	7.0m	.25p	0.0	20	1.0m	4.0m	50u%			6.0p#	2.0m	200S	#	L61	DB	DB				
51	2N5452	250m†	4.5t	20Δ	50Δ	50Δ		50m	5.0mΔ	100p	0.0	20	1.0m	3.0m	3.0u			4.0p#	2.8m	200J	#	L58	DB	DB				
52	2N5453	250m†	4.5t	20Δ	50Δ	50Δ		50m	5.0mΔ	100p	0.0	20	1.0m	3.0m	3.0u			4.0p#	2.8m	200J	#	L58	DB	DB				
53	2N5454	250m†	4.5t	20Δ	50Δ	50Δ		50m	5.0mΔ	100p	0.0	20	1.0m	3.0m	3.0u			4.0p#	2.8m	200J	#	L58	DB	DB				
54	2N5515*	250m	4.0t	20Δ	40	40		50m	7.5m	250p	0.0	20	1.0m	4.0m	10u%			25p#	2.0m	150S	∅	L61	DB	DB				
55	2N5516*	250m	4.0t	20Δ	40	40		50m	7.5m	250p	0.0	20	1.0m	4.0m	10u%			25p#	2.0m	150S	∅	L61	DB	DB				
56	2N5517*	250m	4.0t	20Δ	40	40		50m	7.5m	250p	0.0	20	1.0m	4.0m	10u%			25p#	2.0m	150S	∅	L61	DB	DB				
57	2N5518*	250m	4.0t	20Δ	40	40		50m	7.5m	250p	0.0	20	1.0m	4.0m	10u%			25p#	2.0m	150S	∅	L61	DB	DB				
58	2N5519*	250m	4.0t	20Δ	40	40		50m	7.5m	250p	0.0	20	1.0m	4.0m	10u%			25p#	2.0m	150S	∅	L61	DB	DB				
59	2N5520*	250m	4.0t	20Δ	40	40		50m	7.5m	250p	0.0	20	1.0m	4.0m	10u%			25p#	2.0m	150S	∅	L61	DB	DB				
60	2N5521*	250m	4.0t	20Δ	40	40		50m	7.5m	250p	0.0	20	1.0m	4.0m	10u%			25p#	2.0m	150S	∅	L61						





# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVISS @25°C (W)	MAX. ABS MAX RATINGS@25°C				MAX. TEST COND				PARAMETERS @25°C				DERATE		STRUCTURE	DWG #	Y200 s/a TO200 Ser.	# C A D E		
			MAX. Vp (V)	MAX. Id (A)	MAX. BVdss (V)	MAX. BVgss (V)	MAX. Id(ON) (A)	MAX. Ig (A)	MAX. Vgs=0 (V)	MAX. Vgs>Vp (V)	Vgs (V)	Vds (V)	COMMON SOURCE		r(DS) on (Ω)	MAX. Cis (F)					FREE AIR W/C (°C)	MAX TEMP (°C)
													MIN gfs (mhos)	MAX gfs (mhos)								
1	CM603	300m	1.5	15Δ	5.0Δ	15Δ	100m	100m	100mΔ	3.0n	0.0	0.0	10	20m	60m	30 Δ	5.0p	2.3m	200J	E#	TO18	DD
2	CM640	300m	2.2	15Δ	20Δ	20Δ	100m	100m	500u#	400p	0.0	0.0	10	5.0m	10m	250 Δ	5.0p	2.3m	200J	E#	TO18	DD
3	CM641	300m	2.2	15Δ	20Δ	20Δ	100m	100m	3.0m#	400p	0.0	0.0	10	10m	10m	100 Δ	5.0p	2.3m	200J	E#	TO18	DD
4	CM642	300m	3.0	15Δ	20Δ	20Δ	100m	100m	10m#	400p	0.0	0.0	10	20m	20m	50 Δ	5.0p	2.3m	200J	E#	TO18	DD
5	CM643	300m	5.0	15Δ	20Δ	20Δ	100m	100m	50m#	400p	0.0	0.0	10	30m	30m	35 Δ	5.0p	2.3m	200J	E#	TO18	DD
6	CM644	300m	3.0	15Δ	30Δ	30Δ	100m	100m	10m#	400p	0.0	0.0	10	20m	20m	50 Δ	5.0p	2.3m	200J	E#	TO18	DD
7	CM645	300m	5.0	15Δ	30Δ	30Δ	100m	100m	15m#	400p	0.0	0.0	10	20m	20m	40 Δ	5.0p	2.3m	200J	E#	TO18	DD
8	CM646	300m	7.0	15Δ	30Δ	30Δ	100m	100m	30m#	400p	0.0	0.0	10	30m	30m	30 Δ	5.0p	2.3m	200J	E#	TO18	DD
9	CM647	300m	10	15Δ	30Δ	30Δ	100m	100m	50mΔ	400p	0.0	0.0	10	30m	30m	25 Δ	5.0p	2.3m	200J	E#	TO18	DD
10	FE4302	300m	4.0	20	30	30	10m	10m	5.0m	1.0n	0.0	0.0	20	1.0m	1.0m	50u%	6.0p#	2.5m	145J	DPL	TO106	DB
11	FE4303	300m	6.0	20	30	30	10m	10m	10m	1.0n	0.0	0.0	20	2.0m	2.0m	50u%	6.0p#	2.5m	145J	DPL	TO106	DB
12	FE4304	300m	1.0	20	30	30	10m	10m	15m	1.0n	0.0	0.0	20	1.0m	1.0m	50u%	6.0p#	2.5m	145J	DPL	TO106	DB
13	FF409	300m	5.0	25Δ	30Δ	30Δ	50m	50m	35m#	1.0n	5.0	0.0	15	8.0m	25m		6.5p	1.7m	200J	E#	R135a	DB
14	FF411	300m	5.0	25Δ	30Δ	30Δ	50m	50m	35m#	1.0n	5.0	0.0	15	8.0m	25m		6.5p	1.7m	200J	E#	R135b	DB
15	FF600	300m	5.0	10Δ	15Δ	15Δ	50m	50m	25m*	3.0n	0.0	0.0	10	8.0m	8.0m		35p	1.7m	200J	E#	R150	DH
16	FF617	300m	5.0	10Δ	15Δ	15Δ	50m	50m	25m*	3.0n	0.0	0.0	10	8.0m	8.0m		35p	1.7m	200J	E#	R150a	DH
17	FT0654A	300m	8.0	20	50	50	50m	50m	40mΔ	1.0n	0.0	0.0	20	4.5m	9m	52u	20p#	2.0m	175J	DPL	TO18	DB
18	FT0654B	300m	8.0	20	50	50	50m	50m	40mΔ	1.0n	0.0	0.0	20	4.5m	9m	52u	20p#	2.0m	175J	DPL	TO18	DB
19	FT0654C	300m	4.0	20	50	50	50m	50m	12mΔ	1.0n	0.0	0.0	20	3.5m	8m	27u	22k	2.0m	175J	DPL	TO18	DB
20	FT0654D	300m	4.0	20	50	50	50m	50m	12mΔ	1.0n	0.0	0.0	20	3.5m	8m	27u	22k	2.0m	175J	DPL	TO18	DB
21	FT0654E	300m	2.5	20	50	50	50m	50m	4.0mΔ	1.0n	0.0	0.0	20	2.0m	6m	24u	30k	2.0m	175J	DPL	TO18	DB
22	HEPF2005	300m	2.0	20	30	30	10m	10m	10m	5.0p	0.0	0.0	20	2.0k	7.0m	10u	20p#	1.7m	200S	**	TO72	DJ
23	JH2101	300m	5.0	20	50	50	10m	10m	10m	250p	0.0	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	**	L58	
24	JH2102	300m	5.0	20	50	50	10m	10m	10m	250p	0.0	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	**	L58	
25	JH2103	300m	5.0	20	50	50	10m	10m	10m	250p	0.0	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	**	L58	
26	JH2104	300m	5.0	20	50	50	10m	10m	10m	250p	0.0	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	**	L58	
27	JH2105	300m	5.0	20	50	50	10m	10m	10m	250p	0.0	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	**	L58	
28	JH2106	300m	5.0	20	50	50	10m	10m	10m	250p	0.0	0.0	20	2.0m	7.0m	10u	20p#	1.7m	200S	**	L58	
29	M100	300m	5.0	10	20	20							1.0m	1.0m					Δ*	TO18	DA	
30	M101	300m	8.0	10	20	20							1.5m	1.5m					Δ*	TO18	DA	
31	MD1F3458	300m	8.0	20		50Δ	10m	10m	15m	5.0n	0.0	0.0	20	2.5m	10m		18p#	150A	Δ	TO122	GP	
32	MD1F3459	300m	4.0	20		50Δ	10m	10m	4.0m	5.0n	0.0	0.0	20	1.5m	6.0m	20u	18p#	150A	Δ	TO122	GP	
33	MD1F3460	300m	2.0	20		50Δ	10m	10m	1.0m	5.0n	0.0	0.0	20	800u	4.5m	50u	18p#	150A	Δ	TO122	GP	
34	MD1F3823	300m	8.0	15	30Δ	30Δ	10m	10m	20m	5.0n	0.0	0.0	15	3.2m	7.5m	35u*	6.0p#	150A	Δ	TO122	GP	
35	MD1F4416	300m	6.0	15	30Δ	30Δ	10m	10m	15m	500u	0.0	0.0	15	4.5m	7.5m	50u	4.0p#	150A	Δ	TO122	GP	
36	MFE2093	300m	2.5	15	50	50	3.0m	3.0m	7.0m	1.0n	0.0	0.0	15	2.5m	50m	1.5u	6.0p	175	Δ	TO72	DJ	
37	MFE2094	300m	4.5	15	50	50	3.0m	3.0m	1.4m	100p	0.0	0.0	15	350u	700u	3.0u	6.0p	2.0m	175	Δ	TO72	DJ
38	MFE2095	300m	5.5	15	50	50	3.0m	3.0m	3.0m	100p	0.0	0.0	15	400u	800u	10u	6.0p	2.0m	175	Δ	TO72	DJ
39	MFE3006	300m	3.0	15	25Δ	35	30m	30m	18m	1.0n	4.0	15	8.0m	18m		6.0p#	1.7m	175J	*∅	TO72	DX	
40	MFE3007	300m	3.0	15	25	35	30m	30m	20m	1.0n	4.0	15	10m	18m		5.5p#	1.7m	175J	*∅	TO72	DX	
41	MFE3008	300m	3.0	15	25	35	30m	30m	20m	1.0n	4.0	15	8.0m	18m		6.0p#	1.7m	175J	*∅	TO72	DX	
42	MMF1	300m	8.0	15Δ	30	30	20m	10m	10m	0.5n	0.0	0.0	15	1.5m	6.5m	50u	6.0p#	2.0m	175J	#	X74	DH
43	MMF2	300m	8.0	15Δ	30	30	20m	10m	10m	0.5n	0.0	0.0	15	1.5m	6.5m	50u	6.0p#	2.0m	175J	#	X74	DH
44	MMF3	300m	8.0	15Δ	30	30	20m	10m	10m	0.5n	0.0	0.0	15	1.5m	6.5m	50u	6.0p#	2.0m	175J	#	X74	DH
45	MMF4	300m	8.0	15Δ	30	30	20m	10m	10m	0.5n	0.0	0.0	15	1.5m	6.5m	50u	6.0p#	2.0m	175J	#	X74	DH
46	MMF5	300m	8.0	15Δ	30	30	20m	10m	10m	0.5n	0.0	0.0	15	1.5m	6.5m	50u	6.0p#	2.0m	175J	#	X74	DH
47	MMF6	300m	8.0	15Δ	30	30	20m	10m	10m	0.5n	0.0	0.0	15	1.5m	6.5m	50u	6.0p#	2.0m	175J	#	X74	DH
48	NF500	300m	8.0	15	25	25Δ	1.0m	1.0m	30	30%	10n	0.0	15	4.5 Δ	↑	180 ↑	2.5 #	2.4m	150J	∅#	TO72	DH
49	NF506	300m	5.0	15	25	25	1.0m	1.0m	15m	1.0n	0.0	0.0	15	2.5m	7.0m	50u%	4.0p#	2.4m	150J	∅	TO72	DH
50	NF520	300m	8.0	15	30	30Δ	1.0m	1.0m	10m	1.0n	0.0	0.0	15	500u	2.0mΔ		4.0p#	2.4m	150J	#	TO72	DH
51	NF521	300m	8.0	15	30	30Δ	1.0m	1.0m	2.0m	1.0n	0.0	0.0	15	400u	1.2mΔ		4.0p#	2.4m	150J	#	TO72	DH
52	NF530	300m	8.0	15	30	30Δ	1.0m	1.0m	10m	8.0n	0.0	0.0	15	500u	2.0mΔ		4.0p#	2.4m	150J	#	TO18	DB
53	NF531	300m	8.0	15	30	30Δ	1.0m	1.0m	2.0m	8.0n	0.0	0.0	15	400u	1.2mΔ		4.0p#	2.4m	150J	#	TO18	DB
54	NF4302	300m	4.0	20	30	30	10m	10m	5.0m	1.0n	0.0	0.0	20	700u		50u%	6.0p#	3.0m	125J	∅	TO18	DB
55	NF4303	300m	6.0	20	30	30	10m	10m	10m	1.0n	0.0	0.0	20	1.4m		50u%	6.0p#	3.0m	125J	∅	TO18	DB
56	NF4304	300m	10	20	30	30	10m	10m	15m	1.0n	0.0	0.0	20	700u		50u%	6.0p#	3.0m	125J	∅	TO18	DB
57	PH241N	300m	1.0	15	25	25	10m	10m	3.0m	200p	0.0	0.0	15	2.0m	7.0m		13p#	1.7	200S	PEΔ	X8f	DB
58	PH242N	300m	1.5	15	25	25	10m	10m	6.0m	200p	0.0	0.0	15	3.5m	7.5m		13p#	1.7	200S	PEΔ	X8f	DB
59	PH243N	300m	2.5	15	25	25	10m	10m	15m	200p	0.0	0.0	15	5.0m	10m		13p#	1.7	200S	PEΔ	X8f	DB
60	PH244N	300m	3.0	15	25	25	10m	10m	30m	200p	0.0	0.0	15	8.0m	15m		13p#	1.7	200S	PEΔ	X8f	DB
61	SI241N	300m	1.0	15	25	25	10m	10m	3.0m	200p	0.0	0.0	15	2.0	7.0m		18p#	1.7	200S	PE	TO18	DB
62	SI242N	300m	1.5	15	25	25	10m	10m	6.0m	200p	0.0	0.0	15	3.5m	7.5m		18p#	1.7	200S	PE	TO18	DB
63	SI243N	300m	2.5	15	25	25	10m	10m	15m	200p	0.0	0.0	15	5.0m	10m		18p#	1.7	200S	PE	TO18	DB
64	SI244N	300m	3.0	15	25	25	10m	10m	30m	200p	0.0	0.0	15	8								



# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	2	TYPE No.	1 MAX. DEVICE DISS @25°C (W)	MAX. Vp & Vds		ABS MAX RATINGS @25°C				MAX. Vgs @ Vds = 0		MAX. Vgs > Vp & Vds = 0		PARAMETERS @25°C				DERATE		STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# E O A D E		
				Vp (V)	Vds (V)	BVdss (V)	BVgss (V)	Id (A)	Ig (A)	Id(ON) (A)	Icss @ Vgs = 0 (A)	Icss @ Vgs > Vp (A)	COMMON SOURCE		r(DS) on (Ω)	MAX. Cis (F)	IN FREE AIR W/°C	MAX TEMP (°C)						
													gfs (mhos)	Yos (mhos)										
1	UC703	300m	6.0	20		40		50m	10m	500p	0.0	0.0	20	50u	5.0m		2.0k†	6.0p	1.7m	200		TO72	DH	
2	UC705	300m	8.0	20		40		50m	50m	1.0n	0.0	0.0	20	2.0m	2.0m		500†	1.7m	200	200		TO72	DH	
3	UC714	300m	8.0	20		30		50m	20m	100p	0.0	0.0	20	2.0m	6.5m			1.7m	200	200		TO72	DH	
4	UC734	300m	8.0	15	30Δ	30		10m	20mΔ	5.0n	0.0	0.0	15	3.5m	6.5m	50u		4.0p#	1.7m	200	PL#	TO72	DH	
5	UC734E	300m	8.0	15	30Δ	30		10m	20mΔ	5.0n	0.0	0.0	15	3.5m	6.5m	50u		4.0p#	200J	#1†	TO106	u77	EE	
6	UT100	300m	6.0	10		25		10m	30m	100p	100	100	10	6.0m	10m	200u\$		5.0p\$	1.7m	150A	#	u77a	EF	
7	UT101	300m	6.0	10		25		10m	30m	100p	100	100	10	6.0m	10m	200u\$		5.0p#	1.7m	150A	#	u77a	EF	
8	2N5457	310m	6.0†	15		25		10m	5mΔ	1.0n	0.0	0.0	15	1.0m	5.0m†	50u*		7.0p#	2.8m	150S	#	TO92	DD	
9	2N5458	310m	7.0†	15		25		10m	9mΔ	1.0n	0.0	0.0	15	1.5m	5.5m†	50u*		7.0p#	2.8m	150S	#	TO92	DD	
10	2N5459	310m	8.0†	15		25		10m	16mΔ	1.0n	0.0	0.0	15	2.0m	6.0m†	50u*		7.0p#	2.8m	150S	#	TO92	DD	
11	2N5484	310m	3.0†			25		10m	5mΔ	1.0n	0.0	0.0	15	3.0m	6.0m	50u		5.0p#	2.8m	150S	#	TO92	DD	
12	2N5485	310m	4.0†			25		10m	5mΔ	1.0n	0.0	0.0	15	3.5m	7.0m	60u		5.0p#	2.8m	150S	#	TO92	DD	
13	2N5486	310m	7.5†			25		10m	20mΔ	1.0n	0.0	0.0	15	4.0m	8.0m	75u		5.0p#	2.8m	150S	#	TO92	DD	
14	2N5555†	310m	1.0†	0.0	25	25	40m	10m	15m	1.0n							15k%	5.0p#	2.8m	150S	#	TO92	DD	
15	2N5638†	310m				30Δ		10m	50mΔ	1.0n							30%	10p#	2.8m	150S	#	TO92	DD	
16	2N5639†	310m				30Δ		10m	25mΔ	1.0n							60%	10p#	2.8m	150S	#	TO92	DD	
17	2N5640†	310m				30Δ		10m	2.0mΔ	1.0n							100%	10p#	2.8m	150S	#	TO92	DD	
18	2N5653†	310m				30Δ		10m	40mΔ	1.0n							50%	10p#	2.8m	150S	#	TO92	DD	
19	2N5654†	310m				30Δ		10m	15mΔ	1.0n							100%	10p#	2.8m	150S	#	TO92	DD	
20	2N5668	310m		4.0†	15	25		10m	5.0m	2.0n	0.0	0.0	15	1.5m	6.5m	20u		7.0p#	2.8m	150S	#	TO92	DD	
21	2N5669	310m		6.0†	15	25		10m	10m	2.0n	0.0	0.0	15	2.0m	6.5m	50u		7.0p#	2.8m	150S	#	TO92	DD	
22	2N5670	310m		8.0†	15	25		10m	20m	2.0n	0.0	0.0	15	3.0m	7.5m	75u		7.0p#	2.8m	150S	#	TO92	DD	
23	FE5457	310m		6.0†	15	25	25	10m	5.0m	1.0n	0.0	0.0	15	1.0m†	5.0m†	50u%		7.0p#	2.8m	135J	DPL	TO106	DB	
24	FE5458	310m		7.0†	15	25	25	10m	9.0m	1.0n	0.0	0.0	15	1.5m†	5.5m†	50u%		7.0p#	2.8m	135J	DPL	TO106	DB	
25	FE5459	310m		8.0†	15	25	25	10m	16m	1.0n	0.0	0.0	15	2.0m†	6.0m†	50u%		7.0p#	2.8m	135J	DPL	TO106	DB	
26	FE5484	310m		3.0†	15	25	25	10m	5.0m	1.0n	0.0	0.0	15	3.0m	6.0m	50u%		5.0p#	2.8m	135J	DPL	TO106	DB	
27	FE5485	310m		4.0†	15	25	25	10m	10m	1.0n	0.0	0.0	15	3.5m	7.0m	60u%		5.0p#	2.8m	135J	DPL	TO106	DB	
28	FE5486	310m		7.5†	15	25	25	10m	20m	1.0n	0.0	0.0	15	4.0m	8.0m	75u%		5.0p#	2.8m	135J	DPL	TO106	DB	
29	HEPF0021\$	310m			25	25	30m	10m	20m	1.0n									150J				TO92	DD
30	HSC4391†	310m		10		40	40	50m	150m	100p							30%	14p#	3.1m	125J	E#	TO106	DB	
31	HSC4392†	310m		5.0	20	40	40	50m	75m	100p							60%	14p#	3.1m	125J	E#	TO106	DB	
32	HSC4393†	310m		3.0	20	40	40	50m	30m	100p							100%	14p#	3.1m	125J	E#	TO106	DB	
33	HSC4416	310m		6.0	15	30	30	10m	15m	100p	0.0	0.0	15	4.5m		50u%		4.0p#	3.1m	125J	E#	TO106	DB	
34	HSC4416A	310m		6.0	15	35	35	10m	15m	100p	0.0	0.0	15	4.5m	7.5m	50u%		4.0p#	3.1m	125J	E#	TO106	DB	
35	HSC5163	310m		8.0	15	25	25	50m	40m	1.0n	0.0	0.0	15	2.0m	9.0m	200u%	500%	12p#	3.1m	125J	E#	TO106	DB	
36	HSC5457	310m		6.0	15	25	25	50m	5.0m	1.0n	0.0	0.0	15	1.0m	5.0m	50u*		7.0p#	3.1m	125J	E#	TO106	DB	
37	HSC5457A	310m		6.0	15	50	50	50m	5.0m	1.0n	0.0	0.0	15	1.0m	5.0m	50u*		7.0p#	3.1m	125J	E#	TO106	DB	
38	HSC5458	310m		7.0	15	25	25	50m	9.0m	1.0n	0.0	0.0	15	1.5m	5.5m	50u*		7.0p#	3.1m	125J	E#	TO106	DB	
39	HSC5458A	310m		7.0	15	50	50	50m	9.0m	1.0n	0.0	0.0	15	1.5m	5.5m	50u*		7.0p#	3.1m	125J	E#	TO106	DB	
40	HSC5459	310m		8.0	15	25	25	50m	16m	1.0n	0.0	0.0	15	2.0m	6.0m	50u*		7.0p#	3.1m	125J	E#	TO106	DB	
41	HSC5459A	310m		8.0	15	50	50	50m	1.6m	1.0n	0.0	0.0	15	2.0m	6.0m	50u*		7.0p#	3.1m	125J	E#	TO106	DB	
42	HSC5484	310m		3.0		25	25	10m	5.0m	1.0n	0.0	0.0	15	3.0m	6.0m	50u*		4.0p#	3.1m	125J	E#	TO106	DB	
43	HSC5485	310m		4.0		25	25	10m	10m	1.0n	0.0	0.0	15	3.5m	7.0m	60u		4.0p#	3.1m	125J	E#	TO106	DB	
44	HSC5486	310m		6.0		25	25	10m	20m	1.0n	0.0	0.0	15	4.0m	8.0m	75u		4.0p#	3.1m	125J	E#	TO106	DB	
45	HSC5638†	310m		12		30	30	50m	50m	1.0n							30%	10p#	3.1m	125J	E#	TO106	DB	
46	HSC5639†	310m		8.0		30	30	50m	25m	1.0n							60%	10p#	3.1m	125J	E#	TO106	DB	
47	HSC5640†	310m		6.0		30	30	50m	5.0m	1.0n							100%	10p#	3.1m	125J	E#	TO106	DB	
48	2N5664	325m		3.0†	15Δ	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	100	12p#	2.2m	200S		L61a	DW	
49	2N5665	325m		3.0†	15Δ	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	100	12p#	2.2m	200S		L61a	DW	
50	2N5666	325m		3.0†	15Δ	40	40	30	30m	100p	2.0	15	7.5m	12m	45u	100	100	12p#	2.2m	200S		L61a	DW	
51	3N128	330m		8.0†	15Δ	20	20Δ	50m	25m	50p	5.0	15	5.0m	1.2m				7.0p#	2.2m	175S		TO72	DW	
52	3N142	330m		8.0†	15Δ	20	20	50m	25m	1.0n			15	5.0m				10p#	2.2m	175S		TO72	DW	
53	3N143	330m		8.0†	15Δ	20	20	50m	30m	1.0n			15	5.0m				7.0p#	2.2m	175S		TO72	DW	
54	3N152	330m		8.0†	15Δ	20	20	50m	30m	1.0n			5.0	5.0m					2.2m	175S		TO72	DW	
55	3N154	330m		8.0†	15Δ	20	20	50m	25m	50p	5.0	15	5.0m	12m					2.2m	175S		TO72	DW	
56	3N187	330m		4.0†	15Δ	20	20Δ	50m	50m	50n	7.2	15	7.0m	18m					2.2m	175S	*	TO72	DX	
57	3N200	330m		3.0†	15Δ	20	20	50m	1.0m	50n			10m	20m					2.2m	175S		L77	DW	
58	40673	330m		4.0†	15Δ	20	20	50m	35m	20n	4.0	15	12m					6.0p#*	2.2m	175A	*	TO72	DX	
59	2N3069	350m		9.5	30	50Δ	50Δ	100m	10m	1.0n	0.0	0.0	30	1.0m	2.5m	80u		15p#	2.0m	200C		TO18	DB	
60	2N3070	350m		4.5	30	50Δ	50Δ	100m	2.5m	1.0n	0.0	0.0	30	750u	2.5m	30u†		15p#	2.0m	200C		TO18	DB	
61	2N3071	350m		2.2	30	50Δ	50Δ	100m	600u	1.0n	0.0	0.0	30	500u	2.5m	7.0u†		15p#	2.0m	200C		TO18	DB	
62	2N3684	350m		4.5	20	50	50	7.5m	7.5m	1.0n	0.0	0.0	20	2.0m	3.0m	50u%		4.0p#	2.0m	200S		TO72	DH	
63	2N3684A	350m		5.0†	20	50	50	7.5m	7.5m	100p	0.0	0.0	20	2.0m	3.0m	5.0u		4.0p#	2.0m	200S	*	TO72	DH	
64	BSV78†	350m		1.1	15	40	40	50m	50mΔ	250p							25%	14p	2.0m	200J	#	TO18	DB	
65	BSV79†	350m		7.0	15	40	40	50m	20mΔ	250p							40%	1						

# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1/MAX. DEVICE DISS @25°C (W)	MAX. Vp @ld=0 (V)	MAX. Vd (V)	ABS MAX RATINGS@25°C		ld (A)	lg (A)	ld(ON)@ Vgs>0 & Vds=0 (A)	Icss@ Vgs>Vp & Vds=0 (A)	TEST COND Vgs (V)	Vds (V)	PARAMETERS @25°C COMMON SOURCE		fT (MHz)	MAX. Cis (pF)	IN FREE AIR TEMP (°C)	MAX TEMP (°C)	STRUCTURE	DWG #	C/O
					BVdss (V)	BVgss (V)							gfs (mhos)	Yos (mhos)							
					MIN	MAX							MIN	MAX							
1#	BF245	360m	8.0	15	30	30	10m	25m	5.0n	0.0	15	3.0	6.5	50u	4.0p#	2.9m	150J	PE	T092		
2#	BF246	360m	8.0	15	25	25	10m	300m	5.0n	0.0	15	8.0	23 Δ		12p*	2.9m	150S	PE	X55		
3#	BF247	360m	8.0	15	25	25	10m	300m	5.0n	0.0	15	8.0	23 Δ		12p*	2.9m	150S	PE	T092		
4	FE5245	360m	8.0	15	25	25	10m	20m	2.0n	0.0	15	2.0m	6.5m†	50u	8.0p#	2.8m	150J	DPL	T0106	DB	
5	FE5246	360m	6.0	15	30	30	50m	15m	1.0n	0.0	15	4.5m	7.5m	50u	4.5p#	2.8m	150J	DPL	T0106	DD	
6	FE5247	360m	4.0	15	30	30	50m	7.0m	1.0n	0.0	15	3.0m	6.0m	50u	4.5p#	2.8m	150J	DPL	T0106	DD	
7	FE5247	360m	8.0	15	30	30	50m	24m	1.0n	0.0	15	4.5m	8.0m	70u	4.5p#	2.8m	150J	DPL	T0106	DD	
8	LDF603	360m	8.0	15Δ	20	20	30m	10m	8.0m	500p	0.0	15	1.0m	4.0m	150u	5.0p#	2.9m	150J	∅	T0122	DB
9	LDF604	360m	8.0	15Δ	20	20	30m	10m	12m	500p	0.0	15	2.5m	5.5m	150u	5.0p#	2.9m	150J	∅	T0122	DB
10	LDF605	360m	8.0	15Δ	20	20	30m	10m	20m	500p	0.0	15	3.0m	7.0m	150u	5.0p#	2.9m	150J	∅	T0122	DB
11	LDF691†	360m	10†	20Δ	30	30	50m	50m	5.0n	0.0	20				03k	16p	2.9m	150J	∅	u34	DB
12	LDF692†	360m	5.0†	20Δ	30	30	50m	50m	5.0n	0.0	20				06k	16p	2.9m	150J	∅	u34	DB
13#	NKT80211	360m	5.0	5.0	10	10	10m	15m	10n	0.0	5.0	20m	7.0m		40k	23p	1.8m	200	#	T018	DB
14#	NKT80212	360m	7.0	5.0	10	10	10m	30m	10n	0.0	5.0	40m	1.1m		40k	23p	1.8m	200	#	T018	DB
15#	NKT80213	360m	1.0	5.0	10	10	10m	60m	10n	0.0	5.0	60m	1.5m		40k	23p	1.8m	200	#	T018	DB
16#	NKT80214	360m	1.5	5.0	10	10	10m	1.5m	10n	0.0	5.0	90m	2.2m		40k	23p	1.8m	200	#	T018	DB
17#	NKT80215	360m	2.5	5.0	10	10	10m	3.0m	10n	0.0	5.0	1.3m	3.0m		40k	23p	1.8m	200	#	T018	DB
18#	NKT80216	360m	3.5	5.0	10	10	10m	6.0m	10n	0.0	5.0	1.8m	4.2m		40k	23p	1.8m	200	#	T018	DB
19	NPC211N	360m	5.0	5.0	5.0	8.0Δ	200u	90u	150u	10n	0.0	5.0	200m	700m		25p	200J			T018	DB∅
20	NPC212N	360m	7.0	5.0	5.0	8.0Δ	200u	180u	300u	10n	0.0	5.0	400m	1.1		25p	200J			T018	DB∅
21	NPC213N	360m	1.0	5.0	5.0	8.0Δ	200u	400u	600u	10n	0.0	5.0	600m	1.5		25p	200J			T018	DB∅
22	NPC214N	360m	1.5	5.0	5.0	8.0Δ	200u	900u	1.5m	10n	0.0	5.0	900m	2.2		25p	200J			T018	DB∅
23	NPC215N	360m	2.5	5.0	5.0	8.0Δ	200u	1.8m	3.0m	10n	0.0	5.0	1.3	3.0		25p	200J			T018	DB∅
24	NPC216N	360m	3.5	5.0	5.0	8.0Δ	200u	4.0m	6.0m	10n	0.0	5.0	1.8	4.2		25p	200J			T018	DB∅
25#	SI211N	360m	5.0	5.0	5.0	8.0Δ		150u	10n	0.0	0.0	200u	700u		23p*	2.0	200J	PL	T018	DB∅	
26#	SI212N	360m	7.0	5.0	5.0	8.0Δ		300u	10n	0.0	0.0	400u	1.1m		23p*	2.0	200J	PL	T018	DB∅	
27#	SI213N	360m	1.0	5.0	5.0	8.0Δ		600u	10n	0.0	0.0	600u	1.5m		23p*	2.0	200J	PL	T018	DB∅	
28#	SI214N	360m	1.5	5.0	5.0	8.0Δ		1.5m	10n	0.0	0.0	900u	2.2m		23p*	2.0	200J	PL	T018	DB∅	
29#	SI215N	360m	2.5	5.0	5.0	8.0Δ		3.0m	10n	0.0	0.0	1.3m	3.0m		23p*	2.0	200J	PL	T018	DB∅	
30#	SI216N	360m	3.5	5.0	5.0	8.0Δ		6.0m	10n	0.0	0.0	1.8m	4.2m		23p*	2.0	200J	PL	T018	DB∅	
31	TIS34	360m	8.0	15	30	30	10m	20mΔ	5.0n	0.0	15	3.5m	6.5m	50u	6.0p	2.9m	150J	PE	T092		
32	TIS41	360m			30	30	50m	50mΔ	20						25 ↑	18p#	2.4m	150S	PE	T018	
33	TIS42	360m			25	25	10m	10mΔ	5.0						70 ↑	18p#	2.9m	150S	PE	T092	
34	TIS58	360m	5.0	15	25	25		8.0m	4.0m	0.0	15	1.3m	4.0m	20u	6.0p#	2.8m	150S	PE	T092	DA	
35	TIS59	360m	9.0	15	25	25		25m	4.0m	0.0	15	2.3m	5.0m	50u	6.0p#	2.8m	150S	PE	T092	DA	
36	TIS68	360m	5.0	15	25Δ	25Δ	30m	8.0m	2.0n	0.0	15	1.0m	6.0m	35u	8.0p#	3.5m	150S	PE	T092		
37	TIS69	360m	5.0	15	25Δ	25Δ	30m	8.0m	2.0n	0.0	15	1.0m	6.0m	35u	8.0p#	3.5m	150S	PE	T092		
38	TIS70	360m	5.0	15	25Δ	25Δ	30m	8.0m	2.0n	0.0	15	1.0m	6.0m	35u	8.0p#	3.5m	150S	PE	T092		
39	TIS73†	360m	10†	15	30Δ	30Δ	50m	50m#	2.0n	0.0	15	1.0m	6.0m	35u	5.0	18p#	3.5m	150S	PE	X55	DB
40	TIS74†	360m	6.0	15	30Δ	30Δ	50m	20m#	2.0n	0.0	15	1.0m	6.0m	35u	0.4k%	18p#	3.5m	150S	PE	X55	DB
41	TIS75†	360m	4.0	15	30Δ	30Δ	50m	8m#	2.0n	0.0	15	1.0m	6.0m	35u	0.6k%	18p#	3.5m	150S	PE	X55	DB
42	TIS78	360m	10†	30	300Δ	300Δ	10m	10m#	2.0n	0.0	15	1.0m	6.0m	35u	1.5k%	15p#	2.0m	150J	P	X55	DB
43	TIS79	360m	12†	30	200Δ	200Δ	10m	10m#	2.0n	0.0	30	750u	3.0m†	100u*	2.0k%	18p#	2.0m	150J	P	X55	DB
44	UC588	360m	6.0	15	30	30	10m	15m	1.0n	0.0	15	4.5m	7.5m	50u	4.0p	2.8m	200	∅	T0106	DD	
45	2N5902	367m	4.5	10Δ	40	40		500u	5.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
46	2N5903	367m	4.5	10Δ	40	40		500u	5.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
47	2N5904	367m	4.5	10Δ	40	40		500u	5.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
48	2N5905	367m	4.5	10Δ	40	40		500u	5.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
49	2N5906	367m	4.5	10Δ	40	40		500u	2.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
50	2N5907	367m	4.5	10Δ	40	40		500u	2.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
51	2N5908	367m	4.5	10Δ	40	40		500u	2.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
52	2N5909	367m	4.5	10Δ	40	40		500u	2.0p	0.0	10	70u	250u	5.0u	3.0p#	3.0m	150S	∅	L54b		
53	2N5911	367m	5.0	10Δ	25	25	100p	40m	100p	0.0	10	5.0m	10m	100u	5.0p#	3.0m	150S	∅	L54b		
54	2N5912	367m	5.0	10Δ	25	25	100p	40m	100p	0.0	10	5.0m	10m	100u	5.0p#	3.0m	150S	∅	L54b		
55	40468A	375m		Δ	20	1.0	25m	25m#	1.0n	0.0	15	6.0m	9.0mΔ		10p#	2.5m	175J	*	T072	DW	
56	40559A	375m		Δ	20	1.0	25m	25m#	1.0n	0.0	12	6.0m	9.0mΔ		5.5p#	2.5m	175J	*	T072	DS	
57	FT57	375m		Δ	15Δ	25Δ		26m	1.0n	0.0	12	6.0m	9.0mΔ		2.7p#	2.5m	175J	DPE*	T072		
58	2N3084	400m	10†	15	30	15	50m	3.0m	1.0n	1.0	15	4.0m	2.0m	50u	14p	2.3m	200C		R82		
59	2N3085	400m	10†	15	30	15	50m	3.0m	1.0n	1.0	15	4.0m	2.0m	50u	14p	2.3m	200C		T018	DD	
60	2N3086	400m	10†	15	40	15	50m	3.0m	1.0n	1.0	15	4.0m	2.0m	50u	14p	2.3m	200C		R82		
61	2N3087	400m	10†	15	40	15	50m	3.0m	1.0n	1.0	15	4.0m	2.0m	50u	14p	2.3m	200C		T018	DD	
62	2N3088	400m	5.0	15	15	10	50m	2.0m	1.0n	1.0	15	3.0m	2.0m	50u	14p	2.3m	200C		R82		
63	2N3088A	400m	5.0	15	15	10	50m	2.0m	1.0n	1.0	15	3.0m	2.0m	50u	14p#	2.3m	200C		R82		
64	2N3089	400m	5.0	15	15	10	50m	2.0m	1.0n	1.0	15	3.0m	2.0m	50u	14p	2.3m	200C		T018	DD	
65	2N3089A	400m	5.0	15	15	10	50m	2.0m	1.0n	1.0	15	3.0m	2.0m	50u	14p#	2.3m	200C		T018	DD	
66	2N3465	400m	10†	15	40	40Δ	50m	5.0m	1.0n	0.0	15	4.0m	1.2m	10u	15p†	2.3m	200C		R82		
67	2N3466	400m	10†	15	40	40Δ	50m	5.0m	1.0n	0.0	15	4.0m	1.2m	10u	15p†	2.3m	200C		T018	DD	
68	2N4445†	400m	10	5.0Δ	25	25	400m	100m	150m#	3.0n					5.0 ↑	70p#	2.3m	200S		T046	DD∅
69	2N4446†	400m	10	5.0Δ	25	25	400m	100m	100m#												

# 7. SILICON FIELD EFFECT TRANSISTORS - N CHANNEL

IN ORDER OF (1) DISSIPATION  
(2) TYPE No.

LINE No.	TYPE No.	1 MAX. DEVICE DISS @ 25°C (W)	MAX. ABS MAX RATINGS @ 25°C				MAX. Id (A)		MAX. Ig (A)		MAX. Igs @ Vgs=0 & Vgs>Vp & Vds=0 (A)		TEST COND			COMMON SOURCE			DERATE		STRUCTURE	DWG Y200 s/a TO200 Ser.	# L C O D E
			Vp (V)	Vds (V)	Vgs (V)	BVdss (V)	BVgss (V)	Id (A)	Ig (A)	Igs (A)	Vgs (V)	Vds (V)	PARAMETERS @ 25°C		r(DS) on (Ω)	MAX. C (F)	IN FREE AIR W/°C	MAX TEMP (°C)					
													gfs (mhos)						Yos (Ω)				
													MIN	MAX									
1	FM1108*	500m	6.0†	15	35	35Δ	100u	10m	100p	0.0	15	1.0m	6.0m	50u%	5.0p#	2.8m	200J	#	L74				
2	FM1109*	500m	6.0†	15	35	35Δ	100u	10m	100p	0.0	15	1.0m	6.0m	50u%	5.0p#	2.8m	200J	#	L74				
3	FM1110*	500m	10†	15	25	35Δ	100u	10m	1.0n	0.0	15	500u	6.0m		5.0p#	2.8m	200J	#	L74				
4	FM1111*	500m	10†	15	25	35Δ	100u	10m	1.0n	0.0	15	500u	6.0m		5.0p#	2.8m	200J	#	L74				
5	FM1200*	500m	2.0†	15	35	35Δ	100u	2.5m	200p	0.0	15	800u	4.5m	35u%	8.0p#	2.8m	200J	#	L74				
6	FM1201*	500m	2.0†	15	35	35Δ	100u	2.5m	200p	0.0	15	800u	4.5m	35u%	8.0p#	2.8m	200J	#	L74				
7	FM1202*	500m	2.0†	15	35	35Δ	100u	2.5m	200p	0.0	15	800u	4.5m	35u%	8.0p#	2.8m	200J	#	L74				
8	FM1203*	500m	2.0†	15	35	35Δ	100u	2.5m	200p	0.0	15	800u	4.5m	35u%	8.0p#	2.8m	200J	#	L74				
9	FM1204*	500m	2.0†	15	35	35Δ	100u	2.5m	200p	0.0	15	800u	4.5m	35u%	8.0p#	2.8m	200J	#	L74				
10	FM1205*	500m	7.0†	15	35	35Δ	100u	20m	200p	0.0	15	3.0m	10m	50u%	8.0p#	2.8m	200J	#	L74				
11	FM1206*	500m	7.0†	15	35	35Δ	100u	20m	200p	0.0	15	3.0m	10m	50u%	8.0p#	2.8m	200J	#	L74				
12	FM1207*	500m	7.0†	15	35	35Δ	100u	20m	200p	0.0	15	3.0m	10m	50u%	8.0p#	2.8m	200J	#	L74				
13	FM1208*	500m	7.0†	15	35	35Δ	100u	20m	200p	0.0	15	3.0m	10m	50u%	8.0p#	2.8m	200J	#	L74				
14	FM1209*	500m	7.0†	15	35	35Δ	100u	20m	200p	0.0	15	3.0m	10m	50u%	8.0p#	2.8m	200J	#	L74				
15	FM1210*	500m	7.0†	15	25	25Δ	100u	20m	1.0n	0.0	15	800u	10m		8.0p#	2.8m	200J	#	L74				
16	FM1211*	500m	7.0†	15	25	25Δ	100u	20m	1.0n	0.0	15	800u	10m		8.0p#	2.8m	200J	#	L74				
17	FM3954*	500m	4.5†	20	50	50Δ	100u	5.0m	100p	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
18	FM3954A*	500m	4.5†	20	50	50Δ	100u	5.0m	100p	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
19	FM3955*	500m	4.5†	20	50	50Δ	100u	5.0m	100p	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
20	FM3955A*	500m	4.5†	20	50	50Δ	100u	5.0m	100p	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
21	FM3956*	500m	4.5†	20	50	50Δ	100u	5.0m	100p	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
22	FM3957*	500m	4.5†	20	50	50Δ	100u	5.0m	100p	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
23	FM3958*	500m	4.5†	20	50	50Δ	100u	5.0m	100p	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
24	HEPF2007\$	500m	2.0†	25	20	20	30m	30m	20n	0.0	20	1.0m	4.0m	35u%	4.0p#	2.8m	200J	#	L74				
25	MD1F4391	500m	10	20	40Δ	40Δ	50m	150m	5.0n	0.0	30	10k			14p#	150A	150J	∇	TO122	GP			
26	MD1F4392	500m	5	20	40Δ	40Δ	50m	75m	5.0n	0.0	60				14p#	150A	150J	∇	TO122	GP			
27	MD1F4393	500m	3.0	20	40Δ	40Δ	50m	30m	5.0n	0.0	100				14p#	150A	150J	∇	TO122	GP			
28	MPF120	500m	4.0†	15\$	25	25	30m	18m	20n	4.0	15	8.0m	18m		7.0p#	5.0m	175J	∅*	u80	EE			
29	MPF121	500m	4.0†	15\$	25	25	30m	30m	20n	4.0	15	10m	20m		6.0p#	5.0m	175J	∅*	u80	EE			
30	MPF122	500m	4.0†	15\$	25	25	30m	30m	20n	4.0	15	8.0m	18m		7.0p#	5.0m	175J	∅*	u80	EE			
31	NF516	500m	10†	20	30	30Δ	10m	50m	10n	0.0	10	20	20m		15	4.0m	150J		TO18	DB			
32	UC250	1500m	10	20	30	30		150m	1.0n	0.0	20	20m		0.3kt	25p				TO18	DB			
33	UC139	500m	6.0	15	30	30		6.0m	2.0n										L21b	DB			
34	UC2149	500m	6.0	20	30	30		15m	2.0n										L21b	DB			
35	2N4881	800m	15†	50Δ	300	100	10m	2.0m	2.0n	0.0	50	35m%	15m%	10u%	5.0kt	4.6m	200S	∅	TO5	DB			
36	2N4882	800m	15†	50Δ	300	100	10m	7.5m	2.0n	0.0	50	60m%	15m%	10u%	5.0kt	4.6m	200S	∅	TO5	DB			
37	2N4883	800m	10†	50Δ	200	100	10m	2.0m	1.0n	0.0	50	35m%	15m%	10u%	5.0kt	4.6m	200S	∅	TO5	DB			
38	2N4884	800m	10†	50Δ	200	100	10m	7.5m	1.0n	0.0	50	60m%	15m%	10u%	5.0kt	4.6m	200S	∅	TO5	DB			
39	2N4885	800m	10†	50Δ	125	75	10m	2.0m	1.0n	0.0	50	35m%	15m%	10u%	5.0kt	4.6m	200S	∅	TO5	DB			
40	2N4886	800m	10†	50Δ	125	75	10m	7.5m	1.0n	0.0	50	60m%	15m%	10u%	5.0kt	4.6m	200S	∅	TO5	DB			
41	2N5277	800m	7.0†	30	150	150	10m	12m	5.0n	0.0	30	2.0m	5.0m	25u	15p#	4.6m	200S	∅#	TO5	DB			
42	2N5278	800m	10†	30	150	150	10m	25m	5.0n	0.0	30	3.0m	6.0m	60u	25p#	4.6m	200S	∅#	TO5	DB			
43	3N169†	800m	15Δ	10*	25	35Δ	30m	10n	10p					200	5.0p#	4.5m	200S		TO72	DR			
44	3N170†	800m	2.0Δ	10*	25	35Δ	30m	10n	10p					200	5.0p#	4.5m	200S		TO72	DR			
45	3N171†	800m	3.0Δ	10*	25	35Δ	30m	10n	10p					200	5.0p#	4.5m	200S		TO72	DR			
46*	U22†	800m	8.0	20	50	50	25m	110m	1.0n	0.0	20	15m	40m		28p#	4.6m	200J	#	TO5	DB			
47*	U222	800m	10	20	50	50	25m	250m	1.0n	0.0	20	20m	50m		28p#	4.6m	200J	#	TO5	DB			
48	U1715	800m	15†	50	200		25m	50m	5.0n					40kt	28p#	4.5m	200J	#	TO5	DB			
49	2N3970†	8	10	20Δ	40	40	50m	150m						30kt	25p#	10m	200S		TO18	DB			
50	2N3971†	18	5.0	20Δ	40	40	50m	75m						60kt	25p#	10m	200S		TO18	DB			
51	2N3972†	18	3.0	20Δ	40	40	50m	30m						100kt	25p#	10m	200S		TO18	DB			
52	2N4091	18	10	20Δ	40	40Δ	10m	30m						16p#	10m	200S		TO18	DB				
53	2N4091A†	18	10†	20Δ	50	50	10m	30m	40p					30	16p#	10m	200S		TO18	DB			
54	2N4092	18	7.0	20Δ	40	40Δ	10m	15m						16p#	10m	200S		TO18	DB				
55	2N4092A†	18	7.0†	20Δ	50	50	10m	15m	40p					50	16p#	10m	200S		TO18	DB			
56	2N4093	18	5.0	20Δ	40	40Δ	10m	8.0m						80	16p#	10m	200S		TO18	DB			
57	2N4093A†	18	5.0†	20Δ	50	50	10m	8.0m	40p					80	16p#	10m	200S		TO18	DB			
58	2N4094†	18			40Δ	40	10m	75m#						02k%	32p#	10m	200C		TO18	DB			
59	2N4095†	18			40Δ	40	10m	20m#						04k%	32p#	10m	200C		TO18	DB			
60	2N4391†	18	Δ	10	20Δ	40	40	50m	150m	10n				03kt	14p#	10m	200S		TO18	DB			
61	2N4392†	18	Δ	5.0	20Δ	40	40	50m	75m	10n				06kt	14p#	10m	200S		TO18	DB			
62	2N4393†	18	Δ																				

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	M T A E M P	ABSOLUTE MAX RATINGS @25°C					MAX. hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ce0</sub> (V)	I <sub>cb0</sub> @ 25°C (A)	V <sub>cb</sub> (V)								
1#	2N671	1.0	1.0	1.0	#J	2.0	1.0	40	40	40	250	1.5	1.0	40	250	700k	350m	AΔ	T028	A∅
2#	2SA416†	6.0	6.0	6.0	#J	700m	50m	70	15	60	600	1.0	600m	40	100	90m	200n	AΔ	T03	A∅
3#	2SB282†	30	30	30	#J	6.0	1.0	80	40	60	100	1.0	60	15	30	250k	15u	A	T03	A∅
4#	2SB283†	30	30	30	#J	6.0	1.0	60	20	48	100	1.0	60	35	80	250k	15u	A	T03	A∅
5#	2SB284†	30	30	30	#J	6.0	1.0	60	20	48	100	1.0	60	20	45	250k	15u	A	T03	A∅
6#	2SB285†	30	30	30	#J	6.0	1.0	80	40	60	100	1.0	60	20	65	250k	15u	A	T03	A∅
7#	2SB337	12	12	12	#J	7.0	1.0	40	10	30	1.0	2.0	1.0	50	165	300k		A	T03	A∅
8#	2SB361	12	12	12	#J	5.0	1.0	80	1.0	80	1.0	2.0	1.0	50	280	50k		A	T03	A∅
9#	2SB367	4.0	4.0	4.0	#J	1.0	1.0	25	12	25	100	1.5	50	45	170	500k		A	T066	A∅
10#	2SB367H	4.0	4.0	4.0	#J	1.0	1.0	30	12	25	70	1.5	50	50	80	500k		A	T066	A∅
11#	2SB368	4.0	4.0	4.0	#J	1.0	1.0	45	12	45	100	1.5	50	45	170	500k		A	T066	A∅
12#	2SB368H	4.0	4.0	4.0	#J	1.0	1.0	45	12	35	70	1.5	50	50	80	500k		A	T066	A∅
13#	2SB468	10	10	10	#J	1.0	1.0	200	15	90	50	1.5	4.0	14	130		2.5u#	D	T03	A∅
14#	2SB471	12	12	12	#J	1.0	1.0	60	10	45	50	2.0	1.0	50	165	300k		A	T03	A∅
15#	2SB472	12	12	12	#J	1.0	1.0	60	10	45	50	2.0	1.0	50	165	300k		A	T03	A∅
16#	ADY30	150	150	150	#J	50	#	45	30	30			15	50				A	T036	C
17#	ADY31	85	85	85	#J	160	#	60	40	40			150	15		2.0m		A	T03	A∅
18#	ADY32	35	35	35	#J	160	#	80	50	50			150	15		2.0m		A	T03	A∅
19#	ASZ16	30	30	30	#J	10	#	60	32	32			60	35		80	250k	A	T03	C∅
20#	HEP200	90	90	90	#J	3.0	\$	30	10	30	6.0	\$	30	40	∅	600k		A	T03	C∅
21#	HEP230	90	90	90	#J	5.0	\$	30	10	30	3.0	\$	30	40	∅	600k		A	T03	C∅
22#	HEP231	150	150	150	#J	15	\$	30	10	30	6.0	\$	30	40	∅	500k		A	T036	A
23#	HEP232	90	90	90	#J	7.0	\$	70	10	70	8.0	\$	2.0	40	∅	600k		A	T036	A
24#	HEP233	170	170	170	#J	15	\$	65	60	65	20	\$	65	55	∅	500k		A	T03	C∅
25#	HEP234	56	56	56	#J	5.0	\$	200	2.0	200	400	\$	10	60	∅	1.0M		A	T03	C∅
26#	HEP235	56	56	56	#J	10	\$	320	2.0	320	400	\$	10	60	∅	1.0M		A	T03	C∅
27#	HEP236	160	160	160	#J	25	\$	110	2.0	80	200	\$	2.0	60	∅	210k		A	T041	A
28#	HEP237	170	170	170	#J	30	\$	75	40	60	900	\$	75	80	∅	270k		A	T036	A
29#	HEP238	20	20	20	#J	3.0	\$	60	20	40	125	\$	30	120	∅	200k		A	T05	A
30#	HEP239	20	20	20	#J	3.0	\$	100	20	60	125	\$	30	120	∅	200k		A	T05	A
31#	HEP623	77	77	77	#J	7.0	\$	60	20	35	1.0	\$	35	70	∅	600k		A	T03	C∅
32#	HEP624	77	77	77	#J	7.0	\$	60	20	35	1.0	\$	35	120	∅	600k		A	T03	C∅
33#	HEP625	90	90	90	#J	10	\$	100	50	75	20	\$	90	40	∅	50k		A	T03	C∅
34#	HEP626	85	85	85	#J	20	\$	80	2.0	50	10	\$	80	60	∅	1.0M		A	T03	C∅
35#	HEP627	85	85	85	#J	10	\$	80	5.0	80	20	\$	80	40	∅	1.0M		A	T03	C∅
36#	HEP628	77	77	77	#J	7.0	\$	60	20	35	1.0	\$	35	45	∅	600k		A	T03	C∅
37#	HEP642	57	57	57	#J	3.0	\$	30	20	25	1.0	\$	30	35	∅	350k		A	T066	A
38#	HEP643	57	57	57	#J	3.0	\$	30	20	25	1.0	\$	30	35	∅	350k		A	T066	A
39#	HEP644	85	85	85	#J	10	\$	160	5.0	160	3.0	\$	160	160	∅	50k		A	T03	C∅
40#	HEPG6001	85	85	85	#J	25	\$	90	1.5	80	200	\$	2.0	70	∅	850k		A	T03	C∅
41#	JAN2N2079A†	0	150	150	#J	15	∅	40	80	40	4.0	2.0	50	35	∅	50kΔ	60m	A	T036	A∅
42	JAN2N2557	14m	1.1	1.1	#J	15	∅	60	20	40	70	5.0	10	20	60	250m		A	MT28	A∅
43	JAN2N2559	14m	1.1	1.1	#J	15	∅	100	20	60	70	5.0	10	20	60	250m		A	MT28	A∅
44#	AC128-01	22m	1.0	1.0	#J	1.0	∅	32	10	16	200	0.0	1.0	165		1.5M	600m	A*	X9c	A
45#	AC128K	22m	1.0	1.0	#J	1.0	∅	32	10	16	100	0.0	1.0	45		1.0MΔ	600m	A	X9c	A
46#	AC176K	22m	1.1	1.1	#J	1.0	∅	32	10	18	50	0.0	300m	50	100	3.0M		A	X9a	A
47	2N4106	25m	1.6	1.6	#S	1.0	∅	25	10	10	25	0.0	50Δ	70	350	3.0M		A	T01	A
48#	AC193	25m∅	1.0	1.0	#C	1.0	∅	25	10	25	14	0.0	400Δ	200		3.0M		A	T01	A
49#	AC193K	25m∅	1.0	1.0	#C	1.0	∅	25	10	25	14	0.0	400Δ	200		3.0M		A	R57	A
50#	2SB325	30m∅	2.5	2.5	#J	600m	600m∅	120	50	100	20	0.0	50m	20	250	1.0MΔ		A*	X9b	A
51#	AC180K	33m	1.8	1.8	#J	1.0	∅	32	10	24	20	1.0	600m	50	250	1.0MΔ		A	R57	A
52#	2SB16A	40m∅	1.8	1.8	#J	600m	600m	20	40	20	20	2.0	50m	20	50	∅		A	R57	A
53#	2SB17A	40m∅	1.8	1.8	#J	600m	600m	40	40	20	20	2.0	50m	20	50	∅		A	R57	A
54#	2SB18A	40m∅	1.8	1.8	#J	600m	600m	80	40	20	20	2.0	50m	20	50	∅		A	R57	A
55	2N2564/5	66m	5.0	5.0	#J	3.0	1.0	60	10	30	650	1.0	30	20	60	70k	250m	A	T05	A∅
56	2N2565/5	66m	5.0	5.0	#J	3.0	1.0	60	10	40	650	1.0	30	20	60	70k	250m	A	T05	A∅
57	2N2566/5	66m	5.0	5.0	#J	3.0	1.0	80	10	50	650	1.0	30	20	60	70k	250m	A	T05	A∅
58	2N2567/5	66m	5.0	5.0	#J	3.0	1.0	100	10	60	650	1.0	30	20	60	70k	250m	A	T05	A∅
59	2N3461	66m	5.0	5.0	#C	3.0	1.0	100	1.5	30	3.0	#	500m	90	150	10kΔ	400m	A	T05	A∅
60#	2SB473	66m	4.3	4.3	#J	1.0	∅	32	6.0	30	1.5	0.0	500mΔ	40	180	10kΔ		A	MD9b	A∅
61#	TF78/30	66m†	2.7	2.7	#J	600m	600m	32	10	24	30	70	50mΔ	30	150	700k†		AΔ	T037	A∅
62#	TF78/60	66m†	2.7	2.7	#J	600m	600m	64	16	45	30	70	50mΔ	30	150	700k†		AΔ	T037	A∅
63	2N1172†	67m	1.5	1.5	#J	1.5	∅	40	20	30	20	1.0	50	30	90	60		DA	T037	A∅
64	2N2282	67m∅	3.0	3.0	#J	3.0	∅	60	60	60	0.5m	1.0	50	30	75	2.5M†	30	DA	T037	A∅
65	2N2283	67m∅	3.0	3.0	#J	3.0	∅	100	60	60	0.5m	1.0	50	30	75	2.5M†	30	DA	T037	A∅
66	2N2284	67m∅	3.0	3.0	#J	3.0	∅	200	100	100	0.5m	1.0	50	30	75	2.5M†	30	DA	T037	A∅



# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J TO C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	A T E M P (°C)	ABSOLUTE MAX. RATINGS @ 25°C					MAX. HFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #200 s/a TO200 Ser.	# C O D E
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>be0</sub> (V)	V <sub>ceo</sub> (V)	I <sub>cb0</sub> @ MAX V <sub>cb0</sub> (A)	V <sub>cb</sub> (V)	I <sub>c</sub> (A)						
1#	OC28	125m	13	0	J	3.5	500m	32	10	35	20m	1.0	1.0	20	60	150k	A	T03	CØ
2#	2SB130	133m	6.0	0	J	1.0		32	10	15	10m	1.0	1.5	20	150	11k	A	MD11	
3#	AD152	133m	6.0	0	J	1.0		45	12	30	30u	1.0	300m	50			A	MD17	
4#	AD154	133m	6.0	0	J	1.0		32	10	20	30u	1.0	300m	40			A	MD17	
5#	OC30	133m	3.6	0	J	1.4	250m	25	10	20	12u	1.0	500m	80	330	11k	A	MD17	
6#	OC30A	133m	4.0	0	J	1.4	250m	32	10	16	30u	1.0	100m		35	300k	A	MD11	
7#	OC30B	133m	4.0	0	J	1.4	250m	32	10	16	40u	1.0	1.4	12	65	180m	A	MD11	
8#	2SB493	139m	9.0	0	J	5.0		40	10	32	40u	1.0	1.4	12	65		A	MD11	
9#	2SB493	139m	9.0	0	J	5.0		40	10	32	40u	1.0	1.4	12	65	300k	A	MD11	A
10#	2N3212	143m	14	0	J	8.0	2.0	100	2.0	80	1.0m	2.0	3.0	30	90	600k	D	T037	AØ
11#	2N3213	143m	14	0	J	8.0	2.0	80	2.0	60	1.0m	2.0	3.0	30	90	600k	D	T037	AØ
12#	2N3214	143m	14	0	J	8.0	2.0	60	2.0	40	1.0m	2.0	3.0	30	90	600k	D	T037	AØ
13#	2N3215	143m	14	0	J	8.0	2.0	40	2.0	40	1.0m	2.0	3.0	30	90	600k	D	T037	AØ
14#	2SC831	154m	23	0	J	20		50		4.0	1.0m	2.0	3.0	25	100	600k	D	T037	AØ
15#	2N3731	167m	5.0	0	C	10	4.0	320	2.0	320	200u	2.0	1.0	15	200	300M	PE	T060	CØ
16#	2N4346	167m	10	0	J	1.5	1.5	60	1.0	2.0	200u	2.0	1.0	40	200	1.5M	D	MD10a	AØ
17#	2SB445	167m	10	0	J	1.5	1.5	60	1.0	2.0	100u	2.0	1.0	40	200	1.5M	D	MD10a	AØ
18#	2SB446	167m	10	0	J	1.5	1.5	60	1.0	2.0	100u	2.0	1.0	40	200	1.5M	D	MD10a	AØ
19#	40617	167m	12	0	A	8.0		60	0	50	3.0	2.0	1.0	30	150		A	T03	CØ
20#	40623	167m	12	0	A	8.0		60	0	50	500u	2.0	1.0	50	170		A	T03	CØ
21#	40628	167m	12	0	A	8.0		60	0	50	500u	2.0	1.0	50	170		A	T03	CØ
22#	AUY10	182m	4.5	0	J	700m	50m	70	40	60	2.0m	1.0	600m	20		120M	AD	T03	
23#	2SB180A	185m	12	0	J	500m	500m	40	12	30	500u	1.5	500m	25	150	13k	A	T08	
24#	2SB181A	185m	12	0	J	500m	500m	60	12	30	200u	1.5	500m	25	150	13k	A	T08	
25#	2SB333	185m	12	0	J	7.0	1.0	60	10	30	1.0m	1.5	500m	25		250k	A	MD24	
26#	2SB338	185m	12	0	J	1.0	1.0	80	50	35	250u	1.0	8.0	1.0		250k	A	MD24	
27#	2SB340	185m	12	0	J	1.0	1.0	100	50	40	250u	1.0	8.0	35		250k	A	MD24	
28#	2SB341	185m	12	0	J	1.0	1.0	120	50	50	250u	1.0	8.0	35		250k	A	MD24	
29#	2SB362	185m	12	0	J	7.0	1.0	100	1.0	40	500u	2.0	4.5	90		250k	A	MD24	
30#	2SB466	185m	12	0	J	500m	500m	40	1.0	30	500u	1.5	500m	25	150	13k	A	MD10a	
31#	2SB467	185m	12	0	J	500m	500m	60	1.0	30	200u	1.5	500m	25	150	13k	A	MD10a	
32#	2N1658/13	200m	15	0	J	1.0		80		40	200m	2.0	200m	30	90	10k	A	ZA22	
33#	2N1659/13	200m	15	0	J	1.0		60		40	200m	2.0	200m	30	90	10k	A	ZA22	
34#	2N2659	200m	15	0	J	3.0	1.0	50	20	30	125u	500	500m	30	90	280k	A	R122	
35#	2N2660	200m	15	0	J	3.0	1.0	70	20	40	125u	500	500m	30	90	280k	A	R122	
36#	2N2661	200m	15	0	J	3.0	1.0	90	20	50	125u	500	500m	30	90	280k	A	R122	
37#	2N2662	200m	15	0	J	3.0	1.0	50	20	30	125u	500	500m	30	90	280k	A	R62	
38#	2N2663	200m	15	0	J	3.0	1.0	70	20	40	125u	500	500m	30	90	280k	A	R62	
39#	2N2664	200m	15	0	J	3.0	1.0	90	20	50	125u	500	500m	30	90	280k	A	R62	
40#	2N2665	200m	15	0	J	3.0	1.0	50	20	30	125u	500	500m	50	150	300k	A	R122	
41#	2N2666	200m	15	0	J	3.0	1.0	70	20	40	125u	500	500m	50	150	300k	A	R122	
42#	2N2667	200m	15	0	J	3.0	1.0	90	20	50	125u	500	500m	50	150	300k	A	R122	
43#	2N2668	200m	15	0	J	3.0	1.0	50	20	30	125u	500	500m	50	150	300k	A	MT27	
44#	2N2669	200m	15	0	J	3.0	1.0	70	20	40	125u	500	500m	50	150	300k	A	MT27	
45#	2N2670	200m	15	0	J	3.0	1.0	90	20	50	125u	500	500m	50	150	300k	A	MT27	
46#	2SB448	200m	12	0	J	1.0	200m	32	10	35	1.0m	1.0	1.0	30	110	10k	A	MD11	
47#	2SB474	200m	12	0	J	2.0		35	10	35	200u	1.5	200u	50	275	700k	A	T03	CØ
48#	AD136	200m	9.0	0	J	10		40	10	22	500	5.0	20	100	300k	AD	T08		
49#	AUY18	200m	9.0	0	J	8.0		64	20	35	500	5.0	20	60	300k	AD	T08		
50#	AUY35	200m	15	0	J	3.0	3.0	70	2.0	25	10m	1.0	5.0	35	260	2.5M	D	T08	
51#	AUY36	200m	15	0	J	3.0	3.0	70	2.0	25	10m	1.0	5.0	100	3.0M	D	T08		
52#	AD162	222m	6.0	0	J	3.0	100m	32	10	20	200u	1.0	50m	74	300	1.5M	A	MD17c	A
53#	2N2835	250m	16	0	J	1.0	20	32	10	32	0	1.0	1.0	30			A	MD17	
54#	AD148	250m	11	0	J	2.0	400m	32	10	32	0	1.0	1.0	30	100	450k	A	MD23	
55#	AD262	250m	10	0	J	4.0	2.0	35	10	20	100u	2.0	1.5	30		450k	A	MD17	
56#	AD263	250m	10	0	J	4.0	2.0	60	10	40	100u	2.0	1.5	20		450k	A	MD17	
57#	2N1038-1	263m	10	0	J	3.0	1.0	40	20	30	650u	500	1.0	20	60	7.0k	AD	MT27	AØ
58#	2N1038-2	263m	10	0	J	3.0	1.0	40	20	30	650u	500	1.0	20	60	7.0k	AD	MT28	AØ
59#	2N1039-1	263m	10	0	J	3.0	1.0	60	20	40	650u	500	1.0	20	60	7.0k	AD	MT27	AØ
60#	2N1039-2	263m	10	0	J	3.0	1.0	60	20	40	650u	500	1.0	20	60	7.0k	AD	MT28	AØ
61#	2N1040-1	263m	10	0	J	3.0	1.0	80	20	50	650u	500	1.0	20	60	7.0k	AD	MT27	AØ
62#	2N1040-2	263m	10	0	J	3.0	1.0	80	20	50	650u	500	1.0	20	60	7.0k	AD	MT28	AØ
63#	2N1041-1	263m	10	0	J	3.0	1.0	100	20	60	650u	500	1.0	20	60	7.0k	AD	MT27	AØ
64#	2N1041-2	263m	10	0	J	3.0	1.0	100	20	60	650u	1.0	3.0	20	60	7.0k	AD	MT28	AØ
65#	2N1042	263m	10	0	J	3.0	1.0	40	20	30	650u	1.0	3.0	20	60	7.0k	AD	ZA1	
66#	2N1042-1	263m	10	0	J	3.0	1.0	40	20	30	650u	1.0	3.0	20	60	7.0k	AD	MT27	AØ
67#	2N1042-2	263m	10	0	J	3.0	1.0	40	20	30	650u	1.0	3.0	20	60	7.0k	AD	MT28	AØ
68#	2N1043	263m	10	0	J	3.0	1.0	60	20	40	650u	1.0	3.0	20	60	7.0k	AD	ZA1	
69#	2N1043-1	263m	10	0	J	3.0	1.0	60	20	40	650u	1.0	3.0	20	60	7.0k	AD	MT27	AØ
70#	2N1043-2	263m	10	0	J	3.0	1.0	60	20	40	650u	1.0	3.0	20	60	7.0k	AD	MT28	AØ
71#	2N1044	263m	10	0	J	3.0	1.0	80	20	50	650u	1.0	3.0	20	60	7.0k	AD	ZA1	
72#	2N1044-1	263m	10	0	J	3.0	1.0	80	20	50	650u	1.0	3.0	20	60	7.0k	AD	MT27	AØ
73#	2N1044-2	263m	10	0	J	3.0	1.0	80	20	50	650u	1.0	3.0	20	60	7.0k	AD	MT28	AØ
74#	2N1045	263m	10	0	J	3.0	1.0	100	20	60	650u	1.0	3.0	20	60	7.0k	AD	ZA1	
75#	2N1045-1	263m	10	0	J	3.0	1.0	100	20	60	650u	1.0	3.0	20	60	7.0k	AD	MT27	AØ
76#	2N1045-2	263m	10	0	J	3.0	1.0	100	20	60	650u	1.0	3.0	20	60	7.0k	AD	MT28	AØ
77#	2N1038	267m	20	0	J	3.0	1.0	40	20	30	125u	500	1.0	20	60	8.5k	A	R122	
78#	2N1039	267m	20	0	J	3.0	1.0	60	20	40	125u	500</							



# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	TEMPERATURE (°C)	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS Vcb (V)	MIN (A)	MAX (A)	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)									
1	2N1333	270m	20	0	3.0		100		80		500m	30		8.0k			A	TO13	F0	
2	KM7007	270m	20	0	3.0		30		30		500m	25		6.0k	300m		A	MS7	C0	
3	KM7008	270m	20	0	3.0		60		60		500m	21		6.0k	300m		A	MS7	C0	
4	KM7009	270m	20	0	3.0		80		80		500m	21		6.0k	300m		A	MS7	C0	
5	KM7010	270m	20	0	3.0		100		80		500m	21		6.0k	300m		A	MS7	C0	
6	LT11	270m	20	0	3.0		100		80		500m	21		8.0k			A	ZA24	C0	
7	LT12	270m	20	0	3.0		150		100		500m	21		8.0k			A	ZA24	C0	
8	LT13	270m	20	0	3.0		150		120		500m	21		8.0k			A	ZA24	C0	
9	LT14	270m	20	0	3.0		175		150		500m	21		8.0k			A	ZA24	C0	
10	LT15	270m	20	0	3.0		200		150		500m	21		8.0k			A	ZA24	C0	
11	JAN2N158	283m	17	0	2.2		60	30	60	1.0m	2.0	1.0	40	4.0k	750m		A	MM3	F0	
12#	25B449	300m	22	0	3.5		50	20	50	3.0m	2.0	3.0	85	10k			A	TO3	C0	
13	2N3730	303m	10	0	3.0	500m	200	50	200	200	4.0	5.0m	10	200	1.0m	880m		A	TO3	F0
14	2N141/13	333m	20	0	1.0	500m	60	30	30	2.0m	2.0	500m	25		4.0		A	TO13	F0	
15	2N143/13	333m	20	0	1.0		60	30	30	5.0m	6.0	250m	10		6.0		A	TO13	F0	
16	2N155	333m	1.5	0	3.0	500m	30	15	15	1.0m	2.0	500m	32	0	180kt		A	TO3	F0	
17	2N156	333m	1.5	0	3.0		30	15	30	1.0m	2.0	.50	25	32	4.0k	.75	A	TO13	F0	
18	2N158	333m	1.5	0	3.0	.50	60	30	60	1.0m	2.0	.50	21	32	4.0k	.75	A	TO13	F0	
19	2N158A	333m	25	0	3.0	.50	80	30	60	1.0m	2.0	.50	21	32	4.0k	.75	A	TO13	F0	
20	2N242	333m	25	0	2.0		45	45	45	5.0m	2.0	.50	30	40	5.0k	800m		A	MD9	C0
21	2N255	333m	25	0	2.0	.50	15	15	15	1.0m	2.0	.50	30	100			A	TO3	C0	
22	2N255A	333m	25	0	2.0	.50	15	15	15	5.0m	2.0	.50	30	100	125kt		A	TO3	C0	
23	2N256	333m	25	0	2.0	.50	30	30	30	1.0m	2.0	.50	30	100	125kt		A	TO3	C0	
24	2N256A	333m	25	0	2.0	.50	30	15	25	5.0m	2.0	.50	30	100	125kt		A	TO3	C0	
25	2N296	333m	20	0	2.0		30	15	60	2.0	2.0	1.0	20		4.0k	1.0	A	TO3	C0	
26	2N1320	333m	20	0	3.0		35	15	30	1.5m	2.0	500m	40		1.0		A	TO10	F0	
27	2N1322	333m	20	0	3.0		60	15	60	1.5m	2.0	500m	40		1.0		A	TO10	F0	
28	2N1324	333m	20	0	3.0		100	15	80	2.0m	2.0	500m	40		1.0		A	TO10	F0	
29	2N1326	333m	23	0	3.0		100	15	75	2.0m	2.0	500m	30	90	150k	750m	A	TO10	F0	
30	2N1437	333m	23	0	3.0	500m	100	15	80	2.0m	2.0	500m	20		4.0k	1.0	A	TO10	F0	
31	2N1438	333m	23	0	3.0	500m	100	30	90	2.0m	2.0	500m	20		1.0		A	TO10	F0	
32	2N1465	333m	20	0	3.0	500m	120	15	100	2.5m	2.0	500m	20		1.0		A	TO10	F0	
33	2N1466	333m	20	0	3.0	500m	120	15	100	2.5m	2.0	500m	20		1.0		A	TO10	F0	
34	2N1504/10	333m	1.7	0	3.0	.50	80	30	60	1.0m	2.0	.50	21	100	150kt	75	A	TO10	F0	
35	KL8503	333m	1.7	0	3.0	2.0	60	30	40	2.0m	2.0	500m	40	200	14k	266m	A	TO8	A	
36	KL8504	333m	1.7	0	3.0	2.0	60	30	40	2.0m	2.0	500m	75	200	14k	266m	A	TO8	A	
37	KL8505	333m	1.7	0	3.0	2.0	100	30	65	2.0m	2.0	500m	40	100	14k	266m	A	TO8	A	
38	KL8506	333m	1.7	0	3.0	2.0	100	30	65	2.0m	2.0	500m	75	200	14k	266m	A	TO8	A	
39	LT5021	333m		0	3.0	.50	30	15	30	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
40	LT5023	333m		0	3.0	.50	30	15	30	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
41	LT5024	333m		0	3.0	.50	30	15	30	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
42	LT5026	333m		0	3.0	.50	30	15	30	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
43	LT5027	333m		0	3.0	.50	30	15	30	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
44	LT5029	333m		0	3.0	.50	60	15	60	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
45	LT5030	333m		0	3.0	.50	60	15	60	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
46	LT5032	333m		0	3.0	.50	60	15	60	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
47	LT5033	333m		0	3.0	.50	60	15	60	1.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
48	LT5035	333m		0	3.0	.50	100	15	60	2.0m	2.0	.50	20		100kt	1.0	A	TO10	F0	
49	LT5036	333m		0	3.0	.50	100	15	90	2.0m	2.0	.50	20		100kt	1.0	A	TO10	F0	
50	LT5037	333m		0	3.0	.50	100	15	90	2.0m	2.0	.50	40		100kt	1.0	A	TO10	F0	
51	LT5040	333m		0	3.0	.50	100	15	90	2.0m	2.0	.50	60		100kt	1.0	A	TO10	F0	
52	LT5041	333m		0	3.0	.50	100	15	90	2.0m	2.0	.50	60		100kt	1.0	A	TO10	F0	
53	LT5043	333m		0	3.0	.50	120	15	100	2.5m	2.0	.50	20		100kt	1.0	A	TO10	F0	
54	LT5044	333m		0	3.0	.50	120	15	100	2.5m	2.0	.50	20		100kt	1.0	A	TO10	F0	
55	LT5046	333m		0	3.0	.50	120	15	100	2.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
56	LT5047	333m		0	3.0	.50	120	15	100	2.5m	2.0	.50	40		100kt	1.0	A	TO10	F0	
57	LT5049	333m		0	3.0	.50	120	15	100	2.5m	2.0	.50	60		100kt	1.0	A	TO10	F0	
58	LT5050	333m		0	3.0	.50	120	15	100	2.5m	2.0	.50	60		100kt	1.0	A	TO10	F0	
59	LT5152	333m		0	3.0		30	15	30	1.5m	2.0	.50	20		100kt	1.0	A	TO10	F0	
60	LT5153	333m		0	3.0		60	15	60	1.5m	2.0	.50	20		100kt	1.0	A	TO10	F0	
61#	OC22	333m	15	0	1.0	200m	47	12	32	100	2.0	1.0	50	150	2.5M		A	TO3	C0	
62	OC23	333m	16	0	1.0	200m	55	12	34	30	2.0	1.0	50	150	2.5M		A	TO3	C0	
63#	OC24	333m	15	0	1.0	200m	47	12	32	100	2.0	1.0	50	150	2.5M		A	TO3	C0	
64#	2G240	376m	40	0	3.0		80	1.0		1.0m	2.0	500m	12	70	15M	1.3	D	MD6	F0	
65	KJ2000	384m	40	0	3.0		80		50		2.0	80	10		6.0k		A	TO10	F0	
66	KJ2001	384m	40	0	3.0		100		60		2.0	80	10		6.0k		A	TO10	F0	
67	KJ2002	384m	40	0	3.0		80		50		2.0	80	240		6.0k		A	TO10	F0	
68	KJ2003	384m	40	0	3.0		100		60		2.0	80	240		6.0k		A	TO10	F0	
69	KM7000	384m	28	0	3.0		60		35	500m	60		10k				A	MS7	C0	
70	KM7001	384m	28	0	3.0		100		65	500m	60		90k				A	MS7	C0	
71	KM7002	384m	28	0	3.0		80		50	500m	50						A	MS7	C0	
72	JAN2N1046	400m	30	0	3.0		30	1.5	30	1.0m	1.0	500m	40	200	15M	210m	D	TO3	0	
73	2N1755f	400m	28	0	3.0	2.0	40	30	30	3.0m	2.0	500m	30	75	15k	230m	A	MS7	C0	
74	2N1756f	400m	28	0	3.0	2.0	60	30	50	3.0m	2.0	500m	30	75	15k	230m	A	MS7	C0	
75	2N1757f	400m	28	0	3.0	2.0	80	30	65	3.0m	2.0	500m	30	75	15k	230m	A	MS7	C0	
76	2N1758f	400m	28	0	3.0	2.0	100	30	75	3.0m	2.0	500m	30	75	15k	230m	A	MS7	C0	
77	2N1759f	400m	28	0	3.0	2.0	40	30	35	3.0m	2.0	500m	60	150	15k	160m	A	MS7	C0	
78	2N1760f	400m	28	0	3.0	2.0	60	30	50	3.0m	2.0	500m	60	150	15k	160m	A	MS7	C0	
79	2N1761f	400m	28	0	3.0	2.0	80	30	65	3.0m	2.0	500m	60	150	15k	270m	A	MS7	C0	
80	2N1762f	400m	28	0	3.0	2.0	100	30	75	3.0m	2.0	500m	60	150	15k	270m	A	MS7	C0	
81	2N2087	400ms	10	0																

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (°C)	MAX. P <sub>C</sub> (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG s/a TO200 Ser.	# E A D E	C O D E	
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)	I <sub>co</sub> @ MAX V <sub>cb</sub> @25°C (A)	V <sub>cb</sub> (V)	I <sub>c</sub> (A)								MIN
1	2N1202	455m	34	3.5	#	3.5	500m	80	28	60	2.0m	2.0	500m	40	120	200kΔ	600m	A	MT36	F	C
2	2N1203	455m	34	3.5	#	3.5	500m	120	28	70	2.0m	2.0	2.0	25	75	200kΔ	300m	A	MT36	F	C
3	2N1261	455m	34	3.5	#	3.5	500m	80	28	45	2.0m	2.0	2.0	20	50	200kΔ	300m	A	MT36	F	C
4	2N1262	455m	34	3.5	#	3.5	500m	80	28	45	2.0m	2.0	2.0	30	75	200kΔ	300m	A	MT36	F	C
5	2N1263	455m	34	3.5	#	3.5	500m	80	28	45	2.0m	2.0	2.0	45	113	200kΔ	300m	A	MT36	F	C
6	2N1501	455m	34	3.5	#	3.5	500m	60	28	40	2.0m	2.0	2.0	25	100	200kΔ	300m	A	MT36	F	C
7	2N1502	455m	34	3.5	#	3.5	500m	40	28	40	2.0m	2.0	2.0	25	100	200kΔ	300m	A	MT36	F	C
8	CA2D2	455m	10	3.5	#	3.5	500m	20	12		4.0m	2.0	2.0	20		200kΔ	300m		MT36	F	C
9	2N234A	500m		3.0	#	3.0	15			30		50	25					A	TO3		C
10	2N235A	500m	25	3.0	#	3.0	150m	50	15	40	1.0m	500m	40			800m	A	TO3		C	
11	2N235B	500m	25	3.0	#	3.0	150m	50	15	40	1.0m	500m	60			800m	A	TO3		C	
12	2N236A	500m		3.0	#	3.0	15	50		40	1.0m	75	40			33		TO3		C	
13	2N236B	500m		3.0	#	3.0	15	50		40	1.0m	75	40			33		TO3		C	
14	2N297A	500m	35	4.0	#	4.0	1.0	60	40	40	3.0m	2.0	5.0	60	100	12k	50	5.0u	AΔ	TO3	
15	2N399	500m		3.0	#	3.0	15			40	1.0m	75	40			400k	83		TO3		C
16	2N400	500m		3.0	#	3.0	15	50		40	2.0m	1.0	1.0	50		500k	33		TO3		C
17	2N401	500m		3.0	#	3.0	15			40	1.0m	75	40			400k	83		TO3		C
18	2N418†	500m		5.0	#	5.0	50	100		80	1.5m	2.0	4.0	40	50	400k	50	15u		TO3	
19	2N419	500m	25	3.0	#	3.0	150m	55	45	45	1.0m	1.5	2.2	9.0	44	300k	1.5		AΔ	TO3	
20	2N420†	500m		5.0	#	5.0	50	65	45	45	1.5m	2.0	4.0	40	50	400k	50	15u		TO3	
21	2N420A†	500m		5.0	#	5.0	50	90	70	70	5.0m	2.0	4.0	40	50	400k	50	15u		TO3	
22	2N463†	500m		5.0	#	5.0	1.0	60	50	60	300u	2.0	2.0	20	60	4.0k	80m	4.6u	A	TO32	
23	2N553	500m	35	4.0	#	4.0	1.0	80	40	40	2.0m	2.0	5.0	40	80	25k	30	5.0u	AΔ	MD1	
24	2N637†	500m	25	5.0	#	5.0	50			40	1.0m	5.0	3.0	30	60			15u		TO3	
25	2N637A†	500m	25	5.0	#	5.0	50			70	5.0m	5.0	3.0	30	60			15u		TO3	
26	2N637B†	500m	25	5.0	#	5.0	50			80	5.0m	5.0	3.0	30	60			15u		TO3	
27	2N638†	500m	25	5.0	#	5.0	50			40	1.0m	5.0	3.0	20	40			15u		TO3	
28	2N638A†	500m	25	5.0	#	5.0	50			70	5.0m	5.0	3.0	20	40			15u		TO3	
29	2N638B†	500m	25	5.0	#	5.0	50			80	5.0m	5.0	3.0	20	40			15u		TO3	
30	2N639†	500m	25	5.0	#	5.0	50			40	1.0m	5.0	3.0	15	30			15u		TO3	
31	2N639A†	500m	25	5.0	#	5.0	50			70	5.0m	5.0	3.0	15	30			15u		TO3	
32	2N639B†	500m	25	5.0	#	5.0	50			80	5.0m	5.0	3.0	15	30			15u		TO3	
33	2N663	500m		4.0	#	4.0				25	12m	2.0	5.0	25	75				A	TO3	
34	2N665	500m	35	5.0	#	5.0	1.0	80	40	40	2.0m	2.0	5.0	40	80	20kΔ	30	5.0u	AΔ	TO3	
35	JAN2N665	500m	35	5.0	#	5.0	80	40	40	40	10m	2.0	5.0	40	80	20kΔ	300m		TO3		C
36	2N1138	500m		5.0	#	5.0	50			40	2.0m	5.0	3.0	100	200					TO3	
37	2N1138A	500m		5.0	#	5.0	50			80	5.0m	5.0	3.0	100	20					TO3	
38	2N1138B	500m		5.0	#	5.0	50			80	5.0m	5.0	3.0	100	200					TO3	
39	2N1971	500m	38	4.0	#	4.0	1.0	80	40	40	20m	2.0	5.0	25	60	50kΔ	300m			TO3	
40	2N2061	500m	75	3.0	#	3.0	20	6.0	15	15	10m	2.0	2.0	10				A	TO3		C
41	2N2062	500m	75	3.0	#	3.0	20	6.0	15	15	10m	2.0	2.0	10				A	TO3		C
42	2N2063	500m	75	3.0	#	3.0	20	30	30	30	20m	2.0	2.0	10				A	TO3		C
43	2N2064	500m	75	3.0	#	3.0	40	20	30	30	20m	2.0	2.0	10				A	TO3		C
44	2N2065	500m	75	3.0	#	3.0	80	30	60	60	20m	2.0	2.0	10				A	TO3		C
45	2N2066	500m	75	3.0	#	3.0	80	30	60	60	20m	2.0	2.0	10				A	TO3		C
46	2N2266	500m	50	5.0	#	5.0	700m	100	28	55	2.0m	2.0	2.0	25	75	200k	150m	8.0u	A	MT36	
47	2N2267	500m	50	5.0	#	5.0	700m	120	28	55	2.0m	2.0	2.0	25	75	200k	150m	8.0u	A	MT36	
48	2N2268	500m	50	5.0	#	5.0	700m	100	28	55	2.0m	2.0	2.0	25	75	200k	150m	8.0u	A	MT36	
49	2N2269	500m	50	5.0	#	5.0	700m	120	28	55	2.0m	2.0	2.0	25	75	200k	150m	8.0u	A	MT36	
50	2N2836	500m	38	3.5	#	3.5	50	55	20	55	0.5m	0.0	1.0	Δ	100	500k	500m	10u	AΔ	TO3	
51	2N3154	500m	38	3.0	#	3.0	2.0	40	30	25	100u	2.0	500m	60	180	15kΔ	500m	10u	AΔ	MS7	
52	2N3155	500m	38	3.0	#	3.0	2.0	60	30	40	100u	2.0	500m	60	180	15kΔ	500m	10u	AΔ	MS7	
53	2N3156	500m	38	3.0	#	3.0	2.0	80	30	55	100u	2.0	500m	60	180	15kΔ	500m	10u	AΔ	MS7	
54	2N3157	500m	38	3.0	#	3.0	2.0	100	30	65	100u	2.0	500m	60	180	15kΔ	500m	10u	AΔ	MS7	
55	2N3158	500m	38	3.0	#	3.0	2.0	40	30	25	100u	2.0	500m	30	75	10kΔ	470m	10u	AΔ	MS7	
56	2N3159	500m	38	3.0	#	3.0	2.0	60	30	40	100u	2.0	500m	30	75	10kΔ	470m	10u	AΔ	MS7	
57	2N3160	500m	38	3.0	#	3.0	2.0	80	30	55	100u	2.0	500m	30	75	10kΔ	470m	10u	AΔ	MS7	
58	2N3161	500m	38	3.0	#	3.0	2.0	100	30	65	100u	2.0	500m	30	75	10kΔ	470m	10u	AΔ	MS7	
59	2N4241	500m	37	5.0	#	5.0	32	20	20	20	45u	1.0	1.0	30	300	5.0k	70m			TO3	
60#	ZSB426	500m	30	5.0	#	5.0	32	12	32	32	160u	1.5	3.0	34	80	400k			A	TO3	
61#	AD149	500m	22	3.5	#	3.5		30	30	30	1.0m	1.0	1.0	30	100	500k			A	TO3	
62#	ADY27*	500m	22	3.5	#	3.5	600m			30	2.0m	1.0	5.0	30	100	450k			A	TO3	
63#	AU101	500m	10	10	#	10	2.0	40	1.0	120	10m	2.0	5.0	30	100	400k	100m	2.6u#	D	MD17f	
64#	AU102	500m	10	10	#	10	2.0	40	1.0	120	10m	2.0	5.0	30	100	400k	100m	3.9u#	D	TO3	
65	B1065	500m	10	10	#	10	120	15	120	40	10m	2.0	5.0	40	100	1.5M†			D	TO3	
66	B10474	500m	40	10	#	10	60	60	40	2.0m	1.0	100m	50	400				DAΔ	TO3		C
67	KL8010	500m	1.7	10	#	10	3.0	60	30	30	2.0m	2.0	10	60	200	800k	100m		Δ	TO8	
68	KL8011	500m	1.7	10	#	10	3.0	60	30	35	2.0m	2.0	10	60	200	800k	83m		Δ	TO8	
69	KL8012	500m	1.7	10	#	10	3.0	60	30	50	2.0m	2.0	10	60	200	800k	100m		Δ	TO8	
70	KL8013	500m	1.7	10	#	10	3.0	100	30	50	2.0m	2.0	10	60	200	800k	83m		Δ	TO8	
71	LT5052	500m		4.5	#	4.5	60	30	15	30	2.0m	2.0	75	30	100k	1.0				TO13	
72	LT5053	500m		4.5	#	4.5	60	30	15	30	2.0m	2.0	75	30	100k	1.0				TO10	
73	LT5055	500m		4.5	#	4.5	60	30	15	30	2.0m	2.0	75	60	100k	1.0				TO13	
74	LT5056	500m		4.5	#	4.5	60	30	15	30	2.0m	2.0	75	60	100						

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A E J A X P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	MAX Vcb (V)								
1	2N1011	666m	45	#J	5.0	1.0	80	40	40	20m	2.0	3.0	30	75	5.0kΔ	500m	5.0u	A	TO3	C
2	JAN2N1011	666m	50	#S	5.0	1.0	80	40	40	10m	2.0	3.0	30	75	5.0kΔ	500m	5.0u	A	TO3	C
3	2N1120	666m	45	#S	15	1.0	80	40	70	15m	2.0	1.0	20	50	3.0kΔ	100m		AΔ	TO41	C
4	2N1666	666m*	30	#J	6.0	1.0	80	40	60	100u∅	1.0	6.0	15	30	250kt		20u	AΔ	MD3	C
5	2N1667	666m*	30	#J	6.0			2.0	32	100u∅		6.0		90	200kt			AΔ	MD3	C
6	2N1668	666m*	30	#J	6.0			2.0	32	100u∅		6.0		50	200kt			AΔ	MD3	C
7	2N1669	666m*	30	#J	6.0			2.0	32	100u∅		6.0		70	200kt			AΔ	MD3	C
8	2N1905	666m	50	#J	10	3.0	60	1.0	40	500u∅	2.0	1.0	50	150	75k	1.0	100n	D	TO3	C
9	2N1906	666m	50	#J	10	3.0	100	1.0	40	500u∅	2.0	5.0	75	200	75k	200m	100n	D	TO3	C
10	2N2147	666m	12	#J	5.0	1.0	75	1.5	50	1.0m∅	2.0	1.0	100	150	4.0MΔ			D	TO3	C
11	2N2148	666m	12	#J	5.0	1.0	60	1.0	40	1.0m∅	2.0	1.0	40	80	4.0MΔ			D	TO3	C
12	2N2869	666m#	30	#J	10	3.0	60	1.0	50		2.0	1.0	50	165	4.0k	250m		A	TO3	C
13	2N2869/2N301	666m#	30	#J	10	3.0	60	1.0	50		2.0	1.0	50	165	4.0k	250m		A	TO3	C
14	2N2870	666m#	30	#J	10	3.0	80	1.0	50		2.0	1.0	50	165	4.0k	100m		A	TO3	C
15	2N2870/2N301A	666m#	30	#J	10	3.0	80	1.0	50		2.0	1.0	50	165	4.0k	100m		A	TO3	C
16#	2SB41	666m#	30	#J	1.2	3.0	80	1.0	50	2.0m∅	2.0	1.0	50	165	4.0k	100m		A	TO3	C
17#	2SB42	666m	44	#J	1.2		60	1.2	50	2.0m∅	1.5	1.0	35	160	5.0k			A	TO3	C
18#	2SB151	666m	50	#J	5.0	5.0	80	60	60	500u∅	1.5	3.0	30	75	5.0k	200m		A	TO3	C
19#	2SB152	666m	50	#J	5.0	5.0	100	60	80	500u∅	1.5	3.0	30	75	5.0k	200m		A	TO3	C
20#	2SB295	666m*	40	#J	5.0		100	40	65	3.0m	1.0	1.0	30	120	4.5k	200m		A	TO3	C
21#	2SB309	666m	43	#J	8.0		75	1.0		220u∅	1.0	1.0	30	125	17k			D	TO3	C
22#	2SB310	666m	43	#J	8.0		140	1.0		220u∅	1.0	1.0	30	125	17k	110m		D	TO3	C
23#	2SB318	666m	50	#J	5.0	5.0	60	1.0	40	1.0m∅	2.0	1.0	40	200	2.0MΔ			D	TO3	C
24#	2SB319	666m	50	#J	5.0	5.0	100	1.0	60	1.0m∅	2.0	1.0	40	200	3.0MΔ			D	TO3	C
25#	2SB320	666m	50	#J	10	10	100	2.0	60	1.0m∅	2.0	1.0	40	200	2.0MΔ	100m	1.6u	D	TO3	C
26#	2SB432	666m	50	#J	5.0	5.0	150	2.0	100	1.0m∅	2.0	5.0	40	170	3.0MΔ	100m		D	TO3	C
27	40022	666m†	12	#J	5.0	1.0	32	5.0	32	1.0m	2.0	1.0	38	70	300kΔ			A	TO3	C
28	40050	666m†	12	#J	5.0	1.0	40	5.0	40	500u∅	2.0	1.0	50	90	500kΔ			A	TO3	C
29	40051	666m†	12	#J	5.0	1.0	50	5.0	50	500u∅	2.0	1.0	50	90	500kΔ			A	TO3	C
30	40254	666m†	12	#J	5.0	1.0	32	5.0	32	3.0m	2.0	1.0	30	70	300kΔ			A	TO3	C
31	40421	666m†	12	#J	5.0	1.0	75	1.5	50	1.0m∅	2.0	1.0	62	175	2.0MΔ			A	TO3	C
32	40439	666m#	5.0	#J	10	4.0	320	2.0	320	200u∅	2.0	1.0	50	90	600kΔ	250m	750nt	D	TO3	C
33	40440	666m#	5.0	#J	10	4.0	200	2.0	200	200u∅	2.0	1.0	50	90	600kΔ	120m	1.2ut	D	TO3	C
34	40462	666m#	12	#J	5.0	1.0	40	5.0	40	500u∅	2.0	1.0	50	90	600kΔ	200m		D	TO3	C
35#	AD130	666m*	30	#J	3.0	500m	32	10	30		1.0	1.0	20	100	350kΔ			A	TO3	C
36#	AD131	666m*	30	#J	3.0	500m	64	20	45		1.0	1.0	20	100	350kΔ			A	TO3	C
37#	AD132	666m*	30	#J	3.0	500m	80	20	60		1.0	1.0	20	100	350kΔ			A	TO3	C
38#	AD133	666m*	30	#J	15	2.0	50	10	32		5.0	5.0	20	60	300kΔ		25u∅	AΔ	TO41	C
39#	AD140	666m†	35	#J	3.0	500m	55	10	55	100u∅	1.0	1.0	30	100	4.5k			A	TO3	C
40#	AD142	666m	30	#J	10	3.0	80	10	80	100u∅	2.0	1.0	30	170	450kΔ			A	TO3	C
41#	AD143	666m	30	#J	10	3.0	40	10	40	100u∅	2.0	1.0	30	170	450kΔ			A	TO3	C
42#	AD143R	666m	30	#J	10	3.0	32	10	25	160u∅	2.0	1.0	30	170	450kΔ			A	TO3	C
43#	AD150	666m	30	#J	3.5	500m	32	10	30		1.0	1.0	30	100	450kΔ			A	TO3	C
44#	AD163	666m	30	#J	3.0		100	20	80	150u∅	1.0	1.0	13	60	350kΔ			D	TO3	C
45#	AL100	666m	30	#J	10	3.0	130	2.0	130	100u∅	2.0	1.0	40	250	4.0MΔ			D	TO3	C
46#	AL102	666m	30	#J	6.0	1.0	130	2.0	130	100u∅	2.0	1.0	40	250	4.0MΔ			D	TO3	C
47#	AL103	666m	30	#J	6.0	1.0	100	1.5	130	100u∅	2.0	1.0	40	250	3.0MΔ			D	TO3	C
48#	ASZ15†	666m∅	30	#J	6.0	1.0	80	40	60	100u∅	1.0	1.0	20	55	250kt		20u	A	TO3	C
49#	AT1138	666m	44	#J	10	1.0	40	20	35	2.0m∅	1.0	1.0	66	200	300kΔ	1.0		A	TO3	C
50#	AT1138A	666m	44	#J	10	1.0	60	20	45	2.0m∅	1.0	1.0	66	200	300kΔ	1.0		A	TO3	C
51#	AT1138B	666m	44	#J	10	1.0	80	20	55	2.0m∅	1.0	1.0	66	200	300kΔ	1.0		A	TO3	C
52#	AT1833	666m	44	#J	10	1.0	40	20	35	2.0m∅	1.0	1.0	45	95	400kt			A	TO3	C
53#	AT1834	666m	44	#J	10	1.0	40	20	35	2.0m∅	1.0	1.0	75	165	400kt			A	TO3	C
54#	AU103†	666m	10	#J	10	2.5	155	4.0	155	10m	1.0	1.0	15	15	15MΔ		1.7u	AD	TO3	C
55#	AU104	666m	15	#J	12	2.5	185	4.0	185	10m	1.0	1.0	14	14	15MΔ		1.8u	AD	TO3	C
56#	AU106	666m	5.0	#J	10	4.0	320	2.0	320	200u∅	1.3	6.0	15	80	2.0MΔ			D	TO3	C
57#	AU107	666m	30	#J	10	1.0	200	2.0	200	200u∅	2.0	700m	35	120	2.0MΔ			D	TO3	C
58#	AU108	666m	30	#J	10	1.0	100	2.0	100	200u∅	2.0	700m	35	200	2.0MΔ			D	TO3	C
59#	AU108F	666m	30	#J	10	1.0	100	2.0	100	200u∅	2.0	1.0	120	250	2.0MΔ			D	TO3	C
60#	AU110	666m	30	#J	10	3.0	160	2.0	160	100u∅	2.0	1.0	20	90	2.0MΔ			D	TO3	C
61#	AU111	666m	30	#J	10	4.0	320	2.0	320	200u∅	1.3	6.0	15	80	2.0MΔ			D	TO3	C
62#	AU112	666m	5.0	#J	10	4.0	320	2.0	320	200u∅	1.3	6.0	15	40	2.0MΔ			D	TO3	C
63#	AU113	666m	5.0	#J	10	250	3.0			200u∅	1.3	6.0	15	80	2.0MΔ			D	TO3	C
64#	AU19	666m*	30	#J	3.0	64	20	45		1.0	1.0	20	100	350kΔ		10u∅	AΔ	TO3	C	
65#	AUY20	666m*	30	#J	3.0	80	20	60		1.0	1.0	20	100	350kΔ		10u∅	AΔ	TO3	C	
66#	AUY21	666m*	30	#J	10	65	20	45		5.0	5.0	13	60	300kΔ		12u∅	A	TO41	C	
67#	AUY21A	666m	36	#J	10	65	20	45		5.0	5.0	12	60	300kΔ		12u∅	A	TO3	C	
68#	AUY22	666m*	36	#J	8.0	80	20	60		5.0	5.0	13	40	300kΔ		12u∅	AΔ	TO41	C	
69#	AUY22A	666m*	36	#J	8.0	80	20	60		5.0	5.0	12	60	300kΔ		12u∅	A	TO3	C	
70#	AUY29	666m*	36	#J	15	80	20	60		5.0	5.0	20	60	300kΔ		12u∅	AΔ	TO41	C	
71#	AUY34	666m	30	#J	3.0	500m	100	20	80		1.0	1.0	35	260	350kΔ	500m		D	TO3	C
72#	AUY38	666m	30	#J	10	3.0	130	2.0	60	100u∅	1.0	5.0	35	260	2.5MΔ			D	TO3	C
73	B10912	666m	30	#J	3.0	35	40	40	40	2.0m	2.0	1.0	50					D	TO3	C
74	B10913	666m	30	#J	3.0	35	40	40	40	2.0m	2.0	1.0	100					D	TO3	C
75	CDT1309	666m	4	#J	3.0	2.0	40	35	35	2.0m	2.0	2.0	40	120	8.0k	750m		A	TO3	C
76	CDT1310†	666m	4	#J	3.0	2.0														

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>c</sub> (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C						MAX. hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# CODE	
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)	I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	V <sub>cb</sub> (V)	I <sub>c</sub> (A)	MIN							MAX
1#	2SB129	667m			#J	6.0		80	40	40	2.2m	1.0	6.0	30	80		A	T03			
2#	ASZ171	667m			#J	6.0	1.0	60	20	48	1.0m	1.0	1.0	25	75	250k		T03			
3#	ASZ181	667m			#J	6.0	1.0	80	40	60	1.0m	1.0	1.0	30	110	250k		T03			
4#	AUY37	667m	30 #		#J	10	3.0	100	40	55	1.0m	2.0	1.0	30	110	450k		T03			
5	LT5088	667m			#J	6.0	.70	30	15	30	3.0m	2.0	1.0	40		100k		T013	F0		
6	LT5089	667m			#J	6.0	.70	30	15	30	3.0m	2.0	1.0	40		100k		T010	F0		
7	LT5091	667m			#J	6.0	.70	30	15	30	3.0m	2.0	1.0	80		100k		T013	F0		
8	LT5092	667m			#J	6.0	.70	30	15	30	3.0m	2.0	1.0	80		100k		T010	F0		
9	LT5094	667m			#J	6.0	.70	30	15	30	3.0m	2.0	1.0	160		100k		T013	F0		
10	LT5095	667m			#J	6.0	.70	30	15	30	3.0m	2.0	1.0	160		100k		T010	F0		
11	LT5097	667m			#J	6.0	.70	60	15	60	3.0m	2.0	1.0	40		100k		T013	F0		
12	LT5098	667m			#J	6.0	.70	60	15	60	3.0m	2.0	1.0	40		100k		T010	F0		
13	LT5100	667m			#J	6.0	.70	60	15	60	3.0m	2.0	1.0	80		100k		T013	F0		
14	LT5101	667m			#J	6.0	.70	60	15	60	3.0m	2.0	1.0	80		100k		T010	F0		
15	LT5103	667m			#J	6.0	.70	60	15	60	3.0m	2.0	1.0	160		100k		T013	F0		
16	LT5104	667m			#J	6.0	.70	60	15	60	3.0m	2.0	1.0	160		100k		T010	F0		
17	LT5106	667m			#J	6.0	.70	80	15	75	3.5m	2.0	1.0	40		100k		T013	F0		
18	LT5107	667m			#J	6.0	.70	80	15	75	3.5m	2.0	1.0	40		100k		T010	F0		
19	LT5109	667m			#J	6.0	.70	80	15	75	3.5m	2.0	1.0	80		100k		T013	F0		
20	LT5110	667m			#J	6.0	.70	80	15	75	3.5m	2.0	1.0	80		100k		T010	F0		
21	LT5112	667m			#J	6.0	.70	80	15	75	3.5m	2.0	1.0	160		100k		T013	F0		
22	LT5113	667m			#J	6.0	.70	80	15	75	3.5m	2.0	1.0	160		100k		T010	F0		
23	LT5115	667m			#J	6.0	.70	100	15	90	4.0m	2.0	1.0	40		100k		T013	F0		
24	LT5116	667m			#J	6.0	.70	100	15	90	4.0m	2.0	1.0	40		100k		T010	F0		
25	LT5118	667m			#J	6.0	.70	100	15	90	4.0m	2.0	1.0	80		100k		T013	F0		
26	LT5119	667m			#J	6.0	.70	100	15	90	4.0m	2.0	1.0	80		100k		T010	F0		
27	LT5121	667m			#J	6.0	.70	100	15	90	4.0m	2.0	1.0	160		100k		T013	F0		
28	LT5122	667m			#J	6.0	.70	100	15	90	4.0m	2.0	1.0	160		100k		T010	F0		
29	2N5324†	670m	56		#J	10	3.0	250	4.0	150	2.0	5.0	20	60	2.0MΔ	50m	15uZ	T03	C0		
30	2N5325†	670m	56		#J	10	3.0	325	4.0	200	2.0	5.0	20	60	2.0MΔ	50m	15uZ	T03	C0		
31	MP3730	670m	56		#J	5.0		200	2.0	200	4.0m	4.0	5.0m	10	200	1.0MΔ	10		T03	C0	
32	MP3731	670m	56		#J	10		320	2.0	320	4.0	6.0	15			833m		T03	C0		
33	2N456†	714m	50		#J	5.0	3.0	40	2.0	40	2.0m	1.5	5.0	10	30	200m	26u	T03	C0		
34	2N457†	714m	50		#J	5.0	3.0	60	2.0	60	2.0m	1.5	5.0	10	30	200m	26u	T03	C0		
35	2N458	714m	50		#J	5.0	3.0	80	2.0	80	2.0m	1.5	5.0	10	30	200m	26u	T03	C0		
36#	2SB447	714m	45		#J	6.0	6.0	220	3.0		500u	1.0	6.0	15	50	1.5M†	50m		T03	C0	
37#	2SB311	770m	50		#J	10		180	1.0		220u	1.0	1.0	30	125	17k	110m		T03	C0	
38#	NKT401†	770m	1.3		#J	10	2.0	90	40	60	150u	1.0	1.0	25	75	430k†	140m	10u	MD17d	C0	
39#	NKT402†	770m	1.3		#J	10	2.0	60	20	32	150u	1.0	1.0	60	180	430k†	140m	16u	MD17d	C0	
40#	NKT403†	770m	1.3		#J	10	2.0	80	40	32	150u	1.0	1.0	50	150	430k†	420m	16u	MD17d	C0	
41#	NKT404†	770m	1.3		#J	10	2.0	60	20	32	150u	1.0	1.0	50	150	430k†	420m	16u	MD17d	C0	
42#	NKT405	770m	1.3		#J	5.0	1.0	60	20		150u	1.0	1.0	100	200	430k†	420m		MD17d	C0	
43#	NKT406†	770m	1.3		#J	10	2.0	60	20	32	150u	1.0	1.0	30	50	430k†	420m	15u	MD17d	C0	
44	2N378	833m	50		#J	5.0		20			500u	2.0	2.0	15	40	5.0kΔ	500m	25u	T03	C0	
45	2N379	833m	50		#J	5.0		40			500u	2.0	2.0	20	70	5.0kΔ	500m	25u	T03	C0	
46	2N380	833m	50		#J	5.0		30			500u	2.0	2.0	30	70	8.0kΔ	500m	25u	T03	C0	
47	2N459†	833m	50		#J	5.0		105			500u	2.0	2.0	20	70	5.0kΔ	500m	25u	T03	C0	
48	2N1136	833m			#J	6.0		60			1.0m	5.0	3.0	50	100	5.0kΔ	33	5.0u	T03	C0	
49	2N1136A	833m			#J	6.0		90		55	1.0m	5.0	3.0	50	100	5.0kΔ	33	5.0u	T03	C0	
50	2N1136B	833m			#J	6.0		100		65	1.0m	5.0	3.0	50	100	5.0kΔ	33	5.0u	T03	C0	
51	2N1137	833m			#J	6.0		60		30	1.0m	5.0	3.0	75	150	5.0kΔ	33	5.0u	T03	C0	
52	2N1137A	833m			#J	6.0		90		55	1.0m	5.0	3.0	75	150	5.0kΔ	33	5.0u	T03	C0	
53	2N1137B	833m			#J	6.0		100		65	1.0m	5.0	3.0	75	150	5.0kΔ	33	5.0u	T03	C0	
54	2N1159†	833m			#J	7.0	1.0	80	20	60	8.0m	2.0	3.0	30	75	10k		10u	T03	C0	
55	2N1160†	833m	20		#J	7.0	1.0	80	20	60	8.0m	2.0	5.0	20	50	10k			T03	C0	
56	2N1314	833m	125		#J	3.5		32	10	16	100u	1.4	300m	20	80	4.5k			MD3	C0	
57	2N2137	833m	62		#J	3.0	3.0	30	15	20	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
58	2N2137A	833m	62		#J	3.0	3.0	30	15	20	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
59	2N2138	833m	63		#J	3.0	3.0	45	25	30	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
60	2N2138A	833m	62		#J	3.0	3.0	45	25	30	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
61	2N2139	833m	63		#J	3.0	3.0	60	30	45	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
62	2N2139A	833m	62		#J	3.0	3.0	60	30	45	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
63	2N2140	833m	63		#J	3.0	3.0	75	40	60	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
64	2N2140A	833m	62		#J	3.0	3.0	75	40	60	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
65	2N2141	833m	63		#J	3.0	3.0	90	45	65	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
66	2N2141A	833m	62		#J	3.0	3.0	90	45	65	2.0m	2.0	500m	30	60	12kΔ	250m		T03	C0	
67	2N2142	833m	62		#J	3.0	3.0	30	15	20	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
68	2N2142A	833m	62		#J	3.0	3.0	30	15	20	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
69	2N2143	833m	63		#J	3.0	3.0	45	25	30	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
70	2N2143A	833m	62		#J	3.0	3.0	45	25	30	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
71	2N2144	833m	63		#J	3.0	3.0	60	30	45	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
72	2N2144A	833m	62		#J	3.0	3.0	60	30	45	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
73	2N2145	833m	63		#J	3.0	3.0	75	40	60	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
74	2N2145A	833m	62		#J	3.0	3.0	75	40	60	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
75	2N2146	833m	63		#J	3.0	3.0	90	45	65	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
76	2N2146A	833m	62		#J	3.0	3.0	90	45	65	2.0m	2.0	500m	50	100	12kΔ	250m		T03	C0	
77	B1178	833m			#	10		160	15	160	1.0m	2.0	5.0	40	∅	1.0M†	15	2.0u	DA	T03	C0



# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc M T A E X M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# E O D E			
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX @25°C (A)	Vcβ (V)	Ic (A)							MIN	MAX	
1	2N2834f	1.0	85	∅	∅	20	5.0	140	2.0	100	10m	2.00	10	25	100	10MΔ	4.0u	A	T03	C∅	
2	JAN2N2834t	1.0	85	∅	∅	20	5.0	160	2.0	100	10m	2.00	10	25	100	10MΔ	4.0u	A	T03	C∅	
3	2N2912t	1.0	75	∅	∅	25	3.0	15	1.5	5.0	10m#	2.00	5.0	200	800	10MΔ	2.0u	A	R74	C∅	
4#	2SB131	1.0	65	∅	∅	15	1.5 ∅	40	12	32	2.0m∅	1.50	1.0	35	160	5.0k	20	A	T03	C∅	
5#	2SB131A	1.0	65	∅	∅	15	1.5 ∅	40	12	32	2.0m∅	1.50	1.0	40	160	5.0k	20	A	T03	C∅	
6#	2SB132	1.0	65	∅	∅	15	1.5 ∅	60	12	50	2.0m∅	1.50	1.0	35	160	5.0k	20	A	T03	C∅	
7#	2SB132A	1.0	65	∅	∅	15	1.5 ∅	60	12	50	2.0m∅	1.50	1.0	40	160	5.0k	20	A	T03	C∅	
8#	2SB483	1.0	60	∅	∅	15		80	40	60	5.0m	1.5	10	40	100	2.5k	30m	A	T03	C∅	
9#	2SB484	1.0	60	∅	∅	15		100	40	75	5.0m	1.5	10	40	100	2.5k	30m	A	T03	C∅	
10#	2SB485	1.0	60	∅	∅	15		140	40	85	5.0m	1.5	10	40	100	2.5k	30m	A	T03	C∅	
11	3N451	1.0	75	∅	∅	12	500m	60	28	35	3.0m	2.00	5.0	30	120	16k	3.0u	A	T015	GB	
12	3N461	1.0	75	∅	∅	12	500m	80	28	50	3.0m	2.00	5.0	20	80	12k	6.0u	A	T015	GB	
13	3N47	1.0	75	∅	∅	12	15	40	28	25	3.0m	2.00	5.0	30	120	500kΔ	80m	A	T015	GB∅	
14	3N48	1.0	75	∅	∅	12	15	60	28	40	3.0m	2.00	5.0	20	80	300kΔ	80m	A	T015	GB∅	
15	B102000	1.0	45	∅	∅	7.0		30		30	2.0m	2.00	1.0	40	250			A	T03	C∅	
16	B102001	1.0	45	∅	∅	7.0		40		40	2.0m	2.00	1.0	40	250			A	T03	C∅	
17	B102002	1.0	45	∅	∅	7.0		50		50	2.0m	2.00	1.0	40	250			A	T03	C∅	
18	B102003	1.0	45	∅	∅	7.0		60		60	2.0m	2.00	1.0	40	250			A	T03	C∅	
19	B103000	1.0	45	∅	∅	10		30		30	2.0m	2.00	3.0	40	200			A	T03	C∅	
20	B103001	1.0	45	∅	∅	10		40		40	2.0m	2.00	3.0	40	200			A	T03	C∅	
21	B103002	1.0	45	∅	∅	10		50		50	2.0m	2.00	3.0	40	200			A	T03	C∅	
22	B103003	1.0	45	∅	∅	10		60		60	2.0m	2.00	3.0	40	200			A	T03	C∅	
23	B103004	1.0	45	∅	∅	10		70		70	2.0m	2.00	3.0	40	200			A	T03	C∅	
24#	CTP1544	1.0	1.7	*	∅	25		60	30	30	15m	2.00	25	25	125	4.0k	40m		A	T03	C∅
25#	CTP1552	1.0	1.7	*	∅	25		40	30	20	15m	2.00	25	25	125	4.0k	40m		A	T03	C∅
26	DTG1100A	1.0	85	∅	∅	15	5.0		2.8	70	20m#	2.00	1.0	50	300	850k		DA	T03	C∅	
27	DTG600t	1.0	85	∅	∅	15	5.0		1.4	50	20m#	2.00	5.0	50	115	850k	30m	4.4u	DA	T03	C∅
28	DTG601t	1.0	85	∅	∅	15	5.0		1.4	50	20m#	2.00	5.0	50	115	850k	30m	4.4u	DA	T03	C∅
29	DTG602t	1.0	85	∅	∅	15	5.0		1.4	70	20m#	2.00	5.0	50	115	850k	30m	4.4u	DA	T03	C∅
30	DTG603t	1.0	85	∅	∅	15	5.0		1.4	80	20m#	2.00	5.0	50	115	850k	30m	4.4u	DA	T03	C∅
31	DTG603Mt	1.0	85	∅	∅	15	2.5		1.4	80	20m#	2.00	5.0	50	250	850k	30m	13u	DA	T03	C∅
32	DTG2400Mt	1.0	85	∅	∅	25	5.0		1.5	140	10m#	2.00	10	25	125		10u	ADE	T03	C∅	
33	MP600t	1.0	85	∅	∅	25	5.0	75	1.5	50	200u∅	2.00	5.0	50			10u	ADE	T03	C∅	
34	MP601t	1.0	85	∅	∅	25	5.0	75	1.5	60	200u∅	2.00	5.0	50			10u	ADE	T03	C∅	
35	MP602t	1.0	85	∅	∅	25	5.0	90	1.5	70	200u∅	2.00	5.0	50			10u	ADE	T03	C∅	
36	MP603t	1.0	85	∅	∅	25	5.0	90	1.5	80	200u∅	2.00	5.0	50			10u	ADE	T03	C∅	
37	MP1612	1.0	85	∅	∅	20		70	2.0	50			10	25	100	18M	03		A	T03	C∅
38	MP1612A	1.0	85	∅	∅	20		110	2.0	75			10	25	100	18M	03		A	T03	C∅
39	MP1612B	1.0	85	∅	∅	20		13	2.0	100			10	25	100	18M	03		A	T03	C∅
40	MP1613	1.0	85	∅	∅	7.0	2.0	100	50	75	5.0m	2.00	1.0	40	70			A	T03	C∅	
41	MP2060	1.0	85	∅	∅	7.0	2.0	40	20	25	1.0m	2.00	3.0	30	200	600k		A	T03	C∅	
42	MP2061	1.0	85	∅	∅	7.0	2.0	60	20	35	1.0m	2.00	3.0	30	200	600k		A	T03	C∅	
43	MP2062	1.0	85	∅	∅	7.0	2.0	75	20	50	1.0m	2.00	3.0	30	200	600k		A	T03	C∅	
44	MP2063	1.0	85	∅	∅	7.0	2.0	90	20	60	1.0m	2.00	3.0	30	200	600k		A	T03	C∅	
45#	2G220	1.1	∅	∅	∅	10	5.0	40	30	60	2.0m	1.50	10	10	12	200k	.05	11u	A	MD4	C∅
46#	2G221	1.1	∅	∅	∅	10	5.0	60	30	60	2.0m	1.50	10	10	12	200k	.05	11u	A	MD4	C∅
47#	2G222	1.1	∅	∅	∅	10	5.0	80	30	30	2.0m	1.50	10	10	12	200k	.05	11u	A	MD4	C∅
48	2N176	1.2	90	∅	∅	3.0		40		30	3.0m	2.00	500m∅	25	90	7.0k	800m		A	T03	C∅
49	2N178	1.2	90	∅	∅	3.0		30	20	30	3.0m	2.00	500m	15	45	6.0k	800m		A	T03	C∅
50	2N250A	1.2	90	∅	∅	7.0	2.0	40	20	25	500u∅	1.50	3.0	25	100	160kΔ	230m		A	T03	C∅
51	2N251A	1.2	90	∅	∅	7.0	2.0	60	20	35	500u∅	1.50	3.0	25	100	160kΔ	230m		A	T03	C∅
52	2N350	1.2	10	∅	∅	3.0		50	40	40	3.0m	2.00	700m	20	60	6.0k	800m		A	T03	C∅
53	2N350A	1.2	90	∅	∅	3.0		50	40	40	3.0m	2.00	700m	20	60	6.0k	800m	5.0u	A	T03	C∅
54	2N351	1.2	10	∅	∅	3.0		50	40	40	3.0m	2.00	700m	25	90	6.0k	800m		A	T03	C∅
55	2N351A	1.2	90	∅	∅	3.0		50	40	40	3.0m	2.00	700m	25	90	6.0k	800m	5.0u	A	T03	C∅
56	2N375	1.2	90	∅	∅	3.0		80	40	60	3.0m	4.00	1.0	35	90	10k	800m	10u	A	T03	C∅
57	2N376	1.2	10	∅	∅	3.0		50	40	40	3.0m	2.00	700m	35	120	6.0k	800m		A	T03	C∅
58	2N376A	1.2	90	∅	∅	3.0		50	40	40	3.0m	2.00	700m	35	120	6.0k	800m	5.0u	A	T03	C∅
59	2N456A	1.2	150	∅	∅	7.0	3.0	40	20	30	2.0m	1.50	5.0	30	90	200k	100m		A	T03	C∅
60	2N456B	1.2	150	∅	∅	7.0	3.0	40	30	30	5.0m	1.50	5.0	30	90	200k	10		A	T03	C∅
61	2N457A	1.2	150	∅	∅	7.0	3.0	60	20	40	2.0m	1.50	5.0	30	90	200k	100m		A	T03	C∅
62	2N457B	1.2	150	∅	∅	7.0	3.0	60	30	40	5.0m	1.50	5.0	30	90	200k	10		A	T03	C∅
63	2N458A	1.2	150	∅	∅	7.0	3.0	80	20	45	2.0m	1.50	5.0	30	90	200k	100m		A	T03	C∅
64	2N458B	1.2	150	∅	∅	7.0	3.0	80	30	45	5.0m	1.50	5.0	30	90	200k	10		A	T03	C∅
65	2N459A	1.2	106	∅	∅	5.0		105	25	60	500m∅	2.00	2.0	20	70	5.0kΔ		A	T03	C∅	
66	2N554	1.2	40	∅	∅	3.0		15	15	16	10m	2.00	500m	50	∅	6.0k	800m		A	T03	C∅
67	2N555	1.2	40	∅	∅	3.0		30	15	30	20m	2.00	500m	50	∅	6.0k	800m		A	T03	C∅
68	2N589	1.2	90	∅	∅	3.0		100	50	75	2.0m	2.00	3.0	20	40			A	T03	C∅	
69	2N618	1.2	90	∅	∅	3.0		80	40	60	3.0m	4.00	1.0	60	140	8.5k	400m	8.0u	A	T03	C∅
70	2N627	1.2	90	∅	∅	10		40	20	30	20m	2.00	10	10	30	8.0k	100m		A	T03	C∅
71	2N628	1.2	90	∅	∅	10		60	30	45	20m	2.00	10	10	30	8.0k	100m		A	T03	C∅
72	2N629	1.2	90	∅	∅	10		80	40	60	20m	2.00	10	10	30	8.0k	100m		A	T03	C∅
73	2N630	1.2	90	∅	∅	10		100	50	70	20m	2.00	10	10	30	8.0k	100m		A	T03	C



# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	M A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E	
					lc (A)	lb (A)	BVcbo (V)	BVebo (V)	BVceo (V)	lcbo @ MAX Vcb @ 25°C (A)	Vcb (V)									lc (A)
1	2N1295	1.2	90	#J	3.0	500m	80	15	80	2.0m	2.0	500m	40	150k	1.0	A	T03	C0		
2	2N1358†	1.2	30	#J	15	4.0	80	60	40	8.0m	2.0	1.2	40	100k	60m	Δ	T036	C0		
3	2N1359	1.2	30	#J	15	4.0	80	25	40	3.0m	4.0	1.0	35	10k	500m	Δ	T03	C0		
4	2N1360	1.2	90	#J	3.0		50	25	40	3.0m	4.0	1.0	60	8.5k	400m	Δ	T03	C0		
5	2N1362	1.2	90	#J	3.0		100	50	75	3.0m	4.0	1.0	90	10k	500m	Δ	T03	C0		
6	2N1363	1.2	90	#J	3.0		100	50	75	3.0m	4.0	1.0	60	8.5k	400m	Δ	T03	C0		
7	2N1364	1.2	90	#J	3.0		120	60	100	3.0m	4.0	1.0	35	10k	500m	Δ	T03	C0		
8	2N1365	1.2	90	#J	3.0		100	60	100	3.0m	4.0	1.0	40	10k	500m	Δ	T03	C0		
9	2N1412	1.2	87	#J	15	4.0	120	60	65	3.0m	4.0	1.0	25	8.5k	400m	Δ	T036	C0		
10	2N1526	1.2	125	#J	5.0		40	20	20	2.0m	2.0	3.0	20	2.0k			T03	C0		
11	2N1530	1.2	125	#J	5.0		80	30	30	2.0m	2.0	3.0	20	2.0k			T03	C0		
12	2N1531	1.2	125	#J	5.0		80	30	30	2.0m	2.0	3.0	20	2.0k			T03	C0		
13	2N1532	1.2	125	#J	5.0		100	50	50	2.0m	2.0	3.0	20	2.0k			T03	C0		
14	2N1533	1.2	125	#J	5.0		100	50	50	2.0m	2.0	3.0	20	2.0k			T03	C0		
15	2N1534	1.2	125	#J	5.0		120	60	60	2.0m	2.0	3.0	20	2.0k			T03	C0		
16	2N1535	1.2	125	#J	5.0		40	20	20	2.0m	2.0	3.0	35	70	2.0k		T03	C0		
17	2N1536	1.2	125	#J	5.0		80	30	30	2.0m	2.0	3.0	35	70	2.0k		T03	C0		
18	2N1537	1.2	125	#J	5.0		100	50	50	2.0m	2.0	3.0	35	70	2.0k		T03	C0		
19	2N1538	1.2	125	#J	5.0		120	60	60	2.0m	2.0	3.0	35	70	2.0k		T03	C0		
20	2N1539	1.2	125	#J	5.0		40	20	20	2.0m	2.0	3.0	50	100	4.0k		T03	C0		
21	2N1539A	1.2	90	#J	5.0		40	20	20	2.0m	2.0	3.0	50	100	4.0k	200m	5.0u	Δ	T03	C0
22	2N1540	1.2	125	#J	5.0		60	30	30	2.0m	2.0	3.0	50	1.0k			T03	C0		
23	2N1540A	1.2	90	#J	5.0		60	30	30	2.0m	2.0	3.0	50	4.0k	200m	5.0u	Δ	T03	C0	
24	2N1541	1.2	125	#J	5.0		80	40	40	2.0m	2.0	3.0	50	1.0k			T03	C0		
25	2N1541A	1.2	90	#J	5.0		80	40	40	2.0m	2.0	3.0	50	4.0k	200m	5.0u	Δ	T03	C0	
26	2N1542	1.2	125	#J	5.0		100	50	50	2.0m	2.0	3.0	50	1.0k			T03	C0		
27	2N1542A	1.2	90	#J	5.0		100	50	50	2.0m	2.0	3.0	50	4.0k	200m	5.0u	Δ	T03	C0	
28	2N1543	1.2	125	#J	5.0		120	60	60	2.0m	2.0	3.0	50	1.0k			T03	C0		
29	2N1544	1.2	90	#J	5.0		40	20	20	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
30	2N1544A	1.2	90	#J	5.0		40	20	20	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
31	2N1545	1.2	90	#J	5.0		60	30	30	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
32	2N1545A	1.2	90	#J	5.0		60	30	30	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
33	2N1546	1.2	90	#J	5.0		80	40	40	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
34	2N1546A	1.2	90	#J	5.0		80	40	40	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
35	2N1547	1.2	90	#J	5.0		100	50	50	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
36	2N1547A	1.2	90	#J	5.0		100	50	50	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
37	2N1548	1.2	90	#J	5.0		120	60	60	2.0m	2.0	3.0	75	150	4.0k	100m	5.0u	Δ	T03	C0
38	2N1549	1.2	90	#J	15		40	20	20	3.0m	2.0	10	10	30	10k	100m	5.0u	Δ	T03	C0
39	2N1549A	1.2	90	#J	15		40	20	20	3.0m	2.0	10	10	30	10k	100m	5.0u	Δ	T03	C0
40	JAN2N1549AT	1.2	90	#J	15	5.0	40	20	20	3.0m	2.0	10	10	30	10kΔ	100m	8.0u	Δ	T03	C0
41	2N1550	1.2	90	#J	15		60	30	30	3.0m	2.0	10	10	30	10k	100m	5.0u	Δ	T03	C0
42	2N1550A	1.2	90	#J	15		60	30	30	3.0m	2.0	10	10	30	10k	100m	5.0u	Δ	T03	C0
43	JAN2N1550AT	1.2	90	#J	15	5.0	60	30	30	3.0m	2.0	10	10	30	10kΔ	100m	8.0u	Δ	T03	C0
44	2N1551	1.2	90	#J	15		80	40	40	3.0m	2.0	10	10	30	10k	100m	5.0u	Δ	T03	C0
45	2N1551A	1.2	90	#J	15		80	40	40	3.0m	2.0	10	10	30	10k	100m	5.0u	Δ	T03	C0
46	JAN2N1551AT	1.2	90	#J	15	5.0	80	40	40	3.0m	2.0	10	10	30	10kΔ	100m	8.0u	Δ	T03	C0
47	2N1552	1.2	90	#J	15		100	50	50	3.0m	2.0	10	10	30	10k	100m	5.0u	Δ	T03	C0
48	2N1552A	1.2	90	#J	15		100	50	50	3.0m	2.0	10	10	20	10k	100m	5.0u	Δ	T03	C0
49	JAN2N1552AT	1.2	90	#J	15	5.0	100	50	50	3.0m	2.0	10	10	30	10kΔ	100m	8.0u	Δ	T03	C0
50	2N1553	1.2	90	#J	15		40	20	20	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
51	2N1553A	1.2	90	#J	15		40	20	20	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
52	JAN2N1553AT	1.2	90	#J	15	5.0	50	20	20	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
53	2N1554	1.2	90	#J	15		60	30	30	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
54	2N1554A	1.2	90	#J	15		60	30	30	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
55	JAN2N1554AT	1.2	90	#J	15	5.0	60	30	30	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
56	2N1555	1.2	90	#J	15		80	40	40	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
57	2N1555A	1.2	90	#J	15		80	40	40	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
58	JAN2N1555AT	1.2	90	#J	15	5.0	80	40	40	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
59	2N1556	1.2	90	#J	15		100	50	50	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
60	2N1556A	1.2	90	#J	15		100	50	50	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
61	JAN2N1556AT	1.2	90	#J	15	5.0	100	50	70	3.0m	2.0	10	30	6.0k	70m	10u	Δ	T03	C0	
62	2N1557	1.2	90	#J	15		40	20	20	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
63	2N1557A	1.2	90	#J	15		40	20	20	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
64	JAN2N1557AT	1.2	90	#J	15	5.0	50	20	20	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
65	2N1558	1.2	90	#J	15		60	30	30	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
66	2N1558A	1.2	90	#J	15		60	30	30	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
67	JAN2N1558AT	1.2	90	#J	15	5.0	60	30	30	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
68	2N1559	1.2	90	#J	15		80	40	40	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
69	2N1559A	1.2	90	#J	15		80	40	40	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
70	JAN2N1559AT	1.2	90	#J	15	5.0	80	40	40	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
71	2N1560	1.2	90	#J	15		100	50	50	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
72	2N1560A	1.2	90	#J	15		100	50	50	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
73	JAN2N1560AT	1.2	90	#J	15	5.0	100	50	70	3.0m	2.0	10	50	100	5.0k	50m	10u	Δ	T03	C0
74	2N1651†	1.2	100	#J	25	2.5	60	1.5	60	5.0m	2.0	10	35	140	1.5M	250m	7.0u	DA	T041	C0
75	JAN2N1651†	1.2	100	#J	25	2.5	60	1.5	30	5.0m	2.0	10	35	105	600kΔ	26m	10u	DA	MD27	C0
76	2N1652†	1.2	100	#J	25	2.5	100	1.5	100	5.0m	2.0	10	35	140	1.5M	250m	7.0u	DA	T041	C0
77	JAN2N1652†	1.2	100	#J	25	2.5	100	1.5	60	5.0m	2.0	10	35	105						

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M A X P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a T0200 Ser.	# E O A D E
					Ic (A)	Ib (A)	BVcbo (V)	BVceo (V)	BVceo (V)	lcbo @ MAX Vcbo @25°C (A)	Vcbo (V)	Ic (A)								
1#	ADZ12	1.2	45	#J	20	4.0	80	50	60	8.0m	2.0	1.2	40	120	∅	100k		AD	Z44	∅
2	B113000	1.2	70	#J	25	2.5	110	2.0	70	100mΔ	2.0	2.0	60	300		100m	DA	T03		
3	B113001	1.2	70	#J	25	2.5	130	2.0	80	100mΔ	2.0	2.0	60	300		100m	DA	T03		
4	B113002	1.2	70	#J	25	2.5	160	2.0	100	100mΔ	2.0	2.0	60	300		100m	DA	T03		
5	B113003†	1.2	70	#J	25	2.5	130	2.0	80	50m*	2.0	1.0	30	100		30m	DA	T03		
6	B113004†	1.2	70	#J	25	2.5	160	2.0	90	50m*	2.0	1.0	30	100		30m	DA	T03		
7	B113005†	1.2	70	#J	25	2.5	170	2.0	100	50m*	2.0	1.0	30	100		30m	DA	T03		
8	CQT940A	1.2	90	#J	15	5.0	100	20	85	∅	2.0	1.0	20			90m	A	T03	C∅	
9	CQT940B	1.2	90	#J	15	5.0	80	60	60	∅	2.0	7.0	30			90m	A	T03	C∅	
10	CQT940BA	1.2	90	#J	15	5.0	80	60	60	∅	2.0	1.0	30			60m	A	T03	C∅	
11	CQT1110	1.2	90	#J	5.0		40	10	30	2.0m∅	2.0	1.0	50	250	250k	200m	A	T03	A	
12	CQT1110A	1.2	90	#J	5.0		40	10	30	2.0m∅	2.0	1.0	50	250*	250k	200m	A	T03	A	
13	CQT1111	1.2	90	#J	5.0		60	10	50	2.0m∅	2.0	1.0	50	250	250k	200m	A	T03	A	
14	CQT1111A	1.2	90	#J	5.0		60	10	50	2.0m∅	2.0	1.0	50	250*	250k	200m	A	T03	A	
15	CQT1112	1.2	90	#J	10		65	65	65	2.0m∅	2.0	1.0	75	300	250k	100m	A	T03	A	
16	CTP1500	1.2	90	#J	15	5.0	100	30	80	8.0m	2.0	5.0	30	75		70m	AA	T03	C∅	
17	CTP1503	1.2	90	#J	15	5.0	80	30	70	8.0m	2.0	5.0	30	75		70m	AA	T03	C∅	
18	CTP1504	1.2	90	#J	15	5.0	60	30	50	8.0m	2.0	5.0	30	75		70m	AA	T03	C∅	
19	CTP1508	1.2	90	#J	15	5.0	40	30	40	8.0m	2.0	5.0	30	75		70m	AA	T03	C∅	
20	CTP3500	1.2	90	#J	15	5.0	100	30	40	8.0m	2.0	5.0	30	75		70m	AA	T041	C∅	
21	CTP3503	1.2	90	#J	15	5.0	80	30	70	8.0m	2.0	5.0	30	75		70m	AA	T041	C∅	
22	CTP3504	1.2	90	#J	15	5.0	60	30	50	8.0m	2.0	5.0	30	75		70m	AA	T041	C∅	
23	CTP3508	1.2	90	#J	15	5.0	40	30	40	8.0m	2.0	5.0	30	75		70m	AA	T041	C∅	
24	CTP3544	1.2	90	#J	25	5.0	60	30	40	15m	2.0	25	25	125	5.0k	40m	AA	T041	C∅	
25	CTP3545	1.2	90	#J	25	5.0	80	30	60	15m	2.0	25	25	125	5.0k	40m	AA	T041	C∅	
26	CTP3552	1.2	90	#J	25	5.0	40	30	30	10m	2.0	25	25	75	5.0k	40m	AA	T041	C∅	
27	CTP3553	1.2	90	#J	25	5.0	100	30	75	10m	2.0	25	25	75	5.0k	40m	AA	T041	C∅	
28	DTG110	1.2	70	#J	7.0	1.0		2.0	65	2.0m	2.0	1.0	74*	250	320k		DA	T03		
29	DTG110B	1.2	70	#J	25	5.0		2.0	40				65*	300	850k	100m	DA	T03		
30	DTG1101†	1.2	106	#J	15	3.0		1.0	325 #	15m #					450k	160m	A	T03	C∅	
31	DTG1101†	1.2	106	#J	15	3.0		1.0	200 #	15m #					450k	160m	A	T03	C∅	
32	DTG1200	1.2	106	#J	15	3.0		1.0	120 #	100mΔ	5.0	8.0	22			41m	A	T03	C∅	
33	MP110	1.2	106	#J	7.0	2.0			65 #	2.0m∅	2.0	1.0	74	250	320k		A	T03	C∅	
34	MP110B	1.2	106	#J	25	5.0	90	2.0	40	200∅	2.0	1.0	65	300*	500kΔ	100m	ADEΔ	T03	C∅	
35	MP525	1.2	106	#J	10				60	200∅	2.0	3.0	30	200*			A	T03	C∅	
36	MP2000A†	1.2	106	#J	25	5.0		2.0	30	200∅	2.0	8.0	25		210k	24m	ADE	T03	C∅	
37	MP2100A†	1.2	106	#J	25	5.0		2.0	60	200∅	2.0	8.0	25		210k	24m	ADE	T03	C∅	
38	MP2200A†	1.2	106	#J	25	5.0		2.0	80	200∅	2.0	8.0	25		210k	24m	ADE	T03	C∅	
39	MP2300A†	1.2	106	#J	25	5.0		2.0	100	200∅	2.0	8.0	25		210k	24m	ADE	T03	C∅	
40	MP2400A†	1.2	106	#J	25	5.0		2.0	120	200∅	2.0	8.0	25		210k	24m	ADE	T03	C∅	
41#	SFT264	1.2	87	#C	15		30	15	15	8.0m	2.0	5.0	25	100	300k†	600m	A	T036	C∅	
42#	SFT265	1.2	87	#C	15	2.5	40	20	40	8.0m	2.0	5.0	25	45	∅	60m	A	T036	C∅	
43#	SFT266	1.2	87	#C	15	2.5	60	40	50	8.0m	2.0	5.0	25	45	∅	60m	AA	T036	C∅	
44#	SFT267	1.2	87	#C	15	2.5	80	60	60	8.0m	2.0	5.0	25	45	∅	60m	AA	T036	C∅	
45	TI3027	1.2	2.0	#C	7.0	3.0	45	20	40	1.0m∅	2.0	3.0	40	250 #			A	T03	C∅	
46	TI3028	1.2	2.0	#C	7.0	3.0	60	20	50	1.0m∅	2.0	3.0	40	250 #			A	T03	C∅	
47	TI3029	1.2	2.0	#C	7.0	3.0	80	20	55	1.0m∅	2.0	3.0	40	250 #			A	T03	C∅	
48	TI3030	1.2	2.0	#C	7.0	3.0	100	20	60	1.0m∅	2.0	3.0	40	250 #			A	T03	C∅	
49	TI3031	1.2	2.0	#C	7.0	3.0	120	20	65	1.0m∅	2.0	3.0	40	250 #			A	T03	C∅	
50	2N392	1.3		#J	5.0	1.0	60	40	30	8.0m	2.0	1.0	200		6.0k	17	A	T03	C∅	
51	2N1168	1.3		#J	5.0	1.0	50	20	40	8.0m	2.0	1.0	70	110	10k	08	A	T03	C∅	
52	2N1291	1.3		#J	3.0	5.0	35	15	30	1.5m	2.0	5.0	30	90	150k	1.0	A	T03	C∅	
53	2N1293	1.3		#J	3.0	5.0	60	15	45	2.0m	2.0	5.0	30	90	150k	1.0	A	T03	C∅	
54	2N1297	1.3		#J	3.0	5.0	100	15	80	4.0m	2.0	5.0	30	90	150k	1.0	A	T03	C∅	
55	2N1518†	1.3	50	#J	25	4.0	50	30	40	4.0m	4.0	15	15	40	4.0k	.03	20u	A	T036	C∅
56	2N1519†	1.3	50	#J	25	4.0	80	30	60	4.0m	4.0	15	15	40	4.0k	.03	20u	A	T036	C∅
57	2N1520†	1.3	50	#J	35	6.0	50	30	40	4.0m	4.0	15	17	35	4.0k	.02	25u	A	T036	C∅
58	2N1521†	1.3	50	#J	35	6.0	80	30	60	4.0m	4.0	15	17	35	4.0k	.02	25u	A	T036	C∅
59	2N1522†	1.3	50	#J	50	8.0	50	30	40	4.0m	4.0	15	22	45	4.0k	.01	30u	A	T036	C∅
60	2N1523†	1.3	50	#J	50	8.0	80	30	60	4.0m	4.0	15	22	45	4.0k	.01	30u	A	T036	C∅
61	2N1529A	1.3		#J	5.0	5.0	40	20	30	2.0m	2.0	3.0	20	40	5.0kΔ				T03	
62	2N1530A	1.3		#J	5.0	5.0	60	30	45	2.0m	2.0	3.0	20	40	5.0kΔ				T03	
63	2N1531A	1.3		#J	5.0	5.0	80	40	60	2.0m	2.0	3.0	20	40	5.0kΔ				T03	
64	2N1532A	1.3		#J	5.0	5.0	100	50	75	2.0m	2.0	3.0	20	40	5.0kΔ				T03	
65	2N1534A	1.3		#J	5.0	5.0	40	20	30	2.0m	2.0	3.0	35	70	5.0kΔ				T03	
66	2N1535A	1.3		#J	5.0	5.0	60	30	45	2.0m	2.0	3.0	35	70	5.0kΔ				T03	
67	2N1536A	1.3		#J	5.0	5.0	80	40	60	2.0m	2.0	3.0	35	70	5.0kΔ				T03	
68	2N1537A	1.3		#J	5.0	5.0	100	50	75	2.0m	2.0	3.0	35	70	5.0kΔ				T03	
69	2N2291	1.3	60	#J	10	1.0	40	75	40	1.0m∅	2.0	5.0	50	120	1.5m†	.10	5.0u	DA	T03	
70	2N2292	1.3	60	#J	10	1.0	80	75	80	1.0m∅	2.0	5.0	50	120	1.5m†	.10	5.0u	DA	T03	
71	2N2293	1.3	60	#J	10	1.0	120	75	120	2.0m∅	2.0	5.0	50	120	1.5m†	.10	5.0u	DA	T03	
72	2N2294	1.3	60	#J	10	1.0	40	75	40	1.0m∅	2.0	5.0	50	120	1.5m†	.10	5.0u	DA	T041	
73	2N2295	1.3	60	#J	10	1.0	80	75	80	1.0m∅	2.0	5.0	50	120	1.5m†	.10	5.0u	DA	T041	
74	2N2296	1.3	60	#J	10	1.0	120	75	120	2.0m∅	2.0	5.0	50	120	1.5m†	.10	5.0u	DA	T041	
75	2N2423	1.3		#J	5.0	5.0	100	30	80	5.0m	2.0	2.0	20	100			A	T03		
76	2N2445	1.3	90	#J	20	2.0	100	12	50	3.0m∅	2.0	10	20	60		.10			T041	A∅
77	2N2636	1.3		#J	25		100		100	10m∅	2.0	10	35	140			4u#†	DA	T041	C∅
78	2N2637	1.3		#J	25		100		100	10m∅	2.0									

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb</sub> @ 25°C (A)		BIAS hFE		MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a Ser. TO200	# C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)	I <sub>cb</sub> (A)	V <sub>cb</sub> (V)	I <sub>c</sub> (A)									
1	2N5439T	1.4	120	∅	#J	60	12	110	2.5	90	10m#	2.0	25	40	120			12u		TO3	C∅
2	2N5440T	1.4	120	∅	#J	60	12	140	2.5	120	10m#	2.0	25	40	120			12u		TO3	C∅
3	2N5692T	1.4	120	∅	#J	40	12	50	2.5	30	10m#	2.0	25	20	65			20u			
4	2N5693T	1.4	120	∅	#J	40	12	100	2.5	80	10m#	2.0	25	20	65			20u			
5	2N5694T	1.4	120	∅	#J	40	12	100	2.5	80	10m#	2.0	25	20	65			20u			
6	2N5695T	1.4	120	∅	#J	40	12	120	2.5	100	10m#	2.0	25	20	65			20u			
7	2N5696T	1.4	120	∅	#J	40	12	140	2.5	120	10m#	2.0	25	20	65			20u			
8#	2SB410	1.5	40	∅	#J	15		135	5.0	135	250u	1.5	1.0	60	∅	3.0M\$			DA	TO3	
9#	2SB411	1.5	40	∅	#J	11		200	5.0	200	250u	1.5	1.0	60	∅	2.5M\$			DA	TO3	
10	2N2733	1.6	140	∅	#J	65		80	30	80	5.0m	2.0	65	15	10m			10u	A	MT23	
11	2N2734	1.6	140	∅	#J	65		10	30	45	5.0m	2.0	65	15	10m			10u	A	MT23	
12	2N2735	1.6	140	∅	#J	65		10	30	45	5.0m	2.0	65	15	10m			10u	A	MT23	
13	2N2736	1.6	140	∅	#J	65		10	30	45	5.0m	2.0	65	15	10m			10u	A	MT22	
14	2N2737	1.6	140	∅	#J	65		10	30	45	5.0m	2.0	65	15	10m			10u	A	MT22	
15	2N2738	1.6	140	∅	#J	65		10	30	45	5.0m	2.0	65	15	10m			10u	A	MT22	
16#	ADY28	1.6	100	∅	#J	30	5.0	80	40	60	2.0	25	15	25	∅	100k		25u	A	ZA4	
17	SDT1960	1.6	140	∅	#J	65		80	30	60	5.0m	2.0	65	20		340k	7.0m	10u	A	MT23	
18	SDT1961	1.6	140	∅	#J	65		80	30	60	5.0m	2.0	65	20		340k	7.0m	10u	A	MT23	
19	SDT1962	1.6	140	∅	#J	65		80	30	60	5.0m	2.0	65	20		340k	7.0m	10u	A	MT23	
20#	2G210	2.0	∅	∅	#J	6.0	2.0	60	20	60	1.0m	1.5	5.0	25	90	400k\$	10	15u	A	MD6	
21	2N173	2.0	50	∅	#J	15	4.0	60	40	45	4.0m	2.0	5.0	35	70	10k	08	15u	A	TO36	
22	2N174	2.0	50	∅	#J	15	4.0	80	60	55	4.0m	2.0	5.0	25	50	10k	08	15u	A	TO36	
23	2N174A	2.0	50	∅	#J	15	4.0	80	60	40	8.0m	2.0	1.2	40	80	15k	06	15u	A	TO36	
24#	JAN2N174A	2.0	75	∅	#S	14	4.0	80	60	40	15m	2.0	1.2	40	80	100kTΔ	60m	15u	A	MT56	
25	2N277	2.0	50	∅	#J	15	4.0	40	20	25	8.0m	2.0	5.0	35	70	10k	08	15u	A	TO36	
26	2N278	2.0	50	∅	#J	15	4.0	50	30	30	4.0m	2.0	5.0	35	70	10k	08	15u	A	TO36	
27	2N441	2.0	150	∅	#J	15	4.0	40	20	25	8.0m	2.0	5.0	20	40	10k	08	15u	A	TO36	
28	2N442	2.0	150	∅	#J	15	4.0	50	30	30	4.0m	2.0	5.0	20	40	10k	08	15u	A	TO36	
29	2N443	2.0	150	∅	#J	15	4.0	60	40	45	4.0m	2.0	5.0	20	40	10k	08	15u	A	TO36	
30#	JAN2N456B	2.0	150	∅	#J	7.0		40	30	30	7.0m	1.5	5.0	30	120	100m		15u	A	TO3	
31#	JAN2N457B	2.0	150	∅	#J	7.0		60	35	40	7.0m	1.5	5.0	30	120	100m		15u	A	TO3	
32#	JAN2N458B	2.0	150	∅	#J	7.0		800	40	45	7.0m	1.5	5.0	30	120	100m		15u	A	TO3	
33	2N511	2.0	150	∅	#J	25	5.0	40	30	30	15m	2.0	10	20	60	260k\$	50m	15u	A	MD4	
34	2N511A	2.0	150	∅	#J	25	5.0	60	30	40	15m	2.0	10	20	60	260k\$	50m	15u	A	MD4	
35	2N511B	2.0	150	∅	#J	25	5.0	80	30	45	15m	2.0	10	20	60	260k\$	50m	15u	A	MD4	
36	2N512	2.0	150	∅	#J	25	5.0	40	30	30	15m	2.0	15	20	60	280k\$	70m	15u	A	MD4	
37	2N512A	2.0	150	∅	#J	25	5.0	60	30	40	15m	2.0	15	20	60	280k\$	70m	15u	A	MD4	
38	2N512B	2.0	150	∅	#J	25	5.0	80	30	45	15m	2.0	15	20	60	280k\$	70m	15u	A	MD4	
39	2N513	2.0	150	∅	#J	25	5.0	40	30	30	15m	2.0	20	20	60	300k\$	750m	15u	A	MD4	
40	2N513A	2.0	150	∅	#J	25	5.0	60	30	40	15m	2.0	20	20	60	300k\$	750m	15u	A	MD4	
41	2N513B	2.0	150	∅	#J	25	5.0	80	30	45	15m	2.0	20	20	60	300k\$	750m	15u	A	MD4	
42	2N514	2.0	150	∅	#J	25	5.0	40	30	30	15m	2.0	25	20	60	430k\$	800m	15u	A	MD4	
43	2N514A	2.0	150	∅	#J	25	5.0	60	30	40	15m	2.0	25	20	60	430k\$	800m	15u	A	MD4	
44	2N514B	2.0	150	∅	#J	25	5.0	80	30	45	15m	2.0	25	20	60	430k\$	800m	15u	A	MD4	
45#	JAN2N1021A	2.0	150	∅	#J	7.0		100	50	50	7.0m	1.5	5.0	30	120	100m		15u	A	TO3	
46#	JAN2N1022A	2.0	150	∅	#J	7.0		120	60	55	7.0m	1.5	5.0	30	120	100m		15u	A	TO3	
47	JAN2N1358	2.0	150	∅	#J	15	∅	80	40	40	4.0m	2.0	5.0	25	50	5.0kΔ	60m	30u	ADA	TO36	
48	2N1358A1	2.0	50	∅	#J	15	4.0	100	60	60	4.0m	2.0	5.0	25	50	5.0kΔ	60m	30u	ADA	TO36	
49	2N1907	2.0	60	∅	#J	20	3.0	100	1.5	40	10m	1.5	15	20	20M\$	70m		ADA	TO3		
50	2N1908	2.0	60	∅	#J	20	3.0	100	1.5	50	10m	1.5	15	20	20M\$	70m		ADA	TO3		
51	2N1980	2.0	170	∅	#J	15		50	20	30	6.0m	2.0	5.0	50	100	3.0kΔ	100m		A	TO36	
52	2N1981	2.0	170	∅	#J	15		70	20	40	6.0m	2.0	5.0	50	100	3.0kΔ	100m		A	TO36	
53	2N1982	2.0	170	∅	#J	15		90	20	50	6.0m	2.0	5.0	50	100	3.0kΔ	100m		A	TO36	
54	2N2075	2.0	170	∅	#J	15		80	40	65	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
55	2N2075A	2.0	170	∅	#J	15		80	40	65	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
56	2N2076	2.0	170	∅	#J	15		70	35	55	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
57	2N2076A	2.0	170	∅	#J	15		70	35	55	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
58	2N2077	2.0	170	∅	#J	15		50	25	45	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
59	2N2077A	2.0	170	∅	#J	15		50	25	45	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
60	2N2078	2.0	170	∅	#J	15		40	20	25	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
61	2N2078A	2.0	170	∅	#J	15		40	20	25	4.0m	2.0	5.0	20	40	10k	60m	9.0u	A	TO36	
62	2N2079	2.0	170	∅	#J	15		80	40	65	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
63	2N2079A	2.0	170	∅	#J	15		80	40	65	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
64	2N2080	2.0	170	∅	#J	15		70	35	55	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
65	2N2080A	2.0	170	∅	#J	15		70	35	55	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
66	2N2081	2.0	170	∅	#J	15		50	25	45	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
67	2N2081A	2.0	170	∅	#J	15		50	25	45	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
68	2N2082	2.0	170	∅	#J	15		40	20	25	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
69	2N2082A	2.0	170	∅	#J	15		40	20	25	4.0m	2.0	5.0	35	70	10k	60m	6.0u	A	TO36	
70#	2N2152	2.0	170	∅	#J	30	30	45	25	30	4.0m	2.0	5.0	50	100	2.0kΔ	20m		DA	MT85	
71	2N2152A	2.0	170	∅	#J	30	30	45	25	30	4.0m	2.0	5.0	50	100	2.0k	20m		DA	MT85	
72#	2N2153	2.0	170	∅	#J	30	30	60	30	45	4.0m	2.0	5.0	50	100	2.0kΔ	20m		DA	MT85	
73	2N2153A	2.0	170	∅	#J																

# 8. GERMANIUM PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcb @ 25°C (A)	hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O A D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)		hFE (A)	hFE (V)								
1	2N4277†	2.0	170	∅	#J	80	10	30	20	20	4.0m	2.0∅	15	80	180	#	2.0kΔ	20u∅		TO3	C∅
2	2N4278†	2.0	170	∅	#J	60	10	45	25	30	4.0m	2.0∅	15	60	120	#	2.0kΔ	20u∅		TO3	C∅
3	2N4279†	2.0	170	∅	#J	60	10	45	25	30	4.0m	2.0∅	15	80	180	#	2.0kΔ	20u∅		TO3	C∅
4	2N4280†	2.0	170	∅	#J	60	10	60	30	45	4.0m	2.0∅	15	60	120	#	2.0kΔ	20u∅		TO3	C∅
5	2N4281†	2.0	170	∅	#J	60	10	60	30	45	4.0m	2.0∅	15	80	180	#	2.0kΔ	20u∅		TO3	C∅
6	2N4282†	2.0	170	∅	#J	60	10	75	40	60	4.0m	2.0∅	15	60	120	#	2.0kΔ	20u∅		TO3	C∅
7	2N4283†	2.0	170	∅	#J	60	10	75	40	60	4.0m	2.0∅	15	80	180	#	2.0kΔ	20u∅		TO3	C∅
8 #	2SB407	2.0	30	∅	#J	7.0		30	10	30	500u	1.5∅	1.0	80	∅		350k§			TO3	C∅
9	MP500	2.0	170	∅	#J	60		45	25	30	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
10	MP500A	2.0	170	∅	#J	60		45	25	30	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
11	MP501	2.0	170	∅	#J	60		60	30	45	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
12	MP501A	2.0	170	∅	#J	60		60	30	45	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
13	MP502	2.0	170	∅	#J	60		75	40	60	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
14	MP502A	2.0	170	∅	#J	60		45	25	30	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
15	MP504	2.0	170	∅	#J	60		45	25	30	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
16	MP504A	2.0	170	∅	#J	60		45	25	30	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
17	MP505	2.0	170	∅	#J	60		60	30	45	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
18	MP505A	2.0	170	∅	#J	60		60	30	45	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
19	MP506	2.0	170	∅	#J	60		75	40	60	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
20	MP506A	2.0	170	∅	#J	60		75	40	60	200u∅	2.0∅	50	12	20	∅	2.0kΔ	9.0m	A	TO36	C∅
21	SDT1860	2.0	170	∅	#J	65	10	80	30	60	5.0m	2.0∅	65	20			340k§	7.0m	10u	TO36	C∅
22	SDT1861	2.0	170	∅	#J	65	10	80	30	45	5.0m	2.0∅	65	20			340k	7.0m	10u	TO36	C∅
23	SDT1862	2.0	170	∅	#J	65	10	40	20	30	5.0m	2.0∅	65	20			340k	7.0m	10u	TO36	C∅
24 #	2N4078	2.2	7.5	∅	#J	1.0		32	10	20	20u∅	0.0	500m	75	300		1.0M§Δ	400m		MD6	A∅
25	2N574	2.5	187	∅	#J	10	2.0	80	28	55	7.0m	2.0∅	10	9.0	22		100k§	20m	20u	A	MT7
26	JAN2N574	2.5	187	∅	#J	10	2.0	80	28	55	7.0m	2.0∅	10	9.0	22		100k§	20m	20u	A	MT7
27	2N574A	2.5	187	∅	#J	10	2.0	80	28	60	2.0m	2.0∅	10	9.0	22		100k§	20m	20u	A	MT7
28	2N575	2.5	187	∅	#J	25	3.8	80	28	50	7.0m	2.0∅	25	10			150k§	20m	15u	AΔ	MT7
29	JAN2N575	2.5	187	∅	#J	25	3.8	80	28	50	7.0m	2.0∅	100m	19	42		150k§	20m	15u	AΔ	MT7
30	2N575A	2.5	187	∅	#J	25	3.8	80	28	55	2.0m	2.0∅	25	10			150k§	20m	15u	AΔ	MT7
31	JAN2N575A	2.5	187	∅	#J	25	3.8	80	28	55	2.0m	2.0∅	10	19	42		150k§	20m	15u	AΔ	MT7
32	2N1157	2.5	187	∅	#J	40	6.0	80	28	45	7.0m	2.0∅	40	10			200k§	20m	10u	MT7	
33	2N1157A	2.5	187	∅	#J	40	6.0	80	28	50	2.0m	2.0∅	40	10			200k§	20m	10u	MT7	
34	JAN2N1157A	2.5	187	∅	#J	40	6.0	80	28	50	2.0m	2.0∅	10	38	84		200k§	20m	10u	MT7	
35 #	AD139	2.5	13	∅	#J			32	10	32	25u∅	0.0	1.0	Δ	33	110	10k			MD11	MT7
36	DA3F3	2.5	187	∅	#J		2.5	60	65	35	2.0∅	2.0∅	10	25					12u	A	MT7
37	MP800	3.0	250	∅	#J	150		20	60	45	12m∅	2.0∅	150	15						X71	A
38	MP801	3.0	250	∅	#J	150		20	60	45	12m∅	2.0∅	150	15						X71	A
39	MP900†	3.0	250	∅	#J	150		80	2.0	90	10m	2.0∅	70	20			3.0m	25u		X71	A
40	MP901†	3.0	250	∅	#J	150		110	2.0	90	10m	2.0∅	70	20			3.0m	25u		X71	A
41	MP902†	3.0	250	∅	#J	150		140	2.0	120	10m	2.0∅	70	20			3.0m	25u		X71	A

# 9. GERMANIUM NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. @ 25°C		hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O A D E	
						ic	ib	BVcbo	BVebo	BVceo	icbo @ MAX Vcb	Vcb	ic	MIN									MAX
						(A)	(A)	(V)	(V)	(V)	(A)	(V)	(A)										
1	2N95		2.5			1.5		25			2.0m	4.0	.25	11			6.0			X4	FØ		
2	2N142/13		4.0			.80		60			20uØ	1.0Ø	600m	50			5.0M			* X9b	FØ		
3#	AC181K		2.5			1.0		32			25uØ	1.0Ø	400m	200			5.0M				FØ		
4#	AC194	2.5mØ	1.0 #		#J	1.0		25			25uØ	1.0Ø	400m	200			5.0M				TO1		
5#	AC194K	2.5mØ	1.0 #		#C	1.0		25			25uØ	1.0Ø	400m	200			5.0M				TO1		
6	2N4105	25m	1.6		#S	1.0		25			25uØ	1.0Ø	5.0m	70	350						A		
7	2N102/13	80m	1.0		#J	1.5		30	15	30	2.0m	1.5Ø	500m	11			2.0				TO13		
8	2N144/13	80m	1.0		#J	800m		60	30	60	6.0m	4.5Ø	250m	11			6.0				TO13		
9	JAN2N326	116m	7.0		#J	2.0		35	15	35	500u	1.0Ø	1.0	15	60		150kΔ	1.2			TO3		
10#	AD165	117m	6.0		#J	1.0		25	10	20	30uØ	1.0Ø	500m	60	185		20k				MD17		
11	2N326	125mØ	7.0 Ø		#J	2.0		35	15	35	300u	1.0Ø	1.0	15	60		150kΔ	1.2			MD9		
12#	AD161	222m	4.0		#J	1.0		32	10	20	500u	1.0Ø	500m	80	320		3.0M\$				MD17c		
13	2N1218	270m	20		#C	3.0		45	15	45	100u	1.5Ø	1.0	30	120		70kΔ	1.0	1.5u		TO3		
14	2N1292	333mØ	25		#J	3.0		35	15	30	1.0	2.0Ø	500m	30			1.0				TO3		
15	2N1294	333mØ	25		#J	3.0		60	15	45	2.0	2.0Ø	500m	30			1.0				TO3		
16	2N1296	333mØ	25		#J	3.0		80	15	60	3.0	2.0Ø	500m	30			1.0				TO3		
17	2N1298	333mØ	25		#J	3.0		100	15	80	4.0	2.0Ø	500m	30			1.0				TO3		
18	2N1321	333mØ	25		#J	3.0		35	15	30	1.0	2.0Ø	500m	30			1.0				TO10		
19	2N1323	333mØ	25		#J	3.0		60	15	45	2.0	2.0Ø	500m	30			1.0				TO10		
20	2N1325	333mØ	25		#J	3.0		80	15	60	3.0	2.0Ø	500m	30			1.0				TO10		
21	2N1327	333mØ	25		#J	3.0		100	15	80	4.0	2.0Ø	500m	30			1.0				TO10		
22	2N1329	333mØ	25		#J	3.0		35	15	30	1.0	2.0Ø	500m	30			1.0				TO13		
23	2N1330	333mØ	25		#J	3.0		60	15	45	2.0	2.0Ø	500m	30			1.0				TO13		
24	2N1332	333mØ	25		#J	3.0		80	15	60	3.0	2.0Ø	500m	30			1.0				TO13		
25	2N1334	333mØ	25		#J	3.0		100	15	80	4.0	2.0Ø	500m	30			1.0				TO13		
26	2N5887	670m	57		#J	5.0	2.0	20	20	20	15 Δ	2.0Ø	500m	15	350		7.0				TO66		
27	2N5888	670m	57		#J	5.0	2.0	30	20	30	25 Δ	2.0Ø	500m	15	350		7.0				TO66		
28	2N5889	670m	57		#J	5.0	2.0	30	20	30	25 Δ	2.0Ø	500m	30	70		7.0				TO66		
29	2N5890	670m	57		#J	5.0	2.0	45	20	45	35 Δ	2.0Ø	500m	30	70		7.0				TO66		
30	2N5891	670m	57		#J	5.0	2.0	60	20	60	45 Δ	2.0Ø	500m	30	70		7.0				TO66		
31	2N5892	670m	57		#J	5.0	2.0	75	20	75	60 Δ	2.0Ø	500m	30	70		7.0				TO66		
32	2N5893	670m	57		#J	5.0	2.0	30	20	30	25 Δ	2.0Ø	500m	60	120		7.0				TO66		
33	2N5894	670m	57		#J	5.0	2.0	45	20	45	35 Δ	2.0Ø	500m	60	120		7.0				TO66		
34	2N5895	670m	57		#J	5.0	2.0	60	20	60	45 Δ	2.0Ø	500m	60	120		7.0				TO66		
35	2N5896	670m	57		#J	5.0	2.0	75	20	75	60 Δ	2.0Ø	500m	60	120		7.0				TO66		
36	2N5897	670m	57		#J	5.0	2.0	30	20	30	25 Δ	2.0Ø	500m	100	200		7.0				TO66		
37	2N5898	670m	57		#J	5.0	2.0	45	20	45	35 Δ	2.0Ø	500m	100	200		7.0				TO66		
38	2N5899	670m	57		#J	5.0	2.0	60	20	60	45 Δ	2.0Ø	500m	100	200		7.0				TO66		
39	2N5900	670m	57		#J	5.0	2.0	75	20	75	60 Δ	2.0Ø	500m	100	200		7.0				TO66		
40	2N5901	670m	57		#J	5.0	2.0	30	20	30	25 Δ	2.0Ø	500m	175	350		7.0				TO66		
41♦	2N4077	2.2 #	7.5		#J	1.0		32	10	20	25uØ	0.0	500m	75	300		1.0M\$Δ	600m			MD6	AØ	



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J TO C (W/C)	MAX FREE AIR @ 25°C (W)	Pc M T A E M X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C		BIAS		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O A D E
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	Icbo (A)	Ic (A)	MIN								
1#	2SA483		20	0	1.0	1.0	150	50	150	100	100	30	250	90M		DM		TO66	C		
2#	2SA565		350	0	50	50	40	50	50	50	30	10	40	200		PE		TO1			
3#	2SA566		10	0	70	120	40	100	40	50	35	200	200M		PE		TO66				
4#	2SA597		60	0	1.0	50	40	40	1.0	3.0	150	10	250	400K		PE		TO39	A		
5#	2SA663		60	0	7.0	100	50	80	1.0	5.0	1.0	30	200	6.0M		EM		TO3	C		
6#	HEP76s		1.0	0	400m	40	3.5	20	1.0	25	15			250M				TO39			
7#	HEP242s		60	0	30	60	7.0	40	500	40	60	60	60	8.0M				TO5	A		
8#	HEP246s		30	0	30	60	5.0	40	500	40	60	60	60	8.0M				X58B	B		
9#	HEP248s		150	0	10	70	7.0	50	2.0	40	60	60	60	6.0M				TO3	C		
10#	HEP700s		40	0	50	40	5.0	40	100	25	70	70	70	8.0M				X58B	B		
11#	HEP702s		25	0	30	80	5.0	80	100	60	80	80	80	8.0M				TO66	C		
12#	HEP705s		87	0	50	40	5.0	40	1.0	40	250	250	250	4.0M				TO3	C		
13#	HEP708s		1.8	0	600m	60	5.0	60	3.0	30	85	85	85	275M				TO18	A		
14#	HEP710s		30	0	100m	95	4.5	80	5.0	15	25	25	25	200M				TO5	A		
15	TRSP3254S	2.2m	10	0	40	40	350	50	325	0.2	10	20	30	30M				TO5			
16	TRSP3255S	2.0	40	40	40	350	50	325	0.2	10	20	30	30	30M				MD14			
17	TRSP3504S	1.0	40	40	40	375	50	350	0.2	10	20	30	30	30M				TO5			
18	TRSP3505S	2.0	40	40	40	375	50	350	0.2	10	20	30	30	30M				MD14			
19	TRSP3754S	1.0	40	40	400	50	375	0.2	10	20	30	30	30	30M				TO5			
20	TRSP3755S	2.0	40	40	400	50	375	0.2	10	20	30	30	30	30M				MD14			
21	2N5023T	2.2m	10	0	500m	30	50	30	1.0	500	40	100	200M		1.7			TO39	A		
22	2N5091	2.6m	20	0	1.0	500m	350	60	300	500	150	100	20	200	20M	120			TO5	A	
23	2N5093	2.6m	20	0	1.0	500m	400	60	350	500	150	100	20	200	20M	120			TO5	A	
24	2N5094	2.6m	20	0	1.0	500m	450	60	400	500	150	100	20	200	20M	120			TO5	A	
25	2N5096	2.6m	20	0	1.0	500m	500	60	450	500	150	100	20	200	20M	120			TO5	A	
26	JAN2N3467T	2.8m	10	0	1.0	500m	40	50	40	100	100	500	40	120	175M	1.2	30n		TO5	A	
27	JAN2N3468T	2.8m	10	0	1.0	500m	50	50	50	100	100	500	25	75	150M	1.2	30n		TO5	A	
28	JAN2N3635T	2.8m	10	0	1.0	140	50	140	100	100	50	100	300	#	200M		400n		TO5	A	
29	JAN2N3636T	2.8m	10	0	1.0	175	50	175	100	100	50	100	150	#	150M		400n		TO5	A	
30	JAN2N3637T	2.8m	10	0	1.0	175	50	175	100	100	50	100	300	#	200M		400n		TO5	A	
31	2N4036T	2.8m	50	0	1.0	500m	90	70	65	100	100	150	40	140	60M	4.3	70n		TO5	A	
32	2N5160	2.8m	50	0	400m	60	40	40	1.0	50	50	10	10	500M				TO39	A		
33	2N5281	2.8m	20	0	1.0	500m	175	50	150	1.0	10	20	200	20M	50m				TO5	A	
34	2N5282	2.8m	20	0	1.0	500m	325	50	300	1.0	10	20	200	20M	50m				TO5	A	
35	40406	2.8m	10	0	700m	200m	40	50	40	100	100	100	30	200	100M				TO5	A	
36	2N3467T	5.6m	10	0	1.0	500m	40	50	40	100	100	500	40	120	175M		30n		TO5	A	
37	2N3468T	5.6m	10	0	1.0	500m	50	50	50	100	100	500	25	75	150M		30n		TO5	A	
38	2N4037	5.6m	10	0	1.0	500m	60	70	40	250	100	150	50	250	60M	930m			TO5	A	
39	2N4234	5.6m	10	0	1.0	200m	40	70	40	100	100	250	30	150	30M				TO5	A	
40	2N4235	5.6m	10	0	1.0	200m	60	70	60	100	100	250	30	150	30M				TO5	A	
41	2N4236	5.6m	10	0	1.0	200m	80	70	80	100	100	250	30	150	30M				TO5	A	
42	2N4314	5.6m	10	0	1.0	500m	90	70	65	250	100	150	50	250	200M	9.3			TO5	A	
43	40537	5.6m	10	0	700m	200m	50	55	55	100	400	50	50	300	100M	22			TO5	A	
44	40538	5.6m	10	0	700m	200m	50	55	55	100	400	500	15	90	100M	4.0			TO5	A	
45	MM4001	5.6m	10	0	500m		150	40	150	1.0	10	20	#	#	100M				TO39	A	
46	MM4002	5.6m	10	0	500m		200	40	200	5.0	10	10	20	#	50M				TO39	A	
47	MM4003	5.6m	10	0	500m		250	40	250	5.0	10	10	20	#	50M				TO39	A	
48	JAN2N3763T	5.7m	10	0	1.0	500m	60	50	60	100	100	10	35		150M	10	35n		TO5	A	
49	2N5679	5.7m	10	0	1.0	500m	100	40	100	1.0	20	10	40	150	30M	20			TO5	A	
50	2N5680	5.7m	10	0	1.0	500m	120	40	120	1.0	20	10	40	150	30M	20			TO5	A	
51#	SA0403	5.7m	10	0	2.0		50	80	80	10	10	30	90	#	50M				TO39	A	
52#	SA0403A	5.7m	10	0	2.0		50	80	80	10	10	70	300	#	60M				TO39	A	
53	2N5147	5.9m	10	0	2.0	10	100	55	80	1.0	10	10	30	90	50M				TO39	A	
54	2N5149	5.9m	10	0	2.0	10	100	55	80	1.0	10	10	70	120	60M				TO39	A	
55	2N5151	5.9m	10	0	2.5	100	55	80	1.0	10	25	30	90	60M					TO39	A	
56	2N5153	5.9m	10	0	2.5	100	55	80	1.0	10	25	70	200	70M					TO39	A	
57	TRSP2254	6.6m	10	0	400m	50m	225	50	225	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
58	TRSP2254S	6.6m	10	0	400m	50m	250	50	225	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
59	TRSP2504	6.6m	10	0	400m	50m	250	50	250	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
60	TRSP2504S	6.6m	10	0	400m	50m	275	50	250	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
61	TRSP2754	6.6m	10	0	400m	50m	275	50	275	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
62	TRSP2754S	6.6m	10	0	400m	50m	300	50	275	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
63	TRSP3014	6.6m	10	0	400m	50m	300	50	300	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
64	TRSP3014S	6.6m	10	0	400m	50m	325	50	300	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
65	TRSP3504	6.6m	10	0	400m	50m	350	50	350	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
66	TRSP3514S	6.6m	10	0	400m	50m	375	50	350	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
67	TRSP4014	6.6m	10	0	400m	50m	400	50	400	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
68	TRSP4014S	6.6m	10	0	400m	50m	425	50	400	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
69	TRSP4254S	6.6m	10	0	400m	50m	450	50	425	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
70	TRSP4504	6.6m	10	0	400m	50m	450	50	450	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
71	TRSP4504S	6.6m	10	0	400m	50m	475	50	450	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
72	TRSP4754S	6.6m	10	0	400m	50m	500	50	475	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
73	TRSP5014	6.6m	10	0	400m	50m	500	50	500	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
74	TRSP5014S	6.6m	10	0	400m	50m	525	50	500	3.0	100	25	25	#	50	20M	200	200p	DM	TO5	
75	2N5864	7.1m	12	0	1.5	90	50	70	500	100	150	50	500	50M	3.0				TO39	A	
76	ST72039T	10m	15	0	50	80	80	80	20	20	20	30	120	#	20M		500n		PL	TO5	
77	ST72040T	10m	15	0	50	100	80	100	20	20	20	30	120	#	20M		500n		PL	TO5	
78	ST72041T	10m	15	0</																	

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	2	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E	
							Ic (A)	Ib (A)	V <sub>cb0</sub> (V)	V <sub>be0</sub> (V)	V <sub>ce0</sub> (V)	I <sub>cb0</sub> @ MAX V <sub>cb</sub> (A)	V <sub>cb</sub> (V)	Ic (A)							MIN
1		2N3763†	22m	1.0	∅	∅	1.5	50	5.0	60	100n#	1.5	1.0	20	80	150MΔ	10	40n	∅	T05 A∅	
2		2N5022†	25m	1.0	∅	∅	500m	50	5.0	50	100n#	1.0	500m	25	100	170MΔ	800m	30n	∅	T039 A∅	
3		2N3244†	28m	1.0	∅	∅	1.0	40	5.0	40	50n#	1.0	500m	50	150	175MΔ	35n	35n	∅	T05 A∅	
4		2N3245†	28m	1.0	∅	∅	1.0	50	5.0	50	50n#	1.0	500m	30	90	150MΔ	40n	40n	∅	T05 A∅	
5		2N3634†	28m	1.0	∅	∅	1.0	140	5.0	140	100n#	1.0	50m	50	150	150kΔ	400n	400n	∅	T05 A∅	
6		JAN2N3634†	28m	1.0	∅	∅	1.0	140	5.0	140	100n#	1.0	50m	50	150	150MΔ	400n	400n	∅	T05 A∅	
7		2N3635†	28m	1.0	∅	∅	1.0	175	5.0	175	100n#	1.0	50m	100	300	200kΔ	40	400n	∅	T05 A∅	
8		2N3636†	28m	1.0	∅	∅	1.0	175	5.0	175	100n#	1.0	50m	50	150	150kΔ	40	400m	∅	T05 A∅	
9		2N3637†	28m	1.0	∅	∅	1.0	175	5.0	175	100n#	1.0	50m	100	300	200kΔ	40	400m	∅	T05 A∅	
10		2N3743	28m	1.0	∅	∅	50m	300	5.0	300	300n#	1.0	30	25	250	300MΔ	500		∅	T05 A∅	
11		2N4404†	28m	5.0	∅	∅	500m	80	5.0	80	25n#	5.0	150m	40	120	200MΔ		25n	∅	T039 A∅	
12		2N4405†	28m	5.0	∅	∅	500m	80	5.0	80	25n#	5.0	150m	100	300	200MΔ		25n	∅	T039 A∅	
13		2N4406†	28m	5.0	∅	∅	1.5	80	5.0	80	25n#	5.0	500m	30	120	150MΔ		60n	∅	T039 A∅	
14		2N4407†	28m	5.0	∅	∅	1.5	80	5.0	80	25n#	5.0	500m	80	240	150MΔ		60n	∅	T039 A∅	
15		2N4890†	28m	1.0	∅	∅	500m	60	4.0	40	250n#	1.0	150m	50	250	100MΔ	9.3	50n	∅	T05 A∅	
16		2N4829	28m	1.0	∅	∅	500m	150	4.0	150	500n#	1.0	1.0	20	100MΔ			∅	T05 A∅		
17		2N4930	28m	1.0	∅	∅	500m	200	4.0	200	1.0u#	1.0	1.0	20	20MΔ			∅	T05 A∅		
18		2N4931	28m	1.0	∅	∅	500m	250	4.0	250	1.0u#	1.0	1.0	20	20MΔ			∅	T05 A∅		
19		2N5583	28m	5.0	∅	∅	500m	30	3.0	30	50n#	2.0	100m	25	100	1.0GΔ	8.0		Δ	T039 A∅	
20		40319	28m	1.0	∅	∅	700m	25	4.0	25	250n#	4.0	50m	35	200	100MΔ	9.3		PE	T05 A∅	
21		40362	28m	5.0	∅	∅	700m	4.0	7.0	4.0	10mΔ	4.0	50	35	200	100MΔ			PE	T05 A∅	
22		40634	28m	1.0	∅	∅	700m	7.0	7.0	7.0	10m*	4.0	150m	50	250	100MΔ	2.7		PE	T05 A∅	
23		BC160†	28m	3.2	∅	∅	100m	40	5.0	40	100n#	1.0	100m	40	250	50MΔ	1.0	500n	E	T039 A∅	
24		BC161†	28m	3.2	∅	∅	100m	60	5.0	60	100n#	1.0	100m	40	250	50MΔ	1.0	500n	E	T039 A∅	
25		BSV15†	28m	3.2	∅	∅	200m	5.0	5.0	40	100n#	1.0	100m	40	250	50MΔ	2.0	500n	PE	T039 A∅	
26		BSV16†	28m	3.2	∅	∅	200m	5.0	5.0	60	100n#	1.0	100m	40	250	50MΔ	2.0	500n	PE	T039 A∅	
27		MM3726†	28m	1.0	∅	∅	1.5	5.0	5.0	50	100n#	2.0	500m	30	120	200MΔ	1.2		EA	T05 A∅	
28		MM4019	28m	5.0	∅	∅	1.0	60	4.0	40	100n#	5.0	250m	10		750MΔ			AN	T039 A	
29		MM4845†	28m	5.0	∅	∅	2.5	200	5.0	200	10u#	1.0	10m	20		40MΔ	2.0	50n	AN	T039 A∅	
30		MM4846†	28m	5.0	∅	∅	2.5	300	5.0	300	10u#	1.0	10m	20		40MΔ	2.4	50n	AN	T039 A∅	
31		MM4847†	28m	5.0	∅	∅	2.5	400	5.0	400	10u#	1.0	10m	20		30MΔ	3.0	50n	AN	T039 A∅	
32		2N3719†	34m	6.0	∅	∅	3.0	40	4.0	40	10u#	1.5	1.0	25	180	60MΔ		100n	∅	T05 A∅	
33		2N3720†	34m	6.0	∅	∅	3.0	60	4.0	60	10u#	1.5	1.0	25	180	60MΔ		100n	∅	T05 A∅	
34		2N3867†	34m	1.0	∅	∅	3.0	40	4.0	40	15u#	3.0	2.5	25		60MΔ	1.0	65n	∅	T05 A∅	
35		2N3868†	34m	1.0	∅	∅	3.0	60	4.0	60	15u#	3.0	2.5	20		60MΔ	1.0	65n	∅	T05 A∅	
36		SA0419	34m	6.0	∅	∅	1.0	500m	6.0	5.0	1.5m#	1.0	250m	20	150	1.0MΔ			DME	T05 A∅	
37		2N5675	40m	1.2	∅	∅	1.0	500m	125	5.0	100	100n#	5.0	500m	50	150	50MΔ			∅	T05 A∅
38		2N5865†	40m	1.2	∅	∅	1.0	70	5.0	50	200n#	1.0	150m	40	200	100MΔ	2.5	90n	∅	T039 A∅	
39		40394	40m	7.0	∅	∅	1.0	500m	60	7.0	40	250n#	1.0	1.0m	15		60MΔ	9.3		DPEA	MD28a
40		BC304	40m	6.0	∅	∅	1.0	500m	60	7.0	45	20n#	100	150m	40	240	75MΔ			PL	T039 A
41		SDT3501	40m	7.0	∅	∅	2.0	1.0	60	60	40	100n#	5.0	500m	30		50MΔ			PL	T05
42		SDT3502	40m	7.0	∅	∅	2.0	1.0	60	60	60	100n#	5.0	500m	30		50MΔ			PL	T05
43		SDT3503	40m	7.0	∅	∅	2.0	1.0	80	60	80	100n#	5.0	500m	30		50MΔ			PL	T05
44		SDT3504	40m	7.0	∅	∅	2.0	1.0	100	60	100	100n#	5.0	500m	30		50MΔ			PL	T05
45		SDT3505	40m	7.0	∅	∅	2.0	1.0	40	60	40	100n#	5.0	500m	50	150	50MΔ			PL	T05
46		SDT3506	40m	7.0	∅	∅	2.0	1.0	60	60	60	100n#	5.0	500m	50	150	50MΔ			PL	T05
47		SDT3507	40m	7.0	∅	∅	2.0	1.0	80	60	80	100n#	5.0	500m	50	150	50MΔ			PL	T05
48		SDT3508	40m	7.0	∅	∅	2.0	1.0	100	60	100	100n#	5.0	500m	50	150	50MΔ			PL	T05
49		SDT3550	40m	7.0	∅	∅	2.0	1.0	60	60	60	1.0m	1.0	250m	30	100	10MΔ			∅	T05
50		SDT3551	40m	7.0	∅	∅	2.0	1.0	80	60	80	1.0m	1.0	250m	30	100	10MΔ			∅	T05
51		SDT3552	40m	7.0	∅	∅	2.0	1.0	40	50	40	100u#	1.0	500m	20	100	10MΔ			∅	T05
52		SDT3553	40m	7.0	∅	∅	2.0	1.0	60	50	60	100u#	1.0	500m	20	100	10MΔ			∅	T05
53		SDT3554	40m	7.0	∅	∅	2.0	1.0	80	50	80	100u#	1.0	500m	20	100	10MΔ			∅	T05
54		SDT3775	40m	7.0	∅	∅	5.0	2.0	40	60	40	75u#	2.0	2.0	20	60	10MΔ			∅	T05
55		SDT3776	40m	7.0	∅	∅	5.0	2.0	60	60	60	75u#	2.0	2.0	20	60	10MΔ			∅	T05
56		SDT3777	40m	7.0	∅	∅	5.0	2.0	80	60	80	75u#	2.0	2.0	20	60	10MΔ			∅	T05
57		SDT3778	40m	7.0	∅	∅	5.0	2.0	40	60	40	75u#	2.0	2.0	20	40	10MΔ			∅	T05
58		SE8543	40m	1.0	∅	∅	1.0	30	5.0	30	50n#	1.0	150m	40	# 540	500MΔ			DPL	T039 A	
59		MM5005	45m	1.5	∅	∅	2.0	50	5.0	60	200n#	2.5	150m	50	250	30MΔ	3.3		ANΔ	T039 A	
60		MM5006	45m	1.5	∅	∅	2.0	100	5.0	80	200n#	2.5	200m	50	250	30MΔ	3.3		ANΔ	T039 A	
61		MM5007	45m	1.5	∅	∅	2.0	120	5.0	100	200n#	2.5	250m	50	250	30MΔ	3.3		ANΔ	T039 A	
62		MPSU55	45m	1.0	∅	∅	1.0	60	4.0	60	100n#	5.0	50m	100	180	125MΔ	2.4		AN	X81 A∅	
63		MPSU56	45m	1.0	∅	∅	1.0	80	4.0	80	100n#	5.0	50m	100	180	125MΔ	2.4		AN	X81 A∅	
64		2N2881	50m	8.5	∅	∅	2.0	1.0	60	10	60	4.0	500m	20	60				∅	T05 A∅	
65		2N2882	50m	8.5	∅	∅	2.0	1.0	100	10	100	4.0	500m	20	60				∅	T05 A∅	
66		2N3202	50m	8.7	∅	∅	3.0	1.5	40	10	40	75u#	2.0	1.0	20	60	1.0MΔ	300m		∅	T05 A∅
67		2N3203	50m	8.7	∅	∅	3.0	1.5	60	10	60	75u#	2.0	1.0	20	60	1.0MΔ	300m		∅	T05 A∅
68		2N3204	50m	8.7	∅	∅	3.0	1.5	80	10	80	75u#	2.0	1.0	20	60	1.0MΔ	300m		∅	T05 A∅
69		2N3208	50m	8.7	∅	∅	2.0	1.0	40	10	40	75u#	2.0	500m	20	60	1.0MΔ	300m		∅	T05 A∅
70		2N3795†	50m	5.0	∅	∅	1.0	500m	120	10	120	1.0m#	2.0	10m	12	36	500kΔ	20	5.0u	∅	T05
71		SDT3321	50m	1.0	∅	∅	5.0	2.0	40	60	40	0.1m	5.0	2.0	40	120	40MΔ				

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	Pc	T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcb @ 25°C		hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo (A)	Vcb (V)	Ic (A)	MIN								
1	MJ81011	57m	10	0	SJ	5.0	1.0	80	5.0	80	10u	2.0	2.0	25	180	#	30MΔ	2.4	100n	PE	T039	A
2	2N3660	66m	5.0	0	SS	1.5		40	5.0	30	100n	100	500m	25	100		25MΔ			PE	T05	A
3	2N3661	66m	5.0	0	SS	1.5		60	5.0	50	100n	100	500m	25	100		25MΔ			PE	T05	A
4#	2SA547	66m	10	0	SJ	1.0		70	5.0	60	3.0u	3.0	1.0	25	25		80MΔ			PE	T037	A
5#	2SA547A	66m	10	0	SJ	1.0		90	5.0	80	3.0u	3.0	1.0	25	25		80MΔ			PE	T037	A
6	TRSP15X5	66m	2.0	0	SJ	1.0	500m	175	12	150	100n	100	30m	900	40k		25MΔ			PE	MD14	
7	TRSP20X5	66m	2.0	0	SJ	1.0	500m	200	12	200	100n	100	30m	900	40k		25MΔ			PE	MD14	
8	TRSP25X5	66m	2.0	0	SJ	1.0	500m	250	12	250	100n	100	30m	900	40k		25MΔ			PE	MD14	
9	TRSP30X5	66m	2.0	0	SJ	1.0	500m	300	12	300	100n	100	30m	900	40k		25MΔ			PE	MD14	
10	2N1084	67m	2.0	0	SJ	2.0	.20	80	5.0	50	10m	1.0	50	20	60		25MΔ			PE	T05	A
11#	2SA6231	70m	7.0	0	SJ	1.5		35	5.0	20	1.0	4.0	500m	35	300	#	70MΔ		200n	PE	X51b	P
12#	2SA6241	70m	7.0	0	SJ	1.5		50	5.0	40	1.0	4.0	500m	35	300	#	70MΔ		200n	PE	X51b	P
13#	2SA6451	70m	7.0	0	SJ	800m		70	5.0	60	1.0	4.0	300m	35	300	#	70MΔ		200n	PE	X51b	P
14#	2SA6461	70m	7.0	0	SJ	800m		90	5.0	80	1.0	4.0	300m	20	300	#	70MΔ		200n	PE	X51b	P
15#	2SA6471	70m	7.0	0	SJ	800m		110	5.0	100	1.0	4.0	300m	20	300	#	70MΔ		200n	PE	X51b	P
16#	2SA606	72m	9.0	0	SJ	700m		100	5.0	80	3.0u	5.0	200m	50	150		150MΔ		50n	PE	T05	A
17#	D41D11	72m	1.2	0	SS	1.0		50	5.0	30	100n	2.0	100m	120	300		150MΔ		50n	PE	X51c	F
18#	D41D21	72m	1.2	0	SS	1.0		50	5.0	30	100n	2.0	100m	120	300		150MΔ		50n	PE	X51c	F
19#	D41D41	72m	1.2	0	SS	1.0		50	5.0	45	100n	2.0	100m	50	150		150MΔ		50n	PE	X51c	F
20#	D41D51	72m	1.2	0	SS	1.0		50	5.0	45	100n	2.0	100m	120	360		150MΔ		50n	PE	X51c	F
21#	D41D71	72m	1.2	0	SS	1.0		50	5.0	60	100n	2.0	100m	50	150		150MΔ		50n	PE	X51c	F
22#	D41D81	72m	1.2	0	SS	1.0		50	5.0	60	100n	2.0	100m	120	360		150MΔ		50n	PE	X51c	F
23#	MPSU51	72m	1.0	0	TJ	2.0		40	5.0	40	100n	1.0	10m	55	#		50MΔ			AN	X81	A
24#	MPSU51A	72m	1.0	0	TJ	2.0		50	5.0	40	100n	1.0	10m	55	#		50MΔ			AN	X81	A
25	ST750041	76m	11	0	SJ	2.0		80	8.0	80	10u	1.0	1.0	30	120	#	20MΔ		500n	PL	T05	
26	ST750051	76m	11	0	SJ	2.0		100	8.0	100	10u	1.0	1.0	30	120	#	20MΔ		500n	PL	T05	
27	ST750061	76m	11	0	SJ	2.0		120	8.0	120	10u	1.0	1.0	30	120	#	20MΔ		500n	PL	T05	
28#	BD136Δ	100m	6.5	0	SJ	500m	100m	45	5.0	45	100n	1.0	150m	40	250		50MΔ			PE	X58	B
29#	BD136Δ	100m	6.5	0	SJ	500m	100m	45	5.0	45	100n	2.0	150m	40	250		75MΔ			PE	X100	B
30#	BD138Δ	100m	6.5	0	SJ	500m	100m	60	5.0	60	100n	1.0	150m	40	160		50MΔ			PE	X58	B
31#	BD138Δ	100m	6.5	0	SJ	500m	100m	60	5.0	60	100n	2.0	150m	40	160		75MΔ			PE	X100	B
32#	BD140Δ	100m	6.5	0	SJ	500m	100m	60	5.0	60	100n	2.0	150m	40	160		75MΔ			PE	X100	B
33#	D43C11	100m	2.1	0	SJ	3.0		50	5.0	30	10u	1.0	200m	25			40MΔ		50n	PE	X51c	B
34#	D43C21	100m	2.1	0	SJ	3.0		50	5.0	30	10u	1.0	200m	40	120		40MΔ		50n	PE	X51c	B
35#	D43C31	100m	2.1	0	SJ	3.0		50	5.0	30	10u	1.0	200m	40	120		40MΔ		50n	PE	X51c	B
36#	D43C41	100m	2.1	0	SJ	3.0		50	5.0	30	10u	1.0	200m	25			40MΔ		50n	PE	X51c	B
37#	D43C51	100m	2.1	0	SJ	3.0		50	5.0	45	10u	1.0	200m	40	120		40MΔ		50n	PE	X51c	B
38#	D43C61	100m	2.1	0	SJ	3.0		50	5.0	45	10u	1.0	200m	40	120		40MΔ		50n	PE	X51c	B
39#	D43C71	100m	2.1	0	SJ	3.0		50	5.0	60	10u	1.0	200m	25			40MΔ		50n	PE	X51c	B
40#	D43C81	100m	2.1	0	SJ	3.0		50	5.0	60	10u	1.0	200m	40	120		40MΔ		50n	PE	X51c	B
41	SDT3575	100m	17	0		2.0	1.0	40	6.0	40	10u	1.0	250m	30	150		10M				T066	
42	SDT3576	100m	17	0		2.0	1.0	60	6.0	60	10u	1.0	250m	30	150		10M				T066	
43	SDT3577	100m	17	0		2.0	1.0	80	6.0	80	10u	1.0	250m	30	150		10M				T066	
44	SDT3578	100m	17	0		2.0	1.0	40	5.0	30	10u	1.0	500m	25	100		40M			PL	T066	
45	SDT3579	100m	17	0		2.0	1.0	40	5.0	50	10u	1.0	500m	25	100		40M			PL	T066	
46	2N4387	114m	20	0	SJ	2.0	300m	40	5.0	40	10u	1.0	500m	25	100		25MΔ		3.0		T066	C
47	2N4388	114m	20	0	SS	2.0	300m	60	5.0	60	10u	1.0	500m	25	100		25MΔ		3.0		T066	C
48	2N5161	114m	20	0	SS	1.5		60	4.0	40	10u	5.0	250m	10			10M				T060	A
49	2N5597	114m	20	0	SJ	2.0	1.0	80	5.5	60	1.0m	5.0	1.0	70	200	#	60MΔ				T066	C
50	2N5599	114m	20	0	SJ	2.0	1.0	100	5.5	80	1.0m	5.0	1.0	30	90	#	50MΔ				T066	C
51	2N5601	114m	20	0	SJ	2.0	1.0	100	5.5	80	1.0m	5.0	1.0	70	200	#	60MΔ				T066	C
52	2N5603	114m	20	0	SJ	2.0	1.0	120	5.5	100	1.0m	5.0	1.0	30	90	#	50MΔ				T066	C
53#	2SA613	119m	15	0	SJ	2.0	500m	80	7.0	40	1.0m	5.0	500m	30	200	#				PE	T066	C
54#	2SA614	119m	15	0	SJ	2.0	500m	80	7.0	60	1.0m	5.0	500m	30	200	#				PE	T066	C
55	2N5100	133m	10	0	SA	1.0	500m	450	6.0	400	5.0u	1.5	100m	20	200		20MΔ		120		MD14	A
56	TRSP2006	133m	20	0	S	1.0	500m	200	6.0	200	10u	100	50m	30	300		25M				T066	
57	TRSP3006	133m	20	0	S	1.0	500m	300	6.0	300	10u	100	50m	30	300		25M				T066	
58	TRSP4006	133m	20	0	S	1.0	500m	400	6.0	400	10u	100	50m	30	300		25M				T066	
59	TRSP4016S	133m	20	0	SJ	1.0	500m	450	6.0	400	10u	100	50m	30	300		2.5M				T066	
60	TRSP4296	133m	20	0	SJ	1.0	500m	350	4.0	250	10u	100	50m	50	150		20MΔ				T066	
61	TRSP4297	133m	20	0	SJ	1.0	500m	350	4.0	250	10u	100	50m	75	300		20MΔ				T066	
62	TRSP4298	133m	20	0	SJ	1.0	500m	500	4.0	350	10u	100	50m	75	150		20MΔ				T066	
63	TRSP4299	133m	20	0	SJ	1.0	500m	500	4.0	350	10u	100	50m	75	150		20MΔ				T066	
64	TRSP4506	133m	20	0	S	1.0	500m	450	6.0	450	10u	100	50m	30	300		25M				T066	
65	TRSP5006	133m	20	0	S	1.0	500m	500	6.0	500	10u	100	20m	30	300		25M				T066	
66	TRSP6006	133m	20	0	S	1.0	500m	600	6.0	600	10u	100	20m	30	300		25M				T066	
67	TRSP7006	133m	20	0	S	1.0	500m	700	6.0	700	10u	100	20m	30	300		25M				T066	
68	TRSP8006	133m	20	0	S	1.0	500m	800	6.0	800	10u	100	20m	30	300		25M				T066	
69	2N2875	138m	20	0	SC	2.0	200m	60	5.0	50	1.0u	6.0	1.5	15	60	#	25MΔ		3.0	PL	MT21	
70	2N4898	142m	25	0	SJ	1.0	1.0	40	5.0	40	10u	1.0	500m	20	100	#	3.0MΔ				T066	C
71	2N4899	142m	25	0	SJ	1.0	1.0	60	5.0	60												

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc MAX (W)	Tj MAX (°C)	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser	# E A O D E	
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	hFE (V)									hFE (A)
1	SDT3713	160m	28	5.0	5.0	1.0	80	6.0	80	75u	2.0	2.0	20	60	10M				T066		
2	SDT3714	160m	28	5.0	5.0	1.0	80	6.0	80	75u	2.0	2.0	20	60	10M				T066		
3	SDT3715	160m	28	5.0	5.0	1.0	40	6.0	40	75u	2.0	2.0	20	60	10M				T066		
4	SDT3716	160m	28	5.0	5.0	1.0	40	6.0	40	1.0m	3.0	1.0	12	36	10M				T066		
5	SDT3717	160m	28	5.0	5.0	1.0	80	6.0	80	1.0m	3.0	1.0	12	36	10M				T066		
6	SDT3718	160m	28	5.0	5.0	1.0	80	6.0	80	1.0m	3.0	1.0	12	36	10M				T066		
7	SDT3719	160m	28	5.0	5.0	1.0	100	6.0	100	1.0m	3.0	1.0	12	36	10M				T066		
8	SDT3720	160m	28	5.0	5.0	1.0	40	6.0	40	1.0m	3.0	1.0	40	36	10M				T066		
9	SDT3721	160m	28	5.0	5.0	1.0	40	6.0	40	1.0m	3.0	2.0	10	30	10M				T066		
10	SDT3722	160m	28	5.0	5.0	1.0	80	6.0	80	1.0m	3.0	2.0	10	30	10M				T066		
11	SDT3723	160m	28	5.0	5.0	1.0	80	6.0	80	1.0m	3.0	2.0	10	30	10M				T066		
12	SDT3724	160m	28	5.0	5.0	1.0	100	6.0	100	1.0m	3.0	2.0	10	30	10M				T066		
13	SDT3725	160m	28	5.0	5.0	1.0	40	6.0	40	1.0m	3.0	2.0	40	10M					T066		
14	SDT3726	160m	28	5.0	5.0	1.0	40	6.0	40	100u	2.0	2.0	25	100	10M				T066		
15	SDT3727	160m	28	5.0	5.0	1.0	60	6.0	60	100u	2.0	2.0	25	100	10M				T066		
16	SDT3728	160m	28	5.0	5.0	1.0	80	6.0	80	100u	2.0	2.0	25	100	10M				T066		
17	SDT3729	160m	28	5.0	5.0	1.0	40	6.0	40	1.0m	3.0	3.0	10	30	10M				T066		
18	SDT3730	160m	28	5.0	5.0	1.0	60	6.0	60	1.0m	3.0	3.0	10	30	10M				T066		
19	SDT3731	160m	28	5.0	5.0	1.0	80	6.0	80	1.0m	3.0	3.0	10	30	10M				T066		
20	SDT3732	160m	28	5.0	5.0	1.0	100	6.0	100	1.0m	3.0	3.0	10	30	10M				T066		
21	SDT3733	160m	28	5.0	5.0	1.0	40	6.0	40	1.0m	3.0	3.0	40	10M					T066		
22	SG0403	160m	24	5.0	5.0	2.0	5.5	5.5	80	10u#	5.0	1.0	30	90	50MΔ			DPL	T059	A	
23	SG0403A	160m	24	5.0	5.0	2.0	5.5	5.5	80	10u#	5.0	1.0	70	300	50MΔ			DPL	T059	A	
24	2N3021	165m	25	3.0	3.0	500m	30	4.0	30	200u#	2.0	1.0	20	60	60MΔ	500m	100n		T03	C	
25	2N3022	165m	25	3.0	3.0	500m	45	4.0	45	200u#	2.0	1.0	20	60	60MΔ	500m	100n		T03	C	
26	2N3023	165m	25	3.0	3.0	500m	60	4.0	60	200u#	2.0	1.0	20	60	60MΔ	500m	100n		T03	C	
27	2N3024	165m	25	3.0	3.0	500m	30	4.0	30	200u#	2.0	1.0	50	180	60MΔ	330m	100n		T03	C	
28	2N3025	165m	25	3.0	3.0	500m	45	4.0	45	200u#	2.0	1.0	50	180	60MΔ	330m	100n		T03	C	
29	2N3026	165m	25	3.0	3.0	500m	60	4.0	60	200u#	2.0	1.0	50	180	60MΔ	330m	100n		T03	C	
30	MM4021	166m	29	2.5	2.5	500m	36	4.0	18	100u#	5.0	500m	15						MT75a	R	
31	SDT3509	166m	30	2.0	2.0	1.0	40	6.0	40	100n	5.0	500m	30		50M			PL	T066		
32	SDT3510	166m	30	2.0	2.0	1.0	60	6.0	60	100n	5.0	500m	30		50M			PL	T066		
33	SDT3511	166m	30	2.0	2.0	1.0	80	6.0	80	100n	5.0	500m	30		50M			PL	T066		
34	SDT3512	166m	30	2.0	2.0	1.0	100	6.0	100	100n	5.0	500m	30		50M			PL	T066		
35	SDT3513	166m	30	2.0	2.0	1.0	40	6.0	40	100n	5.0	500m	50	150	50M			PL	T066		
36	SDT3514	166m	30	2.0	2.0	1.0	60	6.0	60	100n	5.0	500m	50	150	50M			PL	T066		
37	SDT3515	166m	30	2.0	2.0	1.0	80	6.0	80	100n	5.0	500m	50	150	50M			PL	T066		
38	SDT3516	166m	30	2.0	2.0	1.0	100	6.0	100	100n	5.0	500m	50	150	50M			PL	T066		
39	BD132	167m	11	3.0	3.0	500m#	45	4.0	45	50u#	12	500m	40		60M\$	800m		PL	PE	TO126	D
40	2N4999	200m#	30	2.0	2.0	1.0	100	5.5	80	1.0m#	5.0	1.0	30	90	50M\$Δ				T059	A	
41	2N5001	200m#	30	2.0	2.0	1.0	100	5.5	80	1.0m#	5.0	1.0	70	200	60M\$Δ				T059	A	
42	2N5739	200m#	20	10	10	2.0	60	5.0	60	500uΔ	5.0	5.0	20	80	10M\$Δ	500m			T066	C	
43	2N5740	200m#	20	10	10	2.0	100	5.0	100	500uΔ	5.0	5.0	20	80	10M\$Δ	500m			T066	C	
44	2SB434	200m	1.5	3.0	3.0	2.0	50	5.0	50	200u#	5.0	2.5	15	25	3.0M\$	400m		D	X75	A	
45	2SB435	200m	1.5	3.0	3.0	2.0	35	5.0	35	200u#	5.0	1.0	20	55	3.0M\$	1.0		D	X75	A	
46	MJE370	200m	25	3.0	3.0	3.0	30	4.0	30	100u	1.0	1.0	25	#				D	X58	B	
47	SDT3801	200m	35	10	10	4.0	60	6.0	60	1.0m	2.0	1.0	25	90	10M				T066		
48	SDT3802	200m	35	10	10	4.0	80	6.0	80	1.0m	2.0	1.0	25	90	10M				T066		
49	SDT3803	200m	35	10	10	4.0	60	6.0	60	1.0m	2.0	1.0	50	180	10M				T066		
50	SDT3804	200m	35	10	10	4.0	80	6.0	80	1.0m	2.0	1.0	50	180	10M				T066		
51	SDT3805	200m	35	10	10	2.0	40	5.0	40	100u	5.0	5.0	20	80	10M				T066		
52	SDT3806	200m	35	10	10	2.0	80	5.0	80	100u	5.0	5.0	20	80	10M				T066		
53	SDT3807	200m	35	10	10	2.0	40	5.0	40	100u	5.0	5.0	40	100	10M				T066		
54	ST40002†	200m#	300	60	60	80	80	80	80	100u#	10	20	20	120	20M\$Δ		500n	PL	T063		
55	ST40003†	200m#	300	60	60	100	80	100	100	100u#	10	20	20	120	20M\$Δ		500n	PL	T063		
56	ST40004†	200m#	300	60	60	120	80	120	100	100u#	10	20	20	120	20M\$Δ		500n	PL	T063		
57	MP8511	222m	3.0	1.2	1.2	60	7.0	60	1.0m	5.0	200m	30	60	100M\$				PE	X95		
58	MP8512	222m	3.0	1.2	1.2	60	7.0	60	1.0m	5.0	200m	50	120	100M\$				PE	X95		
59	MP8513	222m	3.0	1.2	1.2	60	7.0	60	1.0m	5.0	200m	100	100	100M\$				PE	X95		
60	MP8521	222m	3.0	1.2	1.2	35	7.0	35	1.0m	5.0	200m	20	60	100M\$				PE	X95		
61	MP8522	222m	3.0	1.2	1.2	35	7.0	35	1.0m	5.0	200m	50	120	100M\$				PE	X95		
62	MP8523	222m	3.0	1.2	1.2	35	7.0	35	1.0m	5.0	200m	100	100	100M\$				PE	X95		
63	MP8611	222m	5.0	1.5	1.5	60	7.0	60	1.0m	5.0	500m	30	60	100M\$				PE	T066	C	
64	MP8612	222m	5.0	1.5	1.5	60	7.0	60	1.0m	5.0	500m	50	120	100M\$				PE	T066	C	
65	MP8613	222m	5.0	1.5	1.5	60	7.0	60	1.0m	5.0	500m	100	100	100M\$				PE	T066	C	
66	MP8621	222m	5.0	1.5	1.5	35	7.0	35	1.0m	5.0	500m	20	60	100M\$				PE	T066	C	
67	MP8622	222m	5.0	1.5	1.5	35	7.0	35	1.0m	5.0	500m	50	120	100M\$				PE	T066	C	
68	MP8623	222m	5.0	1.5	1.5	35	7.0	35	1.0m	5.0	500m	100	100	100M\$				PE	T066	C	
69	2N3199	227m	40	3.0	3.0	15	40	10	40	75u#	2.0	1.0	20	60	1.0M\$Δ	300m			MT42c	A	
70	2N3200	227m	40	3.0	3.0	15	60	10	60	75u#	2.0	1.0	20	60	1.0M\$Δ	300m			MT42c	A	
71	2N3201	227m	40	3.0	3.0	15	80	10	80	75u#	2.0	1.0	20	60	1.0M\$Δ	300m			MT42c	A	
72	2N3205	227m	40	3.0	3.0	1.0	40	10	40	75u#	2.0	500m	20	60	1.0M\$Δ	800m			T059	A	
73	2N3206	227m	40	3.0	3.0	1.0	60	10	60	75u#	2.0	500m	20	60	1.0M\$Δ	800m			T059	A	
74	2N3207	227m	40	3.0	3.0	1.0	100	10	100	75u#	2.0	500m	20	60	1.0M\$Δ	800m			T059	A	
75	2N5344†	228m	40	3.0	3.0	500m	250	5.0	250	100u	5.0										



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb0</sub> @ 25°C (A)	hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>be0</sub> (V)	V <sub>ceo</sub> (V)		MIN	MAX	MIN						
1▼	2N6025	288m	36	∅	∅	∅	∅	∅	∅	10mΔ	4.0	1.5	30	120	#			X75a	T∅
2▼	2N6026	288m	36	∅	∅	∅	∅	∅	∅	10mΔ	4.0	1.5	30	120	#			X75a	D∅
3▼	SDI445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	2.5	25	125	#			X75a	D
4▼	SDJ445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	2.5	20	100	#			X75a	D
5▼	SDK445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	2.5	20	100	#			X75a	D
6▼	SDL445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	2.5	20	100	#			X75a	D
7▼	SDM445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	2.00m	40	200	#			X75a	D
8▼	SDN445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	300m	40	200	#			X75a	D
9▼	SDO445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	500m	40	200	#			X75a	D
10▼	SDP445	288m	1.8	∅	∅	∅	∅	∅	∅	1.0m#	4.0	500m	40	200	#			X75a	D
11#	BDY67	300m	2.0	∅	∅	∅	∅	∅	∅	5.0uΔ	4.0	2.0	20	80	#			X75a	G
12#	BDY68	300m	2.0	∅	∅	∅	∅	∅	∅	5.0uΔ	4.0	2.0	20	80	#			X75a	G
13	SDT3125	300m	2.0	∅	∅	∅	∅	∅	∅	1.0u	5.0	2.0	20	80	#			X75a	G
14	SDT3126	300m	2.0	∅	∅	∅	∅	∅	∅	1.0u	5.0	2.0	20	80	#			X75a	G
15	SDT3127	300m	2.0	∅	∅	∅	∅	∅	∅	1.0u	5.0	2.0	20	80	#			X75a	G
16	SDT3128	300m	2.0	∅	∅	∅	∅	∅	∅	1.0u	5.0	2.0	20	80	#			X75a	G
17	SDT3129	300m	2.0	∅	∅	∅	∅	∅	∅	1.0u	5.0	2.0	20	80	#			X75a	G
18	SDT3750	300m	2.0	∅	∅	∅	∅	∅	∅	1.0u	1.5	1.0	25	180	#			X75a	G
19	SDT3751	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	1.5	1.0	25	180	#			X75a	G
20	SDT3752	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	1.0	12	36	#			X75a	G
21	SDT3753	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	1.0	12	36	#			X75a	G
22	SDT3754	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	1.0	12	36	#			X75a	G
23	SDT3755	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	1.0	12	36	#			X75a	G
24	SDT3756	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	1.0	12	36	#			X75a	G
25	SDT3757	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	2.0	10	30	#			X75a	G
26	SDT3758	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	2.0	10	30	#			X75a	G
27	SDT3759	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	2.0	10	30	#			X75a	G
28	SDT3760	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	2.0	10	30	#			X75a	G
29	SDT3761	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	2.0	10	30	#			X75a	G
30	SDT3762	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	3.0	10	30	#			X75a	G
31	SDT3763	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	3.0	10	30	#			X75a	G
32	SDT3764	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	3.0	10	30	#			X75a	G
33	SDT3765	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	3.0	10	30	#			X75a	G
34	SDT3766	300m	2.0	∅	∅	∅	∅	∅	∅	1.0m	3.0	3.0	10	30	#			X75a	G
35	2N5003	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	30	90	#			X75a	A
36	2N5005	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	30	200	#			X75a	A
37	2N5006	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	30	80	#			X75a	A
38	2N5007	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	30	80	#			X75a	A
39	2N5408†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	20	60	#			X75a	A
40	2N5409†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	20	60	#			X75a	A
41	2N5410†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	40	120	#			X75a	A
42	2N5411†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	40	120	#			X75a	A
43	SDT3301†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	40	120	#			X75a	A
44	SDT3302†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	40	120	#			X75a	A
45	SDT3303†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	40	120	#			X75a	A
46	SDT3304†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	40	120	#			X75a	A
47	SDT3305†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	20	60	#			X75a	A
48	SDT3306†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	20	60	#			X75a	A
49	SDT3307†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	20	60	#			X75a	A
50	SDT3308†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	20	60	#			X75a	A
51	SDT3309†	303m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.0	20	60	#			X75a	A
52	ST7201	303m#	∅	∅	∅	∅	∅	∅	∅	1.0u	2.0	1.5	30	200	#			X75a	A
53	ST7202	303m#	∅	∅	∅	∅	∅	∅	∅	1.0u	2.0	1.5	30	200	#			X75a	A
54	ST7203	303m#	∅	∅	∅	∅	∅	∅	∅	1.0u	2.0	1.5	30	200	#			X75a	A
55	ST7204	303m#	∅	∅	∅	∅	∅	∅	∅	2.0u	2.0	1.5	30	200	#			X75a	A
56	2N5193	320m	40	∅	∅	∅	∅	∅	∅	100u	2.0	1.5	25	100	#			X75a	B
57	2N5194	320m	40	∅	∅	∅	∅	∅	∅	100u	2.0	1.5	25	100	#			X75a	B
58	2N5195	320m	40	∅	∅	∅	∅	∅	∅	100u	2.0	1.5	20	80	#			X75a	B
59	MJE371	320m	40	∅	∅	∅	∅	∅	∅	100u	1.0	1.0	40	#				X75a	B
60	MJE2370	320m	40	∅	∅	∅	∅	∅	∅	200u	4.0	200m	40	200	#			X75a	D
61	MJE2371	320m	40	∅	∅	∅	∅	∅	∅	200u	4.0	200m	40	200	#			X75a	D
62	MJE3740	320m	40	∅	∅	∅	∅	∅	∅	100u	1.0	250m	30	100	#			X75a	D
63	MJE3741	320m	40	∅	∅	∅	∅	∅	∅	100u	1.0	250m	30	100	#			X75a	D
64	TIP32	322m	2.0	∅	∅	∅	∅	∅	∅	500uΔ	4.0	1.0	20	100	#			X75b	B
65	TIP32A†	322m	2.0	∅	∅	∅	∅	∅	∅	500uΔ	4.0	1.0	20	100	#			X75b	B
66	TIP32B	322m	2.0	∅	∅	∅	∅	∅	∅	500u	4.0	1.0	20	100	#			X75b	B
67	TIP32C	322m	2.0	∅	∅	∅	∅	∅	∅	500u	4.0	1.0	20	100	#			X75b	B
68	2N5613	330m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	70	200	#			X75b	C
69	2N5615	330m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	30	90	#			X75b	C
70	2N5617	330m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	70	200	#			X75b	C
71	2N5619	330m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	30	90	#			X75b	C
72	2N5286	333m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	30	90	#			X75b	C
73	2N5287	333m#	∅	∅	∅	∅	∅	∅	∅	1.0m#	5.0	2.5	70	200	#			X75b	C
74	ST72036†	333m#	∅	∅	∅	∅	∅	∅	∅	20u	10	2.0	30	120	#			X75b	C
75	ST72037†	333m#	∅	∅	∅	∅	∅	∅	∅	20u	10	2.0	30	120	#			X75b	C
76	ST72038†	333m#	∅	∅	∅	∅	∅	∅	∅	20u	10	2.0	30	120	#			X75b	C
77	MJ5001	343m	60	∅	∅	∅	∅	∅	∅	10u	2.0	2.0	25	180	#			X75b	C
78	MJ5011	343m	60	∅	∅	∅	∅	∅	∅	10u	2.0	2.0	25	180	#			X75b	C
79	MJ6700†	343m	60	∅	∅	∅	∅	∅	∅	10u	2.0	2.0	25	180	#			X75b	C
80	MJ6701†	343m	60	∅	∅	∅	∅	∅	∅	10u	2.0	2.0	25	180	#			X75b	C
81#	ZSC642	400m	50	∅	∅	∅	∅	∅											



# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E M X P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O A D E
						Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)	Icbo @ MAX Vcb @25°C (A)	Vcb (V)						
1	2N3178	454m	85	5.0	5.0	2.0	100	10	100	10m#	3.0	2.0	10	30	1.0MΔ	500m	MT10	A0
2	2N3179	454m	85	5.0	5.0	2.0	40	10	40	10m#	3.0	2.0	10	30	1.0MΔ	500m	TO53	A0
3	2N3180	454m	85	5.0	5.0	2.0	60	10	60	10m#	3.0	2.0	10	30	1.0MΔ	500m	TO53	A0
4	2N3181	454m	85	5.0	5.0	2.0	80	10	80	10m#	3.0	2.0	10	30	1.0MΔ	500m	TO53	A0
5	2N3182	454m	85	5.0	5.0	2.0	100	10	100	10m#	3.0	2.0	10	30	1.0MΔ	500m	TO53	A0
6	2N3187	454m	85	5.0	5.0	2.0	40	10	40	10m#	3.0	2.0	10	30	1.0MΔ	300m	MT10	A0
7	2N3188	454m	85	5.0	5.0	2.0	60	10	60	10m#	3.0	2.0	10	30	1.0MΔ	300m	MT10	A0
8	2N3189	454m	85	5.0	5.0	2.0	80	10	80	10m#	3.0	2.0	10	30	1.0MΔ	300m	MT10	A0
9	2N3190	454m	85	5.0	5.0	2.0	100	10	100	10m#	3.0	2.0	10	30	1.0MΔ	300m	MT10	A0
10	2N3191	454m	85	5.0	5.0	2.0	40	10	40	10m#	3.0	2.0	10	30	1.0MΔ	300m	TO53	A0
11	2N3192	454m	85	5.0	5.0	2.0	60	10	60	10m#	3.0	2.0	10	30	1.0MΔ	300m	TO53	A0
12	2N3193	454m	85	5.0	5.0	2.0	80	10	80	10m#	3.0	2.0	10	30	1.0MΔ	300m	TO53	A0
13	2N3194	454m	85	5.0	5.0	2.0	100	10	100	10m#	3.0	2.0	10	30	1.0MΔ	300m	TO53	A0
14	SDT3825	454m	78	10	10	2.0	40	5.0	40	100u	5.0	5.0	20	80	10M		TO3	
15	SDT3826	454m	78	10	10	2.0	80	5.0	80	100u	5.0	5.0	20	80	10M		TO3	
16	SDT3827	454m	78	10	10	2.0	40	5.0	40	100u	5.0	5.0	40	10M			TO3	
17#	2SA626	480m	60	7.0	7.0	2.0	80	5.0	60	2.0m#	2.0	3.0	20	50	10M		EM	TO3
18#	2SA627	480m	60	7.0	7.0	2.0	100	5.0	70	2.0m#	2.0	3.0	20	50	10M		EM	TO3
19	MJE2490	480m	60	7.0	7.0	1.0	40	5.0	40	200u#	4.0	1.0	20	100	3.0MΔ		Δ	X104
20	MJE2491	480m	60	7.0	7.0	1.0	60	5.0	60	200u#	4.0	1.0	20	100	3.0MΔ		Δ	X104
21	2N4901	500m	87	5.0	5.0	1.0	40	5.0	40	100u#	2.0	1.0	20	80	4.0MΔ			TO3
22	2N4902	500m	87	5.0	5.0	1.0	60	5.0	60	100u#	2.0	1.0	20	80	4.0MΔ			TO3
23	2N4903	500m	87	5.0	5.0	1.0	80	5.0	80	100u#	2.0	1.0	20	80	4.0MΔ			TO3
24	2N4904	500m	87	5.0	5.0	1.0	40	5.0	40	100u#	2.0	2.5	25	100	4.0MΔ			TO3
25	2N4905	500m	87	5.0	5.0	1.0	60	5.0	60	100u#	2.0	2.5	25	100	4.0MΔ			TO3
26	2N4906	500m	87	5.0	5.0	1.0	80	5.0	80	100u#	2.0	2.5	25	100	4.0MΔ			TO3
27	2N5312†	500m	50	10	10	2.5	80	6.0	80	10u#	5.0	1.0	30	90	3.0MΔ	500n		TO61
28	2N5314†	500m	50	10	10	2.5	100	6.0	100	10u#	5.0	1.0	30	90	3.0MΔ	500n		TO61
29	2N5316†	500m	50	10	10	2.5	80	6.0	80	10u#	5.0	1.0	30	90	3.0MΔ	200n		TO61
30	2N5318†	500m	50	10	10	2.0	100	6.0	100	10u#	5.0	1.0	30	90	3.0MΔ	200n		TO61
31	2N5386	500m	3.5	12	12	4.0	100	6.0	80	10u#	5.0	6.0	20	80	3.0MΔ			TO61
32	2N5677†	500m	50	10	10	2.0	125	6.0	100	1.0u#	5.0	5.0	30	90	2.0MΔ	500m		TO61
33	2N5737	500m	50	10	10	2.0	60	5.0	60	500uΔ	5.0	5.0	20	80	1.0MΔ			TO3
34	2N5738	500m	50	10	10	2.0	100	5.0	100	500uΔ	5.0	5.0	20	80	1.0MΔ	500m		TO3
35	2N5867†	500m	87	3.0	3.0	1.0	60	5.0	60	100uΔ	4.0	1.5	20	100	4.0MΔ	500m		TO3
36	2N5868†	500m	87	3.0	3.0	1.0	80	5.0	80	100uΔ	4.0	1.5	20	100	4.0MΔ	500m		TO3
37#	BDY69	500m	3.5	12	12	4.0	100	4.0	80	50uΔ	4.0	6.0	20	80	3.0MΔ		PE	TO61
38	MJ490	500m	5.0	4.0	4.0	1.0	40	5.0	40	1.0m	2.0	1.0	30	200	4.0MΔ	400m		TO3
39	MJ491	500m	5.0	4.0	4.0	1.0	60	5.0	60	1.0m	2.0	1.0	30	200	4.0MΔ	400m		TO3
40	MM4023	500m	87	5.0	5.0	6.0	36	4.0	18	500u#	5.0	500m	15					MT75a
41	SDT3101†	500m	3.0	20	20	5.0	40	6.0	40	10m#	5.0	10	30	90	3.0MΔ	500n	PE	TO61
42	SDT3102†	500m	3.0	20	20	5.0	60	6.0	60	0.1m#	5.0	10	30	90	3.0MΔ	50u	PE	TO61
43	SDT3103†	500m	3.0	20	20	5.0	80	6.0	80	10m#	5.0	10	30	90	3.0MΔ	500n	PE	TO61
44	SDT3104†	500m	3.0	20	20	5.0	100	6.0	100	10m#	5.0	10	30	90	3.0MΔ	500n	PE	TO61
45	SDT3105†	500m	3.0	20	20	4.0	40	6.0	40	10m#	5.0	5.0	30	90	3.0MΔ	200n	PE	TO61
46	SDT3106†	500m	3.0	20	20	4.0	60	6.0	60	10m#	5.0	5.0	30	90	3.0MΔ	200n	PE	TO61
47	SDT3107†	500m	3.0	20	20	4.0	80	6.0	80	10m#	5.0	5.0	30	90	3.0MΔ	200n	PE	TO61
48	SDT3108†	500m	3.0	20	20	4.0	100	6.0	100	10m#	5.0	5.0	30	90	3.0MΔ	200n	PE	TO61
49	SDT3109†	500m	3.0	20	20	4.0	120	6.0	120	10m#	5.0	5.0	30	90	3.0MΔ	200n	PE	TO61
50	ST72015	500m	50	10	10	6.0	7.0	6.0	60	1.0u#	2.0	3.0	30	200	3.0MΔ		PE	TO61
51	ST72016	500m	50	10	10	8.0	7.0	8.0	80	2.0u#	2.0	3.0	30	200	3.0MΔ		PE	TO61
52	ST72017	500m	50	10	10	10.0	7.0	10.0	100	2.0u#	2.0	3.0	30	200	3.0MΔ		PE	TO61
53▼	SCC421	511m	100	10	10	4.0	4.0	5.0	40	1.0m#	4.0	3.0	20	100	10M	333m	DME	TO3
54	TIP42	520m	2.0	6.0	6.0	3.0	40	5.0	40	700u	4.0	3.0	15	75	3.0 Δ		D	X75b
55	TIP42A	520m	2.0	6.0	6.0	3.0	60	5.0	60	700u	4.0	3.0	15	75	3.0 Δ		D	X75b
56	TIP42B	520m	2.0	6.0	6.0	3.0	80	5.0	80	700u	4.0	3.0	15	75	3.0 Δ		D	X75b
57	TIP42C	520m	2.0	6.0	6.0	3.0	100	5.0	100	700u	4.0	3.0	15	75	3.0 Δ		D	X75b
58	MJE105	522m	66	5.0	5.0	2.5	50	4.0	50	100u	2.0	2.0	25	100	10M			X58a
59	SDT3875	552m	96	20	20	4.0	40	5.0	40	100u	5.0	10	20	80	10M			TO3
60	SDT3876	552m	96	20	20	4.0	80	5.0	80	100u	5.0	10	20	80	10M			TO3
61	SDT3877	552m	96	20	20	4.0	40	5.0	40	100u	5.0	10	40	100	10M			TO3
62	2N5871†	572m	100	5.0	5.0	1.5	60	5.0	60	250uΔ	4.0	2.5	20	100	4.0MΔ	250m		TO3
63	2N5872†	572m	100	5.0	5.0	1.5	80	5.0	80	250uΔ	4.0	2.5	20	100	4.0MΔ	700nZ		TO3
64	TIP34B	625m	3.5	10	10	3.0	80	5.0	80	700u	4.0	1.0	30	3.0 Δ		D	X86	
65	TIP34C	625m	3.5	10	10	3.0	100	5.0	100	700u	4.0	1.0	30	3.0 Δ		D	X86	
66	MJE2010	640m	80	5.0	5.0	3.0	40	5.0	40	400u	4.0	1.0	25	125	3.0MΔ		Δ	X104
67	MJE2011	640m	80	5.0	5.0	3.0	60	5.0	60	400u	4.0	1.0	25	125	3.0MΔ		Δ	X104
68	TIP34†	641m	3.5	10	10	3.0	40	5.0	40	700uΔ	4.0	1.0	25	125	3.0kΔ	350nZ	D	X86
69	TIP34A†	641m	3.5	10	10	3.0	60	5.0	60	700uΔ	4.0	1.0	25	125	3.0kΔ	350nZ	D	X86
70	2N5741	650m	65	5.0	5.0	2.0	60	5.0	60	500uΔ	5.0	1.0	20	80	1.0MΔ	250m		TO3
71	2N5742	650m	65	5.0	5.0	2.0	100	5.0	100	500uΔ	5.0	1.0	20	80	1.0MΔ	250m		TO3
72	MJ2901	657m	115	7.0	7.0	4.0	50	7.0	40	5.0m	4.0	8.0	15	60	1.0MΔ			TO3
73	2N5853	660m	66	5.0	5.0	3.0	100	6.0	80	500u#	5.0	5.0	30	90	15MΔ	150m		TO61
74	2N5854	660m	66	5.0	5.0	3.0	100	6.0	80	500u#	5.0	5.0	30	90	20MΔ	150m		TO61
75▼	SC0421	660m	115	10	10	4.0	60	5.0	60	1.5m#	5.0	5.0	20	140	1.0MΔ		DME	TO3
76	2N5007	666m#	100	5.0	5.0	3.0	100	5.5	80	1.0m#	5.0	5.0	30	90	3.0MΔ			MT16a
77	2N5009	666m#	100	5.0	5.0	3.0	100	5.5	80	1.0m#	5.0	5.0	70	200	4.0MΔ			MT16a
78	2N5290	666m#	100	5.0	5.0	3.0	100	5.5	100	1.0m#	5.0	5.0	30	90	3.0MΔ</			

# 10. SILICON PNP - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P X	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	hFE (A)	hFE (V)	hFE (A)								
1	2N5879†	9.15m	160	§	12	4.0	60†	5.0†	60	500u#	4.0	6.0	20	100	4.0M#Δ	142m	700nZ	PL	TO3	CØ
2	2N5880†	9.15m	160	§	12	4.0	80†	5.0†	80	500u#	4.0	6.0	20	100	4.0M#Δ	142m	700nZ	PL	TO3	CØ
3	2N5878†	1.0	100	§	20	2.0	125†	6.0†	100	2.0u#	5.0	10	25	75 #	2.0M#Δ	100m	500nZ	PL	TO63	AØ
4▼	2N5958†	1.0	100	§	20	2.0	100	8.0	100	500u	10	10	30	120	2.0M#Δ	100m	500nZ	PL	TO61	AØ
5▼	2N5960†	1.0	100	§	20	2.0	100	8.0	100	500u	10	10	30	120	2.0M#Δ	100m	500nZ	PL	TO61	AØ
6	SDT3601	1.0	175	§	60	10	40	5.0	40	10u	10	40	10	40	25M			PL		
7	SDT3602	1.0	175	§	60	10	40	5.0	60	10u	10	40	10	40	25M			PL		
8	SDT3603	1.0	175	§	60	10	40	5.0	80	10u	10	40	10	40	25M			PL		
9	SDT3604	1.0	175	§	60	10	100	5.0	100	10u	10	40	10	40	25M			PL		
10	ST10007†	1.0 #	150 #	§	30		80	8.0	80 *	100u	10	10	30	120 #	2.0M#Δ		500nØ	PL	TO63	
11	ST10008†	1.0 #	150 #	§	30		100	8.0	100 *	100u	10	10	30	120 #	2.0M#Δ		500nØ	PL	TO63	
12	ST10009†	1.0 #	150 #	§	30		120	8.0	120 *	100u	10	10	30	120 #	2.0M#Δ		500nØ	PL	TO63	
13	ST72018	1.0	100	§	20		40	7.0	40	.01mØ	5.0	10	20	200	1.0M#Δ			PE	TO63	
14	ST72019	1.0	100	§	20		60	7.0	60	.01mØ	5.0	10	20	200	1.0M#Δ			PE	TO63	
15	ST72020	1.0	100	§	20		80	7.0	80	.01mØ	5.0	10	20	200	1.0M#Δ			PE	TO63	
16	ST72021	1.0	100	§	20		100	7.0	100	.01mØ	5.0	10	20	200	1.0M#Δ			PE	TO63	
17	2N4398†	1.1	200	§	30	7.5	40†	5.0†	40	1.0m#	4.0	15	15	60 #	4.0M#Δ		400nZ	PE	MD6f	CØ
18	2N4399†	1.1	200	§	30	7.5	60†	5.0†	60	1.0m#	4.0	15	15	60 #	4.0M#Δ		400nZ	PE	MD6f	CØ
19	2N5745†	1.1	200	§	20	7.5	80†	5.0†	80	1.0m#	2.0	10	15	60 #	4.0M#Δ		700nZ	PE	TO3	CØ
20	2N5883†	1.1	200	§	20	6.0	60†	5.0†	60	1.0m#	4.0	10	20	100	4.0M#Δ	66m	700nZ	PE	TO3	CØ
21	2N5884†	1.1	200	§	20	6.0	80†	5.0†	80	1.0m#	4.0	10	20	100	4.0M#Δ	66m	700nZ	PE	TO3	CØ
22	MJ4502	1.1	200	§	30	7.5	100	4.0	90	1.0m	2.0	7.5	25	100 #	2.0M#Δ			PE	MD6d	CØ
23	ST29045	1.1	150	§	30	8.0	70	10	40	500u	10	15	30	150	1.0M	130m		PE	TO3	
24	ST29046	1.1	150	§	30	8.0	90	10	60	500u	10	15	30	150	1.0M	130m		PE	TO3	
25	ST29047	1.1	150	§	30	8.0	110	10	80	500u	10	15	30	150	1.0M	130m		PE	TO3	
26	ST29048	1.1	150	§	20	6.0	70	10	40	500u	10	10	30	150	1.0M	130m		PE	TO3	
27	ST29049	1.1	150	§	20	6.0	90	10	60	500u	10	10	30	150	1.0M	130m		PE	TO3	
28	ST29050	1.1	150	§	20	6.0	110	10	80	500u	10	10	30	150	1.0M	130m		PE	TO3	
29▼	2N5967†	1.2	125	§	40	5.0	100†	8.0†	100	500u#	10	10	30	120	2.0M#Δ		500nØ	PE	TO63	AØ
30▼	2N5969†	1.2	125	§	40	5.0	100†	8.0†	100	500u#	10	10	30	120	2.0M#Δ		500nØ	PE	TO63	AØ
31	SDT3901	1.2	220	§	60	10	40	5.0	40	10u	10	40	10	40	25M			PE	TO114	
32	SDT3902	1.2	220	§	60	10	60	5.0	60	10u	10	40	10	40	25M			PE	TO114	
33	SDT3903	1.2	220	§	60	10	80	5.0	80	10u	10	40	10	40	25M			PE	TO114	
34	SDT3904	1.2	220	§	60	10	80	5.0	80	10u	10	40	10	40	25M			PE	TO114	
35▼	2N6061†	1.5	150	§	60	10	100	8.0	100	500u	10	20	120	120	2.0M#Δ	55m	500nØ	PE	TO63	AØ
36▼	2N6063†	1.5	150	§	60	10	100	8.0	100	500u	10	20	120	120	2.0M#Δ	55m	500nØ	PE	TO63	AØ
37	2N5883	1.7	300	§	50	15	60	5.0	60	2.0m	2.0	25	15	60 #	2.0M#Δ			PE	MD6d	CØ
38	2N5884	1.7	300	§	50	15	80	5.0	80	2.0m	2.0	25	15	60 #	2.0M#Δ			PE	MD6d	CØ
39	ET1550	2.0	150	§	7.0	3.0	45	4.0	50	1.0mØ	2.0	3.0	40	250	1.0M	400m		PE	TO3	CØ
40	ET1551	2.0	150	§	7.0	3.0	60	4.0	50	1.0mØ	2.0	3.0	40	250	1.0M	400m		PE	TO3	CØ
41	ST29051	2.3	85	§	10	4.0	70	10	40	500u	10	5.0	30	150	1.0M	130m		PE	TO3	
42	ST29052	2.3	85	§	10	4.0	90	10	60	500u	10	5.0	30	150	1.0M	130m		PE	TO3	
43	ST29053	2.3	85	§	10	4.0	110	10	80	500u	10	5.0	30	150	1.0M	130m		PE	TO3	
44#	2SB502	6.2	20	§	3.0		100	10	80	100u	5.0	500m	40	240	1.0M#			PE	TO66	C
45#	2SB503	6.2	20	§	3.0		70	10	50	100u	5.0	500m	40	240	1.0M#			PE	TO66	C
46	2N3774†	50	5.0	§	1.0	500m	40	8.0	40	500u#	2.0	200m	20	60 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
47	2N3775†	50	5.0	§	1.0	500m	60	8.0	60	500u#	2.0	200m	20	60 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
48	2N3776†	50	5.0	§	1.0	500m	80	8.0	80	500u#	2.0	200m	20	60 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
49	2N3777†	50	5.0	§	1.0	500m	100	8.0	100	500u#	2.0	200m	20	60 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
50	2N3778†	50	5.0	§	1.0	500m	40	8.0	40	500u#	2.0	200m	10	40 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
51	2N3779†	50	5.0	§	1.0	500m	60	8.0	60	500u#	2.0	200m	10	40 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
52	2N3780†	50	5.0	§	1.0	500m	80	8.0	80	500u#	2.0	200m	10	40 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
53	2N3781†	50	5.0	§	1.0	500m	100	8.0	100	500u#	2.0	200m	10	40 #	1.0M#Δ		3.0uØ	PE	TO5	AØ
54	2N3782†	50	5.0	§	3.0	1.0	40	8.0	40	500u#	3.0	1.0	10	40 #	1.0M#Δ			PE	TO5	AØ
55	2N5404†	50	1.0	§	5.0	2.0	80	6.0	80	10u#	5.0	2.0	20	60	4.0M#Δ	1.0	500nØ	PE	TO5	AØ
56	2N5405†	50	1.0	§	5.0	2.0	100	6.0	100	10u#	5.0	2.0	20	60	4.0M#Δ	1.0	500nØ	PE	TO5	AØ
57	2N5406†	50	1.0	§	5.0	2.0	80	6.0	80	10u#	5.0	2.0	40	120	4.0M#Δ	800m	500nØ	PE	TO5	AØ
58	2N5407†	50	1.0	§	5.0	2.0	100	6.0	100	10u#	5.0	2.0	40	120	4.0M#Δ	800m	500nØ	PE	TO5	AØ
59	RS1875	50	3.5	Ø	400m		55	4.0	55	10m	5.0	1.0m	20		1.2G	3.0		PE	TO39	
60	STP30P	75	2.0	§	500m	100m	300	5.0	300	3.0m	10	20m	20	250	2.0M#Δ	200	300m	PE	MD14	
61	STP40P	75	2.0	§	500m	100m	400	5.0	400	3.0m	10	20m	20	250	2.0M#Δ	200	300m	PE	MD14	
62	STP50P	75	2.0	§	500m	100m	500	5.0	500	4.0m	10	20m	20	250	2.0M#Δ	200	300m	PE	MD14	
63	STP60P	75	2.0	§	500m	100m	600	5.0	600	4.0m	10	20m	20	250	2.0M#Δ	200	300m	PE	MD14	
64	STP70P	75	2.0	§	300m	50m	700	5.0	700	5.0m	10	20m	20	250	2.0M#Δ	200	350m	PE	MD14	
65	STP20S	150	1.0	§	400m	50m	200	5.0	200	3.0m	10	20m	20	250	2.0M#Δ	200	200m	PE	TO5	
66	STP30S	150	1.0	§	400m	50m	300	5.0	300	3.0m	10	20m	20	250	2.0M#Δ	200	200m	PE	TO5	
67	STP40S	150	1.0	§	400m	50m	400	5.0	400	3.0m	10	20m	20	250	2.0M#Δ	200	200m	PE	TO5	
68	STP50S	150	1.0	§	400m	50m	500	5.0	500	4.0m	10	20m	20	250	2.0M#Δ	200	250m	PE	TO5	
69	STP60S	150	1.0	§	400m	50m	600	5.0	600	4.0m	10	20m	20	250	2.0M#Δ	200	250m	PE	TO5	
70	STP70S	150	1.0	§	200m	30m	700	5.0	700	5.0m	10	20m	20	250	2.0M#Δ	200	250m	PE	TO5	

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C						MAX. Vcb @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	#	C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb (V)	Vcb (V)	MIN	MAX							
1#	2N2239	1.0	1.0	0.5	#J	500m			60	50	100	100	200	50	140	2.5Mf				T037	A	
2#	2SC291	1.0	1.0	0.5	#J	3.0			70	50	40	30	2.0	1.0	90Mf				PE	T05		
3#	2SC292	1.0	1.0	0.5	#J	3.0			100	50	60	30	2.0	100	90Mf				PE	T05		
4#	2SC293	1.0	1.0	0.5	#J	3.0			130	50	80	30	2.0	100	90Mf				PE	T05		
5#	2SC517	10	10	0.5	#J	2.0			60	40	60	10	5.0	500	300k				PE	T037	A	
6#	2SC571	6.0	6.0	0.5	#J	1.5			36	4.0	18	5.0	13	100	250Mf				PE	T039		
7#	2SC572	10	10	0.5	#J	3.0			36	4.0	18	5.0	13	200	250Mf				PE	T060		
8#	2SC573	20	20	0.5	#J	4.0			36	4.0	18	10	13	400	250Mf				PE	T060		
9#	2SC608T	1.0	1.0	0.5	#J	1.5	#		75	4.0	60	5.0	4.0	10	250Mf				PE	MD25		
10#	2SC609T	1.0	1.0	0.5	#J	1.5	#		75	4.0	60	5.0	4.0	10	250Mf				PE	MD25		
11#	2SC664	50	50	0.5	#J	5.0		1.5	100	50	50	5.0	1.0	35	300k					T03		
12#	2SC680	8.0	8.0	0.5	#J	2.0		1.0	200	60	120	10	20	60	240					T066		
13#	2SC680A	8.0	8.0	0.5	#J	2.0		1.0	200	60	140	10	20	45	180					T066		
14#	2SC681	50	50	0.5	#J	6.0			200	50	70	15m	10	45	180					T03		
15#	2SC681A	50	50	0.5	#J	6.0			250	50	80	15m	10	45	180					T03		
16#	2SC685	3.0	3.0	0.5	#J	1.0			300	30	300	5.0	10	30	150	20Mf			TD	T03		
17#	2SC685A	6.5	6.5	0.5	#J	1.0			300	40	300	5.0	10	30	160	25Mf				T066		
18#	2SC756	10	10	0.5	#J	4.0		800m	130	60	40	3.0	2.0	100	60Mf	450m			EM	T05		
19#	2SC792	50	50	0.5	#J	1.5			400	50	300	5.0	10	300	10Mf			DM	T03	C		
20#	2SC795	90	90	0.5	#J	100m		10m	250	60	200	10	10	70	70	5.5k	600m		D	MD17		
21#	2SC806	125	125	0.5	#J	10		1.0	650	10		5.0	3.0	20	30	5.5k	600m		D	T03		
22#	2SC806A	125	125	0.5	#J	5.0			630	10		100	3.0	20	12	92	3.0Mf	750m		DM	T03	
23#	2SC807	125	125	0.5	#J	10		1.0	500	10	220	5.0	3.0	100	50	5.5k	1.0		DM	T03		
24#	2SC807A	125	125	0.5	#J	5.0			195	8.0		100	3.0	100	30	3.0Mf	1.6		DM	T03		
25#	2SC821	1.7	1.7	0.5	#J	600m			40	4.0	20	1.0	13	100	20	350Mf			PE	T039		
26#	2SC822	2.5	2.5	0.5	#J	800m			40	4.0	20	1.0	13	100	20	400Mf			PE	T039		
27#	2SC830	25	25	0.5	#J	3.0			50	4.0	50	4.0	1.0	35	200	20Mf				T066		
28#	2SC833	25	25	0.5	#J	2.0			450	6.0	300	10	10	40	80	20Mf			ME	T066		
29#	2SC898	80	80	0.5	#J	7.0		7	150	5.0	100	1.0	5.0	10	25	200				T03		
30#	2SC931	10	10	0.5	#J	3.0			50	4.0	50	50	2.0	1.0	70	120Mf			ME	X101	F	
31#	2SC932	10	10	0.5	#J	3.0			30	4.0	20	50	2.0	1.0	70	120Mf			ME	X101	F	
32#	2SC935	12	12	0.5	#J	2.5		2.5	300	5.0	300	5.0	10	30	80					T03		
33#	2SC936	12	12	0.5	#J	1.0			1.0k	5.0	500	1.0	10	100	30	120				T03		
34#	2SC937	22	22	0.5	#J	2.5		2.5	1.2k	6.0	500	5.0	10	300	80	120				T03		
35#	2SC996	1.2	1.2	0.5	#J	100m			300	5.0	300	100	10	50	80	100Mf			DPL	T037	A	
36#	2SC1001	5.0	5.0	0.5	#J	500m			36	4.0	18	10	2.0	100	10	250	800Mf		PE	T05	A	
37#	2SC1002	10	10	0.5	#J	1.0			36	4.0	18	20	2.0	200	10	250	700Mf		PE	T060	A	
38#	2SC1003	20	20	0.5	#J	2.0			36	4.0	18	50	2.0	400	20	250	600k		PE	T060	A	
39#	2SC1024	25	25	0.5	#J	3.0			60	4.0	50	1.0	2.0	1.0	70			ME	T066			
40#	2SC1025	25	25	0.5	#J	3.0			120	4.0	80	1.0	4.0	200	80			ME	T066			
41#	2SC1034	125	125	0.5	#J	1.0			1.0k	13		100	3.0	750	4.0	40	5.0Mf	6.7	DM	MD40	C	
42#	2SC1077	50	50	0.5	#J	5.0			65	4.0	65	1.0	10	20	40	150Mf		PE	MT83b	V		
43#	2SC1086	125	125	0.5	#J	4.0			1.0k	14		2.0	3.0	2.0	6.0	5.0Mf	600m		DM	MD40a	C	
44#	2SC1105	7.0	7.0	0.5	#J	100m			300	5.0	300	100	10	50	40	200		ME	T066	C		
45#	2SC1120	10	10	0.5	#J	1.5		1.5	35	4.0	20	5.0	5.0	500	20	40	700Mf		PE	MT83	V	
46#	2SC1121	20	20	0.5	#J	3.0		3.0	35	4.0	20	25	5.0	1.0	20	40	500Mf		PE	MT83	V	
47#	2SC1122	30	30	0.5	#J	4.5		4.5	35	4.0	20	50	5.0	1.5	20	40	400Mf		PE	MT83	V	
48#	2SC1170	50	50	0.5	#J	3.5			1.2k	5.0	500	10	3.0	5.0	30	4.0Mf		ME	T03	C		
49#	2SC1170A	50	50	0.5	#J	3.5			1.4k	5.0	500	10	3.0	5.0	30	4.0Mf		ME	T03	C		
50#	2SC1172	50	50	0.5	#J	5.0			1.5k	5.0	600	10	2.0	10	50	5.0Mf		DM	T03	C		
51#	2SD24	6.0	6.0	0.5	#J	100m			300	2.0	300	1.5	10	50	60	25Mf		ME	T066			
52#	2SD28	18	18	0.5	#J	3.0		1.0	70	4.0	40	20	1.0	100	32	276		D	MD17			
53#	2SD29	18	18	0.5	#J	3.0		1.0	70	4.0	60	20	1.0	100	32	276		D	MD17			
54#	2SD49	18	18	0.5	#J	3.0		1.0	100	10	60	20	3.0	1.0	25	100	2.0Mf	600m	D	MD17		
55#	2SD51	50	50	0.5	#J	5.0		1.5	100	6.0	50	5.0	2.0	30	120	10k	500m		ME	T03		
56#	2SD56	30	30	0.5	#J	3.0		1.0	220	18	80	50	1.0	100	15	150		D	MD17			
57#	2SD67	50	50	0.5	#J	5.0			120	5.0	120	5.0	1.0	50	50	100Mf		ME	T03			
58#	2SD68	50	50	0.5	#J	5.0			75	5.0	75	5.0	1.0	50	50	100Mf		ME	T03			
59#	2SD88	83	83	0.5	#J	5.0			300	8.0		100	3.0	2.0	34	517	10Mf	400m	DM	T03		
60#	2SD88A	125	125	0.5	#J	10		2.0	300	8.0		100	3.0	2.0	34	517	12Mf	400m	DM	T03		
61#	2SD102	25	25	0.5	#J	3.0			100	10	80	100	5.0	500	30	300	1.5Mf		D	T066	C	
62#	100T2	85	85	0.5	#J	3.0			80	10	80	10	2.0	20	40	120	10k	500m	PE	T03		
63#	104T2	85	85	0.5	#J	3.0			80	10	80	10	2.0	20	40	120	10k	500m	PE	T03		
64#	BD111A	62	62	0.5	#J	10			60	5.0	60	1.0	5.0	500	40	100	100Mf		PE	T03		
65#	BLY471	40	40	0.5	#J	3.0		2.0	100	8.0	75	50	10	30	100	15Mf		DM	T03	C		
66#	BLY47A1	40	40	0.5	#J	3.0		2.0	100	8.0	75	50	10	30	100	15Mf		DM	T066	C		
67#	BLY481	40	40	0.5	#J	3.0		2.0	100	8.0	75	50	10	60	200	15Mf		DM	T03	C		
68#	BLY48A1	40	40	0.5	#J	3.0		2.0	100	8.0	75	50	10	60	200	15Mf		DM	T066	C		
69#	BLY491	40	40	0.5	#J	3.0		2.0	250	8.0	150	50	10	30	100	15Mf		DM	T03	C		
70#	BLY49A1	40	40	0.5	#J	3.0		2.0	250	8.0	150	50	10	30	100	15Mf		DM	T066	C		
71#	BLY501	40	40	0.5	#J	3.0		2.0	250	8.0	150	50	10	60	200	15Mf		DM	T03	C		
72#	BLY50A1	40	40	0.5	#J	3.0		2.0	250	8.0	150	50	10	60	200	15Mf		DM	T066	C		
73#	BLY61	50	50	0.5	#J	500m		100m	36	4.0	18	100	5.0	250	10	120	400k		PE	T039	A	
74#	BLY62	11	11	0.5	#J	2.0		500m	36	4.0	18	100	5.0	250	10	120	400k		PE	T0117	GE	
75#	BLY63	17	17	0.5	#J	2.0		2.0	36	4.0	18	100	5.0	250	10	120	400k		PE	T0117	GE	
76#	BLY83	12	12	0.5	#J	7.5	#		66	33	20	4.0	20	20		250Mf		P	MT84	R		
77#	BLY84	12																				

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	Pc	M A E M	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vcb @25°C (A)	Vcb (V)								
1	ST9T087		30	5		170	2.0	120	10	120	20	20	30	120	10M	320m		PE	T059	
2	PP3006	1.0m	115	15		80		60		60	4.0	5.0	20					DM	T03	C
3	PP3007	1.0m	115	15		100		80		80	4.0	5.0	20					DM	T03	C
4	PP3008	1.0m	115	15		120		100		100	4.0	5.0	20					DM	T03	C
5	BSX481	2.0m	1.0	*	600m	50	5.0	25	120n	1.0	100m		42	400m				DPE	T018	A
6	BSX491	2.0m	1.0	*	600m	60	5.0	40	70n	1.0	100m		42	400m				DPE	T018	A
7	A210	4.0m	3.5		150m	40	2.0	25	20u	5.0	50m	25		1.2G				PE	T039	A
8	A211	4.0m	3.5		150m	40	2.0	25	20u	5.0	50m	25		1.1G				PE	T039	A
9	TRS140MP	4.5m	1.0		400m	140	6.0	140	3.0u	4.0	50m	30		50M					T05	
10	TRS160MP	4.5m	1.0		400m	160	6.0	160	3.0u	4.0	50m	30		50M					T05	
11	TRS180MP	4.5m	1.0		400m	180	6.0	180	3.0u	4.0	50m	30		50M					T05	
12	TRS200MP	4.5m	1.0		400m	200	6.0	200	2.0u	4.0	50m	20		50M					T05	
13	TRS225MP	4.5m	1.0		400m	225	6.0	225	3.0u	4.0	50m	22		50M					T05	
14	TRS250MP	4.5m	1.0		400m	250	6.0	250	2.0u	4.0	50m	20		50M					T05	
15	TRS275MP	4.5m	1.0		400m	275	6.0	275	3.0u	4.0	50m	22		50M					T05	
16	TRS301MP	4.5m	1.0		400m	300	6.0	300	2.0u	4.0	50m	30		50M					T05	
17	TRS325MP	4.5m	1.0		400m	325	6.0	325	3.0m	4.0	50m	22		50M					T05	
18	TRS350MP	4.5m	1.0		400m	350	6.0	350	2.0m	4.0	50m	20		50M					T05	
19	TRS375MP	4.5m	1.0		400m	375	6.0	375	3.0m	4.0	50m	22		50M					T05	
20	TRS401MP	4.5m	1.0		400m	400	6.0	400	2.0m	4.0	50m	30		50M					T05	
21	TRS425MP	4.5m	1.0		400m	425	6.0	425	3.0m	4.0	50m	22		50M					T05	
22	TRS451MP	4.5m	1.0		400m	450	6.0	450	2.0m	4.0	50m	30		50M					T05	
23	TRS475MP	4.5m	1.0		400m	475	6.0	475	2.0m	4.0	50m	22		50M					T05	
24	TRS501MP	4.5m	1.0		400m	500	6.0	500	10m	4.0	25m	30		50M					T05	
25	TRS525MP	4.5m	1.0		400m	525	6.0	525	10m	4.0	25m	22		50M					T05	
26	TRS550MP	4.5m	1.0		400m	550	6.0	550	10m	4.0	25m	20		50M					T05	
27	TRS575MP	4.5m	1.0		400m	575	6.0	575	10m	4.0	25m	22		50M					T05	
28	TRS601MP	4.5m	1.0		400m	600	6.0	600	10u	4.0	25m	30		50M					T05	
29	A203	5.0m	3.5		400m	40	2.0	20	20u	5.0	100m	10	200	700M	5.0			PE	T039	A
30	2N2726	5.5m	1.0		500m	200	10	200	1.0u	100	200m	60		15M					T05	A
31	2N2727	5.5m	1.0		500m	200	10	200	1.0u	100	200m	110		15M					T05	A
32	2SC776	5.5m	1.0		1.0	75	4.0	75	10u	100	100m	5.0		200M				PE	T039	A
33	ZT2102	5.5m	1.0		1.0	120	6.0	65	1.0u	100	150m	40		60M					T05	A
34	2N2405	5.7m	1.0		1.0	120	7.0	90	10n	100	150m	60	200	30M					T05	A
35	2N2987	5.7m	1.0		1.0	95	7.0	80	30n	5.0	200m	25	75	30M					T05	A
36	2N2988	5.7m	1.0		1.0	155	7.0	100	30n	5.0	200m	25	75	30M					T05	A
37	2N2989	5.7m	1.0		1.0	95	7.0	80	30n	5.0	200m	60	120	30M					T05	A
38	2N2990	5.7m	1.0		1.0	155	7.0	100	30n	5.0	200m	60	120	30M					T05	A
39	2N34181	5.7m	1.0		3.0	85	8.0	60	500n	2.0	1.0	20	60	40M					T05	A
40	2N34191	5.7m	1.0		3.0	125	8.0	80	500n	2.0	1.0	20	60	40M					T05	A
41	2N34201	5.7m	1.0		3.0	85	8.0	60	500n	2.0	1.0	40	120	40M					T05	A
42	2N34211	5.7m	1.0		3.0	125	8.0	80	500n	2.0	1.0	40	120	40M					T05	A
43	2N3439	5.7m	1.0		1.0	450	7.0	350	20u	100	20m	40	160	15M					T05	A
44	2N3440	5.7m	1.0		1.0	300	7.0	250	20u	100	20m	40	160	15M					T05	A
45	2N34441	5.7m	1.0		1.0	80	5.0	50	500n	1.0	500m	20	60	150M					T05	A
46	2N3498	5.7m	1.0		500m	100	6.0	100	50n	100	150m	40	120	150M					T05	A
47	2N3499	5.7m	1.0		500m	100	6.0	100	50n	100	150m	100	300	150M					T05	A
48	2N3500	5.7m	1.0		300m	150	6.0	150	50n	100	150m	40	120	150M					T05	A
49	2N3501	5.7m	1.0		300m	150	6.0	150	50n	100	150m	100	300	150M					T05	A
50	2N35061	5.7m	1.0		3.0	60	5.0	40	1.0m	2.0	1.5	40	200	60M	1.0				T05	A
51	2N35071	5.7m	1.0		3.0	80	5.0	50	1.0m	2.0	1.5	30	150	60M	1.0				T05	A
52	2N3724A1	5.7m	1.0		1.2	50	6.0	30	500u	1.0	100m	60	150	300M					T05	A
53	2N3725A1	5.7m	1.0		1.2	80	6.0	50	500u	1.0	100m	60	150	300M					T05	A
54	JAN2N37351	5.7m	1.0		1.5	75	5.0	50	250n	1.0	10m	35	250M	20					T05	A
55	2N51891	5.7m	1.0		2.0	60	5.0	35	100u	1.0	1.0	15		400M					T05	A
56	2N52621	5.7m	1.0		2.0	75	5.0	50	1.0u	1.0	500m	40		350M					T05	A
57	2N5681	5.7m	1.0		1.0	100	4.0	100	1.0u	2.0	250m	40	150	30M	2.0			PE	T039	A
58	2N5682	5.7m	1.0		1.0	120	4.0	120	1.0u	2.0	250m	40	150	30M	2.0				T05	A
59	MM1812	5.7m	1.0		100m	175	4.0	175	100n	100	10m	35	200	150M					T05	A
60	MM2258	5.7m	1.0		500m	120	5.0	120	50n	100	10m	35		150M	16				T05	A
61	MM2259	5.7m	1.0		300m	175	5.0	175	50n	100	10m	50		150M	16				T05	A
62	MM2260	5.7m	1.0		300m	175	5.0	175	50n	100	10m	50		150M	16				T05	A
63	MM3000	5.7m	1.0		200m	50	100	*	1.0u	100	10m	20		150M					T039	A
64	MM3001	5.7m	1.0		200m	50	150	*	1.0u	100	10m	20		150M					T039	A
65	MM3002	5.7m	1.0		50m	50	200	*	5.0u	100	10m	20		150M					T039	A
66	MM3003	5.7m	1.0		50m	50	250	*	5.0u	100	10m	20		150M					T039	A
67	MM3008	5.7m	1.0		400m	60	120	*	100n	100	10m	40		50k					T039	A
68	MM3009	5.7m	1.0		400m	60	180	*	100n	100	10m	40		50M					T039	A
69	SA6207	5.7m	1.0		2.0	80	6.0	80	10u	5.0	1.0	30	90	50M				DPE	T05	A
70	SA6207A	5.7m	1.0		2.0	80	6.0	80	10u	5.0	1.0	70	300	60M				DPE	T05	A
71	1IXS12	5.7m	1.0		200m	30	2.0	15	500u	100	50m	20		1.4G				PE	X39	
72	1IXS13	5.7m	1.0		200m	30	2.0	15	500u	100	50m	20		1.2G				PE	X39	
73	2N5148	6.0m	1.0		2.0	100	6.0	80	1.0m	5.0	1.0	30	90	50M					T039	A
74	2N5150	6.0m	1.0		2.0	100	6.0	80	1.0m	5.0	1.0	70	200	60M					T039	A
75	2N5152	6.0m	1.0		2.0	100	6.0	80	1.0m	5.0	2.5	30	90	60M					T039	A
76	2N5154	6.0m	1.0		2.0	100	6.0	80	1.0m	5.0	2.5	70	200	70M					T039	A
77	2N3298	6.6m	1.0		100m	25	3.0	15	50u	1.0	10m	80		200M					T018	A
78	2N4069	6.6m	1.0		200m	150	5.0	150	50n	100	30m	30		50M	100				R119	
79	2N54131	6.6m	1.0		2.0	60	6.0	40	1.0u	2.0	2.0	25	100	250M					T039	A
80	2N54141	6.6m	1.0		2.0	80	6.0	50	1.0u	2.0	2.0	20	100	250M						



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200	DWG #	C O D E
					Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo (A)	Vcb (V)	Ic (A)	MIN							
1	TRL5504	6.6m	1.0	SS	3.0	1.0	550	4.0	550	10m	100	500m	15	35	20MΔ	400n	DM	TO5		
2	TRL6014	6.6m	1.0	SS	3.0	1.0	600	4.0	600	10m	100	500m	15	35	20MΔ	400n	DM	TO5		
3	TRL6504	6.6m	1.0	SS	3.0	1.0	650	4.0	650	10u	100	500m	15	35	20MΔ	400n	DM	TO5		
4	TRL7014	6.6m	1.0	SS	3.0	1.0	700	4.0	700	10u	100	500m	15	35	20MΔ	400n	DM	TO5		
5	TRL7504	6.6m	1.0	SS	3.0	1.0	750	4.0	750	10u	100	500m	15	35	20MΔ	400n	DM	TO5		
6	TRL8014	6.6m	1.0	SS	3.0	1.0	800	4.0	800	10u	100	500m	15	35	20MΔ	400n	DM	TO5		
7	TRM2014	6.6m	1.0	SS	3.0	1.0	200	6.0	200	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
8	TRM2254S	6.6m	1.0	SS	3.0	1.0	250	6.0	225	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
9	TRM2504	6.6m	1.0	SS	3.0	1.0	250	6.0	250	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
10	TRM2504S	6.6m	1.0	SS	3.0	1.0	275	6.0	250	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
11	TRM2754S	6.6m	1.0	SS	3.0	1.0	300	6.0	275	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
12	TRM3014	6.6m	1.0	SS	3.0	1.0	300	6.0	300	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
13	TRM3014S	6.6m	1.0	SS	3.0	1.0	325	6.0	300	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
14	TRM3504	6.6m	1.0	SS	3.0	1.0	350	6.0	350	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
15	TRM3514S	6.6m	1.0	SS	3.0	1.0	375	6.0	350	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
16	TRM4014	6.6m	1.0	SS	3.0	1.0	400	6.0	400	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
17	TRM4014S	6.6m	1.0	SS	3.0	1.0	425	6.0	400	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
18	TRM4504	6.6m	1.0	SS	3.0	1.0	450	6.0	450	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
19	TRM5014	6.6m	1.0	SS	3.0	1.0	500	6.0	500	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
20	TRM5014S	6.6m	1.0	SS	3.0	1.0	525	6.0	500	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
21	TRM5504	6.6m	1.0	SS	3.0	1.0	550	6.0	550	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
22	TRM6014	6.6m	1.0	SS	3.0	1.0	600	6.0	600	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
23	TRM6504	6.6m	1.0	SS	3.0	1.0	650	6.0	650	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
24	TRM7014	6.6m	1.0	SS	3.0	1.0	700	6.0	700	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
25	TRM7504	6.6m	1.0	SS	3.0	1.0	750	6.0	750	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
26	TRM8014	6.6m	1.0	SS	3.0	1.0	800	6.0	800	3.0u	100	1.0	10	15	20MΔ	400m	DM	TO5		
27	TRS301LC	6.6m	1.0	SJ	400m	1.0	300	5.0	300	10u	100	20m	40	65	20MΔ	400m	DM	TO5		
28	TRS401LC	6.6m	1.0	SJ	400m	1.0	400	5.0	400	10u	100	20m	30	65	20MΔ	400m	DM	TO5		
29	2N2983	6.7m	1.0	SJ	3.0	1.0	155	8.0	80	10u	5.0	1.0	20	60	60M\$	600m		TO5	A	
30	2N2984	6.7m	1.0	SJ	3.0	1.0	185	8.0	120	10u	5.0	1.0	20	60	60M\$	600m		TO5	A	
31	2N2985	6.7m	1.0	SJ	3.0	1.0	155	8.0	80	10u	5.0	1.0	40	120	60M\$	600m		TO5	A	
32	2N2986	6.7m	1.0	SJ	3.0	1.0	185	8.0	120	10u	5.0	1.0	40	120	60M\$	600m		TO5	A	
33	TRL3514S	6.7m	1.0	S	3.0	1.0	375	4.0	350	.01m	100	.50	15	35	20MΔ	.40u	DM	TO5		
34	2N3469	6.9m	1.2	SC	5.0	500m	35	5.0	25	100n	1.0	500m	100	350	20M\$	500m		TO5		
35	NS90011	6.9m	1.2	SJ	5.0	500m	100	8.0	80	200n	5.0	1.0	30	350	20M\$	500m	250u	TO39	A	
36	5552-41	7.0m	1.2	SA	10		120	7.0	80	200n	2.0	1.0	70		30M\$	100n	PL	MT20	A	
37	2N55411	7.1m	1.2	SJ	5.0	1.0	175	8.0	130	500n	5.0	5.0	30	90	20M\$	500n	PL	TO5	A	
38	2SC730	7.1m	1.2	SJ	400m		40	3.0	40	10u	100	1.0m	5.0		500M\$		PE	TO39	A	
39	2SC51	7.6m	1.0	SJ	300m		60	5.0	40	100n	6.0	1.0m	50				ME	R56		
40	2SC611	7.6m	1.2	SJ	300m		30	5.0	20	1.0u	6.0	1.0m	50		180M\$		ME	R56		
41	2N343A	8.0m	1.0	SJ	60m		60	1.0	60	1.0u	10	5.0 Δ	28	90		350		TO11		
42	2N2106	8.0m	1.0	SJ	500m		60	8.0	60	200u	100	200m	12	36				TO5	A	
43	2N2107	8.0m	1.0	SJ	500m		60	8.0	60	100	100	200m	30	90				TO5	A	
44	2N2108	8.0m	1.0	SJ	500m		60	8.0	60	100	100	200m	75	200				TO5	A	
45	2N4073	8.6m	1.5	SS	150m		40	4.0	20	100n	2.0	25m	10		300M\$			TO5	A	
46	JAN2N3418T	10m	1.0	SA	3.0		85	8.0	60	500n	2.0	1.0	20	60	40M\$	300n		TO5	A	
47	JAN2N3419T	10m	1.0	SA	3.0		125	8.0	80	500n	2.0	1.0	20	60	40M\$	300n		TO5	A	
48	JAN2N3420T	10m	1.0	SA	3.0		85	8.0	60	500n	2.0	1.0	40	120	40M\$	300n		TO5	A	
49	JAN2N3421T	10m	1.0	SA	3.0		125	8.0	80	500n	2.0	1.0	40	120	40M\$	300n		TO5	A	
50	2N5079	10m	1.8	SS	1.0	200m	60	5.0	30	10n	100	150m	100	300	400M\$	1.0		TO18	A	
51	2N5080	10m	1.8	SS	1.0	200m	60	5.0	30	10u	100	150m	200	500	500M\$	1.0		TO18	A	
52	2SC213	10m	1.5	SJ	600m		50			100p	100	20m	50	150			PL	TO8		
53	2SC214	10m	1.5	SJ	600m		25			100p	100	20m	50	150			PL	TO8		
54	2SC215	10m	1.5	SJ	600m		80			100p	100	20m	50	150			PL	TO8		
55	2SC223	10m	1.5	SJ	1.0		50			100p	100	20m	20	150			PE	TO8		
56	2SC224	10m	1.5	SJ	1.0		25			100p	100	20m	20	150			PE	TO8		
57	2SC225	10m	1.5	SJ	1.0		80			100p	100	20m	20	150			PE	TO8		
58	2SC229	10m	1.5	SJ	1.0		80	5.0	80	100p	1.0	100m	50	50			PE	TO8		
59	AT301	10m	1.7	SS	200m		20	3.0	15	20n	100	35m	20	50	3.5G\$		PE	u77e	Y	
60	AT320	10m	1.7	SS	100m		20	3.0	15	20n	100	35m	20	50	3.5G\$		PE	u77e	GA	
61	KD4025	10m	1.0	SS	100m		20	2.0	10	300n	6.0	50m	20		1.2G\$			X72		
62	ST91054T	10m	15	SS	5.0		125	10	80	20u	100	2.0	30	120	10M\$	500n	PL	TO5		
63	ST91055T	10m	15	SS	5.0		145	10	100	20u	100	2.0	30	120	10M\$	500n	PL	TO5		
64	ST91056T	10m	15	SS	5.0		170	10	120	20u	100	2.0	30	120	10M\$	500n	PL	TO5		
65	2N2991	11m	2.0	SC	1.0	200m	95	7.0	80	30n	5.0	200m	25	75	30M\$			MT13	A	
66	2N2992	11m	2.0	SC	1.0	200m	155	7.0	100	30n	5.0	200m	25	75	30M\$			MT13	A	
67	2N2993	11m	2.0	SC	1.0	200m	95	7.0	80	30n	5.0	200m	60	120	30M\$			MT13	A	
68	2N2994	11m	2.0	SC	1.0	200m	155	7.0	100	30n	5.0	200m	60	120	30M\$			MT13	A	
69	2N5581T	11m	2.0	SS	800m		75	6.0	40	10n	100	100u	20		250M\$	25n		TO46	A	
70	2N5582T	11m	2.0	SS	800m		75	6.0	40	10n	100	100u	35		300M\$	25n		TO46	A	
71	40081	11m	2.0	SJ	250m			2.0		10u					27M*		DPL	TO5	A	
72	2N2952	12m	1.8	SC	250m	50m		5.0	60	100p	100	10	20	150	200M\$	3.3		TO18	A	
73	2SC130	12m	1.8	SJ	400m		60			100n	100	20m	20	150	160M\$		PL	TO8		
74	2SC234	12m	1.8	SJ	1.5		100			1.0m	100	150m	20	140			EM	TO8		
75	2SC235	12m	1.8	SJ	1.5		100			1.0m	100	150m	20	120			EM	TO8		
76	2SC236	12m	1.8	SJ	500m		90			100p	100	20m	17	100			EM	TO8		
77	2N1092T	13m	2.0	SS	500m	200m	60	12	30	500u	4.0	200m	15	75	1.5Mt	10	1.2u	TO5	A	
78	2N3295	13m	2.0	SS	250m	50m	60	5.0	60	100n	100									



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Icb @ 25°C		BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	# C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo (A)	Vcb (V)	Ic (A)	MIN						
1	TRM7015	13m	2.0	SS	3.0	1.0	700	6.0	700	3.0u	100	1.0	10	15	20MΔ	400n	DM	MD14		
2	TRM7505	13m	2.0	SS	3.0	1.0	750	6.0	750	3.0u	100	1.0	10	15	20MΔ	400n	DM	MD14		
3	TRM8015	13m	2.0	SS	3.0	1.0	800	6.0	800	3.0u	100	1.0	10	15	20MΔ	400n	DM	MD14		
4	USA55191/33†	13m	2.3	SS	600m		60	5.0	40	1.0u	4.0	250m	19	#	50MΔ	150n				
5	USA55191/34†	13m	2.3	SS	600m		60	5.0	40	1.0u	4.0	250m	19	#	50MΔ	150n				
6#	2N3869	16m	2.5	SS	500m	100m	120	5.0	80	1.0u	100	150m	40	#	50MΔ	300n		T05	A	
7	2N4296†	16m	2.0	SS	1.0	250m	350	4.0	250	100u	100	50m	50	150	20MΔ	7.0u		T066	C	
8	2N4297†	16m	2.0	SS	1.0	250m	350	4.0	250	100u	100	50m	75	300	20MΔ	7.0u		T066	C	
9	2N4298†	16m	2.0	SS	1.0	250m	500	4.0	350	100u	100	50m	25	75	20MΔ	7.0u		T066	C	
10	2N4299†	16m	2.0	SS	1.0	250m	500	4.0	350	100u	100	50m	50	150	20MΔ	7.0u		T066	C	
11	2N5421	16m	3.0	SS	500m	250m	36	4.0	18	1.0u	5.0	100m	10	60	300M	2.0		T039	A	
12#	2SC854	16m	2.5	SS	300m		40	2.0	20	1.0u	5.0	100m	10	200	800M		PE	T05		
13#	BSX45	16m	3.0	SS	1.0		80	7.0	40	10u	1.0	150m	40	120	800M		PE	T05		
14#	BSX46	16m	3.0	SS	1.0		100	7.0	60	10u	1.0	150m	40	120	60M		PE	T05		
15#	BSY34†	16m	2.6	SS	600m	200m	60	5.0	40	70n	1.0	100m	25	42	400M	3.0	DPE	T039	A	
16#	BSY58†	16m	2.6	SS	600m	200m	50	5.0	25	120n	1.0	100m	17	42	400M	3.0	DPE	T039	A	
17	PT5947	16m	3.0	SS	5.0	2.0	140	8.0	120	1.0m	2.0	1.0	40	120	80M	400m	PL	T011	G	
18#	BF109	17m	2.5	SS	.04	.01	135	2.0	135			.01 Δ	20		1.0M		PE	T05		
19#	XB433	17m	3.0	SS	800m	200m	36	4.0	18						900M		PE	T0131		
20#	XB434	17m	3.0	SS	800m	200m	36	4.0	18						900M		PE	T0117		
21#	XB473	17m	3.0	SS	800m	200m	55	4.0	30						900M		PE	T0131		
22#	XB474	17m	3.0	SS	800m	200m	55	4.0	30						900M		PE	T0117		
23	2N1505	20m	3.0	SS	500m	200m	50	3.0	40	50u	28	100m	7.0	100	250M*	13	PL	T05	A	
24	2N1506	20m	3.0	SS	500m	200m	60	4.0	40	10u	28	100m	10	100	250M*	10	PL	T05	A	
25	2N2951	20m	3.0	SS	250m	50m	60	5.0	60	100p	1.0	10	20	150	200MΔ	3.3		T05	A	
26	2N3917	20m#	2.0	SS	2.0	1.0	80	6.0	40	1.0m	4.0	1.0	30	120	50MΔ			T03	C	
27	2N3918	20m#	2.0	SS	2.0	1.0	80	6.0	40	1.0m	4.0	1.0	100	300	80MΔ			T03	C	
28	2N4133	20m	3.0	SS	600m	100m	90	5.0	80	10u	5.0	200m	10	80	200MΔ			T05	A	
29	2N4427	20m	3.5	SS	400m	400m	40	2.0	20	20u	5.0	100m	10	200	500MΔ	5.0		T039	A	
30	2N5010	20m	2.0	SS	500m	250m	500	5.0	500	6.0u	10	25m	30	180	20MΔ	56		T05	A	
31	2N5011	20m	2.0	SS	500m	250m	600	5.0	600	6.0u	10	25m	30	180	20MΔ	60		T05	A	
32	2N5012	20m	2.0	SS	500m	250m	700	5.0	700	6.0u	10	25m	30	180	20MΔ	64		T05	A	
33	2N5013	20m	2.0	SS	500m	250m	800	5.0	800	12u	10	20m	30	180	20MΔ	80		T05	A	
34	2N5014	20m	2.0	SS	500m	250m	900	5.0	900	12u	10	20m	30	180	20MΔ	80		T05	A	
35	2N5015	20m	2.0	SS	500m	250m	1.0k	5.0	1.0k	12u	10	20m	30	180	20MΔ	90		T05	A	
36	2N5108	20m	3.5	SS	400m		55	3.0	55	1.0u	5				1.2GΔ			T039	A	
37	2N5108A	20m	3.5	SS	400m		55	3.0	55	1.0u	5				1.2GΔ			T039	A	
38	2N5109	20m	3.5	SS	400m	400m	40	3.0	20	20m	Δ	15	50m	40	120	1.2GΔ			T039	A
39	2N5470	20m	3.5	SS	200m		55	3.5	55	1.0m	5							X82	A	
40	2N5528	20m	3.5	SS	10	4.0	60	3.0	40	1.0m	5.0	3.0	40	200	200MΔ	3.7		T059	A	
41	2N5529	20m	3.5	SS	10	4.0	60	3.0	40	1.0m	5.0	3.0	40	200	200MΔ	3.7		T061	A	
42	2N5530	20m	3.5	SS	10	4.0	60	3.0	40	1.0m	5.0	3.0	40	200	200MΔ	3.7		T061	A	
43	2N5532	20m	3.5	SS	10	4.0	90	3.0	75	1.0m	5.0	3.0	30	150	200MΔ	3.7		T059	A	
44	2N5533	20m	3.5	SS	10	4.0	90	3.0	75	1.0m	5.0	3.0	30	150	200MΔ	3.7		T061	A	
45	2N5534	20m	3.5	SS	10	4.0	90	3.0	75	1.0m	5.0	3.0	30	150	200MΔ	3.7		T061	A	
46	2N5644	20m	3.5	SS	250m		36	4.0	18	100u	5.0	100m	15		400MΔ			MT172h	A	
47	2N5697	20m	3.5	SS	500m		40	3.0	18	1.0m	12	40m	30					T039	A	
48	2N5710	20m	3.5	SS	500m		40	3.0	20	100u	5.0	10m	20					T039	A	
49	2N5943	20m	1.0	SS	400m		40	3.5	30	100u	15	50m	25					T039	A	
50#	2SC855	20m	3.0	SS	400m		40	2.0	20	1.0u	5.0	100m	10	200	800M		PE	T05		
51#	2SC1012A	20m	2.5	SS	60m	10m	250	5.0	250	5.0	20	40m	50	250	100M	100	DPL	T039	A	
52	40389	20m	3.5	SS	700m		60	5.0	40	250n	10	150m	20	250	100MΔ	9.3		MM9	A	
53	40409	20m	3.0	SS	700m	200m	40	4.0	90	1.0u	4.0	150m	50	250	100M	9.3	D	MM9	A	
54	40459†	20m	1.0	SS	1.0		60	8.0	40	10n	10	10m	300	300	200M	1.0	DPE	R119	A	
55	40608	20m	3.5	SS	400m		40	2.0	40	100u	15	50m	35	120	700MΔ	20	DPE	T039	A	
56	40625	20m	3.5	SS	1.0		7.0	4.0	45	25n	10	150m	100	300				X84	A	
57	40628	20m	3.5	SS	1.0		7.0	4.0	55	25n	10	150m	100	300				X84	A	
58	B3747	20m	1.5	SS	800m		25		25									MT27	A	
59	B3748	20m	1.5	SS	800m		25		25									MT27	A	
60#	BFW16A	20m	1.5	SS	150m		40		25	1.0u	5	50m	25	25	1.2G	7.5	PE	T039	A	
61#	BFW17A	20m	1.5	SS	150m		40		25	1.0u	5	50m	25	25	1.1G	7.5	PE	T039	A	
62#	BLY38	20m	5.0	SS	36	4.0	18			5.0	500m	50	50	1.3G	500m		PL	X63A	R	
63	MM1500	20m	3.5	SS	200m		30	4.0	15	100n					1.5G			R70		
64	MM1501	20m	3.5	SS	200m		30	4.0	15	100n					1.0G			R70		
65	MM8000	20m	3.5	SS	400m		40	3.5	30	20u	15	50m	30		550MΔ			T039	A	
66	MM8001	20m	3.5	SS	400m		40	3.5	30	20u	15	50m	30		700MΔ			T039	A	
67	MM8008	20m	3.5	SS	100m		35	3.0	30	100u					1.1G			T0107	A	
68	MM8009	20m	3.5	SS	400m		55	3.0	50	100u					1.0GΔ	5.0		T039		
69	MM8010	20m	3.5	SS	100m		35	3.0	30	100u					1.1G	3.0		T0107	A	
70	MM8011	20m	3.5																	

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	Pc	M A X A M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcb @ 25°C (A)		BIAS hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E	
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Vcb (V)	Ic (A)	MIN	MAX							
1#	BF179C	22m	1.7	0.0	\$J	50m	10m	80	5.0	250	50n	28	100m	10	100	120M		DPL	T05	A	
2	PT1558	22m	4.0	0.0	\$J	500m	200m	80	5.0	45	50n	28	100m	10	100	250M*	4.0	PL	T05	A	
3	2N1506A	23m	3.5	0.0	\$J	500m	200m	80	5.0	80	50n	28	100m	10	100	250M*	4.0	PL	T05	A	
4	2N3309	23m	3.5	0.0	\$S	500m	100m	50	3.0	50	100u	2.0	75	5.0	100	300MΔ	2.0		T039	A	
5	2N3659	23m	4.0	0.0	\$S	500m	250m	220	5.0	170	10n	50	10m	20	200	50MΔ		PL	T05	A	
6#	2SC844	23m	3.5	0.0	\$S	400m		40	2.0	17	1.0u	5.0	100m	10	200	800M\$		PL	T05	A	
7#	2SC845	23m	3.5	0.0	\$J	400m		55	3.5	30	1.0u	5.0	100m	10	200	800M\$		PL	T05	A	
8	PT6669	23m	4.0	0.0	\$S	200m		55	3.5	30											
9#	MP8131	24m	3.0	0.0	\$J	1.2		20	4.0	20	1.0m	5.0	200m	20	75	100MΔ		PE	X95	A	
10#	MP8132	24m	3.0	0.0	\$J	1.2		20	4.0	20	1.0m	5.0	200m	60	120	100MΔ		PE	X95	A	
11#	MP8133	24m	3.0	0.0	\$J	1.2		20	4.0	20	1.0m	5.0	200m	100	175	100MΔ		PE	X95	A	
12#	MP8134	24m	3.0	0.0	\$J	1.2		20	4.0	20	1.0m	5.0	200m	175	250	100MΔ		PE	X95	A	
13#	MP8135	24m	3.0	0.0	\$J	1.2		20	4.0	20	1.0m	5.0	200m	250		100MΔ		PE	X95	A	
14#	MP8136	24m	3.0	0.0	\$J	1.2		20	4.0	20	1.0m	5.0	200m	30	280	100MΔ		PE	X95	A	
15#	2SC777	25m	2.0	0.0	\$J	1.0		75	4.0	75	1.0u	10	100m	5.0		150M\$		PL	MD32	A	
16#	3TX620	25m	4.0	0.0	J	500m	100m	36	3.5	18	100u	5.0	50m	10	200	800M		PL	MT59	A	
17#	3TX630	25m	4.0	0.0	J	500m	100m	60	4.0	30	100u	5.0	50m	10	200	700M		PL	MT59	A	
18#	3TX650	25m	4.0	0.0	J	500m	100m	55	4.0	30	100u	5.0	50m	10	200	1.2G		PL	MT59	A	
19#	3TX820	25m	4.0	0.0	J	500m	100m	36	3.5	18	100u	5.0	50m	10	200	800M		PL	MT59	A	
20#	3TX830	25m	4.0	0.0	J	500m	100m	60	4.0	30	100u	5.0	50m	10	200	700M		PL	MT59	A	
21#	3TX850	25m	4.0	0.0	J	500m	100m	55	4.0	30	100u	5.0	50m	10	200	1.2G		PL	MT59	A	
22	40347V1	25m	4.4	0.0	\$J	1.5	500m	60	7.0	40	1.0u*	4.0	450m	20	80		2.2	D	MM9	A	
23	40348V1	25m	4.4	0.0	\$J	1.5	500m	90	7.0	65	1.0u*	4.0	300m	30	100		2.5	D	MM9	A	
24	40349V1	25m	4.4	0.0	\$J	1.5	500m	160	7.0	140	1.0u*	4.0	150m	25	100		3.3	D	MM9	A	
25#	BFS50	25m	3.0	0.0	\$J	400m		40	3.5	20	20uΔ	5.0	120m	10	#	600MΔ	5.0	PE	T039	A	
26#	BFX49	25m	2.5	0.0	\$J	250m	700m#	65	4.0	36		5.0	100m	10	25	1.3G		PL	MT72j	A	
27	S3006	25m	5.0	0.0	\$J	400m		40	3.5	30	20uΔ	5.0	50m	10	200	1.4G		PL	MT66	A	
28	2N5092	26m	2.0	0.0	\$A	1.0	500m	400	6.0	350	500n	10	100m	15	250	50MΔ	20		T05	A	
29	2N5095	26m	2.0	0.0	\$A	1.0	500m	500	6.0	400	500n	10	100m	15	250	50MΔ	20		T05	A	
30	2N5097	26m	2.0	0.0	\$A	1.0	500m	600	6.0	450	500n	10	100m	15	250	50MΔ	20		T05	A	
31	2N5098	26m	2.0	0.0	\$A	1.0	500m	700	6.0	500	500n	10	100m	15	250	50MΔ	20		T05	A	
32	2N5099	26m	2.0	0.0	\$A	1.0	500m	800	6.0	550	500n	10	100m	15	250	50MΔ	20		T05	A	
33	MS15404	26m	1.0	0.0	\$A	400m	200m	650	5.0	540	10u	10	100m	20		50MΔ	60	DM	T05	A	
34	MS16604	26m	1.0	0.0	\$A	400m	200m	800	5.0	660	10u	10	100m	20		50MΔ	60	DM	T05	A	
35	PT1544	26m	4.0	0.0	\$J	500m	200m	50	4.0	50	100u	5.0	50m	10		250M*		PL	T05	A	
36	PT1545	26m	4.0	0.0	\$J	500m	200m	50	4.0	50	100u	5.0	50m	10		250M*		PL	T05	A	
37	TRS1004	26m	1.0	0.0	\$J	400m	50m	100	6.0	100	3.0u	4.0	50m	30	∅	50k\$	30		T05	A	
38	TRS1204	26m	1.0	0.0	\$J	400m	50m	120	6.0	120	3.0u	4.0	50m	30	∅	50k\$	30		T05	A	
39	TRS1404	26m	1.0	0.0	\$J	400m	50m	140	6.0	140	3.0u	4.0	50m	30	∅	50k\$	30		T05	A	
40	TRS1604	26m	1.0	0.0	\$J	400m	50m	160	6.0	160	3.0u	4.0	50m	30	∅	50k\$	30		T05	A	
41	TRS1804	26m	1.0	0.0	\$J	400m	50m	180	6.0	180	3.0u	4.0	50m	30	∅	50k\$	30		T05	A	
42	TRS2004	26m	1.0	0.0	\$J	400m	50m	200	6.0	200	2.0u	4.0	50m	20	∅	50k\$	30		T05	A	
43	TRS2254	26m	1.0	0.0	\$J	400m	50m	225	6.0	225	3.0u	4.0	50m	22	∅	50k\$	30		T05	A	
44	TRS2504	26m	1.0	0.0	\$J	400m	50m	250	6.0	250	2.0u	4.0	50m	20	∅	50k\$	30		T05	A	
45	TRS2754	26m	1.0	0.0	\$J	400m	50m	275	6.0	275	3.0u	4.0	50m	22	∅	50k\$	30		T05	A	
46	TRS2804S	26m	1.0	0.0	\$A	400m		340	5.0	280	2.0u	8.0	200m	25	45	50MΔ	30	DM	T05	A	
47	TRS3014	26m	1.0	0.0	\$J	400m		300	6.0	300	2.0u	4.0	50m	30	#	50M	30		T05	A	
48	TRS3204S	26m	1.0	0.0	\$J	400m		385	5.0	320	2.0u	8.0	200m	25	45	50MΔ	30	DM	T05	A	
49	TRS3254	26m	1.0	0.0	\$J	400m	50m	325	6.0	325	3.0u	4.0	50m	22	∅	50k\$	30		T05	A	
50	TRS3504	26m	1.0	0.0	\$J	400m	50m	350	6.0	350	2.0u	4.0	50m	20	#	50M	38		T05	A	
51	TRS3604S	26m	1.0	0.0	\$J	400m	50m	360	5.0	360	2.0u	8.0	200m	25	45	50MΔ	30	DM	T05	A	
52	TRS3754	26m	1.0	0.0	\$J	400m	50m	375	6.0	375	3.0u	4.0	50m	22	∅	50k\$	30		T05	A	
53	TRS4004	26m	1.0	0.0	\$J	400m	50m	400	6.0	400	2.0u	4.0	50m	30	#	65	50M	30		T05	A
54	TRS4014	26m	1.0	0.0	\$J	400m	50m	400	6.0	400	2.0u	4.0	50m	30	∅	50k\$	30		T05	A	
55	TRS4014S	26m	1.0	0.0	\$J	400m	50m	480	5.0	400	10u	10	100m	20	30	50MΔ	60	DM	T05	A	
56	TRS4254	26m	1.0	0.0	\$J	400m	50m	425	6.0	425	3.0u	4.0	50m	22	∅	50k\$	30		T05	A	
57	TRS4404S	26m	1.0	0.0	\$J	400m	50m	530	5.0	440	10u	10	100m	20	30	50MΔ	60	DM	T05	A	
58	TRS4504	26m	1.0	0.0	\$J	400m	50m	450	6.0	450	2.0u	4.0	50m	30	#	50M	30		T05	A	
59	TRS4754	26m	1.0	0.0	\$J	400m	50m	475	6.0	475	2.0u	4.0	50m	22	∅	50k\$	30		T05	A	
60	TRS4804S	26m	1.0	0.0	\$J	400m	50m	580	5.0	480	10u	10	100m	20	30	50MΔ	60	DM	T05	A	
61	TRS5014	26m	1.0	0.0	\$A	400m	50m	500	6.0	500	2.0u	5.0	25m	30	#	65	50M	60		T05	A
62	TRS5204S	26m	1.0	0.0	\$A	400m	50m	525	5.0	520	10u	10	100m	20	30	50MΔ	60	DM	T05	A	
63	TRS5254	26m	1.0	0.0	\$J	400m	50m	525	6.0	525	2.0u	5.0	25m	22	∅	50k\$	72		T05	A	
64	TRS5404S	26m	1.0	0.0	\$A	400m	50m	650	5.0	540	10u	10	100m	20	30	50MΔ	60	DM	T05	A	
65	TRS5504	26m	1.0	0.0	\$A	400m	50m	550	6.0	550	10u	5.0	25m	20	#	60	50M	76		T05	A
66	TRS5754	26m	1.0	0.0	\$J	400m	50m	575	6.0	575	2.0u	5.0	25m	22	∅	50k\$	72		T05	A	
67	TRS5804S	26m	1.0	0.0	\$A	400m	50m	700	5.0	580	10u	10	100m	20	3.0	50MΔ	60	DM	T05	A	
68	TRS6014	26m	1.0	0.0	\$A	400m	50m	600	6.0	600	10u	5.0	25m	30	#	65	50M	60		T05	A
69	TRS6204S	26m	1.0	0.0	\$A	400m	50m	750	5.0	620	10u	10	100m	20	30	50MΔ	60	DM	T05	A	
70	TRS6504	26m	1.0	0.0	\$A	400m	50m	650	6.0	650	10u	5.0	25m	25	#	50M	60		T05	A	
71	TRS6604S	26m	1.0	0.0	\$A	400m	50m	800	5.0	660	10u	10	100m	20	30	50MΔ	60	DM	T05	A	
72	TRS7014	26m	1.0	0.0	\$A	400m	50m	700	6.0	700	10u	5.0	25m	25	#	50M	60		T05	A	
73	TRS7014S	26m	1.0	0.0	\$A	400m	50m	850	5.0	700	10u	10	100m	20	30	50MΔ	60		T05	A	

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C						MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y2000 s/a TO200 Ser.	# C L E O D E
						lc (A)	lb (A)	BVcbo (V)	BVebo (V)	BVCeo (V)	lcbo @ MAX @ 25°C (A)	Vcb (V)	lc (A)								
1	2N3666	28m	5.0	∅	SS	1.0		120	8.0	80	50n∅	100	150m	100	300	60MΔ	165		Δ	T05	A∅
2	2N3742	28m	1.0	∅	SS	50m		300	7.0	300	200n∅	100	30m	20	200	30MΔ				T05	A∅
3	JAN2N3742	28m	1.0	∅	SS	50m		300	7.0	300	500n∅	100	30m	20	120 #	40MΔ				T039	A∅
4	JAN2N3743	28m	1.0	∅	SJ	50m		300	5.0	300	500n∅	100	30m	50	200 #	40MΔ				T039	A∅
5	2N3866	28m	5.0	∅	SS	400m		55	3.5	30	100u#	5.0	50m	10	200	500MΔ	10			T039	A∅
6	JAN2N3866	28m	1.0	∅	SJ	400m		60	3.5	30	20uΔ	5.0	50m	15	200	500k				T039	A∅
7	2N3945	28m	5.0	∅	SS	1.0		70	8.0	50	100n∅	100	150m	40	150	60MΔ	3.3			T05	A∅
8	2N3948	28m	5.0	∅	SS	400m		36	3.5	20	100n∅	5.0	50m	15	200	700MΔ				T039	A
9	2N4429	28m	5.0	∅	SS	425m	150m	55 †	3.5 †	35	1.0m#	5.0	50m	20	200	700MΔ				MT59j	R
10	2N4924	28m	1.0	∅	SS	200m		100	5.0	100	100n∅	100	150m	40	200 #	100MΔ				T039	A∅
11	2N4925	28m	1.0	∅	SS	200m		150	5.0	150	100n∅	100	150m	40	200 #	100MΔ				T039	A∅
12	2N4926	28m	5.0	∅	SS	50m		200	7.0	200	100n∅	100	30m	20	200 #	30MΔ				T039	A∅
13	JAN2N4926	28m	1.0	∅	SJ	50m		200	7.0	200	500n∅	100	30m	30	120 #	40MΔ				T039	A∅
14	2N4927	28m	5.0	∅	SS	50m		250	7.0	250	100n∅	100	30m	20	200 #	30MΔ				T039	A∅
15	JAN2N4927	28m	1.0	∅	SJ	50m		250	7.0	250	500n∅	100	30m	30	120 #	40MΔ				T039	A∅
16	JAN2N4930	28m	1.0	∅	SJ	50m		200	5.0	200	500n∅	100	30m	50	200 #	40MΔ				T039	A∅
17	JAN2N4931	28m	1.0	∅	SJ	50m		250	5.0	250	500n∅	100	30m	50	200 #	40MΔ				T039	A∅
18	2N4976	28m	5.0	∅	SS	400m	150m	55	3.5	30	5.0m#	5.0	50m	20	250	1.0MΔ				MT66	R
19	2N5279	28m	1.0	∅	SS	1.0	500m	400	7.0	300	20u∅	100	20m	40	150	15MΔ				T05	A∅
20	2N5422	28m	5.0	∅	SS	1.0	500m	36	4.0	18	100u∅	5.0	500m	10	60	300MΔ	1.0			T039	A∅
21	2N5481	28m	5.0	∅	SS	200m	50m	55 †	3.0 †	30	2.0m	5.0	50m	20	250					MT74	R
22	2N5527s	28m	5.0	∅	SJ	5.0	1.0	60	3.0	40	1.0m	5.0	3.0	40	200 #	200MΔ	3.7			R81j	A∅
23	2N5531s	28m	5.0	∅	SJ	5.0	1.0	90	3.0	75	1.0m	5.0	3.0	30	150 #	200MΔ	3.7			R81j	A∅
24	2N5535s	28m	5.0	∅	SJ	2.0	8.0	60	3.0	50	1.0m	5.0	1.0	30	150 #	150MΔ	6.2			T061	A∅
25	2N5536s	28m	5.0	∅	SJ	2.0	8.0	60	3.0	50	1.0m	5.0	1.0	30	150 #	150MΔ	6.2			T061	A
26	2N5537s	28m	5.0	∅	SJ	2.0	8.0	90	3.0	75	1.0m	5.0	1.0	30	150 #		6.2			T061	A∅
27	2N5538s	28m	5.0	∅	SJ	2.0	8.0	90	3.0	75	1.0m	5.0	1.0	30	150 #		6.2			T061	A∅
28	2N5687	28m	5.0	∅	SS	500m		40 †	3.0 †	20	1.0mΔ	1.2	50m	15						T039	A∅
29	2N5698	28m	5.0	∅	SS	500m		40 †	3.0 †	18	1.0mΔ	1.2	40m	30						T0131	R
30	2N5766	28m	5.0	∅	SS	200m	40m	55 †	3.5 †	25	3.0m∅	5.0	50m	20 †						MT77	Z
31	2N5859†	28m	1.0	∅	SJ	2.0		80	6.0	40	250n∅	1.0	1.0	15	100	250MΔ	700m	30nZ		T039	A∅
32	2N5860†	28m	1.0	∅	SJ	2.0		90	7.0	45	250n∅	1.0	1.0	15	80	250MΔ	700m	15nZ		T039	A∅
33	2N5861†	28m	1.0	∅	SJ	2.0		100	6.0	50	300n∅	1.0	500m	25	100	200MΔ		15nZ		T039	A∅
34	2N5913	28m	3.5	∅	SS	330m		38 †	3.5 †	14	300uΔ	1.0								T039	A
35	2N5920	28m	3.5	∅	SS	250m		50 †	3.5 †		1.0m#	1.0								X82a	A
36	2N5922	28m	5.0	∅	SS	425m		55 †	3.5 †	35	4.0m#	1.0								MT75d	R
37	2SC890	28m	4.3	∅	SJ	400m		40	3.0	20	1.0m#	100	100m	20 #		600MΔ				PE	T039
38	2SC908	28m	5.0	∅	SJ	500m		40	3.0	40	50u∅	100	100m	5.0		800MΔ				PE	T05
39	40082	28m	5.0	∅	SJ	1.5					1.0u	100				27M*				DPL	T039
40	40309	28m	1.0	∅	SJ	700m	200m	2.5	2.5	18	250n∅	4.0	50m	70	350	100MΔ				DPL	T05
41	40311	28m	1.0	∅	SJ	700m	200m	2.5	2.5	30	250n∅	4.0	50m	70	350	100MΔ				DPL	T05
42	40314	28m	1.0	∅	SJ	700m	200m	2.5	2.5	40	250n∅	4.0	50m	70	350	100MΔ				DPL	T05
43	40315	28m	1.0	∅	SJ	700m	200m	2.5	2.5	35	250n∅	4.0	50m	70	350	100MΔ				DPL	T05
44	40317	28m	1.0	∅	SJ	700m	200m	2.5	2.5	40	250n∅	4.0	10m	40	200	100MΔ				DPL	T05
45	40320	28m	1.0	∅	SJ	700m	200m	2.5	2.5	40	250n∅	4.0	10m	40	200	100MΔ				DPL	T05
46	40323	28m	1.0	∅	SJ	700m	200m	2.5	2.5	18	250n∅	4.0	50m	70	350	100MΔ				DPL	T05
47	40360	28m	5.0	∅	SJ	700m	200m	4.0	4.0	70	1.0mΔ	4.0	10m	40	200	100MΔ				DPL	T05
48	40361	28m	5.0	∅	SJ	700m	200m	4.0	4.0	70	1.0mΔ	4.0	50m	70	350	100MΔ				DPL	T05
49	40366	28m	1.0	∅	SJ	1.0		120	7.0	65	2.0n∅	1.0	150m	40	120 #					DΔ	T05
50	40367	28m	1.0	∅	SJ	1.5	1.0	100	1.2	55	4.0n∅	4.0	200m	35	100		7.0			DΔ	T05
51	40385	28m	1.0	∅	SJ	1.0		450	7.0	350	2.0uΔ	1.0	20m	40	160		10			DΔ	T05
52	40407	28m	1.0	∅	SJ	700m	200m	4.0	4.0	50	250n∅	1.0	1.0m	40	200	100MΔ	9.3			D	T05
53	40408	28m	1.0	∅	SJ	700m	200m	4.0	4.0	90	1.0uΔ	4.0	10m	40	200	100MΔ				D	T05
54	40578	28m	5.0	∅	SJ	400m		55	3.5	30	100uΔ	1.0								D	T05
55	40581	28m	5.0	∅	SJ	1.5					1.0u					27M*				DPL	T039
56	40611	28m	1.0	∅	SA	700m	200m	2.5	2.5	25	50n∅	4.0	50m	70	500					D	T05
57	40616	28m	1.0	∅	SA	700m	200m	2.5	2.5	32	50n∅	4.0	50m	70	500					D	T05
58	40635	28m	1.0	∅	SA	700m	200m	2.5	2.5	32	50n∅	4.0	50m	70	500					D	T05
59	BC140†	28m	3.7	∅	SJ	1.0		80	7.0	40	100u#	1.0	150m	50	250	50MΔ				PL	T05
60	BC141†	28m	3.7	∅	SJ	1.0		100	7.0	60	100u#	1.0	100m	63	250 *	50MΔ		250n∅		E	T039
61	BFX33	28m	3.7	∅	SJ	1.0		100	7.0	60	100u#	1.0	100m	63	250 *	50MΔ		250n∅		E	T039
62	BFX35	28m	3.7	∅	SJ	400m		55	3.5	30	100n∅	1.5	80m	25		800MΔ				PE	T039
63	BFX44	28m	3.7	∅	SJ	400m		60	3.5	40	50n∅	2.0	50m	40	160	500MΔ	8.0			PE	T

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE TO C (W/°C)	MAX. FREE AIR @ 25°C (W)	PC	M	T	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		BIAS (V)	MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E
							lc (A)	lb (A)	BVcbo (V)	BVebo (V)	BVceo (V)	lcbo (A)	Vcbo (V)									
1	A209	30m	3.5 Δ	Δ	Δ	Δ	200m		40	3.5	25	10u∅	5.0∅	50m∅	25		1.2G			PE∅	MT71	R
2	BLV76	32m	4.0				300m		65	4.0	36	5.0∅	5.0∅	250m	30	∅	900M	2.0		PE	X63a	A
3	2N10671	33m	5.0 ∅				500m	200m	65	12	30	500u	4.0∅	200m	15	75	1.5M	10	1.2u	PE	TO8	A∅
4	2N5058	33m	1.0				150m		300	7.0	300	50n∅	25∅	30m	35	150 #	30MΔ			PE	TO5	A∅
5	2N5059	33m	1.0				150m		250	6.0	250	50n∅	25∅	30m	30	150 #	30MΔ			PE	TO5	A∅
6	2N5715	33m	6.0 ∅				200m	80m	50	3.5†	30	500u∅	5.0∅	50m	20	200	3.5GΔ			PE	TO5	A∅
7	2SC8031	33m	5.0 ∅				1.5		60	4.0	35	1.0u∅	4.0∅	400m	20	300	90MΔ		80n	PL	TO5	∅
8	2SC976	33m	5.0 ∅				400m		55	3.5	35	100u∅	2.8∅	20m	10	180 #	1.3GΔ			PE	MT83	V
9	40250V1	33m	5.8				4.0	2.0	50	5.0	40	1.0m∅	4.0∅	1.5	25	100			DPL	MD30	∅	
10	40321	33m	1.0				1.0	500m		5.0	300	100u∅	1.0∅	20m	25	200			DPL	TO5	A∅	
11	40326	33m	1.0				700m	20		2.5		250n∅	4.0∅	10m	40	200			DPL	TO5	A∅	
12	40327	33m	1.0				1.0	500m		5.0		100u†	1.0∅	20m	40	250			DPL	TO5	A∅	
13	40372	33m∅	5.8				4.0		90	7.0	55	500u∅Δ	4.0∅	500m	25	100 #	800MΔ			DΔ	MD30	C∅
14	40373	33m∅	5.8				3.0	2.0	160	7.0	140	10mΔ	4.0∅	500m	20	80	15MΔ			DΔ	MD30	C∅
15	40374	33m	5.8				2.0	1.0	250	6.0	175	10mΔ	1.0∅	100m	40	20	15MΔ			DΔ	MD30	C∅
16	40375	33m∅	5.8				1.0	5.0	120	7.0		5.0mΔ	5.0∅	500m	50	200	60MΔ			E	MD30	∅
17	BFX51	33m	6.0 Δ				1.0		80	4.0	80	10u∅	1.0∅	100m	15	40	180MΔ	1.8		E	TO5	∅
18	SFT443	33m	6.0 Δ				1.0		80	4.0	80	10u∅†	1.0∅	100m	15	40	180MΔ	1.8		E	TO5	∅
19	ZT90	33m	1.0				1.0 #		80	6.0	60	100n∅	1.0∅	200m	60	200 #	30MΔ	3.5		PL	TO5	A∅
20	ZT91	33m	1.0				1.0 #		120	6.0	100	1.0u∅	1.0∅	200m	40	120	250MΔ	6.0		PL	TO5	A∅
21	ZT92	33m	1.0				1.0 #		120	6.0	100	1.0u∅	1.0∅	200m	65	200 #	250MΔ	6.0		PL	TO5	A∅
22	ZT93	33m	1.0				1.0 #		120	6.0	80	100n∅	1.0∅	150m	40	120	300MΔ	3.5		PL	TO5	A∅
23	ZT94	33m	1.0				1.0 #		60	6.0	45	1.0u∅	1.0∅	10m	20	#	300MΔ	3.5		PL	TO5	A∅
24	ZT95	33m	1.0				1.0 #		60	6.0	60	100n∅	1.0∅	350m	30	200	300MΔ	3.4		PL	TO5	A∅
25	ZT3440	33m#	1.0				1.0	500m	300	7.0	250	20u∅	1.0∅	20m	40	160	20MΔ		50n	DΔ	TO5	∅
26	2N5334†	34m	6.0 ∅				3.0	500m	60	8.0	60	5.0u	2.0∅	1.0	30	150 #	40MΔ		50n		TO39	A∅
27	2N5335†	34m	6.0 ∅				3.0	500m	80	8.0	80	5.0u	2.0∅	1.0	30	150 #	40MΔ		50n		TO39	A∅
28	2N5336†	34m	6.0 ∅				5.0	1.0	80	6.0	80	10u	2.0∅	2.0	30	120	30MΔ		100n		TO39	A∅
29	2N5337†	34m	6.0 ∅				5.0	1.0	80	6.0	80	10u	2.0∅	2.0	60	240	30MΔ		100n		TO39	A∅
30	2N5338†	34m	6.0 ∅				5.0	1.0	100	6.0	100	10u	2.0∅	2.0	30	120	30MΔ		100n		TO39	A∅
31	2N5339†	34m	6.0 ∅				5.0	1.0	100	6.0	100	10u	2.0∅	2.0	60	240	30MΔ		100n		TO39	A∅
32	PT6618	34m∅	6.0 ∅				400m		55	3.5	30	10m†									MT75d	R
33	2N5923	35m	6.0 ∅				750m		55	3.5	35	10m†									TO5	A∅
34	2N2657†	40m	1.2				5.0	500m	80	7.0	60	100n∅	2.0∅	1.0	40	120 #	20MΔ		80n		TO5	A∅
35	2N2658†	40m	1.2				5.0	500m	100	7.0	80	100n∅	2.0∅	1.0	40	100 #	20MΔ		80n		TO5	A∅
36	2N2949	40m	6.0 ∅				700m	100m	60	3.0	60	100n∅	2.0∅	4.0m	5.0	100 #	100MΔ	1.2			R70	A∅
37	2N2950	40m	6.0 ∅				700m	100m	60	3.0	60	100n∅	2.0∅	4.0m	5.0	100 #	100MΔ	1.2			MT30	A
38	2N3296	40m	6.0 ∅				700m	100m	60	3.0	40	100n∅	2.0∅	4.0m	5.0	50	100MΔ	1.2			MT30	A
39	2N3553	40m	7.0 ∅				350m	100m	65	4.0†	40	1.0m#	5.0∅	250m	15	150	350MΔ	4.0			TO39	A∅
40	JAN2N3553	40m	1.0				1.0		85	4.0	40	200u†	5.0∅	150m	15	150 #	50MΔ				TO39	A∅
41	2N3593	40m	1.0				500m	250m	200	10	200	1.0u∅	8.0∅	200m	30	90	15MΔ				MT20	A∅
42	2N3594	40m	1.0				500m	250m	200	10	200	1.0u∅	8.0∅	200m	75	150 #	15MΔ				MT20	A∅
43	2N3850†	40m	3.0 ∅				5.0	500m	100	5.0	80	100n∅	1.0∅	1.0	50	150 #	20MΔ	1.2	150n		TO59	A∅
44	2N3851†	40m	3.0 ∅				5.0	500m	100	5.0	80	100n∅	1.0∅	1.0	30	90	20MΔ	1.2	150n		TO59	A∅
45	2N3852†	40m	3.0 ∅				5.0	500m	60	5.0	40	100n∅	1.0∅	1.0	50	150 #	20MΔ	1.2	150n		TO59	A∅
46	2N3853†	40m	3.0 ∅				5.0	500m	60	5.0	40	100n∅	1.0∅	1.0	30	90 #	20MΔ	1.2	150n		TO59	A∅
47	2N3916	40m	5.0 ∅				150m	150m	150	5.0	150	1.0m#	1.0∅	150m	40	200	20MΔ				MD28	∅
48	2N3924	40m	7.0 ∅				500m		35	4.0	18	100u∅					250MΔ				TO39	∅
49	2N4349†	40m	7.0 ∅				2.0		65	5.0	40	100u#	1.0	1.0	20	200	350MΔ	500m	130ns	PE	TO5	∅
50	2N4350	40m	7.0 ∅				350m		65	4.0	40	100u#	5.0∅	350m	50	150 #	300MΔ	2.9			TO5	A∅
51	2N4862	40m	4.0 ∅				2.0	500m	140	8.0	120	100n∅	5.0∅	500m	50	150 #	50MΔ				TO6	A
52	2N4863	40m	4.0 ∅				2.0	500m	140	8.0	120	100n∅	5.0∅	500m	50	150 #	50MΔ				TO6	A
53	2N5090	40m	5.0 ∅				400m	400m	55	3.5	30	20uΔ	5.0∅	5.0m	10	200	500MΔ	10			TO6	A
54	2N5102	40m	7.0 ∅				3.3	1.0	90	4.0	50	5.0	4.0∅	500m	10	100	150MΔ				TO6	A
55	2N5252	40m	1.0				1.0	250m	300	6.0	300	10u	1.0∅	100m	40	120	30MΔ	5.0			TO39	A∅
56	2N5253	40m	1.0				1.0	250m	300	6.0	300	10u	1.0∅	100m	80	250	30MΔ	5.0			TO39	A∅
57	2N5916	40m	4.0 ∅				200m		55	3.5†	24	1.0m†	1.5∅	50m	20		1.0GΔ				MM14	R
58	2N5917	40m	4.0 ∅				200m		55	3.5†	24	1.0m†	1.5∅	50m	20		1.0GΔ				MM14	R
59	2SC354	40m	7.0 ∅				1.5		40	4.0		1.0u∅	4.0∅	500m	100	∅	180MΔ			PL	TO5	A
60	2SC541	40m	6.0 ∅				1.0		65	4.0	35	5.0u∅	4.0∅	100m	25	∅	450MΔ			PE	TO5	A
61	2SC547	40m	6.0 ∅				5.0		65	4.0	40	100u#	3.0∅	150m	10		400MΔ	4.0				



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR to 25°C (W)	MAX P <sub>C</sub> (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ MAX V <sub>cb</sub> @ 25°C (A)		BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG # Y200 s/a TO200 Ser.	C O D E
						Ic (A)	Ib (A)	BV <sub>cb0</sub> (V)	BV <sub>eb0</sub> (V)	BV <sub>ce0</sub> (V)	Icbo (A)	Icbo (A)	Ic (A)	MIN								
1	MS170B	40m	2.0	2.0	SA	1.0	400m	700	5.0	700	12u	100	30			20M	34		DM	T05		
2	S715	40m	7.0	7.0	SJ	800m		55	3.5	30	40uΔ					800M	5.0		PE	T039		
3	SD1181	40m	5.0	5.0	SJ	500m		55	3.5	30	20uΔ					1.2G			PE	T060		
4	SD1182	40m	5.0	5.0	SJ	500m		55	3.5	30	20uΔ					1.2G			PE	MT591		
5	SD1183	40m	5.0	5.0	SJ	500m		55	3.5	30	20uΔ					1.2G			PE	MT66		
6	SDT4455	40m	4.0	4.0	SJ	500		80	8.0	40	1.0u	5.0	100			20M			PL	T05		
7	SDT4456	40m	4.0	4.0	SJ	500		100	8.0	80	1.0u	5.0	100			20M			PL	T05		
8	SDT4483	40m	4.0	4.0	SJ	500		60	8.0	40	1.0u	5.0	100			20M			PL	T05		
9	SDT4821	40m	7.0	7.0	SJ	500		225	8.0	200	1.0u	5.0	100			30M			PL	T05		
10	SDT4822	40m	7.0	7.0	SJ	500	1.0	275	8.0	250	1.0u	5.0	100			30M			PL	T05		
11	SDT4823	40m	7.0	7.0	SJ	500	1.0	300	8.0	275	1.0u	5.0	100			30M			PL	T05		
12	SDT4824	40m	7.0	7.0	SJ	500	1.0	325	8.0	300	1.0u	5.0	100			30M			PL	T05		
13	SDT4825	40m	7.0	7.0	SJ	500	1.0	325	8.0	300	1.0u	5.0	100			30M			PL	T05		
14	SDT5001	40m	4.0	4.0	SJ	500m		500m	8.0	8.0	100m	2.0	500m	50		150			PL	T046	A	
15	SDT5002	40m	4.0	4.0	SJ	500m		500m	8.0	8.0	100m	2.0	500m	50		150			PL	T046	A	
16	SDT5003	40m	4.0	4.0	SJ	500m		500m	100	8.0	100m	2.0	500m	50		150			PL	T046	A	
17	SDT5004	40m	4.0	4.0	SJ	500m		500m	140	8.0	100m	2.0	500m	50		150			PL	T046	A	
18	SDT5005	40m	4.0	4.0	SJ	500m		500m	180	8.0	100m	2.0	500m	50		150			PL	T046	A	
19	SDT5006	40m	4.0	4.0	SJ	500m		500m	60	8.0	100m	2.0	500m	30		50M			PL	T046	A	
20	SDT5007	40m	4.0	4.0	SJ	500m		500m	80	8.0	100m	2.0	500m	30		50M			PL	T046	A	
21	SDT5008	40m	4.0	4.0	SJ	500m		500m	100	8.0	100m	2.0	500m	30		50M			PL	T046	A	
22	SDT5009	40m	4.0	4.0	SJ	500m		500m	140	8.0	100m	2.0	500m	30		50M			PL	T046	A	
23	SDT5010	40m	4.0	4.0	SJ	500m		500m	180	8.0	100m	2.0	500m	30		50M			PL	T046	A	
24	SDT5011	40m	4.0	4.0	SJ	500m		500m	60	8.0	100m	2.0	500m	120		50M			PL	T046	A	
25	SDT5012	40m	4.0	4.0	SJ	500m		500m	80	8.0	100m	2.0	500m	120		50M			PL	T046	A	
26	SDT5013	40m	4.0	4.0	SJ	500m		500m	100	8.0	100m	2.0	500m	120		50M			PL	T046	A	
27	SDT5014	40m	4.0	4.0	SJ	500m		500m	140	8.0	100m	2.0	500m	120		50M			PL	T046	A	
28	SDT5015	40m	4.0	4.0	SJ	500m		500m	180	8.0	100m	2.0	500m	120		50M			PL	T046	A	
29	SDT5051	40m	4.0	4.0	SJ	500m		500m	175	8.0	100m	2.0	500m	50		150			PL	T046	A	
30	SDT5052	40m	4.0	4.0	SJ	500m		500m	200	8.0	100m	2.0	500m	50		150			PL	T046	A	
31	SDT5053	40m	4.0	4.0	SJ	500m		500m	225	8.0	100m	2.0	500m	50		150			PL	T046	A	
32	SDT5054	40m	4.0	4.0	SJ	500m		500m	175	8.0	100m	2.0	500m	30		150			PL	T046	A	
33	SDT5055	40m	4.0	4.0	SJ	500m		500m	200	8.0	100m	2.0	500m	30		150			PL	T046	A	
34	SDT5056	40m	4.0	4.0	SJ	500m		500m	225	8.0	100m	2.0	500m	30		150			PL	T046	A	
35	SDT5057	40m	4.0	4.0	SJ	500m		500m	80	8.0	100m	2.0	500m	50		150			PL	T05	A	
36	SDT5058	40m	4.0	4.0	SJ	500m		500m	80	8.0	100m	2.0	500m	50		150			PL	T05	A	
37	SDT5059	40m	4.0	4.0	SJ	500m		500m	100	8.0	100m	2.0	500m	50		150			PL	T05	A	
38	SDT5060	40m	4.0	4.0	SJ	500m		500m	140	8.0	100m	2.0	500m	50		150			PL	T05	A	
39	SDT5061	40m	4.0	4.0	SJ	500m		500m	180	8.0	100m	2.0	500m	50		150			PL	T05	A	
40	SDT5062	40m	4.0	4.0	SJ	500m		500m	60	8.0	100m	2.0	500m	30		50M			PL	T05	A	
41	SDT5063	40m	4.0	4.0	SJ	500m		500m	80	8.0	100m	2.0	500m	30		50M			PL	T05	A	
42	SDT5064	40m	4.0	4.0	SJ	500m		500m	100	8.0	100m	2.0	500m	30		50M			PL	T05	A	
43	SDT5065	40m	4.0	4.0	SJ	500m		500m	140	8.0	100m	2.0	500m	30		50M			PL	T05	A	
44	SDT5066	40m	4.0	4.0	SJ	500m		500m	180	8.0	100m	2.0	500m	30		50M			PL	T05	A	
45	SDT5067	40m	4.0	4.0	SJ	500m		500m	60	8.0	100m	2.0	500m	120		50M			PL	T05	A	
46	SDT5068	40m	4.0	4.0	SJ	500m		500m	80	8.0	100m	2.0	500m	120		50M			PL	T05	A	
47	SDT5069	40m	4.0	4.0	SJ	500m		500m	100	8.0	100m	2.0	500m	120		50M			PL	T05	A	
48	SDT5070	40m	4.0	4.0	SJ	500m		500m	140	8.0	100m	2.0	500m	120		50M			PL	T05	A	
49	SDT5071	40m	4.0	4.0	SJ	500m		500m	180	8.0	100m	2.0	500m	120		50M			PL	T05	A	
50	SDT5072	40m	4.0	4.0	SJ	500m		500m	175	8.0	100m	2.0	500m	50		150			PL	T05	A	
51	SDT5073	40m	4.0	4.0	SJ	500m		500m	200	8.0	100m	2.0	500m	50		150			PL	T05	A	
52	SDT5074	40m	4.0	4.0	SJ	500m		500m	225	8.0	100m	2.0	500m	50		150			PL	T05	A	
53	SDT5075	40m	4.0	4.0	SJ	500m		500m	175	8.0	100m	2.0	500m	30		150			PL	T05	A	
54	SDT5076	40m	4.0	4.0	SJ	500m		500m	200	8.0	100m	2.0	500m	30		150			PL	T05	A	
55	SDT5077	40m	4.0	4.0	SJ	500m		500m	225	8.0	100m	2.0	500m	30		150			PL	T05	A	
56	SDT6101	40m	7.0	7.0	SJ	2.0		65	4.0	30	10u	5.0	2.0	10		450M			PL	T05		
57	SDT6102	40m	7.0	7.0	SJ	2.0		65	4.0	40	10u	5.0	2.0	10		450M			PL	T05		
58	SDT6103	40m	7.0	7.0	SJ	2.0		65	4.0	50	10u	5.0	2.0	10		450M			PL	T05		
59	SDT9001	40m	4.0	4.0	SJ	500m		50	5.0	30	1.0u	2.0	1.0	20		10M			PL	T05	A	
60	SDT9002	40m	4.0	4.0	SJ	500m		50	5.0	30	1.0u	2.0	1.0	20		10M			PL	T05	A	
61	SDT9003	40m	4.0	4.0	SJ	500m		90	5.0	70	1.0u	2.0	1.0	20		10M			PL	T05	A	
62	SDT9004	40m	4.0	4.0	SJ	500m		50	5.0	30	1.0u	2.0	1.0	30		90			PL	T05	A	
63	SDT9005	40m	4.0	4.0	SJ	500m		50	5.0	50	1.0u	2.0	1.0	30		90			PL	T05	A	
64	SDT9006	40m	4.0	4.0	SJ	500m		70	5.0	70	1.0u	2.0	1.0	30		90			PL	T05	A	
65	SDT9007	40m	4.0	4.0	SJ	500m		50	5.0	30	1.0u	2.0	1.0	50		150			PL	T05	A	
66	SDT9008	40m	4.0	4.0	SJ	500m		50	5.0	30	1.0u	2.0	1.0	50		150			PL	T05	A	
67	SDT9009	40m	4.0	4.0	SJ	500m		90	5.0	70	1.0u	2.0	1.0	50		150			PL	T05	A	
68	SDT9010	40m	4.0	4.0	SJ	500m		50	5.0	30	1.0u	2.0	1.0	100		10M			PL	T05	A	
69	SDT9011	40m	4.0	4.0	SJ	500m		70	5.0	50	1.0u	2.0	1.0	100		10M			PL	T05	A	
70	SDT9012	40m	4.0	4.0	SJ	500m		90	5.0	70	1.0u	2.0	1.0	100		10M			PL	T05	A	
71	SE8042	40m	1.0	1.0	SJ	1.0		30	6.0	30	50n	1.0	150m	40		540			DPL	T039		
72	STT4451	40m	1.2	1.2	SJ	1.0		80	8.0	40	1.0u	5.0	1.0	20		60			PL	T05		
73	STT4452	40m	1.2	1.2	SJ	1.0		100	8.0	80	1.0u	5.0	1.0	20		60			PL	T05		
74	STT4453	40m	1.2	1.2	SJ	1.0		80	8.0	40	1.0u	5.0	1.0	40		120			PL	T05		
75	STT4454	40m	1																			



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVceo (V)	BVceo (V)	hFE (A)	hFE (V)								
1	MPSU10	45m	1.0		TJ	1.0		300	8.0	300	200	150	1.0m	25	60	60MΔ	75	AN	X81	A0
2	2N2033	50m	5.0		Δ	3.0	1.0	80	10	60	25	4.0	50	20	60	1.5Kt	80	Δ	T05	A0
3	2N2034	50m	5.0		Δ	3.0	1.0	80	10	60	25	4.0	50	20	60	1.5 t	300m	Δ	T05	A0
4	JAN2N2631	50m	8.8		Δ	1.5		80	4.0	60	100	100	300m	30	150 #	150MΔ	670m	PL	R81	A0
5	2N2876	50m	1.8		Δ	2.5		80	4.0	60	100	100	300m	30	150 #	200MΔ			T06	A0
6	2N2911	50m	5.0		Δ	3.0	1.0	150	10	125	2.0	1.0	20	60	1.0M			T05	A0	
7	2N3262†	50m	1.0		Δ	1.5		100	4.0	80	100	4.0	500m	40		150MΔ	600m	20m	T039	A0
8	2N3619	50m	7.5		Δ	2.5	500m	75	4.0	40	25	5.0	1.0	40 #		200MΔ		PLD	R50	A0
9	2N3620	50m	7.5		Δ	5.0	1.0	75	4.0	40	25	5.0	1.0	40 #		200MΔ			MT27	
10	2N3623	50m	7.5		Δ	2.5	500m	75	4.0	40	1.0	5.0	1.0	40 #		200MΔ			R50	
11	2N3624	50m	7.5		Δ	5.0	1.0	75	4.0	40	1.0	5.0	1.0	40 #		200MΔ			MT27	
12	2N3627	50m	7.5		Δ	2.5	500m	100	4.0	50	1.0	5.0	1.0	40 #		200MΔ			R50	
13	2N3628	50m	7.5		Δ	5.0	1.0	100	4.0	50	1.0	5.0	1.0	40 #		200MΔ			MT27	
14	2N3675†	50m	8.8		Δ	3.0	1.0	90	7.0	55	5.0	1.0	1.0	12	60	1.0MΔ	800m	5.0u	T05	
15	2N3676†	50m	8.8		Δ	3.0	1.0	90	7.0	90	5.0	1.0	1.0	12	60	1.0MΔ	800m	5.0u	T05	
16	2N3928†	50m	5.0		Δ	3.0	500m	80	4.0	40	1.0	1.5	20	300 #		200MΔ		30n	R114	A0
17	2N4054	50m	4.0		Δ	100m		300	7.0	300	100	100	50m	30	90	15MΔ	67		X51	L
18	2N4055	50m	4.0		Δ	100m		250	7.0	250	100	100	50m	30	90	15MΔ	67		X51	L
19	2N4056	50m	4.0		Δ	100m		200	7.0	200	100	100	50m	30	90	15MΔ	67		X51	L
20	2N4057	50m	4.0		Δ	100m		150	7.0	150	100	100	50m	30	90	15MΔ	67		X51	L
21	2N4132	50m	7.5		Δ	600m	100m	90	5.0	80	1.0	5.0	200m	10	80 #	200MΔ			T037	A0
22	2N4150†	50m	5.0		Δ	5.0	2.0	100	5.0	80	100	5.0	5.0	40	120 #	15MΔ		200n	T05	A0
23	JAN2N4150†	50m	1.5		Δ	10		100	7.0	70	100	5.0	5.0	40	120 #	15MΔ		500n	T05	A
24	2N4225†	50m	5.0		Δ	3.0	.50	80	6.0	40	1.0	5.0	1.0	40	150 #	150MΔ	3.3	.03u	R114	
25	2N4226†	50m	5.0		Δ	3.0	.50	100	6.0	60	1.0	5.0	1.0	40	150 #	150MΔ	3.3	.03u	R114	
26	2N5237†	50m	5.0		Δ	5.0	2.0	150	5.0	120	1.0	5.0	5.0	40	120 #	50MΔ		500n	T05	A0
27	JAN2N5237†	50m	1.5		Δ	10		150	7.0	120	100	5.0	5.0	40	120 #	15MΔ		500n	T05	A
28	2N5238†	50m	5.0		Δ	5.0	2.0	200	5.0	170	1.0	5.0	5.0	40	120 #	50MΔ		500n	T05	A0
29	JAN2N5238†	50m	1.5		Δ	10		200	7.0	170	100	5.0	5.0	40	120 #	15MΔ		500n	T05	A
30	2N5327†	50m	5.0		Δ	10	2.0	100	5.0	80	2.0	1.0	100	300	100MΔ	500m		200n	T05	A
31#	2SC582	50m	4.0		Δ	100m		300	3.0	300	100	10	50m	30	150	150MΔ			T066	
32#	2SC778	50m	2.5		Δ	2.0		80	4.0	80	10	100	50	50		800MΔ			MD32	
33#	2SC911	50m	2.0		Δ	500m		40	3.0	40	50	100	100	5.0					X63b	GE
34#	2SC973	50m	7.0		Δ	500m		40	3.0	40	50	100	50	5.0 #		1.2G			MT83	V
35#	2SD136	50m	4.0		Δ	100m		200	3.0	200	10	100	50	30	250	25MΔ			MD26	
36#	2SD137	50m	4.0		Δ	100m		300	3.0	300	10	100	50	30	250	25MΔ			MD26	
37#	2SD156	50m	4.0		Δ	100m		200	3.0	200	10	100	50	20	250 *	20MΔ	100		T066	
38#	2SD157	50m	4.0		Δ	100m		300	3.0	300	10	100	50	20	250 *	20MΔ	100		T066	
39	40347	50m	1.0		Δ	1.5	500m	60	7.0	40	1.0*	4.0	450m	20	80		2.2		T05	A0
40	40348	50m	1.0		Δ	1.5	500m	90	7.0	65	1.0*	4.0	300m	20	100		2.5		T05	A0
41	40349	50m	1.0		Δ	1.5	500m	160	7.0	140	1.0*	4.0	150m	25	100		3.3		T05	A0
42	B3465	50m	5.0		Δ	3.0		100	6.0	60	100	5.0	1.0	40		200MΔ	500m		T05	A0
43	B3466	50m	5.0		Δ	3.0		100	6.0	60	100	5.0	1.0	40		200MΔ	500m		MT27	
44	B3531	50m	4.0		Δ	5.0		80	8.0	40	1.0	.50	1.0	20	60	30MΔ	500m		T05	PE
45	B3532	50m	4.0		Δ	5.0		100	8.0	80	1.0	.50	1.0	20	60	30MΔ	500m		T05	PE
46	B3533	50m	4.0		Δ	5.0		80	8.0	40	1.0	.50	1.0	40	120	30MΔ	500m		T05	PE
47	B3534	50m	4.0		Δ	5.0		100	8.0	80	1.0	.50	1.0	40	120	30MΔ	500m		T05	PE
48	B3535	50m	4.0		Δ	5.0		80	8.0	40	1.0	.50	1.0	100		30MΔ	500m		T05	PE
49	B3536	50m	4.0		Δ	5.0		100	8.0	80	1.0	.50	1.0	100		30MΔ	500m		T05	PE
50	B3537	50m	4.0		Δ	5.0		60	5.0	40	1.0	.50	1.0	20	60	40MΔ	500m		T05	PE
51	B3594	50m	5.0		Δ	10		60	5.0	40	1.0	.50	5.0	40	120	30MΔ	100m		T05	PE
52	B3595	50m	5.0		Δ	10		80	5.0	60	1.0	.50	5.0	40	120	30MΔ	100m		T05	PE
53	B3596	50m	5.0		Δ	10		100	5.0	80	1.0	.50	5.0	40	120	30MΔ	100m		T05	PE
54	B3597	50m	5.0		Δ	10		60	5.0	40	1.0	.50	5.0	20	60	15MΔ	1.2		T05	PE
55	B3598	50m	5.0		Δ	10		80	5.0	60	1.0	.50	5.0	20	60	15MΔ	1.2		T05	PE
56	B3599	50m	5.0		Δ	10		100	5.0	80	1.0	.50	5.0	20	60	15MΔ	1.2		T05	PE
57	B3600	50m	5.0		Δ	10		60	5.0	40	1.0	.50	5.0	40	120	15MΔ	1.2		T05	PE
58	B3601	50m	5.0		Δ	10		80	5.0	60	1.0	.50	5.0	40	120	15MΔ	1.2		T05	PE
59	B3602	50m	5.0		Δ	10		100	5.0	80	1.0	.50	5.0	40	120	15MΔ	1.2		T05	PE
60	B3603	50m	5.0		Δ	10		60	5.0	40	1.0	.50	5.0	100		15MΔ	1.2		T05	PE
61	B3604	50m	5.0		Δ	10		80	5.0	60	1.0	.50	5.0	100		15MΔ	1.2		T05	PE
62	B3605	50m	5.0		Δ	10		100	5.0	80	1.0	.50	5.0	100		15MΔ	1.2		T05	PE
63	B3606	50m	4.0		Δ	5.0		50	5.0	30	1.0	.50	1.0	20		15MΔ	1.2		T05	PE
64	B3607	50m	4.0		Δ	5.0		70	5.0	50	1.0	.50	1.0	20		1.0	20		T05	PE
65	B3608	50m	4.0		Δ	5.0		90	5.0	70	1.0	.50	1.0	20		1.0	20		T05	PE
66	B3609	50m	4.0		Δ	5.0		50	5.0	30	1.0	.50	1.0	30	90				T05	PE
67	B3610	50m	4.0		Δ	5.0		70	5.0	50	1.0	.50	1.0	30	90				T05	PE
68	B3611	50m	4.0		Δ	5.0		90	5.0	70	1.0	.50	1.0	30	90				T05	PE
69	B3612	50m	4.0		Δ	5.0		50	5.0	30	1.0	.50	1.0	50	150				T05	PE
70	B3613	50m	4.0		Δ	5.0		70	5.0	50	1.0	.50	1.0	50	150				T05	PE
71	B3614	50m	4.0		Δ	5.0		90	5.0	70	1.0	.50	1.0	50	150				T05	PE
72	B3615	50m	4.0		Δ	5.0		50	5.0	30	1.0	.50	1.0	100					T05	PE
73	B3616	50m	4.0		Δ	5.0		70	5.0	50	1.0	.50	1.0	100					T05	PE
74	B3617	50m	4.0		Δ	5.0		90	5.0	70	1.0	.50	1.0	100					T05	PE
75	B3749	50m	3.7		Δ	5.0		50		50									MT27	
76	B3750	50m	3.7		Δ	5.0		50		50									MT27	
77*	D40N1	50m	1.3		Δ	100m		5.0	250	5.0	10u	100	20m	30	90	80MΔ			X51c	F
78*	D40N3	50m	1.3		Δ	100m		5.0	300	5.0	10u	100	20m	30	90	80MΔ			X51c	F
79#	DT1311																			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M	T	A	E	M	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	# DWG CODE	C O A D E						
										Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	BIAS							MIN	MAX	fae (Hz)			
																Vcb (V)										Ic (A)		
1	SDT3426	50m	1.0							5.0	2.0	60	6.0	60	0.1m	5.0	2.0	20	60	40MΔ	60	50u	PEΔ	T05				
2	SDT3427	50m	1.0							5.0	2.0	80	6.0	80	0.1m	5.0	2.0	20	60	40MΔ	60	50u	PEΔ	T05				
3	SDT3428	50m	1.0							5.0	2.0	100	6.0	100	0.1m	5.0	2.0	20	60	40MΔ	60	50u	PEΔ	T05				
4	SDT3429	50m	1.0							5.0	2.0	120	6.0	120	0.1m	5.0	2.0	20	60	40MΔ	60	50u	PEΔ	T05				
5	SDT4301	50m	8.7							500m	40	10	40	150u	4.0	500m	20	60	4.0M					ME	T05			
6	SDT4302	50m	8.7							500m	60	10	60	150u	4.0	500m	20	60	4.0M					ME	T05			
7	SDT4303	50m	8.7							500m	80	10	80	150u	4.0	500m	20	60	4.0M					ME	T05			
8	SDT4304	50m	8.7							500m	40	10	40	150u	4.0	500m	40	120	4.0M					ME	T05			
9	SDT4305	50m	8.7							500m	60	10	60	150u	4.0	500m	40	120	4.0M					ME	T05			
10	SDT4306	50m	8.7							500m	80	10	80	150u	4.0	500m	40	120	4.0M					ME	T05			
11	SDT4307	50m	8.7							500m	40	10	40	150u	4.0	1.0	20	60	4.0M					ME	T05			
12	SDT4308	50m	8.7							500m	60	10	60	150u	4.0	1.0	20	60	4.0M					ME	T05			
13	SDT4309	50m	8.7							500m	80	10	80	150u	4.0	1.0	20	60	4.0M					ME	T05			
14	SDT4310	50m	8.7							500m	40	10	40	150u	4.0	1.0	40	120	4.0M					ME	T05			
15	SDT4311	50m	8.7							500m	60	10	60	150u	4.0	1.0	40	120	4.0M					ME	T05			
16	SDT4312	50m	8.7							500m	80	10	80	150u	4.0	1.0	40	120	4.0M					ME	T05			
17	SDT7401	50m	5.0							5.0	2.0	60	5.0	40	1.0u	5.0	5.0	40	120	#	15MΔ			PLΔ	T05	A		
18	SDT7402	50m	5.0							5.0	2.0	80	5.0	60	1.0u	5.0	5.0	40	120	#	15MΔ			PLΔ	T05	A		
19	SDT7403	50m	5.0							5.0	2.0	100	5.0	80	1.0u	5.0	5.0	40	120	#	15MΔ			PLΔ	T05	A		
20	SDT7411	50m	5.0							5.0	2.0	60	5.0	40	1.0u	5.0	5.0	20	60	#	15MΔ			PLΔ	T05	A		
21	SDT7412	50m	5.0							5.0	2.0	80	5.0	60	1.0u	5.0	5.0	20	60	#	15MΔ			PLΔ	T05	A		
22	SDT7413	50m	5.0							5.0	2.0	100	5.0	80	1.0u	5.0	5.0	20	60	#	15MΔ			PLΔ	T05	A		
23	SDT7414	50m	5.0							5.0	2.0	60	5.0	40	1.0u	5.0	5.0	40	120	#	15MΔ			PLΔ	T05	A		
24	SDT7415	50m	5.0							5.0	2.0	80	5.0	60	1.0u	5.0	5.0	40	120	#	15MΔ			PLΔ	T05	A		
25	SDT7416	50m	5.0							5.0	2.0	100	5.0	80	1.0u	5.0	5.0	40	120	#	15MΔ			PLΔ	T05	A		
26	SDT7417	50m	5.0							5.0	2.0	60	5.0	40	1.0u	5.0	5.0	100	#	15MΔ			PLΔ	T05	A			
27	SDT7418	50m	5.0							5.0	2.0	80	5.0	60	1.0u	5.0	5.0	100	#	15MΔ			PLΔ	T05	A			
28	SDT7419	50m	5.0							5.0	2.0	100	5.0	80	1.0u	5.0	5.0	100	#	15MΔ			PLΔ	T05	A			
29	ST84027	50m	5.0							5.0	1.0	170	20	120	10u	10	200m	40	120		10M	700m	1.0u	P	T05			
30	ST84028	50m	5.0							5.0	1.0	190	10	140	10u	10	200m	40	120		10M	700m	1.0u	P	T05			
31	ST84029	50m	5.0							5.0	1.0	220	10	180	10u	10	200m	40	120		10M	700m	1.0u	P	T05			
32	STC7644	50m	8.8							3.0	3.0	150	10	150	250u	#	4.0	1.0	20	60	#			D	T05	A		
33	STC7645	50m	8.8							3.0	3.0	180	10	180	250u	#	4.0	1.0	15	60	#			D	T05	A		
34#	ZT2876	50m	1.8							2.5	2.0	80	4.0	60	1.0u	2.0	1.0	15	25	#	200MΔ			PL	MT31			
35	TRS100HC	52m	1.0							2.0	200m	100	5.0	100	3.0u	10	1.0	15	25	#	40MΔ	5.0		DM	T05	A		
36	TRS125HC	52m	1.0							2.0	200m	125	5.0	125	3.0u	10	1.0	15	25	#	40MΔ	5.0		DM	T05	A		
37	TRS150HC	52m	1.0							2.0	200m	150	5.0	150	3.0u	10	1.0	15	25	#	40MΔ	5.0		DM	T05	A		
38	TRS175HC	52m	1.0							2.0	200m	175	5.0	175	3.0u	10	1.0	15	25	#	40MΔ	5.0		DM	T05	A		
39	TRS200HC	52m	1.0							2.0	200m	200	5.0	200	3.0u	10	1.0	15	25	#	40MΔ	5.0		DM	T05	A		
40	MPSU02	54m	1.0							1.0	800m	60	5.0	40	100u	#	150m	50	300		150MΔ	2.6		ANT	X81	A		
41	2N3925	55m	1.0							1.0	36	4.0	18	100u	#	2.0	4.0	20	100	#	250MΔ				TO102	A		
42	2N4877	55m	1.0							4.0	1.0	70	5.0	60	100u	#	4.0	2.0	100	#	4.0MΔ				TO39	A		
43	2N5688	56m	7.0							5.0m	40	3.0	20	1.0u	10	50m	15	35	#	300	#	100n		PET	TO117	R		
44#	2SC1013	56m	7.0							1.5	35	5.0	20	1.0u	4.0	500m	35	300	#	70MΔ	1.0	200n		PET	X51b	P		
45#	2SC1014	56m	7.0							1.5	50	5.0	40	1.0u	4.0	500m	35	300	#	70MΔ	1.0	200n		PET	X51b	P		
46	2N3830	57m	1.0							1.2	80	5.0	50	500u	#	1.0	500m	30	35	#	200MΔ	50n			T05	A		
47	2N3831	57m	1.0							1.2	70	5.0	40	500u	#	1.0	500m	35	35	#	200MΔ	50n			T05	A		
48	2N3961	57m	1.0							1.0	65	4.0	40	1.0u	#	500m	30	35	#	350MΔ					T05	A		
49	2N4063	57m	1.0							1.0	500m	450	7.0	350	20u	#	10	20m	40	160		15MΔ			MD34			
50	2N4064	57m	1.0							1.0	500m	300	7.0	250	20u	#	10	20m	40	160		15MΔ			MD34			
51	2N4430	57m	1.0							1.0	500m	55	3.5	40	2.0m	#	5.0	100m	20	200		600MΔ			MD66	V		
52	2N5320	57m	1.0							2.0	1.0	100	7.0	75	100u	#	4.0	500m	30	130		50MΔ			T05	A		
53	2N5321	57m	1.0							2.0	1.0	75	5.0	50	100u	#	4.0	500m	40	250		50MΔ	1.6	80n		T05	A	
54	2N5482	57m	1.0							3.5m	100m	50	3.0	30	3.0m	#	5.0	50m	20	250		50MΔ			MT74	R		
55	2N5699	57m	1.0							1.0	40	3.0	18	1.5m	10	50m	15	35	#	300	#				TO129	R		
56	2N5703	57m	1.0							1.0	36	3.0	18	1.0m	5.0	50m	15	35	#	300	#				TO117	R		
57	2N5764	57m	1.0							1.0	250m	55	3.5	25	5.0m	#	5.0	100m	20	100		50MΔ			MT77	R		
58	2N5767	57m	1.0							1.0	75m	55	3.5	25	5.0m	#	5.0	100m	20	100		50MΔ			MT77	Z		
59	2N5784	57m	1.0							3.5	1.0	80	5.0	80	1.0m	#	2.0	1.0	20	100		625m			T05	P		
60	2N5785	57m	1.0							3.5	1.0	65	5.0	65	1.0m	#	2.0	1.2	20	100		625m			T05	P		
61	2N5786	57m	1.0							3.5	1.0	45	3.5	45	1.0m	#	2.0	1.6	20	100		625m			T05	P		
62	2N5846	57m	1.0							1.0	36	4.0	18	500u	#	5.0	250m	50							TO102	A		
63	2N5924	57m	1.0							1.5	55	3.5	35	20m	#	5.0	250m	50							TO102	A		
64#	2SC691	57m	1.0							1.0	750m	60	4.0	40	200u	#	10	100m	50	#	400MΔ			PET	MT59b	R		
65#	2SC702	57m	1.0					</																				

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	PC	M	T	ABSOLUTE MAX. RATINGS @25°C					MAX. V <sub>cb</sub> @ 25°C (A)	hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E			
							I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>be</sub> (V)	V <sub>ceo</sub> (V)		MIN	MAX									
1#	XB475	83m	11	∅	∅	∅	2.0	500m	80	4.0	30	100uΔ	5.0∅	125m	10	200	900MΔ	4.0	1.6u	PE	TO17	A	
2	2N4440	65m	11	∅	∅	∅	1.5	200m	65	4.0	40	100uΔ	4.0∅	750m	15	75	400MΔ	2.6		D	TO60	A∅	
3	2N1068T	66m	10	∅	∅	∅	1.5	500m	60	12	30	500u	4.0∅	750m	15	75	1.5M†				TO8	A∅	
4	2N2201	66m	2.0	∅	∅	∅	1.0	500m	120	10	100	50u	6.8∅	200m	25	90	10MΔ				MD14	A	
5	2N2202	66m	1.0	∅	∅	∅	1.0	500m	120	10	100	50u	6.8∅	200m	25	90	10MΔ				R46	A	
6	2N2203	66m	1.0	∅	∅	∅	1.0	500m	120	10	100	50u	6.8∅	200m	25	90	10MΔ				R46	A	
7	2N2204	66m	1.0	∅	∅	∅	1.0	500m	120	10	100	50u	6.8∅	200m	25	90	10MΔ				MT19	A	
8	2N2472	66m	1.0	∅	∅	∅	1.0	500m	120	10	100	10uΔ	10∅	200m	30	90	10MΔ				MD14	A	
9	2N2611	66m	2.0	∅	∅	∅	1.0	500m	120	10	100	50u	10∅	200m	12	36	20M†	8.5		ME	TO5	A	
10	2N2849-11	66m	850m	∅	∅	∅	3.0	100	60	5.0	80	1.0∅	1.0	100	300	300	30kΔ	400m	125n∅	PE	TO5	∅	
11	2N2854-11	66m	850m	∅	∅	∅	2.5	500m	100	4.0	40	100n∅	1.0	100	300	300	30kΔ	400m	125n∅	PE	TO5	∅	
12	2N3016	66m	3.3	∅	∅	∅	2.5	100	100	4.0	50	100n∅	5.0∅	10	60						R81	∅	
13	2N3017	66m	3.3	∅	∅	∅	5.0	100	100	4.0	50	100n∅	5.0∅	10	60						MT27	∅	
14	2N3015	66m	1.1	∅	∅	∅	1.5	200m	65	4.0	40	100uΔ	5.0∅	250m	10	100	350MΔ	4.0			TO60	A	
15	JAN2N3375	66m	2.0	∅	∅	∅	1.5	500m	65	4.0	40	200u∅	5.0∅	150m	15	150	350MΔ				MT31	∅	
16	2N3588	66m	2.0	∅	∅	∅	500m	250m	200	10	200	1.0∅	8.0∅	200m	30	90	15MΔ				MD14	A	
17	2N3590	66m	2.0	∅	∅	∅	500m	250m	200	10	200	1.0∅	8.0∅	200m	30	90	15MΔ				MD14	A	
18	2N3591	66m	1.0	∅	∅	∅	500m	250m	200	10	200	1.0∅	8.0∅	200m	30	90	15MΔ				R46	A	
19	2N3592	66m	1.0	∅	∅	∅	500m	250m	200	10	200	1.0∅	8.0∅	200m	30	90	15MΔ				R46	A	
20	2N3595	66m	1.5	∅	∅	∅	500m	250m	200	10	200	1.0∅	8.0∅	200m	30	90	15MΔ				MT20a	A∅	
21	2N3596	66m	1.5	∅	∅	∅	500m	250m	200	10	200	1.0∅	8.0∅	200m	30	90	15MΔ				MT20a	A∅	
22	2N3861	66m	2.0	∅	∅	∅	25m	50m	530	5.0	530	100u	4.0∅	25m	30	200	50MΔ	60			MD14	∅	
23	2N3926	66m	12	∅	∅	∅	1.5	200m	36	4.0	18	100u∅	5.0	10	60	250MΔ				TO60	∅		
24	2N4012	66m	5.0	∅	∅	∅	1.0	500m	65	4.0	40	100uΔ	5.0∅	10	60	350MΔ	4.0				TO60	A	
25	2N4271	66m	5.0	∅	∅	∅	1.0	500m	175	8.0	140	50n∅	10∅	200m	20	140	20MΔ				TO5	A∅	
26	2N4272	66m	5.0	∅	∅	∅	1.0	500m	175	8.0	140	100n∅	10∅	200m	20	140	10MΔ				TO5	A∅	
27	2N4305†	66m	5.0	∅	∅	∅	2.5	100	120	6.0	80	10u#	2.0∅	10	50	150	10MΔ				TO5	A∅	
28	2N4307†	66m	5.0	∅	∅	∅	2.5	100	120	6.0	80	10u#	2.0∅	10	50	150	10MΔ				TO5	A	
29	2N4309†	66m	5.0	∅	∅	∅	2.5	100	120	6.0	80	10u#	2.0∅	10	50	150	10MΔ				TO5	A	
30	2N4311†	66m	5.0	∅	∅	∅	2.5	100	120	6.0	80	10u#	2.0∅	10	50	150	10MΔ				TO5	A∅	
31	JAN2N4440	66m	2.0	∅	∅	∅	1.5	500m	65	4.0	40	200u∅	5.0∅	150m	15	150	350MΔ				MT31	∅	
32	2N5729†	66m	10	∅	∅	∅	5.0	100	140	5.0†	80	1.0m#	2.0∅	20	300	30MΔ					TO5	∅	
33	2SC5220†	66m	10	∅	∅	∅	2.0	200	140	5.0	100	1.0∅	2.0∅	200m	30	150	60MΔ	300m	200n∅	DPL	MD29	A∅	
34	2SC5222†	66m	10	∅	∅	∅	1.5	140	140	5.0	100	1.0∅	2.0∅	200m	30	90	60MΔ	300m	130n∅	DPL	MD29	A∅	
35	2SC5230†	66m	10	∅	∅	∅	1.5	120	120	5.0	80	1.0∅	2.0∅	200m	30	150	60MΔ	300m	130n∅	DPL	MD29	A∅	
36	2SC5238†	66m	10	∅	∅	∅	1.5	120	120	5.0	80	1.0∅	2.0∅	200m	30	90	60MΔ	300m	130n∅	DPL	MD29	A∅	
37	2SC5241	66m	10	∅	∅	∅	500m	100	5.0	60	3.0∅	2.0∅	200m	30	150	50MΔ				PL	MD29	∅	
38	2SC5240†	66m	10	∅	∅	∅	1.5	100	100	5.0	60	1.0∅	2.0∅	200m	30	150	60MΔ	300m	130n∅	DPL	MD29	A∅	
39	2SC5242†	66m	10	∅	∅	∅	1.5	100	100	5.0	60	1.0∅	2.0∅	200m	30	90	60MΔ	300m	130n∅	DPL	MD29	A∅	
40	2SC5244†	66m	10	∅	∅	∅	500m	70	5.0	40	3.0∅	2.0∅	200m	30	150	50MΔ				PL	MD29	∅	
41	2SC5250†	66m	10	∅	∅	∅	1.5	70	5.0	40	3.0∅	2.0∅	200m	30	150	50MΔ				DPL	MD29	∅	
42	2SC5251†	66m	10	∅	∅	∅	1.5	70	5.0	40	3.0∅	2.0∅	200m	30	150	50MΔ				DPL	MD29	A∅	
43	2SC5252†	66m	10	∅	∅	∅	1.5	70	5.0	40	3.0∅	2.0∅	200m	30	90	60MΔ	300m	130n∅	DPL	MD29	A∅		
44	2SC549	66m	10	∅	∅	∅	1.5	65	4.0	40	5.0∅	3.0∅	500m	25	∅	450MΔ				PE	TO60	A	
45	2SC550	66m	10	∅	∅	∅	1.5	65	4.0	40	5.0∅	3.0∅	500m	25	∅	400MΔ				PE	TO60	A	
46	2SC598	66m	10	∅	∅	∅	1.5	36	4.0	40	5.0∅	2.8∅	100m	30	†	400MΔ	2.0			PE	MT68	A	
47	2SC635	66m	10	∅	∅	∅	1.5	65	4.0	40	3.0∅	1.0∅	500m	20	200	500MΔ				PE	TO60	∅	
48	2SC637	66m	10	∅	∅	∅	1.0	40	4.0	20	10u∅	14∅	500m	20	#	500MΔ				PE	MT68	A∅	
49	2SC697	66m	10	∅	∅	∅	3.0	600m	100	5.0	60	3.0∅	2.0	100mΔ	30	173	35MΔ	400m			PE	TO37	A
50	2SC697A	66m	10	∅	∅	∅	3.0	600m	130	5.0	80	3.0∅	2.0	100mΔ	30	173	35MΔ	400m			PE	TO37	A
51	2SC799	66m	10	∅	∅	∅	1.0	#	40	5.0	40	1.0∅	10∅	150m	50	90	150MΔ	600m			PE	TO5	A∅
52	2SD182	66m	10	∅	∅	∅	1.0	40	12	30	15u∅	4.0∅	750m	15	120	1.5M†				D	TO8	∅	
53	2SD183	66m	10	∅	∅	∅	1.0	50	12	55	15u∅	4.0∅	750m	15	120	1.5M†				D	TO8	∅	
54	3TX616	66m	10	∅	∅	∅	500m	200m	65	4.0	50	100u	4.0∅	750m	15	120	500MΔ				PE	MT59	∅
55	2849-11	66m	1.0	∅	∅	∅	3.0	100	5.0	80	100n∅	1.0∅	1.0	100	#	30MΔ					TO5	∅	
56	2849-31	66m	1.5	∅	∅	∅	3.0	100	5.0	80	100n∅	1.0∅	1.0	100	#	30MΔ					MT32	∅	
57	40279†	66m	12	∅	∅	∅	1.5	65	4.0	40	100n∅	5.0∅	150m	10						PE	TO60	A∅	
58	40281†	66m	12	∅	∅	∅	1.0	100uΔ	36	4.0	18	100uΔ	5.0∅	150m	10					PE	TO60	A∅	
59	40291	66m	11	∅	∅	∅	500m	65	4.0	50	#	100nΔ	5.0∅	150m	10					PE	TO60	A∅	
60	40306	66m	11	∅	∅	∅	1.5	65	4.0	40	#	100nΔ	5.0∅	150m	10					PE	TO60	A∅	
61	40346	66m	1.0	∅	∅	∅	1.0	500m	175	5.0	40	5.0uΔ	10∅	10m	25					DA	TO5	A∅	
62	40346V2	66m	10	∅	∅	∅	1.0	500m	175	5.0	40	5.0uΔ	10∅	10m	25					DA	MD34	A∅	
63	40347V2	66m	12	∅	∅	∅	1.5	500m	60	7.0	40	1.0u*	4.0∅	450m	20	80	2.2				MD34	A∅	
64	40348V2	66m	12	∅	∅	∅	1.5	500m	90	7.0	65	1.0u*	4.0∅	300m	30	100	2.5				D	MD34	A∅
65	40349V2	66m	12	∅	∅	∅	1.5	500m	160	7.0	140	1.0u*	4.0∅	150m	25	100	3.3				D	MD34	A∅
66	40412	66m	1.0	∅	∅	∅	1.0	500m	250	5.0	40	1.0m*	20∅	30m	40					DA	TO5	A∅	
67	40412V2	66m	10	∅	∅	∅	1.0	500m	250	5.0	40	1.0m*	20∅	30m	40			</					

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @25°C						MAX. hFE		BIAS Vcb Ic	MIN MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	DWG #	L C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BEVbo (V)	BVceo (V)	Icbo (A)	Vcb (V)	Ic (A)									
1	MSP6605	66m	2.0	SA	400m	200m	800	5.0	660	10u	100	100m	20		50M	60		DM	MD14	A0		
2	PPR1006S	66m	7.5	SA	5.0		60		40				40							MT27	A0	
3	PPR1008S	66m	7.5	SA	5.0		90		75				30							MT27	A0	
4	PT5916	66m	11	S	5.0	2.0	100	6.0	80	1.0m	2.0	1.0	40	150	30M	250m	350n	PL	TO5	TO5	A	
5	SDT6104	66m	11	S	5.0	2.0	65	4.0	30	10u	5.0	2.0	10		450M			PL	TO60	TO60		
6	SDT6105	66m	11	S	5.0	2.0	65	4.0	40	10u	5.0	2.0	10		450M			PL	TO60	TO60		
7	SDT6106	66m	11	S	5.0	2.0	65	4.0	50	10u	5.0	2.0	10		450M			PL	TO60	TO60		
8	SDT9901	66m	115	S	15	3.0	60	12	40	1.0u	5.0	5.0	20	60	5.0M			ME	TO61	TO61		
9	SDT9902	66m	115	S	15	3.0	80	12	60	1.0u	5.0	5.0	20	60	5.0M			ME	TO61	TO61		
10	SDT9903	66m	115	S	15	3.0	100	12	80	1.0u	5.0	5.0	20	60	5.0M			ME	TO61	TO61		
11	SDT9904	66m	115	S	15	3.0	120	12	100	1.0u	5.0	5.0	20	60	5.0M			ME	TO61	TO61		
12	TR25X5	66m	2.0	SJ	1.0	500m	300	12	250	100u	100	20m	1.6k	30k	50kΔ					MD14		
13	TR330X5	66m	2.0	SJ	1.0	500m	400	12	300	100u	100	20m	2.5k	32k	50kΔ					MD14		
14	TR335X5	66m	2.0	SJ	1.0	500m	450	12	350	100u	100	20m	1.6k	30k	50kΔ					MD14		
15	TR3100S	66m	2.0	SJ	400m	50m	100	6.0	100	3.0u	4.0	50m	30		50k	30				MD14		
16	TR3120S	66m	2.0	SJ	400m	50m	120	6.0	120	3.0u	4.0	50m	30		50k	30				MD14		
17	TR3140S	66m	2.0	SJ	400m	50m	140	6.0	140	3.0u	4.0	50m	30		50k	30				MD14		
18	TR3160S	66m	2.0	SJ	400m	50m	160	6.0	160	3.0u	4.0	50m	30		50k	30				MD14		
19	TR3180S	66m	2.0	SJ	400m	50m	180	6.0	180	3.0u	4.0	50m	30		50k	30				MD14		
20	TR3200S	66m	2.0	SJ	400m	50m	200	6.0	200	2.0u	4.0	50m	20		50k	38				MD14		
21	TR3225S	66m	2.0	SJ	400m	50m	225	6.0	225	3.0u	4.0	50m	22		50k	36				MD14		
22	TR3250S	66m	2.0	SJ	400m	50m	250	6.0	250	2.0u	4.0	50m	20		50k	38				MD14		
23	TR3275S	66m	2.0	SJ	400m	50m	275	6.0	275	3.0u	4.0	50m	20		50k	38				MD14		
24	TR3280S	66m	2.0	SA	400m		340	5.0	280	2.0u	8.0	200m	25	45	50k	38		DM		MD14		
25	TR3301S	66m	2.0	SA	400m		300	6.0	300	2.0u	4.0	50m	22		50k	38				MD14		
26	TR3320S	66m	2.0	SA	400m		385	5.0	320	2.0u	8.0	200m	25	45	50k	38		DM		MD14		
27	TR3325S	66m	2.0	SJ	400m	50m	325	6.0	325	3.0u	4.0	50m	30		50k	30				MD14		
28	TR3350S	66m	2.0	SA	400m		350	6.0	350	2.0u	4.0	50m	22		50k	38				MD14		
29	TR3360S	66m	2.0	SA	400m	50m	420	5.0	360	2.0u	8.0	200m	25	45	50k	38		DM		MD14		
30	TR3375S	66m	2.0	SJ	400m	50m	375	6.0	375	3.0u	4.0	50m	20		50k	38				MD14		
31	TR3400S	66m	2.0	SA	400m		400	6.0	400	2.0u	4.0	50m	30	65	50k	30				MD14		
32	TR3401S	66m	2.0	SJ	400m	50m	400	6.0	400	2.0u	4.0	50m	22		50k	36				MD14		
33	TR3401S	66m	2.0	SA	400m		480	5.0	400	1.0u	100	100m	20	30	50k	60		DM		MD14		
34	TR3425S	66m	2.0	SJ	400m	50m	425	6.0	425	3.0u	4.0	50m	30		50k	30				MD14		
35	TR3450S	66m	2.0	SA	400m		450	6.0	450	2.0u	4.0	50m	22		50k	36				MD14		
36	TR3475S	66m	2.0	SJ	400m	50m	475	6.0	475	2.0u	4.0	50m	30		50k	30				MD14		
37	TR3480S	66m	2.0	SA	400m		580	5.0	480	1.0u	100	100m	20	30	50k	60		DM		MD14		
38	TR3501S	66m	2.0	SA	400m		500	6.0	500	2.0u	5.0	50m	22		50k	30				MD14		
39	TR3520S	66m	2.0	SA	400m		625	5.0	520	1.0u	100	100m	20	30	50k	60		DM		MD14		
40	TR3525S	66m	2.0	SJ	400m	50m	525	6.0	525	2.0u	5.0	25m	22		50k	72				MD14		
41	TR3540S	66m	2.0	SA	400m		650	5.0	540	1.0u	100	100m	20	30	50k	60		DM		MD14		
42	TR3550S	66m	2.0	SA	400m		550	6.0	550	1.0u	5.0	25m	30	65	50k	60				MD14		
43	TR3575S	66m	2.0	SJ	400m	50m	575	6.0	575	2.0u	5.0	25m	22		50k	72		DM		MD14		
44	TR3580S	66m	2.0	SA	400m		700	5.0	580	1.0u	100	100m	20	30	50k	60		DM		MD14		
45	TR3601S	66m	2.0	SA	400m		600	6.0	600	1.0u	5.0	25m	20	60	50k	60		DM		MD14		
46	TR3620S	66m	2.0	SA	400m		750	5.0	620	1.0u	100	100m	20	30	50k	60		DM		MD14		
47	TR3650S	66m	2.0	SA	400m		650	6.0	650	1.0u	5.0	25m	25		50k	60		DM		MD14		
48	TR3660S	66m	2.0	SA	400m		800	5.0	660	1.0u	100	100m	20	30	50k	60		DM		MD14		
49	TR3701S	66m	2.0	SA	400m		700	6.0	700	1.0u	5.0	25m	25		50k	60				MD14		
50	TR3701S	66m	2.0	SA	400m		850	5.0	700	1.0u	100	100m	20	30	50k	60		DM		MD14		
51	TR3750S	66m	2.0	SA	400m		750	6.0	750	1.0u	5.0	25m	25		50k	60				MD14		
52	TR3801S	66m	2.0	SA	400m		800	5.0	800	1.0u	5.0	25m	25		50k	60				MD14		
53	VX3375	66m	12	SJ	1.5		65	4.0	40	100u	5.0	50	40	120	600M	2.0		PE	X48	TO5		
54	2N1085	67m	10	SJ	2.0	20	60	5.0	50	50m	2.0	50	40	180	1.3G	250m	50n	PE	MT83	TO5	V	
55#	ZSC977	67m	1.2	SJ	600m		55	3.5	35	300u	5.0	50m	10	180	40M	250m	50n	PL	TO5	TO5	A0	
56#	2850-11	67m	1.2	SA	5.0		100	5.0	80	100m	1.0	50m	25	50	40M	250m	50n	PL	MT32	TO5	A0	
57#	2850-31	67m	1.5	SA	5.0		100	5.0	80	100m	1.0	50m	25	50	40M	400m	50n	PL	TO5	TO5	A0	
58#	2851-11	67m	1.2	SA	5.0		100	5.0	80	100m	1.0	50m	25	50	40M	400m	50n	PL	MT32	TO5	A0	
59#	2851-31	67m	1.5	SA	5.0		100	5.0	80	100m	1.0	50m	25	50	40M	400m	50n	PL	TO5	TO5	A0	
60#	2852-11	67m	1.2	SA	5.0		100	5.0	80	100m	1.0	50m	15	25	30M	400m	60n	PL	MT32	TO5	A0	
61#	2852-31	67m	1.5	SA	5.0		100	5.0	40	100m	1.0	1.0	40	85	40M	400m	50n	PL	TO5	TO5	A0	
62#	2853-11	67m	1.2	SA	5.0		60	5.0	40	100m	1.0	1.0	40	85	40M	400m	50n	PL	MT32	TO5	A0	
63#	2853-31	67m	1.5	SA	5.0		60	5.0	40	100m	1.0	1.0	40	85	40M	400m	50n	PL	MT32	TO5	A0	
64#	2854-11	67m	1.2	SA	5.0		60	5.0	40	100m	1.0	50m	50	90	50M	400m	40n	PL	TO5	TO5	A0	
65#	2854-31	67m	1.5	SA	5.0		60	5.0	40	100m	1.0	50m	50	90	50M	400m	40n	PL	MT32	TO5	A0	
66#	2855-11	67m	1.2	SA	5.0		60	5.0	40	100m	1.0	50m	25	50	40M	400m	50n	PL	TO5	TO5	A0	
67#	2855-31	67m	1.5	SA	5.0		60	5.0	40	100m	1.0	50m	25	50	40M	400m	50n	PL	MT32	TO5	A0	
68#	2856-11	67m	1.2	SA	5.0		60	5.0	40	100m	1.0	50m	15	25	30M	400m	60n	PL	TO5	TO5	A0	
69#	2856-31	67m	1.5	SA	5.0		60	5.0	40	100m	1.0	50m	15	25	30M	400m	60n	PL	MT32	TO5	A0	
70	2N5423	68m	12	SS	2.0	1.0	36	4.0	18	1.0u	5.0	1.0	20	70	300M	500m				TO60	AZ	
71	2N5645	68m	12	SS	2.0		36	4.0	18	500u	5.0	500m	15		400M					MT72h	R	
72#	ZSC891	68m	10	SS	1.0		40	4.0	20													



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A X E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vcb @ 25°C (A)	Vcb (V)						
1	ST74050T	76m#	11	0	S	2.0		145	10	100 *	10uφ	100	1.0	30	120 #	30MΔ	105	
2	ST74051T	76m#	11	0	S	2.0		170	10	120 *	10uφ	100	1.0	30	120 #	30MΔ	105	
3	2N5918	80m	10	0	S	750m		60 †	4.0 †	30	5.0m†	100	1.0				105	R
4	2SC355	80m	15	0	S	2.5		75	4.0	40	1.0uφ	500m	100	∅		180M	106	
5	2SC893	80m	12	0	J	300m		100	6.0	60	1.0u	50	50	370	20M	106	A∅	
6	3TX622	80m	14	0	J	2.0	400m	36	3.5	18	100u	100	10	200	700M	106		
7	3TX632	80m	14	0	J	2.0	400m	60	4.0	30	100u	5.0	100	10	200	650M	106	
8	3TX822	80m	14	0	J	2.0	400m	36	3.5	18	100u	5.0	100	10	200	800M	106	
9	3TX832	80m	14	0	J	2.0	400m	60	4.0	30	100u	5.0	100	10	200	650M	106	
10	BLY53A	80m	10	0	J	1.3		36		18		500m	50			800M	106	
11	BLY55	80m	10	0	J	1.0			4.0	20	5.0m	5.0	200m	10	60	450M	106	A∅
12	FT027	80m	13	0	S	1.0		60	6.0	40	100u	150	25m	20	40	60M	106	
13	KS6109T	80m			S	2.0	500m	80	4.5	80	500u	5.0	1.0	15		350M†	106	
14	KS6110T	80m			S	2.0	500m	40	4.5	40	500u	5.0	1.0	15		25nZ	106	
15	KS6111T	80m			S	2.0	500m	80	4.5	80	500u	5.0	1.0	15		400M†	106	
16	KS6112T	80m			S	2.0	500m	40	4.5	40	500u	5.0	1.0	15		25nZ	106	
17	MSP60A	80m	12	0	S	1.0	400m	600	5.0	600	10uφ	100	100	30	200	30M	106	
18	MSP70A	80m	12	0	S	1.0 #	400m	700	5.0	700	10uφ	100	100	30	200	30M	106	
19	SE7020	80m	10	0	S	400m		300	5.0	300	10u	100	50	40	240 #	30M	106	C∅
20	SFT440	80m	12	0	S	1.0		80	4.0	80	10uφ	100	100	10	50	200M	106	
21	SFT443A	80m	12	0	S	1.0		80	4.0	80	10uφ	100	100	15	40	180M	106	
22	2N5921	83m	14	0	S	700m		50 †	3.5 †	50 †	1.0m†						106	A
23	2N5915	85m	10	0	S	1.5		35 †	3.5 †	14	1.0m†						106	R
24	2N5995	85m	10	0	S	1.5		36	3.5	14	2.5mΔ						106	R
25	2N5589	86m	15	0	S	600m		36	4.0	18	1.0m	5.0	100m	5.0		200MΔ	106	
26	2SC22	86m	13	0	S	600m		75	5.0	50	2.0m	100	150m	20	100 #	110M	106	
27	2SC23	86m	13	0	S	500m		75	5.0	50	5.0m	100	150m	20	100 #	110M	106	
28	2SC24	86m	12	0	S	500m		100	5.0	70	5.0m	100	150m	20	100 #	110M	106	
29	2SC592	86m	13	0	S	2.5	400m	75	4.0	50	1.0uφ	4.0	500m	25	100	180M	106	
30	A253	86m	15	0	S	1.3		36	4.0	18		5.0	500m	50	∅	800M	106	
31	BLY37	86m			S	3.0 #		65	4.0	36		5.0	1.0	50	∅	700M	106	
32	BLY53	86m	10	0	S	3.0 #		36	4.0	18		5.0	1.0	50	∅	700M	106	
33	PT600Z	86m	13	0	S	2.0		60	4.0	45	1.0uφ	12	1.0	15	45 #	210M	106	
34	PT601Z	86m	13	0	S	2.0		60	4.0	45	1.0uφ	12	1.0	30	90 #	210M	106	
35	PT612	86m	2.0	0	S	2.0		75	5.0	60	500u	28	350m	7.5	75	60MΔ	106	
36	2SC1102	88m	11	0	S	50m		300	7.0	300	100uφ	10	10m	40	200	60MΔ	106	
37	A271	90m	16	0	S	750m		65	4.0	36	5.0mΔ	5.0	500m	5.0		500M	106	
38	A275	90m	16	0	S	750m		65	4.0	36	5.0mΔ	5.0	500m	5.0		500M	106	
39	BLY91	90m	16	0	S	750m		65	4.0	36	5.0mΔ	5.0	500m	5.0		500M	106	
40	2N5947	91m	16	0	S	400m		40	3.5	30	10uφ	20	75m	25	250	1.1GΔ	106	
41	BLY87	91m	16	0	S	1.2		36	4.0	18	5.0mΔ	5.0	500m	5.0		700M	106	
42	JAN2N1072T	100m	2.0	0	J	2.0		75	6.0	75	100n	5.0	75m	20		70M	106	
43	2N1709	100m	15	0	S	2.0		75	4.0	60	10uφ	28	350m	7.5	75 #	150MΔ	106	
44	2N1710	100m	15	0	S	2.0		60	3.0	45	50uφ	28	350m	7.5	75 #	120MΔ	106	
45	2N2631	100m	8.8	0	S	1.5		80	4.0	60	100n	28	350m	7.5	75 #	200M	106	
46	2N2697	100m	18	0	S	5.0	500m	80	8.0	60	100n	2.0	1.0	40	120 #	20MΔ	106	
47	2N2698	100m	18	0	S	5.0	500m	100	8.0	80	100n	2.0	1.0	40	120 #	20MΔ	106	
48	2N2781	100m	15	0	S	2.0		75	5.0	75	500u	28	350m	7.5	75 #	140MΔ	106	
49	2N2782	100m	15	0	S	2.0		100	5.0	100	500u	28	350m	7.5	75 #	140MΔ	106	
50	2N2783	100m	15	0	S	2.0		100	5.0	100	500u	28	350m	7.5	75 #	140MΔ	106	
51	2N2874	100m	15	0	S	2.0		75	4.0	75	10uφ	28	350m	7.5	75 #	140MΔ	106	
52	JAN2N2876	100m	18	0	S	2.5		80	4.0	60	100n	10	300m	30	150 #	150MΔ	106	
53	2N3229	100m	17	0	S	2.5		105	4.0	60	1.0uφ	1.0	2.5	5.0		200M	106	
54	2N4040	100m	18	0	S	1.0	300m	60	4.0	40	200u	5.0	100m	10	80	400MΔ	106	
55	2N4041	100m	18	0	S	1.0	300m	60	4.0	40	200u	5.0	100m	10	80	400MΔ	106	
56	2SD79	100m	15	0	S	2.0	1.0	100	12	60	1.0uφ	2.0	500m	40	160		106	
57	2SD141	100m	15	0	S	3.0	500m	20	5.0	12	100uφ	2.0	1.0	30	240 #		106	
58	2SD142	100m	15	0	S	3.0	500m	40	5.0	20	100uφ	2.0	1.0	30	240 #		106	
59	2SD152	100m	15	0	S	1.0	500m	150	6.0	70	100uφ	2.0	500m	30	70		106	
60	40422	100m	8.0	0	S	150m		300	2.0	300	100u	10	50m	50	250	25MΔ	106	
61	40424	100m	8.0	0	S	150m		300	2.0	300	100u	10	50m	30	150	25MΔ	106	
62	40426	100m	8.0	0	S	150m		300	2.0	300	100u	10	50m	20	100	25MΔ	106	
63	40491	100m	3.8	0	S	150m		300	2.0	300	100u	10	50m	30	250	25M	106	
64	BD135Δ	100m	6.5	0	J	500m	100m	45	5.0	45	100n	1.0	150m	40	250	50MΔ	106	
65	BD135	100m	6.5	0	J	500m	100m	45	5.0	45	100n	2.0	150m	40	250	250M	106	
66	BD137Δ	100m	6.5	0	J	500m	100m	60	5.0	60	100n	1.0	150m	40	160	50MΔ	106	
67	BD137	100m	6.5	0	J	500m	100m	60	5.0	60	100n	2.0	150m	40	160	250M	106	
68	BD139Z	100m	6.5	0	J	500m	100m	80	5.0	80	100n	2.0	150m	40	160	250M	106	
69	BLY34T	100m*	13	0	S	3.0		60	5.0	40	100u	20	2.0	30	300	80MΔ	106	
70	BLY14	100m	8.7	0	J	1.0	200m	80	4.0	80	∅	5.0	10	11 †		190M	106	
71	BLY20	100m#	14	0	J	2.0 #	200m	45	4.0	30		10	500mΔ	5.0		200M	106	
72	BLY21	100m#	14	0	J	2.0 #	200m	45	4.0	30		10	500mΔ	5.0		200M	106	
73	D42C1T	100m	2.1	0	S	3.0		5.0	5.0	30	10u	1.0	200m	25		50M	106	
74	D42C2T	100m	2.1	0	S	3.0		5.0	5.0	30	10u	1.0	200m	40	120	50M	106	
75	D42C3T	100m	2.1	0	S	3.0		5.0	5.0	30	10u	1.0	200m	40	120	50M	106	
76	D42C4T	100m	2.1	0	S	3.0		5.0	5.0	45	10u	1.0	200m	25		50M	106	
77	D42C5T	100m	2.1	0	S	3.0		5.0	5.0	45	10u	1.0	200m	40	120	50M	106	
78	D42C6T	100m	2.1	0	S	3.0		5.0	5.0	45	10u	1.0	200m	40	120	50M	106	
79	D42C7T	100m	2.1	0	S	3.0		5.0	5.0	60	10u	1.0	200m	25		50M	106	
80	D42C8T	100m	2.1	0	S	3.0		5.0	5.0	60	10u	1.0	200m	40	120	50M	106	
81	MJ3201	100m	15	0	J	10		225	3.0	225	10m	10	05	30	#	15MΔ	106	
82	MJ3202	100m	15	0	J	10m		300	3.0	300	100u	10	50m	30	#	15MΔ	106	
83	MSP10A	100m	4.0	0	S	2.0	500m	100	5.0	100	10u	10	100m	25				



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
(2) TYPE No.

LINE No.	TYPE No.	MIN DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS Ic	MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	L C E O D E	
						Ic (A)	Ib (A)	BVcbo (V)	BEVbo (V)	BVCceo (V)	Icbo (A)	Vcb (V)										Vcb (V)
1	STT2402	100m	10		SJ	7.5	1.0	140	12	120	1.0u	150	2.0	50	150 #	25Ms			DPLA	TO5	A	
2	STT2403	100m	10		SJ	7.5	1.0	120	12	100	1.0u	150	2.0	30	90 #	25Ms			DPLA	TO5	A	
3	STT2404	100m	10		SJ	7.5	1.0	100	12	80	1.0u	150	2.0	30	90 #	25Ms			DPLA	TO5	A	
4	STT2405	100m	10		SJ	7.5	1.0	75	10	60	1.0u	150	2.0	30	90 #	25Ms			DPLA	TO5	A	
5	STT2406	100m	10		SJ	7.5	1.0	40	10	30	500u	150	2.0	25	#	25Ms			DPLA	TO5	A	
6	2N5765	103m	18		SS	1.5	500m	55	3.5	25	7.5m	5.0	100m	20	200	600Ms			PEt	TO129	R	
7	2N5774	103m	18		SS	1.5	500m	55	3.5	35	4.0m	5.0	100m	20	200	600Ms			PEt	TO66	V	
8	2N4431	108m	18		SJ	2.0	1.0	55	3.5	4.0	4.0m	5.0	100m	20	200	400Ms			ME	MD17	Ø	
9	2SC692	110m	17		SJ	1.0		60	4.0	4.0	200u	1.0	100m	5.0	#	400Ms			ME	MD17b	CØ	
10	BD127	111m	14		SJ	150m	50m	350	7.0	300	120u	2.0	50m	5.0	#	10Ms			ME	MD17	Ø	
11	BD1281	111m	16		SJ	150m	50m	400	7.0	350	200u	2.0	50m	5.0	#	20Ms			ME	MD17b	CØ	
12	BD129	111m	16		SJ	150m	50m	350	5.0	350	1.0u	2.0	50m	5.0	#	10Ms			ME	MD17b	CØ	
13	2N5424	114m	20		SC	4.0	2.0	36	4.0	18	1.0u	5.0	2.0	20	100	250Ms	250m		PEt	TO60	AZ	
14	2N5424A	114m	20		SC	4.0	2.0	36	4.0	18	1.0u	5.0	2.0	20	100	250Ms	250m		PEt	TO60	AZ	
15	2N5598	114m	20		SC	2.0	1.0	30	6.0	60	1.0m	5.0	1.0	70	200 #	60Ms			PEt	TO66	CØ	
16	2N5800	114m	20		SJ	2.0	1.0	100	6.0	80	1.0m	5.0	1.0	70	200 #	60Ms			PEt	TO66	CØ	
17	2N5802	114m	20		SJ	2.0	1.0	100	6.0	80	1.0m	5.0	1.0	70	200 #	60Ms			PEt	TO66	CØ	
18	2N5804	114m	20		SJ	2.0	1.0	120	6.0	100	1.0m	5.0	1.0	70	200 #	60Ms			PEt	TO66	CØ	
19	2N5847	114m	20		SS	2.0		36	4.0	18	1.0m	5.0	500m	5.0	#	300Ms			PEt	MT72h	R	
20	2SC599	114m	20		SJ	1.5		60	4.0	40	500u	2.0	100m	5.0	#	300Ms			PEt	MT59b	R	
21	2SC737	114m	20		SJ	5		60	4.0	40	500u	2.0	100m	5.0	#	300Ms			PEt	MT59b	R	
22	2SC975	114m	20		SJ	2.0		40	3.0	40	200u	1.0	100m	5.0	#	1.2Gs			PEt	MT83	VZ	
23	PT2600	114m	1.0		SJ	1.0	400m	100	4.0	100	100u	4.0	300m	20	100 #			D	MT40			
24	PT6636	114m	20		SS	0		55	3.5	30	1.0											
25	ZT2887	114m	20		SJ	1.2	400m	100	4.0	80	500u	2.0	400m	15	100	420Ms	1.2		PL	MT59	R	
26	2N5483	115m	20		SS	700m	200m	45	3.0	30	6.0m	5.0	100m	20	250	900Ms			PE	MT74	R	
27	XB437	115m	20		SJ	2.0	700m	36	4.0	18						900Ms			PE	TO117		
28	2SC892	117m	17		SJ	1.2		40	4.0	20	100u	1.0	1.0	15	#	400Ms			PE	MT59d	SZ	
29	2N5768	118m	20		SJ	1.2	700m	55	3.5	25	10m	5.0	100m	20	20	400Ms			PE	MT77	Z	
30	2N5595	120m	20		SJ	1.2	500m	55	3.5	30	4.0m	5.0	50m	20		1.5Gs			PE	MT73a	R	
31	2SC487	120m	15		SJ	1.5	1.5	110	5.0	110	120u	2.0	200m	40	250	20Mt	400m		DM	TO66	AØ	
32	2SC491	120m	15		SJ	1.5	1.5	50	5.0	35	10u	2.0	500m	30	250 *	30Ms	1.0		DM	TO66	CØ	
33	2SC791	120m	15		SJ	5	1.5	90	5.0	90	120u	2.0	200m	40	250	20Mt	1.4		DM	TO66	CØ	
34	2SC978	120m	15		SJ	1.2		55	3.5	35	500u	2.0	50m	10	180 #	1.3Gs			PEt	MT83	V	
35	2SD150	120m	20		SJ	1.0	500m	50	5.0	40	1.0m	2.0	1.0	30	240	10k			PE	MD10a		
36	3TX602	120m	20		J	4.0	500m	36	4.0	18	1.0m	5.0	200m	20	100	250M			PL	MT59f	Z	
37	MJE3439	120m	15		SJ	300m	150m	450	5.0	350	20u	1.0	20m	30	160	15Ms	10				X58	B
38	MJE3440	120m	15		SJ	300m	150m	350	5.0	250	20u	1.0	20m	40	160	15Ms	10				X58	B
39	MSA8505	120m	2		SJ	3.0		4.0	33		5.0m	5.0	1.0	10	#	435Mt	1.0		DPE	MT72a	R	
40	2N3138	125m	20		SS	2.0	200m	65	1.0	65	100u	1.0	1.0	10		10Ms				MT24		
41	2N3139	125m	20		SS	2.0	200m	140	1.0	140	100u	1.0	1.0	10		10Ms				MT24		
42	2N3140	125m	20		SS	2.0	200m	65	1.0	65	100u	1.0	1.0	10		10Ms				MT24		
43	2N3141	125m	20		SS	2.0	200m	140	1.0	140	100u	1.0	1.0	10		10Ms				MT24		
44	MJ2251	125m	10		SJ	500m		6.0	225	100u	1.0	50m	25	200	10Ms					TO66	CØ	
45	MJ2252	125m	10		SJ	500m		6.0	300	100u	1.0	50m	25	200	10Ms					TO66	CØ	
46	ST15008	125m	12.5		SJ	40	80	125	12	80	10u	5.0	40	10		10Ms	60m		PE	TO83		
47	MSA8507	126m	22		SJ	2.0		36	4.0	18	1.0m	5.0	1.0	5.0	#	500Ms			DPE	MT72a	R	
48	2N3927	128m	22		SJ			36	4.0	18	250u					200Ms				TO60	AØ	
49	2SC488	128m	18		SJ	3.0		140	5.0	110	3.0m	5.0	500m	80	100	10Ms			DM	TO66		
50	2SC489	128m	18		SJ	3.0	30	100	5.0	80	120u	5.0	500m	20	200 *	10Ms	500m		DM	TO66	CØ	
51	2SC490	128m	18		SJ	3.0	30	100	5.0	80	120u	5.0	500m	20	200 *	10Ms	500m		DM	TO66	CØ	
52	2N3632	131m	23		SC	3.0	400m	65	4.0	40	500u	5.0	250m	10	150	250Ms	1.0			TO60	A	
53	2N3733	131m	23		SC	1.0	400m	65	4.0	40	500u	5.0	250m	10	150	250Ms	1.0			TO60	A	
54	2N5145	131m	23		SC	1.0	500m	70	4.0	70	500u	5.0	500m	10	80	400Ms	500m			TO60	AZ	
55	2N5143	131m	23		SJ	3.0		65	4.0	40	12u	4.0	1.0	25	Ø	400Ms			PE	TO60	A	
56	40307	131m	23		SJ	3.0		65	4.0	40	250u	5.0	300m	10		400Ms			PE	TO60	A	
57	40665	131m	23		SJ	1.0		65	4.0	40	250u	5.0	300m	10		400Ms	2.0		E	TO60	AZ	
58	VX3733	131m	23		SJ	3.0		65	4.0	40	250u	5.0	300m	10		400Ms	2.0		PE	TO60	A	
59	XB404	131m	23		SJ	3.0		60	4.0	40	50u	5.0	200m	20	60	350Ms			PE	TO60		
60	2N1718	133m	20		SJ	1.0	1.0	60	6.0	60	50u	5.0	200m	20	60	16Ms	10		ME	MT13		
61	2N1719	133m	20		SJ	1.0		60	6.0	100	50u	5.0	200m	20	60	16Ms	10		ME	MT13		
62	2N1720	133m	20		SJ	1.0		60	6.0	60	50u	5.0	200m	40	120	16Ms	10		ME	MT13		
63	2N1721	133m	20		SJ	1.0		60	6.0	100	50u	5.0	200m	40	120	16Ms	10		ME	MT13		
64	2N2196	133m	20		SC	1.0	500m	80	8.0	60	75u	3.0	10m	30	100	60Ms				MD14	AØ	
65	2N2197	133m	20		SC																	

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (V)	Pc A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS V <sub>bc</sub> (V)	I <sub>c</sub> (A)	MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y2000 Ser.	# C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ceo</sub> (V)	I <sub>co</sub> (A)	hFE										
1	SPT3738	133m	20	3.0	1.0	250	6.0	225	500u#	100	250m	50	300	100MΔ	10			Δ	T066		
2	TRS2006	133m	20	3.0	500m	200	6.0	200	100u	100	50m	30	300	50M					T066		
3	TRS3006	133m	20	3.0	500m	300	6.0	300	100u	100	50m	30	300	50M					T066		
4	TRS4006	133m	20	3.0	500m	400	6.0	400	100u	100	50m	30	300	50M					T066		
5	TRS4016S	133m	20	3.0	500m	450	6.0	400	100u	100	50m	30	300	50M					T066		
6	TRS4506	133m	20	3.0	500m	450	6.0	450	100u	100	50m	30	300	50M					T066		
7	TRS5006	133m	20	3.0	500m	500	6.0	500	100u	100	20m	30	300	50M					T066		
8	TRS6006	133m	20	3.0	500m	600	6.0	600	100u	100	20m	30	300	50M					T066		
9	TRS7006	133m	20	3.0	500m	700	6.0	700	100u	100	20m	30	300	50M					T066		
10	TRS8006	133m	20	3.0	500m	800	6.0	800	100u	100	20m	30	300	50M					T066		
11	2N3327	134m	20	3.0	200m	65	3.0	65	500u	100	500m	10		100MΔ					MT31	A	
12	2N122	140m	9.0	3.0	140m	120	1.0		100u	35	100m	3.0		100k†	200			G	MS6		
13#	BD215	140m	21	3.0	500m			300		100	100m	40		10M				3D	MD17b	C	
14	2N1483	142m	25	3.0	3.0	1.5	60	12	40	15u	4.0	750m	20	60	1.2M†	2.6		D	T08	A	
15	JAN2N1483	142m	1.7	3.0	3.0		60	12	40	15u	4.0	750m	20	60	600k†Δ			Δ	T08	A	
16	2N1484	142m	25	3.0	1.5	100	12	55	15u	4.0	750m	20	60	1.2M†	2.6		D	T08	A		
17	JAN2N1484	142m	1.7	3.0	1.5	100	12	55	15u	4.0	750m	20	60	600k†Δ			Δ	T08	A		
18	2N1485	142m	25	3.0	1.5	60	12	40	15u	4.0	750m	35	100	1.2M†	1.0		D	T08	A		
19	JAN2N1485	142m	1.7	3.0	1.5	60	12	40	15u	4.0	750m	35	100	600k†Δ			Δ	T08	A		
20	2N1486	142m	25	3.0	1.5	100	12	55	15u	4.0	750m	35	100	1.2M†	1.0		D	T08	A		
21	JAN2N1486	142m	1.7	3.0	1.5	100	12	55	15u	4.0	750m	35	100	600k†Δ			Δ	T08	A		
22	2N2035	142m	14	3.0	1.0	80	10	60	25u	4.0	1.5	15	45	1.5k†	300m	1.8u	D	T08	A		
23	2N2304	142m	25	3.0	1.5	60	6.0	40	100u	4.0	300m	20	80	3.0				T08	A		
24	2N2308	142m	25	3.0	1.5	100	12	80	50u	4.0	1.0	20	60	1.0MΔ			D	T08	A		
25	2N2887	142m	25	3.0	400m	100	4.0	80	28u	350m	15	80	#	1.2			PL	MT39			
26	2N3054	142m	25	3.0	2.0	90	7.0	60	1.0m#	4.0	500m	25	100	30kΔ	2.0				MD6e	A	
27	2N3142	142m	25	3.0	200m	65	1.0	65	100u	100	1.0	10		10MΔ				MT46			
28	2N3143	142m	25	3.0	200m	140	1.0	140	100u	100	1.0	10		10MΔ				MT46			
29	2N3144	142m	25	3.0	200m	65	1.0	65	100u	100	1.0	10		10MΔ				MT46			
30	2N3145	142m	25	3.0	200m	140	1.0	140	100u	100	1.0	10		10MΔ				MT46			
31	2N3226	142m	75	3.0	2.6	35	6.0	35	200u#	3.0	2.0	20	50	30kΔ	500m				T03	C	
32	2N3441	142m	25	3.0	2.0	160	7.0†	140	100mΔ	4.0	500m	25	100	1.0M	2.2				T066	C	
33	JAN2N3441	142m	2.5	3.0	2.0	160	7.0	140	1.0m	4.0	500m	20	80	#	2.0				T066	C	
34	2N3442	142m	25	3.0	1.0	70	7.0	140	200mΔ	4.0	3.0	20	70		2.2				T03	C	
35	2N4127	142m	25	3.0	500m	60	4.0†	40	500u	5.0	200m	10	80	300MΔ	1.0				MT59	GE	
36	2N4910	142m	25	3.0	1.0	40	5.0	40	100u	1.0	500m	20	100	#	3.0MΔ				T066	C	
37	2N4911	142m	25	3.0	1.0	60	5.0	60	100u	1.0	500m	20	100	#	3.0MΔ				T066	C	
38	2N4912	142m	25	3.0	1.0	80	5.0	80	100u	1.0	500m	20	100	#	3.0MΔ				T066	C	
39	2N5216	142m	25	3.0	1.5	400m	80	4.0	100u	5.0	500m	10	60	350M	800m				MT62b	F	
40#	2SC297	142m	10	3.0	600m	70	5.0	40	3.0u	2.0	1.0	25	52	90M	400m	60n	PE	PE	T037		
41#	2SC298	142m	10	3.0	600m	100	5.0	60	3.0u	2.0	100m	30	173	90M	400m	60n	PE	PE	T037		
42#	2SC299	142m	10	3.0	600m	130	5.0	80	3.0u	2.0	100m	30	173	90M	400m	60n	PE	PE	T037		
43#	2SC703	142m	25	3.0	2.0	40	4.0	20	1.0m	100	100m	5.0	#	150M				PE	MT59b	R	
44#	2SC916†	142m	2.0	3.0	2.0	100	6.0	70	5.0u	1.0	400m	40	120					60n	T08		
45	40368	142m	25	3.0	1.5	100	12	55	9.0u	4.0	750m	35	100						T08	A	
46#	BD109	142m	15	3.0	50m	60	5.0	40	100u	5.0	20	120	100	50MΔ				PE	MD6b		
47#	DT3301	142m	15	3.0	2.0	60	8.0	60	10u	5.0	500m	25	100	1.0M	500m			D	T066		
48#	DT3302	142m	15	3.0	2.0	100	8.0	100	10u	5.0	500m	25	100	1.0M	500m			D	T066		
49	MJ4101	142m	25	3.0	5.0	50	5.0	40	1.5	10	25	100	40MΔ	670m					T066		
50	MSA7505	142m	25	3.0	4.0	40	4.0	33	5.0m	5.0	1.0	#		435M†	1.0			DPE	T060	A	
51	PT2635†	142m	2.5	3.0	1.2	100	4.0	60	1.0m	28	350m	15	#	170M					T05		
52	S1050	142m	25	3.0	2.0	45	3.5	30	2.0m#	5.0	500m	20		1.2G				PE			
53	SB0319	142m	25	3.0	3.0	60	5.0†	60	1.5m	4.0	1.5	20	130	#	1.0MΔ				T066	C	
54	SDT4611	142m	14	3.0	1.0	60	8.0	40	1.0u	1.0	1.0	20	60	40M					T08		
55	SDT4612	142m	14	3.0	1.0	80	8.0	60	1.0u	1.0	1.0	20	60	40M					T08		
56	SDT4613	142m	14	3.0	1.0	100	8.0	80	1.0u	1.0	1.0	20	60	40M					T08		
57	SDT4614	142m	14	3.0	1.0	60	8.0	40	1.0u	1.0	1.0	40	120	60M					T08		
58	SDT4615	142m	14	3.0	1.0	80	8.0	60	1.0u	1.0	1.0	40	120	60M					T08		
59	SDT4616	142m	14	3.0	1.0	100	8.0	80	1.0u	1.0	1.0	40	120	60M					T08		
60	SDT4617	142m	14	3.0	1.0	60	8.0	40	1.0u	1.0	1.0	100		70M					T08		
61	SDT4618	142m	14	3.0	1.0	80	8.0	60	1.0u	1.0	1.0	100		70M					T08		
62	SDT4619	142m	14	3.0	1.0	100	8.0	80	1.0u	1.0	1.0	100		70M					T08		
63	STC4401	142m	25	3.0	5.0	50	5.0	40	1.0m	1.5	25	25	100	#	100m			D	T066		
64#	ZT1483	142m	25	3.0	1.5	60	12	40	15u	4.0	750m	20	60	1.2M	2.6			D	T08	A	
65#	ZT1484	142m	25	3.0	1.5	100	12	55	15u	4.0	750m	20	60	1.2M	2.6			D	T08	A	
66#	ZT1485	142m	25	3.0	1.5	60	12	40	15u	4.0	750m	35	100	1.2M	2.6			D	T08	A	
67#	ZT1486	142m	25	3.0	1.5	100	12	55	15u	4.0	750m	35	100	1.2M	2.6			D	T08	A	
68#	ZT1701	142m	25	3.0	2.5	1.0	60	6.0	40	100u	4.0	300m	20	80	1.0M†	5.0	1.2u	D	T08		
69#	ZT3441	142m	25	3.0	2.0	160	7.0	140	5.0m#	4.0	500m	20	80	200kΔ	2.0			Δ	T066		
70	2N1701	143m	25	3.0	2.5	1.0	60	6.0	40	100u	4.0	300m	20	80	350kΔ	5.0	1.0u	Δ	T08	A	
71	2N2339	143m	25	3.0	1.0	60	6.0	40	10m	4.0	30	20	80	1.0M†	5.0			D	MT5		
72	2N2525	143m	25	3.0	1.0	100	5.0	100	28u	35	10						PL	MT39			
73	2N5606	143m	25	3.0	2.0	80	6.0	60	1.0m#	5.0	2.5	70	200	#	70MΔ				T066	C	
74	2N5608	143m	25	3.0	2.0	100	6.0	80	1.0m#	5.0	2.5	30	90	#	60MΔ				T066	C	
75	2N5610	143m	25	3.0	2.0	100	6.0	80	1.0m#	5.0	2.5	70	200	#	70MΔ				T066	C	
76	2N5612	143m	25	3.0	2.0	120	6.0	100	1.0m#	5.0	2.5	30	90	#	60MΔ				T066	C	
77	2N5689	143m	25</																		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	M A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ MAX Vcb		BIAS		MIN	MAX	fae (Hz)	MAX. SAT. RES. (s)	tr (s)	STRUC-TURE	DWG #/s/a TO200 Ser.	# C O D E
					Ic (A)	Ib (A)	BVcbo (V)	BEbo (V)	VEco (V)	lcbo (A)	Vcb (V)	lc (A)	Vcb (V)								
1#	2SC508	180m	20	\$J	4.0	4.0	180	5.0	180	120u	5.0	4.0	20	40	25M	500m		DM	T066	C	
2#	2SC779	180m	20	\$J	2.0	1.0	300	6.0	250	100u	10	100m	30	80	10M	1.8		ME	T066	C	
3#	2SC782	180m	20	\$J	1.5	1.5	300	5.0	300	100u	10	100m	30	250	10M	1.8		DM	T066	C	
4#	2SC783	180m	20	\$J	1.5	1.5	200	5.0	200	100u	10	100m	30	250	10M	1.8		DM	T066	C	
5#	2SC840	180m	20	\$J	2.0	1.0 #	100	5.0	60	5.0m	3.0	1.0	30		50M	750m		DM	T066	C	
6#	2SC840A	180m	20	\$J	2.0	1.0 #	150	5.0	100	5.0m	3.0	1.0	30		50M	750m		DM	T066	C	
7#	2SC990	180m	24	\$J	2.0		50	4.0	25	10u	10	1.0	15	200 #	300M		PE	MT66a	GJ		
8#	2SC1104	180m	20	\$J	700m		300	5.0	300	100u	10	400m	40	200			ME	T066	C		
9#	2SD57	180m	20	\$J	3.0	1.0	30	10	20	200u	4.0	1.0	20	180	3.5M		D	MD17	C		
10#	2SD58	180m	20	\$J	3.0	1.0	60	10	40	40u	4.0	1.0	20	180	3.5M		D	MD17	C		
11#	2SD901	180m	20	\$J	3.0	1.0	30	10	20	2.0m	4.0	1.0	20	40	5.0M	500m	1.0u	D	T09	C	
12#	2SD911	180m	20	\$J	3.0	1.0	60	10	40	2.0m	4.0	1.0	20	40	5.0M	500m	1.0u	D	T09	C	
13#	2SD921	180m	20	\$J	3.0	1.0	100	10	55	2.0m	4.0	1.0	20	40	5.0M	500m	1.0u	D	T09	C	
14#	2SD931	180m	20	\$J	3.0	1.0	150	10	70	2.0m	4.0	1.0	20	40	5.0M	500m	1.0u	D	T09	C	
15#	2SD941	180m	20	\$J	3.0	1.0	200	10	80	2.0m	4.0	1.0	20	40	5.0M	500m	1.0u	D	T09	C	
16#	SG0034t	180m	28	\$J	10t	2.0	80t	6.0t	60	10u	2.0	2.0	30	120 #	50M		300n	DPE	T059	A	
17#	SG0034At	180m	28	\$J	10t	2.0	80t	6.0t	60	10u	2.0	2.0	100	300 #	80M		300n	DPE	T059	A	
18#	SG6207	180m	24	\$J	2.0t	2.0		6.0t	80	10u	5.0	1.0	30	90 #	50M			DPL	T059	A	
19#	SG6207A	180m	24	\$J	2.0t	2.0		6.0t	80	10u	5.0	1.0	70	300 #	60M			DPL	T059	A	
20	2N2948	166m	25	\$C	1.5	500m	40	2.0	40	1.0u	2.0	400m	2.5	100 #	100M	500m				T03	C
21	2N3818	166m	25	\$C	1.0	1.0	60	4.0	60	1.0u	2.0	400m	5.0	50	150M					T060	A
22	2N4273	166m	25	\$C	2.5	1.5	175	9.0	140	100n	10	1.0	20	140 #	10M					T066	A
23#	2SD184t	166m	25	\$C	1.5		60	12	40	10u	4.0	750m	20	100	1.5M	2.0	500n	ME		T08	C
24#	2SD185t	166m	25	\$C	1.5		100	12	55	10u	4.0	750m	20	100	1.5M	1.0	500n	ME		T08	C
25	40250	166m	29	\$J	4.0	2.0	50	5.0	40	1.0m	4.0	1.5	25	100	1.0M					T066	C
26	40310	166m	29	\$J	4.0	2.0		2.5	35	10u	2.0	1.0	20	120	750k					T066	C
27	40312	166m	29	\$J	4.0	2.0		2.5	60	10u	2.0	1.0	20	120	750k					T066	C
28	40316	166m	29	\$J	4.0	2.0			40	10u	2.0	1.0	20	120	750k					T066	C
29	40324	166m	29	\$J	4.0	2.0			35	10u	2.0	1.0	20	120	750k					T066	C
30	A272	166m	29	\$J	1.5		65	4.0	36	10m	5.0	500m	5.0		500M	600m		PE	MT72c	R	
31#	A276	166m	29	\$J	2.5		36	4.0	18	10m	5.0	500m	5.0		700M	600m		PE	MT72c	R	
32#	BD148	166m	24	\$J	4.0	2.0		7.0	60	2.0m	1.5	500m	40	250	1.0M					MD17f	A
33#	BD149	166m	24	\$J	4.0	2.0		7.0	80	2.0m	1.5	500m	40	160	1.0M					MD17f	A
34#	BD162	166m	15	\$J	4.0	2.0		40	7.0	2.0	1.5	30		750k						MD17	C
35#	BD163	166m	15	\$J	4.0	2.0		60	7.0	2.0	1.5	20		750k						MD17	C
36#	BLY88	166m	29	\$J	2.5		36	4.0	18	10m	5.0	500m	5.0		700M	600m				MT72	GC
37#	BLY92	166m	29	\$J	1.5		65	4.0	36	10m	5.0	500m	5.0		500M	600m		PE	MT72c	R	
38#	BUY43	166m	24	\$J	4.0	2.0		7.0	40	1.0m	1.5	500m	40	60	1.0M					MD17f	C
39#	BUY46	166m	24	\$J	4.0	2.0		7.0	55	1.0m	1.5	500m	25	100	1.0M					MD17a	C
40	MJ3340	166m	20	\$J	500m			3.0	300	100u	10	50m	30	240						X58	B
41	PP3083	166m	30	\$C	7.0	2.0	80	6.0	80	4.0	1.0	20			1.0M	750m		DM	T066	C	
42	PP3084	166m	30	\$C	7.0	2.0	100	6.0	100	4.0	1.0	20			1.0M	750m		DM	T066	C	
43	PP3085	166m	30	\$C	7.0	2.0	40	6.0	40	4.0	3.0	20			1.0M	1.0		DM	T066	C	
44	PP3086	166m	30	\$C	7.0	2.0	60	6.0	60	4.0	3.0	20			1.0M	1.0		DM	T066	C	
45	PP3087	166m	30	\$C	7.0	2.0	80	6.0	80	4.0	3.0	20			1.0M	1.0		DM	T066	C	
46	PP3088	166m	30	\$C	7.0	2.0	100	6.0	100	4.0	3.0	20			1.0M	1.0		DM	T066	C	
47	PP3250	166m	30	\$C	4.0	2.0	50	6.0	40	1.0m	4.0	1.5	25	100	1.0M	1.5		DM	T066	C	
48	PP3310	166m	30	\$C	4.0	2.0	45	6.0	35	10u	4.0	1.0	20		1.0M	750m		DM	T066	C	
49	PP3312	166m	30	\$C	4.0	2.0	70	6.0	60	10u	4.0	1.0	20		1.0M	750m		DM	T066	C	
50	SDT5901	166m	16	\$J	2.0	500m	60	8.0	40	100n	2.0	500m	50	150 #	50M	700m		PL	T066	C	
51	SDT5902	166m	16	\$J	2.0	500m	80	8.0	60	100n	2.0	500m	50	150 #	50M	700m		PL	T066	C	
52	SDT5903	166m	16	\$J	2.0	500m	100	8.0	80	100n	2.0	500m	50	150 #	50M	700m		PL	T066	C	
53	SDT5904	166m	16	\$J	2.0	500m	140	8.0	100	100n	2.0	500m	50	150 #	50M	700m		PL	T066	C	
54	SDT5905	166m	16	\$J	2.0	500m	180	8.0	120	100n	2.0	500m	50	150 #	50M	700m		PL	T066	C	
55	SDT5906	166m	16	\$J	2.0	500m	60	8.0		100n	2.0	500m	30 #		50M			PL	T066	C	
56	SDT5907	166m	16	\$J	2.0	500m	80	8.0		100n	2.0	500m	30 #		50M			PL	T066	C	
57	SDT5908	166m	16	\$J	2.0	500m	100	8.0		100n	2.0	500m	30 #		50M			PL	T066	C	
58	SDT5909	166m	16	\$J	2.0	500m	140	8.0		100n	2.0	500m	30 #		50M			PL	T066	C	
59	SDT5910	166m	16	\$J	2.0	500m	180	8.0		100n	2.0	500m	30 #		50M			PL	T066	C	
60	SDT5911	166m	16	\$J	2.0	500m	60	8.0		100n	2.0	500m	120 #		50M			PL	T066	C	
61	SDT5912	166m	16	\$J	2.0	500m	80	8.0		100n	2.0	500m	120 #		50M			PL	T066	C	
62	SDT5913	166m	16	\$J	2.0	500m	100	8.0		100n	2.0	500m	120 #		50M			PL	T066	C	
63	SDT5914	166m	16	\$J	2.0	500m	140	8.0		100n	2.0	500m	120 #		50M			PL	T066	C	
64	SDT5915	166m	16	\$J	2.0	500m	180	8.0		100n	2.0	500m	120 #		50M			PL	T066	C	
65	SDT5954	166m	16	\$J	2.0	500m	175	8.0		100n	2.0	500m	30	150 #	50M			PL	T066	C	
66	SDT5955	166m	16	\$J	2.0	500m	200	8.0		100n	2.0	500m	30	150 #	50M			PL	T066	C	
67	SDT5956	166m	16	\$J	2.0	500m	225	8.0		100n	2.0	500m	30	150 #	50M			PL	T066	C	
68	2N2947	167m	25	\$C	1.5	500m	60	3.0	60	1.0u	2.0	400m	6.0	60 #	100M					T03	C
69	2N3297	167m	25	\$C	1.5	500m	60	3.0	60	1.0u	2.0	400m	6.0	60 #	100M					T03	C
70#	BD131	167m	11	\$J	3.0	500m	70	6.0	45	5.0u	12	500m	40		60M	800m		PE	T0126	D	
71	SDT5951	167m	16	\$J	2.0	.50	175	8.0		10u	2.0	.50	50	150 #	50M			PL	T066	C	
72	SDT5952	167m	16	\$J	2.0	.50	200	8.0		10u	2.0	.50	50	150 #	50M			PL	T066	C	
73	SDT5953	167m	16	\$J	2.0	.50	225	8.0		10u	2.0	.50	50	150 #	50M			PL	T066	C	
74#	KSD2101	170m	30	J	4.0	1.0	80	7.0	45	1.0m	4.0	500m	25	100	800k					T066	C
75#	KSD2102	170m	30	J	4.0	1.0	70	7.0	35	1.0m	4.0	500m	25	100	800k					T066	C

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A X E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Icbo @ MAX Vcb @ 25°C (A)	BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vbeo (V)	Vceo (V)		Vcb (V)	Ic (A)								
1	2N3919†	200m\$	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
2	2N3920†	200m\$	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
3	2N3929†	200m\$	20	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
4	2N4231	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
5	2N4232	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
6	2N4233	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
7	2N4240†	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
8	2N4428	200m#	3.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
9	2N4998	200m#	3.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
10	2N5000	200m#	3.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
11	2N5016	200m#	3.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
12	JAN2N5016	200m#	2.6	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
13	2N5083†	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
14	2N5084†	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
15	2N5085†	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
16	2NE202†	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
17	2NE326†	200m\$	20	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
18	2NE660†	200m#	20	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
19	2NE661†	200m#	20	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
20	2NE700	200m#	20	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
21	2NE701	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
22	2NE919	200m\$	25	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
23	2NE938\$	200m\$	2.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
24#	2SC675	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
25#	2SC690	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
26#	2SC825	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
27#	2SD129	200m	25	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
28#	2SD130	200m	25	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
29#	2SD158	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
30#	2SD159	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
31#	2SD226	200m	25	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
32#	2SD226A	200m	25	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
33#	2SD226B	200m	25	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
34#	2SD234O	200m	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
35#	2SD234R	200m	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
36#	2SD234Y	200m	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
37#	2SD235O	200m	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
38#	2SD235R	200m	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
39#	2SD235Y	200m	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
40	40313	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
41	40318	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
42	40322	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
43	40328	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
44	40364	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
45	A235	200m	12	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
46	B3585	200m	35	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
47	B3586	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
48	B3587	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
49	B3588	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
50	B3589	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
51	B3590	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
52	B3591	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
53	B3592	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
54	B3593	200m	30	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
55	B3618	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
56	B3619	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
57	B3620	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
58	B3621	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
59	B3622	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
60	B3623	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
61	B3624	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
62	B3625	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
63	B3626	200m	40	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
64#	BD111	200m\$	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
65#	BD113	200m	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
66	BD144	200m	8.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
67#	BD145	200m	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
68#	BDY60†	200m	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
69#	BDY61†	200m	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
70#	BDY62†	200m	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
71#	BLY12	200m	3.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
72#	BU100	200m\$	15	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
73#	BUY10†	200m	2.5																		



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS V <sub>cb</sub> (V)	MIN (A)	MAX (A)	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	# L O A D E	C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)	I <sub>cb0</sub> (A)	V <sub>cb</sub> (V)										
1	SDT7513	200m	20	SS	SJ			100	5.0	80	1.0u	5.0	20	60	40Ms			T08			
2	SDT7514	200m	20	SS	SJ			60	5.0	40	1.0u	5.0	40	120	50Ms			T08			
3	SDT7515	200m	20	SS	SJ			80	5.0	60	1.0u	5.0	40	120	50Ms			T08			
4	SDT7516	200m	20	SS	SJ			100	5.0	80	1.0u	5.0	40	120	50Ms			T08			
5	SDT7517	200m	20	SS	SJ			60	5.0	40	1.0u	5.0	100	400	60Ms			T08			
6	SDT7518	200m	20	SS	SJ			80	5.0	60	1.0u	5.0	100	400	60Ms			T08			
7	SDT7519	200m	20	SS	SJ			100	5.0	80	1.0u	5.0	100	400	60Ms			T08			
8	ST14030T	200m	30	SS	SJ	60		125	10	80	100u	10	20	30	10Ms		500n	PL	TO63		
9	ST14031T	200m	30	SS	SJ	60		145	10	100	100u	10	20	30	10Ms		500n	PL	TO63		
10	ST14032T	200m	30	SS	SJ	60		170	10	120	100u	10	20	30	10Ms		500n	PL	TO63		
11	2N1768	220m	40	SS	SA	3.0	15	60	12	40	15u	4.0	750m	35	100	600k	1.0	Δ	MT5	A0	
12	2N1769	220m	40	SS	SA	3.0	1.5	100	12	55	15u	4.0	750m	35	100	600k	1.0	Δ	MT5	A0	
13	25C1015	220m	33	SS	SJ	3.0		40	5.0	18	500u	1.0	100m	5.0	#	1.2G		PET	MT83	VZ	
14	2N2036	222m	17	SS	SS	5.0		80	10	60	10m	4.0	2.0	15	45	2.0M	500m	DA	TO37	A0	
15	MP8111	222m	3.0	SS	SJ	1.2		60	7.0	60	5.0u	5.0	200m	30	60	100Ms	600m	PE	X95	A0	
16	MP8112	222m	3.0	SS	SJ	1.2		60	7.0	60	5.0u	5.0	200m	100	240	100Ms	600m	PE	X95	A0	
17	MP8113	222m	3.0	SS	SJ	1.2		60	7.0	60	5.0u	5.0	200m	20	60	100Ms	600m	PE	X95	A0	
18	MP8121	222m	3.0	SS	SJ	1.2		35	7.0	35	5.0u	5.0	200m	50	120	100Ms	600m	PE	X95	A0	
19	MP8122	222m	3.0	SS	SJ	1.2		35	7.0	35	5.0u	5.0	200m	20	60	100Ms	600m	PE	X95	A0	
20	MP8123	222m	3.0	SS	SJ	1.2		35	7.0	35	5.0u	5.0	200m	100	240	100Ms	600m	PE	X95	A0	
21	MP8211	222m	5.0	SS	SJ	400m		60	7.0	60	1.0m	5.0	500m	30	60	100Ms	600m	PE	TO66	C0	
22	MP8212	222m	5.0	SS	SJ	400m		60	7.0	60	1.0m	5.0	500m	50	120	100Ms	600m	PE	TO66	C0	
23	MP8213	222m	5.0	SS	SJ	400m		60	7.0	60	1.0m	5.0	500m	20	60	100Ms	600m	PE	TO66	C0	
24	MP8221	222m	5.0	SS	SJ	400m		35	7.0	35	1.0m	5.0	500m	20	60	100Ms	600m	PE	TO66	C0	
25	MP8222	222m	5.0	SS	SJ	1.5		35	7.0	35	1.0m	5.0	500m	50	120	100Ms	600m	PE	TO66	C0	
26	MP8223	222m	5.0	SS	SJ	1.5		35	7.0	35	1.0m	5.0	500m	100	200	100Ms	600m	PE	TO66	C0	
27	2N5596	225m	40	SS	SS	2.5	1.0	55	3.5	30	4.0m	5.0	50m	20	30	1.5G		PE	MT73	A0	
28	JAN2N1047A	227m	1.0	SS	SJ	500m		10	80	15u	10	50m	12	36	2.0Ms	15	Δ	TO57	A0		
29	JAN2N1048A	227m	1.0	SS	SJ	500m		10	80	15u	10	50m	12	36	2.0Ms	15	Δ	TO57	A0		
30	JAN2N1049A	227m	1.0	SS	SJ	500m		10	80	15u	10	50m	30	90	2.0Ms	15	Δ	TO57	A0		
31	JAN2N1050A	227m	1.0	SS	SJ	500m		10	120	15u	10	50m	30	90	2.0Ms	15	Δ	TO57	A0		
32	2N4128	227m	40	SS	SA	4.0	10	60	4.0	40	1.0m	5.0	200m	10	80	200Ms	500m	PET	MT59	A0	
33	25C704	227m	40	SS	SA	4.0		40	4.0	20	2.0m	1.0	100m	5.0	#	100Ms		PET	MT59	A0	
34	PT5693	227m	40	SS	SJ	4.0		40	4.0	20	5.0m	1.0	100m	15	120	200Ms	500m	PL	MT59	A0	
35	2N1047	228m	1.0	SS	SJ	500m		80	6.0	80	15u	1.0	500m	12	36	2.0Ms			TO57	A0	
36	2N1047A	228m	1.0	SS	SJ	500m	500m	80	10	80	350u	1.0	500m	12	36	2.0Ms	75k		TO57	A0	
37	2N1047B	228m	1.0	SS	SJ	750m	500m	80	10	80	10u	1.0	500m	12	36	2.0Ms	125k		TO57	A0	
38	2N1048	228m	1.0	SS	SJ	500m		120	6.0	10	15u	1.0	500m	12	36	2.0Ms			TO57	A0	
39	2N1048A	228m	1.0	SS	SJ	500m	500m	120	10	120	350u	1.0	500m	12	36	2.0Ms	75k		TO57	A0	
40	2N1048B	228m	1.0	SS	SJ	750m	500m	120	10	120	10u	1.0	500m	12	36	2.0Ms	125k		TO57	A0	
41	2N1049	228m	1.0	SS	SJ	500m		80	6.0	80	15u	1.0	500m	30	90	2.0Ms			TO57	A0	
42	2N1049A	228m	1.0	SS	SJ	500m	500m	80	10	80	350u	1.0	500m	30	90	2.0Ms	75k		TO57	A0	
43	2N1049B	228m	1.0	SS	SJ	750m	500m	80	10	80	10u	1.0	500m	30	90	2.0Ms	125k		TO57	A0	
44	2N1050	228m	1.0	SS	SJ	500m		120	6.0	10	15u	1.0	500m	30	90	2.0Ms			TO57	A0	
45	2N1050A	228m	1.0	SS	SJ	500m	500m	120	10	120	350u	1.0	500m	30	90	2.0Ms	75k		TO57	A0	
46	2N1050B	228m	1.0	SS	SJ	750m	500m	120	10	120	10u	1.0	500m	30	90	2.0Ms	125k		TO57	A0	
47	2N1690	228m	1.0	SS	SJ	500m	500m	80	10	80	350u	1.0	500m	20	60	90k			MT5	A0	
48	2N1691	228m	1.0	SS	SJ	500m	500m	120	10	120	350u	1.0	500m	20	60	90k			MT5	A0	
49	2N5177	228m	40	SS	SJ	4.0	1.0	55	3.5	35	10m	5.0	100m	10	150	200Ms			MD36	FZ	
50	2N5427T	228m	40	SS	SJ	7.0	1.0	80	6.0	80	10u	2.0	2.0	50	120	30Ms	100n		TO66	C0	
51	2N5428T	228m	40	SS	SJ	7.0	1.0	80	6.0	80	10u	2.0	2.0	60	240	30Ms	100n		TO66	C0	
52	2N5429T	228m	40	SS	SJ	7.0	1.0	100	6.0	100	10u	2.0	2.0	30	120	30Ms	100n		TO66	C0	
53	2N5430T	228m	40	SS	SJ	7.0	1.0	100	6.0	100	10u	2.0	2.0	30	240	30Ms	100n		TO66	C0	
54	MJ3801T	228m	40	SS	SJ	10	500m	80	7.5	80	10u	4.0	6.0	10k	60k	50Ms	200m		L69		
55	MJ3802T	228m	40	SS	SJ	10	500m	80	7.5	80	10u	4.0	6.0	10k	20k	50Ms	200m		L69		
56	2N2828	229m	40	SS	SA	3.0	1.0	80	6.0	10	50m	4.0	500m	20	60	1.0Ms	1.5u	D	MT25		
57	STC1300	229m	40	SS	SJ	1.5		60	6.0	40	4.0	300m	20	90	2.5M	5.0	900n	D	MT5		
58	STC1336	229m	40	SS	SJ			60	6.0	40	15u	1.0	200m	30	90	2.5M	15	900n	D	MT5	
59	2N5775	230m	40	SS	SJ	3.0	500m	65	3.5	35	5.0m	5.0	100m	10	150	5.0Ms	333m		MD36	FZ	
60	2N5954	232m	40	SS	SJ	6.0		85	5.0	75	2.0m	4.0	2.0	20	100	5.0Ms	333m		TO66	C0	
61	2N5955	232m	40	SS	SJ	6.0		70	5.0	60	2.0m	4.0	2.0	20	100	5.0Ms	333m		TO66	C0	
62	2N5956	232m	40	SS	SJ	6.0		50	5.0	40	2.0m	4.0	3.0	20	100	5.0Ms	333m		TO66	C0	
63	2N4921	238m	30	SS	SJ	1.0		40	5.0	40	1.0m	1.0	500m	20	100	3.0Ms			X58	B0	
64	2N4922	238m	30	SS	SJ	1.0		60	5.0	60	100u	1.0	500m	20	100	3.0Ms			X58	B0	
65	2N4923	238m	30	SS	SJ	1.0		80	5.0	80	100u	1.0	500m	20	100	3.0Ms			X58	B0	
66	D44C11	238m	1.6	SS	SJ	4.0		50	5.0	30	10u	1.0	200m	40	120	50Ms			X102	D	
67	D44C2T	238m	1.6	SS	SJ	4.0		50	5.0	30	10u	1.0	200m	40	120	50Ms			X102	D	
68	D44C3T	238m	1.6	SS	SJ	4.0		50	5.0	30	10u	1.0	200m	40	120	50Ms			X102	D	
69	D44C4T	238m	1.6	SS	SJ	4.0		50	5.0	45	10u	1.0	200m	40	120	50Ms			X102	D	
70	D44C5T	238m	1.6	SS	SJ	4.0		50	5.0	45	10u	1.0	200m	40	120	50Ms			X102	D	
71	D44C6T	238m	1.6	SS	SJ	4.0		50	5.0	45	10u	1.0	200m	40	120	50Ms			X102	D	
72	D44C7T	238m	1.6	SS	SJ	4.0		50	5.0	60	10u	1.0	200m	40	120	50Ms			X102	D	
73	D44C8T	238m	1.6	SS	SJ	4.0		50	5.0	60	10u	1.0	200m	40	120	50Ms			X102	D	
74	D44C9T	238m	1.6	SS	SJ	4.0		50	5.0	60	10u	1.0	200m	40	120	50Ms			X102	D	
75	TIP29T	238m	2.0	SS	SJ	1.0	400m	40													



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y2000 Ser.	# E O A D	C R		
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vcb @ 25°C (A)	hFE (A)										hFE (V)	
1#	BLY89	250m	44	∅	\$J	3.5		36	4.0	18	10mΔ	5.0	500m	5.0				PE	MT72	C∅	R		
2	BLY93	250m	44	∅	\$J	2.0		65	4.0	36	10mΔ	5.0	500m	5.0				PE	MT72c	C∅	R		
3	BR100D\$	250m	35	∅	\$J	10	2.0	60	3.0	40	1.0m∅	5.0	3.0	40	200	#	300m\$	TO60			A		
4	BR101D\$	250m	35	∅	\$J	10	2.0	90	3.0	75	1.0m∅	5.0	3.0	30	150	#	300m\$	TO60			A		
5▼	D44R1	250m	1.6	∅	\$J	1.0		5.0	250		1.0m\$	10∅	500m	30	90			Δ	X102		B		
6▼	D44R2	250m	1.6	∅	\$J	1.0		5.0	250		1.0m\$	10∅	500m	75	175			Δ	X102		B		
7▼	D44R3	250m	1.6	∅	\$J	1.0		5.0	300		1.0m\$	10∅	500m	30	90			Δ	X102		B		
8▼	D44R4	250m	1.6	∅	\$J	1.0		5.0	300		1.0m\$	10∅	500m	75	175			Δ	X102		B		
9	KSP1121	250m			\$J	10	2.0	225	8.0	200	10u	5.0	5.0	20	60			Δ	TO66		∅		
10	KSP1122	250m			\$J	10	2.0	250	8.0	225	10u	5.0	5.0	20	60			PE	TO66		∅		
11	KSP1123	250m			\$J	10	2.0	275	8.0	250	10u	5.0	5.0	20	60			PE	TO66		∅		
12	KSP1124	250m			\$J	10	2.0	300	8.0	275	10u	5.0	5.0	20	60			PE	TO66		∅		
13	KSP1125	250m			\$J	10	2.0	325	8.0	300	10u	5.0	5.0	20	60			PE	TO66		∅		
14	PPR1007\$	250m	35	∅	\$J	10		60		40		5.0	3.0	40					TO60		A∅		
15	PPR1009\$	250m	35	∅	\$J	10		90		75		5.0	3.0	30					TO60		A∅		
16▼	PT2993†	250m	44	∅	\$A			100	5.0	80		2.0	3.0	100	300				166m▼		MT65		
17	SDT7901	250m\$	25	∅	\$J	10		225	8.0	200	1.0u∅	5.0	5.0	20	60	#				PL	TO66	C∅	
18	SDT7902	250m\$	25	∅	\$J	10		250	8.0	225	1.0u∅	5.0	5.0	20	60	#				PL	TO66	C∅	
19	SDT7903	250m\$	25	∅	\$J	10		275	8.0	250	1.0u∅	5.0	5.0	20	60	#				PL	TO66	C∅	
20	SDT7904	250m\$	25	∅	\$J	10		325	8.0	300	1.0u∅	5.0	5.0	20	60	#				PL	TO66	C∅	
21	SDT7905	250m\$	25	∅	\$J	10		350	8.0	325	1.0u∅	5.0	5.0	20	60	#				PL	TO66	C∅	
22	SDT7907	250m	43	∅	\$J	10	2.0	200	8.0	200	10u	5.0	5.0	15						PL	TO66	C∅	
23	SDT7908	250m	43	∅	\$J	10	2.0	250	8.0	250	10u	5.0	5.0	15						PL	TO66	C∅	
24	SDT7909	250m	43	∅	\$J	10	2.0	300	8.0	300	10u	5.0	5.0	15						PL	TO66	C∅	
25	SDT7910	250m	43	∅	\$J	10	2.0	150	8.0	150	10u	5.0	5.0	10						PL	TO66	C∅	
26	ST15043†	250m#	187	∅	\$J	40		125	10	80	100u∅	10∅	10	30	120	#				500n∅		TO63	
27	ST15044†	250m#	187	∅	\$J	40		145	10	100	100u∅	10∅	10	30	120	#				500n∅		TO63	
28	ST15045†	250m#	187	∅	\$J	40		170	10	120	100u∅	10∅	10	30	120	#				500n∅		TO63	
29	2N5025	256m	45	∅	\$J	5.0		75	4.5	75	10u\$	2.0	2.0	20	#						150m\$Δ		A∅
30	2N5026	256m	45	∅	\$J	5.0		90	4.5	90	10u\$	2.0	2.0	20	#						150m\$Δ		A∅
31	2N5713	256m	45	∅	\$S	5.0		60	4.0	40	500u∅	10∅	10m	10									TO128
32	2N1648	263m	40	∅	\$S	3.0		120	6.0	80	100u∅	10∅	500m	15	45								MT11
33	2N1650	263m	40	∅	\$S	3.0		120	6.0	80	100u∅	10∅	500m	30	90								MT11
34	2N2018	263m\$	20	∅	\$S	2.0	500m	150	6.0	125	100u∅	10∅	500m	20	60	#							MT11
35	2N2019	263m\$	20	∅	\$S	2.0	500m	200	6.0	140	100u∅	10∅	500m	20	60	#							MT11
36	2N1647	266m	40	∅	\$S	3.0		80	6.0	80	100u∅	10∅	500m	15	45								MT11
37	2N1649	266m	40	∅	\$S	3.0		80	6.0	80	100u∅	10∅	500m	30	90								MT11
38	2N1886	266m	40	∅	\$S	3.0		60	6.0	60	350u	10∅	500m	20									MT11
39	2N2632	266m	40	∅	\$J	5.0	500m	90	8.0	60	100n∅	2.0	1.0	40	120								MT24
40	2N2633	266m	40	∅	\$J	5.0	500m	120	8.0	80	100n∅	2.0	1.0	40	120								MT24
41	2N2634	266m	40	∅	\$J	5.0	500m	150	8.0	100	100n∅	2.0	1.0	40	120								MT24
42	2N2866	266m	40	∅	\$C	2.0	150m	120	10	80		5.0	500m	20	60								MT21
43	2N2867	266m	40	∅	\$C	2.0	150m	120	10	80		5.0	500m	40	120								MT21
44	2N5050†	266m	40	∅	\$J	2.0	1.0	125	6.0	125	500u#	5.0	750m	25	100	#							TO66
45	2N5051†	266m	40	∅	\$J	2.0	1.0	150	6.0	150	500u#	5.0	750m	25	100	#							TO66
46	2N5052†	266m	40	∅	\$J	2.0	1.0	200	6.0	200	500u#	5.0	750m	25	100	#							TO66
47#	2S033†	266m	4.0	∅	\$J	3.0	2.0	100	8.0	75	2.0m∅	10∅	1.0	30	100	#							TO3
48#	2S034†	266m	4.0	∅	\$J	3.0	2.0	100	8.0	75	2.0m∅	10∅	1.0	60	200	#							TO3
49#	2S035†	266m	4.0	∅	\$J	3.0	2.0	150	8.0	100	2.0m∅	10∅	1.0	30	100	#							TO3
50#	2S036†	266m	4.0	∅	\$J	3.0	2.0	150	8.0	100	2.0m∅	10∅	1.0	60	200	#							TO3
51	SDT6001	266m	40	∅	\$J	5.0		100	5.0	50	1.0u∅	5.0	1.0	10	120	#							MT24
52	SDT6011	266m	40	∅	\$J	5.0		80	8.0	40	1.0u∅	5.0	1.0	20	60	#							MT24
53	SDT6012	266m	40	∅	\$J	5.0		100	8.0	80	1.0u∅	5.0	1.0	20	60	#							MT24
54	SDT6013	266m	40	∅	\$J	5.0		80	8.0	40	1.0u∅	5.0	1.0	40	120	#							MT24
55	SDT6014	266m	40	∅	\$J	5.0		100	8.0	80	1.0u∅	5.0	1.0	40	120	#							MT24
56	SDT6015	266m	40	∅	\$J	5.0		80	8.0	40	1.0u∅	5.0	1.0	100	#								MT24
57	SDT6016	266m	40	∅	\$J	5.0		100	8.0	80	1.0u∅	5.0	1.0	100	#								MT24
58	SDT6031	266m	40	∅	\$J	5.0	500m	60	5.0	40	1.0u∅	5.0	1.0	20	60	#							MT24
59▼	SG7207	266m	40	∅	\$J	5.0	∅	60	6.0	80	10u\$	5.0	2.5	30	300	#							TO59
60▼	SG7207A	266m	40	∅	\$J	5.0	∅	60	6.0	80	10u\$	5.0	2.5	70	300	#							TO59
61	2N2020	267m	40	∅	\$S	2.0		150	6.0	125	100u∅	10∅	500m	40	90								MT11
62	2N2021	267m	40	∅	\$S	2.0		200	6.0	140	100u∅	10∅	500m	40	90								MT11
63	40613	277m	1.8	∅	\$A	4.0	2.0	5.0	5.0	25	2.0u	4.0	1.0	30	120								X75a
64	40618	277m	1.8	∅	\$A	4.0	2.0	5.0	5.0	30	2.0u	4.0	1.0	30	120								X75a
65	40621	277m	1.8	∅	\$A	4.0	2.0	5.0	5.0	32	500u*	4.0	1.5	25	100								X75a
66	40622	277m	1.8	∅	\$A	4.0	2.0	5.0	5.0	40	500u*	4.0	1.5	25	100								X75a
67	40629	277m	1.8	∅	\$A	4.0	2.0	5.0	5.0		500u*	4.0	1.0	20	70								X75a
68	40630	277m	1.8	∅	\$A	4.0	2.0	5.0	5.0		500u*	4.0	1.5	20	70								X75a
69	40631	277m	1.8	∅	\$A	4.0	2.0	5.0	5.0		500u*	4.0	2.0	20	70								X75a
70#	ZSC101A	280m	35	∅	\$J	5.0		70	5.0	50	1.0m∅	10∅	500m	30	†								TO66
71	SPT3439	280m	50	∅	\$J	5.0	1.0	500	7.0	400	2.0u∅	10∅	200	20									TO117
72▼	2N5773	285m	5.0	∅	\$S	500m	150m	65	†	3.5	20u∅	5.0	50m	20	200								TO117
73▼	2N5848	285m	50	∅	\$S	3.5																	

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y2000 Ser.	# C O D E
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ MAX Vcb @ 25°C (A)	Vcb (V)								
1	JAN2N3749†	300m\$	2.0	\$A	5.0		110	8.0	80	400n∅	5.0∅	1.0	40	120 #	20M\$Δ	250m	300n∅	MT53e	M
2	2N3996†	300m\$	2.0	\$J	5.0	1.0	100	8.0	80	5.0u\$	2.0∅	50m	30		40M\$Δ	300n∅	MT53	M	
3	2N3997†	300m\$	2.0	\$J	5.0	1.0	100	8.0	80	5.0u\$	2.0∅	50m	60		40M\$Δ	300n∅	MT53	M	
4	2N3998†	300m\$	2.0	\$J	5.0	1.0	100	8.0	80	5.0u\$	2.0∅	50m	30		40M\$Δ	300n∅	MT42	A∅	
5	2N3999†	300m\$	2.0	\$J	5.0	1.0	100	8.0	80	5.0u\$	2.0∅	50m	60		40M\$Δ	300n∅	MT42	A∅	
6	2N5658†	300m	30	\$J	10	2.0	120	7.0	80	200n\$	5.0∅	5.0	50	150 #	30M\$Δ	150n∅	TO59	A∅	
7	2N5659†	300m	30	\$J	10	2.0	120	7.0	80	200n\$	5.0∅	5.0	50	150 #	30M\$Δ	150n∅	TO111	G	
8	2N5664†	300m#	30	\$J	3.0	600m	250	6.0	200	1.0u\$	5.0∅	1.0	40	120 #	20M\$Δ	250n∅	TO66	A∅	
9	2N5665†	300m#	30	\$J	3.0	600m	400	6.0	300	1.0u\$	5.0∅	1.0	40	120 #	20M\$Δ	250n∅	TO66	A∅	
10	2N5730†	300m#	45	\$J	10	2.0	100 †	5.0†	80	1.0m\$	2.0∅	2.0	30	300	30M\$Δ	240m	200n∅	TO59	A
11	2850-2†	300m	2.0	\$A	5.0		100	5.0	80	100n\$	1.0∅	50m	25	50	40M\$	50n	PL	TO59	A∅
12	2851-2†	300m	2.0	\$A	5.0		100	5.0	80	100n\$	1.0∅	50m	25	50	40M\$	50n	PL	TO59	A∅
13	2852-2†	300m	2.0	\$A	5.0		100	5.0	80	100n\$	1.0∅	50m	15	25	30M\$	400m	PL	TO59	A∅
14	2853-2†	300m	2.0	\$A	5.0		60	5.0	40	100n\$	1.0∅	1.0	40	85	40M\$	50n	PL	TO59	A∅
15	2854-2†	300m	2.0	\$A	5.0		60	5.0	40	100n\$	1.0∅	50m	50	90	50M\$	40n	PL	TO59	A∅
16	2855-2†	300m	2.0	\$A	5.0		60	5.0	40	100n\$	1.0∅	50m	25	50	40M\$	50n	PL	TO59	A∅
17	2856-2†	300m	2.0	\$A	5.0		60	5.0	40	100n\$	1.0∅	50m	15	25	30M\$	60n	PL	TO59	A∅
18	BD117	300m	30	\$			100	5.0	60		5.0∅	2.0	30	110			PE	TO3	G∅
19	BUY39	300m	2.0	\$J	5.0	1.0	100	8.0	80	50uΔ	2.0∅	1.0	40	240	40M\$		PE	MT53	
20	BUY40	300m	2.0	\$J	5.0	1.0	100	8.0	80	50uΔ	2.0∅	1.0	40	240	40M\$		PE	MT42	
21	CP657	300m	30	\$			120	6.0	100	10u\$	5.0∅	2.0	25	95	50M\$	400n∅	PE		H
22	KSP1091	300m		\$	5.0	1.0	225	8.0	200	1.0u	5.0	1.0	20	60	40M		PE	TO3	
23	KSP1092	300m		\$	5.0	1.0	250	8.0	225	1.0u	5.0	1.0	20	60	40M		PE	TO3	
24	KSP1093	300m		\$	5.0	1.0	275	8.0	250	1.0u	5.0	1.0	20	60	40M		PE	TO3	
25	KSP1094	300m		\$	5.0	1.0	300	8.0	275	1.0u	5.0	1.0	20	60	40M		PE	TO3	
26	KSP1095	300m		\$	5.0	1.0	325	8.0	300	1.0u	5.0	1.0	20	60	40M		PE	TO3	
27	BD121	303m	45	\$J	5.0	1.0	60	6.0	35	100u	1.0∅	100m	15		60M\$	650m	D	TO3	C∅
28	BD123	303m	45	\$J	5.0	1.0	90	6.0	60	100u	1.0∅	100m	15		60M\$	650m	D	TO3	C∅
29	PT4926	303m	53	\$	10	5.0	100	5.0	80	1.0m	5.0	5.0	80	200	60M	250m	PL	TO59	A∅
30	2N5190	320m	40	\$J	4.0	1.0	40	5.0	40	100u	2.0∅	15	25	100	2.0M\$Δ	350m	E	X58	B∅
31	2N5191	320m	40	\$J	4.0	1.0	60	5.0	60	100u	2.0∅	15	25	100	2.0M\$Δ	350m	E	X58	B∅
32	2N5192	320m	40	\$J	4.0	1.0	80	5.0	80	100u	2.0∅	15	20	80	2.0M\$Δ	350m	E	X58	B∅
33	MJE521	320m	40	\$J	3.0	2.0	40	4.0	40	100u	1.0∅	1.0	40	#				X58	B∅
34	MJE2520	320m	40	\$J	3.0	1.0	40	5.0	40	200u\$	4.0∅	200m	40	200 #	3.0M\$Δ		Δ	X104	D
35	MJE2521	320m	40	\$J	3.0	1.0	60	5.0	60	200u\$	4.0∅	200m	40	200 #	3.0M\$Δ		Δ	X104	D
36	MJE2522	320m	40	\$J	3.0	1.0	40	5.0	40	200u\$	4.0∅	1.0	20	100 #	3.0M\$Δ		Δ	X104	D
37	MJE2523	320m	40	\$J	3.0	1.0	60	5.0	60	200u\$	4.0∅	1.0	20	100 #	3.0M\$Δ		Δ	X104	D
38	MJE3054	320m	40	\$J	4.0	2.0	90	5.0	55	1.0m#	4.0∅	500m	25	100 #	30kΔ		Δ	X75b	B∅
39	TIP31†	322m	2.0	\$J	3.0	1.0	40	5.0	40	500uΔ	4.0	1.0	20	100 #	3.0kΔ	450n∅	D	X75b	B∅
40	TIP31A†	322m	2.0	\$J	3.0	1.0	60	5.0	60	500uΔ	4.0	1.0	20	100 #	3.0kΔ	450n∅	D	X75b	B∅
41	TIP31B	322m	2.0	\$J	3.0	1.0	80	5.0	80	500uΔ	4.0∅	1.0	20		3.0kΔ		D	X75b	B∅
42	TIP31C	322m	2.0	\$J	3.0	1.0	100	5.0	100	500uΔ	4.0∅	1.0	20		3.0kΔ		D	X75b	B∅
43	2N5614	330m#	50	\$J	5.0	2.0	80 †	6.0†	60	1.0m#	5.0∅	2.5	30	200 #	70M\$Δ			TO3	C∅
44	2N5616	330m#	50	\$J	5.0	2.0	100 †	6.0†	80	1.0m#	5.0∅	2.5	30	200 #	60M\$Δ			TO3	C∅
45	2N5618	330m#	50	\$J	5.0	2.0	100 †	6.0†	80	1.0m#	5.0∅	2.5	70	200 #	70M\$Δ			TO3	C∅
46	2N5620	330m#	50	\$J	5.0	2.0	120 †	6.0†	100	1.0m#	5.0∅	2.5	30	170	60M\$Δ			TO3	C∅
47	40464	330m	40	\$J	5.0	1.0	35	4.0	35	250u	1.0∅	2.0	30	170	2.0M\$Δ		E	TO3	C∅
48	40465	330m	40	\$J	5.0	1.0	40	4.0	40	100u	1.0∅	2.0	50	170	2.0M\$Δ		E	TO3	C∅
49	40466	330m	40	\$J	5.0	1.0	50	4.0	50	100u	1.0∅	2.0	50	170	2.0M\$Δ		E	TO3	C∅
50	2N1069†	333m	50	\$A	4.0	1.3	60	9.0	45	1.0n	4.0∅	1.5	10	50	1.2M†	2.0	D	TO3	C∅
51	2N1070†	333m	50	\$A	4.0	1.3	60	9.0	45	1.0n	4.0∅	1.5	10	50	1.2M†	1.8u	D	TO3	C∅
52	2N1470	333m	30	\$J	3.0		3.0	6.0	65	5.0m	5.0∅	1.0	15		1.0M†	3.0	D	TO3	C∅
53	2N2102	333m	1.0	\$J	1.0		120	7.0	65	2.0n∅	1.0∅	10m	35		3.0	∅	TO5	A∅	
54	2N3744†	333m\$	30	\$J	5.0		60	7.0	40	100n∅	5.0∅	1.0	20	60 #	30M\$Δ	120m	D	MT53	G
55	2N3745†	333m\$	30	\$J	5.0	500m	80	7.0	40	100n∅	5.0∅	1.0	20	60 #	30M\$Δ	120m	D	MT53	G
56	2N3746†	333m\$	30	\$J	5.0	500m	100	8.0	80	100n∅	5.0∅	1.0	20	60 #	30M\$Δ	120m	D	MT53	G
57	2N3747†	333m\$	30	\$J	5.0	500m	60	7.0	40	100n∅	5.0∅	1.0	40	120 #	40M\$Δ	80n	D	MT53	G
58	2N3748†	333m\$	30	\$J	5.0	500m	80	8.0	60	100n∅	5.0∅	1.0	40	120 #	40M\$Δ	80n	D	MT53	G
59	2N3749†	333m\$	30	\$J	5.0	500m	100	8.0	80	100n∅	5.0∅	1.0	40	120 #	40M\$Δ	80n	D	MT53	G
60	2N3750†	333m\$	30	\$J	5.0	500m	60	7.0	40	100n∅	5.0∅	1.0	100	300 #	50M\$Δ	80n	D	MT53	G
61	2N3751†	333m\$	30	\$J	5.0	500m	80	8.0	60	100n∅	5.0∅	1.0	100	300 #	50M\$Δ	80n	D	MT53	G
62	2N3751†	333m\$	30	\$J	5.0	500m	100	8.0	80	100n∅	5.0∅	1.0	100	300 #	50M\$Δ	80n	D	MT53	G
63	JAN2N3996†	333m\$	2.0	\$S	5.0		100	8.0	80	5.0u\$	2.0∅	1.0	40	120 #	40M\$Δ	300n∅	D	MT53	M
64	JAN2N3997†	333m\$	2.0	\$S	5.0		100	8.0	80	5.0u\$	2.0∅	1.0	40	120 #	40M\$Δ	300n∅	D	MT53	M
65	JAN2N3998†	333m\$	2.0	\$S	5.0		100	8.0	80	5.0u\$	2.0∅	1.0	40	120 #	40M\$Δ	300n∅	D	MT42a	A
66	JAN2N3999†	333m\$	2.0	\$S	5.0		100	8.0	80	5.0u\$	2.0∅	1.0	40	120 #	40M\$Δ	300n∅	D	MT42a	A
67	2N4111	333m#	30	\$J	5.0	2.0	100	8.0	60	2.0m#	5.0∅	2.0	40	120 #	50M\$Δ			TO3	A∅
68	2N4112	333m#	30	\$J	5.0	2.0	100	8.0	60	2.0m#	5.0∅	2.0	40	120 #	60M\$Δ			TO3	A∅
69	2N4113	333m#	30	\$J	5.0	2.0	120	8.0	80	2.0m#	5.0∅	2.0	40	120 #	50M\$Δ			TO3	A∅
70	2N4114	333m#	30	\$J	5.0	2.0	120	8.0	80	2.0m#	5.0∅	2.0	30	90 #	60M\$Δ			TO59	A
71	2N5002	333m#	50	\$J	5.0	2.0	100	6.0	80	1.0m#	5.0∅	2.5	70	200 #	70M\$Δ			TO59	A
72	2N5004	333m#	50	\$J	5.0	2.0	100	6.0	80	1.0m#	5.0∅	2.5	70	200 #	70M\$Δ			TO59	A
73	2N5284	333m#	50	\$J	5.0	2.0	120	6.0	80	1.0m#	5.0∅	2.5	30	90 #	60M\$Δ			TO59	A
74	2N5285	333m#	50	\$J	5.0	2.0	120	6.0	80	1.0m#	5.0∅	2.5	70	200 #	70M\$Δ			TO59	A
75	2N5328†	333m#	30</																

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J TO C (W/C)	MAX FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. I <sub>cb0</sub> @ MAX V <sub>cb</sub> @ 25°C (A)	BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 TO200 Ser	# C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)		V <sub>cb</sub> (V)	I <sub>c</sub> (A)								
1	B3579	333m	40	SC	5.0		100	8.0	80	1.0	1.0	20	60	30M	500m		PE	T059		
2	B3580	333m	40	SC	5.0		80	8.0	40	1.0	1.0	40	120	30M	500m		PE	T059		
3	B3581	333m	40	SC	5.0		100	8.0	80	1.0	1.0	40	120	30M	500m		PE	T059		
4	B3582	333m	40	SC	5.0		80	8.0	40	1.0	1.0	100		30M	500m		PE	T059		
5	B3583	333m	40	SC	5.0		100	8.0	80	1.0	1.0	100		30M	500m		PE	T059		
6	B3584	333m	40	SC	5.0		60	5.0	40	1.0	1.0	20	60	30M	500m		PE	T059		
7	B14400	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	45	90		2.0u	Δ	T059	A	
8	B14400	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	70	140		2.0u	Δ	T059	A	
9	B14400	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	120	240		2.0u	Δ	T059	A	
10	B14400	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0	45	90		2.0u	Δ	T059	A	
11	B14400	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0	70	140		2.0u	Δ	T059	A	
12	B14400	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0	120	240		2.0u	Δ	T059	A	
13	B14400	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0	45	90		2.0u	Δ	T059	A	
14	B14400	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0	70	140		2.0u	Δ	T059	A	
15	B14400	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0	120	240		2.0u	Δ	T059	A	
16	B14500	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	45	90		2.0u	Δ	T061	A	
17	B14500	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	70	140		2.0u	Δ	T061	A	
18	B14500	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	120	240		2.0u	Δ	T061	A	
19	B14500	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0	45	90		2.0u	Δ	T061	A	
20	B14500	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0	70	140		2.0u	Δ	T061	A	
21	B14500	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0	120	240		2.0u	Δ	T061	A	
22	B14500	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0	45	90		2.0u	Δ	T061	A	
23	B14500	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0	70	140		2.0u	Δ	T061	A	
24	B14500	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0	120	240		2.0u	Δ	T061	A	
25	B14500	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	45	90		2.0u	Δ	T061	A	
26	B14500	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	70	140		2.0u	Δ	T061	A	
27	B14500	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0	120	240		2.0u	Δ	T061	A	
28	B145010	333m	25	SC	1.0	2.0	50	5.0	40	1.0m	100	3.0				2.0u	Δ	T061	A	
29	B145011	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0				2.0u	Δ	T061	A	
30	B145012	333m	25	SC	1.0	2.0	70	5.0	60	1.0m	100	3.0				2.0u	Δ	T061	A	
31	B145013	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0				2.0u	Δ	T061	A	
32	B145014	333m	25	SC	1.0	2.0	90	5.0	80	1.0m	100	3.0				2.0u	Δ	T061	A	
33	BU111	333m	25	SC	4.0	1.5	6.0	300	15m	100	10m	8.0		10M		1.0u	Δ	MD17f	C	
34	DT3200	333m	15	SC	5.0	330m	45	8.0	30	5.0	3.0	15	45		600m		D	T08		
35	DT3201	333m	15	SC	5.0	330m	80	8.0	60	5.0	3.0	15	45		600m		D	T08		
36	DT4011	333m	1.0	SC	5.0	1.0	100	8.0	70	5.0	3.0	20	70		500m		D	T03		
37	NS9002T	333m	5.0	SC	5.0	500m	100	8.0	80	200	5.0	1.0	30		250m	250u	PL	MT42	A	
38	PT5929T	333m	53	SC	1.0	5.0	100	5.0	90	1.0	5.0	5.0	80	200	75M	200n	PL	MT09	A	
39	SDT3401†	333m	2.0	SC	5.0	2.0	40	6.0	40	1.0	5.0	2.0	40	120	40M	500n	PE	T011		
40	SDT3402†	333m	2.0	SC	5.0	2.0	60	6.0	60	1.0	5.0	2.0	40	120	40M	500n	PE	T011		
41	SDT3403†	333m	2.0	SC	5.0	2.0	80	6.0	80	1.0	5.0	2.0	40	120	40M	500n	PE	T011		
42	SDT3404†	333m	2.0	SC	5.0	2.0	100	6.0	100	1.0	5.0	2.0	40	120	40M	500n	PE	T011		
43	SDT3405†	333m	2.0	SC	5.0	2.0	40	6.0	40	1.0	5.0	2.0	20	60	40M	500n	PE	T011		
44	SDT3406†	333m	2.0	SC	5.0	2.0	60	6.0	60	1.0	5.0	2.0	20	60	40M	500n	PE	T011		
45	SDT3407†	333m	2.0	SC	5.0	2.0	80	6.0	80	1.0	5.0	2.0	20	60	40M	500n	PE	T011		
46	SDT3408†	333m	2.0	SC	5.0	2.0	100	6.0	100	1.0	5.0	2.0	20	60	40M	500n	PE	T011		
47	SDT3409†	333m	2.0	SC	5.0	2.0	120	6.0	120	1.0	5.0	2.0	20	60	40M	500n	PE	T011		
48	SDT6308	333m	30	SC	5.0	500m	60	8.0	40	1.0	2.0	1.0	20	60	30M	500m	PLD	MT42		
49	SDT6309	333m	30	SC	5.0	500m	80	8.0	60	1.0	2.0	1.0	20	60	30M	500m	PLD	MT42		
50	SDT6310	333m	30	SC	5.0	500m	100	8.0	80	1.0	2.0	1.0	20	60	30M	500m	PLD	MT42		
51	SDT6311	333m	30	SC	5.0	500m	60	8.0	40	1.0	2.0	1.0	40	120	30M	500m	PLD	MT42		
52	SDT6312	333m	30	SC	5.0	500m	80	8.0	60	1.0	2.0	1.0	40	120	30M	500m	PLD	MT42		
53	SDT6313	333m	30	SC	5.0	500m	100	8.0	80	1.0	2.0	1.0	40	120	30M	500m	PLD	MT42		
54	SDT6314	333m	30	SC	5.0	500m	60	8.0	40	1.0	2.0	1.0	100	#	30M	500m	PLD	MT42		
55	SDT6315	333m	30	SC	5.0	500m	80	8.0	60	1.0	2.0	1.0	100	#	30M	500m	PLD	MT42		
56	SDT6316	333m	30	SC	5.0	500m	100	8.0	80	1.0	2.0	1.0	100	#	30M	500m	PLD	MT42		
57	SDT6408	333m	30	SC	5.0	500m	60	8.0	40	1.0	2.0	1.0	20	60	30M	500m	PLD	MT53	GN	
58	SDT6409	333m	30	SC	5.0	500m	80	8.0	60	1.0	2.0	1.0	20	60	30M	500m	PLD	MT53	GN	
59	SDT6410	333m	30	SC	5.0	500m	100	8.0	80	1.0	2.0	1.0	20	60	30M	500m	PLD	MT53	GN	
60	SDT6411	333m	30	SC	5.0	500m	60	8.0	40	1.0	2.0	1.0	40	120	30M	500m	PLD	MT53	GN	
61	SDT6412	333m	30	SC	5.0	500m	80	8.0	60	1.0	2.0	1.0	40	120	30M	500m	PLD	MT53	GN	
62	SDT6413	333m	30	SC	5.0	500m	100	8.0	80	1.0	2.0	1.0	40	120	30M	500m	PLD	MT53	GN	
63	SDT6414	333m	30	SC	5.0	500m	60	8.0	40	1.0	2.0	1.0	100	#	30M	500m	PLD	MT53	GN	
64	SDT6415	333m	30	SC	5.0	500m	80	8.0	60	1.0	2.0	1.0	100	#	30M	500m	PLD	MT53	GN	
65	SDT6416	333m	30	SC	5.0	500m	100	8.0	80	1.0	2.0	1.0	100	#	30M	500m	PLD	MT53	GN	
66	ST18015	333m	30	SC	5.0		375	10	375	1.0	2.5	2.0	20	60	10M	500m	PE	T059		
67	ST18016	333m	30	SC	5.0		300	10	300	1.0	2.5	2.0	20	60	10M	500m	PE	T059		
68	ST18017	333m	30	SC	5.0		250	10	250	1.0	2.5	2.0	20	60	10M	500m	PE	T059		
69	ST18018	333m	30	SC	5.0		200	10	200	1.0	2.5	2.0	20	60	10M	500m	PE	T059		
70	ST92006	333m	30	SC	2.0		125	10	80	20u	1.0	1.0	20	120	10M	2.0	1.5u	P	T059	
71	ST92007	333m	30	SC	2.0		145	10	100	20u	1.0	1.0	20	120	10M	2.0	1.5u	P	T059	
72	ST92008	333m	30	SC	2.0		170	10	120	20u	1.0	1.0	20	120	10M	2.0	1.5u	P	T059	
73	STT6309	333m	30	SC	5.0	500m	80	8.0	60	1.0	5.0	1.0	20	60	30M		PL	T011		
74	STT6310	333m	30	SC	5.0	500m	100	8.0	80	1.0	5.0	1.0	20	60	30M		PL	T011		
75	STT6311	333m	30	SC	5.0	500m	60	8.0	60	1.0	5.0	1.0	40	120	30M		PL	T011		
76	STT6312	333m	30	SC	5.0	500m	80	8.0	60	1.0	5.0	1.0	40	120	30M		PL	T011		
77	STT6313	333m	30	SC	5.0	500m	100	8.0	80	1.0	5.0	1.								

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @25°C						MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	DWG #	C O A D E	
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	BIAS											
												Vcb (V)	Vcb (A)										
1	2N2812	400m	70	∅	∅	10	2.0	80	8.0	60	100∅	5.0	5.0	40	120 #	15MΔ	100m	150n	PL	MT29	C∅		
2	2N2813	400m	70	∅	∅	10	2.0	120	8.0	80	100∅	5.0	5.0	20	60 #	15MΔ	100m	200n	PL	MT29	C∅		
3	2N2814	400m	70	∅	∅	10	2.0	120	8.0	80	100∅	5.0	5.0	40	120 #	15MΔ	100m	150n	PL	MT29	C∅		
4	2N3220	400m	2.0	∅	∅	2.0	1.0	100	8.0	80	10u#	5.0	1.0	20	60 #	10MΔ	1.3			MT47	C∅		
5	2N3221	400m	2.0	∅	∅	2.0	1.0	100	8.0	80	10u#	5.0	1.0	40	120 #	10MΔ	1.3			MT47	C∅		
6	2N3222	400m	2.0	∅	∅	2.0	1.0	80	8.0	60	10u#	5.0	1.0	20	60 #	10MΔ	1.3			MT47	C∅		
7	2N3223	400m	2.0	∅	∅	2.0	1.0	80	8.0	60	10u#	5.0	1.0	40	120 #	10MΔ	1.3			MT47	C∅		
8	2N3543	400m∅	60	∅	∅	5.0	50	65	4.0	60	0.1m∅	5.0	4.5	10 #	80	150MΔ	.22			TO3	C∅		
9	2N3950	400m	70	∅	∅	3.3 †		65 †	4.0 †	35 *	10m †					100MΔ				TO60	AZ		
10	2N4004†	400m	1.2	∅	∅	2.0	1.0	100	8.0	80	1.0m∅	4.0	1.0	30	150 #	30MΔ				X21	C∅		
11	2N4005†	400m	1.2	∅	∅	2.0	1.0	120	8.0	100	1.0m∅	4.0	1.0	30	150 #	30MΔ				X21	C∅		
12	2N4131	400m	60	∅	∅	5.0	1.0	90	4.0	80	10u∅	5.0	1.0	10	80 #	150MΔ				TO3	AZ		
13	2N4932	400m	70	∅	∅	3.3	1.0	50	4.0	25	5.0	1.0	10	100	100kΔ					TO60	AZ		
14	2N4933	400m	70	∅	∅	3.3	1.0	70	4.0	35	5.0	1.0	10	100	100kΔ					TO60	AZ		
15	2N5070	400m	70	∅	∅	3.3	1.0	65	4.0	30	10m∅	5.0	3.0	10	100	100MΔ				TO60	AZ		
16	2N5071	400m	70	∅	∅	3.3	1.0	65	4.0	30	10m∅	5.0	3.0	10	100	100MΔ				TO60	AZ		
17	2N5074	400m	70	∅	∅	3.0	300m	200	6.0	200	1.0m#†	5.0	500m	30	110 #	40MΔ	670m			TO59	A		
18	2N5075	400m	70	∅	∅	3.0	300m	200	6.0	200	1.0m#†	5.0	500m	90	250 #	40MΔ	670m			TO59	A		
19	2N5076	400m	70	∅	∅	3.0	300m	250	6.0	250	1.0m#†	5.0	500m	30	110 #	40MΔ	670m			TO59	A		
20	2N5077	400m	70	∅	∅	3.0	300m	250	6.0	250	1.0m#†	5.0	500m	90	250 #	40MΔ	670m			TO59	A		
21	2N5468	400m\$	40	∅	∅	3.0	1.0	500	8.0	400	1.0mΔ	5.0	3.0	15	60 #	2.5MΔ				TO66	AZ		
22	2N5469	400m\$	40	∅	∅	3.0	1.0	700	8.0	400	1.0mΔ	5.0	3.0	15	60 #	2.5MΔ				TO66	AZ		
23	2N5490	400m	50	∅	∅	7.0	3.0	60	5.0	50	5.0mΔ	4.0	2.0	20	100		307m			X75	D∅		
24	2N5491	400m	50	∅	∅	7.0	3.0	60	5.0	50	5.0mΔ	4.0	2.0	20	100		307m			X75a	D∅		
25	2N5492	400m	50	∅	∅	7.0	3.0	75	5.0	65	1.0mΔ	4.0	2.5	20	100		307m			X75	D∅		
26	2N5493	400m	50	∅	∅	7.0	3.0	75	5.0	65	1.0mΔ	4.0	2.5	20	100		307m			X75a	D∅		
27	2N5494	400m	50	∅	∅	7.0	3.0	60	5.0	50	1.0mΔ	4.0	3.0	20	100		307m			X75	D∅		
28	2N5495	400m	50	∅	∅	7.0	3.0	60	5.0	50	1.0mΔ	4.0	3.0	20	100		307m			X75a	D∅		
29	2N5496	400m	50	∅	∅	7.0	3.0	90	5.0	80	1.0mΔ	4.0	3.5	20	100		285m			X75	D∅		
30	2N5497	400m	50	∅	∅	7.0	3.0	90	5.0	80	1.0mΔ	4.0	3.5	20	100		285m			X75a	D∅		
31	2N5591	400m	70	∅	∅	4.0		36	4.0	18	1.0m∅	5.0	500m	5.0		200MΔ				MT72h	R V		
32	2N5707	400m	70	∅	∅	4.0		70	4.0 †	50	5.0m†	10	100m	5.0		50MΔ				TO128	F V		
33	2N5714	400m	70	∅	∅	8.0		60	4.0 †	40	1.0m∅ †	10	10m	5.0		100MΔ				MD36	F V		
34	2N5776	400m	70	∅	∅	6.0	1.0	65	3.5 †	35	10m∅ †	5.0	200m	10	150					MD36	F V		
35	2N5939\$	400m\$	2.0	∅	∅	1.0	4.0	80	5.0	80	500u\$	5.0	5.0	40	200 #	120MΔ				TO111	A		
36	2N5940\$	400m\$	2.0	∅	∅	1.0	4.0	70	5.0	70	500u\$	4.0	5.0	40	200 #	120MΔ				TO111	A		
37	2SC493	400m	50	∅	∅	5.0	5.0	80	5.0	80	10m∅	5.0	1.0	20	200 *	10M\$	500m			DM	TO3	C∅	
38	2SC494	400m	50	∅	∅	5.0	5.0	50	5.0	50	10m	5.0	1.0	20	200 *	10M\$	500m			DM	TO3	C∅	
39	2SC519A†	400m	50	∅	∅	7.0	7.0	130	5.0	110	1.0m∅	5.0	1.0	20		20M†	400m	200n		DM	TO3	C∅	
40	2SC520A†	400m	50	∅	∅	7.0	7.0	100	5.0	80	1.0m∅	5.0	1.0	30		20M†	400m	200n		DM	TO3	C∅	
41	2SC521A†	400m	50	∅	∅	7.0	7.0	70	5.0	50	1.0m∅	5.0	1.0	30		20M†	400m	200n		DM	TO3	C∅	
42	2SC558	400m	50	∅	∅	5.0	5.0	250	5.0	250	1.0m∅	5.0	5.0	20	40 ∅	20M†	400m	200n		DM	TO3	C∅	
43	2SC642	400m	50	∅	∅	1.0	1.1k	1.1k	5.0		10u∅	15	150m	30	160		500M				ME	TO3	C∅
44	2SC643	400m	50	∅	∅	2.5	1.1k	1.1k	5.0		10u∅	15	2.0	7.0		200k					ME	TO3	C∅
45	2SC939†	400m∅	50	∅	∅	5.0		150	7.0	60	2.0m∅	5.0	5.0	15	120			1.0u#			ME	TO3	C∅
46	2SC940†	400m∅	50	∅	∅	5.0		200	7.0	90	2.0m∅	5.0	5.0	15	120			1.0u#			ME	TO3	C∅
47	2SC1004	400m	50	∅	∅	5.0	500m	1.1k		700	5.0	15	150m	30	160		2.0M†				ME	TO3	C∅
48	2SC1021	400m	60	∅	∅	6.0		60	5.0	40	2.0m∅	10	100m	5.0 #		500M\$				PE†	MT79	V	
49	2SC1022	400m	60	∅	∅	6.0		60	5.0	40	2.0m∅	10	100m	5.0 #		500M\$				PE†	MT79	V	
50	2SC1100	400m∅	50	∅	∅	3.0	1.1k	1.1k	7.0	400	1.0m∅	15	3.0	10							ME	TO3	C∅
51	2SC1101	400m∅	50	∅	∅	3.0	1.1k	1.1k	5.0	500	1.0m∅	15	500m	30	120						ME	TO3	C∅
52	2SD45	400m	50	∅	∅	5.0	1.5	150	6.0	100	15m∅	10	1.0	12	128		20M\$	600m			ME	TO3	C∅
53	2SD46	400m	50	∅	∅	5.0	1.5	150	6.0	75	15m∅	10	1.0	12	184		20M\$	600m			ME	TO3	C∅
54	2SD47	400m	50	∅	∅	5.0	1.5	100	6.0	50	15m∅	10	1.0	12	184		20M\$	600m			ME	TO3	C∅
55	2SD51A	400m	50	∅	∅	5.0	1.5	150	6.0	110	100u∅	3.0	2.0	30	120		10M†	500m			ME	TO3	C∅
56	2SD59	400m	50	∅	∅	6.0		100	5.0	60	30u∅	4.0	1.0	35	180		3.0M†				D	TO3	C∅
57	2SD60	400m	50	∅	∅	6.0		150	10	75	30u∅	4.0	1.0	35	180		3.0M†				D	TO3	C∅
58	2SD73	400m	60	∅	∅	7.5	1.5	100	5.0	60	5.0m	10	1.0	25	80 #		400m				EM	TO3	C∅
59	2SD74	400m	60	∅	∅	7.5	1.5	150	5.0	90	5.0m	10	1.0	25	80 #		400m				EM	TO3	C∅
60	2SD80†	400m	50	∅	∅	6.0	3.0	30	10	20	200u	4.0	1.0	40	60 ∅		1.5M†Δ	500m	1.2u		D	TO3	C∅
61	2SD81†	400m	50	∅	∅	6.0	3.0	60	10	40	50u∅	4.0	1.0	40	60 ∅		1.5M†Δ	500m	1.2u		D	TO3	C∅
62	2SD82†	400m	50	∅	∅	6.0	3.0	100	10	60	30u∅	4.0	1.0	40	60 ∅		1.5M†Δ	500m	1.2u		D	TO3	C∅
63	2SD83†	400m	50	∅	∅	6.0	3.0	150	10	75	30u∅	4.0	1.0	40	60 ∅		1.5M†Δ	500m	1.2u		D	TO3	C∅
64	2SD84†	400m	50	∅	∅	6.0	3.0	200	10	85	30u∅	4.0	1.0	40	60 ∅		1.5M†Δ	500m	1.2u		D	TO3	C∅
65	2SD124AH	400m	60	∅	∅	7.0	3.0	75	10	50	25u∅	4.0	1.5	20	80		12k	200m			D	TO3	C∅
66	2SD125AH	400m	60	∅	∅	7.0	3.0	100	10	75	25u∅	4.0	1.5	20	80		12k	200m			D	TO3	C∅
67	2SD126H	400m	60	∅	∅	7.0	3.0	150	5.0	100	25u∅	4.0	1.5	20	40 ∅		12k	200m			D	TO3	C∅
68	2SD180	400m∅	50	∅	∅	2.0	80	7.0	60	60	2.0m	2.0	3.0	30			20kΔ				EM	TO3	C∅
69	2SD20																						



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX P <sub>c</sub> FREE AIR @ 25°C (W)	M T A X E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E	
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>ce</sub> (V)	V <sub>be</sub> (V)	V <sub>ceo</sub> (V)	I <sub>co</sub> (A)	V <sub>cb</sub> (V)									V <sub>bc</sub> (V)
1#	SDT1157	400m	50	5	10	3.0	8.0	400	1.0mΔ	5.0	2.0	10	#	50	50M\$		PL	T066		
2#	SDT1158	400m	50	5	10	3.0	8.0	400	1.0mΔ	5.0	2.0	10	#	50	50M\$		PL	T066		
3#	SDT1159	400m	50	5	10	3.0	8.0	400	1.0mΔ	5.0	2.0	10	#	50	50M\$		PL	T066		
4#	SDT1160	400m	50	5	10	3.0	8.0	200	1.0mΔ	5.0	3.0	10	#	50	50M\$		PL	T066		
5#	SDT1161	400m	50	5	10	3.0	8.0	325	1.0mΔ	5.0	3.0	10	#	50	50M\$		PL	T066		
6#	SDT1162	400m	50	5	10	3.0	8.0	400	1.0mΔ	5.0	3.0	10	#	50	50M\$		PL	T066		
7#	SDT1163	400m	50	5	10	3.0	8.0	400	1.0mΔ	5.0	3.0	10	#	50	50M\$		PL	T066		
8#	SDT1164	400m	50	5	10	3.0	8.0	400	1.0mΔ	5.0	3.0	10	#	50	50M\$		PL	T066		
9	ST91057†	400m#	60	#	10		125	10	30u∅	100	2.0	30		120	#	10M\$Δ		500n∅	PL	T059
10	ST91058†	400m#	60	#	10		145	10	100*	30u∅	100	2.0	30	120	#	10M\$Δ		500n∅	PL	T059
11	ST91059†	400m#	60	#	10		170	10	120*	30u∅	100	2.0	30	120	#	10M\$Δ		500n∅	PL	T059
12	STT2800	400m\$	40	∅	7.5	1.0	150	12	150	1.0u\$	150	2.0	30	90	#	25M\$	DPLΔ		PL	T059
13	STT2801	400m\$	40	∅	7.5	1.0	140	12	120	1.0u\$	150	2.0	30	90	#	25M\$	DPLΔ		PL	T059
14	STT2802	400m\$	40	∅	7.5	1.0	140	12	120	1.0u\$	150	2.0	50	150	#	25M\$	DPLΔ		PL	T059
15	STT2803	400m\$	40	∅	7.5	1.0	120	12	100	1.0u\$	150	2.0	30	90	#	25M\$	DPLΔ		PL	T059
16	STT2804	400m\$	40	∅	7.5	1.0	100	12	80	1.0u\$	150	2.0	30	90	#	25M\$	DPLΔ		PL	T059
17	STT2805	400m\$	40	∅	7.5	1.0	75	10	60	1.0u\$	150	2.0	30	90	#	25M\$	DPLΔ		PL	T059
18	STT2806	400m\$	40	∅	7.5	1.0	40	10	30	500u\$	150	2.0	25	#	25M\$	DPLΔ		PL	T059	
19	2N5178	401m	70	∅	8.0	2.0	55	3.5	35	20m#	5.0	200m	10	150	#	200M\$Δ			MD36	FZ
20	2N3018	416m\$	25	∅	10	2.0	100	4.0	50	100n∅	5.0	1.0	60	60	#	300kΔ		1.0u	MEΔ	T061
21	2N1487	424m	75	∅	6.0	3.0	60	10	40	25u∅	4.0	1.5	15	45	#	1.0M†	2.7	1.0u	MEΔ	MD6
22	JAN2N1487	424m	75	∅	6.0	3.0	60	10	40	25u∅	4.0	1.5	15	45	#	500kΔ		1.0u	MEΔ	T03
23	2N1488	424m	75	∅	6.0	3.0	100	10	55	25u∅	4.0	1.5	15	45	#	1.0M†	2.7	1.0u	MEΔ	MD6
24	JAN2N1488	424m	75	∅	6.0	3.0	100	10	55	25u∅	4.0	1.5	15	45	#	500kΔ		1.0u	MEΔ	T03
25	2N1489	424m	75	∅	6.0	3.0	60	10	40	25u∅	4.0	1.5	25	75	#	1.0M†	1.0	1.0u	MEΔ	MD6
26	JAN2N1489	424m	75	∅	6.0	3.0	60	10	40	25u∅	4.0	1.5	25	75	#	500kΔ		1.0u	MEΔ	T03
27	2N1490	424m	75	∅	6.0	3.0	100	10	55	25u∅	4.0	1.5	25	75	#	1.0M†	1.0	1.0u	MEΔ	MD6
28	JAN2N1490	424m	75	∅	6.0	3.0	100	10	55	25u∅	4.0	1.5	25	75	#	500kΔ		1.0u	MEΔ	T03
29	2N2305	424m	75	∅	6.0	3.0	60	10	40	200u∅	4.0	800m	15	60	#	500kΔ		2.0	DΔ	T03
30	40369	424m	75	∅	6.0	3.0	100	10	55	10u∅	4.0	1.5	25	75	#	800m		1.2u∅	DΔ	T03
31#	ZT1702	424m	75	∅	5.0	2.5	60	6.0	40	200u∅	4.0	800m	15	60	#	1.0M†	4.0	1.2u∅	D	T03
32	2N1702	425m	75	∅	5.0	2.5	60	6.0	40	200u∅	4.0	800m	15	60	#	300kΔ	4.0		D	MD6
33	2N1703	425m	75	∅	5.0	2.5	60	6.0	40	200u∅	4.0	800m	15	60	#	300kΔ	4.0		D	T036
34#	2SC851	427m∅	75	∅	8.0	3.0	50	5.0	25	500u∅	5.0	5.0	20	250	#	110M\$Δ	200m		PE	T03
35	2N1511	428m	75	∅	6.0	3.0	60	10	40	500u	4.0	1.5	15	45	#	300k†	1.2			T036
36	2N1512	428m	75	∅	6.0	3.0	100	10	55	500u	4.0	1.5	15	45	#	300k†	1.2			T036
37	2N1513	428m	75	∅	6.0	3.0	60	10	40	500u	4.0	1.5	25	75	#	300k†	1.0			T036
38	2N1514	428m	75	∅	6.0	3.0	100	10	55	500u	4.0	1.5	25	75	#	300k†	1.0			T036
39#	ZT1487†	429m	75	∅	6.0	3.0	60	10	40	25u∅	4.0	1.5	15	45	#	1.0M\$	2.0	1.2u∅	D	T03
40#	ZT1488†	429m	75	∅	6.0	3.0	100	10	55	25u∅	4.0	1.5	15	45	#	1.0M\$	2.0	1.2u∅	D	T03
41#	ZT1489†	429m	75	∅	6.0	3.0	60	10	40	25u∅	4.0	1.5	25	75	#	1.0M\$	670m	1.2u∅	D	T03
42#	ZT1490†	429m	75	∅	6.0	3.0	100	10	55	25u∅	4.0	1.5	25	75	#	1.0M\$	670m	1.2u∅	D	T03
43	2N5635	430m	75	∅	1.0		60	4.0	35	100u∅	5.0	100m	5.0		#	500M\$Δ			DΔ	MT71b
44	STC1080	434m\$	75	∅	3.0		10	40	10	10m	150	1.0	12	36	#	750m			DΔ	T03
45	STC1081	434m\$	75	∅	3.0		10	60	10	10m	150	1.0	12	36	#	750m			DΔ	T03
46	STC1082	434m\$	75	∅	3.0		10	80	10	10m	150	1.0	12	36	#	750m			DΔ	T03
47	STC1083	434m\$	75	∅	5.0		10	40	10	10m	150	2.0	10	30	#	500m			DΔ	T03
48	STC1084	434m\$	75	∅	5.0		10	60	10	10m	150	2.0	10	30	#	500m			DΔ	T03
49	STC1085	434m\$	75	∅	5.0		10	80	10	10m	150	2.0	10	30	#	500m			DΔ	T03
50	2N2101	450m	75	∅	3.0	3.0 ∅	60	10	40	30u∅	150	1.0	15	60	#	5.0			DΔ	MT10
51	STC1550	450m\$	85	∅	3.0		10	40	10	10m	150	1.0	12	36	#	750m			DΔ	MT10
52	STC1551	450m\$	85	∅	3.0		10	60	10	10m	150	1.0	12	36	#	750m			DΔ	MT10
53	STC1552	450m\$	85	∅	3.0		10	80	10	10m	150	1.0	12	36	#	750m			DΔ	MT10
54	STC1553	450m\$	85	∅	3.0		10	40	10	10m	150	2.0	10	30	#	500m			DΔ	MT10
55	STC1554	450m\$	85	∅	5.0		10	60	10	10m	150	2.0	10	30	#	500m			DΔ	MT10
56	STC1555	450m\$	85	∅	5.0		10	80	10	10m	150	2.0	10	30	#	500m			DΔ	MT10
57▼	PT6944†	454m	80	∅	3.0		120	8.0	70	5.0	3.0	40	200	#	100M\$	133mV			DΔ	T03
58▼	PT6945†	454m	80	∅	3.0		160	8.0	100	5.0	3.0	40	200	#	100M\$	166mV			DΔ	T03
59▼	PT6946†	454m	80	∅	3.0		200	8.0	140	5.0	3.0	30	150	#	100M\$	200mV			DΔ	T03
60▼	PT7912†	454m	80	∅	3.0		90	6.0	70	5.0	3.0	200	400	#	100M\$	133mV			DΔ	T03
61▼	PT7913†	454m	80	∅	3.0		90	6.0	70	5.0	3.0	50	250	#	100M\$	133mV			DΔ	T03
62▼	PT7914†	454m	80	∅	3.0		120	6.0	70	5.0	3.0	30	30	#	100M\$	166mV			DΔ	T03
63▼	PT7915†	454m	80	∅	3.0		120	6.0	100	5.0	3.0	200	400	#	100M\$	166mV			DΔ	T03
64▼	PT7916†	454m	80	∅	3.0		120	6.0	100	5.0	3.0	50	250	#	100M\$	166mV			DΔ	T03
65▼	PT7917†	454m	80	∅	3.0		160	8.0	100	5.0	3.0	30	30	#	100M\$	200mV			DΔ	T03
66▼	PT7918†	454m	80	∅	3.0		170	6.0	140	5.0	3.0	100	300	#	100M\$	200mV			DΔ	T03
67▼	PT7919†	454m	80	∅	3.0		170	6.0	140	5.0	3.0	30	150	#	100M\$	200mV			DΔ	T03
68▼	PT7920†	454m	80	∅	3.0		200	8.0	140	5.0	3.0	20	30	#	100M\$	233mV			DΔ	T03
69▼	PT7958†	454m	80	∅	3.0		225	6.0	200	5.0	3.0	10		#	100M\$	333mV			DΔ	T03
70▼	PT7959†	454m	80	∅	3.0		325	6.0	300	5.0	3.0	10		#	100M\$	333mV			DΔ	T03
71	STC1500	455m	80	∅	2.5		60	6.0	40	5.0	3.0	15	60	#	2.5M†	4.0	.90u		D	MT10
72	2N5706	460m	80	∅	7.0		36	4.0	18	3.0mΔ	5.0	100m	15		#				D	X92
73	2N389	476m∅	85	∅	2.0		60	10	60	10m	150	1.0	12	60	#	5.0	750m		DΔ	T053
74	2N389A	476m∅	85	∅	3.0		60	10	60	10m	150	1.0	12	60	#	2.0M†	750m		DΔ	



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a TO200 Ser.	# DWG	C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo (mA)	Vcb (V)									
1	JAN2N424	500m	85	SS			80	10	80	1.0m	150	15	60	#					Y053	A	
2	2N2383	500m	85	SS		2.0		80	8.0	60	1.0m	20	60	#	3.0MΔ	670m	900n	D	MS3	A	
3	2N2384	500m	85	SS		5.0		80	8.0	60	1.0m	20	60	#	3.0MΔ	670m	900n	D	MT10	A	
4	JAN2N2812T	500m	4.0	SC		10	2.0	80	8.0	60	100n	40	120	#	15MΔ	350n	350n		T061	A	
5	JAN2N2814T	500m	4.0	SC		10	2.0	120	8.0	80	100n	40	120	#	15MΔ	350n	350n		T061	A	
6	2N4301	500m	50	SJ		10	4.0	100	8.0	80	100n	40	120	#	4.0MΔ				T061	A	
7	2N4395T	500m	62	SJ		5.0	900m	60	4.0	40	100u	50	170	#	4.0MΔ	180m			T03	C	
8	2N4396T	500m	62	SJ		5.0	900m	80	4.0	60	100u	40	170	#	4.0MΔ	180m			T03	C	
9	2N4913	500m	88	SJ		5.0	1.0	40	5.0	40	10u#	25	100	#	4.0MΔ				T03	C	
10	2N4914	500m	88	SJ		5.0	1.0	60	5.0	60	10u#	25	100	#	4.0MΔ				T03	C	
11	2N4915	500m	88	SJ		5.0	1.0	80	5.0	80	10u#	25	100	#	4.0MΔ				T03	C	
12	2N5067	500m	88	SJ		5.0	1.0	40	5.0	40	1.0m#	20	80	#	4.0MΔ				T03	C	
13	2N5068	500m	88	SJ		5.0	1.0	60	5.0	60	1.0m#	20	80	#	4.0MΔ				T03	C	
14	2N5069	500m	88	SJ		5.0	1.0	80	5.0	80	1.0m#	20	80	#	4.0MΔ				T03	C	
15	2N5218T	500m	50	SC		10	1.0	220	8.0	200	500n	15	120	#	4.0MΔ	600n			T061	A	
16	2N5264T	500m	87	SJ		10	2.0	400	5.0	180	1.0m#	30	300	#	5.0MΔ	178m	1.0u		T03	A	
17	2N5313T	500m	50	SJ		10	2.5	80	6.0	80	10u#	30	90	#	3.0MΔ	500n			T061	A	
18	2N5315T	500m	50	SJ		10	2.5	100	6.0	100	10u#	30	90	#	3.0MΔ	500n			T061	A	
19	2N5317T	500m	50	SJ		10	2.0	80	6.0	80	10u#	30	90	#	3.0MΔ	400n			T061	A	
20	2N5319T	500m	50	SJ		10	2.0	100	6.0	100	10u#	30	90	#	3.0MΔ	400n			T061	A	
21	2N5540T	500m	50	SJ		10	2.0	325	8.0	300	500n	20	60	#	2.0MΔ	1.5u			T061	A	
22	2N5542T	500m	50	SJ		10	2.0	175	8.0	130	500n	30	90	#	2.0MΔ	500n			T061	A	
23	2N5691	500m	88	SJ		8.0		5.0	4.0	30	1.5mΔ	10	100	#	3.0MΔ	120m	300n		T03	A	
24	2N5731T	500m	75	SJ		20	4.0	100	5.0	80	1.0m#	30	300	#	3.0MΔ	300n			T061	A	
25	2N5732T	500m	75	SJ		20	4.0	100	5.0	80	1.0m#	30	300	#	3.0MΔ	300n			T03	A	
26	2N5869T	500m	87	SJ		3.0	1.0	60	5.0	60	100u	20	100	#	4.0MΔ	500m	700n		T03	C	
27	2N5870T	500m	87	SJ		3.0	1.0	80	5.0	80	100u	20	100	#	4.0MΔ	500m	700n		T03	C	
28#	2SC240	500m	75	SJ		5.0		100	5.0	65	5.0m	15	35	#	35M1	500m		ME	T03		
29#	2SC241	500m	75	SJ		5.0		60	5.0	40	10m	15	35	#	35M1	500m		ME	T03		
30#	2SC242	500m	75	SJ		5.0		100	5.0	65	10m	15	35	#	35M1	500m		ME	T03		
31#	2SC243	500m	75	SJ		5.0		140	5.0	80	10m	15	35	#	35M1	500m		ME	T03		
32#	2SD12	500m	60	SJ		2.5		75	4.0	40	10m	25	75	#	2.0MΔ	800m		ME	T03		
33#	3TE610	500m	87	J		8.0	3.0	80	4.0	60	1.0m	10		#	250M			PL	MT62a		
34#	3TE611	500m	87	J		8.0	3.0	60	4.0	30	1.0m	15	150	#	100M			PL	MT62a		
35#	180T2A	500m	85	SJ		6.0	3.0	60	10	60	10m	15	45	#	10MΔ				T03	C	
36#	180T2B	500m	85	SJ		6.0	3.0	60	10	60	10m	15	90	#	10MΔ				T03	C	
37#	180T2C	500m	85	SJ		6.0	3.0	60	10	60	10m	15	180	#	10MΔ				T03	C	
38#	181T2A	500m	85	SJ		6.0	3.0	100	10	90	1.0m	15	45	#	10MΔ				T03	C	
39#	181T2B	500m	85	SJ		6.0	3.0	100	10	90	1.0m	15	90	#	10MΔ				T03	C	
40#	181T2C	500m	85	SJ		6.0	3.0	100	10	90	1.0m	15	180	#	10MΔ				T03	C	
41#	182T2A	500m	85	SJ		6.0	3.0	200	10	140	1.0m	15	45	#	10MΔ				T03	C	
42#	182T2B	500m	85	SJ		6.0	3.0	200	10	140	1.0m	15	90	#	10MΔ				T03	C	
43#	182T2C	500m	85	SJ		6.0	3.0	200	10	140	1.0m	15	180	#	10MΔ				T03	C	
44#	183T2A	500m	85	SJ		6.0	3.0	300	10	180	1.0m	15	45	#	10MΔ				T03	C	
45#	183T2B	500m	85	SJ		6.0	3.0	300	10	180	1.0m	15	90	#	10MΔ				T03	C	
46#	183T2C	500m	85	SJ		6.0	3.0	300	10	180	1.0m	15	180	#	10MΔ				T03	C	
47#	184T2A	500m	85	SJ		6.0	3.0	400	10	200	1.0m	15	45	#	10MΔ				T03	C	
48#	184T2B	500m	85	SJ		6.0	3.0	400	10	200	1.0m	15	90	#	10MΔ				T03	C	
49#	185T2A	500m	85	SJ		6.0	3.0	500	10	250	1.0m	15	45	#	10MΔ				T03	C	
50#	185T2B	500m	85	SJ		6.0	3.0	500	10	250	1.0m	15	90	#	10MΔ				T03	C	
51#	185T2C	500m	85	SJ		6.0	3.0	500	10	250	1.0m	15	180	#	10MΔ				T03	C	
52	1716-0402T	500m	50	SJ		10	#	40	7.0	40	200u#	20	20	#	4.0MΔ	250m	300n	EM	T061	A	
53	1716-0405T	500m	50	SJ		10	#	60	7.0	40	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
54	1716-0602T	500m	50	SJ		10	#	60	7.0	60	200u#	20	20	#	4.0MΔ	250m	300n	EM	T061	A	
55	1716-0605T	500m	50	SJ		10	#	80	7.0	60	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
56	1716-0802T	500m	50	SJ		10	#	80	7.0	80	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
57	1716-0805T	500m	50	SJ		10	#	80	7.0	80	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
58	1716-1002T	500m	50	SJ		10	#	100	7.0	100	200u#	20	20	#	4.0MΔ	250m	300n	EM	T061	A	
59	1716-1005T	500m	50	SJ		10	#	100	7.0	100	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
60	1716-1202T	500m	50	SJ		10	#	120	7.0	120	200u#	20	20	#	4.0MΔ	250m	300n	EM	T061	A	
61	1716-1205T	500m	50	SJ		10	#	120	7.0	120	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
62	1716-1402T	500m	50	SJ		10	#	140	7.0	140	200u#	20	20	#	4.0MΔ	250m	300n	EM	T061	A	
63	1716-1405T	500m	50	SJ		10	#	140	7.0	140	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
64	1716-1602T	500m	50	SJ		10	#	160	7.0	160	200u#	20	20	#	4.0MΔ	250m	300n	EM	T061	A	
65	1716-1605T	500m	50	SJ		10	#	160	7.0	160	200u#	20	20	#	4.0MΔ	250m	400n	EM	T061	A	
66	1716-1802T	500m	50	SJ		10	#	180	7.0	180	200u#	20	20	#	4.0MΔ	250m	300n	EM	T061	A	
67	1716-1805T	500m	50	SJ		10	#	180	7.0	180	200u#	20	20	#	4.0MΔ	250m					

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. @ 25°C		BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E	
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	Vcb (V)	Vcb (V)	Ic (A)									MIN
1	SDT7017	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	100 #		15M			PL	T061	∅	
2	SDT7018	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	100 #		15M			PL	T061	∅	
3	SDT7019	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	100 #		15M			PL	T061	∅	
4	SDT7140	500m	87	∅	∅	∅	∅	∅	∅	∅	100n	5.0	5.0	40	120	50M			PL	T061	∅	
5	SDT7141	500m	87	∅	∅	∅	∅	∅	∅	∅	100n	5.0	5.0	40	120	50M			PL	T061	∅	
6	SDT7150	500m	87	∅	∅	∅	∅	∅	∅	∅	500n	5.0	5.0	20	60	50M			PL	T061	∅	
7	SDT7151	500m	87	∅	∅	∅	∅	∅	∅	∅	500n	5.0	5.0	20	60	50M			PL	T061	∅	
8	SDT7152	500m	87	∅	∅	∅	∅	∅	∅	∅	500n	5.0	5.0	20	60	50M			PL	T061	∅	
9	SDT7154	500m	87	∅	∅	∅	∅	∅	∅	∅	500n	5.0	5.0	40	120	50M			PL	T061	∅	
10	SDT7155	500m	87	∅	∅	∅	∅	∅	∅	∅	500n	5.0	5.0	40	120	50M			PL	T061	∅	
11	SDT7156	500m	87	∅	∅	∅	∅	∅	∅	∅	500n	5.0	5.0	40	120	50M			PL	T061	∅	
12	SDT7801	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	20	60	30M	100m		PL	T061	∅	
13	SDT7802	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	20	60	30M	100m		PL	T061	∅	
14	SDT7803	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	20	60	30M	100m		PL	T061	∅	
15	SDT7804	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	20	60	30M	100m		PL	T061	∅	
16	SDT7805	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	20	60	30M	100m		PL	T061	∅	
17	SDT7806	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	10	#				PL	MT50a	A	
18	SDT7807	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	15	#				PL	MT50a	A	
19	SDT7808	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	15	#				PL	MT50a	A	
20	SDT7809	500m	50	∅	∅	∅	∅	∅	∅	∅	1.0u	5.0	5.0	15	#				PL	MT50a	A	
21	ST86020	500m	50	∅	∅	∅	∅	∅	∅	∅	100u	10	3.0	20	120	10M	400m	2.0u	P	T061	∅	
22	ST86021	500m	50	∅	∅	∅	∅	∅	∅	∅	100u	10	3.0	20	120	10M	400m	2.0u	P	T061	∅	
23	ST86022	500m	50	∅	∅	∅	∅	∅	∅	∅	100u	10	3.0	20	120	10M	400m	2.0u	P	T061	∅	
24	TIP41	520m	2.0	∅	∅	∅	∅	∅	∅	∅	700u	4.0	3.0	15	75	3.0	∅		D	X75b	B	
25	TIP41A	520m	2.0	∅	∅	∅	∅	∅	∅	∅	700u	4.0	3.0	15	75	3.0	∅		D	X75b	B	
26	TIP41B	520m	2.0	∅	∅	∅	∅	∅	∅	∅	700u	4.0	3.0	15	75	3.0	∅		D	X75b	B	
27	TIP41C	520m	2.0	∅	∅	∅	∅	∅	∅	∅	700u	4.0	3.0	15	75	3.0	∅		D	X75b	B	
28	MJE205	522m	65	∅	∅	∅	∅	∅	∅	∅	100u	2.0	2.0	25	100				ME	X58a	B	
29	2N3551†	526m	40	∅	∅	∅	∅	∅	∅	∅	10m	2.0	2.0	10	20	90	#	40M	100m	300n	X15	
30	2N3552†	526m	40	∅	∅	∅	∅	∅	∅	∅	10m	2.0	2.0	10	20	90	#	40M	100m	300n	X15	
31	2N5862	533m	80	∅	∅	∅	∅	∅	∅	∅	2.0m	5.0	3.0	5.0					DM	MT75b	R	
32	MM1552	533m	80	∅	∅	∅	∅	∅	∅	∅	2.0m	5.0	3.0	5.0					DM	MT80	C	
33	MM1553	533m	80	∅	∅	∅	∅	∅	∅	∅	2.0m	5.0	3.0	15					DM	MT80	C	
34	SG8207	533m	80	∅	∅	∅	∅	∅	∅	∅	10u	5.0	5.0	30	90	#	30M		DPE	T066	A	
35	SG8207A	533m	80	∅	∅	∅	∅	∅	∅	∅	10u	5.0	5.0	30	300	#	40M		DPE	T066	A	
36	PT6907	555m	75	∅	∅	∅	∅	∅	∅	∅	5.0	3.0	15	30	150	150M	80m		PL	T063	A	
37	BUY20	568m	85	∅	∅	∅	∅	∅	∅	∅	100u	5.0	3.0	20	300	#	15M		DM	T03	C	
38	BUY21	568m	85	∅	∅	∅	∅	∅	∅	∅	100u	5.0	3.0	20	300	#	15M		DM	T03	C	
39	BUY21A	568m	85	∅	∅	∅	∅	∅	∅	∅	100u	5.0	3.0	20	300	#	15M		DM	T03	C	
40	BUY22	568m	85	∅	∅	∅	∅	∅	∅	∅	100u	5.0	3.0	20	300	#	15M		DM	T03	C	
41	2N5239	570m	100	∅	∅	∅	∅	∅	∅	∅	4.0m	10	2.0	20	80	5.0M	1.1		DM	T03	C	
42	2N5240	570m	100	∅	∅	∅	∅	∅	∅	∅	4.0m	10	2.0	20	80	5.0M	1.1		DM	T03	C	
43	2N5708	570m	100	∅	∅	∅	∅	∅	∅	∅	5.0m	10	100m	5.0	50	5.0M			DM	T0128	V	
44	2N5711	570m	10	∅	∅	∅	∅	∅	∅	∅	200u	4.0	36	50m					DM	T0117	R	
45	2N5849	571m	100	∅	∅	∅	∅	∅	∅	∅	1.0m	5.0	2.4	3.0					DM	MT75b	R	
46	MM1620	571m	100	∅	∅	∅	∅	∅	∅	∅	1.0m	5.0	2.4	3.0					DM	MT75b	R	
47	SCC321	571m	100	∅	∅	∅	∅	∅	∅	∅	1.0m	5.0	2.4	3.0					DM	MT75b	R	
48	2N5838†	572m	57	∅	∅	∅	∅	∅	∅	∅	275	6.0	275	#	80	5.0M	333m	1.5u	DM	T03	C	
49	2N5839†	572m	57	∅	∅	∅	∅	∅	∅	∅	300	6.0	300	#	50	5.0M	333m	1.5u	DM	T03	C	
50	2N5840†	572m	57	∅	∅	∅	∅	∅	∅	∅	375	6.0	375	#	50	5.0M	333m	1.5u	DM	T03	C	
51	2N5873†	572m	100	∅	∅	∅	∅	∅	∅	∅	60	5.0†	60		100	4.0M	250m	700n	DM	T03	C	
52	2N5874†	572m	100	∅	∅	∅	∅	∅	∅	∅	250u	4.0	2.5	20	100	4.0M	250m	700n	DM	T03	C	
53	2N4347	577m	100	∅	∅	∅	∅	∅	∅	∅	200m	4.0	2.0	15	60	#			DM	T03	C	
54	BU110	588m	30	∅	∅	∅	∅	∅	∅	∅	150	15m	1.5	6.0	8.0				DM	MD17†	C	
55	3TE225A	600m	105	∅	∅	∅	∅	∅	∅	∅	1.0m	5.0	4.5	10					PL	MT62a	∅	
56	KS6120†	600m	100	∅	∅	∅	∅	∅	∅	∅	500u	5.0	10	15					PE	T03	∅	
57	KS6121†	600m	100	∅	∅	∅	∅	∅	∅	∅	500u	5.0	10	15					PE	T03	∅	
58	KS6122†	600m	100	∅	∅	∅	∅	∅	∅	∅	500u	5.0	10	15					PE	T03	∅	
59	KS6125†	600m	100	∅	∅	∅	∅	∅	∅	∅	500u	5.0	10	15					PE	T03	∅	
60	KS6126†	600m	100	∅	∅	∅	∅	∅	∅	∅	500u	5.0	10	15					PE	T03	∅	
61	2SD55A	620m	200	∅	∅	∅	∅	∅	∅	∅	130	12	110		48	1.0M			D	T03	C	
62	2N5804†	625m	62	∅	∅	∅	∅	∅	∅	∅	300	6.0	300	#	100	15M	400m	500n	DM	T03	C	
63	2N5805†	625m	62	∅	∅	∅	∅	∅	∅	∅	375	6.0	375	#	100	15M	400m	500n	DM	T03	C	
64	BU108	625m	12	∅	∅	∅	∅	∅	∅	∅	1.5k	5.0		3.0					D	T03	C	
65	TIP33†	625m	3.5	∅	∅	∅	∅	∅	∅	∅	40	5.0	40		25	125	#	3.0k	DM	X86	B	
66	TIP33A†	625m	3.5	∅	∅	∅	∅	∅	∅	∅	60	5.0	60		25	125	#	3.0k	DM	X86	B	
67	TIP33B	625m	3.5	∅	∅	∅	∅	∅	∅	∅	80	5.0	80		30				DM	X86	B	
68	TIP33C	625m	3.5	∅	∅	∅	∅	∅	∅	∅	100	5.0	100		30				DM	X86	B	
69	TIP3055	625m	3.5	∅	∅	∅	∅	∅	∅	∅	100	7.0	70		20				DM	X86	B	
70	2SC1106	630m	80	∅	∅	∅	∅	∅	∅	∅	350	5.0	250		40				ME	T03	∅	
71	MJE2020	640m	80	∅	∅	∅	∅	∅	∅	∅	40	5.0	40		25	125	#	3.0M	DM	X104	D	
72	MJE2021	640m	80	∅	∅	∅	∅	∅	∅	∅	60	5.0	60		25	125	#	3.0M	DM	X104	D	
73	2N5329	645m	65	∅	∅	∅	∅	∅	∅	∅	150	8.0	90		40	120	80M	90m	350n	T061	A	
74	KSD1051	650m	1																			

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX FREE AIR @ 25°C (W)	Pc	M A E M	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo (A)	Vcb (V)	Ic (A)								
1	2N3234	666m	117	8	SC	7.5	3.0	160	6.0	160	1.0m#	10	3.0	18	55	10M\$Δ			MD21	0	
2	2N3235	666m	117	8	SC	15	7.0	65	7.0	55	5.0m#	4.0	4.0	20	70	10M\$Δ			MD21	0	
3	2N3263†	666m	84	8	SC	25	10	150	7.0	90	2.0m#	2.0	15	20	55	20M\$Δ	500n		X21	D	
4	2N3264†	666m	84	8	SC	25	10	120	7.0	60	2.0m#	3.0	15	25	80	20M\$Δ	500n		X21	D	
5	JAN2N3442	666m	4.0	8	SJ	10	7.0	160	7.0	140	1.0m#	4.0	3.0	20	70	10M\$Δ			TO3	C	
6	2N3445†	666m	115	8	SJ	7.5	4.0	80	6.0	60	100u#	5.0	3.0	20	60	10M\$Δ	500m	350n	TO3	C	
7	2N3446†	666m	115	8	SJ	7.5	4.0	100	10	80	100u#	5.0	3.0	20	60	10M\$Δ	500m	350n	EA	EA	
8	2N3447†	666m	115	8	SJ	7.5	4.0	80	6.0	60	100u#	5.0	3.0	40	120	10M\$Δ	300m	350n	EA	EA	
9	2N3448†	666m	115	8	SJ	7.5	4.0	100	10	80	100u#	5.0	3.0	40	120	10M\$Δ	300m	350n	EA	EA	
10	2N3487†	666m	115	8	SC	7.5	4.0	80	10	60	100u	5.0	3.0	20	60	10M\$Δ	300m	350n		TO61	
11	2N3488†	666m	115	8	SC	7.5	4.0	100	10	80	100u	5.0	3.0	20	60	10M\$Δ	300m	350n		TO61	
12	2N3489†	666m	115	8	SC	7.5	4.0	120	10	100	100u	5.0	3.0	15	45	10M\$Δ	300m	350n		TO61	
13	2N3490†	666m	115	8	SC	7.5	4.0	80	10	60	100u	5.0	3.0	40	120	10M\$Δ	300m	350n		TO61	
14	2N3491†	666m	115	8	SC	7.5	4.0	100	10	80	100u	5.0	3.0	40	120	10M\$Δ	300m	350n		TO61	
15	2N3492†	666m	115	8	SC	7.5	4.0	120	10	100	100u	5.0	3.0	30	90	10M\$Δ	300m	350n		TO61	
16	2N3788	666m	100	8	SJ	2.0	1.0	400	5.0	325	5.0m#	5.0	500m	20	180	50kΔ	2.0		TO3	C	
17	2N3864†	666m	117	8	SC	7.5	3.0	110	7.0	90	1.0m#	2.0	3.0	30	90	500k\$Δ	330m	8.0u	TO3	C	
18	2N3865†	666m	117	8	SC	7.5	3.0	160	7.0	150	1.0m#	2.0	3.0	30	90	500k\$Δ	330m	8.0u	TO3	C	
19	2N5006	666m#	100	8	SJ	10	3.0	100	6.0	80	1.0m#	5.0	5.0	30	90	30M\$Δ			MT16a	A	
20	2N5008	666m#	100	8	SJ	10	3.0	100	6.0	80	1.0m#	5.0	5.0	70	200	40M\$Δ			MT16a	A	
21	2N5034	666m	83	8	SJ	6.0	6.0	55	5.0	45	200mΔ	4.0	4.0	20	80		420m		MS9	C	
22	2N5035	666m	83	8	SJ	6.0	6.0	55	5.0	45	200mΔ	4.0	4.0	20	80		380m		MS9a	C	
23	2N5036	666m	83	8	SJ	8.0	6.0	70	5.0	60	200mΔ	4.0	5.0	20	80		420m		MS9	C	
24	2N5037	666m	83	8	SJ	8.0	6.0	70	5.0	60	200mΔ	4.0	5.0	20	80		380m		MS9a	C	
25	2N5048†	666m	100	8	SJ	10	2.0	120	14	100	1.0m#	4.0	10	15	60	10M\$Δ	250m	600n	TO61	A	
26	2N5049†	666m	100	8	SJ	10	2.0	60	14	50	1.0m#	4.0	10	15	60	10M\$Δ	250m	1.0u	TO61	A	
27	2N5288	666m#	100	8	SJ	10	3.0	120	6.0	100	1.0m#	5.0	5.0	30	90	40M\$Δ			MT16a	A	
28	2N5289	666m#	100	8	SJ	10	3.0	120	6.0	100	1.0m#	5.0	5.0	20	70	40M\$Δ			MT16a	A	
29	2S024	666m	100	8	SJ	7.5	2.0	100	10	32	1.0m	15	2.0	20	30	12M\$	500m		ME	MS3	
30	2S025	666m	100	8	SJ	7.5	2.0	150	10	60	1.0m	15	2.0	20	30	12M\$	500m		ME	MS3	
31	2S026	666m	100	8	SJ	7.5	2.0	200	10	100	1.0m	15	2.0	20	30	12M\$	500m		ME	MS3	
32	2SC408†	666m	100	8	SJ	10	3.0	150	4.0	100	5.0m	5.0	5.0	20	40	400k	200m	1.0u	TO3	C	
33	2SC409†	666m	100	8	SJ	10	3.0	200	4.0	140	2.0m	5.0	5.0	10	30	400k	200m	1.0u	TO3	C	
34	2SC410†	666m	100	8	SJ	10	3.0	200	4.0	140	2.0m	5.0	5.0	20	40	400k	200m	1.0u	TO3	C	
35	2SC411†	666m	100	8	SJ	10	3.0	300	4.0	200	5.0m	5.0	5.0	10	30	400k	200m	1.0u	TO3	C	
36	2SC412†	666m	100	8	SJ	10	3.0	300	4.0	200	5.0m	5.0	5.0	20	40	400k	200m	1.0u	TO3	C	
37	2SC586	666m	50	8	SJ	5.0	6.0	150	6.0	150	15m	4.0	4.0	20	30	300k	320m		EM	TO3	
38	2SC647	666m	50	8	SJ	5.0	6.0	80	5.0	80	10m	4.0	4.0	20	30	300k	320m		DM	TO3	
39	2SC687	666m	50	8	SJ	5.0	6.0	150	6.0	150	15m	4.0	4.0	14	33	300k	320m	1.0u#	DM	TO3	
40	2SC901	666m	50	8	SJ	5.0	1.5	200	6.0	200	15m	4.0	5.0	14	25	300k	320m	300n#	DM	TO3	
41	2SC901A	666m	50	8	SJ	5.0	1.5	250	6.0	250	15m	4.0	5.0	14	25	300k	320m	300n#	DM	TO3	
42	2SD13	666m	100	8	SJ	10	3.0	35	4.0	20	45m	10	2.5	30	90	20kΔ	3.0		ME	TO36	
43	2SD14	666m	100	8	SJ	10	3.0	75	4.0	40	45m	4.0	10	15	45	20kΔ	3.0		ME	TO36	
44	2SD15†	666m	80	8	SJ	6.0	3.0	60	10	45	2.0m	4.0	1.5	10	80	2.0MΔ	1.0	1.3u	D	TO3	
45	2SD16†	666m	80	8	SJ	6.0	3.0	100	10	55	1.0m	4.0	1.5	10	80	2.0MΔ	1.0	1.3u	D	TO3	
46	2SD17†	666m	80	8	SJ	6.0	3.0	150	10	70	500u	4.0	1.5	10	80	2.0MΔ	1.0	1.3u	D	TO3	
47	2SD18†	666m	80	8	SJ	6.0	3.0	200	10	85	500u	4.0	1.5	10	80	2.0MΔ	1.0	1.3u	D	TO3	
48	2SD53	666m	100	8	SJ	10	3.0	90	12	50	200u	4.0	5.0	12	48	1.2M†			D	TO3	
49	2SD110†	666m	100	8	SJ	10	3.0	130	10	110	5.0m	5.0	1.0	20	40	2.0M\$	300m		D	TO3	
50	2SD111†	666m	100	8	SJ	10	3.0	100	10	80	5.0m	5.0	1.0	20	40	2.0M\$	300m		D	TO3	
51	2SD151	666m	120	8	SJ	15	3.0	100	6.0	60	1.0m	10	10	20	100	2.0M\$	100m		EM	TO3	
52	2SD163†	666m	100	8	SJ	10	4.0	60	10	40	500u	4.0	5.0	15	30	800kΔ	300m	1.4u	D	TO3	
53	2SD164†	666m	100	8	SJ	10	4.0	100	10	55	500u	4.0	5.0	15	30	800kΔ	300m	1.4u	D	TO3	
54	2SD165†	666m	100	8	SJ	10	4.0	150	10	70	500u	4.0	5.0	15	30	800kΔ	300m	1.4u	D	TO3	
55	2SD166†	666m	100	8	SJ	10	4.0	200	10	85	500u	4.0	5.0	15	30	800kΔ	300m	1.4u	D	TO3	
56	2SD172	666m	100	8	SJ	10	4.0	60	6.0	40	200u	4.0	5.0	10	60	1.2M\$	500m		D	TO3	
57	2SD173	666m	100	8	SJ	10	4.0	100	6.0	60	200u	4.0	5.0	10	60	1.2M\$	500m		D	TO3	
58	2SD176	666m	100	8	SJ	10	4.0	90	12	50	200u	4.0	5.0	10	50	1.2M†			D	TO3	
59	2SD177	666m	100	8	SJ	10	4.0	120	12	70	200u	4.0	5.0	10	50	1.2M†			DM	TO3	
60	2SD189	666m	50	8	SJ	5.0	8.0	80	5.0	80	10m	4.0	4.0	20	160	4.0M\$	400m		DM	TO3	
61	2SD189A	666m	50	8	SJ	5.0	8.0	100	5.0	100	10m	4.0	4.0	20	160	4.0M\$	400m		DM	TO3	
62	40251	666m	117	8	SJ	15	7.0	50	5.0	40	5.0m	4.0	8.0	15	60	500k\$	190m		D	TO3	
63	40325	666m	117	8	SJ	15	7.0	35	5.0	35	5.0m	4.0	8.0	12	60	500k\$	190m		D	TO3	
64	40363	666m	115	8	SJ	17	6.0	40	4.0	70	500u	4.0	4.0	20	70	700k\$			D	TO3	
65	40513	666m	83	8	SJ	6.0	6.0	5.0	5.0	4.0	2.5m*	4.0	2.5	20	70	800kΔ			MS9a	C	
66	40514	666m	83	8	SJ	6.0	6.0	5.0	5.0	4.0	2.5m*	4.0	2.5	20	70	800kΔ			MS9	C	
67	40542	666m	83	8	SJ	6.0	6.0	5.0	5.0	5.0	1.0m*	4.0	2.5	20	70	800kΔ	400m		I	MS9	
68	40543	666m	83	8	SJ	8.0	6.0	5.0	5.0	5.0	1.0m*	4.0	2.5	20	70	800kΔ	330m		I	MS9	
69	40633	666m	2.0	8	SA	8.0	6.0	5.0	5.0	5.0	500n*	4.0	4.0	20	70	800kΔ			H	TO3	
70	40636	666m	115	8	SA	15	7.0	7.0	7.0	35	500n*	4.0	4.0	20	70	800kΔ			PE	L88	
71	40675*	666m#	100	8	SJ	10	3.0	3.5	3.5	80	10u\$	5.0	2.0	40	160	60M\$Δ	100m	200n	TO61	A	
72	B148000†	666m	100	8	SJ	20	4.0	4.0	7.0	100	10u\$	5.0	2.0	40	160	60M\$Δ	100m	200n	TO61	A	
73	B148001†	666m	100	8	SJ</																

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J TO C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M A X E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Icbo @ 25°C (A)	hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O D E
						Ic (A)	Ib (A)	BVcbo (V)	BVcbo (V)	BVceo (V)		Vcbo (V)	Vcb (V)								
1	B176007	666m\$	50	0	\$J	5.0	2.5	400	5.0	400	#	2.0u	5.0	2.5	10					T03	C0
2	B176008	666m\$	50	0	\$J	5.0	2.5	550	5.0	550	#	2.0u	5.0	100m	25					T03	C0
3	B176009	666m\$	50	0	\$J	5.0	2.5	550	5.0	550	#	2.0u	5.0	500m	20					T03	C0
4	B176010	666m\$	50	0	\$J	5.0	2.5	550	5.0	550	#	2.0u	5.0	1.5	10					T03	C0
5	B176011	666m\$	50	0	\$J	5.0	2.5	550	5.0	550	#	2.0u	5.0	2.5	10					T03	C0
6	B176012	666m\$	50	0	\$J	5.0	2.5	650	5.0	650	#	2.0u	5.0	100m	25					T03	C0
7	B176013	666m\$	50	0	\$J	5.0	2.5	650	5.0	650	#	2.0u	5.0	100m	25					T03	C0
8	B176014	666m\$	50	0	\$J	5.0	2.5	650	5.0	650	#	2.0u	5.0	1.5	10					T03	C0
9	B176015	666m\$	50	0	\$J	5.0	2.5	650	5.0	650	#	2.0u	5.0	2.5	10					T03	C0
10	B176024	666m\$	50	0	\$J	5.0	2.5	400	5.0	400	#	2.0u	5.0	1.5	10					T03	C0
11	B176025	666m\$	50	0	\$J	5.0	2.5	400	5.0	400	#	2.0u	5.0	2.5	10					T03	C0
12	B176026	666m\$	50	0	\$J	5.0	2.5	550	5.0	550	#	2.0u	5.0	1.5	10					T03	C0
13	B176027	666m\$	50	0	\$J	5.0	2.5	550	5.0	550	#	2.0u	5.0	2.5	10					T03	C0
14	B176028	666m\$	50	0	\$J	5.0	2.5	650	5.0	650	#	2.0u	5.0	1.5	10					T03	C0
15	B176029	666m\$	50	0	\$J	5.0	2.5	650	5.0	650	#	2.0u	5.0	2.5	10					T03	C0
16#	BD130	666m\$	117	0	#J	15	7.0	100	7.0	60		4.0	4.0	3.0	20	70	1.3M\$		PL	T03	
17#	BD141	666m\$	117	0	#J	10	7.0	160	7.0	140		4.0	4.0	3.0	20	70	1.3M\$		PL	T03	
18#	BD142	666m\$	117	0	#J	15	7.0	50	5.0	40		4.0	4.0	3.0	12	160	1.3M\$		PL	T03	
19#	BDY17	666m\$	115	0	\$J	10	2.0	80	7.0	70	5.0m	4.0	6.0	Δ	10		1.0M\$		D	T03	
20#	BDY18	666m\$	115	0	\$J	10	2.0	120	7.0	70	5.0m	4.0	8.0	Δ	10		1.0M\$		D	T03	
21#	BDY19	666m\$	115	0	\$J	10	2.0	150	7.0	80	5.0m	4.0	10	Δ	10		1.0M\$		D	T03	
22#	BDY38	666m\$	115	0	\$J	6.0	2.0	50	7.0	40	1.0m	4.0	2.0	30			1.0M\$		D	T03	
23#	BDY39	666m\$	75	0	\$J	10	2.0	70	7.0	60	200u\$	4.0	4.0	Δ	20	70	1.1M\$	200m	D	T03	
24#	BLY17	666m\$	100	0	\$J	10	2.0	100	4.0	100	1.0m\$	0.0	1.0	Δ	5.0	25	70M\$		DPL	T03	
25#	BU115	666m\$	50	0	\$C	20	8.0	800	10	600	2.0m	5.0	5.0	20	100		100m	DM	T03		
26#	BU116	666m\$	50	0	\$C	20	8.0	400	10	300	2.0m	5.0	5.0	20	100		200m	DM	T03		
27#	BU117	666m\$	50	0	\$C	20	8.0	250	10	200	2.0m	5.0	5.0	20	100		200m	DM	T03		
28#	BU120	666m\$	50	0	\$C	5.0	5.0	8.0	8.0	400	5.0	5.0	1.0	35	165	10M\$	660m	DM	T03		
29#	BU121	666m\$	50	0	\$C	15	5.0	8.0	8.0	320	5.0	6.0	7.0	7.0	250	6.0M\$	290m	DM	T03		
30#	BU122	666m\$	50	0	\$C	5.0	5.0	8.0	8.0	250	5.0	1.0	25	250	250	10M\$	930m	DM	T03		
31#	BU123	666m\$	50	0	\$C	1.0	1.0	8.0	8.0	180	5.0	1.0	25	250	250	10M\$	930m	DM	T03		
32	DTS701	666m\$	50	0	\$J	1.0	250m	5.0	5.0	800	500uΔ	5.0	150m	20			1.5M\$Δ		DMΔ	T03	
33	DTS702	666m\$	50	0	\$J	3.0	1.0	5.0	5.0	1.0k	500uΔ	5.0	2.0	2.5			1.5M\$Δ		DMΔ	T03	
34	DTS704	666m\$	50	0	\$J	3.0	1.0	5.0	5.0	1.0k	500uΔ	5.0	2.0	2.5			1.5M\$Δ	1.0u#	DMΔ	T03	
35	DTS721	666m\$	50	0	\$J	3.0	1.0	5.0	5.0	1.0k	250u#	5.0	150m	20	60		1.5M\$Δ		DM	T03	
36	DTS723	666m\$	50	0	\$J	3.0	1.0	5.0	5.0	1.0k	500u#	5.0	500m	10			1.5M\$Δ		DM	T03	
37	MJ3010	666m\$	100	0	\$J	7.0	5.0	200	5.0	200	5.0	5.0	20	180		670m		PL	T03		
38	MJ3011	666m\$	100	0	\$J	7.0	5.0	325	5.0	325	5.0	2.0	10			670m		PL	T03		
39	PP3000	666m\$	115	0	\$J	15	60	50	4.0	50	4.0	5.0	12					DM	T03		
40	PP3001	666m\$	115	0	\$J	15	100	80	4.0	80	4.0	5.0	12					DM	T03		
41	PP3002	666m\$	115	0	\$J	15	120	100	4.0	100	4.0	5.0	12					DM	T03		
42	PP3003	666m\$	115	0	\$J	15	60	50	4.0	50	4.0	5.0	12					DM	T03		
43	PP3004	666m\$	115	0	\$J	15	100	80	4.0	80	4.0	5.0	12					DM	T03		
44	PP3005	666m\$	115	0	\$J	15	120	100	4.0	100	4.0	5.0	12					DM	T03		
45	PT1937	666m\$	5.0	0	#J	7.0	140	4.0	100	50m	2.0	7.0	15	60	#	40M\$Δ		DM	T080		
46	PT5992	666m\$	116	0	\$J	30	10	120	5.0	70	5.0m	5.0	10	20		67m		PL	X15		
47	PT6939†	666m\$	100	0	\$A	30	220	8.0	200	5.0	5.0	5.0	40			100m		PL	T061		
48	PT6984†	666m\$	100	0	\$A	30	250	6.0	250	5.0	5.0	10	15	75		50M\$Δ	500n	PL	T061		
49	PT6988†	666m\$	100	0	\$J	30	250	6.0	250	5.0	5.0	10	15	75		50M\$Δ	100m	PL	T063		
50	SDT7201	666m\$	50	0	\$J	10	225	8.0	200	1.0u	5.0	5.0	20	60	#	50M\$Δ		PL	T03		
51	SDT7202	666m\$	50	0	\$J	10	250	8.0	225	1.0u	5.0	5.0	20	60	#	50M\$Δ		PL	T03		
52	SDT7203	666m\$	50	0	\$J	10	275	8.0	250	1.0u	5.0	5.0	20	60	#	50M\$Δ		PL	T03		
53	SDT7204	666m\$	50	0	\$J	10	325	8.0	300	1.0u	5.0	5.0	20	60	#	50M\$Δ		PL	T03		
54	SDT7205	666m\$	50	0	\$J	10	350	8.0	325	1.0u	5.0	5.0	20	60	#	50M\$Δ		PL	T03		
55	SDT7206	666m\$	115	0	\$J	10	2.0	150	8.0	150	10u	5.0	5.0	10			30M		PL	T03	
56	SDT7207	666m\$	115	0	\$J	10	2.0	200	8.0	200	10u	5.0	5.0	15			30M		PL	T03	
57	SDT7208	666m\$	115	0	\$J	10	2.0	250	8.0	250	10u	5.0	5.0	15			30M		PL	T03	
58	SDT7209	666m\$	115	0	\$J	10	2.0	300	8.0	300	10u	5.0	5.0	15			30M		PL	T03	
59	SDT7601	666m\$	60	0	\$J	10	5.0	60	8.0	40	500n	5.0	5.0	40	120	#	60M\$	100m	PE	T03	
60	SDT7602	666m\$	60	0	\$J	10	5.0	80	8.0	60	500n	5.0	5.0	40	120	#	60M\$	100m	PE	T03	
61	SDT7603	666m\$	60	0	\$J	10	5.0	100	8.0	80	500n	5.0	5.0	40	120	#	60M\$	100m	PE	T03	
62	SDT7604	666m\$	60	0	\$J	10	5.0	140	8.0	120	500n	5.0	5.0	40	120	#	60M\$	100m	PE	T03	
63	SDT7605	666m\$	60	0	\$J	10	5.0	170	8.0	150	500n	5.0	5.0	40	120	#	60M\$	120m	PE	T03	
64	SDT7606	666m\$	60	0	\$J	10	5.0	220	8.0	200	500n	5.0	5.0	40	120	#	60M\$	120m	PE	T03	
65	SDT7607	666m\$	60	0	\$J	10	5.0	60	8.0	40	500n	5.0	5.0	20	60	#	60M\$	100m	PL	T03	
66	SDT7608	666m\$	60	0	\$J	10	5.0	80	8.0	60	500n	5.0	5.0	20	60	#	60M\$	100m	PL	T03	
67	SDT7609	666m\$	60	0	\$J	10	5.0	100	8.0	80	500n	5.0	5.0	20	60	#	60M\$	100m	PL	T03	
68	SDT7610	666m\$	60	0	\$J	10	5.0	140	8.0	120	500n	5.0	5.0	20	60	#	60M\$	100m	PL	T03	
69	SDT7611	666m\$	60	0	\$J	10	5.0	170	8.0	150	500n	5.0	5.0	20	60	#	60M\$	120m	PL	T03	
70	SDT7612	666m\$	60	0	\$J	10	5.0	220	8.0	200	500n	5.0	5.0	20	60	#	60M\$	120m	PL	T03	
71	SDT8105	666m\$	115	0	\$J	20	4.0	80	8.0	60	100u	5.0	10	40	120		30M		PL	X21	
72	SDT8106	666m\$	115	0	\$J	20	4.0	100	8.0	80	100u	5.0	10	40	120		30M		PL	X21	
73	SDT8110	666m\$	115	0	\$J	20	4.0	80	8.0	60	10u	5.0	10	100		30M		PL	X21		
74	SDT8111	666m\$	115	0	\$J	20	4.0	100	8.0	80	10u	5.0	10	100		30M		PL	X21		
75	SDT8112	666m\$	115	0	\$J	20	4.0	80	8.0	60	10u	5.0	10	20	60		30M		PL	X21	
76	SDT8113	666m\$	115	0	\$J	20	4.0	100	8.0												



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE TO C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Icbo @ 25°C (A)	BIAS			MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E					
						lc (A)	lb (A)	BVcbo (V)	BVebo (V)	BVceo (V)		Vcb (V)	Vc (A)	IC (A)									MIN	MAX			
1	T11126	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	100	8.0	50	10m	4.0	2.0	15	60 #	7.5MΔ	500m	ME	T053	A∅	
2	T11131	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	200	8.0	100	10m	4.0	2.0	30	120 #	7.5MΔ	500m	ME	MT10	A∅	
3	T11132	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	200	8.0	100	10m	4.0	2.0	15	60 #	7.5MΔ	500m	ME	MT10	A∅	
4	T11133	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	150	8.0	75	10m	4.0	2.0	30	120 #	7.5MΔ	500m	ME	MT10	A∅	
5	T11134	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	150	8.0	75	10m	4.0	2.0	15	60 #	7.5MΔ	500m	ME	MT10	A∅	
6	T11135	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	100	8.0	50	10m	4.0	2.0	30	120 #	7.5MΔ	500m	ME	MT10	A∅	
7	T11136	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	100	8.0	50	10m	4.0	2.0	15	60 #	7.5MΔ	500m	ME	MT10	A∅	
8	T11141	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	200	8.0	100	10m	4.0	5.0	20	80 #	7.5MΔ	500m	ME	T053	A∅	
9	T11142	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	200	8.0	100	10m	4.0	5.0	10	40 #	7.5MΔ	500m	ME	T053	A∅	
10	T11143	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	150	8.0	75	10m	4.0	5.0	20	80 #	7.5MΔ	500m	ME	T053	A∅	
11	T11144	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	150	8.0	75	10m	4.0	5.0	10	40 #	7.5MΔ	500m	ME	T053	A∅	
12	T11145	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	100	8.0	50	10m	4.0	5.0	20	80 #	7.5MΔ	500m	ME	T053	A∅	
13	T11146	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	100	8.0	50	10m	4.0	5.0	10	40 #	7.5MΔ	500m	ME	T053	A∅	
14	T11151	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	200	8.0	100	10m	4.0	5.0	20	80 #	7.5MΔ	500m	ME	MT10	A∅	
15	T11152	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	200	8.0	100	10m	4.0	5.0	10	40 #	7.5MΔ	500m	ME	MT10	A∅	
16	T11153	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	150	8.0	75	10m	4.0	5.0	20	80 #	7.5MΔ	500m	ME	MT10	A∅	
17	T11154	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	150	8.0	75	10m	4.0	5.0	10	40 #	7.5MΔ	500m	ME	MT10	A∅	
18	T11155	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	100	8.0	50	10m	4.0	5.0	20	80 #	7.5MΔ	500m	ME	MT10	A∅	
19	T11156	666m#	80	∅	∅	∅	∅	∅	∅	∅	∅	7.5	5.0	100	8.0	50	10m	4.0	5.0	10	40 #	7.5MΔ	500m	ME	MT10	A∅	
20	TK9201	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	55	7.0	45	5.0m#	4.0	4.0	18	70	2.0MΔ	275m	TO3	C∅	C∅	
21	TK30551	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	55	7.0	45	2.0mΔ	4.0	4.0	20	70	2.0MΔ	275m	TO3	C∅	C∅	
22	TK30552	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	100	7.0	80	700uΔ	4.0	4.0	20	70	2.0MΔ	275m	TO3	C∅	C∅	
23	TK30553	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	120	7.0	100	700uΔ	4.0	4.0	20	70	2.0MΔ	275m	TO3	C∅	C∅	
24	TK30554	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	140	7.0	120	700uΔ	4.0	4.0	20	70	2.0MΔ	275m	TO3	C∅	C∅	
25	TK30555	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	55	7.0	45	2.0mΔ	4.0	4.0	15	70	2.0MΔ	275m	TO3	C∅	C∅	
26	TK30556	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	80	7.0	60	700uΔ	4.0	4.0	15	70	2.0MΔ	275m	TO3	C∅	C∅	
27	TK30557	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	100	7.0	80	700uΔ	4.0	4.0	15	70	2.0MΔ	275m	TO3	C∅	C∅	
28	TK30558	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	120	7.0	100	700uΔ	4.0	4.0	15	70	2.0MΔ	275m	TO3	C∅	C∅	
29	TK30559	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	140	7.0	120	700uΔ	4.0	4.0	15	70	2.0MΔ	275m	TO3	C∅	C∅	
30	TK30560	666m	115	∅	∅	∅	∅	∅	∅	∅	∅	7.5	7.0	40	5.0	30	5.0mΔ	2.0	2.0	15	70	2.0MΔ	275m	TO3	C∅	C∅	
31#	Z13442	666m	117	∅	∅	∅	∅	∅	∅	∅	∅	7.5	10	160	7.0	140	30m#	4.0	3.0	20	70	80kΔ	500m	ME	MT10	A∅	
32	2N38631	667m	117	∅	∅	∅	∅	∅	∅	∅	∅	7.5	10	70	7.0	50	1.0m#	2.0	3.0	30	60	500kΔ	.33	8 0uΔ	Δ	TO3	C∅
33	2N6222	667m#	100	∅	∅	∅	∅	∅	∅	∅	∅	3.0	3.0	80	7.0	60	1.0m#	5.0	5.0	70	200 #	40MΔ			TO3	C∅	
34	2N6224	667m#	100	∅	∅	∅	∅	∅	∅	∅	∅	3.0	3.0	100	7.0	80	1.0m#	5.0	5.0	30	90 #	30MΔ			TO3	C∅	
35	2N6226	667m#	100	∅	∅	∅	∅	∅	∅	∅	∅	3.0	3.0	100	7.0	80	1.0m#	5.0	5.0	70	200 #	40MΔ			TO3	C∅	
36	2N6228	667m#	100	∅	∅	∅	∅	∅	∅	∅	∅	3.0	3.0	100	7.0	80	1.0m#	5.0	5.0	30	90 #	30MΔ			TO3	C∅	
37	2N3867	670m	117	∅	∅	∅	∅	∅	∅	∅	∅	7.5	10	120	7.0	100	1.0m#	5.0	5.0	30	90 #	30MΔ			TO3	C∅	
38	1756-0640†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	60	7.0	60	5.0m#	3.0	3.0	15	#	500kΔ		6 0u∅	EM	T063	A∅
39	1756-0660†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	60	7.0	60	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
40	1756-0840†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	80	7.0	80	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
41	1756-0860†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	80	7.0	80	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
42	1756-1040†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	100	7.0	100	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
43	1756-1060†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	100	7.0	100	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
44	1756-1240†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	120	7.0	120	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
45	1756-1260†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	120	7.0	120	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
46	1756-1440†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	140	7.0	140	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
47	1756-1460†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	140	7.0	140	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
48	1756-1640†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	160	7.0	160	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
49	1756-1660†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	160	7.0	160	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
50	1756-1840†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	180	7.0	180	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
51	1756-1860†	670m	240	∅	∅	∅	∅	∅	∅	∅	∅	7.5	15	180	7.0	180	5.0m#	3.0	3.0	15	#	20MΔ		500n∅	EM	T063	A∅
52	2N5412†	671m	100	∅	∅	∅	∅	∅	∅	∅	∅	3.0	3.0	80	7.0	80	1.0m#	5.0	5.0	10	100	60MΔ		200m	D	TO3	A∅
53	2N4348	685m	120	∅	∅	∅	∅	∅	∅	∅	∅	8.0	4.0	140	7.0	120	200mΔ	4.0	4.0	15	#	1.0MΔ		200m	D	TO3	A∅
54	STC4252	685m	120	∅	∅	∅	∅	∅	∅	∅	∅	8.0	3.0	10	60	20m#	4.0	5.0	15	#	1.0MΔ		200m	D	TO3	A∅	
55	STC4253	685m	120	∅	∅	∅	∅	∅	∅	∅	∅	8.0	3.0	10	60	20m#	4.0	5.0	15	#	1.0MΔ		200m	D	TO3	A∅	
56	STC4254	685m	120	∅	∅	∅	∅																				



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W/°C)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @25°C					MAX. Vcb		BIAS hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a T0200 Ser.	L E O A D E
						Ic (A)	Ib (A)	Vcbo (V)	VEbo (V)	Vcvo (V)	Icbo (A)	Vcb (V)	Ic (A)	MIN								
1	PT6995	800m	140	§		20	5.0	120	7.0	75	50m	5.0	10		100	50M	125m	400nø	PL	T03	K	
2	SDM2401	800m	140	§		10	500m	60	10	40	1.0u	5.0	5.0	2.0k	30M			PL	T061			
3	SDM2402	800m	140	§		10	500m	80	10	60	1.0u	5.0	5.0	2.0k	30M			PL	T061			
4	SDM2403	800m	140	§		10	500m	100	10	80	1.0u	5.0	5.0	2.0k	30M			PL	T061			
5	SDT1050	800m	100	ø	§J	10	3.0	8.0	200	ø	5.0mΔ	5.0	1.0	15 #	5.0M			PL	T03	Cø		
6	SDT1051	800m	100	ø	§J	10	3.0	8.0	325	ø	5.0mΔ	5.0	1.0	15 #	5.0M			PL	T03	Cø		
7	SDT1052	800m	100	ø	§J	10	3.0	8.0	400	ø	5.0mΔ	5.0	1.0	15 #	5.0M			PL	T03	Cø		
8	SDT1053	800m	100	ø	§J	10	3.0	8.0	400	ø	5.0mΔ	5.0	1.0	15 #	5.0M			PL	T03	Cø		
9	SDT1054	800m	100	ø	§J	10	3.0	8.0	400	ø	5.0mΔ	5.0	1.0	15 #	5.0M			PL	T03	Cø		
10	SDT1055	800m	100	ø	§J	10	3.0	8.0	200	ø	1.0mΔ	5.0	2.0	10 #	5.0M	50	5.0M	PL	T03	Cø		
11	SDT1056	800m	100	ø	§J	10	3.0	8.0	325	ø	1.0mΔ	5.0	2.0	10 #	5.0M	50	5.0M	PL	T03	Cø		
12	SDT1057	800m	100	ø	§J	10	3.0	8.0	400	ø	1.0mΔ	5.0	2.0	10 #	5.0M	50	5.0M	PL	T03	Cø		
13	SDT1058	800m	100	ø	§J	10	3.0	8.0	400	ø	1.0mΔ	5.0	2.0	10 #	5.0M	50	5.0M	PL	T03	Cø		
14	SDT1059	800m	100	ø	§J	10	3.0	8.0	400	ø	1.0mΔ	5.0	2.0	10 #	5.0M	50	5.0M	PL	T03	Cø		
15	SDT1060	800m	100	ø	§J	10	3.0	8.0	200	ø	1.0mΔ	5.0	3.0	10 #	5.0M			PL	T03	Cø		
16	SDT1061	800m	100	ø	§J	10	3.0	8.0	325	ø	1.0mΔ	5.0	3.0	10 #	5.0M			PL	T03	Cø		
17	SDT1062	800m	100	ø	§J	10	3.0	8.0	400	ø	1.0mΔ	5.0	3.0	10 #	5.0M			PL	T03	Cø		
18	SDT1063	800m	100	ø	§J	10	3.0	8.0	400	ø	1.0mΔ	5.0	3.0	10 #	5.0M			PL	T03	Cø		
19	SDT1064	800m	100	ø	§J	10	3.0	8.0	400	ø	1.0mΔ	5.0	3.0	10 #	5.0M			PL	T03	Cø		
20	SDT3225	800m	140			10	2.0	40	6.0	40	10u	5.0	5.0	20	80	40M			PL	T0111	G	
21	SDT3226	800m	140			10	2.0	60	6.0	60	10u	5.0	5.0	20	80	40M			PL	T0111	G	
22	SDT3227	800m	140			10	2.0	80	6.0	80	10u	5.0	5.0	20	80	40M			PL	T0111	G	
23	SDT3228	800m	140			10	2.0	100	6.0	100	10u	5.0	5.0	20	80	40M			PL	T0111	G	
24	SDT3229	800m	140			10	2.0	120	6.0	120	10u	5.0	5.0	20	80	40M			PL	T0111	G	
25	25D196	833m	125	ø	§J	10		100	12	50	20uø	4.0	5.0	10	50		300m	Δ	T036			
26	25D197	833m	125	ø	§J	10		130	12	70	20uø	4.0	5.0	10	50		240m	Δ	T036			
27	CH3055	833m	117		§	15	7.0	100	7.0	60	5.0mø	4.0	4.0	20		800kΔ		DM	R151	B		
28	CH3226	833m	117		§	15	7.0	35	4.0	35	5.0mø	4.0	4.0	20		800kΔ		DM	R151	B		
29	CH3232	833m	117		§	15	7.0	80	4.0	60	5.0mø	4.0	4.0	12		800kΔ		DM	R151	B		
30	SDT9801	833m	90		§	15	3.0	60	12	40	1.0u	5.0	5.0	20	60	5.0M		ME	T03			
31	SDT9802	833m	90		§	15	3.0	80	12	60	1.0u	5.0	5.0	20	60	5.0M		ME	T03			
32	SDT9803	833m	90		§	15	3.0	100	12	80	1.0u	5.0	5.0	20	60	5.0M		ME	T03			
33	SDT9804	833m	90		§	15	3.0	120	12	100	1.0u	5.0	5.0	20	60	5.0M		ME	T03			
34	K5D3771	850m	145		J	30	7.0	50	5.0	40	2.0m	4.0	15	10	30	800k		D	T03	ø		
35	K5D3772	850m	145		J	20	5.0	100	5.0	60	5.0m	4.0	10	10	30	800k		D	T03	ø		
36	K5D3773	850m	145		J	20	5.0	160	7.0	140	2.0m	4.0	8.0	10	30	800k		D	T03	ø		
37	K5D9701	850m	145		J	16	4.0	100	7.0	80	2.0m	4.0	8.0	15	60	800k		D	T03	ø		
38	K5D9701A	850m	145		J	16	4.0	100	7.0	80	2.0m	4.0	8.0	10	30	800k		D	T03	ø		
39	K5D9702	850m	145		J	16	4.0	120	7.0	100	2.0m	4.0	8.0	15	60	800k		D	T03	ø		
40	K5D9702A	850m	145		J	16	4.0	120	7.0	100	2.0m	4.0	8.0	10	30	800k		D	T03	ø		
41	K5D9703	850m	145		J	16	4.0	140	7.0	120	2.0m	4.0	8.0	15	60	800k		D	T03	ø		
42	K5D9703A	850m	145		J	16	4.0	140	7.0	120	2.0m	4.0	8.0	10	30	800k		D	T03	ø		
43	K5D9704	850m	145		J	16	4.0	100	7.0	80	1.0m	4.0	5.0	20	80	800k		D	T03	ø		
44	K5D9705	850m	145		J	16	4.0	120	7.0	100	1.0m	4.0	5.0	20	80	800k		D	T03	ø		
45	K5D9706	850m	145		J	16	4.0	140	7.0	120	1.0m	4.0	5.0	20	80	800k		D	T03	ø		
46	K5D9707	850m	145		J	16	4.0	80	7.0	60	1.0m	4.0	5.0	15		800k		D	T03	ø		
47	2N2015	854m	150	ø	§C	10	6.0	100	10	50	50uø	4.0	5.0	15	50	25k	250m	Δ	T036	Cø		
48	JAN2N2015	854m	150	ø	§C	10	6.0	100	10	50	50uø	4.0	5.0	15	50	25k	250m	Δ	T036	Cø		
49	2N2016	854m	150	ø	§C	10	6.0	130	10	65	50uø	4.0	5.0	15	50	25k	250m	Δ	T036	Cø		
50	JAN2N2016	854m	150	ø	§C	10	6.0	130	10	65	50uø	4.0	5.0	15	50	25k	250m	Δ	T036	Cø		
51	2N2338	854m	150	ø	§C	7.5	5.0	60	6.0	40	200uø	4.0	3.0	15	60	25k	500m	D	T026	Aø		
52	2N3236	854m	150	ø	§C	15	4.5	90	7.0	90	2.0m	4.0	5.0	17	60	1.0MΔ		D	MD21	ø		
53	2N3238	854m	150	ø	§C	15	7.5	80	8.0	80	5.0m	12	10	8.5	25	1.0MΔ		D	MD21	ø		
54	2N3239	854m	150	ø	§C	15	7.5	80	8.0	80	5.0m	10	10	8.5	25	1.0MΔ		D	MD21	ø		
55	2N3240	854m	150	ø	§C	15	7.5	160	8.0	160	5.0m	10	10	8.5	25	1.0MΔ		D	MD21	ø		
56	2N3713	854m	150	ø	§J	10	4.0	80	7.0	60	1.0m	2.0	1.0	25	75	30kΔ		D	T03	ø		
57	2N3714	854m	150	ø	§J	10	4.0	100	7.0	80	1.0m	2.0	1.0	25	75	30kΔ		D	T03	ø		
58	2N3715	854m	150	ø	§J	10	4.0	80	7.0	60	1.0m	2.0	1.0	50	150	30kΔ		D	T03	ø		
59	JAN2N3715†	854m	150	ø	§A	10	4.0	80	7.0	60	1.0m	2.0	1.0	50	150	4.0MΔ	1.5uø	D	T03	ø		
60	2N3716	854m	150	ø	§J	10	4.0	100	7.0	80	1.0m	2.0	1.0	50	150	30kΔ		D	T03	ø		
61	JAN2N3716†	854m	150	ø	§A	10	4.0	100	7.0	80	1.0m	2.0	1.0	5	150	4.0MΔ	1.5uø	D	T03	ø		
62	2N3771	854m	150	ø	§J	30	7.5	50	5.0	40	2.0m	4.0	15	15	60	#	130m		D	T03	ø	
63	2N3772	854m	150	ø	§J	20	5.0	100	7.0	60	5.0m	4.0	10	15	60	#	140m		D	T03	ø	
64	1723-0405†	854m	85	ø	§J	20	5.0	50	7.0	40	4.0	5.0	20	#	30MΔ	250mø	E	T03	Cø			
65	1723-0410†	854m	85	ø	§J	20	5.0	50	7.0	40	4.0	10	20	#	30MΔ	300mø	E	T03	Cø			
66	1723-0605†	854m	85	ø	§J	20	5.0	70	7.0	60	4.0	5.0	20	#	30MΔ	250mø	E	T03	Cø			
67	1723-0610†	854m	85	ø	§J	20	5.0	70	7.0	60	4.0	10	20	#	30MΔ	300mø	E	T03	Cø			
68	1723-0805†	854m	85	ø	§J	20	5.0	90	7.0	80	4.0	5.0	20	#	30MΔ	250mø	E	T03	Cø			
69	1723-0810†	854m	85	ø	§J	20	5.0	90	7.0	80	4.0	10	20	#	30MΔ	300mø	E	T03	Cø			
70	1723-1005†	854m	85	ø	§J	20	5.0	110	7.0	100	4.0	5.0	20	#	30MΔ	250mø	E	T03	Cø			
71	1723-1010†	854m	85	ø	§J	20	5.0	110	7.0	100	4.0	10	20	#	30MΔ	300mø	E	T03	Cø			
72	1723-1205†	854m	85	ø	§J	20	5.0	130	7.0	120	4.0	5.0	20	#	30MΔ	250mø	E	T03	Cø			
73	1723-1210†	854m	85	ø	§J	20	5.0	130	7.0	120	4.0	10	20	#	30MΔ	300mø	E	T03	Cø			
74	1723-1405†	854m	85	ø	§J	20	5.0	150	7.0	140	4.0	5.0	20	#	30MΔ	250mø	E	T03	Cø			
75	1723-1410†	854m</																				

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	MAX P <sub>C</sub> (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS I <sub>b</sub> (A)	MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C A O D E			
						I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>CB</sub> (V)	V <sub>EB</sub> (V)	V <sub>CE</sub> (V)	I <sub>co</sub> @ MAX V <sub>CB</sub> @ 25°C (A)	V <sub>CB</sub> (V)												
1	1843-2710†	854m	85	85	SJ	30	#	10	#	275	7.0	275	3.0m	5.0	10	15	#	25MΔ	500n	EM	TO3	CØ		
2	1843-2720†	854m	85	85	SJ	30	#	10	#	275	7.0	275	3.0m	5.0	20	10	#	25MΔ	500n	EM	TO3	CØ		
3	1843-3005†	854m	85	85	SJ	30	#	10	#	300	7.0	300	3.0m	5.0	5	20	#	25MΔ	500n	EM	TO3	CØ		
4	1843-3010†	854m	85	85	SJ	30	#	10	#	300	7.0	300	3.0m	5.0	10	15	#	25MΔ	500n	EM	TO3	CØ		
5	1843-3020†	854m	85	85	SJ	30	#	10	#	300	7.0	300	3.0m	5.0	20	10	#	25MΔ	500n	EM	TO3	CØ		
6	1843-3205†	854m	85	85	SJ	30	#	10	#	325	7.0	325	3.0m	5.0	5	20	#	25MΔ	500n	EM	TO3	CØ		
7	1843-3210†	854m	85	85	SJ	30	#	10	#	325	7.0	325	3.0m	5.0	10	15	#	25MΔ	500n	EM	TO3	CØ		
8	1843-3220†	854m	85	85	SJ	30	#	10	#	325	7.0	325	3.0m	5.0	20	10	#	25MΔ	500n	EM	TO3	CØ		
9	1843-3505†	854m	85	85	SJ	30	#	10	#	350	7.0	350	3.0m	5.0	5	20	#	25MΔ	500n	EM	TO3	CØ		
10	1843-3510†	854m	85	85	SJ	30	#	10	#	350	7.0	350	3.0m	5.0	10	15	#	25MΔ	500n	EM	TO3	CØ		
11	1843-3520†	854m	85	85	SJ	30	#	10	#	350	7.0	350	3.0m	5.0	20	10	#	25MΔ	500n	EM	TO3	CØ		
12	1843-3705†	854m	85	85	SJ	30	#	10	#	375	7.0	375	3.0m	5.0	5	20	#	25MΔ	500n	EM	TO3	CØ		
13	1843-3710†	854m	85	85	SJ	30	#	10	#	375	7.0	375	3.0m	5.0	10	15	#	25MΔ	500n	EM	TO3	CØ		
14	1843-3720†	854m	85	85	SJ	30	#	10	#	375	7.0	375	3.0m	5.0	20	10	#	25MΔ	500n	EM	TO3	CØ		
15	40411	854m	150	150	SJ	30	#	15	#	40	9.0	90	3.0u*	4.0	4.0	35	100	800kΔ	200m	EM	TO3	CØ		
16	B177000	854m	150	150	SJ	30	#	100	7.0	80	7.0	80	5.0m	4.0	10	15	#	100	60	#	DM	TO3	CØ	
17	MJ2840	854m	150	150	SJ	10	4.0	60	4.0	60	4.0	60	100u	2.0	30	20	100	2.0MΔ	2.0MΔ	350n	MD6c	TO3	CØ	
18	MJ2841	854m	150	150	SJ	10	4.0	80	4.0	80	4.0	80	100u	2.0	40	20	100	2.0MΔ	2.0MΔ	350n	MD6c	TO3	CØ	
19	MJ3771†	854m	150	150	SJ	30	7.5	50	5.0	40	5.0	40	2.0m	4.0	15	15	60	2.0MΔ	2.0MΔ	350n	TO3	CØ		
20	MJ3772†	854m	150	150	SJ	20	5.0	100	7.0	60	7.0	60	5.0m	4.0	10	15	60	2.0MΔ	2.0MΔ	350n	TO3	CØ		
21	MJ7000	854m	150	150	SJ	30	10	100	7.0	100	7.0	100	5.0u	4.0	10	20	100	30MΔ	30MΔ	350n	TO63	CØ		
22	PT6996	854m	150	150	S	20	5.0	160	7.0	140	7.0	140	2.0m	4.0	8	15	60	50M	50M	170m	700n	TO3	K	
23	SDT9701	854m	150	150	SJ	30	3.0	100	7.0	80	7.0	80	5.0m	5.0	8	15	60	100k	100k	700n	PL	TO3	CØ	
24	SDT9702	854m	150	150	SJ	30	3.0	120	7.0	100	7.0	100	5.0m	5.0	8	15	60	100k	100k	700n	PL	TO3	CØ	
25	SDT9703	854m	150	150	SJ	30	3.0	140	7.0	120	7.0	120	5.0m	5.0	8	15	60	100k	100k	700n	PL	TO3	CØ	
26	SDT9704	854m	150	150	SJ	30	3.0	100	7.0	80	7.0	80	5.0m	5.0	5	20	80	100k	100k	700n	PL	TO3	CØ	
27	SDT9705	854m	150	150	SJ	30	3.0	120	7.0	100	7.0	100	5.0m	5.0	5	20	80	100k	100k	700n	PL	TO3	CØ	
28	SDT9706	854m	150	150	SJ	30	3.0	140	7.0	120	7.0	120	5.0m	5.0	5	20	80	100k	100k	700n	PL	TO3	CØ	
29	SDT9707	854m	150	150	SJ	30	3.0	80	7.0	60	7.0	60	10m	5.0	4	15	100	100k	100k	700n	PL	TO3	CØ	
30	SPC40411	854m	150	150	SJ	30	15	90	4.0	90	4.0	90	500u*	4.0	4.0	35	100	25k	250m	4.0u	DΔ	TO36	CØ	
31	ZT2015	854m	150	150	SC	10	6.0	100	10	50	10	50	50u	4.0	5.0	15	50	25k	250m	4.0u	DΔ	TO36	CØ	
32	ZT2016	854m	150	150	SC	10	6.0	130	10	65	10	65	50u	4.0	5.0	15	50	25k	250m	4.0u	DΔ	TO36	CØ	
33	ZN3773	855m	150	150	SJ	16	4.0	140	7.0	140	7.0	140	2.0m	4.0	16	5.0	60	4.0MΔ	4.0MΔ	700n	TO3	CØ		
34	ZN5970†	855m	85	85	SJ	15	5.0	80	5.0	80	5.0	80	1.5	5.0	20	60	4.0MΔ	4.0MΔ	700n	TO3	CØ			
35	ZN5971†	855m	85	85	SJ	15	5.0	80	6.0	80	6.0	80	1.5	5.0	15	150	4.0MΔ	4.0MΔ	700n	TO3	CØ			
36	ZN5972†	855m	85	85	SJ	15	5.0	100	6.0	90	6.0	90	1.5	5.0	25	75	4.0MΔ	4.0MΔ	700n	TO3	CØ			
37	ZN5973†	855m	85	85	SJ	15	5.0	120	6.0	100	6.0	100	1.5	5.0	25	75	4.0MΔ	4.0MΔ	700n	TO3	CØ			
38	JAN2N3771†	857m	6.0	6.0	SJ	30	7.5	50	7.0	40	7.0	40	2.0m	4.0	15	15	60	600kΔ	600kΔ	700n	TO3	CØ		
39	JAN2N3772†	857m	6.0	6.0	SJ	20	5.0	100	7.0	60	7.0	60	2.0m	4.0	10	15	60	600kΔ	600kΔ	700n	TO3	CØ		
40	ZN5632	857m	150	150	SJ	10	5.0	100	7.0	100	7.0	100	1.0m	2.0	5	25	100	1.0MΔ	1.0MΔ	700n	TO3	CØ		
41	ZN5633	857m	150	150	SJ	10	5.0	120	7.0	120	7.0	120	1.0m	2.0	5	20	80	1.0MΔ	1.0MΔ	700n	TO3	CØ		
42	ZN5634	857m	150	150	SJ	10	5.0	140	7.0	140	7.0	140	1.0m	2.0	5	15	60	1.0MΔ	1.0MΔ	700n	TO3	CØ		
43	ZN5758	857m	150	150	SJ	6	4.0	100	7.0	100	7.0	100	1.0m	2.0	3	25	100	1.0MΔ	1.0MΔ	700n	MD6j	TO3	CØ	
44	ZN5759	857m	150	150	SJ	6	4.0	120	7.0	120	7.0	120	1.0m	2.0	3	20	80	1.0MΔ	1.0MΔ	700n	MD6j	TO3	CØ	
45	ZN5760	857m	150	150	SJ	6	4.0	140	7.0	140	7.0	140	1.0m	2.0	3	15	60	1.0MΔ	1.0MΔ	700n	MD6j	TO3	CØ	
46	ZN5877†	857m	150	150	SJ	8	2.0	60	5.0	60	5.0	60	500u	4.0	4.0	20	100	4.0MΔ	4.0MΔ	700n	TO3	CØ		
47	ZN5878†	857m	150	150	SJ	8	2.0	80	5.0	80	5.0	80	500u	4.0	4.0	20	100	4.0MΔ	4.0MΔ	700n	TO3	CØ		
48	SCE321	857m	150	150	SA	10	4.0	40	4.0	100	4.0	100	1.0m	4.0	4.0	20	100	4.0MΔ	4.0MΔ	250m	700n	DME	TO3	CØ
49	ZN5636	860m	15	15	SS	15	1.0	60	4.0	35	4.0	35	1.0m	5.0	200m	5	50	450MΔ	300MΔ	700n	MT71b	R		
50	ZN5641	860m	15	15	SS	1.0	1.0	65	4.0	35	4.0	35	1.0m	5.0	100m	5	50	450MΔ	300MΔ	700n	MT71b	R		
51	BUY51	862m	150	150	SJ	30	10	60	8.0	60	8.0	60	10m	4.0	10	20	150	10MΔ	10MΔ	150u	EM	TO61	A	
52	BUY51A	862m	150	150	SJ	30	10	60	8.0	60	8.0	60	10m	4.0	10	20	150	10MΔ	10MΔ	150u	EM	TO61	A	
53	BUY52	862m	150	150	SJ	30	10	60	8.0	60	8.0	60	10m	4.0	15	20	150	10MΔ	10MΔ	200u	EM	TO61	A	
54	BUY52A	862m	150	150	SJ	30	10	60	8.0	60	8.0	60	10m	4.0	15	20	150	10MΔ	10MΔ	200u	EM	TO61	A	
55	BUY53	862m	150	150	SJ	30	10	100	8.0	100	8.0	100	10m	4.0	10	20	150	10MΔ	10MΔ	150u	EM	TO61	A	
56	BUY53A	862m	150	150	SJ	30	10	100	8.0	100	8.0	100	10m	4.0	10	20	150	10MΔ	10MΔ	150u	EM	TO61	A	
57	BUY54	862m	150	150	SJ	30	10	100	8.0	100	8.0	100	10m	4.0	15	20	150	10MΔ	10MΔ	200u	EM	TO61	A	
58	BUY54A	862m	150	150	SJ	30	10	100	8.0	100	8.0	100	10m	4.0	15	20	150	10MΔ	10MΔ	200u	EM	TO61	A	
59	SC0328	880m	150	150	SJ	20	7.5	60	10	60	10	60	1.5m	4.0	10	90	#	1.0MΔ	1.0MΔ	142m	700n	DME	TO3	CØ
60	ZN5881†	915m	180	180	SJ	12	4.0	60	10	60	10	60	500u	4.0	6.0	20	100	4.0MΔ	4.0MΔ	142m	700n	TO3	CØ	
61	ZN5882†	915m	180	180	SJ	12	4.0	80	10	80	10	80	500u	4.0	6.0	20	100	4.0MΔ	4.0MΔ	142m	700n	TO3	CØ	
62	2N1899	1.0	125	125	SC	10	5.0	140	5.0	140	5.0	140	30m	2.0	10	30	50MΔ	50MΔ	150m	1.0u	PL	MT38	AØ	
63	2N1900	1.0	125	125	SJ	10	5.0	140	5.0	140	5.0	140	25m	2.0	10	8.0	#	50MΔ	50MΔ	150m	1.0u	PL	MT38	AØ
64	2N1901	1.0	125	125	SC	10	5.0	140	5.0	140	5.0	140	30m	2.0	10									

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
(2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	M T A E M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icbo @ 25°C (A)	BIAS		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG Y200 s/a TO200 Ser.	# C O D E
					Ic (A)	Ib (A)	V <sub>cb0</sub> (V)	V <sub>eb0</sub> (V)	V <sub>ceo</sub> (V)		V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	MIN	MAX						
1#	108T2	1.0	175		30	15	120	10	80		4.0	10	20	60	140m	200ns	ME	T03		
2#	109T2	1.0	175		30	15	160	10	125		4.0	10	20	60	140m	200ns	ME	T03		
3#	1743-0610†	1.0	175	SA	30	10	70	7.0	60	5.0m#	4.0	10	20	100	30m#	500n#	ME	T03	CØ	
4#	1743-0830†	1.0	175	SA	30	10	70	7.0	60	5.0m#	4.0	30	20	100	30m#	700n#	ME	T03	CØ	
5#	1743-0820†	1.0	175	SA	30	10	90	7.0	80	5.0m#	4.0	30	20	100	30m#	600n#	ME	T03	CØ	
6#	1743-1010†	1.0	175	SA	30	10	110	7.0	100	5.0m#	4.0	30	20	100	30m#	500n#	ME	T03	CØ	
7#	1743-1030†	1.0	175	SA	30	10	110	7.0	100	5.0m#	4.0	30	20	100	30m#	700n#	ME	T03	CØ	
8#	1743-1220†	1.0	175	SA	30	10	130	7.0	120	5.0m#	4.0	30	20	100	30m#	600n#	ME	T03	CØ	
9#	1743-1410†	1.0	175	SA	30	10	150	7.0	140	5.0m#	4.0	30	20	100	30m#	500n#	ME	T03	CØ	
10#	1743-1430†	1.0	175	SA	30	10	150	7.0	140	5.0m#	4.0	30	20	100	30m#	700n#	ME	T03	CØ	
11#	1743-1620†	1.0	175	SA	30	10	170	7.0	160	5.0m#	4.0	30	20	100	30m#	600n#	ME	T03	CØ	
12#	1743-1810†	1.0	175	SA	30	10	190	7.0	180	5.0m#	4.0	30	20	100	30m#	500n#	ME	T03	CØ	
13#	1743-1820†	1.0	175	SA	30	10	190	7.0	180	5.0m#	4.0	30	20	100	30m#	600n#	ME	T03	CØ	
14#	1743-1830†	1.0	175	SA	30	10	190	7.0	180	5.0m#	4.0	30	20	100	30m#	700n#	ME	T03	CØ	
15#	1748-0610†	1.0	100	SJ	40	10	60	7.0	60	5.0m#	2.0	10	20	30	30m#	300n#	ME	T063	A	
16#	1748-0630†	1.0	100	SJ	40	10	60	7.0	60	5.0m#	3.0	30	20	30	30m#	500n#	ME	T063	A	
17#	1748-0810†	1.0	100	SJ	40	10	80	7.0	80	5.0m#	2.0	10	20	30	30m#	300n#	ME	T063	A	
18#	1748-0820†	1.0	100	SJ	40	10	80	7.0	80	5.0m#	2.5	20	20	30	30m#	450n#	ME	T063	A	
19#	1748-0830†	1.0	100	SJ	40	10	80	7.0	80	5.0m#	3.0	30	20	30	30m#	500n#	ME	T063	A	
20#	1748-1010†	1.0	100	SJ	40	10	100	7.0	100	5.0m#	2.0	10	20	30	30m#	300n#	ME	T063	A	
21#	1748-1030†	1.0	100	SJ	40	10	100	7.0	100	5.0m#	3.0	30	20	30	30m#	500n#	ME	T063	A	
22#	1748-1210†	1.0	100	SJ	40	10	120	7.0	120	5.0m#	2.0	10	20	30	30m#	300n#	ME	T063	A	
23#	1748-1220†	1.0	100	SJ	40	10	120	7.0	120	5.0m#	2.5	20	20	30	30m#	450n#	ME	T063	A	
24#	1748-1230†	1.0	100	SJ	40	10	120	7.0	120	5.0m#	3.0	30	20	30	30m#	500n#	ME	T063	A	
25#	1748-1410†	1.0	100	SJ	40	10	140	7.0	140	5.0m#	2.0	10	20	30	30m#	300n#	ME	T063	A	
26#	1748-1430†	1.0	100	SJ	40	10	140	7.0	140	5.0m#	3.0	30	20	30	30m#	500n#	ME	T063	A	
27#	1748-1610†	1.0	100	SJ	40	10	160	7.0	160	5.0m#	2.0	10	20	30	30m#	300n#	ME	T063	A	
28#	1748-1620†	1.0	100	SJ	40	10	160	7.0	160	5.0m#	2.5	20	20	30	30m#	450n#	ME	T063	A	
29#	1748-1630†	1.0	175	SJ	50	#	160	7.0	160	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
30#	1748-1810†	1.0	100	SJ	40	#	180	7.0	180	5.0m#	2.0	10	20	30	30m#	300n#	ME	T063	A	
31#	1748-1820†	1.0	100	SJ	40	#	180	7.0	180	5.0m#	2.5	20	20	30	30m#	450n#	ME	T063	A	
32#	1748-1830†	1.0	175	SJ	40	#	180	7.0	180	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
33#	1768-0610	1.0	100	SJ	40	#	60	7.0	60	5.0m#	2.0	10	20	30	30m#	300n#	EM	T063	A	
34#	1768-0620	1.0	100	SJ	40	#	60	7.0	60	5.0m#	2.5	20	20	30	30m#	450n#	EM	T063	A	
35#	1768-0630	1.0	100	SJ	40	#	60	7.0	60	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
36#	1768-0810	1.0	100	SJ	40	#	80	7.0	80	5.0m#	2.0	10	20	30	30m#	300n#	EM	T063	A	
37#	1768-0820	1.0	100	SJ	40	#	80	7.0	80	5.0m#	2.5	20	20	30	30m#	450n#	EM	T063	A	
38#	1768-0830	1.0	100	SJ	40	#	80	7.0	80	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
39#	1768-1010	1.0	100	SJ	40	#	100	7.0	100	5.0m#	2.0	10	20	30	30m#	300n#	EM	T063	A	
40#	1768-1020	1.0	100	SJ	40	#	100	7.0	100	5.0m#	2.5	20	20	30	30m#	450n#	EM	T063	A	
41#	1768-1030	1.0	100	SJ	40	#	100	7.0	100	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
42#	1768-1210	1.0	100	SJ	40	#	120	7.0	120	5.0m#	2.0	10	20	30	30m#	300n#	EM	T063	A	
43#	1768-1220	1.0	100	SJ	40	#	120	7.0	120	5.0m#	2.5	20	20	30	30m#	450n#	EM	T063	A	
44#	1768-1230	1.0	100	SJ	40	#	120	7.0	120	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
45#	1768-1410	1.0	100	SJ	40	#	140	7.0	140	5.0m#	2.0	10	20	30	30m#	300n#	EM	T063	A	
46#	1768-1420	1.0	100	SJ	40	#	140	7.0	140	5.0m#	2.5	20	20	30	30m#	450n#	EM	T063	A	
47#	1768-1430	1.0	100	SJ	40	#	140	7.0	140	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
48#	1768-1610	1.0	100	SJ	40	#	160	7.0	160	5.0m#	2.0	10	20	30	30m#	300n#	EM	T063	A	
49#	1768-1620	1.0	100	SJ	40	#	160	7.0	160	5.0m#	2.5	20	20	30	30m#	450n#	EM	T063	A	
50#	1768-1630	1.0	100	SJ	40	#	160	7.0	160	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
51#	1768-1810	1.0	100	SJ	40	#	180	7.0	180	5.0m#	2.0	10	20	30	30m#	300n#	EM	T063	A	
52#	1768-1820	1.0	100	SJ	40	#	180	7.0	180	5.0m#	2.5	20	20	30	30m#	450n#	EM	T063	A	
53#	1768-1830	1.0	100	SJ	40	#	180	7.0	180	5.0m#	3.0	30	20	30	30m#	500n#	EM	T063	A	
54#	BDY84	1.0	40	SJ	30	10	120	8.0	100	2.0m#	4.0	15	20	30	30m#	500n#	EM	T063	A	
55#	BLV40	1.0	125	SC	10	5.0	100	6.0	100	3.0m	1.0	15	100	40m#	1.0	ME	MT38	A		
56#	DT6105	1.0	50	SJ	5.0	1.0	400	4.0	265	1.0m	3.0	10	50	500k#	1.0u	ME	T036			
57#	DT6106	1.0	50	SJ	5.0	1.0	500	4.0	325	1.0m	5.0	10	50	500k#	1.0u	ME	T036			
58#	DTS401†	1.0	100	SJ	2.0	1.0	400	5.0	400	5.0m#	5.0	20	100	4.0m#	1.0u	D	T03	AØ		
59#	DTS413†	1.0	75	SJ	2.0	1.0	400	5.0	400	5.0m#†	5.0	20	80	6.0m#	1.6	ME	T03	CØ		
60#	DTS801	1.0	25	SJ	500m	100m	400	5.0	800	5.0m#	5.0	20	20	1.5m#		D	T03	CØ		
61#	DTS802	1.0	100	SJ	5.0	2.0	1.0k	5.0	1.0k	5.0m#	3.5	2.2	2.2	1.5m#		D	T03	CØ		
62#	DTS804	1.0	100	SJ	5.0	2.0	1.0k	5.0	1.0k	5.0m#	3.5	2.2	2.2	1.5m#		DA	T03	CØ		
63#	KSP1201	1.0	100	SJ	5.0	2.0	225	8.0	200	1.0m	5.0	10	15	30m		PE	T063			
64#	KSP1202	1.0	100	SJ	2.0	1.0	250	8.0	225	1.0m	5.0	10	15	30m		PE	T063			
65#	KSP1203	1.0	100	SJ	2.0	1.0	275	8.0	250	1.0m	5.0	10	15	30m		PE	T063			
66#	KSP1204	1.0	100	SJ	2.0	1.0	300	8.0	275	1.0m	5.0	10	15	30m		PE	T063			
67#	KSP1205	1.0	100	SJ	2.0	1.0	325	8.0	300	1.0m	5.0	10	15	30m		PE	T063			
68#	KSP1251	1.0	100	SJ	2.0	1.0	60	8.0	40	1.0m	5.0	10	20	60	35m		PE	T063		
69#	KSP1252	1.0	100	SJ	2.0	1.0	100	8.0	80	1.0m	5.0	10	20	60	35m		PE	T063		
70#	KSP1253	1.0	100	SJ	2.0	1.0	140	8.0	120	1.0m	5.0	10	20	60	35m		PE	T063		
71#	KSP1254	1.0	100	SJ	2.0	1.0	60	8.0	40	1.0m	5.0	10	40	120	35m		PE	T063		
72#	KSP1255	1.0	100	SJ	2.0	1.0	100	8.0	80	1.0m	5.0	10	40	120	35m		PE	T063		
73#	KSP1256	1.0	100	SJ	2.0	1.0	140	8.0	120	1.0m	5.0	10	40	120	35m		PE	T063		
74#	MJ413	1.0	125	SJ	10	2.0	400	5.0	400	2.5m#	5.0	500m	20	80	2.5m#	Δ	T03	CØ		
75#	MJ433	1.0	125	SJ	10	2.0	400	5.0	400	2.5m#</										

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M	T	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE			f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	Y200 s/a T0200 Ser.	# DWG	C O D E
							Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	BIAS									
												Icbo @ MAX Vcb @25°C (A)	Vcb (V)	Ic (A)							
1	SDT7732	1.0	175				15	3.0	80	20	60	10u	5.0	5.0	20	80	5.0M	PL	T03		
2	SDT7733	1.0	175				15	3.0	100	20	80	10u	5.0	5.0	20	80	5.0M	PL	T03		
3	SDT7734	1.0	175				15	3.0	120	20	100	10u	5.0	5.0	20	80	5.0M	PL	T03		
4	SDT7735	1.0	175				15	3.0	140	20	125	10u	5.0	5.0	20	80	5.0M	PL	T03		
5	SDT7736	1.0	175				15	3.0	165	20	150	10u	5.0	5.0	20	80	5.0M	PL	T03		
6	SDT7761	1.0	175				15	3.0	60	20	40	10u	5.0	5.0	20	80	5.0M	PL	T061		
7	SDT7762	1.0	175				15	3.0	80	20	60	10u	5.0	5.0	20	80	5.0M	PL	T061		
8	SDT7763	1.0	175				15	3.0	100	20	80	10u	5.0	5.0	20	80	5.0M	PL	T061		
9	SDT7764	1.0	175				15	3.0	120	20	100	10u	5.0	5.0	20	80	5.0M	PL	T061		
10	SDT7765	1.0	175				15	3.0	140	20	125	10u	5.0	5.0	20	80	5.0M	PL	T061		
11	SDT7766	1.0	175				15	3.0	165	20	150	10u	5.0	5.0	20	80	5.0M	PL	T061		
12	SDT8002	1.0	100				20		80	8.0	60	100u	5.0	5.0	10	40	120 #	D	T063		
13	SDT8003	1.0	100				20		100	8.0	80	100u	5.0	5.0	10	40	120 #	D	T063		
14	SDT8012	1.0	100				20		80	8.0	60	100u	5.0	5.0	10	20	60 #	PL	T063		
15	SDT8013	1.0	100				20		100	8.0	80	100u	5.0	5.0	10	20	60 #	PL	T063		
16	SDT8015	1.0	100				20		80	8.0	60	100u	5.0	5.0	10	40	120 #	PL	T063		
17	SDT8016	1.0	100				20		100	8.0	80	100u	5.0	5.0	10	40	120 #	PL	T063		
18	SDT8045	1.0	100				20		40	5.0	25	100u	5.0	5.0	10	40	#	PL	T063		
19	SDT8070	1.0	100				20		80	8.0	60	100u	5.0	5.0	10	100	#	PL	T063		
20	SDT8071	1.0	100				20		100	8.0	80	100u	5.0	5.0	10	100	#	PL	T063		
21	SDT8151	1.0	175				20	4.0	150	8.0	120	100u	5.0	5.0	10	40	120	PL	T063		
22	SDT8152	1.0	175				20	4.0	100	8.0	80	100u	5.0	5.0	10	40	120	PL	T063		
23	SDT8153	1.0	175				20	4.0	80	8.0	60	100u	5.0	5.0	10	40	120	PL	T063		
24	SDT8154	1.0	175				20	4.0	100	8.0	80	100u	5.0	5.0	10	100		PL	T063		
25	SDT8155	1.0	175				20	4.0	80	8.0	60	100u	5.0	5.0	10	100		PL	T063		
26	SDT8156	1.0	175				20	4.0	150	8.0	120	100u	5.0	5.0	10	20	60	PL	T063		
27	SDT8157	1.0	175				20	4.0	100	8.0	80	100u	5.0	5.0	10	20	60	PL	T063		
28	SDT8158	1.0	175				20	4.0	80	8.0	60	100u	5.0	5.0	10	20	60	PL	T063		
29	SDT8159	1.0	175				20	4.0	40	5.0	25	100u	5.0	5.0	10	20	20	PL	T063		
30	SDT8301	1.0	100				30		80	8.0	60	100u	5.0	5.0	10	40	120 #	PL	T063		
31	SDT8302	1.0	100				30		100	8.0	80	100u	5.0	5.0	10	40	120 #	PL	T063		
32	SDT8303	1.0	100				30		80	8.0	60	100u	5.0	5.0	10	100	#	PL	T063		
33	SDT8304	1.0	100				30		100	8.0	80	100u	5.0	5.0	10	100	#	PL	T063		
34	SDT8751	1.0	175				20	4.0	120	8.0	100	10u	5.0	5.0	10	15	60	PL	T063		
35	SDT8752	1.0	175				20	4.0	140	8.0	120	10u	5.0	5.0	10	15	60	PL	T063		
36	SDT8753	1.0	175				20	4.0	170	8.0	150	10u	5.0	5.0	10	15	60	PL	T063		
37	SDT8754	1.0	175				20	4.0	200	8.0	180	10u	5.0	5.0	10	15	60	PL	T063		
38	SDT8755	1.0	175				20	4.0	120	8.0	100	10u	5.0	5.0	10	30	90	PL	T063		
39	SDT8756	1.0	175				20	4.0	140	8.0	120	10u	5.0	5.0	10	30	90	PL	T063		
40	SDT8757	1.0	175				20	4.0	170	8.0	150	10u	5.0	5.0	10	30	90	PL	T063		
41	SDT8758	1.0	175				20	4.0	200	8.0	180	10u	5.0	5.0	10	30	90	PL	T063		
42	SDT8801	1.0	100				20		200	8.0	200	1.0u	5.0	5.0	10	15	60 #	PL	T063		
43	SDT8802	1.0	100				20		225	8.0	225	1.0u	5.0	5.0	10	15	60 #	PL	T063		
44	SDT8803	1.0	100				20		250	8.0	250	1.0u	5.0	5.0	10	15	60 #	PL	T063		
45	SDT8804	1.0	100				20		275	8.0	275	1.0u	5.0	5.0	10	15	60 #	PL	T063		
46	SDT8805	1.0	100				20		300	8.0	300	1.0u	5.0	5.0	10	15	60 #	PL	T063		
47	SPC401	1.0	100				2.0	1.0	400	5.0	300	500u	5.0	5.0	500m	100	4.0M	D	T03		
48	SPC413	1.0	75				2.0	1.0	400	5.0	325	500u	5.0	5.0	500m	20	80	D	T03		
49	ST17060†	1.0	#				30		125	10	80 *	100u	5.0	5.0	10	30	120 #	PL	T063		
50	ST17061†	1.0	#				30		145	10	100 *	100u	5.0	5.0	10	30	120 #	PL	T063		
51	ST17062†	1.0	#				30		170	10	120 *	100u	5.0	5.0	10	30	120 #	PL	T063		
52	ST18007	1.0	100				20		375	10	375	10	10	10	20		10M	PE	T063		
53	ST18008	1.0	100				20		300	10	300	10	10	10	20		10M	PE	T063		
54	ST18009	1.0	100				20		250	10	250	10	10	10	20		10M	PE	T063		
55	ST18010	1.0	100				20		200	10	200	10	10	10	20		10M	PE	T063		
56	STC1726	1.0	200				20	4.5	10	80	2.0m	3.0	3.0	10	20	80	100m	ME	MT18		
57	STC1728	1.0	200				20	4.5	10	80	2.0m	3.0	3.0	10	20	40	80m	ME	MT18		
58	STC1731	1.0	200				20	4.5	10	100	2.0m	3.0	3.0	10	20	80	100m	ME	MT18		
59	STC1733	1.0	200				20	4.5	10	100	2.0m	3.0	3.0	10	20	40	80m	ME	MT18		
60	STC1736	1.0	200				20	4.5	10	150	2.0m	3.0	3.0	10	20	80	100m	ME	MT18		
61	STC1738	1.0	200				20	4.5	10	150	2.0m	3.0	3.0	10	20	40	80m	ME	MT18		
62	STC2220	1.0	200				20	10	100	10	80	2.0m	3.0	3.0	10	10	50 #	D	MD21		
63	STC2221	1.0	200				20	10	100	10	100	2.0m	3.0	3.0	10	10	50 #	D	MD21		
64	STC2222	1.0	200				20	10	150	10	150	2.0m	3.0	3.0	10	10	50 #	D	MD21		
65	STC2223	1.0	200				20	10	200	10	200	2.0m	3.0	3.0	10	10	50 #	D	MD21		
66	STC2224	1.0	200				20	10	80	10	80	2.0m	3.0	3.0	15	10	50 #	D	MD21		
67	STC2225	1.0	200				25	10	100	10	100	2.0m	3.0	3.0	15	10	50 #	D	MD21		
68	STC2226	1.0	200				25	10	150	10	150	2.0m	3.0	3.0	15	10	50 #	D	MD21		
69	STC2227	1.0	200				25	10	200	10	200	2.0m	3.0	3.0	15	10	50 #	D	MD21		
70	STC2228	1.0	200				30	10	80	10	80	2.0m	3.0	3.0	20	10	40 #	D	MD21		
71	STC2229	1.0	200				30	10	100	10	100	2.0m	3.0	3.0	20	10	40 #	D	MD21		
72	STC2230	1.0	200				30	10	150	10	150	2.0m	3.0	3.0	20	10	40 #	D	MD21		
73	STC2231	1.0	200				30	10	200	10	200	2.0m	3.0	3.0	20	10	40 #	D	MD21		
74	STC3706	1.0	200				30	10	200	10	200	2.0m	3.0	3.0	20	10	40 #	D	MD21		
75	2N2815	1.1	200				20		80	8.0	80	3.0	3.0	10	10	50	150m	ME	MT18		
76	2N2816	1.1	200				20		100	10	100	3.0	3.0	10	10	50	150m	ME	MT18		
77	2N2817	1.1	200				20		150</												



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	C O D E	
						Ic (A)	Ib (A)	BVcbo (V)	BVceo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb @ Ic (V)									
1	1561-1415	1.1	150	30	SC	30	7.0	140	7.0	140	2.0 #	4.0	15	15	60	800 Δ	130m		TO3		
2	1561-1610	1.1	150	30	SC	30	7.0	160	7.0	160	2.0 #	4.0	15	15	60	800 Δ	140m		TO3		
3	1561-1615	1.1	150	30	SC	30	7.0	160	7.0	160	2.0 #	4.0	15	15	60	800 Δ	130m		TO3		
4	1561A608	1.1	150	30	SC	30	7.0	60	7.0	60	2.0 #	4.0	8.0	15	60	800 Δ	180m		TO3		
5	1561A615	1.1	150	30	SC	30	7.0	60	7.0	60	2.0 #	4.0	15	15	60	800 Δ	130m		TO3		
6	A580-0402	1.1	175	10	SJ	10	3.0	40	25	40	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
7	A580-0403	1.1	175	10	SJ	10	3.0	40	25	40	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
8	A580-0405	1.1	175	10	SJ	10	3.0	40	25	40	10m#	4.0	5.0	15	#	250kΔ	200m	10uΔ	AΔ	TO3	CØ
9	A580-0802	1.1	175	10	SJ	10	3.0	80	25	80	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
10	A580-0803	1.1	175	10	SJ	10	3.0	80	25	80	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
11	A580-0805	1.1	175	10	SJ	10	3.0	80	25	80	10m#	4.0	5.0	15	#	250kΔ	200m	10uΔ	AΔ	TO3	CØ
12	A580-1202	1.1	175	10	SJ	10	3.0	120	25	120	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
13	A580-1203	1.1	175	10	SJ	10	3.0	120	25	120	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
14	A580-1205	1.1	175	10	SJ	10	3.0	120	25	120	10m#	4.0	5.0	15	#	250kΔ	200m	10uΔ	AΔ	TO3	CØ
15	A580-1602	1.1	175	10	SJ	10	3.0	160	25	160	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
16	A580-1603	1.1	175	10	SJ	10	3.0	160	25	160	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
17	A580-1605	1.1	175	10	SJ	10	3.0	160	25	160	10m#	4.0	5.0	15	#	250kΔ	200m	10uΔ	AΔ	TO3	CØ
18	A580-1802	1.1	175	10	SJ	10	3.0	180	25	180	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
19	A580-1803	1.1	175	10	SJ	10	3.0	180	25	180	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
20	A580-1805	1.1	175	10	SJ	10	3.0	180	25	180	10m#	4.0	5.0	15	#	250kΔ	200m	10uΔ	AΔ	TO3	CØ
21	A580-2002	1.1	175	10	SJ	10	3.0	200	25	200	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
22	A580-2003	1.1	175	10	SJ	10	3.0	200	25	200	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
23	A580-2005	1.1	175	10	SJ	10	3.0	200	25	200	10m#	4.0	5.0	15	#	250kΔ	200m	10uΔ	AΔ	TO3	CØ
24	A580-2202	1.1	175	10	SJ	10	3.0	220	25	220	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
25	A580-2203	1.1	175	10	SJ	10	3.0	220	25	220	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
26	A580-2205	1.1	175	10	SJ	10	3.0	220	25	220	10m#	4.0	5.0	15	#	250kΔ	200m	10uΔ	AΔ	TO3	CØ
27	A580-2402	1.1	175	10	SJ	10	3.0	240	25	240	10m#	4.0	2.0	15	#	250kΔ	400m	10uΔ	AΔ	TO3	CØ
28	A580-2403	1.1	175	10	SJ	10	3.0	240	25	240	10m#	4.0	3.0	15	#	250kΔ	300m	10uΔ	AΔ	TO3	CØ
29	BDY57	1.1	150	30	SJ	30	15	120	10	80	5.0m	4.0	10	20	60	10MΔ	140m	200nØ	ME	TO3	CØ
30	BDY58	1.1	150	30	SJ	30	15	160	10	125	5.0m	4.0	10	20	60	10MΔ	140m	200nØ	ME	TO3	CØ
31	MJ802	1.1	200	30	SJ	30	7.5	100	4.0	90	1.0m	2.0	7.5	25	100 #	2.0MΔ	130m		TO3	CØ	
32	ST28135	1.1	150	30	S	30	8.0	70	10	40	500u	10	15	30	150	10M	130m		PE	TO3	
33	ST28136	1.1	150	30	S	30	8.0	90	10	60	500u	10	15	30	150	10M	130m		PE	TO3	
34	ST28137	1.1	150	30	S	30	8.0	110	10	80	500u	10	15	30	150	10M	130m		PE	TO3	
35	ST28138	1.1	150	30	S	20	6.0	70	10	40	500u	10	10	30	150	10M	130m		PE	TO3	
36	ST28139	1.1	150	30	S	20	6.0	90	10	60	500u	10	10	30	150	10M	130m		PE	TO3	
37	ST28140	1.1	150	30	S	20	6.0	110	10	80	500u	10	10	30	150	10M	130m		PE	TO3	
38	STC1094	1.1	200	30	SJ	20	4.5	90	10	90	15m	4.0	10	7.5		3.0M	130m		P	TO3	CØ
39	2N52411	1.2	125	5.0	SJ	5.0	20	400	5.0	400	500u#	5.0	2.5	15	35	2.5MΔ	500m		D	TO3	CØ
40	2N59661	1.2	125	5.0	SJ	4.0	5.0	100	1.0	100	500u#	10.0	1.0	30	120	10MΔ	80m	500nØ	DM	TO3	A
41	2N59681	1.2	125	5.0	SJ	4.0	5.0	100	1.0	100	500u#	10.0	1.0	30	120	10MΔ	80m	500nØ	DM	TO3	A
42	2SC1079	1.2	100	12	SJ	12	150	5.0	110	100uØ	5.0	2.0	40	240	3.0M			DM	TO3	CØ	
43	2SC1080	1.2	100	12	SJ	12	110	5.0	110	100uØ	5.0	2.0	40	240	3.0M			DM	TO3	CØ	
44	2SC11151	1.2	100	10	SJ	10	4.0	140	12	80	1.0	4.0	3.0	30	150	10M	500m	1.2u	DM	TO3	CØ
45	2SC11161	1.2	100	10	SJ	10	4.0	180	12	120	1.0	4.0	3.0	30	150	10M	500m	1.2u	DM	TO3	CØ
46	PT6953	1.2	220	5	SJ	5	10	120	8.0	70	10m	5.0	2.0	40	200	100M	30m	350nØ	PL	TO3	K
47	PT6954	1.2	220	5	SJ	5	10	160	8.0	100	10m	5.0	2.0	30	150	100M	40m	350nØ	PL	TO3	K
48	PT6955	1.2	220	5	SJ	5	10	200	8.0	140	10m	5.0	2.0	30	150	100M	50m	350nØ	PL	TO3	K
49	PT79391	1.2	220	5	SA			90	6.0	70		5.0	2.0	20		125M	35m			TO3	CØ
50	PT79401	1.2	220	5	SA			90	6.0	70		5.0	2.0	30	150	125M	30m			TO3	CØ
51	PT79411	1.2	220	5	SA			120	8.0	70		5.0	2.0	20		125M	35m			TO3	CØ
52	PT79421	1.2	220	5	SA			120	6.0	100		5.0	2.0	20		125M	45m			TO3	CØ
53	PT79431	1.2	220	5	SA			120	6.0	100		5.0	2.0	30	150	125M	40m			TO3	CØ
54	PT79441	1.2	220	5	SA			160	8.0	100		5.0	2.0	20		125M	45m			TO3	CØ
55	PT79451	1.2	220	5	SA			170	6.0	140		5.0	2.0	20		125M	75m			TO3	CØ
56	PT79461	1.2	220	5	SA			170	6.0	140		5.0	2.0	30	150	125M	50m			TO3	CØ
57	PT79471	1.2	220	5	SA			200	8.0	140		5.0	2.0	20		125M	75m			TO3	CØ
58	ST15010	1.2	125	40	SJ	40	8.0	150	12	100	10uØ	5.0	4.0	10		10MΔ	60m		PE	TO3	A
59	2N34291	1.3	150	5.0	SC	5.0	3.0	50	25	50	2.0m#	2.0	5.0	10	35	20kΔ	200m	5.0uØ		MT52	B
60	2N34301	1.3	150	5.0	SC	5.0	3.0	100	25	100	2.0m#	2.0	5.0	10	35	20kΔ	200m	5.0uØ		MT52	B
61	2N34311	1.3	150	5.0	SC	5.0	3.0	150	25	150	2.0m#	2.0	5.0	10	35	20kΔ	200m	5.0uØ		MT52	B
62	2N34321	1.3	150	5.0	SC	5.0	3.0	200	25	200	2.0m#	2.0	5.0	10	35	20kΔ	200m	5.0uØ		MT52	B
63	2N34331	1.3	150	5.0	SC	5.0	3.0	250	25	250	2.0m#	2.0	5.0	10	35	20kΔ	200m	5.0uØ		MT52	B
64	2N34341	1.3	150	5.0	SC	5.0	3.0	300	25	300	2.0m#	2.0	5.0	10	35	20kΔ	200m	5.0uØ		MT52	B
65	2N39021	1.3	100	2.5	SJ	2.5	1.0	400	5.0	400	250u#	5.0	1.0	30	90	40kΔ	1.0	800nØ		TO3	CØ
66	JAN2N39021	1.3	4.0	3.5	S	3.5	2.0	700	5.0	400	250uΔ	5.0	1.0	30	90	2.5MΔ	800m	800nØ		TO3	CØ
67	2N51571	1.3	100	3.5	SJ	3.5	2.0	700	6.0	500	500u#	5.0	1.0	30	90	2.8MΔ	710m	800nØ		TO3	CØ
68	JAN2N51571	1.3	4.0	3.5	S	3.5	2.0	700	6.0	500	250uΔ	5.0	1.0	30	90	2.5MΔ	800m	800nØ		TO3	CØ
69	153-041	1.3	200	7.5	SJ	7.5	3.0	65	25	40	10m#	4.0	1.5	15		866m	3.0uØ			MT58	
70	153-05	1.3	200	7.5	SJ	7.5	3.0	75	25	50	10m#	4.0	1.5	30	Ø	870m	3.0uØ		FΔ	MT52	
71	153-061	1.3	200																		



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX RATINGS @25°C					MAX. hFE		MIN	MAX	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E	
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	Vcb (V)									MIN
1	DTS4111	1.3	100	∅	\$J	3.5	2.0	300	5.0	300	500u#	5.0	1.0	30	90	5.0M	800m	300n	ME	T03	C
2	DTS4231	1.3	100	∅	\$J	3.5	2.0	400	5.0	400	500u#	5.0	1.0	30	90	5.0M	800m	300n	ME	T03	C
3	DTS423Mt	1.3	100	∅	\$J	3.5	2.0	400	5.0	400	250uΔ	5.0	1.0	30	90	3.0MΔ	800m	800n	D	T03	C
4	DTS4241	1.3	100	∅	\$J	3.5	2.0	500	5.0	500	250uΔ	5.0	1.0	30	90	4.0M	300m	300n	D	T03	C
5	DTS4251	1.3	100	∅	\$J	3.5	2.0	500	5.0	500	250uΔ	5.0	1.0	30	90	4.0M	300m	300n	D	T03	C
6	SDT402	1.3	100	∅	\$J	3.5	2.0	400	5.0	400	500uΔ	5.0	1.0	30	90	4.0M	4.0M	1.9u#	DΔ	T03	A
7	SDT4101	1.3	80	∅	\$J	3.5	2.0	200	0	200	500u#	5.0	1.0	30	#	90	4.0M	250n	ME	T03	C
8	SDT4111	1.3	100	∅	\$J	3.5	2.0	300	0	300	500u#	5.0	1.0	30	#	90	4.0M	250n	ME	T03	C
9	SDT4231	1.3	100	∅	\$J	3.5	2.0	400	0	400	500u#	5.0	1.0	30	#	90	4.0M	250n	ME	T03	C
10	SDT4241	1.3	100	∅	\$J	3.5	2.0	700	0	500	500u#	5.0	1.0	30	#	90	4.0M	250n	D	T03	C
11	SDT4251	1.3	100	∅	\$J	3.5	2.0	700	0	500	500u#	5.0	1.0	30	#	90	4.0M	250n	D	T03	C
12	SDT4301	1.3	125	∅	\$J	5.0	2.0	400	0	400	5.0m#	5.0	2.5	15	#	45	4.0M	250n	D	T03	C
13	SDT4311	1.3	125	∅	\$J	5.0	2.0	400	0	400	5.0m#	5.0	2.5	15	#	45	4.0M	250n	D	T03	C
14	SDT2101	1.3	∅	∅	#J	150	∅	10	∅	5.0	∅	∅	150	40	∅	∅	∅	∅	∅	MT41	A
15	SDT2110	1.3	∅	∅	#J	150	∅	10	∅	5.0	∅	∅	150	40	∅	∅	∅	∅	∅	MT41a	A
16	SDT2111	1.3	∅	∅	#J	175	∅	10	∅	5.0	∅	∅	175	40	∅	∅	∅	∅	∅	MT41a	A
17	SDT2112	1.3	∅	∅	#J	200	∅	10	∅	5.0	∅	∅	200	40	∅	∅	∅	∅	∅	MT41a	A
18	SDT2150	1.3	∅	∅	#J	150	∅	10	∅	5.0	∅	∅	150	40	∅	∅	∅	∅	∅	R121	A
19	SDT2151	1.3	∅	∅	#J	175	∅	10	∅	5.0	∅	∅	175	40	∅	∅	∅	∅	∅	R121	A
20	SDT2152	1.3	∅	∅	#J	200	∅	10	∅	5.0	∅	∅	200	40	∅	∅	∅	∅	∅	R121	A
21	SPC153-04	1.3	200	∅	\$J	7.5	∅	65	25	40	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
22	SPC153-08	1.3	200	∅	\$J	7.5	∅	85	25	60	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
23	SPC153-08	1.3	200	∅	\$J	7.5	∅	105	25	80	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
24	SPC153-10	1.3	200	∅	\$J	7.5	∅	125	25	100	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
25	SPC153-12	1.3	200	∅	\$J	7.5	∅	145	25	120	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
26	SPC153-14	1.3	200	∅	\$J	7.5	∅	165	25	140	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
27	SPC153-16	1.3	200	∅	\$J	7.5	∅	185	25	160	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
28	SPC153-18	1.3	200	∅	\$J	7.5	∅	205	25	180	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
29	SPC153-20	1.3	200	∅	\$J	7.5	∅	225	25	200	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
30	SPC153-22	1.3	200	∅	\$J	7.5	∅	245	25	220	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
31	SPC153-24	1.3	200	∅	\$J	7.5	∅	265	25	240	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
32	SPC153-26	1.3	200	∅	\$J	7.5	∅	285	25	260	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
33	SPC153-28	1.3	200	∅	\$J	7.5	∅	305	25	280	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
34	SPC153-30	1.3	200	∅	\$J	7.5	∅	325	25	300	10m#	4.0	1.5	15	∅	∅	866m	∅	D	T061	A
35	SPC154-04	1.3	200	∅	\$J	7.5	∅	65	25	40	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
36	SPC154-06	1.3	200	∅	\$J	7.5	∅	85	25	60	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
37	SPC154-08	1.3	200	∅	\$J	7.5	∅	105	25	80	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
38	SPC154-10	1.3	200	∅	\$J	7.5	∅	125	25	100	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
39	SPC154-12	1.3	200	∅	\$J	7.5	∅	145	25	120	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
40	SPC154-14	1.3	200	∅	\$J	7.5	∅	165	25	140	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
41	SPC154-16	1.3	200	∅	\$J	7.5	∅	185	25	160	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
42	SPC154-18	1.3	200	∅	\$J	7.5	∅	205	25	180	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
43	SPC154-20	1.3	200	∅	\$J	7.5	∅	225	25	200	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
44	SPC154-22	1.3	200	∅	\$J	7.5	∅	245	25	220	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
45	SPC154-24	1.3	200	∅	\$J	7.5	∅	265	25	240	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
46	SPC154-26	1.3	200	∅	\$J	7.5	∅	285	25	260	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
47	SPC154-28	1.3	200	∅	\$J	7.5	∅	305	25	280	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
48	SPC154-30	1.3	200	∅	\$J	7.5	∅	325	25	300	10m#	4.0	1.5	25	∅	∅	833m	∅	D	T061	A
49	SPC402	1.3	100	∅	\$J	3.5	2.0	400	5.0	325	500uΔ	5.0	500m	20	100	4.0M	666m	∅	D	T03	A
50	SPC410	1.3	80	∅	\$J	3.5	2.0	200	5.0	200	500u#	5.0	1.0	30	90	4.0M	160m	∅	D	T03	A
51	SPC411	1.3	100	∅	\$J	3.5	2.0	300	5.0	300	500u#	5.0	1.0	30	90	5.0M	800m	∅	D	T03	A
52	SPC423	1.3	100	∅	\$J	3.5	2.0	400	5.0	325	500 #	5.0	1.0	30	90	5.0M	800m	∅	D	T03	A
53	SPC424	1.3	100	∅	\$J	3.5	2.0	500	6.0	350	250uΔ	5.0	1.0	30	90	4.0M	800m	∅	D	T03	A
54	SPC425	1.3	100	∅	\$J	3.5	2.0	500	6.0	400	250uΔ	5.0	1.0	30	90	4.0M	800m	∅	D	T03	A
55	2N15006	1.4	125	∅	J	4.0	8.0	100	12	60	0.1m	5.0	4.0	10	∅	10MΔ	06	∅	PE	T063	A
56	2N10151	1.4	150	∅	\$J	7.5	5.0	25	30	20m#	4.0	2.0	10	∅	20k	6.0u	∅	∅	MT1	A	
57	2N1015A1	1.4	150	∅	\$J	7.5	5.0	25	30	20m#	4.0	2.0	10	∅	20k	6.0u	∅	∅	MT1	A	
58	2N1015B1	1.4	150	∅	\$J	7.5	5.0	25	100	20m#	4.0	2.0	10	∅	20k	6.0u	∅	∅	MT1	A	
59	2N1015C1	1.4	150	∅	\$J	7.5	5.0	25	150	20m#	4.0	2.0	10	∅	20k	6.0u	∅	∅	MT1	A	
60	2N1015D1	1.4	150	∅	\$J	7.5	5.0	25	200	20m#	4.0	2.0	10	∅	20k	6.0u	∅	∅	MT1	A	
61	2N1015E1	1.4	150	∅	\$J	7.5	5.0	25	250	20m#	4.0	2.0	10	∅	20k	6.0u	∅	∅	MT1	A	
62	2N1015F1	1.4	150	∅	\$J	7.5	5.0	25	300	20m#	4.0	2.0	10	∅	20k	6.0u	∅	∅	MT1	A	
63	2N10161	1.4	150	∅	\$J	7.5	5.0	25	30	20m#	4.0	5.0	10	∅	20k	6.0u	∅	∅	MT1	A	
64	2N1016A1	1.4	150	∅	\$J	7.5	5.0	25	60	20m#	4.0	5.0	10	∅	20k	6.0u	∅	∅	MT1	A	
65	2N1016B1	1.4	150	∅	\$J	7.5	5.0	25	100	20m#	4.0	5.0	10	∅	20k	6.0u	∅	∅	MT1	A	
66	JAN2N1016B	1.4	150	∅	\$J	7.5	∅	100	25	100	1.0m	4.0	2.0	20	80	20kΔ	500m	10u	Δ	MT1	B
67	2N1016C1	1.4	150	∅	\$J	7.5	5.0	25	150	20m#	4.0	5.0	10	∅	20k	6.0u	∅	∅	MT1	B	
68	JAN2N1016C	1.4	150	∅	\$J	7.5	∅	150	25	150	1.0m	4.0	2.0	20	80	20kΔ	500m	10u	Δ	MT1	B
69	2N1016D1	1.4	150	∅	\$J	7.5	5.0	25	200	20m#	4.0	5.0	10	∅	20k	6.0u	∅	∅	MT1	B	
70	JAN2N1016D	1.4	150	∅	\$J	7.5	∅	200	25	200	1.0m	4.0	2.0	20	80	20kΔ	500m	10u	Δ		

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/C)	MAX FREE AIR @ 25°C (W)	Pc	M T A X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Vcb @ 25°C		BIAS		f <sub>ae</sub>	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 Ser.	C O D E		
						Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo (A)	Vcb (V)	Ic (A)	MIN (Ω)							MAX (Ω)	
																						hFE
1	152-22†	1.4	100	∅	SJ	6.0	3.0	245	25	220	10m#	4.0	1.5	37	∅	∅	F	MT1	A			
2	152-24†	1.4	100	∅	SJ	6.0	3.0	265	25	240	10m#	4.0	1.5	37	∅	∅	F	MT1	A			
3	152-26†	1.4	100	∅	SJ	6.0	3.0	285	25	260	10m#	4.0	1.5	37	∅	∅	F	MT1	A			
4	152-28†	1.4	100	∅	SJ	6.0	3.0	305	25	280	10m#	4.0	1.5	37	∅	∅	F	MT1	A			
5	1776-0640†	1.4 \$	150	∅	SJ	75 #	15 #	60	7.0	60	2.0m#	3.0	40	15			20M\$Δ	37m	500n∅	EM	T063	A
6	1776-0660†	1.4 \$	150	∅	SJ	75 #	15 #	60	7.0	60	2.0m#	3.0	40	15			20M\$Δ	25m	600n∅	EM	T063	A
7	1776-0840†	1.4 \$	150	∅	SJ	75 #	15 #	80	7.0	80	2.0m#	3.0	40	15			20M\$Δ	37m	500n∅	EM	T063	A
8	1776-0860†	1.4 \$	150	∅	SJ	75 #	15 #	80	7.0	80	2.0m#	3.0	40	15			20M\$Δ	25m	600n∅	EM	T063	A
9	1776-1040†	1.4 \$	150	∅	SJ	75 #	15 #	100	7.0	100	2.0m#	3.0	40	15			20M\$Δ	37m	500n∅	EM	T063	A
10	1776-1060†	1.4 \$	150	∅	SJ	75 #	15 #	100	7.0	100	2.0m#	3.0	40	15			20M\$Δ	25m	600n∅	EM	T063	A
11	1776-1240†	1.4 \$	150	∅	SJ	75 #	15 #	120	7.0	120	2.0m#	3.0	40	15			20M\$Δ	37m	500n∅	EM	T063	A
12	1776-1260†	1.4 \$	150	∅	SJ	75 #	15 #	120	7.0	120	2.0m#	3.0	40	15			20M\$Δ	25m	600n∅	EM	T063	A
13	1776-1440†	1.4 \$	150	∅	SJ	75 #	15 #	140	7.0	140	2.0m#	3.0	40	15			20M\$Δ	37m	500n∅	EM	T063	A
14	1776-1460†	1.4 \$	150	∅	SJ	75 #	15 #	140	7.0	140	2.0m#	3.0	40	15			20M\$Δ	25m	600n∅	EM	T063	A
15	1776-1640†	1.4 \$	150	∅	SJ	75 #	15 #	160	7.0	160	2.0m#	3.0	40	15			20M\$Δ	37m	500n∅	EM	T063	A
16	1776-1660†	1.4 \$	150	∅	SJ	75 #	15 #	160	7.0	160	2.0m#	3.0	40	15			20M\$Δ	25m	600n∅	EM	T063	A
17	1776-1840†	1.4 \$	150	∅	SJ	75 #	15 #	180	7.0	180	2.0m#	3.0	40	15			20M\$Δ	37m	500n∅	EM	T063	A
18	1776-1860†	1.4 \$	150	∅	SJ	75 #	15 #	180	7.0	180	2.0m#	3.0	40	15			20M\$Δ	25m	600n∅	EM	T063	A
19	DTS430†	1.4	125	∅	SJ	5.0	2.0	400	5.0	400	5.0m#	5.0	2.5	15		45	4.0M\$	360m	400n	D	T03	C∅
20	DTS431†	1.4	125	∅	SJ	5.0	2.0	400	5.0	400	5.0m#	5.0	2.5	15		35	4.0M\$	280m	400n	D	T03	C∅
21	DTS431Mt	1.4	125	∅	SJ	5.0	2.0	400	5.0	400	5.0m#	5.0	2.5	15		35	4.0M\$	300m	800n∅	D	T03	C∅
22	SDT2205	1.4	121	∅	SJ	5.0	10	10	5.0	5.0	5.0m	1.0	50	40 #		120	450k	3.0m		A	MT23	
23	SDT2305	1.4	121	∅	SJ	5.0	10	10	5.0	5.0	5.0m	1.0	50	40 #		120	450k	3.0m		A	T036	
24	SPC151-04	1.4	100	∅	SJ	6.0	3.0	65	25	40	10m#	4.0	1.5	11			866m		D	A	T082	C∅
25	SPC151-06	1.4	100	∅	SJ	6.0	3.0	85	25	60	10m#	4.0	1.5	11			866m		D	A	T082	
26	SPC151-08	1.4	100	∅	SJ	6.0	3.0	105	25	80	10m#	4.0	1.5	11			866m		D	A	T082	
27	SPC151-10	1.4	100	∅	SJ	6.0	3.0	125	25	100	10m#	4.0	1.5	11			866m		D	A	T082	
28	SPC151-12	1.4	100	∅	SJ	6.0	3.0	145	25	120	10m#	4.0	1.5	11			866m		D	A	T082	
29	SPC151-14	1.4	100	∅	SJ	6.0	3.0	165	25	140	10m#	4.0	1.5	11			866m		D	A	T082	
30	SPC151-16	1.4	100	∅	SJ	6.0	3.0	185	25	160	10m#	4.0	1.5	11			866m		D	A	T082	
31	SPC151-18	1.4	100	∅	SJ	6.0	3.0	205	25	180	10m#	4.0	1.5	11			866m		D	A	T082	
32	SPC151-20	1.4	100	∅	SJ	6.0	3.0	225	25	200	10m#	4.0	1.5	11			866m		D	A	T082	
33	SPC151-22	1.4	100	∅	SJ	6.0	3.0	245	25	220	10m#	4.0	1.5	11			866m		D	A	T082	
34	SPC151-24	1.4	100	∅	SJ	6.0	3.0	265	25	240	10m#	4.0	1.5	11			866m		D	A	T082	
35	SPC151-26	1.4	100	∅	SJ	6.0	3.0	285	25	260	10m#	4.0	1.5	11			866m		D	A	T082	
36	SPC151-28	1.4	100	∅	SJ	6.0	3.0	305	25	280	10m#	4.0	1.5	11			866m		D	A	T082	
37	SPC151-30	1.4	100	∅	SJ	6.0	3.0	325	25	300	10m#	4.0	1.5	11			866m		D	A	T082	
38	SPC152-04	1.4	100	∅	SJ	6.0	3.0	65	25	40	10m#	4.0	1.5	18			833m		D	A	T082	
39	SPC152-06	1.4	100	∅	SJ	6.0	3.0	85	25	60	10m#	4.0	1.5	18			833m		D	A	T082	
40	SPC152-08	1.4	100	∅	SJ	6.0	3.0	105	25	80	10m#	4.0	1.5	18			833m		D	A	T082	
41	SPC152-10	1.4	100	∅	SJ	6.0	3.0	125	25	100	10m#	4.0	1.5	18			833m		D	A	T082	
42	SPC152-12	1.4	100	∅	SJ	6.0	3.0	145	25	120	10m#	4.0	1.5	18			833m		D	A	T082	
43	SPC152-14	1.4	100	∅	SJ	6.0	3.0	165	25	140	10m#	4.0	1.5	18			833m		D	A	T082	
44	SPC152-16	1.4	100	∅	SJ	6.0	3.0	185	25	160	10m#	4.0	1.5	18			833m		D	A	T082	
45	SPC152-18	1.4	100	∅	SJ	6.0	3.0	205	25	180	10m#	4.0	1.5	18			833m		D	A	T082	
46	SPC152-20	1.4	100	∅	SJ	6.0	3.0	225	25	200	10m#	4.0	1.5	18			833m		D	A	T082	
47	SPC152-22	1.4	100	∅	SJ	6.0	3.0	245	25	220	10m#	4.0	1.5	18			833m		D	A	T082	
48	SPC152-24	1.4	100	∅	SJ	6.0	3.0	265	25	240	10m#	4.0	1.5	18			833m		D	A	T082	
49	SPC152-26	1.4	100	∅	SJ	6.0	3.0	285	25	260	10m#	4.0	1.5	18			833m		D	A	T082	
50	SPC152-28	1.4	100	∅	SJ	6.0	3.0	305	25	280	10m#	4.0	1.5	18			833m		D	A	T082	
51	SPC152-30	1.4	100	∅	SJ	6.0	3.0	320	25	300	10m#	4.0	1.5	18			833m		D	A	T082	
52	SPC430	1.4	125	∅	SJ	5.0	2.0	400	5.0	400	5.0m#	5.0	2.5	15		45	4.0M	360m		D	A	T03
53	SPC431	1.4	125	∅	SJ	5.0	2.0	400	5.0	400	5.0m#	5.0	2.5	15		45	4.0M	280m		D	A	T03
54	STC1015	1.4	150	∅	SJ	7.5	5.0	30	10	30	10m	4.0	2.0	10			2.5MT	750m	900n	D	MT1	
55	STC1015A	1.4	150	∅	SJ	7.5	5.0	60	10	60	10m	4.0	2.0	10			2.5MT	750m	900n	D	MT1	
56	STC1015B	1.4	150	∅	SJ	7.5	5.0	100	10	100	10m	4.0	2.0	10			2.5MT	750m	900n	D	MT1	
57	STC1015C	1.4	150	∅	SJ	7.5	5.0	150	10	150	10m	4.0	2.0	10			2.5MT	750m	900n	D	MT1	
58	STC1015D	1.4	150	∅	SJ	7.5	5.0	200	10	200	10m	4.0	2.0	10			2.5MT	750m	900n	D	MT1	
59	STC1015E	1.4	150	∅	SJ	7.5	5.0	250	10	250	10m	4.0	2.0	10			2.5MT	500m	900n	D	MT1	
60	STC1016	1.4	150	∅	SJ	7.5	5.0	30	10	30	10m	4.0	2.0	10			2.5MT	500m	900n	D	MT1	
61	STC1016A	1.4	150	∅	SJ	7.5	5.0	60	10	60	10m	4.0	2.0	10			2.5MT	500m	900n	D	MT1	
62	STC1016B	1.4	150	∅	SJ	7.5	5.0	100	10	100	10m	4.0	2.0	10			2.5MT	500m	900n	D	MT1	
63	STC1016C	1.4	150	∅	SJ	7.5	5.0	150	10	150	10m	4.0	2.0	10			2.5MT	500m	900n	D	MT1	
64	STC1016D	1.4	150	∅	SJ	7.5	5.0	200	10	200	10m	4.0	2.0	10			2.5MT	500m	900n	D	MT1	
65	STC1016E	1.4	150	∅	SJ	7.5	5.0	250	10	250	10m	4.0	2.0	10			2.5MT	500m	900n	D	MT1	
66	STC1400	1.4	150	∅	SJ	5.0	5.0	60	6.0	40	1.0m	4.0	2.0	15		60	2.5MT	1.5	900n	D	MT1	
67	2N6080†	1.5 \$	150	∅	SJ	60	10	100	10	100	500u	10	20	20		120	10M\$Δ	50m	500n∅	PE	T063	A
68	2N6081	1.5 \$	150	∅	SJ	60	10	100	10	100	500u	10	20	20		120	10M\$Δ	50m	500n∅	PE	T063	A
69	1561-0403	1.5	120	∅	SC	15	7.0	40	7.0	40	1											

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C (W/°C)	MAX P <sub>c</sub> FREE AIR @ 25°C (W)	M T A E X P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. hFE		BIAS V <sub>cb</sub> (V)	I <sub>c</sub> (A)	MIN	MAX	f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG # Y200 s/a TO200 Ser.	# C O D E
					I <sub>c</sub> (A)	I <sub>b</sub> (A)	V <sub>cb</sub> (V)	V <sub>eb</sub> (V)	V <sub>ce</sub> (V)	I <sub>cb</sub> @ MAX V <sub>cb</sub> @ 25°C (A)	V <sub>cb</sub> (V)										
1	2N5686	1.7	300	§J	50	15	80	5.0	80	2.0m	2.0	25	15	60	#	2.0mΔ		1.0u	DM	MD6d	CØ
2	BUY231	1.7	100	§J	50	3.0	600	8.0	250	2.0m	5.0	2.5	20	200	#	25M\$		1.0u	DM	TO3	CØ
3	BUY23A†	1.7	100	§J	50	3.0	700	8.0	300	2.0m	5.0	2.5	20	200	#	25M\$		1.0u	DM	TO3	CØ
4	MJ7200	1.7	300	§J	60	20	100	6.0	80	100u	5.0	20	20	100	#	20M\$Δ			ME	MT69a	Ø
5	MJ7201	1.7	300	§J	60	20	120	6.0	100	100u	5.0	20	20	100	#	20M\$Δ			ME	MT69a	Ø
6	2N1936	2.0	150	§J	20	10	125	6.0	60	10m#	10	10	#	50	#	4.0M\$	75m		ME	TO63	Ø
7	2N1937	2.0	150	§J	20	10	125	6.0	80	10m#	10	10	#	50	#	4.0M\$	75m		ME	TO63	Ø
8	2N2226	2.0	150	§C	10	1.0	50	15	50	20m#	6.0	9.0	100	500	#	7.0kΔ	380m			MT1	Ø
9	2N2227	2.0	150	§C	10	1.0	100	15	100	20m#	6.0	9.0	100	500	#	7.0kΔ	380m			MT1	Ø
10	2N2228	2.0	150	§C	10	1.0	150	15	150	20m#	6.0	9.0	100	500	#	7.0kΔ	380m			MT1	Ø
11	2N2229	2.0	150	§C	10	1.0	200	15	200	20m#	6.0	9.0	100	500	#	7.0kΔ	380m			MT1	Ø
12	2N2230	2.0	150	§C	10	1.0	50	15	50	20m#	6.0	9.0	350		#	4.0kΔ	380m			MT1	Ø
13	2N2231	2.0	150	§C	10	1.0	100	15	100	20m#	6.0	9.0	350		#	4.0kΔ	380m			MT1	Ø
14	2N2232	2.0	150	§C	10	1.0	150	15	150	20m#	6.0	9.0	350		#	4.0kΔ	380m			MT1	Ø
15	2N2233	2.0	150	§C	10	1.0	200	15	200	20m#	6.0	9.0	350		#	4.0kΔ	380m			MT1	Ø
16	2N2739†	2.0	200	§C	20	7.5	50	15	50	15m#	4.0	10	10		#	6.0u	6.0u			MT1	B
17	2N2740†	2.0	200	§C	20	7.5	100	15	100	15m#	4.0	10	10		#	6.0u	6.0u			MT1	B
18	2N2741†	2.0	200	§C	20	7.5	150	15	150	15m#	4.0	10	10		#	6.0u	6.0u			MT1	B
19	2N2742†	2.0	200	§C	20	7.5	200	15	200	15m#	4.0	10	10		#	6.0u	6.0u			MT1	B
20	2N2743†	2.0	200	§C	20	7.5	250	15	250	15m#	4.0	10	10		#	6.0u	6.0u			MT1b	B
21	2N2744†	2.0	200	§C	20	7.5	300	15	300	15m#	4.0	10	10		#	6.0u	6.0u			MT1b	B
22	2N2745†	2.0	200	§C	20	7.5	50	15	50	15m#	4.0	15	10		#	100m	6.0u			MT1	B
23	2N2746†	2.0	200	§C	20	7.5	100	15	100	15m#	4.0	15	10		#	100m	6.0u			MT1	B
24	2N2747†	2.0	200	§C	20	7.5	150	15	150	15m#	4.0	15	10		#	100m	6.0u			MT1	B
25	2N2748†	2.0	200	§C	20	7.5	200	15	200	15m#	4.0	15	10		#	100m	6.0u			MT1	B
26	2N2751†	2.0	200	§C	20	7.5	50	15	50	15m#	4.0	20	10		#	75m	7.0u			MT1	B
27	2N2752†	2.0	200	§C	20	7.5	100	15	100	15m#	4.0	20	10		#	75m	7.0u			MT1	B
28	2N2753†	2.0	200	§C	20	7.5	150	15	150	15m#	4.0	20	10		#	75m	7.0u			MT1	B
29	2N2754†	2.0	200	§C	20	7.5	200	15	200	15m#	4.0	20	10		#	75m	7.0u			MT1	B
30	2N2755†	2.0	200	§C	20	7.5	250	15	250	15m#	4.0	20	10		#	7.0u	7.0u			MT1b	B
31	2N2756†	2.0	200	§C	20	7.5	300	15	300	15m#	4.0	20	10		#	7.0u	7.0u			MT1b	B
32	2N2757†	2.0	200	§C	30	7.5	50	15	50	15m#	4.0	10	10		#	150m	6.0u			MT33	A
33	2N2758†	2.0	200	§C	30	7.5	100	15	100	15m#	4.0	10	10		#	150m	6.0u			MT33	A
34	2N2759†	2.0	200	§C	30	7.5	150	15	150	15m#	4.0	10	10		#	150m	6.0u			MT33	A
35	2N2760†	2.0	200	§C	30	7.5	200	15	200	15m#	4.0	10	10		#	150m	6.0u			MT33	A
36	2N2761†	2.0	200	§C	30	7.5	250	15	250	15m#	4.0	10	10		#	150m	6.0u			MT33	A
37	2N2762†	2.0	200	§C	30	7.5	300	15	300	15m#	4.0	10	10		#	6.0u	6.0u			MT33	A
38	2N2763†	2.0	200	§C	30	7.5	50	15	50	15m#	4.0	15	10		#	100m	6.0u			MT33	A
39	2N2764†	2.0	200	§C	30	7.5	100	15	100	15m#	4.0	15	10		#	100m	6.0u			MT33	A
40	2N2765†	2.0	200	§C	30	7.5	150	15	150	15m#	4.0	15	10		#	100m	6.0u			MT33	A
41	2N2766†	2.0	200	§C	30	7.5	200	15	200	15m#	4.0	15	10		#	100m	6.0u			MT33	A
42	2N2767†	2.0	200	§C	30	7.5	250	15	250	15m#	4.0	15	10		#	6.0u	6.0u			MT33	A
43	2N2768†	2.0	200	§C	30	7.5	300	15	300	15m#	4.0	15	10		#	6.0u	6.0u			MT33	A
44	2N2769†	2.0	200	§C	30	7.5	50	15	50	15m#	4.0	20	10		#	75m	7.0u			MT33	A
45	2N2770†	2.0	200	§C	30	7.5	100	15	100	15m#	4.0	20	10		#	75m	7.0u			MT33	A
46	2N2771†	2.0	200	§C	30	7.5	150	15	150	15m#	4.0	20	10		#	75m	7.0u			MT33	A
47	2N2772†	2.0	200	§C	30	7.5	200	15	200	15m#	4.0	20	10		#	75m	7.0u			MT33	A
48	2N2773†	2.0	200	§C	30	7.5	250	15	250	15m#	4.0	20	10		#	7.0u	7.0u			MT33	A
49	2N2774†	2.0	200	§C	30	7.5	300	15	300	15m#	4.0	20	10		#	7.0u	7.0u			MT33	A
50	2N2775†	2.0	200	§C	30	7.5	50	15	50	15m#	4.0	25	10		#	60m	8.0u			MT33	A
51	2N2776†	2.0	200	§C	30	7.5	100	15	100	15m#	4.0	25	10		#	60m	8.0u			MT33	A
52	2N2777†	2.0	200	§C	30	7.5	150	15	150	15m#	4.0	25	10		#	60m	8.0u			MT33	A
53	2N2778†	2.0	200	§C	30	7.5	200	15	200	15m#	4.0	25	10		#	60m	8.0u			MT33	A
54	2N2779†	2.0	200	§C	30	7.5	250	15	250	15m#	4.0	25	10		#	8.0u	8.0u			MT33	A
55	2N2780†	2.0	200	§C	30	7.5	300	15	300	15m#	4.0	25	10		#	8.0u	8.0u			MT33	A
56	2N3149	2.0	300	§J	70	15	80	10	80	2.0m	3.0	50	10	#		100k\$Δ	30m		D	MT49	Ø
57	2N3150	2.0	300	§J	70	15	100	10	100	2.0m	3.0	50	10	#		100k\$Δ	30m		D	MT49	Ø
58	2N3151	2.0	300	§J	70	15	150	10	150	2.0m	3.0	50	10	#		100k\$Δ	30m		D	MT49	Ø
59	2N3470	2.0	150	§C	10	1.0	50	15	50	20m#	6.0	9.0	100	500	#	7.0kΔ	390m		F	MT33	Ø
60	2N3471	2.0	150	§C	10	1.0	100	15	100	20m#	6.0	9.0	100	500	#	7.0kΔ	390m		F	MT33	Ø
61	2N3472	2.0	150	§C	10	1.0	150	15	150	20m#	6.0	9.0	100	500	#	7.0kΔ	390m		F	MT33	Ø
62	2N3473	2.0	150	§C	10	1.0	200	15	200	20m#	6.0	9.0	100	500	#	7.0kΔ	390m		F	MT33	Ø
63	2N3474	2.0	150	§C	10	1.0	50	15	50	20m#	6.0	9.0	350		#	4.0kΔ	390m		F	MT33	Ø
64	2N3475	2.0	150	§C	10	1.0	100	15	100	20m#	6.0	9.0	350		#	4.0kΔ	390m		F	MT33	Ø
65	2N3476	2.0	150	§C	10	1.0	150	15	150	20m#	6.0	9.0	350		#	4.0kΔ	390m		F	MT33	Ø
66	2N3477	2.0	150	§C	10	1.0	200	15	200	20m#	6.0	9.0	350		#	4.0kΔ	390m		F	MT33	Ø
67	2N3846†	2.0	4.0	§C	20	10	300	10	200	10m#	3.0	5.0	10	#		10M\$Δ	80m			TO63	Ø
68	JAN2N3846†	2.0	4.0	§A	20	10	300	10	200	10m#	3.0	5.0	10	#		10M\$Δ	80m			TO63	Ø
69	2N3847†	2.0	4.0	§C	20	10	400	10	300	10m#	3.0	5.0	10	#		10M\$Δ	80m			TO63	Ø
70	JAN2N3847†	2.0	4.0	§A	20	10	400	10	300	10m#	3.0	5.0	10	#		10M\$Δ	80m			TO63	Ø
71	2N3848†	2.0	4.0	§C	20	10	300	10	200	10m#	4.0	5.0	40	200	#	10M\$Δ	670m			TO63	Ø
72	2N3849†	2.0	4.0	§C	20	10	400	10	300	10m#	4.0	5.0	40	200							

# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	1 MIN. DERATE J to C	MAX FREE AIR @ 25°C	M T A E X P	ABSOLUTE MAX. RATINGS @25°C					MAX. hFE		MIN	MAX	fae	MAX. SAT. RES. (Ω)	tr (s)	STRUCTURE	DWG # Y200 s/a T200 Ser.	# E O D E
					Ic (A)	Ib (A)	BVcbo (V)	BVebo (V)	BVceo (V)	Icbo @ 25°C (A)	Vcb @ 25°C (V)								
1	164-04†	2.0	200	§J	20	7.5	55	15	40	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
2	164-05	2.0 #	200	§J	20	7.5	65	15	50	30m#	4.0	5.0	42	∅	200m	6.0u	FΔ	MT33	A∅
3	164-06†	2.0	200	§J	20	7.5	75	15	60	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
4	164-07	2.0 #	200	§J	20	7.5	85	15	70	30m#	4.0	5.0	42	∅	200m	6.0u	FΔ	MT33	A∅
5	164-08†	2.0	200	§J	20	7.5	95	15	80	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
6	164-09	2.0 #	200	§J	20	7.5	105	15	90	30m#	4.0	5.0	42	∅	200m	6.0u	FΔ	MT33	A∅
7	164-10†	2.0	200	§J	20	7.5	115	15	100	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
8	164-12†	2.0	200	§J	20	7.5	135	15	120	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
9	164-14†	2.0	200	§J	20	7.5	155	15	140	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
10	164-16†	2.0	200	§J	20	7.5	175	15	160	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
11	164-18†	2.0	200	§J	20	7.5	195	15	180	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
12	164-20†	2.0	200	§J	20	7.5	215	15	200	30m#	4.0	5.0	25	∅	200m	6.0u	FΔ	MT33	A∅
13	164-22†	2.0	200	§J	20	7.5	235	15	220	30m#†	4.0	5.0	42	∅	200m	6.0u	F	MT33	A∅
14	164-24†	2.0	200	§J	20	7.5	255	15	240	30m#†	4.0	5.0	42	∅	200m	6.0u	F	MT33	A∅
15	164-26†	2.0	200	§J	20	7.5	275	15	260	30m#†	4.0	5.0	42	∅	200m	6.0u	F	MT33	A∅
16	164-28†	2.0	200	§J	20	7.5	295	15	280	30m#†	4.0	5.0	42	∅	200m	6.0u	F	MT33	A∅
17	164-30†	2.0	200	§J	20	7.5	315	15	300	30m#	4.0	5.0	25	∅	200m	6.0u	F	MT33	A∅
18#	BDY23	2.0	85	§J	6.0	3.0	80	10	60	1.0m	4.0	2.0	15	180	10MΔ	500m	ME	TO3	C∅
19#	BDY24	2.0	85	§J	6.0	3.0	120	10	90	1.0m	4.0	2.0	15	180	10MΔ	300m	ME	TO3	C∅
20#	BDY25	2.0	85	§J	6.0	3.0	200	10	140	1.0m	4.0	2.0	15	180	10MΔ	500m	ME	TO3	C∅
21#	BDY26	2.0	85	§J	6.0	3.0	300	10	180	1.0m	4.0	2.0	15	180	10MΔ	300m	ME	TO3	C∅
22#	BDY27	2.0	85	§J	6.0	3.0	400	10	200	1.0m	4.0	2.0	15	180	10MΔ	300m	ME	TO3	C∅
23#	BDY28	2.0	85	§J	6.0	3.0	500	10	250	1.0m	4.0	2.0	15	180	10MΔ	300m	ME	TO3	C∅
24#	BU102	2.0	50	§J	7.0	3.0	400	5.0	150	1.0u	5.0	1.0	30	110	10MΔ	500m	DPE	TO3	C∅
25#	BU104	2.0	85	§J	7.0	3.0	400	10	100	1.0m	3.5	5.0	10	50	10MΔ	350m	ME	TO3	C∅
26	KSP1001	2.0	100	§J	100	15	80	8.0	60	10u	5.0	7.0	10	40	15M	100m	PE	TO114	C∅
27	KSP1002	2.0	100	§J	100	15	100	8.0	80	10u	5.0	7.0	10	40	15M	100m	PE	TO114	C∅
28	KSP1003	2.0	100	§J	100	15	120	8.0	100	10u	5.0	7.0	10	40	15M	100m	PE	TO114	C∅
29	KSP1601	2.0	60	§J	60	10	225	8.0	200	10u	10	40	10	40	15M	100m	PE	TO114	C∅
30	KSP1602	2.0	60	§J	60	10	250	8.0	225	10u	10	40	10	40	15M	100m	PE	TO114	C∅
31	KSP1603	2.0	60	§J	60	10	275	8.0	250	10u	10	40	10	40	15M	100m	PE	TO114	C∅
32	KSP1604	2.0	60	§J	60	10	300	8.0	275	10u	10	40	10	40	15M	100m	PE	TO114	C∅
33	KSP1605	2.0	60	§J	60	10	325	8.0	300	10u	10	40	10	40	15M	100m	PE	TO114	C∅
34	PT500	2.0	300	§A	70	20	175	10	150	2.0m	2.0	50	10	#	100m	2.0 #	D	TO114	C∅
35	PT501	2.0	300	§A	70	20	150	10	120	2.0m	2.0	50	10	#	100m	2.0 #	D	TO114	C∅
36	PT502†	2.0	350	§J	100	20	150	10	100	2.0m	2.0	50	10	40	10M	100m	DM	TO114	C∅
37	PT600Δ	2.0	300	§A	70	20	175	10	150	2.0m	2.0	60	10	#	100m	2.0 #	D	TO114	C∅
38	PT601Δ	2.0	300	§A	70	20	150	10	120	2.0m	2.0	60	10	#	100m	2.0 #	D	TO114	C∅
39	PT602†	2.0	350	§J	100	20	150	10	100	2.0m	2.0	60	10	40	10M	100m	DM	TO114	C∅
40♦	PT700†	2.0	350	§A	100	20	175	10	150	2.0m	2.0	70	10	40	1.0M	100m	D	MT69b	C∅
41	PT701	2.0	300	§A	70	20	150	10	120	2.0m	2.0	70	10	#	100m	2.5u	D	MT69b	C∅
42♦	PT702†	2.0	350	§A	100	20	120	10	100	2.0m	2.0	70	10	40	1.0M	100m	D	MT69b	C∅
43	PT7503†	2.0	350	§J	70	15	175	10	150	2.0m	2.0	30	10	40	1.0M	100m	DM	TO63	C∅
44	PT7506†	2.0	350	§J	80	20	175	10	150	2.0m	2.0	40	10	40	1.0M	100m	DM	TO63	C∅
45	PT7508†	2.0	350	§J	90	20	175	10	150	2.0m	2.0	50	10	40	1.0M	100m	DM	TO63	C∅
46▼	PT7509†	2.0	350	§J	70	15	200	10	200	2.0m	2.0	30	10	40	1.0M	100m	DM	TO63	C∅
47▼	PT7510†	2.0	350	§J	80	20	200	10	200	2.0m	2.0	40	10	40	1.0M	100m	DM	TO63	C∅
48▼	PT7511†	2.0	350	§J	90	20	200	10	200	2.0m	2.0	50	10	40	1.0M	100m	DM	TO63	C∅
49	PT8502†	2.0	350	§J	150	40	150	10	120	2.0m	2.0	100	10	40	1.0M	100m	DM	TO63	C∅
50	SDT1808	2.0	170	§J	80	10	80	30	60	5.0m	2.0	50	15	40	340k	10m	A	TO36	C∅
51	SDT1809	2.0	170	§J	80	10	60	30	45	5.0m	2.0	50	15	40	340k	10m	A	TO36	C∅
52	SDT1810	2.0	170	§J	80	10	40	20	30	5.0m	2.0	50	15	40	340k	10m	A	TO36	C∅
53	SDT8920	2.0	350	§J	90	20	80	8.0	60	0.1m	5.0	75	10	40	20M	100m	DM	MT49	C∅
54	SDT8921	2.0	350	§J	90	20	100	8.0	80	0.1m	5.0	75	10	40	20M	100m	DM	MT49	C∅
55	SDT8922	2.0	350	§J	90	20	120	8.0	100	0.1m	5.0	75	10	40	20M	100m	DM	MT49	C∅
56	SDT8923	2.0	350	§J	90	20	140	8.0	120	0.1m	5.0	75	10	40	20M	100m	DM	MT49	C∅
57	SDT8951	2.0	350	§J	60	15	200	8.0	100	10u	10	40	10	40	20M	100m	PL	MT49a	C∅
58	SDT8952	2.0	350	§J	60	15	225	8.0	100	10u	10	40	10	40	20M	100m	PL	MT49a	C∅
59	SDT8953	2.0	350	§J	60	15	250	8.0	100	10u	10	40	10	40	20M	100m	PL	MT49a	C∅
60	SDT8954	2.0	350	§J	60	15	275	8.0	100	10u	10	40	10	40	20M	100m	PL	MT49a	C∅
61	SDT8955	2.0	350	§J	60	15	300	8.0	100	10u	10	40	10	40	20M	100m	PL	MT49a	C∅
62▼	SPC163-04	2.0	200	§J	20	7.5	55	15	40	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
63▼	SPC163-06	2.0	200	§J	20	7.5	75	15	60	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
64▼	SPC163-08	2.0	200	§J	20	7.5	95	15	80	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
65▼	SPC163-10	2.0	200	§J	20	7.5	115	15	100	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
66▼	SPC163-12	2.0	200	§J	20	7.5	135	15	120	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
67▼	SPC163-14	2.0	200	§J	20	7.5	155	15	140	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
68▼	SPC163-16	2.0	200	§J	20	7.5	175	15	160	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
69▼	SPC163-18	2.0	200	§J	20	7.5	195	15	180	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
70▼	SPC163-20	2.0	200	§J	20	7.5	215	15	200	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
71▼	SPC163-22	2.0	200	§J	20	7.5	235	15	220	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
72▼	SPC163-24	2.0	200	§J	20	7.5	255	15	240	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
73▼	SPC163-26	2.0	200	§J	20	7.5	275	15	260	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
74▼	SPC163-28	2.0	200	§J	20	7.5	295	15	280	30m#	4.0	5.0	15	15	220m	50m	D	TO63	C∅
75▼	SPC163-30	2.0	200	§J															



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR  
& (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E M P	ABSOLUTE MAX. RATINGS @25°C			MAX. hFE			BIAS Vcb (V)	MIN (A)	MAX (A)	fae (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vbeo (V)	Vceo (V)	lco @ 25°C (A)									
1	STC3728	2.0	200	200	SJ	20	7.5	115	10	100	4.0	5.0	15	#	220m		D	MT18		
2	STC3729	2.0	200	200	SJ	20	7.5	135	10	120	4.0	5.0	15	#	220m		D	MT18		
3	STC3730	2.0	200	200	SJ	20	7.5	155	10	140	30m#	4.0	5.0	15	#	220m		D	MT18	
4	STC3731	2.0	200	200	SJ	20	7.5	175	10	160	30m#	4.0	5.0	15	#	220m		D	MT18	
5	STC3732	2.0	200	200	SJ	20	7.5	195	10	180	30m#	4.0	5.0	15	#	220m		D	MT18	
6	STC3733	2.0	200	200	SJ	20	7.5	215	10	200	30m#	4.0	5.0	15	#	220m		D	MT18	
7	STC3734	2.0	200	200	SJ	20	7.5	55	10	40	30m#	4.0	5.0	25	#	200m		D	MT18	
8	STC3735	2.0	200	200	SJ	20	7.5	65	10	50	30m#	4.0	5.0	25	#	200m		D	MT18	
9	STC3736	2.0	200	200	SJ	20	7.5	75	10	60	30m#	4.0	5.0	25	#	200m		D	MT18	
10	STC3737	2.0	200	200	SJ	20	7.5	85	10	70	30m#	4.0	5.0	25	#	200m		D	MT18	
11	STC3738	2.0	200	200	SJ	20	7.5	95	10	80	30m#	4.0	5.0	25	#	200m		D	MT18	
12	STC3739	2.0	200	200	SJ	20	7.5	105	10	90	30m#	4.0	5.0	25	#	200m		D	MT18	
13	STC3740	2.0	200	200	SJ	20	7.5	115	10	100	30m#	4.0	5.0	25	#	200m		D	MT18	
14	STC3741	2.0	200	200	SJ	20	7.5	135	10	120	30m#	4.0	5.0	25	#	200m		D	MT18	
15	STC3742	2.0	200	200	SJ	20	7.5	155	10	140	30m#	4.0	5.0	25	#	200m		D	MT18	
16	STC3743	2.0	200	200	SJ	20	7.5	175	10	160	30m#	4.0	5.0	25	#	200m		D	MT18	
17	STC3744	2.0	200	200	SJ	20	7.5	195	10	180	30m#	4.0	5.0	25	#	200m		D	MT18	
18	STC3745	2.0	200	200	SJ	20	7.5	215	10	200	30m#	4.0	5.0	25	#	200m		D	MT18	
19	2N1809	2.1	250	250	SJ	10	10	50	15	50	30m#	4.0	10	10	10	150m	20u	D	MT14	C
20	2N1810	2.1	250	250	SJ	10	10	100	15	100	30m#	4.0	10	10	10	150m	20u	D	MT14	C
21	2N1811	2.1	250	250	SJ	10	10	150	15	150	30m#	4.0	10	10	10	150m	20u	D	MT14	C
22	2N1812	2.1	250	250	SJ	10	10	200	15	200	30m#	4.0	10	10	10	150m	20u	D	MT14	C
23	2N1813	2.1	250	250	SJ	10	10	250	15	250	30m#	4.0	10	10	10	150m	20u	D	MT14	C
24	2N1814	2.1	250	250	SJ	10	10	300	15	300	30m#	4.0	10	10	10	150m	20u	D	MT14	C
25	2N1816	2.1	250	250	SJ	15	10	50	15	50	30m#	4.0	15	10	10	100m	20u	D	MT14	C
26	2N1817	2.1	250	250	SJ	15	10	100	15	100	30m#	4.0	15	10	10	100m	20u	D	MT14	C
27	2N1818	2.1	250	250	SJ	15	10	150	15	150	30m#	4.0	15	10	10	100m	20u	D	MT14	C
28	2N1819	2.1	250	250	SJ	15	10	200	15	200	30m#	4.0	15	10	10	100m	20u	D	MT14	C
29	2N1823	2.1	250	250	SJ	20	10	50	15	50	30m#	4.0	20	10	10	75m	20u	D	MT14	C
30	2N1824	2.1	250	250	SJ	20	10	100	15	100	30m#	4.0	20	10	10	75m	20u	D	MT14	C
31	2N1825	2.1	250	250	SJ	20	10	150	15	150	30m#	4.0	20	10	10	75m	20u	D	MT14	C
32	2N1826	2.1	250	250	SJ	20	10	200	15	200	30m#	4.0	20	10	10	75m	20u	D	MT14	C
33	2N1827	2.1	250	250	SJ	20	10	250	15	250	30m#	4.0	20	10	10	75m	20u	D	TO49	C
34	2N1830	2.1	250	250	SJ	25	10	50	15	50	30m#	4.0	25	10	10	60m	20u	D	MT14	C
35	2N1831	2.1	250	250	SJ	25	10	100	15	100	30m#	4.0	25	10	10	60m	20u	D	MT14	C
36	2N1832	2.1	250	250	SJ	25	10	150	15	150	30m#	4.0	25	10	10	60m	20u	D	MT14	C
37	2N1833	2.1	250	250	SJ	25	10	200	15	200	30m#	4.0	25	10	10	60m	20u	D	MT14	C
38	2N2109	2.1	250	250	SJ	10	10	50	15	50	30	4.0	10	10	10	150m	20u	D	MT17	F
39	2N2110	2.1	250	250	SJ	10	10	100	15	100	30	4.0	10	10	10	150m	20u	D	MT17	F
40	2N2111	2.1	250	250	SJ	10	10	150	15	150	30	4.0	10	10	10	150m	20u	D	MT17	F
41	2N2112	2.1	250	250	SJ	10	10	200	15	200	30	4.0	10	10	10	150m	20u	D	MT17	F
42	2N2113	2.1	250	250	SJ	10	10	250	15	250	30	4.0	10	10	10	150m	20u	D	MT17	F
43	2N2114	2.1	250	250	SJ	10	10	300	15	300	30	4.0	10	10	10	150m	20u	D	MT17	F
44	2N2116	2.1	250	250	SJ	15	10	50	15	50	30	4.0	15	10	10	100m	20u	D	MT17	F
45	2N2117	2.1	250	250	SJ	15	10	100	15	100	30	4.0	15	10	10	100m	20u	D	MT17	F
46	2N2118	2.1	250	250	SJ	15	10	150	15	150	30	4.0	15	10	10	100m	20u	D	MT17	F
47	2N2119	2.1	250	250	SJ	15	10	200	15	200	30	4.0	15	10	10	100m	20u	D	MT17	F
48	2N2123	2.1	250	250	SJ	20	10	50	15	50	30	4.0	20	10	10	75m	20u	D	MT17	F
49	2N2124	2.1	250	250	SJ	20	10	100	15	100	30	4.0	20	10	10	75m	20u	D	MT17	F
50	2N2125	2.1	250	250	SJ	20	10	150	15	150	30	4.0	20	10	10	75m	20u	D	MT17	F
51	2N2126	2.1	250	250	SJ	20	10	200	15	200	30	4.0	20	10	10	75m	20u	D	MT17	F
52	2N2127	2.1	250	250	SJ	20	10	250	15	250	30m#	4.0	20	10	10	75m	20u	D	TO83	C
53	2N2130	2.1	250	250	SJ	25	10	50	15	50	30	4.0	25	10	10	60m	20u	D	MT17	F
54	2N2131	2.1	250	250	SJ	25	10	100	15	100	30	4.0	25	10	10	60m	20u	D	MT17	F
55	2N2132	2.1	250	250	SJ	25	10	150	15	150	30	4.0	25	10	10	60m	20u	D	MT17	F
56	2N2133	2.1	250	250	SJ	25	10	200	15	200	30	4.0	25	10	10	60m	20u	D	MT17	F
57	2N1820	2.2	250	250	SJ	15	10	250	15	250	30m#	4.0	15	10	10	100m	20u	D	MT14	C
58	2N2120	2.2	250	250	SJ	15	10	250	15	250	30m#	4.0	15	10	10	100m	20u	D	MT17	F
59	ST2814	2.3	85	85	SJ	10	4.0	70	10	40	500u	10	5.0	30	150	10M	130m	PE	TO3	
60	ST2812	2.3	85	85	SJ	10	4.0	90	10	60	500u	10	5.0	30	150	10M	130m	PE	TO3	
61	ST2813	2.3	85	85	SJ	10	4.0	110	10	80	500u	10	5.0	30	150	10M	130m	PE	TO3	
62	2SC642A	2.5	50	50	SJ	1.0	1.5k	5.0	800	100	100	150m	2.0	7.0	50	1.5M	4.0M	DME	TO3	C
63	2SC643A	2.5	50	50	SJ	2.5	1.5k	5.0	800	100	100	150	2.0	7.0	50	1.5M	4.0M	DME	TO3	C
64	2SC999	2.5	50	50	SJ	1.5	1.5k	5.0	700	100	100	150m	2.0	7.0	50	1.5M	4.0M	DME	TO3	C
65	2SC999A	2.5	50	50	SJ	2.5	1.5k	5.0	650	100	100	150m	2.0	7.0	50	1.5M	4.0M	DME	TO3	C
66	2SC1004A	2.5	50	50	SJ	500m	1.5k	5.0	800	100	100	150m	2.0	7.0	50	1.5M	4.0M	DME	TO3	C
67	2SC1005	2.5	50	50	SJ	5.0	1.1k	5.0	600	100	100	150	4.0	5.0	12	3.0M	3.0M	DM	TO3	C
68	2SC1005A	2.5	50	50	SJ	5.0	1.4k	5.0	600	100	100	150	4.0	5.0	12	3.0M	3.0M	DM	TO3	C
69	2SC1111	2.5	50	50	SJ	6.0	1.4k	12	600	100	100	150	4.0	3.0	150	10M	500m	D	TO3	C
70	2SC1112	2.5	50	50	SJ	6.0	1.8k	12	100	100	100	150	4.0	3.0	150	10M	500m	D	TO3	C
71	2SD107	2.5	50	50	SJ	5.0	1.0	60	40	200	2.0	5.0	1.0	10k	10k	10k	DPL	TO3	C	
72	2SD108	2.5	50	50	SJ	5.0	1.0	80	40	200	2.0	5.0	1.0	10k	10k	10k	DPL	TO3	C	
73	STC2500	2.8	500	500	SJ	150	100	100	100	100	3.0	100	10	10	20m		D	MT49		
74	STC2501	2.8	500	500	SJ	150	100	150	100	150	3.0	100	10	10	20m		D	MT49		
75	STC2502	2.8	500	500	SJ															



# 11. SILICON NPN - HIGH POWER TRANSISTORS

IN ORDER OF (1) MIN. DERATING FACTOR & (2) TYPE No.

LINE No.	TYPE No.	MIN. DERATE J to C (W/°C)	MAX. FREE AIR @ 25°C (W)	Pc	M T A E X M P	ABSOLUTE MAX. RATINGS @ 25°C					MAX. Icb0 @ 25°C (A)		BIAS Vcb (V)		hFE		f <sub>ae</sub> (Hz)	MAX. SAT. RES. (Ω)	tr (s)	STRUC-TURE	DWG #	#	C O D E
						Ic (A)	Ib (A)	Vcbo (V)	Vebo (V)	Vceo (V)	Icbo (A)	Vcb (V)	MIN	MAX									
1	1401-1015†	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
2	1401-1020†	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
3	1401-1025†	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
4	1401-1205	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
5	1401-1207	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
6	1401-1210	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
7	1401-1215†	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
8	1401-1220†	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
9	1401-1225†	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
10	1401-1405	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
11	1401-1407	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
12	1401-1410	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
13	1401-1415	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
14	1401-1420	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
15	1401-1425	5.0	625	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
16#	BDY10†	5.0	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
17#	BDY11†	5.0	150	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
18#	2SC481	5.5	60	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
19	1571-0420	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
20	1571-0425	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
21	1571-0620	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
22	1571-0820	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
23	1571-0825	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
24	1571-1020	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
25	1571-1025	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
26	1571-1220	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
27	1571-1225	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
28	1571-1425	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
29	1571-1620	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
30	1571-1625	6.0	29	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
31	2N5185	6.6	1.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
32#	2SC515A	7.5	20	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
33#	2SD222†	12	10	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
34#	2SD223†	12	10	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
35#	2SD224†	12	10	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
36#	2SD236†	12	10	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
37#	2SD237†	12	10	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
38#	2SD238†	12	10	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
39	B3746	13	1.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
40	TRL2015	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
41	TRL2255S	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
42	TRL2505	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
43	TRL2505S	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
44	TRL2755S	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
45	TRL3015	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
46	TRL3015S	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
47	TRL3505S	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
48	TRL3515S	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
49	TRL4015	13	2.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
50	PT3986	15	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
51	PT4992	15	1.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
52	PT5909	20	1.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
53#	BU125	25	800	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
54#	BFR57	30	5.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
55#	BFR58	30	5.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
56#	BFR59	30	5.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
57#	2SC1038	40	3.7	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
58#	2SC1039	40	7.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
59#	2SC1041	40	3.7	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
60#	2SC1042	40	7.5	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
61#	2SD219†	250	500m	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
62#	2SD220†	250	500m	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
63#	2SD221†	250	500m	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
64	SDT4451	40M	4.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
65	SDT4452	40M	4.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
66	SDT4453	40M	4.0	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
67	SDT4454	40M	4.0	∅</																			

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	le (A)	hFE								
1	2N5432		1.0n	40n∅	6.0n∅	30n	300m				5.0	30ps	Ns	Si	150S	T052	DJ	
2	2N5433		1.0n	40n∅	6.0n∅	30n	300m				7.0	30ps	Ns	Si	150S	T052	DJ	
3	2N5434		1.0n	40n∅	6.0n∅	30n	300m				10	30ps	Ns	Si	150S	T052	DJ	
4#	111T2		1.0n	5.0n	4.0n	800m		10 ∅	150m∅	120 ∇	3.0		N-PE	Si	175J	R100	AB	
5▼	E108		1.0nt	3.0n	5.0n∅†	25nt	250m				8.0 \$		Ns	Si	125A	X45	DB	
6▼	E109		1.0nt	3.0n	5.0n∅†	25nt	250m				12 \$		Ns	Si	125A	X45	DB	
7▼	E110		1.0nt	3.0n	5.0n∅†	25nt	250m				18 \$		Ns	Si	125A	X45	DB	
8	NS1110		1.0n	5.0n	4.0n	500m							N	Si	175J	TO18	A∅	
9	NS1111		1.0n	5.0n	4.0n	500m							N	Si	175J	TO18	A∅	
10	2N4856		3.0n	6.0n∅	25n∅	20n∅	360m				25 \$	18ps∇	N∇	Si	200S	TO18	DB∅	
11	2N4856A		3.0n	5.0n∅	25n∅	20n∅	360m				25 \$	10ps	N∇	Si	200S	TO18	DB∅	
12	2N4859		3.0n	6.0n∅	25n∅	20n∅	360m				25 \$	18ps∇	N∇	Si	200S	TO18	DB∅	
13	2N4859A		3.0n	5.0n∅	25n∅	20n∅	360m				25 \$	10ps	N∇	Si	200S	TO18	DB∅	
14#	BSV38		3.0n	6.0n	25n∅	300m∅					25 \$	18ps∇	NPEs	Si	150S	u51	GE	
15#	BSV38P		3.0n	6.0n	25n∅	150m∅					25 \$	18ps∇	NPEs	Si	150S	u17c	GE	
16#	BSV78		3.0n	5.0n	50n∅	350m					25 \$		Ns	Si	200J	TO18	DB∅	
17	TIS73		3.0n	6.0n∅	25n∅	360m					5.0 \$		N-PEs	Si	150S	X55	DB	
18	2N4857		4.0n	6.0n∅	50n∅	360m					40 \$	18ps∇	N∇	Si	200S	TO18	DB∅	
19	2N4857A		4.0n	6.0n∅	40n∅	360m					40 \$	10ps	N∇	Si	200S	TO18	DB∅	
20	2N4860		4.0n	6.0n∅	50n∅	360m					40 \$	18ps∇	N∇	Si	200S	TO18	DB∅	
21	2N4860A		4.0n	6.0n∅	40n∅	360m					40 \$	10ps	N∇	Si	200S	TO18	DB∅	
22▼	E111		4.0nt	10n∅	15n∅†	10nt	250m				30 \$		Ns	Si	125A	X45	DB	
23▼	E112		4.0nt	10n∅	20n∅†	15nt	250m				50 \$		Ns	Si	125A	X45	DB	
24▼	E113		4.0nt	10n∅	35n∅†	20nt	250m				100 \$		Ns	Si	125A	X45	DB	
25	TIS74		4.0n	6.0n∅	50n∅	360m					40 \$		N-PEs	Si	150S	X55	DB	
26	2N4391		5.0n	15n∅	20n∅	15n	1.8 ∅				30 \$	14ps∇	Ns∇	Si	200S	TO18	DB∅	
27	2N4392		5.0n	15n∅	35n∅	20n	1.8 ∅				60 \$	14ps∇	Ns∇	Si	200S	TO18	DB∅	
28	2N4393		5.0n	15n∅	50n∅	30n	1.8 ∅				100 \$	14ps∇	Ns∇	Si	200S	TO18	DB∅	
29	2N4977		5.0n	5.0n	20n∅	1.8 ∅					15 \$	35ps	N	Si	200S	TO18	∅	
30	2N5555		5.0n	5.0n	10n	310m					150 \$	5ps∇	N	Si	150S	T092	DD	
31	2N5638		5.0n	5.0n	10m	310m					10ps		Ns∇	Si	150S	T092	DD	
32	2N5653		5.0n	5.0n	10m	310m					10ps		Ns∇	Si	150S	T092	DD	
33#	BSV79		5.0n	7.0n	50n∅	350m					40 \$		Ns	Si	200J	TO18	DB∅	
34	HSC4391		5.0n	15n∅	20n∅	15n	310m				30	14p	N-ES	Si	125S	TO106	DB	
35	HSC4392		5.0n	15n∅	35n∅	20n	310m				60	14p	N-ES	Si	125S	TO106	DB	
36	HSC4393		5.0n	15n∅	50n∅	30n	310m				100	14p	N-ES	Si	125S	TO106	DB	
37	HSC5638		5.0n	5.0n	10n	310m						10p	N-ES	Si	125S	TO106	DB	
38	LDF691		5.0n	15n∅	20n∅	15n	360m					16ps∇	Ns∇	Si	150J	u34	DB	
39	LDF692		5.0n	15n∅	35n∅	20n	360m					16ps∇	Ns∇	Si	150J	u34	DB	
40	3N167		6.0n	8.0n∅	12n∅	9.0n	225m				20 \$	35m∇	PMOS∇	Si	150S	T072	DM	
41	3N168		6.0n	8.0n∅	12n∅	9.0n	225m				40 \$	35ps∇	PMOS∇	Si	150S	T072	DM	
42	MFE2007		6.0n	10n	65n	1.8 ∅						30ps∇	N∇	Si	175J	TO18	DB∅	
43	MFE2008		6.0n	10n	40n	1.8 ∅						30ps∇	N∇	Si	175J	TO18	DB∅	
44	MFE2009		6.0n	10n	25n	1.8 ∅						30ps∇	N∇	Si	175J	TO18	DB∅	
45	MFE2010		6.0n	10n	75n	1.8 ∅						50ps∇	N∇	Si	175J	TO18	DB∅	
46	MFE2011		6.0n	10n	45n	1.8 ∅						50ps∇	N∇	Si	175J	TO18	DB∅	
47	MFE2012		6.0n	10n	25n	1.8 ∅						10ps	N∇	Si	200S	TO18	DB	
48	2N4858A		8.0n	8.0n∅	80n∅	1.8 ∅					60 \$	10ps	N∇	Si	200S	TO18	DB	
49	2N4861A		8.0n	8.0n∅	80n∅	1.8 ∅					60 \$	10ps	N∇	Si	150S	T092	DD	
50	2N5639		8.0n	10n	20n	310m						10ps	Ns∇	Si	150S	T092	DD	
51	2N5654		8.0n	10n	20n	310m						10ps	Ns∇	Si	150S	T092	DD	
52	HSC5839		8.0n	10n	20n	310m						10p	N-ES	Si	125S	TO106	DB	
53	2N3970		10n	10n	30n∅	1.8					30 \$		N	Si	200S	TO18	DB∅	
54	JAN2N4091		10n	10n	40n∅	360m						16ps∇	N-∇	Si	175A	TO18	DB∅	
55	2N4094		10n	15n	40n∅	1.8 ∅					20 \$		N	Si	200S	TO18	DB∅	
56	2N4858		10n	10n	100n∅	360m					60 \$	18ps∇	N∇	Si	200S	TO18	DB∅	
57	2N4861		10n	10n	100n∅	360m					60 \$	18ps∇	N∇	Si	200S	TO18	DB∅	
58	2N4978		10n	50n	40n∅	1.8 ∅					20 \$	35ps	N	Si	200S	TO18	DB∅	
59	2N5114		10n	15n		15n	500m				75 \$	25ps∇	P∇	Si	200S	TO18	DA∅	
60	2N5640		10n	15n		30n	310m					10ps	Ns∇	Si	150S	T092	DD	
61	3N169		10n			15n	800m∅					5.0ps	N	Si	200S	T072	DR∅	
62	3N170		10n			15n	800m∅					5.0ps	N	Si	200S	T072	DR∅	
63	3N171		10n			15n	800m∅					5.0ps	N	Si	200S	T072	DR∅	
64#	BSV80		10n	10n	50m∅	350m					60 \$		Ns	Si	200J	TO18	DB∅	
65	HSC5840		10n	15n	30n	310m						10p	N-ES	Si	125S	TO106	DB	
66	MFE2006		10n	10n	40n∅	1.8 ∅						16ps∇	N∇	Si	175J	TO18	DB∅	
67	TIS75		10n	10n∅	100n∅	360m					60 \$		N-PEs	Si	120S	X55	DE	
68	U1897E		10n	15n	40m∅	300m					30 \$		Ns	Si	125J	R97b	DB	
69	D26B1		12n∅		10n∅	90m						4.0p∇	N-EP	Si	100J	u40b	DB	
70	D26B2		12n∅		13n	18n∅	90m					4.0p∇	N-EP	Si	100J	u40b	DB	
71	MMT76		13nt	24nt	125nt	11nt	225m					5.0p∇	N-AN∅	Si	135J	u43	C	
72	2N3971		15n	15n	60n∅	1.8					60 \$		N	Si	200S	TO18	DB∅	
73	JAN2N501A		18nt	25nt	140nt	10n	225m				5.0	3.0p∇	P	Ge	100S	R139	A	
74	MMT75		18nt	25nt	140nt	15nt	225m					5.0p∇	P-AN∅	Si	135J	u43	C	
75	JAN2N4092		20n	15n	60n∅	360m						16ps∇	N-∇	Si	175A	TO18	DB∅	
76	2N4082A		20n	15n	60n∅	1.8 ∅					50 \$		N	Si	200S	TO18	DB∅	
77	2N4095		20n	15n	60n∅	1.8 ∅					40 \$		N	Si	200S	TO18	DB∅	
78	2N4445		20n	15n	20n	15n	400m					70ps∇	N	Si	200S	TO46	DD∅	
79	2N4445		20n	15n	20n	15n	400m					70ps∇	N	Si	200S	TO46	DD∅	
80	2N4447		20n	15n	20n	15n	400m					70ps∇	N	Si	200S	TO46	DD∅	
81	2N4448		20n	15n	20n	15n	400m					70ps∇	N	Si	200S	TO46	DD∅	
82	2N5018		20n	15n	50n∅	1.8 ∅					75 \$		P	Si	200J	TO18	DA∅	
83	2N5115		20n	15n	30n	500m					100 \$	25ps∇	P∇	Si	200S	TO18	DA∅	
84	2N5158		20n	15n	20n	15n	400m				10 \$	50ps	N	Si	200S	TO46	DD∅	
85	2N5159		20n	15n	20n	15n	400m				7.0 \$	50ps	N	Si	200S	TO46	DD∅	
86	MFE2005		20n	15n	60n∅	1.8 ∅						16ps∇	N∇	Si	175J	TO18	DB∅	
87	P1086E		20n	15n	50n∅	300m						45ps	P	Si	125J	R97b	DB	
88	U240		20n	15n∅	20n∅	15n	400m					70ps	Ns∇	Si	200S	T052	DB∅	
89	U241		20n	15n∅	20n∅	15n	400m					70ps	Ns∇	Si	200S	T052	DB∅	
90	U242		20n	15n∅	20n∅	15n	400m					70ps	Ns∇	Si	200S	T052	DB∅	
91	U243		20n	15n∅	20n∅	15n	400m					70ps	Ns∇	Si	200S			

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C E A O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	MEM402		30n	30n	180n	180n	600m				75 \$	30p	P	Si	200S	T033	DM	
2	MFE3020		30n	20n	50n	50n	600m	15			500 \$	7.0p	P*	Si	200S	L18a		
3	MFE3021		30n	20n	50n	50n	600m	15			250 \$	7.0p	P*	Si	175J	L18a		
4	2N994		35n		45n	200m	200m	.25	10m	140	18	6.0p	P	Ge	150S	T018	A	
5	3N176		35n	30n	55n	150n	225m				300 \$	5.0p	NMOS	Si	200S	T072	DR	
6	3N182		35n	35n	160n	180n	300m				60 \$	25p	PMOS	Si	200S	T072	DM	
7	CM697		35n	40n	35n	400m	1.8				15 \$		N-E	Si	200J	R135	DB	
8	2N3972		40n	40n	100n	80n	360m				100 \$	16p	N	Si	200S	T018	DB	
9	JAN2N4093		40n			80n	1.8						N	Si	175A	T018	DB	
10	2N4093A		40n	20n		80n	1.8				80 \$	16p	N	Si	200S	T018	DB	
11	2N5189		40n			70n	1.0				1.0		N	Si	200S	R81	A	
12	2SC1072		40n		50n	60n	800m	1.0	1.0	500m	35	12p	N-PE	Si	175J	R81e	A	
13	2SC1072A		40n		50n	60n	800m	1.0	1.0	500m	35	12p	N-PE	Si	175J	R81e	A	
14	3N177		40n	35n	60n	150n	225m				500 \$	7.0p	NMOS	Si	200S	T072	DR	
15	3N183		40n	40n	160n	180n	300m				75 \$	30p	PMOS	Si	200S	T072	DM	
16	BFV51		40n		50n	150m	10	10	500m	20	3.3	8.0p	NPE	Si	200J	u34b	P	
17	BFV53		40n		50n	150m	10	10	500m	20	3.3	8.0p	NPE	Si	200J	u34b	P	
18	MFE2004		40n	20n		80n	1.8					16p	N	Si	175J	T018	DB	
19	U1899E		40n	20n		80n	300m				80 \$	16p	N	Si	125J	R97b	DB	
20	2SC913		42n		25n	38n	300m	1.0	30m	45	1	5.0p	N-PE	Si	175J	T018	A	
21	2SC915		42n		25n	38n	300m	1.0	30m	45	1	5.0p	N-PE	Si	175J	T018	A	
22	2SC1071		45n		27n	42n	300m	1.0	30m	40	1	5.0p	N-PE	Si	175J	T018	A	
23	3N184		45n	35n	55n	150n	300m					9.0p	PMOS	Si	200S	T072	DM	
24	3N174		50n		100n	360m	15			400u		4.0p	P	Si	200S	T072	DM	
25	3N185		50n	40n	60n	150n	300m	1.0	500m	50	750m	10p	PMOS	Si	200S	T072	DM	
26	BSV69		50n		60n	800m	1.0	500m					N-PE	Si	200J	T039	A	
27	CMX740		50n		75n	400m					2.5 \$		N	Si	200J	T046	DD	
28	3N186		55n	45n	65n	150n	300m					11p	PMOS	Si	200S	T072	DM	
29	JAN2N560		60n		250n	500m	25m*	5.0	250m	100m	200	20	N	Si	200J	T05	A	
30	2N1499		60n			25m*					55	8.0p	P-AD	Ge	85S	T09	A	
31	2N4353		60n	60n	120n	180n	250m						P	Si	125S	T072	DM	
32	2SC916		60n		200n	2.0		1.0	400m	40	1	38p	N-PE	Si	175J	T08	A	
33	2N3867		65n	35n	325n	75n	6.0	3.0	2.5	25	1.0	120p	P	Si	200S	T05	A	
34	2N3868		65n	35n	325n	75n	6.0	3.0	2.5	20	1.0	120p	P	Si	200S	T05	A	
35	2N4351		65n	45n	160n	300m					300 \$	5p	N	Si	200S	T072	DR	
36	2N4352		65n	45n	160n	300m					600 \$	5p	N	Si	200S	T072	DR	
37	3N155		65n	45n		100n	300m				600 \$	5.0p	P	Si	175J	T072	DR	
38	3N155A		65n			100n	300m				300 \$	5.0p	P	Si	175J	T072	DG	
39	3N156		65n	45n		100n	300m				600 \$	5.0p	P	Si	175J	T072	DR	
40	3N156A		65n			100n	300m				300 \$	5.0p	P	Si	175J	T072	DG	
41	MEM200		65n	45n	100n	100n	225m				200 \$	5.0p	N	Si	200S	T022	DR	
42	MEM201		65n	45n	100n	100n	225m				300 \$	5.0p	N	Si	200S	T022	DR	
43	MEM202		65n	45n	100n	100n	225m				500 \$	7.0p	N	Si	200S	T022	DR	
44	MEM562		65n		160n	650m	10	2.0m	1.0	300 \$	3.0	3.0	N-MOS	Si	125J	T072	DR	
45	JAN2N1646		70n		100n	150m	500m	10m	15	60	5.0p	5.0p	P	Ge	100S	X25	A	
46	JAN2N695		75n		100n	150m	300m	10m	25	20	5.0p	5.0p	P	Ge	100J	T017	G	
47	JAN2N705		75n		100n	150m	300m	10m	10	1	5.0p	5.0p	P	Ge	100J	T018	Ø	
48	2N710A		75n		50n	75n	300m	10m	25	50	8.0p	8.0p	P	Ge	100S	T018	A	
49	2N782		75n		35n	75n	300m	.25	10m	20	20		P	Ge	100J	T018	A	
50	2N5019		75n	15n	100n	1.8					150 \$	45p	P	Si	200J	T018	DA	
51	MEM100		75n	55n	150n	150n	300m				150 \$	9.0p	P	Si	200S	T072	DM	
52	MEM101		75n	55n	150n	150n	300m				175 \$	10p	P	Si	200S	T072	DM	
53	MEM102		75n	55n	150n	150n	300m				200 \$	11p	P	Si	200S	T072	DM	
54	P1087E		75n	15n	100n	300m						45p	P	Si	125J	R97b	DB	
55	2SC914		80n		60n	80n	300m	1.0	30m	45	1	5.0p	N-PE	Si	175J	T018	A	
56	2N4305		90n	50n	300n	100n	1.5	2.0	5.0m	10	20	100p	N	Si	200J	T05	A	
57	2N4306		90n	50n	300n	100n	4.0	2.0	5.0m	10	20	100p	N	Si	200J	MT65	A	
58	2N4307		90n	50n	300n	100n	1.5	2.0	5.0m	10	20	100p	N	Si	200J	T05	A	
59	2N4308		90n	50n	300n	100n	4.0	2.0	5.0m	10	20	100p	N	Si	200C	MT65	A	
60	2N4309		90n	50n	300n	100n	1.5	2.0	5.0m	10	20	100p	N	Si	200J	T05	A	
61	2N4310		90n	50n	300n	100n	4.0	2.0	5.0m	10	20	100p	N	Si	200C	MT65	A	
62	2N4311		90n	50n	300n	100n	1.5	2.0	5.0m	10	20	100p	N	Si	200J	T05	A	
63	2N4312		90n	50n	300n	100n	4.0	2.0	5.0m	10	20	100p	N	Si	200C	MT65	A	
64	JAN2N1072		100n			300n	12	5.0	750m	20	1.5	55p	P	Si	150S	T038	A	
65	2N1450		100n		85n	85n	120m	1.0	10m	20	10		P-AD	Ge	85S	T09	A	
66	JAN2N1450M		100n	100n		85n	120m	1.0	10m	20	10		P-AD	Ge	100S	R81a	A	
67	2N3966		100n	20n		100n	320m				220 \$	6.0p	N	Si	200S	T072	DH	
68	3N147		100n	20n		150n	1.7				850 \$		P	Si	175J	L18a		
69	3N148		100n	20n		150n	1.7				850 \$		P	Si	175J	L18a		
70	3N149		100n	20n		150n	1.3				400 \$		P	Si	175J	T072	DM	
71	3N150		100n	20n		150n	1.3				400 \$		P	Si	175J	T072	DM	
72	2N3342		150n		80n	200n	250m	1.0	5.0m	30	20	10p	P	Si	175S	T05	A	
73	2N4256		180n		3.5u	200m		.20	10m	60	20		P	Si	125	T098	A	
74	3N145		200n	10n		400n	1.0				2.0k		P	Si	175J	T072	DM	
75	3N146		200n	10n		400n	1.0				2.0k		P	Si	175J	T072	DM	
76	2N1729		300n			600n	150m	.35	200m	20	3.0	20p	P	Ge	85J	T05	A	
77	2N1730		300n			600n	150m	.35	200m	20	3.0	20p	P	Ge	85J	T05	A	
78	2N447B		400n		700n	150m		.25	200m	80			N	Ge	100S	T05	A	
79	3SJ11		400n			400n	100m						P-MOS	Si	150S	T072	Du	
80	2N545		500n			800n	5	6.0	500m	80	10	100p	N	Si	200S	T05	A	
81	JAN2N545		500n			500n	600m	6.0	500m	15	10	100p	N	Si	175S	T05	A	
82	2N546		500n			800n	5	6.0	500m	80	10	100p	N	Si	200S	T05	A	
83	2N672		500n		400n	600n	300m						N	Si	85J	R2	A	
84	JAN2N1173		500n			2.0u	250m	1.0	10m	200	7.5	25p	P	Ge	100S	T029	A	
85	JAN2N1174		500n			2.0u	250m	1.0	10m	200	7.5	25p	P	Ge	100S	T029	A	
86	2N357A		800n		600n	800n	150m	.25	200m	75	10		N	Ge	100S	T05	A	
87	2N358A		800n		600n	800n	150m	.25	300m	75	67		N	Ge	100S	T05	A	
88	JAN2N358A		800n		600n	800n	150m	250m	1.0m	60	20		N	Ge	100S	R81a	A	
89	JAN2N1853		800n		900n	150m		2.0	200u	400	33		P	Ge	85S	T05	A	
90	DA3F3		1200n		30u	187		1.0	1.0	25			P	Ge	100J	MT7	A	
91	2N356A		2100n		500n	1.2u	150m	.25	1.0m	50	2.0		N	Ge	100S			

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/α TO200 Ser.	L E A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	154-04		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
2	154-06		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
3	154-08		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
4	154-10		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
5	154-12		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
6	154-14		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
7	154-16		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
8	154-18		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
9	154-20		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
10	154-22		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
11	154-24		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
12	154-26		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
13	154-28		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
14	154-30		3.0u∅			6.0u∅	200 ∅	4.0 ∅	1.5 ∅	25 ∆	833m							
15	JAN2N528		400n		3.0u	2.0u	85 ∅	2.0 ∅	3.0m∅	20 ∆	80m			P	Ge	110J	MD6f	C∅
16	B170018		400n		300n	500n	60 ∅	4.0 ∅	1.0m∅	30	400m			N-DM	Si	200J	TO3	C∅
17	B170021		400n		300n	500n	60 ∅	4.0 ∅	1.0m∅	30	400m			N-DM	Si	200J	TO3	C∅
18	B170024		400n		300n	500n	60 ∅	4.0 ∅	1.0m∅	30	400m			N-DM	Si	200J	TO3	C∅
19	2N2739		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT1	B
20	2N2740		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT1	B
21	2N2741		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT1	B
22	2N2742		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT1	B
23	2N2743		6.0u∅			12u∅	200 ∅	4.0 ∅	10 ∅	10 ∆				N	Si	175C	MT1b	B
24	2N2744		6.0u∅			12u∅	200 ∅	4.0 ∅	10 ∅	10 ∆				N	Si	175C	MT1b	B
25	2N2745		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT1	B
26	2N2746		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT1	B
27	2N2747		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT1	B
28	2N2748		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT1	B
29	2N2757		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT33	A
30	2N2758		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT33	A
31	2N2759		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT33	A
32	2N2760		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT33	A
33	2N2761		600n∅		12u∅		.20m∅	12 ∅	2.5 ∅	25 ∆	15			N	Si	175C	MT33	A
34	2N2762		6.0u∅			12u∅	200 ∅	4.0 ∅	10 ∅	10 ∆				N	Si	175C	MT33	A
35	2N2763		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT33	A
36	2N2764		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT33	A
37	2N2765		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT33	A
38	2N2766		600n∅		12u∅		.20m∅	12 ∅	3.7 ∅	20 ∆	10			N	Si	175C	MT33	A
39	2N2767		6.0u∅			12u∅	200 ∅	4.0 ∅	15 ∅	10 ∆				N	Si	175C	MT33	A
40	2N2768		6.0u∅			12u∅	200 ∅	4.0 ∅	15 ∅	10 ∆				N	Si	175C	MT33	A
41	2N5926		6.0u		4.0u	6.0u	200 ∅	2.0 ∅	50 ∅	10 ∆#				N	Si	200J	TO63	A∅
42	2N5927		6.0u		4.0u	6.0u	200 ∅	2.0 ∅	70 ∅	10 ∆#				N	Si	200J	TO114	A∅
43	163-04		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
44	163-06		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
45	163-08		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
46	163-10		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
47	163-12		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
48	163-14		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
49	163-16		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
50	163-18		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
51	163-22		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
52	163-24		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
53	163-26		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
54	163-28		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
55	163-30		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	15 ∆	220m			N	Si	175J	MT33	A∅
56	164-04		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
57	164-06		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
58	164-08		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
59	164-10		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
60	164-12		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
61	164-14		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
62	164-16		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
63	164-18		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
64	164-20		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
65	164-22		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
66	164-24		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
67	164-26		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
68	164-28		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
69	164-30		6.0u∅			12u∅	200 ∅	4.0 ∅	5.0 ∅	25 ∆	200m			N	Si	175J	MT33	A∅
70	B170019		800n		400n	1.0u	90 ∅	4.0 ∅	3.0m∅	20	270m			N-DM	Si	200J	TO3	C∅
71	B170022		800n		400n	1.0u	90 ∅	4.0 ∅	3.0m∅	20	270m			N-DM	Si	200J	TO3	C∅
72	B170025		800n		400n	1.0u	90 ∅	4.0 ∅	3.0m∅	20	270m			N-DM	Si	200J	TO3	C∅
73	2N2751		700n∅		13u∅		.20m∅	12 ∅	5.0 ∅	20 ∆	07			N	Si	175C	MT1	B
74	2N2752		700n∅		13u∅		.20m∅	12 ∅	5.0 ∅	20 ∆	07			N	Si	175C	MT1	B
75	2N2753		700n∅		13u∅		.20m∅	12 ∅	5.0 ∅	20 ∆	07			N	Si	175C	MT1	B
76	2N2754		700n∅		13u∅		.20m∅	12 ∅	5.0 ∅	20 ∆	07			N	Si	175C	MT1	B
77	2N2755		7.0u∅			13u∅	200 ∅	4.0 ∅	20 ∅	10 ∆				N	Si	175C	MT1b	B
78	2N2756		7.0u∅			13u∅	200 ∅	4.0 ∅	20 ∅	10 ∆				N	Si	175C	MT1b	B
79	2N2769		700n∅		13u∅		.20m∅	12 ∅	5 ∅	20 ∆	07			N	Si	175C	MT33	A
80	2N2770		700n∅		13u∅		.20m∅	12 ∅	5 ∅	20 ∆	07			N	Si	175C	MT33	A
81	2N2771		700n∅		13u∅		.20m∅	12 ∅	5 ∅	20 ∆	07			N	Si	175C	MT33	A
82	2N2772		700n∅		13u∅		.20m∅	12 ∅	5 ∅	20 ∆	07			N	Si	175C	MT33	A
83	2N2773		7.0u∅			13u∅	200 ∅	4.0 ∅	20 ∅	10 ∆				N	Si	175C	MT33	A
84	2N2774		7.0u∅			13u∅	200 ∅	4.0 ∅	20 ∅	10 ∆				N	Si	175C	MT	

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ie (A)	hFE								
1	2N5438		12u		10u	8.0u	120	2.0	25	40 Δ			P	Ge	110J	T03	C	
2	2N5439		12u		10u	8.0u	120	2.0	25	40 Δ			P	Ge	110J	T03	C	
3	2N5440		12u		10u	8.0u	120	2.0	25	40 Δ			P	Ge	110J	T03	C	
4	2N637		15.0u			35u	25	5.0	3	30 Δ			P	Ge	100J	T03	C	
5	2N637A		15.0u			35u	25	5.0	3	30 Δ			P	Ge	100J	T03	C	
6	2N637B		15.0u			35u	25	5.0	3	30 Δ			P	Ge	100J	T03	C	
7	2N638		15.0u			35u	25	5.0	3	20 Δ			P	Ge	100J	T03	C	
8	2N638A		15.0u			35u	25	5.0	3	20 Δ			P	Ge	100J	T03	C	
9	2N638B		15.0u			35u	25	5.0	3	20 Δ			P	Ge	100J	T03	C	
10	2N639		15.0u			35u	25	5.0	3	15 Δ			P	Ge	100J	T03	C	
11	2N639A		15.0u			35u	25	5.0	3	15 Δ			P	Ge	100J	T03	C	
12	2N639B		15.0u			35u	25	5.0	3	15 Δ			P	Ge	100J	T03	C	
13▼	2N5575		15u			15u	150 \$	4.0	60	10 Δ #			N	Si	175J	MD41	C	
14▼	2N5576		15u			15u	150 \$	4.0	60	10 Δ #			N	Si	175J	MD37	C	
15▼	2N5577		15u			15u	150 \$	4.0	60	10 Δ #			N	Si	175J	MD38	C	
16	DTG2400M		18u		12u	18u	85	2.0	25	15 Δ			P	Ge	110J	T03	C	
17	2N1809		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT14	C	
18	2N1810		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT14	C	
19	2N1811		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT14	C	
20	2N1812		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT14	C	
21	2N1813		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT14	C	
22	2N1814		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT14	C	
23	2N1816		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT14	C	
24	2N1817		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT14	C	
25	2N1818		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT14	C	
26	2N1819		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT14	C	
27	2N1820		20u			25u	250m	4.0	15	10 Δ	100m		N	Si	175J	MT14	C	
28	2N1823		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT14	C	
29	2N1824		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT14	C	
30	2N1825		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT14	C	
31	2N1826		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT14	C	
32	2N1827		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	TO49	C	
33	2N1830		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT14	C	
34	2N1831		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT14	C	
35	2N1832		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT14	C	
36	2N1833		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT14	C	
37	2N2109		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT17	F	
38	2N2110		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT17	F	
39	2N2111		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT17	F	
40	2N2112		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT17	F	
41	2N2113		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT17	F	
42	2N2114		20u			25u	250	4.0	10	10 Δ	150m		N	Si	175J	MT17	F	
43	2N2116		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT17	F	
44	2N2117		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT17	F	
45	2N2118		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT17	F	
46	2N2119		20u			25u	250	4.0	15	10 Δ	100m		N	Si	175J	MT17	F	
47	2N2120		20u			25u	250m	4.0	15	10 Δ	100m		N	Si	175J	MT17	F	
48	2N2123		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT17	F	
49	2N2124		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT17	F	
50	2N2125		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT17	F	
51	2N2126		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	MT17	F	
52	2N2127		20u			25u	250	4.0	20	10 Δ	75m		N	Si	175J	TO83	C	
53	2N2130		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT17	F	
54	2N2131		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT17	F	
55	2N2132		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT17	F	
56	2N2133		20u			25u	250	4.0	25	10 Δ	60m		N	Si	175J	MT17	F	
57	2N5692		20u		8.0u	15u	120	2.0	40	10 Δ			P	Ge	110J			
58	2N5693		20u		8.0u	15u	120	2.0	40	10 Δ			P	Ge	110J			
59	2N5694		20u		8.0u	15u	120	2.0	40	10 Δ			P	Ge	110J			
60	2N5695		20u		8.0u	15u	120	2.0	40	10 Δ			P	Ge	110J			
61	2N5696		20u		8.0u	15u	120	2.0	40	10 Δ			P	Ge	110J			
62	MP900		25u		5.0u	15u	250	2.0	70	20 Δ	3.0m		P-AN	Si	110J	X71	A	
63	MP901		25u		5.0u	15u	250	2.0	70	20 Δ	3.0m		P-AN	Si	110J	X71	A	
64	MP902		25u		5.0u	15u	250	2.0	70	20 Δ	3.0m		P-AN	Si	110J	X71	A	
65	B113003		30u		6.0u	20u	3.5	2.0	10	100	30m		P-DA	Ge	110	TO3	C	
66	B113004		30u		6.0u	20u	3.5	2.0	10	100	30m		P-DA	Ge	110	TO3	C	
67	B113005		30u		6.0u	20u	3.5	2.0	10	100	30m		P-DA	Ge	110	TO3	C	
68	163-20		66.0u			12u	200	4.0	5.0	15 Δ	220m		N	Si	175J	MT33	A	
69#	151-06		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
70#	151-08		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
71#	151-10		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
72#	151-12		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
73#	151-14		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
74#	151-16		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
75#	151-18		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
76#	151-20		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
77#	151-22		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
78#	151-24		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
79#	151-26		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
80#	151-28		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
81#	151-30		7.0m			14m	100	4.0	1.5m	11 Δ	870m		N-F	Si	150J	MT1		
82#	152-04		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
83#	152-06		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
84#	152-08		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
85#	152-10		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
86#	152-12		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
87#	152-14		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
88#	152-16		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
89#	152-18		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
90#	152-20		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
91#	152-22		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
92#	152-24		7.0m			14m	100	4.0	1.5m	18 Δ	870m		N-F	Si	150J	MT1		
93#	152-26		7.0m			14m	100	4.0	1.5m	18 Δ	830m		N-F	Si	150J	MT1		
94#																		



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP. (°C)	DWG # Y200 s/a TO200 Ser.	L E A D E
								Vcb (V)	Ic (A)	hFE								
1*	2N4280	2.0kTΔ	20u∅			100u∅	170 ∅	2.0 ∅	15 ∅	60 Δ#			P	Ge	110J	TO3	C∅	
2*	2N4281	2.0kTΔ	20u∅			100u∅	170 ∅	2.0 ∅	15 ∅	80 Δ#			P	Ge	110J	TO3	C∅	
3*	2N4282	2.0kTΔ	20u∅			100u∅	170 ∅	2.0 ∅	15 ∅	60 Δ#			P	Ge	110J	TO3	C∅	
4*	2N4283	2.0kTΔ	20u∅			100u∅	170 ∅	2.0 ∅	15 ∅	80 Δ#			P	Ge	110J	TO3	C∅	
5	JAN2N1553A	3.0kTΔ	10u	2.0u	5.0u	30u	90 ∅	2.0 ∅	5.0 ∅	30 Δ	700m		P	Ge	100J	TO3	C∅	
6	JAN2N1554A	3.0kTΔ	10u	2.0u	5.0u	30u	90 ∅	2.0 ∅	5.0 ∅	30 Δ	700m		P	Ge	100J	TO3	C∅	
7	JAN2N1555A	3.0kTΔ	10u	2.0u	5.0u	30u	90 ∅	2.0 ∅	5.0 ∅	30 Δ	700m		P	Ge	100J	TO3	C∅	
8	JAN2N1556A	3.0kTΔ	10u	2.0u	5.0u	30u	90 ∅	2.0 ∅	5.0 ∅	30 Δ	700m		P	Ge	100J	TO3	C∅	
9	2N2728	3.0kTΔ	25u		20u	15u	170 ∅	2.0 ∅	20u∅	40 Δ	2.0m		P	Ge	110C	TO36	C∅	
10	2N463	4.0kTΔ	4.6u		4.0u	1.5u	150m	2.0 ∅	2.0 ∅	27	80m	310p	P-A	Si	100	TO32	A∅	
11	JAN2N2079A	5.0kTΔ	25u		30u	25u	50 ∅	2.0 ∅	12m∅	12 Δ	60m		P	Ge	100S	TO36	C∅	
12	2N1358A	.005M†	30.0u			30u	45 ∅	2.0 ∅	1.2 ∅	40 Δ	.06		P	Ge	100C	TO36	A∅	
13	CDT1319	.006M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	40	.30		P-A	Ge	100J	TO3	C∅	
14	CDT1320	.006M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	40	.30		P-A	Ge	100J	TO3	C∅	
15	CDT1321	.006M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	40	.30		P-A	Ge	100J	TO3	C∅	
16	CDT1322	.006M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	40	.30		P-A	Ge	100J	TO3	C∅	
17	CDT1310	.008M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	80	.30		P-A	Ge	100J	TO3	C∅	
18	CDT1311	.008M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	80	.30		P-A	Ge	100J	TO3	C∅	
19	CDT1312	.008M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	80	.30		P-A	Ge	100J	TO3	C∅	
20	CDT1313	.008M†	3500n		6.5u	2.5u	45m∅	2.0 ∅	2.0m	80	.30		P-A	Ge	100J	TO3	C∅	
21#	BDY11	10k†	4000n†	250n†	1.5u†	3.0u†	150 ∅	2.0 ∅	200m∅	20 Δ	350m		N-D	Si	175J	TO3	C∅	
22#	BDY11	10k†	4000n†	250n†	1.5u†	3.0u†	150 ∅	2.0 ∅	200m∅	20 Δ	350m		N-D	Si	175J	TO3	C∅	
23	JAN2N1549A	10k†	8.0u	2.0u	3.0u	6.0u	90 ∅	2.0 ∅	5.0 ∅	15 Δ	100m		P	Ge	100J	TO3	C∅	
24	JAN2N1550A	10k†	8.0u	2.0u	3.0u	6.0u	90 ∅	2.0 ∅	5.0 ∅	15 Δ	100m		P	Ge	100J	TO3	C∅	
25	JAN2N1551A	10k†	8.0u	2.0u	3.0u	6.0u	90 ∅	2.0 ∅	5.0 ∅	15 Δ	100m		P	Ge	100J	TO3	C∅	
26	JAN2N1552A	10k†	8.0u	2.0u	3.0u	6.0u	90 ∅	2.0 ∅	5.0 ∅	15 Δ	100m		P	Ge	100J	TO3	C∅	
27	2N1159	.01M†	10.9u			10u	20 ∅	2.0 ∅	1	150 ∇	.30		P	Ge	95J	TO3	C∅	
28	2N1160	.01M†	10.9u			10u	20 ∅	2.0 ∅	2	100 ∇	.20		P	Ge	95J	TO3	C∅	
29	2N1100	.01M†	15.0u			15u	20 ∅	2.0 ∅	12	20	.06		P	Ge	95J	TO36	C∅	
30	3N46	.12k†	6000n			1.2u	75 ∅	2.0 ∅	10m	27			P-A\$	Ge	100J	TO15	GB	
31	CST1773	.015M†	2500n		300n	400n	28 ∅	2.0 ∅	500m∅	25 Δ	.50		P	Ge	100	MS7		
32	CST1773A	.015M†	2500n		300n	400n	28 ∅	2.0 ∅	500m∅	25 Δ	.50		P	Ge	100	MS7		
33	CST1773B	.015M†	2500n		300n	400n	28 ∅	2.0 ∅	500m∅	25 Δ	.50		P	Ge	100	MS7		
34	3N45	16.8k†	3.0n			8.0u	75 ∅	2.0 ∅	5.0 ∅	10 Δ	.33		P-A\$	Ge	100J	TO15	GB	
35	2N3429	20k†	4000n		4.0u	8.0u	150 ∅	2.0 ∅	5.0 ∅	10 Δ	200m		N	Si	175J	MT52	BB	
36	2N3430	20k†	4000n		4.0u	8.0u	150 ∅	2.0 ∅	5.0 ∅	10 Δ	200m		N	Si	175J	MT52	BB	
37	2N3431	20k†	4000n		4.0u	8.0u	150 ∅	2.0 ∅	5.0 ∅	10 Δ	200m		N	Si	175J	MT52	BB	
38	2N3432	20k†	4000n		4.0u	8.0u	150 ∅	2.0 ∅	5.0 ∅	10 Δ	200m		N	Si	175J	MT52	BB	
39	2N3433	20k†	4000n		4.0u	8.0u	150 ∅	2.0 ∅	5.0 ∅	10 Δ	200m		N	Si	175J	MT52	BB	
40	2N3434	20k†	4000n		4.0u	8.0u	150 ∅	2.0 ∅	5.0 ∅	10 Δ	200m		N	Si	175J	MT52	BB	
41	2N1015	.02M†	6000n∅		2.0u∅	700m∅	70 ∅	4.0 ∅	2	10 Δ			N	Si	150J	MT1	BB	
42	2N1015A	.02M†	6000n∅		2.0u∅	700m∅	70 ∅	4.0 ∅	2	10 Δ			N	Si	150J	MT1	BB	
43	2N1015B	.02M†	6000n∅		2.0u∅	700m∅	70 ∅	4.0 ∅	2	10 Δ			N	Si	150J	MT1	BB	
44	2N1015C	.02M†	6000n∅		2.0u∅	700m∅	70 ∅	4.0 ∅	2	10 Δ			N	Si	150J	MT1	BB	
45	2N1015D	.02M†	6000n∅		2.0u∅	700m∅	70 ∅	4.0 ∅	2	10 Δ			N	Si	150J	MT1	BB	
46	2N1015E	.02M†	6000n∅		2.0u∅	700m∅	70 ∅	4.0 ∅	2	10 Δ			N	Si	150J	MT1	BB	
47	2N1015F	.02M†	6000n∅		2.0u∅	700m∅	70 ∅	4.0 ∅	2	10 Δ			N	Si	150J	MT1	BB	
48	2N1016	.02M†	6000n∅		10u∅	700m∅	70 ∅	4.0 ∅	5	10 Δ			N	Si	150J	MT1	BB	
49	2N1016A	.02M†	6000n∅		10u∅	700m∅	70 ∅	4.0 ∅	5	10 Δ			N	Si	150J	MT1	BB	
50	2N1016B	.02M†	6000n∅		10u∅	700m∅	70 ∅	4.0 ∅	5	10 Δ			N	Si	150J	MT1	BB	
51	2N1016C	.02M†	6000n∅		10u∅	700m∅	70 ∅	4.0 ∅	5	10 Δ			N	Si	150J	MT1	BB	
52	2N1016D	.02M†	6000n∅		10u∅	700m∅	70 ∅	4.0 ∅	5	10 Δ			N	Si	150J	MT1	BB	
53	2N1016E	.02M†	6000n∅		10u∅	700m∅	70 ∅	4.0 ∅	5	10 Δ			N	Si	150J	MT1	BB	
54	2N1016F	.02M†	6000n∅		10u∅	700m∅	70 ∅	4.0 ∅	5	10 Δ			N	Si	150J	MT1	BB	
55#	DT1510	.25k	1000n	300n	4.5u	1.0u	800m	6.0 ∅	300m∅	25	7.0		N	Si	150S	TO5		
56#	DT1511	.25k	1000n	300n	4.5u	1.0u	800m	6.0 ∅	300m∅	25	7.0		N	Si	150S	TO5		
57#	DT1512	.25k	1000n	300n	4.5u	1.0u	800m	6.0 ∅	300m∅	25	7.0		N	Si	150S	TO5		
58	2N2580	.03M†	6000n		6.0u	5.0u	150 ∅	5.0 ∅	5.0 ∅	10 Δ	.14		N	Si	150C	TO36	C∅	
59	2N2581	.03M†	6000n		6.0u	5.0u	150 ∅	5.0 ∅	5.0 ∅	25 Δ	.10		N	Si	150C	TO36	C∅	
60	2N2582	.03M†	6000n		6.0u	5.0u	150 ∅	5.0 ∅	5.0 ∅	10 Δ	.14		N	Si	150C	TO36	C∅	
61	2N2583	.03M†	6000n		6.0u	5.0u	150 ∅	5.0 ∅	5.0 ∅	10 Δ	.10		N	Si	150C	TO36	C∅	
62	2N2584	30k†	6.0u		6.0u	5.0u	150 ∅	5.0 ∅	5.0 ∅	10 Δ	.14		N	Si	150C	TO36	C∅	
63	2N2585	30k†	6.0u		6.0u	5.0u	150 ∅	5.0 ∅	10m	10 Δ	1.0		N	Si	150C	TO36	C∅	
64	2N3079	.03M†	6000n		6.0u	5.0u	150 ∅	5.0 ∅	5.0 ∅	10 Δ	.14		N	Si	150C	TO36	C∅	
65	2N3080	.03M†	6000n		6.0u	5.0u	150 ∅	5.0 ∅	5.0 ∅	10 Δ	.14		N	Si	150C	TO36	C∅	
66	2N3902	40kΔ	800n		900n	100 ∅	800m	5.0 ∅	1.0 ∅	30 Δ	1.0		N	Si	150J	TO3	C∅	
67	2N1358	.10M	15n∅		15n∅		800m	2.0 ∅	5.0 ∅	25 Δ	.06		P	Ge	95J	TO36	C∅	
68	2N5155	150kΔ	18u		18u		60 ∅	2.0 ∅	8.0 ∅	25 Δ	.36m		P	Ge	110J	TO3	C∅	
69	2N5156	15MΔ	20.0u		25u	40u	93 ∅	2.0 ∅	5	25 Δ	.10		P	Ge	100J	TO3	C∅	
70	2N456	200k	26u				1.5 ∅	500 ∅	30		200m		P-A	Ge	95J	TO3	C∅	
71	2N457	200k	26u				1.5 ∅	500 ∅	30		200m		P-A	Ge	95J	TO3	C∅	
72	MP2000A	210k	9.0u∅†			17u∅†	106 ∅	2.0 ∅	8.0 ∅	25 Δ	24m		PADE	Ge	110J	TO3	C∅	
73	MP2100A	210k	9.0u∅†			17u∅†	106 ∅	2.0 ∅	8.0 ∅	25 Δ	24m		PADE	Ge	110J	TO3	C∅	
74	MP2200A	210k	9.0u∅†			17u∅†	106 ∅	2.0 ∅	8.0 ∅	25 Δ	24m		PADE	Ge	110J	TO3	C∅	
75	MP2300A	210k	9.0u∅†			17u∅†	106 ∅	2.0 ∅	8.0 ∅	25 Δ	24m		PADE	Ge	110J	TO3	C∅	
76	MP2400A	210k	9.0u∅†			17u∅†	106 ∅	2.0 ∅	8.0 ∅	25 Δ	24m		PADE	Ge	110J	TO3	C∅	
77	2N1042	250kΔ	480n†	200n†	290n†	2.1u†	1.1	1.0	3.0	60 ∇	250m	100p	P-A	Ge	100S	MT28		
78	2N1043	250kΔ	480n†	200n†	290n†	2.1u†	1.1	1.0	3.0	60 ∇	250m	100p	P-A	Ge	100S	MT28		
79	2N1044	250kΔ	480n†	200n†	290n†	2.1u†	1.1	1.0	3.0	60 ∇	250m	100p	P-A	Ge	100S	MT28		
80	2N1045	250kΔ	480n†	200n†	290n†	2.1u†	1.1	1.0	3.0	60 ∇	250m	100p	P-A	Ge	100S	MT28		
81	DTG2000	250k	9000n∅			10u∅		2.0 ∅	25 ∅	15 Δ	.36m		P	Ge	110J	TO41		
82	DTG2100	250k	9000n∅			10u∅												

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	1 fab	2 MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O A D E
								Vcb (V)	Ic (A)	hFE								
1#	NK1404	43M	16.0u		8.0u	20u	50 ∅	1.0 ∅	3 ∅	35 Δ	42	185p	P	Ge	90J	MT17d	C ∅	
2#	DTG1010	50M	6.0u		1.6u	700nt	106 ∅				160m		P	Ge	110J	TO3	C ∅	
3#	DTG1110	450k	6.0u		1.6u	700nt	106 ∅				160m		P	Si	110J	TO3	C ∅	
4#	DT1610	50M	1000n	300n	4.5u	1.0u	600m	6.0 ∅	200m ∅	10 ↑ Δ	7.0		N	Si	115S	TO5	C ∅	
5#	2N1069	500kΔ	1.8u	200n	800n	1.4u	25 ∅	4.0 ∅	1.5 ∅	20	2.0		N-D	Si	175A	TO3	C ∅	
6#	2N1070	500kΔ	1.8u	200n	800n	1.4u	25 ∅	4.0 ∅	1.5 ∅	20	670m		N-D	Si	175A	TO3	C ∅	
7#	2N3795	50MΔ	5.0u ∅			5u ∅	5.0m ∅	2.0 ∅	10m ∅	12 Δ	20		P	Si	200J	TO5	A ∅	
8#	1401-0415	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	150 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
9#	1401-0420	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	200 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
10#	1401-0425	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	250 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
11#	1401-0615	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	150 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
12#	1401-0620	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	200 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
13#	1401-0625	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	250 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
14#	1401-0815	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	150 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
15#	1401-0820	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	200 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
16#	1401-0825	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	250 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
17#	1401-1015	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	150 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
18#	1401-1020	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	200 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
19#	1401-1025	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	250 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
20#	1401-1215	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	150 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
21#	1401-1220	500kΔ	5000n ∅			10u ∅	625ms ∅	4.0 ∅	200u ∅	10 #			N-D	Si	200J	MT14a	C ∅	
22#	1401-1225	500kΔ	5000n ∅			10u ∅	625ms ∅	4.0 ∅	250u ∅	10 #			N-D	Si	200J	MT14a	C ∅	
23#	1401-1415	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	150 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
24#	1401-1420	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	200 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
25#	1401-1425	500kΔ	5.0u ∅			10u ∅	625 ∅	4.0 ∅	250 ∅	10 Δ #			N-D	Si	200J	MT14a	C ∅	
26#	2N3667	500kΔ	6.0u ∅			12u ∅	117 ∅	3.0 ∅	8.0 ∅	15 # Δ			N	Si	200J	TO3	C ∅	
27#	2N3863	50MΔ	8.0u ∅			16u ∅	117 ∅	2.0 ∅	3 ∅	30 Δ	33		N	Si	200C	TO3	C ∅	
28#	2N3864	50MΔ	8.0u ∅			16u ∅	117 ∅	2.0 ∅	3 ∅	30 Δ	33		N	Si	200C	TO3	C ∅	
29#	2N3865	50MΔ	8.0u ∅			16u ∅	117 ∅	2.0 ∅	3 ∅	30 Δ	33		N	Si	200C	TO3	C ∅	
30#	JAN2N1651	600kΔ	10u		6.0u	5.0u	100 ∅	2.0 ∅	10 ∅	35 Δ	26m		P	Ge	110J	MD27	C ∅	
31#	JAN2N1652	600kΔ	10u		6.0u	5.0u	100 ∅	2.0 ∅	10 ∅	35 Δ	26m		P	Ge	110J	MD27	C ∅	
32#	JAN2N1653	600kΔ	10u		6.0u	5.0u	100 ∅	2.0 ∅	10 ∅	35 Δ	26m		P	Ge	110J	MD27	C ∅	
33#	ACY41	600kΔ	12u	900n	10u	35u	260m	0.0	50m	105	1.0	50nt	P-A ∅	Ge	90J	TO5	s	
34#	2N2691A	60MΔ	700n		3.0u	3.0u	170 ∅	1.5 ∅	20m ∅	100 # Δ	0.3		P	Ge	110C	TO41	A ∅	
35#	2N1067	750kΔ	1.2u	200n	700n	900n	2.5 ∅	4.0 ∅	200m ∅	35	10		N-D	Si	175A	TO8	A ∅	
36#	2N1092	750kΔ	1.2u	200n	700n	900n	1.0 ∅	4.0 ∅	200m ∅	35	10		N-D	Si	175A	TO5	A ∅	
37#	2N1068	750kΔ	1.6u	200n	1.0u	1.8u	5.0 ∅	4.0 ∅	750m ∅	38	2.6		N-D	Si	175A	TO8	A ∅	
38#	2SD120H	80MΔ	.70n		1.1n	1.0m	1.0m	4.0 ∅	.2	60			N	Si	175J	TO39	A ∅	
39#	2SD121H	80MΔ	.70n		1.1n	1.0m	1.0m	4.0 ∅	.2	60			N	Si	175J	TO39	A ∅	
40#	2N5559	80MΔ	6u ∅			8u ∅	100 ∅	2.0 ∅	4 ∅	20 Δ	19	400p	N	Si	200J	TO3	C ∅	
41#	ACY40	800kΔ	15u	900n	7.0u	35u	260m	0.0	50m	45	1.0	50nt	P-A ∅	Ge	90J	TO5	s	
42#	DTG600	850kΔ	4.4u		3.1u	6.4u	85 ∅	2.0 ∅	5.0 ∅	115	30m		P-DA	Ge	110J	TO3	C ∅	
43#	DTG601	850kΔ	4.4u		3.1u	6.4u	85 ∅	2.0 ∅	5.0 ∅	115	30m		P-DA	Ge	110J	TO3	C ∅	
44#	DTG602	850kΔ	4.4u		3.1u	6.4u	85 ∅	2.0 ∅	5.0 ∅	115	30m		P-DA	Ge	110J	TO3	C ∅	
45#	DTG603	850kΔ	4.4u		3.1u	6.4u	85 ∅	2.0 ∅	5.0 ∅	115	33		P-DA	Ge	110J	TO3	C ∅	
46#	DTG603M	85MΔ	13.0u		6.0u	10u	85 ∅	2.0 ∅	5 ∅	250 ∇			P	Ge	110S	TO3	C ∅	
47#	ACY17	1.00MΔ	12p	900n	10u	35u	260m	0.0	50m	100	1.0	50nt	P-A ∅	Ge	90J	TO5	s	
48#	ACY22	1.00MΔ	12p	900n	10u	35u	260m	0.0	50m	85	1.0	50nt	P-A ∅	Ge	90J	TO5	s	
49#	2SD124AH	1.0M	1.4n	.16n	2.2n	5.0n	150n	4.0 ∅	1.5 ∅	40	3.0		N	Si	175J	TO39	∅	
50#	DT1003	1.00M	300n		250n	1.2u	100m	6.0 ∅	200m ∅	12 Δ	4.0	12p	N-D	Si	125A	TO5	∅	
51#	2SA32	1.00M	800n		1.5u	1.2u	100m	6.0 ∅	1.0m	65	4.0	150nt	P-A	Ge	70J	R55	∅	
52#	ZT1487	1.0MΔ	1.2u ∅			2.2u ∅	43 ∅	4.0 ∅	1.5 ∅	15	2.0	200p	N-D	Si	220C	TO3	C ∅	
53#	ZT1488	1.0MΔ	1.2u ∅			2.2u ∅	43 ∅	4.0 ∅	1.5 ∅	15	2.0	200p	N-D	Si	220C	TO3	C ∅	
54#	ZT1489	1.0MΔ	1.2u ∅			2.2u ∅	43 ∅	4.0 ∅	1.5 ∅	25	670m	200p	N-D	Si	220C	TO3	C ∅	
55#	ZT1490	1.0MΔ	1.2u ∅			2.2u ∅	43 ∅	4.0 ∅	1.5 ∅	25	670m	200p	N-D	Si	220C	TO3	C ∅	
56#	2SD125AH	1.00M	1400nt	160nt	2.2ut	5ut	23	4.0 ∅	1.5 ∅	50	20		N-D	Si	175J	TO3	C ∅	
57#	2SD126H	1.00M	1400nt	160nt	2.2ut	5ut	23	4.0 ∅	1.5 ∅	40	20		N-D	Si	175J	TO3	C ∅	
58#	2N2858	1.00MΔ	2000n ∅			5u ∅	600m	4.0 ∅	1.0 ∅	20 Δ	30		N-D	Si	200J	TO5	A ∅	
59#	2N2859	1.00MΔ	2000n ∅			5u ∅	600m	4.0 ∅	1.0 ∅	20 Δ	30		N-D	Si	200J	TO5	A ∅	
60#	2X2N3055	1.0MΔ	2.0ut	400nt	2.0ut	2.5ut	117 ∅	4.0 ∅	400m ∅	2.5	100m	250p	N-D	Si	200J	TO5	A ∅	
61#	PT7509	1.0M	2.0u	2.0n	2.0u	1.5u	350	2.0 ∅	30 ∅	10	100m	1.8n	N-DM	Si	200J	TO63	∅	
62#	PT7510	1.0M	2.0u	2.0n	2.0u	1.5u	350	2.0 ∅	40 ∅	10	100m	1.8n	N-DM	Si	200J	TO63	∅	
63#	PT7511	1.0M	2.0u	2.0n	2.0u	1.5u	350	2.0 ∅	50 ∅	10	100m	1.8n	N-DM	Si	200J	TO63	∅	
64#	PT700	1.0MΔ	2.5u		3.0u	2.5u	200 ∅	4.0 ∅	120 ∅	5.0 Δ		1.8n	N	Si	200A	MT69b	A ∅	
65#	PT702	1.0MΔ	2.5u		3.0u	2.5u	200 ∅	4.0 ∅	120 ∅	5.0 Δ		1.8n	N	Si	200A	MT69b	A ∅	
66#	2N3774	1.00MΔ	3000n ∅		3u ∅	5 ∅	5 ∅	2.0 ∅	20m ∅	20 # Δ			P	Si	200J	TO5	A ∅	
67#	2N3775	1.00MΔ	3000n ∅		3u ∅	5 ∅	5 ∅	2.0 ∅	20m ∅	20 # Δ			P	Si	200J	TO5	A ∅	
68#	2N3776	1.00MΔ	3000n ∅		3u ∅	5 ∅	5 ∅	2.0 ∅	20m ∅	20 # Δ			P	Si	200J	TO5	A ∅	
69#	2N3777	1.00MΔ	3000n ∅		3u ∅	5 ∅	5 ∅	2.0 ∅	20m ∅	20 # Δ			P	Si	200J	TO5	A ∅	
70#	2N3778	1.00MΔ	3000n ∅		3u ∅	5 ∅	5 ∅	2.0 ∅	20m ∅	10 # Δ			P	Si	200J	TO5	A ∅	
71#	2N3779	1.00MΔ	3000n ∅		3u ∅	5 ∅	5 ∅	2.0 ∅	20m ∅	10 # Δ								

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX TEMP (°C)	DWG # Y200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1#	2SD110	2.00MΔ	2000n∅		12u∅	9.0u∅	100 ∅	5.0 ∅	5.0 ∅	10 ∆	30	200p		N-D	Si	150J	T03	C∅
2#	2SD111	2.00MΔ	2000n∅		12u∅	9.0u∅	100 ∅	5.0 ∅	5.0 ∅	10 ∆	30	200p		N-D	Si	150J	T03	C∅
3	2N5324	2.00MΔ	15.0u		10M	7.0u	56 ∅	2.0 ∅	5 ∅	60 ∇	05			P	Ge	110J	T03	C∅
4	2N5325	2.00MΔ	15.0u		10M	7.0u	56 ∅	2.0 ∅	5 ∅	60 ∇	05			P	Ge	110J	T03	C∅
5	JAN2N3902	2.5MΔ	800n∅			1.7u∅	100 ∅	5.0 ∅	2.5 ∅	10 ∆	800m	250p∇		N	Si	200S	T03	C∅
6	JAN2N5157	2.5MΔ	800n∅			1.7u∅	100 ∅	5.0 ∅	2.5 ∅	10 ∆	800m	250p∇		N	Si	200S	T03	C∅
7	DTS431M	2.50MΔ	800n∅		1.7u∅	1.2u∅	125 ∅	5.0 ∅	3.5 ∅	10 ∆	30			N-D	Si	150	T03	C∅
8	JAN2N425	2.50MΔ	1050n∅			1.2u∅	150m	250m∅	1.0m∆	40 ∇	400m	20p∇		P	Ge	100S	T05	A
9	2N5157	2.80MΔ	800n∅		1.7u∅		100 ∅	5.0 ∅	2.5 ∅	10 ∆	71	150p∇		N	Si	150J	T03	C∅
10#	2SA208H	3.00M			350n		120m	.30	200m	40				P	Ge	85J	T05	
11#	2SC89H	3.00M			10n		120m	.20	200m	20				N	Ge	85J	T05	
12	TIP32	3.00MΔ	170n∅			500n∅	40 ∅	4.0 ∅	3 ∅	80 #∆				PD	Si	150J	X75b	B∅
13	TIP32A	3.00MΔ	170n∅			500n∅	40 ∅	4.0 ∅	3 ∅	80 #∆				PD	Si	150J	X75b	B∅
14	TIP30	3.00MΔ	250n∅			900n∅	30 ∅	4.0 ∅	1 ∅	10 #∆				PD	Si	150J	X75b	B∅
15	TIP30A	3.00MΔ	250n∅			900n∅	30 ∅	4.0 ∅	1 ∅	10 #∆				PD	Si	150J	X75b	B∅
16	TIP34	3.00MΔ	350n∅			800n∅	80 ∅	4.0 ∅	3 ∅	12 #∆				PD	Si	150J	X86	B∅
17	TIP34A	3.00MΔ	350n∅			800n∅	80 ∅	4.0 ∅	3 ∅	12 #∆				PD	Si	150J	X86	B∅
18#	2SA208	3.00M	440n		350n		120m	.30	200m	100		25p		P	Ge	85	T05	
19#	2SC89	3.00M	450n		200n		180m	.20	20m	100		25p		N	Ge	85	T05	
20#	2SC179	3.00M	450n		200n		180m	.20	20m	100		25p		N	Ge	85	T01	
21	TIP31	3.00MΔ	450n∅			650n∅	40 ∅	4.0 ∅	3 ∅	80 #∆				ND	Si	150J	X75b	B∅
22	TIP31A	3.00MΔ	450n∅			650n∅	40 ∅	4.0 ∅	3 ∅	80 #∆				ND	Si	150J	X75b	B∅
23	TIP33	3.00MΔ	450n∅			350n∅	80 ∅	4.0 ∅	3 ∅	12 #∆				ND	Si	150J	X86	B∅
24	TIP33A	3.00MΔ	450n∅			350n∅	80 ∅	4.0 ∅	3 ∅	12 #∆				ND	Si	150J	X86	B∅
25	TIP36	3.00MΔ	450n∅			550n∅	90 ∅	4.0 ∅	15m∅	10 #∆				PD	Si	150J	X86	B∅
26#	TIP29	3.00MΔ	500n∅			2.0u∅	30 ∅	4.0 ∅	200m∅	40 #∆				N-DM	Si	150J	u84	B
27#	TIP29A	3.00MΔ	500n∅			2.0u∅	30 ∅	4.0 ∅	200m∅	40 #∆				N-DM	Si	150J	u84	B
28#	TIP29B	3.00MΔ	500n∅			2.0u∅	30 ∅	4.0 ∅	200m∅	40 #∆				N-DM	Si	150J	u84	B
29#	TIP29C	3.00MΔ	500n∅			2.0u∅	30 ∅	4.0 ∅	200m∅	40 #∆				N-DM	Si	150J	u84	B
30	TIP36A	3.00MΔ	550n∅			550n∅	90 ∅	4.0 ∅	15m∅	10 #∆				PD	Si	150J	X86	B∅
31	TIP35	3.00MΔ	600n∅			800n∅	90 ∅	4.0 ∅	15m∅	10 #∆				ND	Si	150J	X86	B∅
32	TIP35A	3.00MΔ	600n∅			800n∅	90 ∅	4.0 ∅	15m∅	10 #∆				ND	Si	150J	X86	B∅
33	2N1302	3.00MΔ	700n	120n	500n	800n	150m	1.0	10m	50	20	20p∇		N-A	Ge	100S	T05	A∅
34	2N1993	3.00MΔ	700n	120n	500n	800n	150m	1.0	10m	50	20	20p∇		N	Ge	100J	T05	A∅
35	DTS423M	3.00MΔ	800n∅		1.7u∅		100 ∅	5.0 ∅	2.5 ∅	10 ∆	80			N-D	Si	150J	T03	C∅
36	JAN2N426	3.00MΔ	1050n∅			1.1u∅	150m	250m∅	1.0m∆	60 ∇	400m	20p∇		P	Ge	100S	T05	A
37#	2SD80	3.00M	1200n	120nt	2.0ut	2.5ut	50 ∅	4.0 ∅	1 ∅	60 ∇	50			N-D	Si	150J	T03	C∅
38#	2SD81	3.00M	1200n	120nt	2.0ut	2.5ut	50 ∅	4.0 ∅	1 ∅	60 ∇	50			N-D	Si	150J	T03	C∅
39#	2SD82	3.00M	1200n	120nt	2.0ut	2.5ut	50 ∅	4.0 ∅	1 ∅	60 ∇	50			N-D	Si	150J	T03	C∅
40#	2SD83	3.00M	1200n	120nt	2.0ut	2.5ut	50 ∅	4.0 ∅	1 ∅	60 ∇	50			N-D	Si	150J	T03	C∅
41#	2SD84	3.00M	1200n	120nt	2.0ut	2.5ut	50 ∅	4.0 ∅	1 ∅	60 ∇	50			N-D	Si	150J	T03	C∅
42#	NKT126	3.00MΔ	2000n		2.0u	750n	75m	1.0	25m∅	50	8.0	22p∇		P	Ge	75J	T05	A
43	2N356	3.00M	2100n		700n	2.0u	100m	.25	100m∅	30		14p		N	Ge	85S	T05	A∅
44	2N679	3.00M	3000n			150u	150m	.50	3.0m	30 t				N-A	Ge	85J	R5	
45	JAN2N3772	3.00M∇	8.0u∅			10u∅	150 ∅	4.0 ∅	10 ∅	10 #∆		1.2n∇		N	Si	200J	T03	C∅
46	JAN2N3771	3.00M∇	10u∅			12u∅	150 ∅	4.0 ∅	15 ∅	10 #∆		1.2n∇		N	Si	200J	T03	C∅
47	2N1353	3.50M	600nt	230nt	400nt	350nt	200m	1.0	10m	70	4.0	12p	150nt	P-A	Ge	85J	T05	A
48#	2SC34	3.50MΔ	1000n		1.0u	400n	140m	0.0	200m	30				N-A	Ge	75	R9	
49#	2SD90	3.50M	2000n	70n	1.4u	1.8u	20 ∅	4.0 ∅	1 ∅	40	50			N-D	Si	150J	T09	
50#	2SD91	3.50M	2000n	70n	1.4u	1.8u	20 ∅	4.0 ∅	1 ∅	40	50			N-D	Si	150J	T09	
51#	2SD92	3.50M	2000n	70n	1.4u	1.8u	20 ∅	4.0 ∅	1 ∅	40	50			N-D	Si	150J	T09	
52#	2SD93	3.50M	2000n	70n	1.4u	1.8u	20 ∅	4.0 ∅	1 ∅	40	.50			N-D	Si	150J	T09	
53#	2SD94	3.50M	2000n	70n	1.4u	1.8u	20 ∅	4.0 ∅	1 ∅	40	.50			N-D	Si	150J	T09	
54	2N438	3.75M	700n				100m	1.0	50m	25 t		9.0p	2.0nt	N-A	Ge	85J	T05	A
55#	2SA212H	4.00M			320n	130n	120m	.30	100m∅	60		20p		P	Ge	85J	T05	
56	2N1518	4.00M∇	50n			20n	50m	4.0	15m	15 ∆	.03			P-A	Ge	100J	T036	C∅
57	2N1520	4.00M∇	50n			25n	50m	4.0	15m	17 ∆	.02			P-A	Ge	100J	T036	C∅
58	2N1522	4.00M∇	50n			30n	50m	4.0	15m	37	.01			P-A	Ge	100J	T036	C∅
59	2N2930	4.0MΔ	73n	350n		73n	250m	60	100m∅	50	2.5			P	Ge	100S	T05	A
60	2N1519	4.00M∇	80n			20nt	50m	4.0	15m	15 ∆	.03			P-A	Ge	100J	T036	C∅
61	2N1521	4.00M∇	80n			25nt	50m	4.0	15m	17 ∆	.02			P-A	Ge	100J	T036	C∅
62	2N1523	4.00M∇	80n			30nt	50m	4.0	15m	37	.01			P-A	Ge	100J	T036	C∅
63	2N4877	4.00MΔ	100n		1.5u	500n	10 ∅	2.0	1.0m∅	30 #∆				N	Si	200J	T039	A∅
64	MM404	4.0MΔ	120nt	70nt	200nt	100nt	300m∅	150m∅	12m∅	80	12	2.0p∇		P	Ge	100J	T018	A∅
65	MM404A	4.0MΔ	120nt	70nt	200nt	100nt	300m∅	150m∅	12m∅	80	12	2.0p∇		P	Ge	100J	T018	A∅
66	MPS404	4.00MΔ	190nt	75nt	155nt	230nt	310m	150m∅	12m∅	400 ∇	12			P-AN	Si	135J	T092	A
67	MPS404A	4.00MΔ	190nt	75nt	155nt	230nt	310m	150m∅	12m∅	400 ∇	12			P-AN	Si	135J	T092	A
68#	SDT410	4.0M	250nt		600nt	150nt	80	5.0	2.5 ∅	10 ∆				N-ME	Si	200J	T03	C∅
69#	SDT411	4.0M	250nt		600nt	150nt	100	5.0	2.5 ∅	10 ∆				N-ME	Si	200J	T03	C∅
70#	SDT423	4.0M	250nt		600nt	150nt	100	5.0	2.5 ∅	10 ∆				N-ME	Si	200J	T03	C∅
71#	SDT424	4.0M	250nt		600nt	150nt	100	5.0	2.5 ∅	10 ∆				N-D	Si	200J	T03	C∅
72#	SDT425	4.0M	250nt		600nt	150nt	100	5.0	2.5 ∅	10 ∆				N-D	Si	200J	T03	C∅
73#	SDT430	4.0M	250nt		600nt	150nt	125	5.0	3.5 ∅	10 ∆				N-D	Si	200J	T03	C∅
74#	SDT431	4.0M	250nt		600nt	150nt	125	5.0	3.5 ∅	10 ∆				N-D	Si	200J	T03	C∅
75	DTS410	4.00M	300nt∅		650nt	550nt	80 ∅	5.0	2.5 ∅	10 ∆	800m			N-ME	Si	150J	T03	C∅
76	DTS424	4.00M	300nt		650nt	200nt	100 ∅	5.0	2.5 ∅	10 ∆	800m			N-D	Si	150J	T03	C∅
77	DTS425	4.00M	300nt		650nt	200nt	100 ∅	5.0	2.5 ∅	10 ∆	800m			N-D	Si	150J	T03	C∅
78#	ASY27	4.00MΔ	350n	75n	1.5u	620n	150m	0.0	20m	50		16p∇		P	Ge	85J	MD6f	C∅
79	2N4398	4.0MΔ	400n		1.5u	600n	200 ∅	2.0	1.0 ∅	40				P	Si	200J	MD6f	C∅
80	2N4399	4.0MΔ	400n		1.5u	600n	200 ∅	2.0	1.0 ∅	40				P	Si	200J	MD6f	C∅
81#	2SA212	4.00M	400n															

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O A D E
								Vcb (V)	Ic (A)	hFE								
1	2N5878	4.0MΔ	700n	1.0u	800n	150	150	4.0	8.0	5.0	200m	300p	N	Si	200J	T03	CØ	
2	2N5879	4.0MΔ	700n	1.0u	800n	160	160	4.0	12	5.0	142m	600p	P	Si	200J	T03	CØ	
3	2N5880	4.0MΔ	700n	1.0u	800n	160	160	4.0	12	5.0	142m	600p	N	Si	200J	T03	CØ	
4	2N5881	4.0MΔ	700n	1.0u	800n	160	160	4.0	12	5.0	142m	400p	N	Si	200J	T03	CØ	
5	2N5882	4.0MΔ	700n	1.0u	800n	160	160	4.0	12	5.0	142m	400p	N	Si	200J	T03	CØ	
6	2N5883	4.0MΔ	700n	1.0u	800n	200	200	4.0	20	5.0	66m	800p	P	Si	200J	T03	CØ	
7	2N5884	4.0MΔ	700n	1.0u	800n	200	200	4.0	20	5.0	66m	800p	N	Si	200J	T03	CØ	
8	2N5885	4.0MΔ	700n	1.0u	800n	200	200	4.0	20	5.0	66m	500p	N	Si	200J	T03	CØ	
9	2N5886	4.0MΔ	700n	1.0u	800n	200	200	4.0	20	5.0	66m	500p	N	Si	200J	T03	CØ	
10	2N4395	4.0MΔ	800n	1.5u	800n	63	63	1.0	1.0	75	18		N	Si	150J	T03	CØ	
11	2N5241	4.0MΔ	800n		1.7u	125	63	5.0	3.5	10	600m		N-D	Si	150J	T03	CØ	
12	2N4396	4.0MΔ	1000n		2.0u			1.0	1.0	60	18		N	Si	150J	T03	CØ	
13	2N425	4.0M	1050n		1.2u	170m		250m	1.0m	30	3.2	14p	P-FA	Ge	85J	T05	A S	
14	2N404A	4.0MΔ	1400n			150m		30	24m	24	12	20p	P-A	Ge	100A	T05	A S	
15	AS33	4.0MΔ	2200n			125m		0.0	20m	80	20	16p	P-A	Ge	75J	R9	A	
16	JAN2N3055	4.0MΔ	8.0u		12u	17		4.0	4.0	15	#Δ	700p	N	Si	200J	T03	CØ	
17	2N395	4.5M	550n	210n	500n	400n	200m	1.0	10m	85	4.0	12p	P-A	Ge	100S	T05	A S	
18	2N1354	4.5M	550n	210n	500n	400n	200m	1.0	10m	70	4.0	12p	P-A	Ge	85J	T05	A	
19#	ZSC35	4.5MΔ	1000n		1.0u	400n	140m	0.0	200m	85			N-A	Ge	75	R9	A	
20#	ZSA209H	5.0M			400n	250n	120m	.30	200m	25			N	Ge	85J	T05	A	
21#	ZSC90H	5.0M			180n	120m	300m	.30	200m	20			N	Ge	85J	T05	A	
22	JAN2N167A	5.0MΔ	60n		220n	70m	70m	1.0	70	500	25	6.0p	N	Ge	85A	OV5	A	
23	2N658	5.0M	100n	32n	144n	210m	350m	1.0	200m	50	1.3	12p	P-FA	Ge	100J	T05	A	
24#	NKT135	5.0M	280n		800n	150m		.35	200m	20	20	20p	P	Ge	85J	T05	A	
25	2N2946	5.0M	300n		400n	300m	400m	.6	200m	20	9.0p	10p	P-DE	Si	200J	T046	A	
26#	ZSA40	5.0M	300n		400n	200n	80m	.8	1.0m	65	12	10p	P-A	Ge	85J	T01	A	
27	DTS411	5.0M	300n		650n	200n	100	.5	2.5	10	80		N-D	Si	150J	T03	CØ	
28	DTS423	5.0M	300n		550n	100	100	.5	2.5	10	800m		N-ME	Si	150J	T03	CØ	
29	2N585	5.0M	350n	50n	250n	200n	120m	.20	20m	40	10	12p	N-A	Ge	71A	T09	CØ	
30	2N1892	5.0MΔ	350n	150n	1.2u	650n	150m	1.0	10m	40	2.0	20p	P	Ge	85J	T05	A S	
31#	ZSA209	5.0M	350n		400n	250n	120m	.30	200m	120		25p	N	Ge	85	T05	A	
32#	ZSC90	5.0M	400n		200n	180n	120m	.30	200m	120		25p	N	Ge	85	T05	A	
33#	ZSC180	5.0M	400n		200n	180n	120m	.30	200m	120		25p	N	Ge	85	T05	A	
34	2N1304	5.0MΔ	450n	100n	500n	600n	150m	1.0	10m	70	20	20p	N-A	Ge	100S	T05	A S	
35#	NKT734	5.0M	450n		500n	600n	150m	.35	200m	15	20	20p	N	Ge	85J	T05	A	
36	JAN2N123	5.0MΔ	500n	200n	1.0u	400n	150m	1.0	10m	30	#Δ	20	P-A	Ge	85J	R116	A	
37	2N396A	5.0M	650n	200n	800n	400n	200m	1.5	200m	15	4.0	25p	P	Ge	100S	T05	A S	
38	JAN2N427	5.0MΔ	850n		400n	1.1u	150m	250m	1.0m	90	600m	20p	P	Ge	100S	T05	A S	
39	2N573	5.0M	900n		600n	120m			400m	15	.75		P-A	Ge	71A	T05	A	
40	GT123	5.0MΔ	900n		150m	1.0	10m	1.0	10m	90	15p		P-A	Ge	100S	T05	A	
41	2N1681	5.0M	950n		180m	.25	10m	.25	10m	75	10	20p	P-A	Ge	100J	T05	A	
42	2N315	5.0M	1000n	300n	400n	80n	150m	.20	100m	70		14p	P-A	Ge	100S	T05	A	
43	2N315A	5.0M	1200n		600n	1.0u	150m	.20	100m	35		14p	P-A	Ge	100S	T05	A	
44	2N5838	5.0MΔ	1.5u		3.0u	1.5u	1.5u	2.0	3.0	8.0	#		N	Si	200J	T03	CØ	
45	2N5839	5.0MΔ	1.5u		3.7u	1.5u	1.5u	2.0	3.0	10	#		N	Si	200J	T03	CØ	
46	2N5840	5.0MΔ	1.5u		3.0u	1.5u	1.5u	2.0	3.0	10	#		N	Si	200J	T03	CØ	
47	2N455	5.0M	1.7u		40u	50	50	2.0	2.0	20	#		N	Si	200J	T03	CØ	
48#	SFT224	5.0M	150n		150n	150m	500m	1.0	10m	25	18		P-A	Ge	85J	T05	A	
49#	ZSA414	5.0M	270n	50n	850n	450n	150m	.50	100m	30			P-A	Ge	85J	T05	A	
50#	ZSC128	5.0M	270n	50n	850n	450n	125m	.50	100m	30			N-A	Ge	75J	T05	A	
51#	SFT13	5.0M	250n		600n	150n	75	1.0	1.0	15	Δ		N-ME	Si	200J	T03	CØ	
52	ASY74	6.0MΔ	300n	55n	400n	200n	500m	0.0	.05m	40	Δ		N-A	Ge	85J	T05	CØ	
53#	ASY29	6.0MΔ	350n	75n	1.5u	620n	125m	0.0	20m	50	Δ	16p	N-A	Ge	75J	T05	A	
54	DTS413	6.0M	400n		550n	550n	75	5.0	1.0	15	1.6		N-ME	Si	150J	T03	CØ	
55	2N357	6.0M	1300n		700n	1.2u	100m	.25	200m	30		14p	N	Ge	85S	T05	A S	
56#	ASY32	6.0MΔ	2200n		1.4u	125m		0.0	20m	150	20	16p	P-A	Ge	75J	R9	A	
57#	2N377	6.0M	2500n		700n	1.0u	150m	.50	30m	40		15p	N-A	Ge	100J	T05	A	
58	2N377A	6.0M	2500n		700n	1.0u	150m	.50	30m	60		20p	N	Ge	100J	T05	A S	
59	JAN2N2034	6.0M	3.0u		6.0u	7.5	4.0	4.0	2.0m	10	#	200p	N	Si	200A	T05	AØ	
60	JAN2N2858	6.0M	3.0u		6.0u	7.5	4.0	4.0	2.0m	10	#	200p	N	Si	200A	T05	AØ	
61	JAN2N2859	6.0M	3.0u		6.0u	7.5	4.0	4.0	2.0m	10	#	200p	N	Si	200A	T05	AØ	
62	JAN2N2911	6.0M	3.0u		6.0u	7.5	4.0	4.0	2.0m	10	#	200p	N	Si	200A	T05	AØ	
63	2N1090	7.0M	250n	50n	200n	150n	120m	.20	20m	50	10	17p	N-A	Ge	85A	T09	AØ	
64	2N1000	7.0MΔ	700n		300n	150m	50	1.0	100m	35		14p	N-A	Ge	100S	T05	A	
65	2N1344	7.0MΔ	1000n	60n	800n	150m	1.0	1.0	20m	90		12p	P-A	Ge	85J	T05	A	
66#	NKT125	7.0MΔ	1000n		600n	100m	1.0	1.0	25m	50	8.0	22p	P	Ge	75J	T05	A	
67	JAN2N1119	7.2MΔ	270n		370n	150m	500m	15	15m	15	Δ	30	P	Si	140S	T05	A	
68#	SFT227	7.5M	130n		130n	150m	500m	10	10m	35	Δ	15	P-A	Ge	85J	T05	A	
69	JAN2N5241	7.5M	800n		1.7u	125	5.0	5.0	1.0	25	#Δ	300p	N	Si	200C	T03	CØ	
70	2N662	8.0M	121n	37n	106n	140n	210m	.35	50m	70	1.2	12p	P-A	Ge	100J	T05	A	
71#	ZSA415	8.0M	220n	45n	880n	420n	150m	.50	100m	45			A	Ge	85J	T05	A	
72#	ZSC129	8.0M	220n	45n	880n	420n	125m	.50	100m	45			N-A	Ge	75J	T05	A	
73#	2N600	8.0M	240n		900n	330n	750m	1.0	100m	125	t		P-A	Ge	100J	MT60	AØ	
74#	ZSD219	8.0M	300n	40n	2.4u	2.6u	500m	4.0	200m	80	1.0		N-D	Si	150J	T05	AØ	
75#	ZSD220	8.0M	300n	40n	2.4u	2.6u	500m	4.0	200m	80	1.0		N-D	Si	150J	T05	AØ	
76#	ZSD221	8.0M	300n	40n	2.4u	2.6u	500m	4.0	200m	80	1.0		N-D	Si	150J	T05	AØ	
77#	ZSD222	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	MD25	AØ	
78#	ZSD223	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	MD25	AØ	
79#	ZSD224	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	MD25	AØ	
80#	ZSD236	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	T066	CØ	
81#	ZSD237	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	T066	CØ	
82#	ZSD238	8.0M	300n	40n	2.4u	2.6u	10	4.0	500m	60	1.0		N-D	Si	150J	T066	CØ	
83	2N396	8.0M	400n	190n	600n	310n	150m	.35	200m	15	Δ	4.0	P	Ge	100S	T05	A S	
84	2N579	8.0M	400n		500n	120m			400m	30	.75		P-A	Ge	71A	T05	A	
85	2N1355	8.0M	400n	190n	600n	310n	200m											



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1#	2SC91H	10.0M				10n	120m	30	200m	20	Δ			N	Ge	85J	T05	
2	2N659	10.0M	120nt	17nt	67nt	128nt	210m	350	50m	70		1.3	12p	P-FA	Ge	100J	T05	A
3	2N599	10.0MΔ	175n		1.0u	185n	250m	1.0	200m	75	†Δ		20p	P	Ge	100J	T05	A
4	JAN2N599	10.0M	175n		1.0u	185n	250m	1.0	200m	300	□	20	20p	P	Ge	100S	T05	A
5	2N601	10.0MΔ	175n		1.0u	185n	750m	1.0	200m	125		2.0	15p	P-A	Ge	100J	MT60	
6#	2SA210	10.0M	200n		400n	150n	120m	30	200m	150	□		25p	P	Ge	85	T05	
7	ASV75	10.0MΔ	200n	50n	450n	150n	500m	0.0	05m	65	Δ			N-A	Ge	85J	T05	
8#	NKT137	10.0M	200n	80n	800n	350n	150m	35	200m	20	Δ	20	20p	P	Ge	85J	T05	A
9	2N1306	10.0MΔ	220n		500n	450n	150m	1.0	10m	100		20	20p	N-A	Ge	100S	T05	A
10	2N2945	10.0M	230n		150n	230n	400m	6.0	200m	200		20	9.0p	P-DE	Si	200J	TO46	A
11	2N598	10.0M	240n		900n	330n	250m	1.0	100m	70	Δ	2.0	20p	P-A	Ge	100J	T05	A
12	2N440	10.0M	300n			100m	100m	1.0	50m	70	†		9.0p	N-A	Ge	85J	T05	A
13	2N821	10.0MΔ	300nt		600nt	200nt	75m	1.0	50m	70		5.0	9.0p	N-FA	Ge	85J	u8	
14	2N5050	10MΔ	300n		3.5u	1.2u	40	5.0	1.0	25	Δ#		250p	N	Si	175J	TO66	C
15	2N5051	10MΔ	300n		3.5u	1.2u	40	5.0	1.0	25	Δ#		250p	N	Si	175J	TO66	C
16	2N5052	10MΔ	300n		3.5u	1.2u	40	5.0	1.0	25	Δ#		250p	N	Si	175J	TO66	C
17#	2SC91	10.0M	300n		250n	100n	120m	30	200m	220	□		25p	N	Ge	85	T05	
18#	2SC181	10.0M	300n		250n	180n	120m	30	200m	220	□		25p	N	Ge	85	TO1	
19	2N3445	10.0MΔ	350n		2.0u	350n	115	5.0	3.0m	60	□	500m	400p	N-EA	Si	200J	TO3	C
20	2N3446	10.0MΔ	350n		2.0u	350n	115	5.0	3.0m	60	□	500m	400p	N-EA	Si	200J	TO3	C
21	2N3447	10.0MΔ	350n		2.0u	350n	115	5.0	5.0m	120	□	300m	400p	N-EA	Si	200J	TO3	C
22	2N3448	10.0MΔ	350n		2.0u	350n	115	5.0	5.0m	120	□	300m	400p	N-EA	Si	200J	TO3	C
23	2N3487	10MΔ	350n		2.0u	350n	115	5.0	500m	20	Δ	4.0	550p	N	Si	200C	TO61	
24	2N3488	10MΔ	350n		2.0u	350n	115	5.0	500m	20	Δ	4.0	550p	N	Si	200C	TO61	
25	2N3489	10MΔ	350n		2.0u	350n	115	5.0	500m	20	Δ	4.0	550p	N	Si	200C	TO61	
26	2N3490	10MΔ	350n		2.0u	350n	115	5.0	500m	40	Δ	3.3	550p	N	Si	200C	TO61	
27	2N3491	10MΔ	350n		2.0u	350n	115	5.0	500m	40	Δ	3.3	550p	N	Si	200C	TO61	
28	2N3492	10MΔ	350n		2.0u	350n	115	5.0	500m	40	Δ	3.3	550p	N	Si	200C	TO61	
29	2N2425	10.0MΔ	500n		375n	350n	375m	1.0	25m	20	Δ	20	14p	P-A	Si	160S	T05	A
30#	2N5957	10MΔ	500n		1.0u	150	150	10	1.0	40	Δ	125m	350p	N	Si	200J	TO61	A
31#	2N5959	10MΔ	500n		1.0u	150	150	10	1.0	40	Δ	125m	350p	N	Si	200J	TO61	A
32#	2N5966	10MΔ	500n		1.0u	187	187	10	1.0	40	Δ	80m	550p	N	Si	200J	TO63	A
33#	2N5968	10MΔ	500n		1.0u	187	187	10	1.0	40	Δ	80m	550p	N	Si	200J	TO63	A
34#	2N6060	10MΔ	500n		1.0u	225	225	10	60	10	Δ	50m	850p	N	Si	200J	TO63	A
35#	2N6062	10MΔ	500n		1.0u	225	225	10	60	10	Δ	50m	850p	N	Si	200J	TO63	A
36	ST14030	10MΔ	500n		1.0u	200	200	10	1.0	40	Δ#		850p	N-PL	Si	200J	TO63	
37	ST14031	10MΔ	500n		1.0u	200	200	10	1.0	40	Δ#		850p	N-PL	Si	200J	TO63	
38	ST14032	10MΔ	500n		1.0u	200	200	10	1.0	40	Δ#		850p	N-PL	Si	200J	TO63	
39	ST15043	10MΔ	500n		1.0u	125	125	10	1.0	40	Δ#		550p	N-PL	Si	200J	TO63	
40	ST15044	10MΔ	500n		1.0u	125	125	10	1.0	40	Δ#		550p	N-PL	Si	200J	TO63	
41	ST15045	10MΔ	500n		1.0u	125	125	10	1.0	40	Δ#		550p	N-PL	Si	200J	TO63	
42	ST17060	10MΔ	500n		1.0u	100	100	10	1.0	40	Δ#		350p	N-PL	Si	200J	TO63	
43	ST17061	10MΔ	500n		1.0u	100	100	10	1.0	40	Δ#		350p	N-PL	Si	200J	TO63	
44	ST17062	10MΔ	500n		1.0u	100	100	10	1.0	40	Δ#		350p	N-PL	Si	200J	TO63	
45	ST91054	10MΔ	500n		1.0u	10	10	10	500m	40	Δ#		160p	N-PL	Si	200J	T05	
46	ST91055	10MΔ	500n		1.0u	10	10	10	500m	40	Δ#		160p	N-PL	Si	200J	T05	
47	ST91056	10MΔ	500n		1.0u	10	10	10	500m	40	Δ#		160p	N-PL	Si	200J	T05	
48	ST91057	10MΔ	500n		1.0u	10	10	10	500m	40	Δ#		225p	N-PL	Si	200J	TO59	
49	ST91058	10MΔ	500n		1.0u	10	10	10	500m	40	Δ#		225p	N-PL	Si	200J	TO59	
50	ST91059	10MΔ	500n		1.0u	10	10	10	500m	40	Δ#		225p	N-PL	Si	200J	TO59	
51	2N1317	10.0MΔ	600n		800n	600n	200m	25	1.0m	85			150nt	P-A	Ge	85J	T05	A
52	2N5048	10.0MΔ	600n		1.5u	600n	100	4.0	10m	15	Δ	20		N	Si	200S	TO61	A
53	2N1345	10.0MΔ	700n	30n	800n	700n	150m	30	400m	60			14p	P-A	Ge	85J	T05	A
54	2N1346	10.0MΔ	700n	30n	800n	700n	150m	25	35m	125			14p	P-A	Ge	85J	T05	A
55#	BC100	10.0MΔ	700n	500n	900n	500n	2.5	20	10m	40		160		N-ME	Si	175J	T05	A
56	JAN2N428	10MΔ	850n		1.1u	150m	350m	10	10m	20	Δ	1.2	20p	P	Ge	100S	T05	A
57	2N428A	10.0M	850n		1.1u	150m	25	1.0m	80	Δ	1.6		20p	P-A	Ge	100S	T05	
58	2N1316	10.0MΔ	1000n		800n	1.0u	200m	25	1.0m	95			14p	P-A	Ge	85J	T05	A
59	2N5049	10.0MΔ	1000n		2.5u	1.0u	100	4.0	100u	15	Δ	250m		N	Si	200S	TO61	A
60	2N1969	10.0MΔ	1200n		650n	650n	150m	25	1.0m	200	□		20p	P	Ge	85J	T05	A
61#	2SC1111	10MΔ	1.2u	100n	2.1u	450n	50	4.0	3.0	60		500m		N-D	Si	150J	TO3	C
62#	2SC1112	10MΔ	1.2u	100n	2.1u	450n	50	4.0	3.0	60		500m		N-D	Si	150J	TO3	C
63#	2SC1115	10MΔ	1.2u	100n	2.7u	450n	100	4.0	3.0	60		500m		N-D	Si	150J	TO3	C
64#	2SC1116	10MΔ	1.2u	100n	2.7u	460n	100	4.0	3.0	60		500m		N-D	Si	150J	TO3	C
65	2N2912	10.0MΔ	2000n		10u	75	75	2.0	1	150	Δ		110	Ge	110	TO74	A	
66	2N4865	10.0MΔ	2000n		1.5u	500n	350	5.0	90	5.0	#Δ	.02		N	Si	200J	MT69	A
67	2N4866	10.0MΔ	2000n		1.5u	500n	350	5.0	90	5.0	#Δ			N	Si	200J	MT69	A
68	2N5250	10.0MΔ	2000n		1.5u	500n	350	5.0	90	5.0	#Δ			N	Si	200J	MT69	A
69	2N5251	10.0MΔ	2000n		1.5u	500n	350	5.0	90	5.0	#Δ			N	Si	200J	MT69	A
70	2N3584	10.0MΔ	3000n		4.0u	3.0u	35	2.0	1	140	□	.75		N	Si	200J	TO66	C
71	2N3585	10.0MΔ	3000n		4.0u	3.0u	35	2.0	1	140	□	.75		N	Si	200J	TO66	C
72	2N2832	10.0MΔ	4000n		6.0u	2.5u	85	2.0	1.0m	50	Δ	25m		P	Ge	110C	TO3	C
73	2N2833	10.0MΔ	4000n		6.0u	2.5u	85	2.0	1.0m	50	Δ	25m		P	Ge	110C	TO3	C
74	2N2834	10.0MΔ	4000n		6.0u	2.5u	85	2.0	1.0m	50	Δ	25m		P	Ge	110C	TO3	C
75	JAN2N2834	10.0MΔ	4000n		6.0u	2.5u	85	2.0	1.0m	25	#Δ	150m		P	Ge	110J	MB6e	C
76	2N3846	10.0MΔ	4000n		7.0u	4.0	4.0	3.0	10	10	Δ	80m	750p	N	Si	175C	TO63	
77	2N3847	10.0MΔ	4000n		7.0u	4.0	4.0	3.0	10	10	Δ	80m	750p	N	Si	175C	TO63	
78	2N3848	10.0MΔ	4000n		7.0u	4.0	4.0	3.0	15	10	Δ	670u	750p	N	Si	175C	TO63	
79	2N3849	10.0MΔ	4000n		7.0u	4.0	4.0	15	10	10	Δ	670u	750p	N	Si	175C	TO63	
80	2N427	11.0M	850n		11u	170m	250m	1.0m	55	55		2.1	14p	P-FA	Ge	85J	T05	A
81#	SFT228	12.0MΔ	110n		110n	150m	50	50	10m	50	Δ	12		N	Ge	85J	T05	A



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ie (A)	hFE								
1	2N2944	15.0M	175n		150n	175n	400m	6.0	200m	200	20	9.0p	P-DE	Si	200J	T046	A	
2	2N580	15.0M	200n		400n	200n	120m	30	400m	45	75		P-A	Si	200J	T05	A	
3	2N4150	15.0M	200n		200n	200n	5.0	5.0	5.0	40 #			N	Si	200J	T05	A	
4#	2SA64	15.0M	200n		350n	150n	80m	6.0	1.0m	65	8.3	10p	P-A	Ge	85J	T01	A	
5#	2N1308	15.0M	220n	80n	400n	400n	150m	1.0	10m	15	20	20p	N-A	Ge	100S	T05	A	
6#	2N2424	15.0M	300n		300n	200n	375m	1.0	25m	25	20	14p	P-A	Si	160S	T05	A	
7	JAN2N3584	15.0M	300n		700n	700n	2.5m	1.0	100m	40		120p	N	Si	200J	T066	A	
8	JAN2N3585	15.0M	300n		700n	700n	2.5m	1.0	100m	40		120p	N	Si	200J	T066	A	
9#	2N4240	15.0M	300n		500n	400n	80m	1.0	10m	70	4.0		P-A G	Si	85J	T01	A	
10	2N5804	15.0M	500n		6.0u	3.0u	35	2.0	75m	6.0	1.3		N	Si	200J	T066	A	
11	2N5805	15.0M	500n		3.5u	2.0u	62	4.0	5.0	10	400m		N	Si	200J	T03	A	
12	2N5805	15.0M	500n		3.5u	2.0u	62	1.0	5.0	10	400m		N	Si	200J	T03	A	
13#	NKT124	15.0M	500n		2.0u	300n	100m	1.0	25m	50	8.0	22p	P	Ge	75J	T05	A	
14#	2N2541	15.0M	1.5u		2.0u	300n	215m	500m	1.0	20	750m		P-FA	Ge	100J	T05	A	
15	2N1759	15.0M	350n		2.8m	2.8m	28m	2.0	50m	105	27		P-A	Ge	95J	MS7	A	
16	2N1760	15.0M	350n		2.8m	2.8m	28m	2.0	50m	105	27		P-A	Ge	95J	MS7	A	
17	2N1755	15.0M	400n		2.8m	2.8m	28m	2.0	50m	52	23		P-A	Ge	95J	MS7	A	
18	2N1756	15.0M	400n		2.8m	2.8m	28m	2.0	50m	52	23		P-A	Ge	95J	MS7	A	
19	2N1757	15.0M	400n		2.8m	2.8m	28m	2.0	50m	52	23		P-A	Ge	95J	MS7	A	
20	2N1758	15.0M	400n		2.8m	2.8m	28m	2.0	50m	52	23		P-A	Ge	95J	MS7	A	
21	2N1759	15.0M	500n		2.8m	2.8m	28m	2.0	50m	105	27		P-A	Ge	95J	MS7	A	
22	2N1762	15.0M	500n		2.8m	2.8m	28m	2.0	50m	105	27		P-A	Ge	95J	MS7	A	
23	2N864A	16.0M	150n		150n	150n	30m	1.0	350	350	20	9.0p	P	Si	200S	T018	A	
24#	SET288	16.0M	190n	35n	60n	150n	150m	350m	1.0	400	750m		P-Δ	Si	85J	T05	A	
25	2N4235	17.0M	850n		1.1u	1.1u	170m	250m	1.0	80	1.6	14p	P-FA	Ge	85J	T05	A	
26	2N582	18.0M	1200n		1.0u	1.0u	150m	20	24m	80	8.4	12p	P-A	Ge	85A	T05	A	
27	2N584	18.0M	1200n		1.0u	1.0u	120m	20	24m	60	8.4	12p	P-A	Ge	85A	T01	A	
28	2N1119	20.0M		175n			150m	500m	15m	25	30	6.0p	P-PA	Si	140S	T05	A	
29	TN63	20.0M	30n	10n	450n	120n	800m	10	150m	25			N-PE	Si	200J	T05	A	
30	TN64	20.0M	30n	10n	450n	120n	500m	10	150m	25			N-PE	Si	200J	T018	A	
31	2N661	20.0M	88n	27n	56n	139n	210m	350m	50m	120	750m	12p	P-FA	Ge	100J	T05	A	
32	2N2657	20.0M	80n		60n	80n	4	6.0	5	15			N	Si	200J	T05	A	
33	2N2658	20.0M	80n		60n	80n	4	6.0	5	15			N	Si	200J	T05	A	
34	NS9001	20.0M	100n		250n	1.2	1.0	1.0	1.0	30	600m	70p	N-PL	Si	200J	T039	A	
35	NS9002	20.0M	100n		250n	30	1.0	1.0	1.0	30	250m	70p	N-PL	Si	200J	MT42	A	
36	2N730	20.0M	110n	40n	140n	105n	500m	10	150m	40		35p	N-PL	Si	175S	T018	A	
37	2N4006	20.0M	120n	60n	320n	120n	400m	2.0	200m	90	3.0	10p	N-DPL	Si	200J	T046	A	
38#	2SC5100	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
39#	2SC510R	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
40#	2SC5110	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
41#	2SC511R	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
42#	2SC5120	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
43#	2SC512R	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
44#	2SC5130	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
45#	2SC513R	20.0M	130n		3.0u	200n	8.0	2.0	200m	90	3.0	40p	N-DPL	Si	175J	T039	A	
46#	2SC5220	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
47#	2SC522R	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
48#	2SC5230	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
49#	2SC523R	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
50#	2SC5240	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
51#	2SC524R	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
52#	2SC5250	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
53#	2SC525R	20.0M	130n		3.0u	200n	10	2.0	200m	150	3.0	25p	N-DPL	Si	175J	MD29	A	
54	2N731	20.0M	140n	40n	130n	130n	500m	10	150m	80	10	35p	N-PL	Si	175S	T018	A	
55	2N3850	20.0M	150n	50n	700n	200n	30m	1.0	1.0m	50	1.2	125p	N	Si	200C	T059	A	
56	2N3851	20.0M	150n	50n	700n	200n	30m	1.0	1.0m	50	1.2	125p	N	Si	200C	T059	A	
57	2N3852	20.0M	150n	50n	700n	200n	30m	1.0	1.0m	50	1.2	125p	N	Si	200C	T059	A	
58	2N3853	20.0M	150n	50n	700n	200n	30m	1.0	1.0m	50	1.2	125p	N	Si	200C	T059	A	
59	2N5660	20.0M	150n		850n	20	5.0	1.0	15	15	60p		N	Si	200J	T066	A	
60	2N5661	20.0M	150n		850n	20	5.0	1.0	15	15	60p		N	Si	200J	T066	A	
61	2N5662	20.0M	150n		850n	15	5.0	1.0	15	15	60p		N	Si	200J	T05	A	
62	2N5663	20.0M	150n		850n	15	5.0	1.0	15	15	60p		N	Si	200J	T05	A	
63#	2SC519A	20.0M	200n	50n	300n	800n	50	5.0	5.0	10	400m	150p	N-DM	Si	150J	T03	A	
64#	2SC520A	20.0M	200n	50n	300n	800n	50	5.0	5.0	10	400m	150p	N-DM	Si	150J	T03	A	
65#	2SC521A	20.0M	200n	50n	300n	800n	50	5.0	5.0	10	400m	150p	N-DM	Si	150J	T03	A	
66#	2SC827	20.0M	200n	2.0u	200n	700m	40	4.0	50m	370	500m	10p	N-D	Si	175J	T05	A	
67	2N5664	20.0M	250n		1.5u	30	5.0	3.0	15	15	125p		N	Si	200J	T066	A	
68	2N5665	20.0M	250n		1.5u	30	5.0	3.0	15	15	125p		N	Si	200J	T066	A	
69	2N5666	20.0M	250n		1.5u	15	5.0	3.0	15	15	125p		N	Si	200J	T05	A	
70	2N5667	20.0M	250n		1.5u	15	5.0	3.0	15	15	125p		N	Si	200J	T05	A	
71	2N317	20.0M	300n	50n	200n	250n	150m	20	400m	30	14p		P-A	Ge	85S	T05	A	
72	2N317A	20.0M	300n	50n	200n	250n	150m	25	400m	40	14p		P-A	Ge	100S	T05	A	
73	2N2648	20.0M	300n	50n	900n	500n	300m	50	1	200	50	22p	P-A	Ge	100	T05	A	
7																		

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	#	L E A D E
								Vcb (V)	Ic (A)	hFE									
1	ST54004	20MΔ	500n∅			1.0u∅	125 ∅#	10 ∅	10 ∅	40 Δ#	875p∅		P-PL	Si	200J	T063			
2	ST54005	20MΔ	500n∅			1.0u∅	125 ∅#	10 ∅	10 ∅	40 Δ#	875p∅		P-PL	Si	200J	T063			
3	ST54006	20MΔ	500n∅			1.0u∅	125 ∅#	10 ∅	10 ∅	40 Δ#	875p∅		P-PL	Si	200J	T063			
4	ST72036	20MΔ	500n∅			1.0u∅	30 ∅\$	10 ∅	500m∅	40 Δ#	300p∅		P-PL	Si	200J	T063			
5	ST72037	20MΔ	500n∅			1.0u∅	30 ∅\$	10 ∅	500m∅	40 Δ#	300p∅		P-PL	Si	200J	T063			
6	ST72038	20MΔ	500n∅			1.0u∅	30 ∅\$	10 ∅	500m∅	40 Δ#	300p∅		P-PL	Si	200J	T063			
7	ST72039	20MΔ	500n∅			1.0u∅	30 ∅\$	10 ∅	500m∅	40 Δ#	300p∅		P-PL	Si	200J	T05			
8	ST72040	20MΔ	500n∅			1.0u∅	30 ∅\$	10 ∅	500m∅	40 Δ#	300p∅		P-PL	Si	200J	T05			
9	ST72041	20MΔ	500n∅			1.0u∅	10 ∅\$	10 ∅	500m∅	40 Δ#	300p∅		P-PL	Si	200J	T05			
10	ST75004	20MΔ	500n∅			1.0u∅	7.5 ∅\$	10 ∅	500m∅	40 Δ#	100p∅		P-PL	Si	200J	T05			
11	ST75005	20MΔ	500n∅			1.0u∅	7.5 ∅\$	10 ∅	500m∅	40 Δ#	100p∅		P-PL	Si	200J	T05			
12	ST75006	20MΔ	500n∅			1.0u∅	7.5 ∅\$	10 ∅	500m∅	40 Δ#	100p∅		P-PL	Si	200J	T05			
13	ST76018	20MΔ	500n∅			1.0u∅	40 ∅\$	10 ∅	500m∅	40 Δ#	400p∅		P-PL	Si	200J	T059			
14	ST76019	20MΔ	500n∅			1.0u∅	40 ∅\$	10 ∅	500m∅	40 Δ#	400p∅		P-PL	Si	200J	T059			
15	ST76020	20MΔ	500n∅			1.0u∅	40 ∅\$	10 ∅	500m∅	40 Δ#	400p∅		P-PL	Si	200J	T059			
16	1756-0660	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063			
17	1756-0860	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063			
18	1756-1060	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063			
19	1756-1260	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063			
20	1756-1460	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063			
21	1756-1660	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063			
22	1756-1860	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063			
23	1776-0660	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063		A	
24	1776-0860	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063		A	
25	1776-1060	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063		A	
26	1776-1260	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063		A	
27	1776-1460	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063		A	
28	1776-1660	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063		A	
29	1776-1860	20MΔ	600n∅		700n	450n	240	3.0 ∅	60 ∅	15	1.6n∅		N-EM	Si	200J	T063		A	
30#	25C728	20.0MΔ	1000n∅		8.0u	2.0u	350m	4.0 ∅	10m∅	90	9.0p		N	Si	175J	T018			
31	JAN2N3715	20.0MΔ	1.5u∅			2.0u∅	90 ∅	10 ∅	500m∅	30 Δ	500p∅		N	Si	200J	T03		C∅	
32	JAN2N3716	20.0MΔ	1.5u∅			2.0u∅	90 ∅	10 ∅	500m∅	30 Δ	500p∅		N	Si	200J	T03		C∅	
33	JAN2N3719	20.0MΔ	1.5u∅			2.0u∅	90 ∅\$	4.0 ∅	10	5.0 #Δ	500p∅		P	Si	200J	T03		C∅	
34	JAN2N3792	20.0MΔ	1.5u∅			2.0u∅	90 ∅\$	4.0 ∅	10	5.0 #Δ	500p∅		P	Si	200J	T03		C∅	
35	2N5540	20.0MΔ	700n∅	1.5u		1.0u∅	50 ∅	5.0 ∅	5.0 ∅	20 #	6.0p∅		N	Si	175	T066		A∅	
36	2N4296	20.0MΔ	700n∅			1.0u∅	20m∅	10 ∅	50m∅	150 Δ	6.0p∅			Si	175	T066		C∅	
37	2N4297	20.0MΔ	700n∅			1.0u∅	20m∅	10 ∅	50m∅	75 Δ	6.0p∅			Si	175	T066		C∅	
38	2N4298	20.0MΔ	700n∅			1.0u∅	20m∅	10 ∅	50m∅	150 Δ	6.0p∅			Si	175	T066		C∅	
39	2N4299	20.0MΔ	700n∅			1.0u∅	20m∅	10 ∅	50m∅	150 Δ	6.0p∅			Si	175	T066		C∅	
40	2N864	22.0MΔ	100n		100n	100n	150m	5.0 ∅	5.0m∅	35 Δ	5.0p		P-A	Si		T018		A	
41	2N863	22.0MΔ	125n		100n	100n	150m	5.0 ∅	5.0m∅	35 Δ	5.0p		P-A	Si		T018		A	
42	2N861	22.0MΔ	150n		100n	150m	150m	5.0 ∅	5.0m∅	35 Δ	5.0p		P-A	Si		T018		A	
43	2N865A	24.0MΔ	100n		150n	100n	300m	6.0 ∅	1.0m	500 Δ	9.0p∅		P	Si	200S	T018			
44#	2H1256	25.0MΔ	25n∅			40n∅	300m	10 ∅	2.0m	25 Δ	10p∅		P-ME	Si	175A	T018			
45#	2H1258	25.0MΔ	25n∅			60n∅	300m	10 ∅	2.0m	75 Δ	10p∅		P-ME	Si	175A	T018			
46#	2N1104	25.0MΔ	30n			300m	300m	10 ∅	2.0m	25	10p∅		P-ME	Si	175A	T018			
47#	2N1104	25.0MΔ	30n		20n	80n	125m	3.0 ∅	10m∅	45 Δ	150		N	Si	150S	T043		A	
48#	SFT229	25.0MΔ	70n∅			70n∅	150m	500m∅	10m∅	75 Δ	9.0		P-AΔ	Ge	85J	T05			
49#	2N5552.4	25.0MΔ	100n∅			700n∅	1.5	5.0 ∅	10 ∅	30	125p		N-PE	Si	200	MT20			
50#	2S033	25.0MΔ	450n∅	2.0u		2.0u∅	1.0u	4.0 ∅	10 ∅	10 #	120p∅		N-DM	Si	175	T03			
51#	2S034	25.0MΔ	450n∅	2.0u		2.0u∅	1.0u	4.0 ∅	10 ∅	25 #	120p∅		N-DM	Si	175	T03			
52#	2S034	25.0MΔ	450n∅	2.0u		2.0u∅	1.0u	4.0 ∅	10 ∅	10 #	120p∅		N-DM	Si	175	T03			
53#	2S038	25.0MΔ	450n∅	2.0u		2.0u∅	1.0u	4.0 ∅	10 ∅	25 #	120p∅		N-DM	Si	175	T03			
54#	1843-2005	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
55#	1843-2010	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
56#	1843-2020	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
57#	1843-2205	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
58#	1843-2210	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
59#	1843-2220	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	10 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
60#	1843-2505	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
61#	1843-2510	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
62#	1843-2520	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
63#	1843-2705	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
64#	1843-2710	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
65#	1843-2720	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	10 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
66#	1843-3005	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
67#	1843-3010	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
68#	1843-3020	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
69#	1843-3205	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
70#	1843-3210	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
71#	1843-3220	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	10 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
72#	1843-3505	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
73#	1843-3510	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
74#	1843-3520	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
75#	1843-3705	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	20 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
76#	1843-3710	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅	5.0 ∅	15 #Δ	600p∅		N-EM	Si	200J	T03		C∅	
77#	1843-3720	25MΔ	500n∅			1.5u∅	85 ∅\$	5.0 ∅											

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C E O D E
								Vcb (V)	Ic (A)	hFE								
1	2N5477	30.0MΔ	100n	100n	2.0u	200n	60	2.0	500m	30	Δ#	250p	N	Si	200J	T059	C	
2	2N5478	30.0MΔ	100n	100n	2.0u	200n	60	2.0	500m	30	Δ#	250p	N	Si	200J	T059	C	
3	2N5479	30.0MΔ	100n	100n	2.0u	200n	60	2.0	500m	30	Δ#	250p	N	Si	200J	T059	C	
4	2N5480	30.0MΔ	100n	100n	2.0u	200n	60	2.0	500m	30	Δ#	250p	N	Si	200J	T059	C	
5	2N5552	30.0MΔ	100n	100n	2.0u	200n	60	2.0	500m	30	Δ#	250p	N	Si	200J	R113	A	
6	2852-1	30MΔ	100n	50n	400n	150n	5.0	1.0	50m	15	Δ	400m	N-PL	Si	200A	T05	A	
7	2852-2	30MΔ	100n	50n	400n	150n	2.2	1.0	50m	15	Δ	400m	N-PL	Si	200A	T059	A	
8	2852-3	30MΔ	100n	50n	400n	150n	5.0	1.0	50m	15	Δ	400m	N-PL	Si	200A	MT32	A	
9	2856-1	30MΔ	100n	50n	400n	150n	5.0	1.0	50m	25	Δ	400m	N-PL	Si	200A	MT32	A	
10	2856-2	30.0MΔ	100n	50n	400n	150n	2.0	1.0	50m	15	Δ	400m	N-PL	Si	200A	T059	A	
11	2856-3	30.0MΔ	100n	50n	400n	150n	1.5	1.0	50m	15	Δ	400m	N-PL	Si	200A	MT35	A	
12	MJ500	30MΔ	100n	100n	1.0u	150n	60	2.0	5.0	15	Δ#	300p	P	Si	200J	T059	A	
13	MJ501	30MΔ	100n	100n	1.0u	150n	60	2.0	5.0	15	Δ#	300p	P	Si	200J	T059	A	
14	MJ6700	30MΔ	100n	100n	1.0u	150n	60	2.0	5.0	15	Δ#	300p	P	Si	200J	T059	A	
15	MJ6701	30MΔ	100n	100n	1.0u	150n	60	2.0	5.0	15	Δ#	300p	P	Si	200J	T059	A	
16	MJ8100	30MΔ	100n	100n	1.0u	150n	10	2.0	5.0	15	Δ#	300p	P	Si	200J	T039	A	
17	MJ8101	30MΔ	100n	100n	1.0u	150n	10	2.0	5.0	15	Δ#	300p	P	Si	200J	T039	A	
18	2N2877	30MΔ	120n	60n	80n	30	30	2.0	10m	15	Δ	150p	N	Si	200J	TO111	A	
19	2N2879	30MΔ	120n	60n	80n	30	30	2.0	10m	15	Δ	150p	N	Si	200J	TO111	A	
20	2N3744	30.0MΔ	120n	60n	80n	30	30	5.0	5	10	Δ	150p	N	Si	200J	MT53	G	
21	2N3745	30.0MΔ	120n	60n	80n	30	30	5.0	5	10	Δ	150p	N	Si	200J	MT53	G	
22	2N3746	30.0MΔ	120n	60n	80n	30	30	5.0	5	10	Δ	150p	N	Si	200J	MT53	G	
23	2N2849	30.0MΔ	125n	50n	300n	175n	850m	1.0	500	50	Δ	400m	N-PE	Si	200S	R61	∅	
24	2N2849-1	30.0MΔ	125n	50n	300n	175n	850m	1.0	500	50	Δ	400m	N-PE	Si	200S	T05	∅	
25	2N2849-3	30.0MΔ	125n	50n	300n	175n	850m	1.0	500	50	Δ	400m	N-PE	Si	200S	MT32	∅	
26	2N2850	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	25	Δ	250m	N-PE	Si	200S	R61	∅	
27	2N2850-1	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	25	Δ	250m	N-PE	Si	200S	T05	∅	
28	2N2850-3	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	25	Δ	250m	N-PE	Si	200S	MT32	∅	
29	2N2851	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	25	Δ	400m	N-PE	Si	200S	R61	∅	
30	2N2851-1	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	25	Δ	400m	N-PE	Si	200S	T05	∅	
31	2N2851-3	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	25	Δ	400m	N-PE	Si	200S	MT32	∅	
32	2N2852	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	15	Δ	400m	N-PE	Si	200S	R61	∅	
33	2N2852-1	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	15	Δ	400m	N-PE	Si	200S	T05	∅	
34	2N2852-3	30.0MΔ	125n	50n	400n	175n	850m	1.0	500	15	Δ	400m	N-PE	Si	200S	MT32	∅	
35	2N2853	30.0MΔ	125n	50n	400n	200n	850m	3.0	5.0	20	Δ#	300m	N-PE	Si	200S	R61	∅	
36	2N2853-1	30.0MΔ	125n	50n	400n	200n	850m	3.0	5.0	20	Δ#	300m	N-PE	Si	200S	T05	∅	
37	2N2853-3	30.0MΔ	125n	50n	400n	200n	850m	3.0	5.0	20	Δ#	300m	N-PE	Si	200S	MT32	∅	
38	2N2854	30.0MΔ	125n	50n	300n	175n	850m	1.0	50m	50	Δ	400m	N-PE	Si	200S	R61	∅	
39	2N2854-1	30.0MΔ	125n	50n	300n	175n	850m	1.0	50m	50	Δ	400m	N-PE	Si	200S	T05	∅	
40	2N2854-3	30.0MΔ	125n	50n	300n	175n	850m	1.0	50m	50	Δ	400m	N-PE	Si	200S	MT32	∅	
41	2N2855	30.0MΔ	125n	50n	400n	175n	850m	1.0	50m	25	Δ	400m	N-PE	Si	200S	R61	∅	
42	2N2855-1	30.0MΔ	125n	50n	400n	175n	850m	1.0	50m	25	Δ	400m	N-PE	Si	200S	T05	∅	
43	2N2855-3	30.0MΔ	125n	50n	400n	175n	850m	1.0	50m	25	Δ	400m	N-PE	Si	200S	MT32	∅	
44	2N2856	30.0MΔ	125n	50n	400n	175n	850m	1.0	50m	15	Δ	400m	N-PE	Si	200S	R61	∅	
45	2N2856-1	30.0MΔ	125n	50n	300n	175n	850m	1.0	50m	15	Δ	400m	N-PE	Si	200S	T05	∅	
46	2N2856-3	30.0MΔ	125n	50n	400n	175n	850m	1.0	50m	15	Δ	400m	N-PE	Si	200S	MT32	∅	
47	2849-1	30.0MΔ	125n	50n	300n	175n	1.0	1.0	500	50	Δ	400m	N-PE	Si	200S	T05	∅	
48	2849-2	30.0MΔ	125n	50n	300n	175n	2.0	1.0	500	50	Δ	400m	N-PE	Si	200S	T059	∅	
49	2849-3	30.0MΔ	125n	50n	300n	175n	1.5	1.0	500	50	Δ	400m	N-PE	Si	200S	MT32	∅	
50	2N5658	30.0MΔ	150m	800m	30	800m	30	2.0	500m	40	Δ#	150p	N	Si	200J	T059	A	
51	2N5659	30.0MΔ	150m	800m	30	800m	30	2.0	500m	40	Δ#	150p	N	Si	200J	TO111	G	
52	2N5316	30.0MΔ	200n	1.0u	200n	50	50	5.0	10	10	Δ#	500p	N	Si	200J	T061	A	
53	2N5318	30.0MΔ	200n	1.0u	200n	50	50	5.0	10	10	Δ#	500p	N	Si	200J	T061	A	
54	2N5729	30MΔ	200n	3.0u	500n	10	10	5.0	10	5.0	Δ	300m	N	Si	200J	T05	A	
55	2N5730	30MΔ	200n	3.0u	500n	45	45	5.0	10	5.0	Δ	240m	N	Si	200J	T059	A	
56	SDT3105	30.0MΔ	200n	1.0u	200n	3.0	3.0	5.0	5.0	90	Δ#	500p	P-PE	Si	200J	T061	A	
57	SDT3106	30.0MΔ	200n	1.0u	200n	3.0	3.0	5.0	5.0	90	Δ#	500p	P-PE	Si	200J	T061	A	
58	SDT3107	30.0MΔ	200n	1.0u	200n	3.0	3.0	5.0	5.0	90	Δ#	500p	P-PE	Si	200J	T061	A	
59	SDT3108	30.0MΔ	200n	1.0u	200n	3.0	3.0	5.0	5.0	90	Δ#	500p	P-PE	Si	200J	T061	A	
60	SDT3109	30.0MΔ	200n	1.0u	200n	3.0	3.0	5.0	5.0	90	Δ#	500p	P-PE	Si	200J	T061	A	
61	1723-0405	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
62	1723-0605	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
63	1723-0805	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
64	1723-1005	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
65	1723-1205	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
66	1723-1405	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
67	1723-1605	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
68	1723-1805	30MΔ	250m	450n	250m	85	85	4.0	5.0	20	Δ#	800p	N-E	Si	200J	T066	C	
69	2N5731	30MΔ	300n	3.0u	600n	75	75	5.0	20	5.0	Δ	120m	N	Si	200J	T061	A	
70	2N5732	30MΔ	300n	3.0u	600n	75	75	5.0	20	5.0	Δ	120m	N	Si	200J	T03	A	
71	1723-0410	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
72	1723-0610	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
73	1723-0810	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
74	1723-1010	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
75	1723-1210	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
76	1723-1410	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
77	1723-1610	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
78	1723-1810	30MΔ	300m	500n	300m	85	85	4.0	10	20	Δ#	800p	N-E	Si	200J	T066	C	
79	1748-0610	30MΔ	300m	500n	300n	100	100	2.0	10	20	Δ	800p	N-E	Si	200J	T063	A	
80	1748-0810	30MΔ	300m	500n	300n	100	100	2.0	10	20	Δ	800p	N-E	Si	200J			

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc AIR FREE @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y2000 s/a TO200 Ser.	L C O A D E
								Vcb (V)	le (A)	hFE								
1	1748-1030	30MSΔ	500n∅		600n	400n	100 ∅	3.0 ∅	3.0 ∅	20 #Δ	800pZ		N-E	Si	200J	T063	A	
2	1748-1230	30MSΔ	500n∅		600n	400n	100 ∅	3.0 ∅	3.0 ∅	20 #Δ	800pZ		N-E	Si	200J	T063	A	
3	1748-1430	30MSΔ	500n∅		600n	400n	100 ∅	3.0 ∅	3.0 ∅	20 #Δ	800pZ		N-E	Si	200J	T063	A	
4	1748-1630	30MSΔ	500n∅		600n	400n	175 ∅	3.0 ∅	3.0 ∅	20 #	800pZ		N-EM	Si	200J	T063	A	
5	1748-1830	30MSΔ	500n∅		600n	400n	175 ∅	3.0 ∅	3.0 ∅	20 #	800pZ		N-EM	Si	200J	T063	A	
6	SDT3101	30MSΔ	500n		750n	500n	3.0 ∅	5.0 ∅	100∅	90 ∅#	500pZ		P-PE	Si	200J	T061	A	
7	SDT3102	30MSΔ	500n		750n	500n	3.0 ∅	5.0 ∅	100∅	90 ∅#	500pZ		P-PE	Si	200J	T061	A	
8	SDT3103	30MSΔ	500n		750n	500n	3.0 ∅	5.0 ∅	100∅	90 ∅#	500pZ		P-PE	Si	200J	T061	A	
9	SDT3104	30MSΔ	500n		750n	500n	3.0 ∅	5.0 ∅	100∅	90 ∅#	500pZ		P-PE	Si	200J	T061	A	
10	SDT3201	30MSΔ	500n		1.0u	500n	3.0 ∅	5.0 ∅	100∅	90 ∅#	500pZ		N-PE	Si	200J	T061	A	
11	SDT3202	30MSΔ	500n		1.0u	500n	3.0 ∅	5.0 ∅	100∅	90 ∅#	500pZ		N-PE	Si	200J	T061	A	
12	SDT3203	30MSΔ	500n		1.0u	500n	3.0 ∅	5.0 ∅	0.1m∅	90 ∅#	500pZ		N-PE S	Si	200J	T061	A	
13	SDT3204	30MSΔ	500n		1.0u	500n	3.0 ∅	5.0 ∅	0.1m∅	90 ∅#	500pZ		N-PE S	Si	200J	T061	A	
14	ST74049	30MSΔ	500n∅		1.0u∅	7.5 ∅	10 ∅	500m∅	40 ∅#	60pZ		N-PL	Si	200J	T05			
15	ST74050	30MSΔ	500n∅		1.0u∅	7.5 ∅	10 ∅	500m∅	40 ∅#	60pZ		N-PL	Si	200J	T05			
16	ST74051	30MSΔ	500n∅		1.0u∅	7.5 ∅	10 ∅	500m∅	40 ∅#	60pZ		N-PL	Si	200J	T05			
17	2N5932	30MSΔ	600n		550n	350n	100 ∅	4.0 ∅	3.0 ∅	12 ∅#			N	Si	200J	MD6f	C∅	
18	2N5933	30MSΔ	600n		550n	350n	100 ∅	4.0 ∅	3.0 ∅	12 ∅#			N	Si	200J	MD6f	C∅	
19	2N5934	30MSΔ	600n		550n	350n	100 ∅	4.0 ∅	3.0 ∅	12 ∅#			N	Si	200J	MD6f	C∅	
20	2N6046	30MSΔ	600n		550n	350n	114 ∅	4.0 ∅	3.0 ∅	12 ∅#			N	Si	200J	T063	A∅	
21	2N6047	30MSΔ	600n		550n	350n	114 ∅	4.0 ∅	3.0 ∅	12 ∅#			N	Si	200J	T063	A∅	
22	2N6048	30MSΔ	600n		550n	350n	114 ∅	4.0 ∅	3.0 ∅	12 ∅#			N	Si	200J	T063	A∅	
23	1743-0820	30MSΔ	600n		550n	350n	100 ∅	4.0 ∅	3.0 ∅	12 ∅#	800pZ		N-E	Si	200A	T03	C∅	
24	1743-1220	30MSΔ	600n		550n	350n	100 ∅	4.0 ∅	3.0 ∅	12 ∅#	800pZ		N-E	Si	200A	T03	C∅	
25	1743-1620	30MSΔ	600n		550n	350n	100 ∅	4.0 ∅	3.0 ∅	12 ∅#	800pZ		N-E	Si	200A	T03	C∅	
26	1743-1820	30MSΔ	600n		550n	350n	100 ∅	4.0 ∅	3.0 ∅	12 ∅#	800pZ		N-E	Si	200A	T03	C∅	
27	2N5733	30MSΔ	700n		3.0u	1.0u	150 ∅#	5.0 ∅	3.0 ∅	5.0 Δ	60m	750pZ	N	Si	200J	T063	A∅	
28	2N5734	30MSΔ	700n		3.0u	1.0u	150 ∅#	5.0 ∅	3.0 ∅	5.0 Δ	60m	750pZ	N	Si	200J	T03	A∅	
29	2N5935	30MSΔ	700n		600n	400n	100 ∅	4.0 ∅	3.0 ∅	20 ∅#			N	Si	200J	MD6f	C∅	
30	2N5936	30MSΔ	700n		600n	400n	100 ∅	4.0 ∅	3.0 ∅	20 ∅#			N	Si	200J	MD6f	C∅	
31	1743-0630	30MSΔ	700n		600n	400n	100 ∅	4.0 ∅	4.0 ∅	10 ∅#	800pZ		N-E	Si	200A	T03	C∅	
32	1743-1030	30MSΔ	700n		600n	400n	100 ∅	4.0 ∅	4.0 ∅	10 ∅#	800pZ		N-E	Si	200A	T03	C∅	
33	1743-1430	30MSΔ	700n		600n	400n	100 ∅	4.0 ∅	4.0 ∅	10 ∅#	800pZ		N-E	Si	200A	T03	C∅	
34	1743-1830	30MSΔ	700n		600n	400n	100 ∅	4.0 ∅	4.0 ∅	10 ∅#	800pZ		N-E	Si	200A	T03	C∅	
35	2N4002	30MSΔ	1000n∅		4.0u∅	1.2	4.0 ∅	2 ∅	15 ∅#	05 #			N	Si	200	X21		
36	2N4003	30MSΔ	1000n∅		4.0u∅	1.2	4.0 ∅	2 ∅	15 ∅#	05 #			N	Si	200	X21		
37	2N4004	30MSΔ	1000n∅		4.0u∅	1.2	4.0 ∅	2 ∅	15 ∅#	05 #			N	Si	200	X21		
38	2N4005	30MSΔ	1000n∅		4.0u∅	1.2	4.0 ∅	2 ∅	15 ∅#	05 #			N	Si	200	X21		
39	2N1301	35MSΔ	70n	90n	90n	70n	150m	500m∅	40m∅	40			P-DM	Ge	85A	R81m	A	
40	2N1384	35MSΔ	80n	20n	250n	100n	240m	5.0 ∅	200m	50			P-D	Ge	85A	T011	A	
41	JAN2N3846	35MSΔ	4.0u∅		7.0u∅	150 ∅	3.0 ∅	5.0 ∅	40 ∅#		750pZ		N	Si	175A	T063	A∅	
42	JAN2N3847	35MSΔ	4.0u∅		7.0u∅	150 ∅	3.0 ∅	5.0 ∅	40 ∅#		750pZ		N	Si	175A	T063	A∅	
43	2N3388	36MSΔ	1000n	200n	400n	1.2u	600m	1.5 ∅	2.5m∅	60 Δ	400	35pZ	N	Si	175A	T05	A∅	
44	2N3389	36MSΔ	1000n	200n	400n	1.2u	600m	1.5 ∅	2.5m∅	60 Δ	400	35pZ	N	Si	175A	T05	A∅	
45	2N1122	40MSΔ	25n∅	150 ∅			25m*	250m∅	10m	25 Δ	1.2	6.0pZ	P-MA	Ge	85J	T024	A	
46	2N1122A	40MSΔ	25n∅	150 ∅			25m*	250m∅	10m	25 Δ	1.2	6.0pZ	P-MA	Ge	85J	T024	A	
47	JAN2N1854	40MSΔ	25n∅		60n		150m	1.0 ∅	50m∅	400 ∅	15		P	Ge	85S	T05	A	
48	2H1255	40MSΔ	25n∅		60n∅	60n∅	300m	1.0 ∅	2.0m	40 Δ	30	10pZ	P-ME	Si	175A	T018		
49	2H1257	40MSΔ	25n∅		60n∅	60n∅	300m	1.0 ∅	2.0m	40 Δ	30	10pZ	P-ME	Si	175A	T018		
50	2H1259	40MSΔ	25n∅		60n∅	60n∅	300m	1.0 ∅	2.0m	25 Δ	30	10pZ	P-ME	Si	175A	T018		
51	2N1259	40MSΔ	25n∅		60n∅	450m	1.0 ∅	10m∅	100	30	10pZ		P	Si	200S	T05		
52	HT100	40MSΔ	25n∅		80n∅	300m	1.0 ∅	2.0m	14 Δ	20	10pZ		P-ME	Si	175A	T018		
53	HT101	40MSΔ	25n∅		80n∅	300m	1.0 ∅	2.0m	120 ∅	50	10pZ		P-ME	Si	175A	T018		
54	2N5334	40MSΔ	50n		950n	100n	6 ∅	2.0 ∅	2.0m∅	15 ∅#	75p		N	Si	200J	T039	A∅	
55	2N5335	40MSΔ	50n		950n	100n	6 ∅	2.0 ∅	2.0m∅	15 ∅#	75p		N	Si	200J	T039	A∅	
56	D43C1	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
57	D43C2	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
58	D43C3	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
59	D43C4	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
60	D43C5	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
61	D43C6	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
62	D43C7	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	10 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
63	D43C8	40MS	50n∅		500n∅	50n∅	1.7 #	1.0 ∅	1.0 ∅	20 Δ	500m	125pZ	Pt	Si	150J	X51c	A	
64	D45C1	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	1.0 ∅	10 Δ	500m	125pZ	Pt	Si	125J	X102	D	
65	D45C2	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	1.0 ∅	20 Δ	500m	125pZ	Pt	Si	125J	X102	D	
66	D45C3	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	2.0 ∅	20 Δ	500m	125pZ	Pt	Si	125J	X102	D	
67	D45C4	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	1.0 ∅	10 Δ	500m	125pZ	Pt	Si	125J	X102	D	
68	D45C5	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	1.0 ∅	20 Δ	500m	125pZ	Pt	Si	125J	X102	D	
69	D45C6	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	2.0 ∅	20 Δ	500m	125pZ	Pt	Si	125J	X102	D	
70	D45C7	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	1.0 ∅	10 Δ	500m	125pZ	Pt	Si	125J	X102	D	
71	D45C8	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	1.0 ∅	20 Δ	500m	125pZ	Pt	Si	125J	X102	D	
72	D45C9	40MS	50n∅		500n∅	50n∅	1.3	1.0 ∅	2.0 ∅	20 Δ	500m	125pZ	Pt	Si	125J	X102	D	
73	MM4545	40MSΔ	50n	30n	400n	60n	25 ∅	1.0 ∅	500m∅	20 #Δ	2.0	80pZ	P-AN	Si	200J	T037	A∅	
74	MM4546	40MSΔ	50n	30n	400n	60n	25 ∅	1.0 ∅	500m∅	20 #Δ	2.4	60pZ	P-AN	Si	200J	T037	A∅	
75	MM4645	40MSΔ	50n	30n	400n	60n	5.0 ∅	1.0 ∅	500m∅	20 #Δ	2.0	80pZ	P-AN	Si	200J	T039	A∅	
76	MM4646	40MSΔ	50n	30n	400n	60n	5.0 ∅	1.0 ∅	500m∅	20 #Δ	2.4	60pZ	P-AN	Si	200J	T039	A∅	
77	2N3747	40MSΔ	80n		60n	80n	30 ∅	5.0 ∅	5 ∅	15 Δ	150pZ		N	Si	200J	MT53	G	
78	2N3748	40MSΔ	80n		60n	80n	30 ∅	5.0 ∅	5 ∅	15 Δ	150pZ		N	Si	200J	MT53	G	
79	2N3749	40MSΔ	80n		60n	80n	30 ∅	5.0 ∅	5 ∅	15 Δ	150pZ		N	Si	200J	MT53	G	



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O C O D E
								Vcb (V)	Ie (A)	hFE								
1#	1714-0802	40MΔ	300n∅		600n	300n∅	25 ∅\$	2.0 ∅	2.0 ∅	20 ∅#	250p∅		N-E	Si	200J	T066	C∅	
2#	1714-0802	40MΔ	300n∅		600n	300n∅	25 ∅\$	2.0 ∅	2.0 ∅	20 ∅#	250p∅		N-E	Si	200J	T066	C∅	
3#	1714-1002	40MΔ	300n∅		600n	300n∅	25 ∅\$	2.0 ∅	2.0 ∅	20 ∅#	250p∅		N-E	Si	200J	T066	C∅	
4#	1714-1202	40MΔ	300n∅		600n	300n∅	25 ∅\$	2.0 ∅	2.0 ∅	20 ∅#	250p∅		N-E	Si	200J	T066	C∅	
5#	1714-1402	40MΔ	300n∅		600n	300n∅	25 ∅\$	2.0 ∅	2.0 ∅	20 ∅#	250p∅		N-E	Si	200J	T066	C∅	
6#	1714-1602	40MΔ	300n∅		600n	300n∅	25 ∅\$	2.0 ∅	2.0 ∅	20 ∅#	250p∅		N-E	Si	200J	T066	C∅	
7#	1714-1802	40MΔ	300n∅		600n	300n∅	25 ∅\$	2.0 ∅	2.0 ∅	20 ∅#	250p∅		N-E	Si	200J	T066	C∅	
8	1716-0402	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
9	1716-0602	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
10	1716-0802	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
11	1716-1002	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
12	1716-1202	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
13	1716-1402	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
14	1716-1602	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
15	1716-1802	40MΔ	300n∅		600n	300n	87	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
16	1718-0402	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
17	1718-0602	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
18	1718-0802	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
19	1718-1002	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
20	1718-1202	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
21	1718-1402	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
22	1718-1602	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
23	1718-1802	40MΔ	300n∅		600n	300n	58	2.0 ∅	2.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
24	2N3879	40.0MΔ	400n	500n∅	800n	400n	35 ∅	2.0 ∅	4 ∅	12 ∅	30		N	Si	200J	T066	C∅	
25#	1714-0405	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
26#	1714-0605	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
27#	1714-0805	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
28#	1714-1005	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
29#	1714-1205	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
30#	1714-1405	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
31#	1714-1605	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
32#	1714-1805	40MΔ	400n∅		600n	300n∅	25 ∅\$	2.0 ∅	5.0 ∅	20 ∅	250p∅		N-E	Si	200J	T066	C∅	
33	1716-0405	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
34	1716-0605	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
35	1716-0805	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
36	1716-1005	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
37	1716-1205	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
38	1716-1405	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
39	1716-1605	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
40	1716-1805	40MΔ	400n∅		600n	300n	87	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T061	A	
41	1718-0405	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
42	1718-0605	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
43	1718-0805	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
44	1718-1005	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
45	1718-1205	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
46	1718-1405	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
47	1718-1605	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
48	1718-1805	40MΔ	400n∅		600n	300n	58	2.0 ∅	5.0 ∅	20	250p∅		N-EM	Si	200J	T0111	GG	
49	2N5404	40.0MΔ	500n		750n	200n	5 ∅\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T05	A∅	
50	2N5405	40.0MΔ	500n		750n	200n	5 ∅\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T05	A∅	
51	2N5406	40.0MΔ	500n		1.0u	300n	5 ∅\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T05	A∅	
52	2N5407	40.0MΔ	500n		1.0u	300n	5 ∅\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T05	A∅	
53	2N5408	40.0MΔ	500n		750n	200n	30m\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T0111	AA	
54	2N5409	40.0MΔ	500n		750n	200n	30m\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T0111	AA	
55	2N5410	40.0MΔ	500n		1.0u	300n	30m\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T0111	AA	
56	2N5411	40.0MΔ	500n		1.0u	300n	30m\$	5.0 ∅	5.0 ∅	30	150p		P	Si	200J	T0111	AA	
57	SDT3301	40.0MΔ	500n		1.0u	300n	2.7 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		P-PE	Si	200J	T0111		
58	SDT3302	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		P-PE	Si	200J	T0111		
59	SDT3303	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		P-PE	Si	200J	T0111		
60	SDT3304	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		P-PE	Si	200J	T0111		
61	SDT3305	40.0MΔ	500n		750n	200n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		P-PE	Si	200J	T0111		
62	SDT3306	40.0MΔ	500n		750n	200n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		P-PE	Si	200J	T0111		
63	SDT3307	40.0MΔ	500n		750n	200n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		P-PE	Si	200J	T0111		
64	SDT3308	40.0MΔ	500n		750n	200n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		P-PE	Si	200J	T0111		
65	SDT3309	40.0MΔ	500n		750n	200n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		P-PE	Si	200J	T0111		
66	SDT3401	40.0MΔ	500n		1.5u	300n	2.0 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		N-PE	Si	200J	T0111		
67	SDT3402	40.0MΔ	500n		1.5u	300n	2.0 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		N-PE	Si	200J	T0111		
68	SDT3403	40.0MΔ	500n		1.5u	300n	2.0 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		N-PE	Si	200J	T0111		
69	SDT3404	40.0MΔ	500n		1.5u	300n	2.0 ∅	5.0m∅	2.0 ∅	120 ∅#	200p		N-PE	Si	200J	T0111		
70	SDT3405	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		N-PE	Si	200J	T0111		
71	SDT3406	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		N-PE	Si	200J	T0111		
72	SDT3407	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		N-PE	Si	200J	T0111		
73	SDT3408	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		N-PE	Si	200J	T0111		
74	SDT3409	40.0MΔ	500n		1.0u	300n	2.0 ∅	5.0m∅	2.0 ∅	60 ∅#	200p		N-PE	Si	200J	T0111		
75	2N5218	40.0MΔ	600n	600n∅	4.5u	1.0u	50 ∅	5.0m∅	50m	75 ∅#	30		N	Si	200C	T061	A∅	
76	2N5560	40.0MΔ	1u∅			2u∅	150 ∅	2.0 ∅	15 ∅	30 ∅	600p\$		N	Si	200J	T063	A∅	
77	PT1937	40.0MΔ	1000n∅			3.0u∅	100 ∅	2.0 ∅	7.0 ∅	60 ∅	140m		N-DPL	Si	150J	MT38		
78	PT1941	40.0MΔ	1000n∅															



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E	
								Vcb (V)	Ie (A)	hFE									
1	2N2350	50MΔ	70n		150n	50n	400m	10	0	150m	300	23	20pZ	N-PE	Si	200J	T046	A0	
2	2N2350A	50MΔ	70n		150n	50n	400m	10	0	150m	300	16	20pZ	N-PE	Si	200J	T046	A0	
3	2N2351	50MΔ	70n		150n	50n	400m	10	0	150m	120	23	20pZ	N-PE	Si	200J	T046	A0	
4	2N2351A	50MΔ	70n		150n	50n	400m	10	0	150m	120	16	20pZ	N-PE	Si	200J	T046	A0	
5	2N2352	50MΔ	70n		150n	50n	400m	10	0	150m	60	23	20pZ	N-PE	Si	200J	T046	A0	
6	2N2352A	50MΔ	70n		150n	50n	400m	10	0	150m	60	16	20pZ	N-PE	Si	200J	T046	A0	
7	2N2364	50MΔ	70n		50n	500n	100n	400m	10	0	150m	120	23	15pZ	N-PE	Si	200J	T046	A0
8	2N2364A	50MΔ	70n	50n	500n	100n	400m	10	0	150m	120	16	15pZ	N-PE	Si	200J	T046	A0	
9#	BSY46	50MΔ	70n		150n	50n	800m	10	0	150m	80		20pZ	N-PE	Si	200J	T05	A0	
10	2N2878	50MΔ	80n		60n	80n	30	2.0	0	10m	30		150pZ	N	Si	200J	T0111	A0	
11	2N2880	50MΔ	80n		60n	80n	30	2.0	0	10m	30		150pZ	N	Si	200J	T0111	A0	
12	2N3750	50MΔ	80n		60n	80n	30	5.0	0	5	20		150pZ	N	Si	200J	MT53	G	
13	2N3751	50MΔ	80n		60n	80n	30	5.0	0	5	20		150pZ	N	Si	200J	MT53	G	
14	2N3752	50MΔ	80n		60n	80n	30	5.0	0	5	20		150pZ	N	Si	200J	MT53	G	
15	2N5320	50MΔ	80n		800n	10	2.0	1	0	10		1.0	150pZ	N	Si	200J	T05	A0	
16	2N5321	50MΔ	80n		800n	10	2.0	4.0	0	500m	250	1.6	150pZ	N	Si	200J	T05	A0	
17	2N3039	50MΔ	100n		500n	150n	10	1.0	0	100u	15	2.0	40pZ	P	Si	200S	T050	A	
18	2N3040	50MΔ	100n	50n	500n	150n	10	1.0	0	100u	30	2.0	40pZ	P	Si	200S	T050	A	
19	2N3341	50MΔ	100n		100n	400m	1.0	1.0	0	10u	40	25k	60pZ	P	Si	175A	T046	A0	
20	2N5322	50MΔ	100n		1u	10	2.0	1	0	10	10	1.4		P	Si	200J	T05	A0	
21	2N5323	50MΔ	100n		1u	10	4.0	0	0	500m	250	2.4		P	Si	200J	T05	A0	
22	2N5357	50MΔ	100n	50n	600n	100n	30	1.0	0	50m	45	0.3	60pZ	P	Si	200J	T037	A0	
23#	2854-1	50M	100n	50n	300n	150n	5.0	1.0	0	50m	50		60p	N-PL	Si	200A	T05	A0	
24#	2854-2	50M	100n	50n	300n	150n	2.2	1.0	0	50m	50		60p	N-PL	Si	200A	T059	A0	
25#	2854-3	50M	100n	50n	300n	150n	5.0	1.0	0	50m	50		60p	N-PL	Si	200A	MT32	A	
26#	D42C1	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
27#	D42C2	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
28#	D42C3	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
29#	D42C4	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
30#	D42C5	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
31#	D42C6	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
32#	D42C7	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
33#	D42C8	50M	100n	500n	75n	1.7	1.7	1.0	0	10	20	500m	100pZ	Nt	Si	150J	X51c	B	
34	D44C1	50M	100n	500n	75n	30	1.0	1.0	0	10	20		100pZ	Nt	Si	150J	X102	D	
35	D44C2	50M	100n	500n	75n	30	1.0	1.0	0	10	20		100pZ	Nt	Si	150J	X102	D	
36	D44C3	50M	100n	500n	75n	30	1.0	2.0	0	20	20		100pZ	Nt	Si	150J	X102	D	
37	D44C4	50M	100n	500n	75n	30	1.0	1.0	0	10	20		100pZ	Nt	Si	150J	X102	D	
38	D44C5	50M	100n	500n	75n	30	1.0	1.0	0	10	20		100pZ	Nt	Si	150J	X102	D	
39	D44C6	50M	100n	500n	75n	30	1.0	2.0	0	20	20		100pZ	Nt	Si	150J	X102	D	
40	D44C7	50M	100n	500n	75n	30	1.0	1.0	0	10	20		100pZ	Nt	Si	150J	X102	D	
41	D44C8	50M	100n	500n	75n	30	1.0	1.0	0	10	20		100pZ	Nt	Si	150J	X102	D	
42	D44C9	50M	100n	500n	75n	30	1.0	2.0	0	20	20		100pZ	Nt	Si	150J	X102	D	
43#	2SA408	50M	105n		150n	80	5.0m	1.0	0	15m	100		3.0p	P-MD	Ge		R48		
44	TI486	50M	140n		2.6u	2.0	1.0	5.0	0	200m	20		30p	N-DPL	Si	200C	T05	A0	
45	TI487	50M	140n		2.6u	2.0	1.0	5.0	0	200m	20		30p	N-DPL	Si	200C	MT13	A0	
46	2N3036	50MΔ	150n	30n	1.0u	200n	5.0	1.0	0	10m	40		15pZ	N	Si	200S	T05	A0	
47	2N3037	50MΔ	150n	30n	1.0u	200n	1.0	1.0	0	100u	15	20	15pZ	N	Si	200S	T050	A	
48	2N3038	50MΔ	150n	30n	1.0u	200n	1.0	1.0	0	100u	30	30	15pZ	N	Si	200S	T050	A	
49#	2SA251	50M	150n		230n	150n	50m	1.0	0	15m	50		2.5p	P-MD	Ge				
50	USA55191/33	50MΔ	150n		600n	5.0	1.0	10	0	150m	19	16	35pZ	N	Si	200S	T05	A0	
51	2N697A	50MΔ	190n		300n	5.0	1.0	10	0	150m	120		35pZ	N	Si	200J	T05	A0	
52	JAN2N696	50MΔ	200n		1.0u	2.0	2.0	10	0	300m	13	10	25pZ	N	Si	200S	T05	A0	
53	MJ3801	50MΔ	200n	200n	3.0u	200n	40	4.0	0	10	10k		75pZ	N	Si	200J	L69		
54	MJ3802	50MΔ	200n	200n	3.0u	200n	40	4.0	0	10	250		75pZ	N	Si	200J	L69		
55#	C1004	50M	225n		800n	360m	1.0	1.0	0	150m	40		25p	N	Si	125	T0109	A	
56#	BC140	50MΔ	250n		850n	3.7	1.0	1.0	0	1	15		25p	N-E	Si	175J	T035	A0	
57#	BC141	50MΔ	250n		850n	3.7	1.0	1.0	0	1	15		25p	N-E	Si	175J	T039	A0	
58	2N2890	50MΔ	300n		1.5u	5.0	2.0	1.0	0	50	10		120pZ	N	Si	200J	T05	A0	
59	2N2891	50MΔ	300n		1.5u	5.0	2.0	1.0	0	30	10		120pZ	N	Si	200J	T05	A0	
60	2N2892	50MΔ	300n		1.5u	17	2.0	1.0	0	50	10		120pZ	N	Si	200J	T059	A0	
61	2N2893	50MΔ	300n		1.5u	17	2.0	1.0	0	30	10		120pZ	N	Si	200J	T059	A0	
62#	2N4895	50MΔ	300n	50n	350n	300n	4.0	2.0	0	2.0	120	200m	80pZ	N	Si	200J	T039	C0	
63#	2N4897	50MΔ	300n	50n	350n	300n	4.0	2.0	0	2.0	120	200m	80pZ	N	Si	200J	T039	C0	
64	2N5083	50MΔ	300n	50n	350n	300n	35m	2.0	0	2	40		80p	N	Si	200J	T059	C	
65	2N5085	50MΔ	300n	50n	350n	300n	35m	2.0	0	2	40		80p	N	Si	200J	T059	C	
66	2N5425	50MΔ	300n		2.0u	32	2.0	0	0	500m	500		15pZ	N	Si	200S	R117a	A	
67	2N5426	50MΔ	300n		2.0u	32	2.0	0	0	500m	10k		15pZ	N	Si	200S	R117a	A	
68#	SG0034	50MΔ	300n	50n	350n	300n	28	2.0	0	2.0	10		80pZ	N-DPE	Si	200J	T059	A	
69	USA55191/34	50MΔ	300n		900n	2.3	1.0	1.0	0	150m	40	26	20pZ	N	Si	200J			
70	2N4390	50MΔ	500n	150n	800n	500m	1.0	5.0	0	20m	20	100	6pZ	N	Si	175S	T0104	A0	
71	2N5237	50MΔ	500n		1.5u	500n	5	5.0	0	5	40			N	Si	200J	T05	A0	
72	2N5238	50MΔ	500n		1.5u	500n	5	5.0	0	5	40			N	Si	200J	T05	A0	
73#	2N5671	50MΔ	500n		1.5u	500n	80	2.0	0	15	20	50m		N	Si	200J	T03	C0	
74#	2N5672	50MΔ	500n		1.5u	500n	80	2.0	0	15	20	50m		N	Si	200J	T03	C0	
75#	BC160	50MΔ	500n		650n	3.2	1.0	100m	63		1.0		30pZ	P-D	Si	175J	T039	A0	
76#	BC161	50MΔ	500n		650n	3.2	1.0	100m	63		1.0		30pZ	P-D	Si	175J	T039	A0	
77#	BSV15	50MΔ	500n	500n	150n	3.2	1.0	100m	63	*	2.0		20p	P-PE	Si	175J	T039	A0	
78#	BSV16	50MΔ	500n	500n	150n	3.2	1.0	100m	63	*	2.0		20p	P-PE	Si	175J	T039	A0	
79#	BSV60	50MΔ	500n	7.0u	800m	2.0	2.0	0	0	50	15	450m		N-PE	Si		T039	A	
80	PT6984	50MΔ	500n		1.0u	100	5.0	10	0	15	15	100m	600pZ	N-PL	Si	200J	T061	A	
81	PT6988	50MΔ	500n		1.0u	100	5.0	10	0	15	15	100m	600pZ	N-					

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME (s)	MAX DELAY TIME (s)	MAX STORE TIME (s)	MAX FALL TIME (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE M P-PNP N-NPN	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O A D E
								Vcb (V)	Ic (A)	hFE							
1	2N5345	60.0MΔ	100n		600n	100n	40 \$	5.0	1.0	7 #Δ	3.0		P	200J	T066	C	
2#	2SA412	60.0MΔ	180n	100n	60n	90n	150m	5.0	3.0	30	10		P	200J	T01	C	
3	JAN2N697	60.0MΔ	200n			1.0u	2.0	10	500m	20 #Δ	10		N	200S	T05	A	
4	2N3108	60.0MΔ	200n		600n		5.0	1.0	150m	40 #Δ			N	200S	T05	A	
5	2N3110	60.0MΔ	200n		600n		5.0	1.0	150m	40 #Δ			N	200S	T05	A	
6	2N5412	60.0MΔ	200n	25n	300n	300n	100	5.0	2.0	20 #Δ	10		N	200S	T061	A	
7	B148000	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #Δ	10		N	175J	T061	A	
8	B148001	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #Δ	10		N	175J	T061	A	
9	B148002	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #Δ	10		N	175J	T061	A	
10	B148003	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #Δ	10		N	175J	T061	A	
11	B148004	60.0MΔ	200n	25n	300n	300n	100	5.0	.02m	160 #Δ	10		N	175J	T061	A	
12	BD121	60.0MΔ	200n	30n	350n	150n	45	10	1.0	30	650m		N-D	175J	T03	C	
13	BD123	60.0MΔ	200n	30n	350n	150n	45	10	1.0	30	650m		N-D	175J	T03	C	
14#	BSX33	60.0MΔ	200n			600n	1.8	10	1.0	40 #Δ			N-DPE	200J	T018	C	
15	2N5202	60.0MΔ	400n		1.2u	400n	35m	1.2	4	10 Δ	30		N	200J	T066	C	
16	2N5038	60.0MΔ	500n	500n	1.5u	500n	140	5.0	12	20 Δ	125m		N	200J	T03	C	
17	2N5039	60.0MΔ	500n	500n	1.5u	500n	140	5.0	10	20 Δ	125m		N	200J	T03	C	
18	JAN2N388	60.0MΔ	1.0u		700n	700n	150m	750m	200m	30 Δ			N	100S	T05	C	
19	2N1252	64.0MΔ	80n		150n		600m	10	150m	35 #Δ	10		N-D	175J	T05	A	
20	2N696	64.0MΔ	200nt				600m	10	150m	35 #Δ	10		N-D	175S	T05	A	
21	2N717	64.0MΔ	200nt				400m	10	150m	20 #Δ	10		N-D	175S	T018	A	
22	2N2692	66.0MΔ	700n	400n	500n	1.0u	300m	1.0	100u	90 Δ	20	5.0pZ	N-PE	175J	T018	A	
23	JAN2N1711	70.0MΔ			30n*	30n*	800m	10	100u	35 Δ	10	25pZ	N	200J	T05	A	
24	JAN2N1890	70.0MΔ			30n*	30n*	800m	10	100u	35 Δ	24	15pZ	N	200J	T05	A	
25	2N1411	70.0MΔ	30n	160n		150n	25m*	1.0	50m	75	3.0p	550nt	P-MA	85J	T024	F	
26#	ZSC850	70.0MΔ	80n		800n	150n	500m	4.0	1.0	160			N	175J	T018	A	
27	2N3240	70.0MΔ	100n				400m	1.0	0.1m	40 Δ	20k	6.0pZ	N	175A	T046	A	
28	2N3107	70.0MΔ	200n			1u	5.0	10	1.0m	35 Δ			N	200J	T05	A	
29	2N3109	70.0MΔ	200n			1u	5.0	10	1.0m	35 Δ			N	200J	T05	A	
30#	2SA823	70.0MΔ	200n		600n	800n	7.0	4.0	500m	35 #Δ	1.0		P-PE1	125J	X51b	P	
31#	2SA624	70.0MΔ	200n		600n	800n	7.0	4.0	500m	35 #Δ	2.0		P-PE1	125J	X51b	P	
32#	2SA645	70.0MΔ	200n		600n	800n	7.0	4.0	300m	35 #Δ	1.0		P-PE1	125J	X51b	P	
33#	2SA646	70.0MΔ	200n		600n	800n	7.0	4.0	300m	20 #Δ	2.0		P-PE1	125J	X51b	P	
34#	2SA647	70.0MΔ	200n		600n	800n	7.0	4.0	300m	20 #Δ	2.0		P-PE1	125J	X51b	P	
35#	ZSC1013	70.0MΔ	200n		1.0u	1.2u	7.0	4.0	500m	35 #Δ	1.0		N-PE1	150J	X51b	P	
36#	ZSC1014	70.0MΔ	200n		1.0u	1.2u	7.0	4.0	500m	35 #Δ	1.0		N-PE1	150J	X51b	P	
37#	ZSC1155	70.0MΔ	200n		1.0u	1.2u	7.0	4.0	300m	35 #Δ	2.0		N-PE1	125J	X51b	P	
38#	ZSC1156	70.0MΔ	200n		1.0u	1.2u	7.0	4.0	300m	20 #Δ	2.0		N-PE1	125J	X51b	P	
39#	ZSC1157	70.0MΔ	200n		1.0u	1.2u	7.0	4.0	300m	20 #Δ	2.0		N-PE1	125J	X51b	P	
40#	BSX62	70.0MΔ	300n			1.5u	7.7	1.0	1.0	250			N-PE	200J	T039	A	
41	JAN2N2812	70.0MΔ	350n		1.0u	200n	50 \$	5.0	1.0	50 #Δ		350pZ	N	200C	T061	A	
42	JAN2N2814	70.0MΔ	350n		1.0u	200n	50 \$	5.0	1.0	50 #Δ		350pZ	N	200C	T061	A	
43	2N5584	70.0MΔ	300n			1.2m	1.0k	3.0	2.0	15	75m		N	200J	T063	A	
44#	BF558	70.0MΔ	600n			1.2u	5.0	2.0	1.0	100		100pZ	N-DPE	200J	T05	A	
45#	JAN2N4865	70.0MΔ	2.0u		1.5u	500n	300	5.0	2.0	30 #Δ			N	200J	MT49a	A	
46#	JAN2N5250	70.0MΔ	2.0u		1.5u	500n	300	5.0	2.0	30 #Δ			N	200J	MT49a	A	
47	JAN2N5251	70.0MΔ	2.0u		1.5u	500n	300	5.0	2.0	30 #Δ			N	200J	MT49a	A	
48	2N1755	75.0MΔ	25n			50m	50m	5.0	50m	50	1.5p		P-MD	85A	T09	A	
49	PT6940	75.0MΔ	150n			400n	35	3.0	3.0	30 Δ	240m		N-PL	200A	T05	C	
50	PT6941	75.0MΔ	150n			400n	35	3.0	1.0	40 Δ	400m		N-PL	200A	T03	C	
51	PT6942	75.0MΔ	150n			400n	35	3.0	1.0	40 Δ	500m		N-PL	200A	T03	C	
52	PT6943	75.0MΔ	150n			400n	35	3.0	1.0	40 Δ	600m		N-PL	200A	T03	C	
53	PT7903	75.0MΔ	150n			400n	35	3.0	1.0	40 Δ	400m		N-PL	200A	T03	C	
54	PT7904	75.0MΔ	150n			400n	35	3.0	1.0	40 Δ	400m		N-PL	200A	T03	C	
55	PT7805	75.0MΔ	150n			400n	35	3.0	1.0	30 Δ	500m		N-PL	200A	T03	C	
56	PT7806	75.0MΔ	150n			400n	35	3.0	1.0	30 Δ	500m		N-PL	200A	T03	C	
57	PT7907	75.0MΔ	150n			400n	35	3.0	1.0	40 Δ	500m		N-PL	200A	T03	C	
58	PT7808	75.0MΔ	150n			400n	35	3.0	1.0	30 Δ	600m		N-PL	200A	T03	C	
59	PT7909	75.0MΔ	150n			400n	35	3.0	1.0	30 Δ	700m		N-PL	200A	T03	C	
60	PT7910	75.0MΔ	150n			400n	35	3.0	1.0	15 Δ	700m		N-PL	200A	T03	C	
61	PT7811	75.0MΔ	150n			400n	35	3.0	1.0	30 Δ	700m		N-PL	200A	T03	C	
62	PT7956	75.0MΔ	150n			400n	35	3.0	1.0	15 Δ	1.0		N-PL	200A	T03	C	
63	PT7957	75.0MΔ	150n			400n	35	3.0	1.0	10 Δ	1.0		N-PL	200A	T03	C	
64	PT5829	75.0MΔ	200n			800n	53	5.0	5.0	80 Δ	250m		N-PL	200A	T059	A	
65	JAN2N4150	75.0MΔ	500n	50n	1.5u	500n	1.5m	5.0	1.0	10 #Δ		350pZ	N	200A	T05	A	
66	JAN2N5237	75.0MΔ	500n	50n	1.5u	500n	1.5m	5.0	1.0	10 #Δ		350pZ	N	200A	T05	A	
67	JAN2N5238	75.0MΔ	500n	50n	1.5u	500n	1.5m	5.0	1.0	10 #Δ		350pZ	N	200A	T05	A	
68	2N796	80.0MΔ	60n		80n	50n	150m	300m	10m	75			P-ME	200A	T05	A	
69#	2SA409	80.0MΔ	90nt		100nt	50m	50m	1.0	15m	100	8.0p		P-MD	85A	T018	A	
70#	2SA252	80.0MΔ	120n	200n		120n	20 \$	1.0	1.5m	150	3.0p	150n	P-MD		R48	A	
71	2N5326	80.0MΔ	150n			400n	20	1.0	1.0	40 #Δ			N	200J	T059	A	
72	2N697	80.0MΔ	200nt				600m	10	150m	40 #Δ	10	35pZ	N-D	175S	T05	A	
73	2N718	80.0MΔ	200nt				400m	10	150m	40 #Δ	10	35pZ	N-D	175S	T018	A	
74	CS697	80.0MΔ	200nt				1.5	10	150m	40 #Δ	10	35pZ	N-D		R97	A	
75	CS1420	80.0MΔ	200nt				1.5	10	150m	100	10	35pZ	N-D		R97	A	
76#	2N4896	80.0MΔ	300n	50n	350n	300n	4.0	2.0	2.0	300 #Δ	200m	80pZ	N	200J	T039	C	
77	2N5084	80.0MΔ	300n	50n	350n	300n	35m	2.0	2.0	100 #Δ		80pZ	N	200J	T059	A	
78#	SGO034A	80.0MΔ	300n	50n	350n	300n	28	2.0</									

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> AIR FREE @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	1N62	100MΔ	30n	10n	450n	100n	1.8	1.0	500m	30 Δ	8.0p		N-PE	Si	200J	TO18	A	
2#	V205	100MΔ	35n	29n	300n	15n	1.0	1.0	50m	40 #	8.0p		P-DPE	Si	175A	TO18	A	
3	2N3883	100MΔ	40n	15n	70n	40n	300m	1.0	200m	30 Δ	2.5	8.0p	P	Si	100S	TO5	A	
4#	BSV83	100MΔ	40n	100n	250n	100n	800m	500m	150m	75 Δ	25p		P	Si	200	TO39	A	
5	2N4890	100MΔ	50n	50n	200n	70n	5.0	2.5	150m	20 Δ	15p		P	Si	200S	TO5	A	
6	TQ59	100MΔ	50n	10n	450n	120n	3.0	1.0	150m	100 Δ	10p		P-PE	Si	200J	TO5	A	
7	TQ59A	100MΔ	50n	10n	450n	120n	3.0	1.0	150m	100 Δ	10p		P-PE	Si	200J	TO5	A	
8	TQ60	100MΔ	50n	10n	450n	120n	1.8	1.0	150m	100 Δ	10p		P-PE	Si	200J	TO18	A	
9	TQ60A	100MΔ	50n	10n	450n	120n	1.8	1.0	150m	100 Δ	10p		P-PE	Si	200J	TO18	A	
10	TQ61	100MΔ	50n	10n	450n	120n	3.0	1.0	150m	50 Δ	10p		P-PE	Si	200J	TO5	A	
11	TQ61A	100MΔ	50n	10n	450n	120n	3.0	1.0	150m	50 Δ	10p		P-PE	Si	200J	TO5	A	
12	TQ62	100MΔ	50n	10n	450n	120n	1.8	1.0	150m	50 Δ	10p		P-PE	Si	200J	TO18	A	
13	TQ62A	100MΔ	50n	10n	450n	120n	1.8	1.0	150m	50 Δ	10p		P-PE	Si	200J	TO18	A	
14	TQ63	100MΔ	50n	10n	450n	120n	3.0	1.0	150m	25 Δ	10p		P-PE	Si	200J	TO5	A	
15	TQ63A	100MΔ	50n	10n	450n	120n	3.0	1.0	150m	25 Δ	10p		P-PE	Si	200J	TO5	A	
16	TQ64	100MΔ	50n	10n	450n	120n	1.8	1.0	150m	25 Δ	10p		P-PE	Si	200J	TO18	A	
17	TQ64A	100MΔ	50n	10n	450n	120n	1.8	1.0	150m	25 Δ	10p		P-PE	Si	200J	TO18	A	
18	2N979	100MΔ	60n				60m	1.0	40m	50	12	15p	P-MD	Ge	100S	TO18	A	
19	2N995A	100MΔ	60n			90n	360m	500m	20m	140 #	5.0	6.0p	P	Si	200J	TO18	A	
20	JAN2N1499A	100MΔ	60n				60m	500m	40m	10	20	3.0p	P	Si	100S	TO9	A	
21	2N1958A	100MΔ	60n		25n	45n	600m	1.0	1.0	15	15	14p	N	Si	200J	TO5	A	
22	2N1959A	100MΔ	60n		25n	45n	600m	1.0	1.0	25	25	14p	N	Si	200J	TO5	A	
23#	2SA628	100MΔ	60n		100n	290	150m	6.0	1.0m	55 #	30	3.5p	P-PE1	Si	125J	TO92	D	
24#	2SA628A	100MΔ	60n		100n	290	150m	6.0	1.0m	55 #	30	3.5p	P-PE1	Si	125J	TO92	D	
25#	ZSC713	100MΔ	60n		120n	30n	200m	6.0	1.0m	90 #	35	2.5p	P-PE1	Si	125J	TO92	D	
26#	BFX87	100MΔ	60n			150n	600m	1.0	1.0m	40 Δ		20p	P-PE	Si	200J	TO5	A	
27#	BFX88	100MΔ	60n			150n	600m	1.0	1.0m	40 Δ		20p	P-PE	Si	200J	TO5	A	
28	2N1958	100MΔ	65n		25n	45n	2.0	1.0	150m	40	3.0	18p	N	Si	175J	TO5	A	
29	2N1959	100MΔ	65n		25n	45n	120m	1.0	150m	80	3.0	18p	N	Si	175J	TO5	A	
30	2N3638	100MΔ	70n	20n	140n	70n	700m	1.0	50m	30 #		20p	P	Si	125J	R110a	A	
31	2N5142	100MΔ	70n	50n	150n	75n	700m	1.0	50m	30 #		10p	P	Si	125J	TO105	A	
32	2N5143	100MΔ	70n	50n	150n	75n	500m	1.0	50m	30 #		10p	P	Si	125J	TO106	A	
33	MPS3638	100MΔ	70n			70n	310m	1.0	50m	30		20p	P-EA	Si	125J	TO92	A	
34#	TP3638	100MΔ	70n	20n	140n	70n	360m	1.0	10m	20 #		20p	P-FL	Si	150J	X55a	A	
35	2N2695	100MΔ	75n			170n	360m	1.0	50m	30 #	3.0	20p	P-PE	Si	200J	TO6	A	
36	2N2696	100MΔ	75n			170n	360m	1.0	50m	30 #	3.0	20p	P-PE	Si	200J	TO6	A	
37	2N2927	100MΔ	75n			170n	3.0	1.0	50m	30 #	3.0	20p	P	Si	200J	TO5	A	
38	2N2927/46	100MΔ	75n			170n	400m	1.0	50m	30 #	3.0	20p	P-PE	Si	200J	TO46	A	
39	RT1116	100M	80n		130n	55n	800m	1.0	150m	30	4.6	15p	N-PE	Si	200J	TO5	A	
40	2N5865	100MΔ	90n	30n	350n	150n	7.0	1.0	1.0m	40 Δ	2.5	20p	P	Si	200S	TO39	A	
41	2N4354	100MΔ	100n		400n		800m	1.0	10m	50 #	1.0	30p	P	Si	125J	R124b	A	
42	2N4355	100MΔ	100n		400n		800m	1.0	10m	100 #	1.0	30p	P	Si	125J	R124b	A	
43	2N4356	100MΔ	100n		400n		800m	1.0	10m	50 #	1.0	30p	P	Si	125J	R124b	A	
44#	BFX38	100MΔ	100n		350n	50n	4.0m	5.0	100m	30 #		20p	N-DPE	Si	200J	TO5	A	
45#	BFX39	100MΔ	100n		350n	50n	4.0m	5.0	100m	15 #		20p	N-DPE	Si	200J	TO5	A	
46#	BFX40	100MΔ	100n		350n	50n	4.0m	5.0	1.0	25 #		20p	N-DPE	Si	200J	TO5	A	
47#	BFX41	100MΔ	100n		350n	50n	4.0m	5.0	1.0	10 #		20p	N-DPE	Si	200J	TO5	A	
48	2N2380	100MΔ	125n		130n	65n	1.0	2.5	150m	15 #	8.7	14p	N	Si	175J	TO5	A	
49	2N2380A	100MΔ	125n		130n	65n	1.0	2.5	150m	15 #	10	14p	N	Si	175J	TO5	A	
50	2N5327	100MΔ	200n			900n	5.0	5.0	5	50	50	12	N	Si	200J	TO5	A	
51	2N5328	100MΔ	200n			900n	3.0	5.0	5	50	50	12	N	Si	200J	TO5	A	
52#	PT2993	100MΔ	200n			800n	44	2.0	3.0	100		150p	N	Si	200A	MT65	A	
53#	PT6944	100MΔ	200n			800n	80	3.0	5.0	40		150p	N	Si	200A	TO3	C	
54#	PT6945	100MΔ	200n			800n	80	3.0	5.0	40		150p	N	Si	200A	TO3	C	
55#	PT6946	100MΔ	200n			800n	80	3.0	5.0	40		150p	N	Si	200A	TO3	C	
56#	PT7912	100MΔ	200n			800n	80	3.0	5.0	200		150p	N	Si	200A	TO3	C	
57#	PT7913	100MΔ	200n			800n	80	3.0	5.0	50		150p	N	Si	200A	TO3	C	
58#	PT7914	100MΔ	200n			800n	80	3.0	5.0	30		150p	N	Si	200A	TO3	C	
59#	PT7915	100MΔ	200n			800n	80	3.0	5.0	200		150p	N	Si	200A	TO3	C	
60#	PT7916	100MΔ	200n			800n	80	3.0	5.0	50		150p	N	Si	200A	TO3	C	
61#	PT7917	100MΔ	200n			800n	80	3.0	5.0	30		150p	N	Si	200A	TO3	C	
62#	PT7918	100MΔ	200n			800n	80	3.0	5.0	100		150p	N	Si	200A	TO3	C	
63#	PT7919	100MΔ	200n			800n	80	3.0	5.0	30		150p	N	Si	200A	TO3	C	
64#	PT7920	100MΔ	200n			800n	80	3.0	5.0	20		150p	N	Si	200A	TO3	C	
65#	PT7958	100MΔ	200n			800n	80	3.0	5.0	10		150p	N	Si	200A	TO3	C	
66#	PT7959	100MΔ	200n			800n	80	3.0	5.0	10		150p	N	Si	200A	TO3	C	
67#	CP409	100MΔ	250n			500n	5.0	1.0	500m	150 #		5.0p	N-DPE	Si	200J	TO6	A	
68#	PT6947	100MΔ	300n			1.0n	125	5.0	5.0	40		400p	N	Si	200A	TO3	C	
69#	PT6948	100MΔ	300n			1.0n	125	5.0	5.0	30		400p	N	Si	200A	TO3	C	
70#	PT6949	100MΔ	300n			1.0n	125	5.0	5.0	30		400p	N	Si	200A	TO3	C	
71#	PT7921	100MΔ	300n			1.0n	125	5.0	5.0	40		400p	N	Si	200A	TO3	C	
72#	PT7922	100MΔ	300n			1.0n	125	5.0	5.0	30		400p	N	Si	200A	TO3	C	
73#	PT7923	100MΔ	300n			1.0n	125	5.0	5.0	30		400p	N	Si	200A	TO3	C	
74#	PT7927	100MΔ	300n			1.0n	125	5.0	5.0	30		400p	N	Si	200A	TO3	C	
75#	PT7928	100MΔ	300n			1.0n	125	5.0	5.0	30		400p	N	Si	200A	TO3	C	
76#	PT7929	100MΔ	300n			1.0n	125	5.0	5.0	20		400p	N	Si	200A	TO3	C	
77#	PT7948	100MΔ	300n			1.0n	175	5.0	5.0	20		400p	N	Si	200A	TO63	C	
78#	PT7950	100MΔ	300n			1.0n	175	5.0	5.0	20		400p	N	Si	200A	TO63	C	
79#	PT3993	100MΔ	350n			1.0n	200	2.0	2.0	15		600p	N	Si	200A	TO63	C	
80#	PT5955	100MΔ	350n			1.0n	175	5.0	10	25		600p	N	Si	200A	TO63	C	
81#	PT6905	100MΔ	350n			1.0n	175	5.0	10	15		600p	N	Si	200A	TO63	C	
82#	PT6909	100MΔ	350n			1.0n	175	5.0	10	20		600p	N	Si	200A	TO81	A	
83#	PT6910	100MΔ	350n			1.0n	175	5.0	10	20		600p	N	Si	200A	TO63	C	
84#	PT6939	100MΔ	350n			1.0n	100	5.0	5.0	40		600p	N	Si	200A	TO61	A	
85#	PT6950	100MΔ	350n			1.0n	175	5.0	10	40		600p	N	Si	200A	TO3	C	
86#	PT7930	100MΔ	350n															

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	C O D E
								Vcb (V)	Ie (A)	hFE								
1#	ZT40	110M	110n			175n	300m	6.0	10m	30		5.0p	N	Si	150J	T018		
2#	ZT41	110M	110n			175n	300m	6.0	10m	30		5.0p	N	Si	150J	T018		
3#	ZT42	110M	110n			175n	300m	6.0	10m	60		5.0p	N	Si	150J	T018		
4#	ZT43	110M	110n			175n	300m	6.0	10m	60		5.0p	N	Si	150J	T018		
5#	ZT44	110M	110n			175n	300m	6.0	10m	120		5.0p	N	Si	150J	T018		
6#	2G106	120M	1.35n	16n	70n		150m	250m	10	30	25	5.0p	P-ME	Ge	100A	T018		
7	KS6127	120M	20n	30n	100n	40n		5.0	15	15		200p	N-PE	Si	200J	T03		
8	KS6129	120M	20n	25n	90n	30n		5.0	20	15		200p	N-PE	Si	200J	T03		
9	KS6130	120M	25n	30n	100n	40n		5.0	20	15		200p	N-PE	Si	200J	T03		
10	KS6128	120M	30n	40n	120n	50n		5.0	15	15		200p	N-PE	Si	200J	T03		
11	2N2800	120M	45n	25n	225n	45n	800m	10	150m	90	2.6	25p	P	Si	200S	T05	A	
12	2N2800/46	120M	45n	15n	225n	45n	400m	10	150m	90		25p	P-E	Si	200J	T046		
13	2N2801	120M	45n	25n	225n	45n	800m	10	150m	225	2.6	25p	P	Si	200S	T05	A	
14	2N2837	120M	45n	25n	225n	45n	500m	10	150m	90	2.6	25p	P	Si	200S	T018	A	
15	2N2838	120M	45n	25n	225n	45n	500m	10	150m	225	2.6	25p	P	Si	200S	T018	A	
16#	BD124	120M	75n	15n	240n	40n	15	5.0	500m	75	5.0m		N-PE	Si	175J	MD17c	C	
17#	ZT60	120M	80n			300n	350m	6.0	10m	38	40	8.0p	N-PE	Si	150J	T05		
18#	ZT61	120M	80n			300n	350m	6.0	10m	38	40	8.0p	N-PE	Si	150J	T05		
19#	ZT62	120M	80n			300n	350m	6.0	10m	75	8.0	8.0p	N-PE	Si	150J	T05		
20#	ZT63	120M	80n			300n	350m	6.0	10m	35	8.0	8.0p	N-PE	Si	200J	T05		
21#	ZT64	120M	80n			300n	350m	6.0	10m	75	8.0	8.0p	N-PE	Si	200J	T05		
22#	ZT66	120M	80n			300n	350m	6.0	10m	35	4.0	8.0p	N-PE	Si	200J	T05		
23#	ZT68	120M	80n			300n	750m	6.0	10m	35	4.0	8.0p	N-PE	Si	200J	T05		
24#	ZT80	120M	80n			300n	300m	6.0	10m	162	40	8.0p	N-PE	Si	150J	T018		
25#	ZT81	120M	80n			300n	300m	6.0	10m	162	40	8.0p	N-PE	Si	150J	T018		
26#	ZT82	120M	80n			300n	300m	6.0	10m	250	20	8.0p	N-PE	Si	150J	T018		
27#	ZT83	120M	80n			300n	300m	6.0	10m	85	20	8.0p	N-PE	Si	200J	T018		
28#	ZT84	120M	80n			300n	300m	6.0	10m	70	40	8.0p	N-PE	Si	200J	T018		
29#	ZT86	120M	80n			300n	300m	6.0	10m	85	40	8.0p	N-PE	Si	200J	T018		
30#	ZT87	120M	80n			300n	300m	6.0	10m	250	40	8.0p	N-PE	Si	200J	T018		
31#	ZT88	120M	80n			300n	300m	6.0	10m	170	20	8.0p	N-PL	Si	200J	T018		
32#	ZT89	120M	80n			300n	300m	6.0	10m	250	20	8.0p	N-PL	Si	200J	T018		
33#	ZT110	120M	80n			300n	300m	6.0	10m	162	40	8.0p	N-PL	Si	150J	T046		
34#	ZT111	120M	80n			300n	300m	6.0	10m	162	40	8.0p	N-PL	Si	150J	T046		
35#	ZT112	120M	80n			300n	300m	6.0	10m	250	40	8.0p	N-PL	Si	150J	T046		
36#	ZT113	120M	80n			300n	300m	6.0	10m	85	20	8.0p	N-PL	Si	200J	T046		
37#	ZT114	120M	80n			300n	300m	6.0	10m	170	20	8.0p	N-PL	Si	200J	T046		
38#	ZT116	120M	80n			300n	300m	6.0	10m	85	20	8.0p	N-PL	Si	200J	T046		
39#	ZT117	120M	80n			300n	300m	6.0	10m	250	40	8.0p	N-PL	Si	150J	T046		
40#	ZT118	120M	80n			300n	300m	6.0	10m	170	20	8.0p	N-PL	Si	200J	T046		
41#	ZT119	120M	80n			300n	300m	6.0	10m	250	20	8.0p	N-PL	Si	200J	T046		
42#	2SC309	120M	250n		200n	200n	800m	10	150m	65	10	10p	N-PL S	Si	200J	T05	A	
43#	2SC310	120M	250n		200n	200n	800m	10	150m	65	10	10p	N-PL S	Si	200J	T05	A	
44	JAN2N3996	120M	300n			1.5u	2.0m	2.0	50m	30		150p	N	Si	200S	MT53	M	
45	JAN2N3997	120M	300n			2.0u	2.0m	2.0	50m	60		150p	N	Si	200S	MT53	M	
46	JAN2N3998	120M	300n			1.5u	2.0m	2.0	50m	30		150p	N	Si	200S	MT42a	A	
47	JAN2N3999	120M	300n			2.0u	2.0m	2.0	50m	60		150p	N	Si	200S	MT42a	A	
48#	BSY51	125M	8.0n	2.0n		12n	800m	10	150m	40	1.7	12p	N	Si	200J	T05		
49#	BSY52	125M	8.0n	2.0n		12n	800m	10	150m	135	1.7	12p	N	Si	200J	T05		
50#	PT5956	125M	360n			1.0u	175	5.0	20	20		600p	N	Si	200A	T063		
51#	PT5961	125M	360n			1.0u	175	5.0	5.0	40		600p	N	Si	200A	T063		
52#	PT7939	125M	360n			1.0u	220	5.0	20	20		600p	N	Si	200A	T03	C	
53#	PT7940	125M	360n			1.0u	220	5.0	20	30		600p	N	Si	200A	T03	C	
54#	PT7941	125M	360n			1.0u	220	5.0	20	20		600p	N	Si	200A	T03	C	
55#	PT7942	125M	360n			1.0u	220	5.0	20	20		600p	N	Si	200A	T03	C	
56#	PT7943	125M	360n			1.0u	220	5.0	20	30		600p	N	Si	200A	T03	C	
57#	PT7944	125M	360n			1.0u	220	5.0	20	20		600p	N	Si	200A	T03	C	
58#	PT7945	125M	360n			1.0u	220	5.0	20	20		600p	N	Si	200A	T03	C	
59#	PT7946	125M	360n			1.0u	220	5.0	20	30		600p	N	Si	200A	T03	C	
60#	PT7947	125M	360n			1.0u	220	5.0	20	20		600p	N	Si	200A	T03	C	
61	2N3072	130M	40n		100n		3.0	1.0	50m	30	5.0	10p	P	Si	200J	T05	A	
62	2N3073	130M	40n		100n		1.2	1.0	50m	30	5.0	10p	P	Si	200J	T018	A	
63	2N3120	130M	40n		100n			1.0	50m	30	5.0	10p	P	Si	200J	T05	A	
64	2N3121	130M	40n		100n			1.0	50m	30	5.0	10p	P	Si	200J	T018	A	
65#	BUY11	140M	9.0n	9.0n	310n	15n	2.5m	2.0	100m	65		23p	N-PE	Si	150J	T03		
66#	BFV82B	140M	20n	10n	90n	20n	300m	50	10m	10		5.0p	PPE	Si	200J	u26a	B	
67#	BFV82C	140M	20n	10n	90n	20n	300m	50	10m	20		5.0p	PPE	Si	200J	u26a	B	
68#	BFV30	140M	35n			150n	150m	50	10m	30	30	7.0p	PPE	Si	200J	u34b	P	
69#	NKT603F	140M	100n		230n	35n	80m	60	1.0m	40	35	3.5p	P	Ge	75J	T07	H	
70#	2N1837	140M	200n		500n		2.0	80	150m	10	5.3	18p	N	Si	175J	T05	A	
71	2N1837A	140M	200n		500n		2.8	80	150m	10	5.3	18p	N	Si	175J	T05	A	
72#	2SA537AH	150M				42n	750m	4.0	50m	30		18p	P	Si	200J	T039		
73#	2SA537H	150M				42n	750m	4.0	50m	30		18p	P	Si	200J	T039		
74#	2S101	150M	5.0n	8.0n	5.0n			5.0	10m	60	50	3.0p	N	Si	175A	T018		
75#	BSY53	150M	8.0n	2.0n		12n	800m	10	150m	80	1.7	12p	N	Si	200J	T05		
76#	BSY54	150M	8.0n	2.0n		12n	800m	10	150m	100	2.4	12p	N	Si	200J	T05		
77	KS6125	150M	15n	35n	110n	45n		5.0	10	15		200p	N-PE	Si	200J	T03		
78	2N2048A	150M	20n	15n	120n	25n	150m	300m	10m	50	40	3.0p	P	Ge	100S	T09		
79	2N3262	150M	20n	40n	750n	10	4.0	500m	40		600m	20p	N-PLD	Si	200J	T039	A	
80	2N4402	150M	20n	15n	25n	30n	310m	1.0	10m	30		9p	P	Si	135J	T092	A	
81#	2SC912	150M	20n	5.0n	100n	40n	150m	6.0	10m	90	35	2.5p	N-PE	Si	150J	R126	A	
82	KS6120	150M	20n	40n	100n	40n		5.0	10	15		90p	N-PE	Si	200J	T03		
83	KS6121	150M	20n	50n	120n	50n		5.0	10	15		90p	N-PE	Si	200J	T03		
84	KS6123	150M	20n	30n	100n	50n		5.0	5.0	15		200p	N-PE	Si	200J	T03		
85	KS6124	150M	25n	40n	110n	60n		5.0	5.0	15		200p	N-PE	Si	200J	T03		
86	KS6126	150M	25n	50n	130n	50n		5.0	10	15		200p	N-PE	Si	200J	T03		
87	2N1499B	150M	30n		120n		75m	30	10m	40	15							



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> AIR FREE 25°C (W)	BIAS			MAX SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O D E
								Vcb (V)	le (A)	hFE								
1	EN2907	150MSΔ	40n	10n	80n	30n	200m	10	150m	300	#	8.0p	P	Si	125J	T0106	A	
2	EN3502	150MSΔ	40n	10n	100n	30n	300m	10	150m	100	#	8.0p	P	Si	125J	T0106	A	
3	EN3504	150MSΔ	40n	10n	100n	30n	200m	10	150m	100	#	8.0p	P	Si	125J	T0105	A	
4	KS6119	150M	40n	35n	140n	60n	300m	5.0	5.0	15	Δ	9.0p	N-PE	Si	200J	T03	∅	
5	2N5372	150MSΔ	50n			150n	360m	10	10m	75	#	10p	P	Si	150J	X93	A	
6	2N5373	150MSΔ	50n			150n	360m	10	10m	75	#	10p	P	Si	150J	X93	A	
7	2N5374	150MSΔ	50n			175n	360m	10	10m	150	#	10p	P	Si	150J	X93	A	
8	2N5375	150MSΔ	50n			175n	360m	10	10m	30	#	10p	P	Si	150J	X93	A	
9#	BSW42	150MSΔ	50nt	20nt	200nt	50nt	300m	4.5	2.0m	75	Δ	6.0	N-E	Si	125J	R110	A	
10#	BSW42A	150MSΔ	50nt	20nt	200nt	50nt	300m	4.5	2.0m	75	Δ	6.0	N-E	Si	125J	R110	A	
11#	BSW43	150MSΔ	50nt	20nt	200nt	50nt	300m	4.5	2.0m	180	Δ	6.0	N-E	Si	125J	R110	A	
12#	BSW43A	150MSΔ	50nt	20nt	200nt	50nt	300m	4.5	2.0m	180	Δ	6.0	N-E	Si	125J	R110	A	
13#	BSX51	150MSΔ	50nt	20nt	200nt	50nt	300m	4.5	2.0m	225	Δ	6.0	N-PE	Si	175A	T018	∅	
14#	BSX51A	150MSΔ	50nt	20nt	200nt	50nt	30m	4.5	2.0m	225	Δ	6.0	N-PE	Si	175A	T018	∅	
15#	BSX52	150MSΔ	50nt	20nt	200nt	50nt	300m	4.5	2.0m	540	Δ	6.0	N-PE	Si	175A	T018	∅	
16#	BSX52A	150MSΔ	50nt	20nt	200nt	50nt	300m	4.5	2.0m	540	Δ	6.0	N-PE	Si	175A	T018	∅	
17#	D41D1	150MS	50n	75n	40nt	1.0	#	2.0	1.0	10	Δ	1.0	Pt	Si	150S	X51c	F	
18#	D41D2	150MS	50n	75n	40nt	1.0	#	2.0	1.0	20	Δ	1.0	Pt	Si	150S	X51c	F	
19#	D41D4	150MS	50n	75n	40nt	1.0	#	2.0	1.0	10	Δ	1.0	Pt	Si	150S	X51c	F	
20#	D41D5	150MS	50n	75n	40nt	1.0	#	2.0	1.0	20	Δ	1.0	Pt	Si	150S	X51c	F	
21#	D41D7	150MS	50n	75n	40nt	1.0	#	2.0	1.0	10	Δ	2.0	Pt	Si	150S	X51c	F	
22#	D41D8	150MS	50n	75n	40nt	1.0	#	2.0	1.0	20	Δ	2.0	Pt	Si	150S	X51c	F	
23	TZ551	150MSΔ	50n			150n	360m	10	1.0m	20	Δ	10p	P-PL	Si	150J	T098	B	
24	TZ552	150MSΔ	50n			150n	360m	10	1.0m	50	Δ	10p	P-PL	Si	150J	T098	B	
25	TZ553	150MSΔ	50n			175n	360m	10	1.0m	100	Δ	10p	P-PL	Si	150J	T098	B	
26	TZ554	150MSΔ	50n			175n	360m	10	1.0m	20	Δ	10p	P-PL	Si	150J	T098	B	
27	2N1495	150MSΔ	55n			250m	250m	5.0	200m	25	Δ	6.5p	P	Ge	100S	T09	A	
28	2N1496	150MSΔ	55n			500m	500m	5.0	200m	25	Δ	1.5	P	Ge	100S	T031	A	
29#	2N2048	150MSΔ	60n			60n	150m	500m	50m	35	Δ	4.0	P	Ge	100S	T09	A	
30	2N3081	150MSΔ	60n			175n	600m	10	150m	30	Δ	2.0	P-PE	Si	200J	T05	A	
31	2N3081/46	150MSΔ	60n	15n	175n	50n	5.0	5.0	150m	30	#	2.0	P-PE	Si	200J	T046	A	
32	2N4406	150MSΔ	60n	15n	175n	50n	5.0	5.0	150m	30	#	1.5p	P	Si	200S	T039	A	
33	2N4407	150MSΔ	60n	15n	175n	50n	5.0	5.0	150m	80	#	1.5p	P	Si	200S	T039	A	
34#	2N4436	150MSΔ	60n			200n	500m	10	500m	15	#	8.0p	N	Si	125J	R124	A	
35#	ZSC189	150MS	60n			700n	300m	600m	10	150m	20	Δ	250m	N-PL	Si	175J	T05	∅
36#	ZSC868	150MS	60n			120n	30n	200m	6.0	1.0m	35	Δ	9.0p	N-PE	Si	125J	X20e	B
37#	ZSC869	150MS	60n			120n	30n	200m	6.0	1.0m	35	Δ	9.0p	N-PE	Si	125J	X20e	B
38#	BFX50	150MSΔ	60n			200n	350m	10	150m	30	Δ	1.2	NPE	Si	200J	T018	A	
39#	BFX52	150MSΔ	60n			200n	350m	10	150m	60	Δ	1.2	N-PE	Si	200J	T018	A	
40	2N3638A	150MSΔ	70n	20n	140n	70n	700m	10	1.0m	80	Δ	10p	P	Si	125J	R110a	A	
41	GET3638	150MSΔ	70n	20n	140n	70n	360m	10	1.0m	30	Δ	10p	P-PE	Si	125J	T018	A	
42	GET3638A	150MSΔ	70n	20n	140n	70n	360m	10	1.0m	80	Δ	10p	P-PE	Si	125J	T018	A	
43	MPS3638A	150MSΔ	70n	20n	140n	70n	310m	1.0	50m	100	#	10p	P-EA	Si	135	T092	A	
44#	TP3638A	150MSΔ	70n	20n	140n	70n	360m	10	1.0m	100	#	10p	P-PL	Si	150J	X55a	A	
45	2N2400	150MSΔ	75n	140n	130n	150m	150m	5.0	10m	30	Δ	4.0p	P	Ge	100S	T018	A	
46	2N2086	150MSΔ	85n			130n	55n	2.0	150m	20	Δ	4.5	N	Si	175J	T05	A	
47	2N2087	150MSΔ	85n			100n	55n	2.0	150m	120	Δ	3.3	N	Si	175J	T05	A	
48	2N711A	150MS	100n			150n	150m	5.0	10m	25	Δ	11	P-ME G	e	100S	T018	A	
49	2N711B	150MS	100n			140n	110n	150m	5.0	10m	30	Δ	9.0	P-ME G	e	100S	T018	A
50	2N2315	150M	100nt			400m	400m	10m	150m	70	#	10	N-PL	Si	175J	T046	A	
51	2N2479	150MSΔ	100n			130n	55n	600m	1.5m	150m	120	Δ	14p	N-PE	Si	175A	T05	A
52	2N2310	150M	120nt			400m	400m	10	200m	60	Δ	2.5	N-PL	Si	200J	T046	A	
53	2N2311	150M	120nt			400m	400m	10	200m	60	Δ	2.5	N-PL	Si	200J	T046	A	
54	2N2312	150M	120nt			400m	400m	10	200m	20	Δ	14p	N-PL	Si	200J	T046	A	
55	2N2313	150M	120nt			400m	400m	10	200m	20	Δ	14p	N-PL	Si	200J	T046	A	
56#	ZT180	150MS	120nt			250nt	300m	6.0	10m	38	Δ	20	P-PL	Si	150J	T018	A	
57#	ZT181	150MS	120nt			250nt	300m	6.0	10m	38	Δ	20	P-PL	Si	150J	T018	A	
58#	ZT182	150MS	120nt			250nt	300m	6.0	10m	75	Δ	20	P-PL	Si	150J	T018	A	
59#	ZT183	150MS	120nt			250nt	300m	6.0	10m	38	Δ	8.0	P-PL	Si	150J	T018	A	
60#	ZT184	150MS	120nt			250nt	300m	6.0	10m	75	Δ	8.0	P-PL	Si	150J	T018	A	
61#	ZT187	150MS	120nt			250nt	300m	6.0	10m	75	Δ	20	P-PL	Si	150J	T018	A	
62#	ZT189	150MS	120nt			250nt	300m	6.0	10m	75	Δ	4.0	P-PL	Si	150J	T018	A	
63#	ZT280	150MSΔ	120nt			250nt	300m	6.0	10m	38	#	20	P-PL	Si	150J	R81k	A	
64#	ZT281	150MSΔ	120nt			250nt	300m	6.0	10m	38	#	20	P-PL	Si	150J	R81k	A	
65#	ZT282	150MSΔ	120nt			250nt	300m	6.0	10m	75	#	20	P-PL	Si	150J	R81k	A	
66#	ZT283	150MSΔ	120nt			250nt	300m	6.0	10m	38	#	4.0	P-PL	Si	150J	R81k	A	
67#	ZT284	150MSΔ	120nt			250nt	300m	6.0	10m	75	#	4.0	P-PL	Si	150J	R81k	A	
68#	ZT287	150MSΔ	120nt			250nt	300m	6.0	10m	75	#	20	P-PL	Si	150J	R81k	A	
69#	ZSC306	150MS	150n			300n	150n	800m	10	150m	85	#	4.7	N-PL	Si	200J	T05	A
70	2N3495	150MSΔ	300n			1.0	∅	600m	10	50m	40	#	35	P	Si	200S	T05	A
71	2N3497	150MSΔ	300n			1.0	∅	400m	10	50m	40	#	35	P	Si	200S	T018	A
72	2N3634	150MSΔ	400n			600n	5.0	∅	10	10m	50	Δ	40	P	Si	200S	T05	A
73	2N3636	150MSΔ	400n			600n	5.0	∅	10	10m	50	Δ	40	P	Si	200S	T05	A
74	2N996	160MΔ	20nt	14nt	80nt	22nt	360m	1.0	20m	35	#	5.0	P-PE	Si	200J	T018	A	
75	2N1499A	160MS	60n	120n		60m	500m	40m	5.0	25	Δ	1.5p	P-MD	Ge	100S	T09	A	
76	2N2317	160M	80nt			350m	10m	150m	10	80	Δ	18p	N-PL	Si	175J	T046	A	
77	JAN2N3418	160MS	300m			1.2u	1.0	5.0	5.0	10	#	150p	N	Si	200A	T05	A	
78	JAN2N3419	160MS	300m			1.2u	1.0	5.0	5.0	10	#	150p	N	Si	200A	T05	A	
79	JAN2N3420	160MS	300m			1.2u	1.0	5.0	5.0	15	#	150p	N	Si	200A	T05	A	
80	JAN2N3421	160MS	300m			1.2u	1.0	5.0m	5.0	15	#	150p	N	Si	200A	T05	A	
81	PT2635	170MS	25n	25n	300n	60n	2.5	28	350m	15	#	30n	N	Si	200J	T05	∅	
82	PT2670	170MS	25nt	25nt	300nt	60nt	1.0m	20	350m	20	#	25p	N	Si	200J	T05	∅	
83	2N5022	170MSΔ	30n	15n	65n	30n	4.0	∅	1.0	100m	15	Δ	80	P	Si	200S	T039	A
84	2N5243	170MSΔ	30n	15n	65n	30n	500m	1.0	1.0	50m	100	#	80	P	Si	125S	T0105	A
85	2N1500	175MS	13n			60m	60m	500m	10m									



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1#	BCW61C	180m	50nt	35nt	400n	80nt	150m*	5.0	2.0m	350	25	8.0p	P-PE	Si	150J	u56a	A	
2#	BCW61D	180m	50nt	35nt	400n	80nt	150m*	5.0	2.0m	500	25	8.0p	P-PE	Si	150J	u56a	A	
3	2N1253	180m	80n	25nt	150n	100n	600m	1.0	150m	45 #	10	45p	N-D	Si	175J	T05	A	
4#	2SC802	180m	100n	1.0u	70n	80n	1.0	4.0	150m	30	5	5.0p	N	Si	175J	T05	A	
5#	2SA608	180m	110n	1.0u	70n	80n	100m	1.0	10m	100	12	12p	P-PE	Si	125J	R145	D	
6#	CS4012	190m	75n	1.0u	170n	100m	300m	1.0	50m	67 #	6	6.0p	P-E	Si	125J	TO105	A	
7	CS4013	190m	75n	1.0u	170n	100m	300m	1.0	50m	130	6	6.0p	N-E	Si	125J	TC135	A	
8	2N706/46	200m	60n	25n	60n	250m	400m	1.0	10m	20 Δ	60	6.0p	N-E	Si	175J	TO46	A	
9	TIS44	200m	60n	25n	60n	250m	250m	1.0	10m	20 #Δ	60	6.0p	P-E	Si	150J	TO92	A	
10#	ZTX310	200m	10nt	27n	130n	16nt	300m	1.0	10m	20 Δ	60	6.0p	N-PL	Si	125S	X59	F	
11#	ZTX311	200m	10nt	27n	130n	16nt	300m	1.0	10m	20 Δ	60	6.0p	N-PL	Si	125S	X59	F	
12#	BLY33	200m	10nt	27n	130n	16nt	100m	2.0	10m	55	4	4.0p	N-PE	Si	100J	TO39	A	
13	UD3005	200m	10n	40n	250n	90n	250m	10	100	35	27	8.0p	N-PE	Si	200S	L56a		
14	UD3006	200m	10n	40n	250n	90n	250m	10	100	35	27	8.0p	P-PE	Si	200S	L56b		
15	UD3007	200m	10n	40n	250n	90n	250m	10	10m	35	27	8.0p	PE	Si	200S	L59		
16#	BFY26	200m	13nt	9.0nt	400nt	300nt	360m	9.0	10m	26 Δ	150	5.5p	N-PL	Si	200J	TO18		
17	2N3426	200m	15n	5.0n	20n	15n	3.0	.50	300m	120 #	25	25p	N	Si	200J	R94	A	
18	2N5861	200m	15n	6.0n	35n	30n	5.0	1.0	500m	25 Δ	1.0	7.0p	N	Si	200J	TO39	A	
19	K56107	200m	15n	15n	100n	30n	360m	5.0	1.0	15 Δ	20	20p	N-PE	Si	200J	TO37		
20	LDS210	200m	15n	15n	100n	30n	360m	1.0	300m	20 #	6	6.0p	N-PL	Si	150J	u34c	P	
21	MMT2222	200m	16n	16n	160n	225m	225m	10	10m	75 Δ	3	3.5p	N-ANT	Si	135J	u43	D	
22	2N783	200m	18n	25n	10n	10n	1.0	1.0	10m	80 Δ	25	3.5p	N	Si	175J	TO18	A	
23	MMT3905	200m	18n	25n	140n	15n	225m	1.0	1.0m	40 Δ	25	4.5p	N	Si	135J	u23c		
24	2N717A	200m	20n	15n	100n	30n	1.8	1.0	10m	25 Δ	19	3.5p	N-PL	Si	175J	TO18	A	
25	2N784	200m	20n	15n	100n	30n	1.8	1.0	10m	25 Δ	19	3.5p	N-PL	Si	175J	TO18	A	
26	2N2411	200m	20n	10n	90n	20n	300m	500m	10m	35	20	3.7p	N-PE	Si	200J	TO18	A	
27	2N2412	200m	20n	10n	90n	20n	300m	500m	10m	55	20	3.7p	P-EPL	Si	200J	TO18	A	
28	2N4400	200m	20n	15n	225n	30n	310m	1.0	150m	50 #Δ	7	7p	N	Si	135J	TO92	A	
29	2N4403	200m	20n	15n	25n	30n	310m	1.0	1.0m	60	9	9p	N	Si	135J	TO92	A	
30#	2SC641H	200m	20n	15n	30n	20n	100m	1.0	10m	200 *	6	6.0p	P-Et	Si	25J	MM12c	A	
31#	2SC841H	200m	20n	15n	30n	20n	100m	1.0	10m	200 *	6	6.0p	N-PE	Si	175J	TO18	A	
32	K56108	200m	20n	15n	120n	40n	225m	5.0	1.0	15 Δ	4	4.8p	N-PE	Si	200J	TO37	D	
33	MMT2907	200m	20n	15n	150n	225m	225m	10	10m	25 Δ	4	4.8p	N-ANT	Si	135J	u43	D	
34	TIS110	200m	20n	15n	230n	60n	360m	1.0	1.0m	20 Δ	20	6.5p	N-PEt	Si	150S	X55	A	
35	2N819	200m	25n	15n	40n	30n	5.0	1.0	10m	60 Δ	20	7.0p	N	Si	200J	TO18	W	
36	2N920	200m	25n	15n	40n	30n	5.0	1.0	10m	120 Δ	20	7.0p	N	Si	200J	TO18	W	
37	2N4404	200m	25n	15n	175n	35n	5.0	5.0	10m	40 #Δ	1	10p	P	Si	200S	TO39	A	
38	2N4405	200m	25n	15n	175n	35n	5.0	5.0	10m	100 #Δ	1	10p	P	Si	200S	TO39	A	
39#	2SA495G	200m	25n	15n	300nt	35nt	200m	2.0	10m	240 *	50	7.0p	P-PEt	Si	125S	R67a	B	
40	D40D1	200m	25n	15n	200nt	50nt	1.0	2.0	1.0	10 Δ	1.0	8.0p	NT	Si	150S	X51c	A	
41	D40D2	200m	25n	15n	200nt	50nt	1.0	2.0	1.0	10 Δ	1.0	8.0p	NT	Si	150S	X51c	A	
42	D40D3	200m	25n	15n	200nt	50nt	1.0	2.0	1.0	10 Δ	1.0	8.0p	NT	Si	150S	X51c	A	
43	D40D4	200m	25n	15n	200nt	50nt	1.0	2.0	1.0	10 Δ	1.0	8.0p	NT	Si	150S	X51c	A	
44	D40D5	200m	25n	15n	200nt	50nt	1.0	2.0	1.0	10 Δ	1.0	8.0p	NT	Si	150S	X51c	A	
45	D40D7	200m	25n	15n	200nt	50nt	1.0	2.0	1.0	10 Δ	1.0	8.0p	NT	Si	150S	X51c	A	
46	D40D8	200m	25n	15n	200nt	50nt	1.0	2.0	1.0	10 Δ	1.0	8.0p	NT	Si	150S	X51c	A	
47#	BSY26	200m	27n	5n	130n	30m	300m	2.0	50m	60 Δ	35	6.0p	N-PE	Si	175J	TO18	A	
48#	BSY27	200m	27n	5n	130n	30m	300m	2.0	50m	120 Δ	35	6.0p	N-PE	Si	175J	TO18	A	
49	2N5845	200m	28n	40n	30n	25n	1.0	1.0	500m	25 #	9	9.0p	N	Si	135S	TO92	A	
50	2N3252	200m	30n	15n	40n	30n	5.0	1.0	500m	90 #	12	12p	N	Si	200J	TO5	A	
51	2N3928	200m	30n	5.0n	50n	25n	5.0	5.0	1.0	40 #	25	25p	N	Si	175J	R114	A	
52	2N3929	200m	30n	5.0n	50n	25n	5.0	5.0	1.0	40 #	25	25p	N	Si	175J	TO59	A	
53	2N5023	200m	30n	15n	65n	30n	1.0	1.0	100m	30 Δ	17	25p	P	Si	200S	TO39	A	
54	LDA404	200m	30n	15n	225n	360m	360m	2.0	150m	40 #Δ	2.6	8.0p	N-PE	Si	150J	u34	P	
55	LDA405	200m	30n	15n	225n	360m	360m	2.0	150m	100 #Δ	2.6	8.0p	N-PE	Si	150J	u34	P	
56	LDA208	200m	30n	15n	225n	360m	360m	2.0	150m	100 #	2.6	8.0p	N-PE	Si	150J	u34c	P	
57	MM3724	200m	30n	15n	50n	1.0	1.0	500m	25 Δ	9	9.0p	N-EA	Si	200J	TO5	A		
58	MM3725	200m	30n	15n	50n	1.0	1.0	500m	25 Δ	9	9.0p	N-EA	Si	200J	TO5	A		
59	MM3726	200m	30n	15n	50n	1.0	1.0	500m	25 Δ	10	10p	P-EA	Si	200J	TO5	A		
60	TIS113	200m	30n	10n	50n	25n	1.2	1.0	300m	40 Δ	12	12p	N-PEt	Si	150S	X55	A	
61	TIS114	200m	30n	10n	50n	25n	1.2	1.0	300m	35 Δ	12	12p	N-PEt	Si	150S	X55	A	
62	TIS115	200m	30n	10n	50n	30n	1.2	1.0	300m	40 Δ	10	10p	N-PEt	Si	150S	X55	A	
63	TIS116	200m	30n	10n	50n	30n	1.2	1.0	300m	35 Δ	10	10p	N-PEt	Si	150S	X55	A	
64	2N3502	200m	35n	25n	70n	50n	700m	10	10m	80 Δ	2.6	8.0p	P	Si	200J	TO5	A	
65	2N3503	200m	35n	25n	70n	50n	700m	10	10m	80 Δ	2.6	8.0p	P	Si	200J	TO5	A	
66	2N3504	200m	35n	25n	70n	50n	400m	10	10m	80 Δ	2.6	8.0p	P	Si	200J	TO18	A	
67	2N3505	200m	35n	25n	70n	50n	400m	10	10m	80 Δ	2.6	8.0p	P	Si	200J	TO18	A	
68	2N3644	200m	35n	25n	70n	50n	700m	10	100	40 Δ	8	8.0p	P	Si	125J	R110a	A	
69	2N3645	200m	35n	25n	70n	50n	700m	10	100	40 Δ	8	8.0p	P	Si	125J	R110a	A	
70	2N3905	200m	35n	35n	200n	60n	310m	1.0	10m	30 #Δ	4	4.5p	P	Si	135J	TO92	A	
71	2N5735	200m	35n	25n	300n	25n	360m	10	150m	40 #	8	8.0p	N	Si	150S	TO122	P	
72	2N5736	200m	35n	25n	300n	25n	360m	10	150m	100 #	8	8.0p	N	Si	150S	TO122	P	
73	2N5795	200m	35n	12n	100n	40n	600m	10	100	40 Δ	8	8.0p	P	Si	200S	L2d		
74	2N5796	200m	35n	12n	100n	40n	600m	10	100	75 Δ	8	8.0p	P	Si	200S	L2d		
75	A5T3644	200m	35n	25n	70n	50n	360m	10	10m	100 #	8	8.0p	P-PE	Si	150S	X55	A	
76	A5T3645	200m	35n	25n	70n	50n	360m	10	10m	100 #	8	8.0p	P-PE	Si	150S	X55	A	
77	A5T3905	200m	35n	35n	200n	60n	360m	1.0	1.0m	40 Δ	4	4.5p	P-PE	Si	150S	X55	A	
78	EN3905	200m	35n	35n	200n	60n	700m	1.0	10m	50 #Δ	25	4.5p	P-DPE	Si	135J	TO106	A	
79	G13644	200m	35n	25n	70n	50n	300m	10	10m	80	50	8.0p	P	Si	125	TO18	A	
80	LDA452	200m	35n	15n	150n	360m	360m	10	300m	20 #Δ	2.6	8.0p	P-PE	Si	150J	u34	P	
81	LDA453	200m	35n	15n	150n	360m	360m	10	300m	30 #Δ	2.6	8.0p	P-PE	Si	150J	u34	P	
82	2N1708	200m	40n	10n	75n	30m	1.0	1.0	10m	2								

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1	A3T2907	200M&A	40n	10n	85n	35n	225m	10	150m	300	12p	P-PET	Si	150S	u44	A		
2	A3T2907A	200M&A	40n	10n	85n	35n	225m	10	150m	300	12p	P-PET	Si	150S	u44	A		
3	A3T2907	200M&A	40n	10n	80n	30n	360m	10	100m	50	8.0p	P-PET	Si	150S	X55	A		
4#	BFV49	200M&A	40n		35n	75n	150m	1.0	10m	30		NPE	Si	200J	u34b	P		
5#	BFV86	200M&A	40n	10n	80n	30n	360m	10	10m	75	8.0p	PPE	Si	200S	u26a	B		
6#	BFV86A	200M&A	40n	10n	80n	30n	360m	10	10m	100	8.0p	PPE	Si	200S	u26a	B		
7#	BFV86B	200M&A	40n	10n	80n	30n	360m	10	10m	35	8.0p	PPE	Si	200S	u26a	B		
8#	BFV86C	200M&A	40n	10n	80n	30n	360m	10	10m	40	8.0p	PPE	Si	200S	u26a	B		
9#	BFW88	200M&S	40n	15n	250n	50n	300m	5.0	10m	125		P-PLT	Si	125J	MM10	A		
10#	BFW90	200M&S	40n	15n	250n	50n	300m	5.0	10m	125	2.6	P-PLT	Si	125J	MM10	A		
11#	BFW91	200M&S	40n	15n	250n	50n	300m	5.0	150m	125	2.6	P-PLT	Si	125J	MM10	A		
12#	BSW12	200M&A	40n			70n	50m*	1.0	10m	150	40	N-PE	Si	125J	u47	A		
13#	BSW23	200M&A	40n	10n	80n	30n	700m	10	150m	40	2.7	PPE	Si	200J	T050	A		
14#	BSW24	200M&A	40n	10n	80n	30n	400m	10	150m	40	2.7	PPE	Si	200J	T018	A		
15#	BSW26	200M&A	40n			85n	1.8	2.0	100m	25	3.5	N-PE	Si	200J	T018	A		
16#	BSW27	200M&A	40n			85n	3.0	2.0	100m	25	3.5	N-PL	Si	200J	T018	A		
17#	BSW29	200M&A	40n			85n	5.0	2.0	100m	25	3.5	N-PL	Si	200J	T05	A		
18#	BSX36	200M&A	40n			100n	1.2	10	100m	75		P-DPE	Si	200J	T018	A		
19#	BSX89	200M&A	40n			75n	300m	10	10m	20	60	NPE	Si	175J	T018	A		
20#	GET2904	200M&A	40n	10n	80n	30n	700m	10	1.0m	25	8.0p	P-PE	Si	125J	X105	A		
21#	GET2905	200M&A	40n	10n	80n	30n	700m	10	1.0m	50	8.0p	P-PE	Si	125J	X105	A		
22#	GET2906	200M&A	40n	10n	80n	30n	700m	10	1.0m	25	8.0p	P-PE	Si	125J	X93a	F		
23#	GET2907	200M&A	40n	10n	80n	30n	700m	10	1.0m	50	8.0p	P-PE	Si	125J	X93a	F		
24#	MD6001	200M&A	40n	20n	280n	70n	500m	10	150m	40	4.3	P-N	Si	200J	L66			
25	MD6001F	200M&A	40n	20n	280n	70n	250m	10	150m	40	4.3	P-N	Si	200J	T089			
26	MD6002	200M&A	40n	20n	280n	70n	500m	10	150m	100	4.3	P-N	Si	200J	L66			
27	MD6002F	200M&A	40n	20n	280n	70n	250m	10	150m	100	4.3	P-N	Si	200J	T089			
28	MPS706	200M&A	40n			75n	310m	1.0	10m	20	6.0p	NANT	Si	135J	X20d	A		
29	MPS706A	200M&A	40n			75n	310m	1.0	10m	60	6.0p	NANT	Si	135J	X20d	A		
30	TIS112	200M&A	40n	10n	80n	70n	360m	10	1.0m	50	8.0p	P-PET	Si	150S	X55	A		
31#	ZT706A	200M&A	40n		25n	75n	300m	1.0	10m	60		N-PL	Si	175J	T018			
32#	ZT1708	200M&A	40n		25n	50n	300m	1.0	10m	20	6.0p	N-PE	Si	175	T046			
33#	ZT2205	200M&A	40n		25n	50n	300m	1.0	10m	20	6.0p	N-PE	Si	175	T018			
34#	ZT2206	200M&A	40n		35n	40n	300m	1.0	10m	40	6.0p	N-PE	Si	175	T046			
35	JAN2N2904	200M&A	45n		18n*	175n	3.0	10	10m	35	8.0p	P	Si	200S	T05	A		
36	JAN2N2904A	200M&A	45n		18n*	175n	3.0	10	10m	40	8.0p	P	Si	200S	T05	A		
37	JAN2N2905	200M&A	45n		18n*	200n	3.0	10	10m	75	8.0p	P	Si	200S	T05	A		
38	JAN2N2905A	200M&A	45n		18n*	200n	3.0	10	10m	100	8.0p	P	Si	200S	T05	A		
39	JAN2N2906	200M&A	45n		18n*	175n	1.8	10	10m	35	8.0p	P	Si	200S	T018	A		
40	JAN2N2906A	200M&A	45n		18n*	175n	1.8	10	10m	40	8.0p	P	Si	200S	T018	A		
41	JAN2N2907	200M&A	45n		18n*	200n	1.8	10	10m	75	2.6	P	Si	200S	T018	A		
42	JAN2N2907A	200M&A	45n		18n*	200n	1.8	10	10m	100	2.6	P	Si	200S	T018	A		
43	JAN2N3485A	200M&A	45n			175n	2.0	10	100m	40	8.0p	P	Si	200S	T046	A		
44	JAN2N3486A	200M&A	45n			200n	2.0	10	100m	75	8.0p	P	Si	200S	T046	A		
45	JAN2N3838	200M&A	45n			300n	250m	10	150m	100	8.0p	P	Si	200J	L19c			
46	JAN2N4854	200M&A	45n			300n	300m	10	150m	100	8.0p	P	Si	200J	L19e			
47	MD1T2907	200M&S	45n		80n	100n	400m	10	150m	100	8.0p	P	Si	150A	TO122	P		
48#	PL4031	200M&A	45n		80n	100n	360m	10	10m	20	8.0p	PPE	Si	175S	u51			
49#	PL4032	200M&A	45n		80n	100n	360m	10	100m	40	8.0p	P-PE	Si	175S	u51			
50#	PL4033	200M&A	45n		80n	100n	360m	10	10m	35	8.0p	PPE	Si	175S	u51			
51#	PL4034	200M&A	45n		80n	100n	360m	10	10m	75	8.0p	PPE	Si	175S	u51			
52	2N3830	200M&A	50n	10n	40n	30n	1.0	1.0	500m	30	12p	N	Si	200S	T05	A		
53	2N3831	200M&A	50n	10n	40n	30n	1.0	1.0	500m	35	12p	N	Si	200S	T05	A		
54#	25C944	200M&A	50n			800n	250m	10	2.0m	60	3.0p	N-PE	Si	125J	T092	B		
55	40458	200M&S	50n	25n	500n	75n	500m	10	10m	150	1.0	N-DPE	Si	175J	R123			
56	40459	200M&S	50n	25n	500n	75n	1.0	10	10m	150	1.0	N-DPE	Si	175J	R119			
57#	BFY64	200M&A	50n			120n	3.0	10	10m	200	10p	P-DPE	Si	200J	T05	A		
58#	BSW28	200M&A	50n			85n	3.0	2.0	100m	25	3.5	N-PL	Si	200J	T05	A		
59#	BSX53	200M&A	50n	75n	100n	50n	150m	1.0	50m	50	5.0p	N-PE	Si	175	T018			
60#	BSX54	200M&A	50n	75n	100n	50n	150m	1.0	50m	50	5.0p	N-PE	Si	175	T018			
61#	BSX79	200M&A	50n	75n	100n	50n	360m	1.0	50m	50	5.0p	N-PE	Si	175	T018			
62	2N3973	200M&A	60n			110n	360m	1.0	10m	35	2.0	N	Si	150S	R67	B		
63	2N3974	200M&A	60n			110n	360m	1.0	10m	55	2.0	N	Si	150S	R67	B		
64	2N3975	200M&A	60n			200n	360m	1.0	10m	35	2.0	N	Si	150S	R67	B		
65	2N3976	200M&A	60n			250n	360m	1.0	10m	55	2.0	N	Si	150S	R67	B		
66	2N4971	200M&A	60n	20n	150n	50n	500m	10	150m	40	8.0p	P	Si	125S	TO106	A		
67#	BC212K	200M&A	60n			30n	300m	5.0	2.0m	50	10p	P-PE	Si	125A	X64a	A		
68#	BC212KA	200M&A	60n			30n	300m	5.0	2.0m	300	10p	P-PE	Si	125A	X64a	A		
69#	BC212KB	200M&A	60n			30n	300m	5.0	2.0m	400	10p	P-PE	Si	125A	X64a	A		
70#	BC212L	200M&A	60n			30n	300m	5.0	2.0m	50	10p	P-PE	Si	125A	X20	B		
71#	BC212LA	200M&A	60n			30n	300m	5.0	2.0m	300	10p	P-PE	Si	125A	X20	B		
72#	BC212LB	200M&A	60n			30n	300m	5.0	2.0m	400	10p	P-PE	Si	125A	X20	B		
73#	BC213K	200M&A	60n			30n	300m	5.0	2.0m	70	10p	P-PE	Si	125A	X64a	A		
74#	BC213KA	200M&A	60n			30n	300m	5.0	2.0m	300	10p	P-PE	Si	125A	X64a	A		
75#	BC213KB	200M&A	60n			30n	300m	5.0	2.0m	400	10p	P-PE	Si	125A	X64a	A		
76#	BC213KC	200M&A	60n			30n	300m	5.0	2.0m	600	10p	P-PE	Si	125A	X64a	A		
77#	BC213L	200M&A	60n			30n	300m	5.0	2.0m	70	10p	P-PE	Si	125A	X20	B		
78#	BC213LA	200M&A	60n			30n	300m	5.0	2.0m	300	10p	P-PE	Si	125A	X20	B		
79#	BC213LB	200M&A	60n			30n	300m	5.0	2.0m	400	10p	P-PE	Si	125A	X20	B		
80#	BC213LC	200M&A	60n			30n	300m	5.0	2.0m	600	10p	P-PE	Si	125A	X20	B		
81#	BC214K	200M&A	60n			30n	300m	5.0	2.0m	125	10p	P-PE	Si	125A	X64a	A		
82#	BC214KB	200M&A	60n			30n	300m	5.0	2.0m	400	10p	P-PE	Si	125A	X64a	A		
83#	BC214KC	200M&A	60n			30n	300m	5.0	2.0m	600	10p	P-PE	Si	125A	X64a	A		
84#	BC214L	200M&A	60n			30n	300m	5.0	2.0m	125	10p	P-PE	Si	125A	X20	B		
85#	BC214LB	200M&A	60n			30n	300m	5.0	2.0m	400	10p	P-PE	Si	125A	X20	B		
86#	BC214LC	200M&A	60n			30n	300m	5.0	2.0m	600	10p	P-PE	Si	125A	X20	B		
87	EN706	200M&A	60n				200m	1.0	10m	20	90	N	Si	125J	TO1			

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME (s)	MAX DELAY TIME (s)	MAX STORE TIME (s)	MAX FALL TIME (s)	MAX. P <sub>c</sub> IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	le (A)	hFE								
1	2N3637	200MΔ	400n			600n	5.0	10	10m	100	40	10p	P	Si	200S	T05	A	
2	BSY40	210MΔ	20n	10n	90n	20n	1.2	10	10m	60	20	10p	P-PE	Si	200S	T05	A	
3	2N1204A	220MΔ	35n			20n	2.0	50	200m	25	8.0p	P	Si	100	T039	A		
4	BSY41	230MΔ	20n	10n	90n	20n	2.0	50	200m	25	8.0p	P-PE	Si	100	T018	A		
5	2N1410A	230MΔ	40n	15n	170n	30n	800m	10	150m	60	2.0	12p	N-PL	Si	175J	T05	A	
6	BFW87	230MΔ	40n	15n	250n	50n	300m	5.0	10m	155	2.6	12p	P-PLT	Si	125J	MM10	A	
7	BFW89	230MΔ	40n	15n	250n	50n	300m	5.0	10m	155	2.6	12p	F-FLI	Si	125J	MM10	A	
8	JAN2N3506	240MΔ	30n	15n	55n	35n	5.0	5.0	3.0	200		40p	N	Si	200A	T05	A	
9	JAN2N3507	240MΔ	30n	15n	55n	35n	5.0	5.0	3.0	150		40p	N	Si	200A	T05	A	
10	2N6011	240MΔ	35n	10n	375n	50n	1.0	1.0	10m	100	8.0	15p	P	Si	150J	X55a	A	
11	2N6015	240MΔ	35n	10n	375n	50n	1.0	1.0	10m	100	8.0	15p	P	Si	150J	X55a	A	
12	2SC317H	240MΔ	45n	130n	350n	65n	350m	6.0	10m	80		10p	N-PM S	Si	175J	T01	A	
13	JAN2N3867	240MΔ	65n	35n	325n	75n	10	5.0	3.0	20	500m	120p	P	Si	200S	T05	A	
14	JAN2N3868	240MΔ	65n	35n	325n	75n	10	5.0	3.0	20	500m	120p	P	Si	200S	T05	A	
15	BFY18	245MΔ	13n	9.0n	600n	300n	300m	9.0	10m	35	5.5p	2.0p	N-PL	Si	175J	T018	A	
16	2SC907H	250MΔ					200m	1.0	10m	60		2.0p	N	Si	175J	T01	A	
17	BSX76	250MΔ					300m	4.0	1.0m	64		2.5p	PL	Si	175J	T018	A	
18	MPS2713	250MΔ	6.0n	7.0n	12n	9.0n	310m	4.5	2.0m	30		2.5p	N-EA	Si	135J	T092	A	
19	MPS2714	250MΔ	6.0n	7.0n	12n	9.0n	310m	4.5	2.0m	75		2.5p	N-EA	Si	135J	T092	A	
20	2N2256	250MΔ	7.0n			7.0n	300m	1.0	10m	30		5.0p	N-ME	Si	175J	T01	A	
21	2N2257	250MΔ	7.0n			7.0n	300m	1.0	10m	50		5.0p	N-ME	Si	175J	T01	A	
22	2N2258	250MΔ	8.0n			7.0n	150m	1.0	10m	30		8.0p	P-ME	Ge	100J	T01	A	
23	2N2259	250MΔ	8.0n			7.0n	150m	1.0	10m	50		8.0p	P-ME	Ge	100J	T01	A	
24	2N976	250MΔ	10n			100m	100m	.50	40m	25	8.5	30p	P	Ge	100S	T018	A	
25	2N5134	250MΔ	12n	14n	13n	200m	1.0	10m	20	20		4p	N	Si	125J	T0106	A	
26	A5T2222	250MΔ	12n	8.0n	190n	30n	360m	10	1.0m	50		8.0p	N-PEt	Si	150S	X55	A	
27	TIS109	250MΔ	12n	8.0n	190n	30n	360m	10	1.0m	30		10p	N-PEt	Si	150S	X55	A	
28	MMT3903	250MΔ	13n	24n	125n	225m	1.0	1.0m	35	20		4.0p	N	Si	135J	u23c	F	
29	2N3248	250MΔ	15n	5.0n	60n	20n	1.2	1.0	10m	50		8.0p	P	Si	200J	T018	A	
30	2N5860	250MΔ	15n	6.0n	35n	30n	5.0	1.0	500m	35	700m	7.0p	N	Si	200J	T039	A	
31	BSV85	250MΔ	15n	45n	110n	40n	360m	10	150m	80		8.0p	N	Si	200	T018	A	
32	BSX77	250MΔ	15n	50n	75n	300m	500m	10	1.0m	64	25		PL	Si	175J	T018	A	
33	A3T2221	250MΔ	16n	7.0n	130n	20n	225m	10	150m	120		8.0p	N-PE	Si	150S	u44	A	
34	A3T2222	250MΔ	16n	7.0n	160n	20n	225m	10	150m	300		8.0p	N-PE	Si	150S	u44	A	
35	MMT3906	250MΔ	18n	25n	140n	15n	225m	1.0	1.0m	80	25	4.5p	P	Si	135J	u23c	A	
36	2N4401	250MΔ	20n	15n	225n	30n	310m	1.0	150m	100		7p	N	Si	135J	T092	A	
37	2N5027	250MΔ	20n	15n	35n	25n	320m	1.0	150m	150		8p	N	Si	120	T098	B	
38	2N5224	250MΔ	20n	25n	35n	25n	310m	1.0	100m	15	35	4p	N	Si	135S	T092	A	
39	TIS111	250MΔ	20n	15n	230n	60n	360m	1.0	1.0m	40		6.5p	N-PEt	Si	150S	X55	A	
40	2N3512	250MΔ	24n	6.0n	30n	15n	4.0	1.0	500m	10	2.6	10p	N	Si	200S	T05	A	
41	40283	250MΔ	24n	6.0n	30n	15n	2.0	1.0	500m	10	2.6	10p	N-DPE	Si	200S	T046	A	
42	2N2218A	250MΔ	25n	10n	225n	60n	800m	10	10m	50		8.0p	N	Si	175J	T05	A	
43	2N2221A	250MΔ	25n	10n	225n	60n	1.8	1.0	1.0m	25	1.5	8.0p	N	Si	175J	T018	A	
44	2N2476	250MΔ	25n			45n	600m	.40	150m	20		10p	N	Si	200J	T05	A	
45	2N2477	250MΔ	25n			45n	600m	.40	150m	40	1.3	10p	N	Si	200J	T05	A	
46	2N2847	250MΔ	25n			40n	360m	10	150m	140		8.0p	N	Si	200J	T018	A	
47	2N2848	250MΔ	25n			40n	800m	10	150m	140		8.0p	N	Si	200J	T05	A	
48	2N3678	250MΔ	25n	15n	190n	60n	800m	10	150m	40		8.0p	N	Si	200J	T05	A	
49	2N5581	250MΔ	25n	10n	225n	60n	2.0	1.0	10m	35		8.0p	N	Si	200S	T046	A	
50	2N5845A	250MΔ	25n	15n	38n	27n	1.2	1.0	500m	35		9.0p	N	Si	135S	T092	A	
51	A3T2221A	250MΔ	25n	10n	225n	60n	225m	10	150m	120		8.0p	N-PEt	Si	150S	u44	A	
52	BC194	250MΔ	25n			150n	100m	10	1.0m	25		8.0p	N-PE	Si	125J	u30b	D	
53	BFV85	250MΔ	25n			200n	360m	10	10m	75		8.0p	NPE	Si	175J	u26a	B	
54	BFV85A	250MΔ	25n	10n	225n	60n	360m	10	10m	75		8.0p	N-PE	Si	175J	u26a	B	
55	BFV85B	250MΔ	25n			175n	360m	10	10m	35		8.0p	NPE	Si	175J	u26a	B	
56	BFV93N	250MΔ	25n			200n	400m	10	150m	300		10p	N-PE	Si	175	L56j	A	
57	BFV94	250MΔ	25n			200n	400m	10	150m	300		10p	N-PE	Si	175	L56f	A	
58	BFV94N	250MΔ	25n			200n	400m	10	150m	300		10p	N-PE	Si	175	L56g	A	
59	BFV95	250MΔ	25n			200n	400m	10	150m	300		10p	N-PE	Si	175	L56d	A	
60	BFV95N	250MΔ	25n			200n	400m	10	150m	300		10p	N-PE	Si	175	L56e	A	
61	BSX72	250MΔ	25n			150n	575m	10	150m	20		8.0p	N-PE	Si	175	T05	A	
62	BSX75	250MΔ	25n			150n	500m	10	500m	20		8.0p	N-PE	Si	175	T018	A	
63	KS6113	250MΔ	25n	30n	100n	50n	5.0	2.0	15	15		35p	N-PE	Si	200J	T060	A	
64	PL4051	250MΔ	25n			150n	220m	10	10m	17		8.0p	NPE	Si	175S	u51	A	
65	PL4052	250MΔ	25n	10n	225n	60n	220m	10	10m	35		8.0p	N-PE	Si	175S	u51	A	
66	PL4053	250MΔ	25n			175n	220m	10	10m	35		8.0p	NPE	Si	175S	u51	A	
67	PL4055	250MΔ	25n			200n	220m	10	10m	75		8.0p	NPE	Si	175S	u51	A	
68	ZT2476	250MΔ	25n			45n	600m	400m	150m	20	1.5	10p	N-PE	Si	200J	T05	A	
69	ZT2477	250MΔ	25n			45n	600m	400m	150m	40	1.3	10p	N-PE	Si	200J	T05	A	
70	2N2956	250MΔ	30n	15n	55n	35n	150m	1.0	50m	76		4.0p	P	Ge	100J	T018	A	
71	2N3545	250MΔ	30n	30n	40n	50n	360m	1.0	10m	120	20	8.0p	P	Si	200J	T018	A	
72	2N5028	250MΔ	30n	15n	45n	35n	320m	1.0	150m	300		8p	P	Si	120	T098	B	
73	2N5793	250MΔ	30n	15n	250n	60n	600m	10	100m	20		8.0p	N	Si	200S	L2d	A	
74	2N5794	250MΔ	30n	15n	250n	60n	600m	10	100m	35		8.0p	N	Si	200S	L2d	A	

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-PNP N-PNP	M A T	TEMP. (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1	2N2845	250MΔ	40n			40n	360m	10	150m	120 #	8.0p		N	Si	200J	TO18	A	
2	2N2846	250MΔ	40n			40n	800m	10	150m	120 #	8.0p		N	Si	200J	TO5	A	
3	2N3015	250MΔ	40n		60n		3.0	0	150m	120 #	8.0p		N	Si	200J	TO5	A	
4	2N3735	250MΔ	40n	8.0n	30n	30n	1.0	1.0	500m	35 Δ	20	9.0p	N	Si	200S	TO5	A	
5	2N3737	250MΔ	40n	8.0n	30n	30n	500m	1.0	150m	40 Δ	20	9.0p	N	Si	200S	TO46	A	
6	2N4140	250MΔ	40n	10n	250n	60n	300m	10	150m	120 #	3.2	8.0p	N	Si	125J	R110	A	
7	2N4141	250MΔ	40n	10n	250n	60n	300m	10	150m	300 #	3.2	8.0p	N	Si	125J	R110	A	
8	2N4227	250MΔ	40n	10n	250n	60n	300m	10	150m	150 #	3.2	8.0p	N	Si	125J	R110	A	
9	2N4951	250MΔ	40n		350n		360m	10	10m	40 #		8p	N	Si	150S	TO98	B	
10	2N4952	250MΔ	40n		350n		360m	10	10m	75 Δ		8p	N	Si	150S	TO98	B	
11	2N4953	250MΔ	40n		400n		360m	10	10m	150 Δ		8p	N	Si	150S	TO98	B	
12	2N4954	250MΔ	40n		400n		360m	10	10m	40 Δ		8p	N	Si	150S	TO98	B	
13	2N5368	250MΔ	40n			350n	360m	10	10m	40 #		8p	N	Si	150J	X93	A	
14	2N5369	250MΔ	40n			350n	360m	10	10m	75 #		8p	N	Si	150J	X93	A	
15	2N5370	250MΔ	40n			400n	360m	10	10m	150 #		8p	N	Si	150J	X93	A	
16	2N5371	250MΔ	40n			400n	360m	10	10m	40 #		8p	N	Si	150J	X93	A	
17#	2SC88	250MΔ	40n		300n	130n	600m	10	10m	50		3.0p	N-ME	Si	175J	TO5	D	
18#	2SC619	250MΔ	40n		150n	250n	250m	6.0	10m	110 #		7.0p	N-PET	Si	125J	TO92	D	
19#	2SC714	250MΔ	40n		150n	250n	250m	6.0	10m	60 #		7.0p	N-PET	Si	125J	TO92	D	
20#	BFV54	250MΔ	40n			60n	150m	.70	300m	10 Δ		8.0p	NPE	Si	200J	u34b	P	
21#	BFV88A	250MΔ	40n		20n	40n	360m	10	1.0m	20 Δ		8.0p	NPE	Si	200J	u26a	B	
22#	BFV88B	250MΔ	40n		20n	40n	360m	10	1.0m	35 Δ		8.0p	NPE	Si	200J	u26a	B	
23#	BFV88C	250MΔ	40n		20n	40n	360m	70	300m	10 #		8.0p	NPE	Si	200J	u26a	B	
24#	BSV59	250M	40n			40n	360m	10	150m	30 #		8.0p	N	Si	200	TO18	A	
25#	BSX30	250MΔ	40n			60n	3.0	0	700m	300m	50 #	8.0p	N-DPE	Si	200J	TO5	∅	
26	CS5368	250MΔ	40n			350n	360m	10	10m	40 #		8.0p	N	Si	150J	TO106	A	
27	CS5369	250MΔ	40n			350n	360m	10	10m	75 #		8.0p	N	Si	150J	TO106	A	
28	CS5370	250MΔ	40n			400n	360m	10	10m	150 #		8.0p	N	Si	150J	TO106	A	
29	CS5371	250MΔ	40n			400n	360m	10	10m	40 #		8.0p	N	Si	150J	TO106	A	
30#	V435	250MΔ	40n			100n	300m	10	10m	40 Δ		12p	N	Si	125J	R97	A	
31#	ZTX360	250MΔ	40n			75n	500m	1.0	500m	150 #	1.2	10p	N-PL	Si	175A	X59	F	
32	2N2787	250MΔ	50n		50n		3.0	0	1.0m	15 Δ		8.0p	N	Si	175J	TO5	A	
33	2N2788	250MΔ	50n		50n		3.0	0	1.0m	30 Δ		8.0p	N	Si	175J	TO5	A	
34	2N2789	250MΔ	50n		70n		3.0	0	1.0m	80 Δ		8.0p	N	Si	175J	TO5	A	
35	2N2790	250MΔ	50n		70n		1.8	0	1.0m	15 Δ		8.0p	N	Si	175J	TO18	A	
36	2N2791	250MΔ	50n		60n		1.8	0	1.0m	30 Δ		8.0p	N	Si	175J	TO18	A	
37	2N2792	250MΔ	50n		70n		1.8	0	1.0m	80 Δ		8.0p	N	Si	175J	TO18	A	
38#	2SA544	250M	50n		200n	250n	750m	10	10m	40 #	13	7.0p	N-PE	Si	175J	TO39	A	
39#	2SC97	250M	50n		100n	150n	800m	10	150m	60 #		20p	N-PE	Si	175J	TO5	∅	
40#	BCV65E	250M	50n	15n	300n	150n	1.0	*	1.0	10m	260	3.5p	N-PE	Si	200J	TO18	A	
41#	BSW41	250MΔ	50n		100n		1.0	0	500m	20 Δ		8.0p	N-PE	Si	200J	TO18	A	
42	2N4450	250MΔ	55n	30n	140n	100n	3.0	0	1.0m	35 Δ	15	8p	N	Si	200J	TO46	A	
43	2N963	250MΔ	60n			120n	150m	1.0	100m	20 Δ	20	5.0p	P	Ge	100S	TO18	A	
44	2N967	250MΔ	60n			120n	150m	1.0	100m	40 Δ	20	5.0p	P	Ge	100S	TO18	A	
45	2N3299	250MΔ	60n			150n	3.0	0	150m	120 #	1.2	8.0p	N	Si	200J	TO5	A	
46	2N3300	250MΔ	60n			150n	3.0	0	150m	300 #	1.2	8.0p	N	Si	200J	TO5	A	
47	2N3301	250MΔ	60n			150n	1.8	0	150m	120 #	1.2	8.0p	N	Si	200J	TO18	A	
48	2N3302	250MΔ	60n			150n	360m	10	150m	300 #	1.2	8.0p	N	Si	200J	TO19	A	
49	2N4437	250MΔ	60n			150n	500m	10	150m	300 #		8.0p	N	Si	125J	R124	A	
50#	ZT600	250MΔ	60n			60n	5.0	0	1.0	150m	150 #	1.0	12p	N	Si	200S	TO5	A
51#	C111E	250MΔ	65n	30n		80n	1.0	0	1.0	50m	50 #	6.0p	NPE	Si	175S	TO18	A	
52#	2SC87	250M	70n		300n	50n	600m	10	10m	50		4.0p	N-ME	Si	175J	TO5	∅	
53#	BFY72	250MΔ	70n			170n	3.0	0	1.0m	85		8.0p	N-DPE	Si	200J	TO5	∅	
54	GI3638	250M	70n	20n	140n	70n	300m	1.0	50m	30		20p	P-E	Si	125	R97d	∅	
55	GI3638A	250M	70n	20n	140n	70n	300m	1.0	50m	100		10p	P-E	Si	125	R97d	∅	
56	2N2402	250MΔ	75n	100n		100n	150m	.50	50m	50 Δ	20	4.0p	N	Ge	200S	TO18	A	
57	2N2958	250MΔ	75n	20n	300n	200n	3.0	0	150m	120 #		8.0p	N	Si	200S	TO5	A	
58	2N2959	250MΔ	75n	20n	300n	200n	3.0	0	150m	300 #		8.0p	N	Si	200S	TO5	A	
59	2N2960	250MΔ	75n	20n	300n	200n	3.0	0	1.0m	50 Δ		8.0p	N	Si	200S	TO5	A	
60	2N2961	250MΔ	75n	20n	300n	200n	3.0	0	500m	30 #		8.0p	N	Si	200S	TO5	A	
61	2N3115	250MΔ	75n	20n	300n	200n	400m	10	150m	40 Δ		8.0p	N	Si	175J	TO18	A	
62	2N3116	250MΔ	75n	20n	300n	200n	400m	10	150m	100 Δ		8.0p	N	Si	175J	TO18	A	
63	2N1340	250M*	100n	15n	150n	100n	800m	10	50m	5.0 #	14	4.0p	N-ME	Si	175J	TO5	A	
64#	2SA552	250M	100n		270n	300n	750m	10	10m	40 #	16	7.0p	N-PE	Si	175J	TO39	A	
65	2N4960	250MΔ	125n	50n	800n	250n	3.5	0	10m	30 Δ		15p	N	Si	200J	TO39	A	
66	2N4961	250MΔ	125n	50n	800n	250n	1.5	0	10m	30 Δ		15p	N	Si	200J	TO39	A	
67	2N4962	250MΔ	125n	50n	800n	250n	3.5	0	10m	30 Δ		15p	N	Si	200J	TO18	A	
68	2N4963	250MΔ	125n	50n	800n	250n	1.5	0	10m	30 Δ		15p	N	Si	200J	TO18	A	
69	2N3946	250MΔ	300n	35n	300n	75n	360m	10	1.0m	250 #	20	4.0p	N	Si	200J	TO18	A	
70	JAN2N744	280MΔ	16n	18n		45n	300m	250m	1.0m	20 Δ		5.0p	N	Si	175J	TO18	A	
71#	BSW13	280MΔ	20n		20n	40n	160m	350m	10m	300 #	30	5.0p	NPE	Ge	100S	TO18	A	
72	2N2635	280M	30n	20n	185n	65n	150m	1.0	50m	45 Δ		5.0p	N	Ge	100S	TO18	A	
73	EN744	282MΔ	16n	18n		24n	500m	350m	10m	40 #	25	5.0p	N-DPE	Si	125J	TO106	A	
74#	BSX78	285MΔ	15n		50n	75n	300m	500m	1.0m	90 #		6.0p	NLA	Si	200S	TO18	A	
75#	2S95A	300MΔ			25n		300m	350m	10m	200 #		6.0p	P-E	Si	150J	TO92	A	
76	TIS45	300MΔ			25n		360m	1.0	10m	120 #	40	6.0p	P-PL	Si	200	TO18	A	
77#	V763	300M				400m	1.0	0	50m	100		6.0p	P-ME	Ge	100J	TO18	A	
78#	2G104	300M				150m	5.0	0	10m	40								
79#	BLY37	300MΔ	5.0n	20n	30n	13n	100m	2.0	10m	54		3.5p	N-PE	Si	100J	MT599	S	
80	2N3261	300MΔ	7.0n	6.0n	10n	6.0n	300m	1.0	200m	20 #		3.5p	N	Si	200S	TO52	A	
81#	BLY36	300MΔ	7.0n	20n	30n	14n	100m	2.0	10m	34		3.5p	N-PE	Si	100J	TO60	A	
82	2N4421	300MΔ	12n	10n	18n	12n	360m	400m	30m	25 #		5.0p	N	Ge	91J	TO3	A	
83#	2SB339H	300M	12n	2.0n	8.0n	14n	12	0	4.0m	45			P	Ge	91J	TO3	A	
84#	2SB341H	300M	12n	2.0n	8.0n	14n	12	0	4.0m	45			P	Ge	91J	TO3	A	
85#	2SC340H	300M	12n	2.0n	8.0n	14n	12	0	4.0m	45			P	Ge	91J	TO3	A	
86#	2SC400	300M	12n	10n	200n</													



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L C O D E
								Vcb (V)	Ic (A)	hFE								
1	2N3449	300MΔ	30n	25n	55n	65n	150m	2.0	10m	20 Δ	100	5.0pZ	P	Ge	100S	TO18	A	
2	JAN2N3449	300MΔ	30n	18n	60n	65n	150m	2.0	10m	20 Δ	20	5.0pZ	P	Ge	100S	TO18	A	
3	2N3724	300MΔ	30n	10n	50n	25n	3.5	500m	30 Δ	35 #Δ	20	12pZ	N	Si	200J	TO5	A	
4	2N3724A	300MΔ	30n	10n	50n	25n	5.0	1.0	10m	30 Δ	20	12pZ	N	Si	200S	TO5	A	
5	2N3725	300MΔ	30n	10n	50n	30n	3.5	1.0	500m	35 #Δ	20	10pZ	N	Si	200J	TO5	A	
6	2N3725A	300MΔ	30n	10n	50n	30n	5.0	1.0	10m	30 Δ	20	10pZ	N	Si	200S	TO5	A	
7	2N4013	300MΔ	30n	10n	50n	25n	1.2	1.0	10m	30 Δ	20	10pZ	N	Si	200J	TO18	A	
8	2N4014	300MΔ	30n	10n	50n	30n	1.2	1.0	10m	30 Δ	20	10pZ	N	Si	200J	TO18	A	
9	FOS104	300MΔ	30n	35n	50n	50n	360m	1.0	10m	80 Δ	20	8.0pZ	N	Si	200J	TO18	A	
10	ME9021	300MΔ	30n	10n	20n	50n	625m	2.0	300m	10 Δ	25	6.0pZ	N-PE	Si	150J	R110c	A	
11	MP53639	300MΔ	30n	10n	20n	12n	500m	300m	10m	30 #Δ	16	3.5pZ	P-E	Ge	125J	X20b	A	
12	2N985	300MΔ	35n	35n	20n	80n	150m	500m	100m	60 Δ	30m	6.0pZ	P-EM	Ge	100J	TO18	A	
13	2N3251	300MΔ	35n	35n	200n	50n	360m	1.0	10m	30 #Δ	20	6.0pZ	N	Si	200J	TO18	A	
14	2N3605	300MΔ	35n	20n	20n	45n	200m	1.0	10m	30 Δ	20	6.0pZ	N	Si	150S	R67	B	
15	2N3605A	300MΔ	35n	20n	20n	45n	320m	1.0	10m	120 Δ	22	25p	N	Si	120J	TO98	B	
16	2N3904	300MΔ	35n	35n	200n	50n	310m	1.0	10m	40 #Δ	25	4.0pZ	N	Si	135J	TO92	A	
17	A5T3904	300MΔ	35n	35n	200n	50n	360m	1.0	10m	70 Δ	20	4.0pZ	N-PE	Si	150S	X55	A	
18	CS3605	300MΔ	35n	20n	20n	45n	500m	1.0	10m	30 Δ	20	6.0pZ	N-DPL	Si	150J	R97	A	
19	CS3904	300MΔ	35n	35n	200n	50n	310m	1.0	10m	40 #Δ	20	4.0pZ	N	Si	135J	TO106	A	
20	EN3904	300MΔ	35n	35n	200n	50n	700m	1.0	10m	100 #Δ	20	4.0pZ	N-DPE	Si	135J	TO106	A	
21	GET914	300MΔ	35n	20n	20n	50n	360m	1.0	10m	120 #Δ	20	6.0pZ	N-PE	Si	125J	TO18	A	
22	GET2222A	300MΔ	35n	20n	20n	285n	1.0	10	1.0m	50 Δ	7.0	8.0pZ	N-PE	Si	125J	u80	A	
23	MM1758	300MΔ	35n	20n	20n	285n	1.0	10	150m	100 Δ	7.0	8.0pZ	N	Si	150J	TO46	A	
24	NKT13329	300MΔ	35n	20n	20n	35n	1.0	10	10m	40 Δ	7.0	5.0p	N	Si	200J	TO18	A	
25	NKT13429	300MΔ	35n	20n	20n	35n	1.0	10	10m	80 Δ	7.0	5.0p	N	Si	200J	TO18	A	
26	JAN2N708	300MΔ	40n	25n	25n	75n	1.2	1.0	500m	15 Δ	40	6.0pZ	N	Si	200S	TO18	A	
27	2N1708A	300MΔ	40n	25n	25n	75n	1.0	1.0	10m	120 Δ	22	6.0pZ	N	Si	175J	TO46	A	
28	2N2481	300MΔ	40n	40n	20n	45n	360m	1.0	10m	40 #Δ	3.7	5.0pZ	N	Si	200J	TO18	A	
29	2N3210	300MΔ	40n	20n	20n	40n	1.2	1.0	10m	120 #Δ	20	6.0pZ	N	Si	300S	TO18	A	
30	2N3606	300MΔ	40n	35n	35n	60n	200m	1.0	10m	30 Δ	20	6.0pZ	N	Si	150S	R67	B	
31	2N3606A	300MΔ	40n	35n	35n	60n	320m	1.0	10m	120 Δ	25	25p	N	Si	120J	TO98	B	
32	2N3734	300MΔ	40n	8.0n	30n	30n	1.0	1.0	500m	35 Δ	20	9.0pZ	N	Si	200S	TO5	A	
33	2N3736	300MΔ	40n	8.0n	30n	30n	500m	1.0	150m	40 Δ	20	9.0pZ	N	Si	200S	TO46	A	
34	Z5A571	300MΔ	40n	130n	180n	800m	800m	10	50m	40 Δ	1.2	25pZ	N-PE	Si	175J	TO5	A	
35	BFV46	300MΔ	40n	30n	50n	150m	150m	2.0	200m	12 Δ	3.5	5.0pZ	NPE	Si	200J	u34b	P	
36	BFV83A	300MΔ	40n	20n	40n	300m	300m	5.0	500m	10 Δ	3.5	6.0pZ	NPE	Si	200J	u26a	F	
37	BSV35A	300MΔ	40n	25n	75n	350m	1.0	1.0	10m	20 Δ	60	6.0pZ	P	Si	175J	u53	F	
38	BSX87	300MΔ	40n	25n	75n	350m	1.0	1.0	10m	20 Δ	3.5	4.5p	NPE	Si	200J	TO18	A	
39	BSX88	300MΔ	40n	25n	75n	360m	1.0	1.0	10m	30 #Δ	40	4.0p	NPE	Si	200J	TO18	A	
40	BSY21	300MΔ	40n	35n	40n	360m	1.0	1.0	10m	120 #Δ	3.5	6.0pZ	N	Si	200J	TO18	A	
41	CS3606	300MΔ	40n	35n	35n	500m	500m	1.0	10m	30 Δ	25	6.0pZ	N-DPL	Si	150J	R97	A	
42	EN708	300MΔ	40n	75n	40n	200m	1.0	1.0	10m	120 #Δ	85	6.0pZ	N	Si	125J	TO106	A	
43	EN914	300MΔ	40n	40n	40n	200m	1.0	1.0	10m	120 #Δ	80	6.0pZ	N	Si	125J	TO106	A	
44	GET708	300MΔ	40n	35n	35n	360m	1.0	1.0	10m	120 #Δ	80	6.0pZ	N-PE	Si	125J	TO106	A	
45	ME0401	300MΔ	40n	10n	80n	30n	600m	10	10m	35	8.0p	8.0p	P-PE	Si	150J	R110c	A	
46	ME0402	300MΔ	40n	10n	80n	30n	600m	10	10m	60	8.0p	8.0p	P-E	Si	150J	R110c	A	
47	T1546	300MΔ	40n	20n	40n	360m	1.0	1.0	10m	30 #Δ	20	6.0pZ	P-E	Si	150J	TO92	A	
48	2N3607	300MΔ	45n	45n	70n	200m	1.0	1.0	10m	30 Δ	20	6.0pZ	N	Si	150S	R67	B	
49	2N5139	300MΔ	45n	20n	170n	50n	500m	10	50m	15 #Δ	25	5pZ	P	Si	125J	TO106	A	
50	CS3607	300MΔ	45n	45n	70n	70n	500m	1.0	10m	30 Δ	200m	6.0pZ	N-DPL	Si	150J	R97	A	
51	2N829	300MΔ	50n	50n	100n	300m	1.0	1.0	150m	50 Δ	20	4.0pZ	P	Ge	100S	TO18	A	
52	2N960	300MΔ	50n	85n	150m	150m	1.0	1.0	100m	20 Δ	20	4.0pZ	P	Ge	100S	TO18	A	
53	2N961	300MΔ	50n	85n	150m	150m	1.0	1.0	100m	20 Δ	20	4.0pZ	P	Ge	100S	TO18	A	
54	2N962	300MΔ	50n	100n	150m	150m	1.0	1.0	100m	20 Δ	20	4.0pZ	P	Ge	100S	TO18	A	
55	JAN2N962	300MΔ	50n	100n	150m	150m	1.0	1.0	100m	20 Δ	20	5.0pZ	P-E	Ge	100J	TO18	A	
56	2N964	300MΔ	50n	85n	150m	150m	1.0	1.0	100m	40 Δ	18	4.0pZ	P	Ge	100S	TO18	A	
57	JAN2N964	300MΔ	50n	85n	150m	150m	1.0	1.0	100m	40 Δ	18	5.0pZ	P-E	Ge	100J	TO18	A	
58	2N965	300MΔ	50n	85n	150m	150m	1.0	1.0	100m	40 Δ	18	4.0pZ	P	Ge	100S	TO18	A	
59	2N966	300MΔ	50n	100n	150m	150m	1.0	1.0	100m	40 Δ	18	4.0pZ	P	Ge	100S	TO18	A	
60	2N3722	300MΔ	50n	12n	85n	45n	800m	1.0	100m	40 #Δ	18	4.0pZ	P	Ge	100S	TO18	A	
61	2N5228	300MΔ	50n	25n	90n	50n	310m	.30	10m	30 Δ	40	5pZ	N	Si	200J	TO5	A	
62	ME9022	300MΔ	50n	70n	70n	625m	2.0	300m	5.0	Δ	40	6.0pZ	N-PE	Si	135S	TO92	A	
63	2N705	300M	60n	75n	100n	100n	300m	5.0	10m	70	44	6.0pZ	P-ME	Ge	100J	TO18	A	
64	2N710	300M	60n	75n	100n	100n	300m	5.0	10m	70	50	6.0pZ	P-ME	Ge	100J	TO18	A	
65	BSX32	300MΔ	60n	60n	60n	3.5	1.0	100m	90 #	20	10pZ	N-DPE	Si	200J	TO5	A		
66	2N3723	300MΔ	70n	15n	110n	50n	800m	1.0	100m	40 #Δ	20	9.0pZ	N	Si	200J	TO5	A	
67	2N5141	300MΔ	70n	45n	100n	70n	500m	2.0	10m	25 #Δ	25	7pZ	N	Si	125J	TO106	A	
68	ME0463	300MΔ	70n	225n	500m	500m	1.0	1.0	10m	50	25	4.0p	P-PE	Si	150J	R110c	A	
69	2N968	300MΔ	75n	125n	150m	150m	.70	.70	.25m	20 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
70	2N969	300MΔ	75n	125n	150m	150m	.70	.70	.25m	20 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
71	2N972	300MΔ	75n	150n	150m	150m	.70	.70	.25m	40 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
72	2N973	300MΔ	75n	150n	150m	150m	.70	.70	.25m	20 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
73	2N974	300MΔ	75n	150n	150m	150m	.70	.70	.25m	20 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
74	2N975	300MΔ	75n	150n	150m	150m	.70	.70	.25m	40 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
75	JAN2N2481	300MΔ	75n	275n	360m	360m	1.0	1.0	10m	120 Δ	25	5.0pZ	N	Si	200J	TO18	A	
76	2N711	300M	100n	200n	150n	300m	500m	1.0	10m	30	50	5.0p	P-ME	Ge	100J	TO18	A	
77	2N970	300MΔ	100n	275n	150m	150m	.70	.70	.25m	20 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
78	2N971	300MΔ	100n	275n	150m	150m	.70	.70	.25m	20 Δ	25	8.0pZ	P	Ge	100J	TO18	A	
79	2N1012	300MΔ	150n	200n	150m	.25	100m	40 Δ	2.0	20pZ	30	6.0pZ	N	Si	100S	TO5	A	
80	BSW19	300MΔ	150n	800n	215m	*	0.0	10m	120	Δ	30	6.0pZ	N-PE	Si	175J	TO18	A	
81	BSW33	300MΔ	200n	40n	125m	#	0.0</											



# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME &  
(3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L O D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	2N3510	350MΔ	12n	10n	18n	12n	360m	1.0	150m	150	25 Δ	2.6	4.0p	N	Si	200	TO52	A
2	2N3647	350MΔ	12n	10n	16n	12n	400m	1.0	150m	25 Δ	25	4.0p	N	Si	200	TO46	A	
3	CS2369	350MΔ	12n	12n	13n	18n	250m	2.0	100m	20 #Δ	25	4.0p	N-DPL	Si	150J	R97a	A	
4	GET2369	350MΔ	12n	12n	18n	18n	360m	1.0	10m	120 #Δ	25	4.5p	N-PE	Si	200J	TO18	A	
5	2N3009	350MΔ	15n	18n	25n	1.2	1.2	5.0	100m	25 #Δ	25	5.0p	N	Si	200J	TO52	A	
6	2N3013	350MΔ	15n	18n	25n	1.2	1.2	4.0	30m	120 #Δ	25	5.0p	N	Si	200J	TO18	A	
7	JAN2N3013	350MΔ	15n	10n	18n	25n	360m	4.0	30m	120 #Δ	25	5.0p	N	Si	200J	TO52	A	
8	2N3646	350MΔ	15n	10n	20n	15n	500m	1.0	300m	15 Δ#	25	5.0p	N	Si	125J	R110	A	
9	2N3829	350MΔ	15n	10n	50n	15n	360m	4.0	30m	30 #Δ	25	6.0p	N	Si	200S	TO52	A	
10	2N4422	350MΔ	15n	10n	20n	15n	360m	1.0	300m	15 Δ#	25	5.0p	N	Si	150S	X55	A	
11	2N6000	350MΔ	15n	10n	250n	70n	800m	1.0	10m	100 Δ	8.0	6.0p	N	Si	125J	X55a	A	
12	2N6004	350MΔ	15n	10n	250n	70n	800m	1.0	10m	100 Δ	8.0	6.0p	N	Si	125J	X55a	A	
13	BFV83B	350MΔ	15n	18n	25n	300m	1.2	1.0	300m	25 #Δ	25	5.0p	NPE	Si	200J	u26a	B	
14	BSX26	350MΔ	15n	18n	25n	1.2	1.2	1.0	300m	15 #Δ	25	5.0p	N-DPE	Si	200J	TO18	A	
15	BSX39	350MΔ	15n	18n	25n	1.2	1.2	1.0	100m	55 #	25	5.0p	N-DPE	Si	200J	TO18	∅	
16	EN3009	350MΔ	15n	25n	25n	200m	4.0	30m	120 #Δ	6.0	5.0p	N	Si	125J	TO106	A		
17	EN3013	350MΔ	15n	25n	25n	200m	4.0	30m	120 #Δ	6.0	5.0p	N	Si	125J	TO106	A		
18	GET3013	350MΔ	15n	18n	25n	360m	4.0	30m	120 #Δ	18	4.5p	N-PE	Si	125J	TO18	A		
19	KS6101	350M	15n	8.0n	25n	8.0n	5.0	250m	15 Δ	20p	20p	N-PE	Si	200J	TO39	A		
20	MPS3646	350MΔ	15n	10n	20n	15n	500m	4.0	30m	120 #Δ	25	5.0p	N-EA	Si	125J	TO92	A	
21	TIS55	350MΔ	15n	10n	20n	15n	360m	5.0	100m	25 #Δ	25	5.0p	N-PE	Si	125J	TO92	A	
22	2N3014	350MΔ	16n	18n	25n	1.2	1.2	4.0	30m	120 #Δ	25	5.0p	N	Si	200J	TO52	A	
23	BFV83C	350MΔ	16n	18n	25n	300m	4.0	30m	30 #Δ	25	5.0p	NPE	Si	200J	u26a	B		
24	BFV92	350MΔ	16n	18n	25n	400m	1.0	30m	150 *Δ	25	5.0p	N-PE	Si	175	L56f	A		
25	BFV92N	350MΔ	16n	25n	35n	400m	1.0	30m	150 *Δ	25	5.0p	N-PE	Si	175	L56g	A		
26	EN3014	350MΔ	16n	25n	35n	200m	4.0	30m	120 #Δ	6.0	5.0p	N	Si	125J	TO106	A		
27	GET3014	350MΔ	16n	18n	25n	360m	4.0	30m	120 #Δ	18	4.5p	N-PE	Si	125J	TO18	A		
28	MMT3014	350MΔ	16n	18n	25n	225m	4.0	30m	200 #Δ	7.3	5.0p	N-AN	Si	135J	u43	D		
29	MPS834	350MΔ	16n	25n	30n	310m	1.0	10m	25 #Δ	25	4.0p	N-AN	Si	135J	TO92	A		
30	TIS52	350MΔ	16n	20n	25n	360m	4.0	30m	120 #Δ	25	5.0p	P-E	Si	150J	TO92	A		
31	GET3646	350MΔ	18n	18n	28n	360m	4.0	30m	120 #Δ	80	4.5p	N-PE	Si	125J	TO18	A		
32	SE3646	350MΔ	18n	18n	28n	500m	4.0	30m	30 #Δ	25	5.0p	N-DPE	Si	125J	TO106	A		
33	2N984	350M	20n	20n	20n	60m	500m	10m	70	10	1.9p	P-MD	Ge	100S	TO18	A		
34	2N2170	350M	20n	18n	30n	60m	500m	10m	70	10	1.9p	P-MD	Ge	100S	TO9	A		
35	BSX87A	350MΔ	20n	30n	30n	360m	1.0	10m	34 Δ#	2.5	2.5p	NPE	Si	200J	TO18	A		
36	KS6102	350M	20n	10n	30n	10n	5.0	250m	15 Δ	20p	20p	N-PE	Si	200J	TO39	A		
37	MD1128	350MΔ	20n	30n	35n	300m	1.0	10m	25 Δ	20p	4.0p	P-PE	Si	200J	L2d	A		
38	KS6110	350M	25n	25n	120n	50n	5.0	1.0	15 Δ	20p	20p	N-PE	Si	200J	TO60	A		
39	KS6112	350M	25n	30n	100n	40n	5.0	1.0	15 Δ	20p	20p	N-PE	Si	200J	TO60	A		
40	2SC97A	350M	30n	70n	90n	800m	1.0	500m	40 Δ#	1.2	10p	N-PE	Si	175J	TO39	A		
41	BSX88A	350MΔ	30n	70n	90n	360m	1.0	10m	30 Δ#	3.2	3.0p	NPE	Si	200J	TO18	A		
42	2N834/46	350MΔ	35n	25n	50n	400m	1.0	10m	25 Δ	25	4.0p	N-E	Si	175J	TO46	A		
43	2N4349	350M	35n	20n	125n	40n	7.0	1.0	20	200m	12p	N-PE	Si	200	TO5	∅		
44	2SC52	350M	50n	250n	50n	500m	6.0	1.0m	50	5.0	4.0p	N-PL	Si	150J	TO18	A		
45	2SC54	350M	50n	250n	50n	300m	6.0	1.0m	50	2.5	4.0p	N-PL	Si	150J	TO18	A		
46	BFR10	350M	60n	150n	800m	1.0	150m	60 Δ	20	5.0p	5.0p	N	PE	Si	200J	TO39	A	
47	BFR11	350M	60n	150n	400m	1.0	500	40 Δ	20	5.0p	5.0p	N	PE	Si	200J	TO18	A	
48	BFV31	350MΔ	60n	100n	150m	1.0	100m	15 Δ	20	8.0p	8.0p	PPE	Si	200J	u34b	P		
49	BFV32	350MΔ	60n	100n	150m	1.0	100m	10 Δ	20	8.0p	8.0p	PPE	Si	200J	u34b	P		
50	ME0461	350M	70n	225n	500m	1.0	1.0m	60	15	3.5p	3.5p	P-PE	Si	150J	R110c	A		
51	ME0462	350M	70n	225n	500m	1.0	1.0m	110	15	3.5p	3.5p	P-PE	Si	150J	R110c	A		
52	MT0461	350M	70n	225n	250m	1.0	100m	40	15	3.5p	3.5p	P-PL	Si	150J	u81	B		
53	MT0462	350M	70n	225n	250m	1.0	100m	80	15	3.5p	3.5p	P-PL	Si	150J	u81	B		
54	2SC772	350M	150n	60n	150n	120m	6.0	1.0m	45	1.5p	1.5p	N-PE	Si	125J	R145	D		
55	2N6013	360MΔ	35n	10n	450n	75n	1.0	1.0	10m	250 Δ	8.0	15p	P	Si	150J	X55a	A	
56	2N6017	360MΔ	35n	10n	450n	75n	1.0	1.0	10m	250 Δ	8.0	15p	P	Si	150J	X55a	A	
57	BSY29	380M	5.0n	7.0n	7.0n	13n	300m	2.0	10m	54	3.5p	3.5p	N-PE	Si	175J	TO18	A	
58	BSY28	380M	7.0n	7.0n	8.0n	14n	300m	2.0	10m	34	3.5p	3.5p	N-PE	Si	175J	TO18	A	
59	2N921	400M	7.0n	25n	25n	360m	1.0	10m	40	20	4.0p	N-ME	Si	200J	TO18	A		
60	2SA548H	400M	15n	15n	200m	1.0	10m	1.0	20	8.0p	8.0p	P	Si	175J	TO18	A		
61	BSV53	400M	12n	13n	10n	300m	1.0	10m	120 #Δ	2.5	4.0p	N	Si	150	u34	E		
62	BSV53P	400M	12n	13n	10n	150m	1.0	10m	120 #Δ	2.5	4.0p	N	Si	150	u17c	E		
63	BSV54	400M	12n	13n	10n	300m	1.0	10m	120 #Δ	2.5	4.0p	N	Si	150	u34	E		
64	BSV54P	400M	12n	13n	10n	150m	1.0	10m	120 #Δ	2.5	4.0p	N	Si	150	u17c	E		
65	2N4274	400MΔ	7.0n	9.0n	13n	8.0n	700m	1.0	10m	120 #Δ	4p	4p	N	Si	125J	R110	A	
66	2N4275	400MΔ	7.0n	9.0n	13n	8.0n	700m	1.0	10m	120 #Δ	4p	4p	N	Si	125J	R110	A	
67	2N744	400M	10n	16n	45n	300m	35	10m	80	10	5.0p	N-E	Si	300S	TO18	A		
68	2N5187	400MΔ	10n	8.0n	13n	8.0n	1.0	40	30m	25 Δ	25	3.5p	N	Si	200S	TO52	A	
69	2N743	400M	11n	16n	40n	300m	35	10m	40	10	5.0p	N-E	Si	300S	TO18	A		
70	2N4294	400MΔ	12n	9.0n	15n	200m	2.0	100m	20 Δ	25	5.0p	N	Si	150S	u29	B		
71	BFV42	400MΔ	12n	10n	20n	150m	2.0	100m	15 Δ	30	4.0p	NPE	Si	200J	u34b	P		
72	BFV87	400MΔ	12n	10n	20n	300m	2.0	100m	10 #Δ	25	4.0p	NPE	Si	200J	u26a	B		
73	BSW58	400MΔ	12n	10n	20n	125m	2.0	100m	20 Δ	30	4p	NPE	Si	125J	MM13	F		
74	C1001	400M	12n	18n	30m	360m	1.0	10m	40 t	25	4.0p	N	Si	200J	TO18	A		
75	ME9001	400MΔ	12n	18n	625m	2.0	100m	20 Δ	25	4.0p	4.0p	N-PE	Si	150J	R110c	A		
76	PL4021	400MΔ	12n	10n	15n	150m	1.0	10m	60 Δ	25	4.0p	NPE	Si	175J	u51	A		
77	TIS47	400MΔ	12n	13n	18n	360m	1.0	10m	20 #Δ	25	4.0p	N-PE	Si	150J	TO92	A		
78	TP4274	400MΔ	12n	13n	12n	500m	1.0	100m	18 Δ#	25	4.0p	N-PL	Si	125J	X55a	A		
79	TP4275	400MΔ	12n	13n	12n	500m	1.0	100m	18 Δ#	25	4.0p	N-PL	Si	125J	X55a	A		
80	ZT2368	400MΔ	12n	12n	15n	360m	1.0	10m	20 Δ	25	4.0p	N-PL	Si	200	TO18	A		
81	2N4419	400MΔ	14n	10n	14n	16n	500m	1.0	10m	30 #Δ	25	4p	N	Si	150S	X55	A	
82	2N418	400M	15n	20n	20n	2.0	4.0m	40 Δ	50	5.0p	5.0p	P	Ge	100J	TO3	C		
83	2N420	400M	15n	20n	20n	1.5	60m	40 Δ	50	5.0p	5.0p	P	Ge	100J	TO3	C		
84	2N420A	400M	15n	20n	2													

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX P <sub>c</sub> IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-NPN N-PNP	M A T	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1#	BSW11	400MΔ	25n			50n	50m*	1.0	10m	50 Δ	35	3.0p	N-PE	Si	125J	u47	D	
2#	ME6101	400MΔ	25n	10n	225n	60n	600m	1.0	10m	40	3.2	5.0p	P-PE	Si	150J	R110c	A	
3#	2N4451	400MΔ	30n	35n	65n	30n	300m	.50	30m	40 #Δ		6p	P	Si	200S	TO46	A	
4#	25A417	400MΔ	30n			40n	150m	300m	10m	70		4.0p	PEM	Ge	100J	TO46	A	
5#	BSV55	400M	30n			50n	300m	500m	30m	150	5.0	6.0p	P	Si	150	u34	E	
6#	BSV55P	400M	30n			50n	150m	500m	30m	150	5.0	6.0p	P	Si	150	u17c	E	
7#	BSY34	400MΔ	30n			50n	2.6	1.0	100m	42 †	20	4.5p	N-DFE	Si	200J	u43	A	
8#	MMT73	400MΔ	30n			30n	225m	1.0	50m	20 †	20	5.0p	P-AN	Si	135J	u39	C	
9#	2N2096	400MΔ	35n		70n	60n	250m	1.5	400m	40	1.8	15p	P-D	Ge	100S	TO31	A	
10#	BSV77	400MΔ	35n			60n	800m	1.0	100m	60 Δ		4.8p	N	PE	200J	TO39	A	
11#	BSV95	400MΔ	35n			60n	800m	1.0	500m	20 Δ		4.8p	N	PE	200J	TO39	A	
12#	BSY58	400MΔ	35n			60n	2.6	1.0	100m	42 †	30	4.5p	N-DPE	Si	200J	TO39	A	
13#	2N706B	400MΔ	40n	15n	140n	40n	75n	300m	1.0	10m	40	4.5p	N-ME	Si	175J	TO18	A	
14#	2N4034	400MΔ	40n	15n	140n	40n	1.0	1.0	1.0m	60 Δ	130	3.5p	P-AN	Si	200J	TO18	A	
15#	2N4121	400MΔ	40n	15n	140n	40n	200m	1.0	10m	70 #Δ	130	4.5p	P	Si	125J	R110	A	
16#	2N4122	400MΔ	40n	15n	140n	40n	200m	1.0	10m	150 #Δ	130	4.5p	P	Si	125J	R110	A	
17#	2N4916	400MΔ	40n	15n	140n	40n	200m	1.0	10m	70 #Δ	40	4.5p	P	Si	125J	R124	A	
18#	BSY19	400MΔ	40n			75n	360m	1.0	10m	30		6.0p	N-PL	Si	200J	TO18	A	
19#	BFX48	400MΔ	50n			160n	1.0	1.0	10m	160 #		3.5p	P-DPE	Si	200J	TO18	A	
20#	BSX49	400MΔ	50n			95n	1.0	1.0	10m	37 *Δ		4.5p	N-DPE	Si	200J	TO18	A	
21#	MM869B	400MΔ	50n			80n	1.2	5.0	10m	120	5.0	6.0p	P-AN	Si	200J	TO18	A	
22#	2N2894	400MΔ	60n			90n	360m	.50	30m	150 #Δ		6.0p	P	Si	200J	TO18	A	
23#	2N3012	400MΔ	60n	75n		12	1.2	.50	30m	120		6.0p	P	Si	200J	TO18	A	
24#	2N3209	400MΔ	60n			90n	360m	500m	30m	30 #Δ	6.0	5.0p	P-PE	Si	200J	TO18	A	
25#	A3T2894	400MΔ	60n			90n	225m	500m	30m	150 #Δ		6.0p	P-PET	Si	150S	u44	A	
26#	BFV81	400MΔ	60n			90n	300m	.50	30m	40 #Δ		6.0p	PPE	Si	200J	u26a	B	
27#	BFV81A	400MΔ	60n			75n	300m	.50	30m	30 #Δ		6.0p	PPE	Si	200J	u26a	B	
28#	BFV91	400MΔ	60n			100n	400m	500m	30m	120 *Δ		6.0p	P-PE	Si	175J	L56d	A	
29#	BFV91N	400MΔ	60n			100n	400m	500m	30m	120 *Δ		6.0p	P-PE	Si	175J	L56e	A	
30#	BSV21	400MΔ	60n			75n	360m	.50	30m	120		6.0p	PPE	Si	200J	TO18	A	
31#	BSV37	400MΔ	60n			90n	350m	500m	30m	150	15	6.0p	P	Si	175J	u53	F	
32#	BSV55A	400M	60n			90n	300m	500m	30m	120	5.0	6.0p	P	Si	150	u34	A	
33#	BSV55AP	400M	60n			90n	150m	500m	30m	120	5.0	6.0p	P	Si	150	u17c	E	
34#	BSX29	400MΔ	60n			90n	1.2	.50	500m	30m	60	6.0p	P-DPE	Si	200J	TO18	A	
35#	TIS50	400MΔ	60n			90n	360m	300m	10m	30 #Δ		6.0p	P-PE	Si	150J	TO92	F	
36#	ZTX510	400MΔ	60n			90n	250m	500m	30m	150 #Δ		6.0p	P-PLT	Si	125A	X59	F	
37#	BSX48	400MΔ	65n			110n	1.0	1.0	10m	37		4.5p	N-DPE	Si	200J	TO18	A	
38#	2N828	400MΔ	70n	50n		50n	150m	3.0	10m	40		3.5p	P-EM	Ge	100J	TO18	A	
39#	V405A	400MΔ	80n			110n	1.0	2.0	10m	20			P-DPE	Si	175J	TO18	A	
40#	2N4026	400MΔ	100n		350n	50n	2.0	5.0	500m	25 #Δ	1.0	20p	P	Si	200J	TO18	A	
41#	2N4027	400MΔ	100n		350n	50n	2.0	5.0	500m	25 #Δ	1.0	20p	P	Si	200J	TO18	A	
42#	2N4030	400MΔ	100n		350n	50n	4.0	5.0	500m	25 #Δ	1.0	20p	P	Si	200J	TO5	A	
43#	2N4031	400MΔ	100n		350n	50n	4.0	5.0	500m	25 #Δ	1.0	20p	P	Si	200J	TO5	A	
44#	2SC752G	400MΔ	100n		30n	70n	200m	1.0	10m	240	12	6.0p	N-PE	Si	125J	R67a	B	
45#	2SC407	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	20	20	500p	P	Si	150J	MD10	A	
46#	2SC408	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	40	20	500p	P	Si	150J	MD10	A	
47#	2SC409	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	20	20	500p	P	Si	150J	MD10	A	
48#	2SC410	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	40	20	500p	P	Si	150J	MD10	A	
49#	2SC411	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	20	20	500p	P	Si	150J	MD10	A	
50#	2SC412	400M†	1000n	200n	4.0u	1.0u	100	5.0	5.0m	40	20	500p	P	Si	150J	MD10	A	
51#	2SC431	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	20	20	1m	P	Si	150J	MD18	A	
52#	2SC432	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	40	20	1m	P	Si	150J	MD18	A	
53#	2SC433	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	20	20	1m	P	Si	150J	MD18	A	
54#	2SC434	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	40	20	1m	P	Si	150J	MD18	A	
55#	2SC435	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	20	20	1m	P	Si	150J	MD18	A	
56#	2SC436	400M†	1000n	200n	4.0u	1.0u	200	5.0	10m	40	20	1m	P	Si	150J	MD18	A	
57#	C720	420MΔ	70n			100n	360m	1.0	10m	60		4.5p	N-PE	Si	200	TO18	A	
58#	2N6012	420MΔ	25n	12n	350n	150n	1.0	1.0	10m	250 Δ	5.0	10p	N	Si	150J	X55a	A	
59#	2N6016	420MΔ	25n	12n	350n	150n	1.0	1.0	10m	250 Δ	5.0	10p	N	Si	150J	X55a	A	
60#	2SC321H	450MΔ				10n	360m	1.0	10m	30 Δ		6.0p	N	Si	175J	TO18	A	
61#	V723	450MΔ		22u†		65n†	360m	1.0	10m	130		3.0p	P-PE	Si	200	TO18	A	
62#	2N3511	450MΔ	10n	8.0n	12n	8.0n	360m	1.0	150m	120	2.6	4.0p	N	Si	200	TO52	A	
63#	2N3648	450MΔ	10n	8.0n	12n	8.0n	400m	1.0	150m	30 Δ		4.0p	N	Si	200	TO46	A	
64#	2N2795	450MΔ	12n	12n	60n	25n	75m	.30	10m	100	12	2.5p	P-D	Ge	100S	TO18	A	
65#	2N2796	450MΔ	15n	15n	75n	25n	75m	.30	10m	60	15	2.5p	P-D	Ge	100S	TO18	A	
66#	2N3303	450MΔ	15n			25n	600m	.50	300m	60 #	2.3	15p	N	Si	200J	R83a	A	
67#	2N5455	450MΔ	15n	15n	25n	15n	340m	1.0	300m	25 #Δ		6p	P	Si	200J	TO52	A	
68#	2N5456	450MΔ	15n	15n	25n	15n	340m	1.0	300m	25 #Δ		6p	P	Si	200J	TO52	A	
69#	2N6002	450MΔ	15n	10n	300n	110n	800m	1.0	10m	250 Δ	8.0	6.0p	N	Si	125J	X55a	A	
70#	2N6006	450MΔ	15n	10n	300n	110n	800m	1.0	10m	250 Δ	8.0	6.0p	N	Si	125J	X55a	A	
71#	BSX12	450MΔ	15n	15n	300n	25n	3.0	500m	10m	20		25p	N-DPE	Si	200J	R113	A	
72#	2N779A	450MΔ	18n	50n		18n	60m	500m	50m	85 †	12	1.4p	P-MD	Ge	100S	TO18	A	
73#	2N846A	450MΔ	18n			18n	60m	500m	50m	35	14	1.9p	P-MD	Ge	100S	TO18	A	
74#	2N982	450MΔ	18n			18n	60m	500m	10m	100	9.0	1.9p	P-MD	Ge	100S	TO18	A	
75#	2N983	450MΔ	18n			18n	60m	500m	10m	85	9.0	1.9p	P-MD	Ge	100S	TO18	A	
76#	2N2168	450MΔ	18n			18n	60m	500m	10m	100	9.0	1.9p	P-MD	Ge	100S	TO9	A	
77#	2N2169	450MΔ	18n			18n	60m	500m	10m	85	9.0	1.9p	P-MD	Ge	100S	TO9	A	
78#	2N835	450MΔ	20n	35n	225n	35n	300m	1.0	10m	40	8.0	2.8p	N-EM	Si	175J	TO18	A	
79#	ME6102	450MΔ	25n	10n	225n	60n	600m	1.0	1.0m	60	3.2	5.0p	P-PE	Si	150J	R110c	A	
80#	2N4035	450MΔ	40n	15n	140n	40n	1.0	1.0	1.0m	150 Δ	130	3.5p	P	Si	200J	TO18	A	
81#	2N4917	450MΔ	40n	15n	140n	40n	200m	1.0	10m	150 #Δ		4.5p	P	Si	125J	R124	A	
82#	2SC595	450MΔ	100n			100n	300m	1.0	10m	60		4.0p	N-PE	Si	150J	TO18	A	
83#	2N964A	460MΔ	50n			85n	150m	1.0	100m	40 Δ		2.2p	P-EM	Ge	100J	TO18		

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME &  
(3) TYPE No.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE P-NPN N-NPN	M A T	MAX. TEMP (°C)	DWG # Y200 s/a Ser. TO200	L C O D E
								Vcb (V)	Ic (A)	hFE								
1	MMT2369	500MSΔ	12n∅			18n∅	225m	1.0∅	10m∅	40 #Δ		4.0p∅	N-AN	Si	135J	u43	D	
2	MPS2369	500MSΔ	12n∅			18n∅	310m	2.0∅	10m∅	20 #Δ		4.0p∅	N-AN	Si	135J	TO92	A	
3#	PL4022	500MSΔ	12n∅			18n∅	150m	1.0∅	10m∅	120 #Δ	25	4.0p∅	N-PE	Si	175S	u51		
4#	PL4023	500MSΔ	12n∅			18n∅	150m	1.0∅	10m∅	120 #Δ	20	4.0p∅	N-PE	Si	175S	u51		
5#	T1S48	500MSΔ	12n∅			18n∅	230m	1.0∅	10m∅	120 #Δ	25	4.0p∅	N-PE	Si	150J	TO92	B	
6#	T1S49	500MSΔ	12n∅			18n∅	230m	1.0∅	10m∅	120 #Δ	5.0	4.0p∅	N-PE	Si	150J	TO92	B	
7#	ZT2369	500MSΔ	12n∅	12n∅		18n∅	360m	1.0∅	10m∅	40 #Δ		4.0p∅	N-PL	Si	200	TO18		
8#	ZT2369A	500MSΔ	12n∅	12n∅		18n∅	300m	1.0∅	10m∅	40 #Δ		4.0p∅	N-PL	Si	200	TO18		
9#	ZTX313	500MSΔ	12n∅			18n∅	300m	1.0∅	10m∅	120 #Δ	24	4.0p∅	N-PL	Si	125S	X59	F	
10#	ZTX314	500MSΔ	12n∅			18n∅	300m	1.0∅	10m∅	120 #Δ	20	4.0p∅	N-PL	Si	125S	X59	F	
11	2N4257	500MSΔ	15n			15n	500m∅	5.0∅	1.0m∅	15 #Δ	15	3ps∅	P	Si	125J	R110	A	
12	2N4257A	500MSΔ	15n	10n		15n	500m∅	5.0m∅	1.0m∅	15 #Δ	15	3.0ps∅	P	Si	125J	R124	A	
13#	BFV27	500MSΔ	15n∅		8.0n	20n∅	150m	5.0∅	1.0m∅	20 #Δ	133	3.0ps∅	NPE	Si	200J	u34b	P	
14#	ZT4257	500MSΔ	15n∅	15n\$		15n∅	500m∅	1.0∅	50m∅	30 #Δ		3.0ps∅	P-PL	Si	125J	X55a	A	
15	2N834	500MSΔ	30n∅	25n\$		24n∅	300m	1.0∅	10m∅	40 #Δ	8.0	2.8p	N-EM	Si	175J	TO18	A	
16	2N834A	500MSΔ	18n∅			10n	360m	1.0∅	10m∅	25 #Δ	25	4.0p∅	N	Si	200J	TO18	A	
17	2N3227	500MSΔ	18n	5.0n		13n	1.2∅	1.0∅	10m∅	300 #Δ	14	4.0p∅	N	Si	200J	TO18	A	
18	2N3508	500MSΔ	18n	5.0n		13n	400m	1.0∅	10m∅	120 #Δ	25	4.0p∅	N	Si	200S	TO46	A	
19	2N3508	500MSΔ	18n	5.0n		13n	400m	1.0∅	10m∅	300 #Δ	25	4.0p∅	N	Si	200S	TO46	A	
20	2N2710	500MSΔ	20n∅			15n	360m	1.0∅	10m∅	40 #Δ	8.0	4.0p∅	N	Si	200S	TO18	A	
21	2N3639	500MSΔ	20n∅	10n		20n	500m∅	3.0∅	10m∅	30 #Δ		3.5p∅	P	Si	125J	R110	A	
22	2N3640	500MSΔ	20n∅	10n		20n	500m∅	3.0∅	10m∅	30 #Δ		3.5p∅	P	Si	125J	R110	A	
23	2SA413	500MSΔ	20n	30n		40n	100m	1.0∅	30m∅	70 #Δ			P-AD	Ge	75J	TO18		
24	T1S53	500MSΔ	20n	10n		20n	360m	300m∅	10m∅	30 #Δ	16	3.5p∅	P-PE	Si	150J	TO92		
25	T1S54	500MSΔ	20n	10n		20n	360m	300m∅	10m∅	30 #Δ	20	3.5p∅	P-PE	Si	150J	TO92		
26	JAN2N3467	500MSΔ	30n	10n		60n	5.0∅	5.0∅	1.0m∅	40 #Δ	1.2	25p∅	P	Si	200S	TO5	A	
27	JAN2N3468	500MSΔ	30n	10n		60n	5.0∅	5.0∅	1.0m∅	25 #Δ	1.2	25p∅	P	Si	200S	TO5	A	
28	MPS3640	500MSΔ	30n∅	10n		20n	310m	1.0∅	50m∅	20 #Δ	20	3.5p∅	PAN	Si	135J	X20d	A	
29#	ZT2938	500MSΔ	30n∅			15n	300m	1.0∅	20m∅	60 #Δ	8.0	4.0p∅	N-PE	Si	175J	TO18		
30	JAN2N3253	500MSΔ	35n	15n		40n	30n	5.0∅	1.0m∅	20 #Δ	1.2	12p∅	N-E	Si	200S	TO5	A	
31	JAN2N3444	500MSΔ	35n	15n		40n	30n	5.0∅	1.0m∅	15 #Δ	1.2	12p∅	N-E	Si	200S	TO5	A	
32	JAN2N5581	500MSΔ	35n∅			300n∅	2.0∅	1.0∅	10m∅	40 #Δ		8.0p∅	N	Si	200J	TO46	A	
33	JAN2N5582	500MSΔ	35n∅			300n∅	2.0∅	1.0∅	10m∅	100 #Δ		8.0p∅	N	Si	200J	TO46	A	
34	2N3304	500MSΔ	60n∅			60n∅	300m	3.0∅	10m∅	63 #Δ	10	3.5p∅	P	Si	200J	TO18	A	
35	2N4449	500MSΔ	60n			30n	300m	3.5∅	10m∅	40 #Δ		4ps∅	N	Si	200S	TO46	A	
36	FT1702	500MSΔ	60n∅	9.0n	12n	75n∅	500m∅	300m∅	10m∅	30 #Δ	20	3.5p∅	P-PE	Si	200J	TO18	A	
37#	ZSC423	500MS	70n		120n	60n	500m	5.0∅	20m∅	80 #Δ		5.0p	N-PE	Si	175J	TO39		
38#	ZSC425	500MS	70n		120n	60n	500m	5.0∅	20m∅	80 #Δ		5.0p	N-PE	Si	175J	TO39		
39#	ZSC933	500MS	70n		120n	60n	200m	5.0∅	20m∅	80 #Δ		5.0p	N-PE	Si	125J	TO104		
40#	ZSC934	500MS	70n		120n	60n	200m	5.0∅	20m∅	80 #Δ		5.0p	N-PE	Si	125J	TO104		
41	2N4028	500MSΔ	100n∅		350n	50n	2.0∅	5.0∅	500m∅	70 #Δ	1.0	20ps∅	P	Si	200J	TO18	A	
42	2N4029	500MSΔ	100n∅		350n	50n	2.0∅	5.0∅	500m∅	70 #Δ	1.0	20ps∅	P	Si	200J	TO18	A	
43	2N4032	500MSΔ	100n∅		350n	50n	4.0∅	5.0∅	500m∅	70 #Δ	1.0	20ps∅	P	Si	200J	TO5	A	
44	2N4033	500MSΔ	100n∅		350n	50n	4.0∅	5.0∅	500m∅	70 #Δ	1.0	20ps∅	P	Si	200J	TO5	A	
45#	2SA450H	530MS	13n†	12n†	14n†	24n†	300m∅	1.0∅	50m∅	30 #Δ		4.0p∅	P-EM	Ge	100J	TO18	A	
46#	2SA451H	530MS	13n†	12n†	14n†	24n†	300m∅	1.0∅	50m∅	60 #Δ		4.0p∅	P-EM	Ge	100J	TO18	A	
47#	2SA452H	530MS	13n†	12n†	14n†	24n†	300m∅	1.0∅	50m∅	120 #Δ		4.0p∅	P-EM	Ge	100J	TO18	A	
48	2N5065	550MSΔ	12n	7.0n	25n	15n	2.5∅	5.0∅	300m∅	120 #Δ	2.3		N#	Si	200J	R83a	A	
49#	BSX92	550MS	12n∅			15n∅	360m	1.0∅	10m∅	20 #Δ		4.0p∅	NPE	Si	200J	TO18	A	
50	2N5055	550MSΔ	15n	10n		20n	500m∅	5.0∅	30m∅	100 #Δ	13	4.5ps	P	Si	125J	R124	A	
51#	ZSC689H	600MSΔ	15n		3.0n	15n	300m	1.0∅	10m∅	85 #Δ		1.8p	N	Si	175J	TO18		
52#	LDS205	600MSΔ			6.0n	15n∅	360m	1.0∅	10m∅	120 #Δ	30	3.0p∅	N-PE	Si	150J	TO122	P	
53	2N3320	600MSΔ	10n	10n		20n	60m	5.0∅	40m∅	40 #Δ		3.0p∅	P	Ge	100S	TO18	A	
54	2N3321	600MSΔ	10n	10n		25n	60m	5.0∅	40m∅	80 #Δ		3.5p∅	P	Ge	100S	TO18	A	
55	2N3322	600MSΔ	10n	10n		30n	60m	5.0∅	40m∅	25 #Δ		3.5p∅	P	Ge	100S	TO18	A	
56	2N3010	600MSΔ	12n∅	6.0n\$	12n∅	30n	300m	4.0∅	10m∅	25 #Δ		3.0p∅	N	Si	200J	TO18	A	
57#	BSV89	600MS	12n∅		18n∅		360m	1.0∅	10m∅	40 #Δ		2.0p	N	PE	200J	TO18	A	
58#	BSV90	600MS	12n∅		18n∅		360m	1.0∅	30m∅	35 #Δ		2.0p	N	PE	200J	TO18	A	
59#	BSV91	600MS	12n∅		18n∅		360m	1.0∅	100m∅	25 #Δ		2.0p	N	PE	200J	TO18	A	
60#	BSX27	600MSΔ	12n∅	6.0n\$		12n∅	300m	4.0m∅	30m∅	60 #Δ		3.0p	N-DPE	Si	200J	TO18		
61	2N5056	600MSΔ	15n	10n		30n	1.2∅	5.0∅	30m∅	100 #Δ	13	4.5ps	P	Si	200J	TO18	A	
62	FT709	600MSΔ	15n∅		6.0n	15n∅	300m	4.0m∅	10m∅	30 #Δ	15	3.0p∅	N-PE	Si	200J	TO18	A	
63#	ME9003	600MS	15n∅			20n∅	625m∅	5.0∅	1.0m∅	30 #Δ	250	2.0p	N-PE	Si	150J	R110c	A	
64#	ZT709	600MSΔ	15n∅		6.0n	15n∅	300m	1.0∅	30m∅	45 #Δ		2.1p	N-PL	Si	200J	TO18		
65#	BSV36	600MSΔ	20n∅		6.0n	15n∅	350m	4.0m∅	20m∅	150 #Δ	25	3.0p∅	P	Si	175J	u53	F	
66#	ZT2475	600MSΔ	20n∅		6.0n	9.0n	300m	4.0m∅	20m∅	50 #Δ		2.4p	N-PE	Si	200	R64		
67	2N2651	600MS	35n∅		25n	75n∅	360m	1.0∅	10m∅	50 #Δ		2.6p	N-PE	Si	300	TO18	A	
68	JAN2N3763	600MSΔ	35n	8.0n		80n	35n	1.0∅	500m∅	40 #Δ	10	15p∅	P	Si	200J	TO5	A	
69	JAN2N3765	600MSΔ	35n	8.0n		80n	35n	5.0m∅	500m∅	40 #Δ	10	15p∅	P	Si	200J	TO46	A	
70	2N3862	600MSΔ	39n	39n		25n	25n	360m	1.0∅	50 #Δ	25	4.0p∅	N	Si	200A	TO18	A	
71	JAN2N914	600MSΔ	40n∅		20n	40n∅	1.2∅	5.0∅	500m∅	10 #Δ	30	6.0p∅	N	Si	200J	TO18	A	
72	JAN2N3735	600MSΔ	40n	8.0n		30n	1.0∅	1.0∅	500m∅	40 #Δ	20	9.0p∅	N	Si	200J	TO5	A	
73	JAN2N3737	600MSΔ	40n	8.0n		30n	500m	1.0∅	500m∅	40 #Δ	20	9.0p∅	N	Si	200J	TO46	A	
74	SE6020	600MSΔ	150n∅			1.0u∅	800m∅	10∅	100u∅	60 #Δ		15ps∅	N-DPE	Si	125J	TO105	A	
75	SE6021	600MSΔ	150n∅			1.0u∅	800m∅	10∅	100u∅	70 #Δ		15ps∅	N-DPE	Si	125J	TO105	A	
76	SE6022	600MSΔ	150n∅			1.0u∅	600m∅	10∅	100u∅	60 #Δ		15ps∅	N-DPE	Si	125J	TO106	A	
77	SE6023	600MSΔ	150n∅			1.0u∅	600m∅	10∅	100u∅	70 #Δ		15ps∅	N-DPE	Si	125J	TO106	A	
78	2N2368	640MΔ	12n∅	10n\$		15n∅	360m	1.0∅	10m∅	40 #Δ		4.0p∅	N-PE	Si	200J	TO18	A	
79	2N869A	640MΔ	50n∅			80n∅	360m	500m∅	30m∅	40 #Δ	6.7	6.0p∅	P-PE					

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) fab, (2) MAX RISE TIME & (3) TYPE No.

LINE No.	TYPE No.	fab	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN AIR @ 25°C (W)	BIAS			MAX. SAT. RES. (Ω)	Cob (F)	r <sub>bb</sub> X Cob (s)	STRUCTURE P-PNP N-NPN	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O A D E
								V <sub>cb</sub> (V)	I <sub>e</sub> (A)	hFE								
1	2N3832	800M\$Δ	20n	15n	10n	20n	200m	50 ∅	2.0m ∅	25 Δ	40		N	Si	200S	TO72	G	
2#	BSW25	800M\$Δ	20n ∅			25n ∅	1.2 ∅	500m ∅	30m ∅	40 # Δ			P-DPE	Si	200J	TO18	A ∅	
3	EN2894A	800M\$Δ	20n ∅			25n ∅	200m	50 ∅	30m ∅	120 # ∇			P	Si	125J	TO106	A	
4	2N2894A	800M\$Δ	60n ∅			20n ∅	360m	500m ∅	30m ∅	120 # ∇	4.5	4.5p	P	Si	200J	TO18	∅	
5▼	MM2894A	800M\$Δ	60n ∅			35n ∅	1.2 ∅	50 ∅	30m ∅	120 # ∇	4.5	4.5p	P-AN	Si	200J	TO18	A ∅	
6	JAN2N3498	800M\$∇	115n ∅			1.1u ∅	5.0 ∅	10 ∅	100u ∅	20 # Δ		10p ∇	N	Si	200J	TO5	A ∅	
7	JAN2N3499	800M\$∇	115n ∅			1.1u ∅	5.0 ∅	10 ∅	100u ∅	25 # Δ		10p ∇	N	Si	200J	TO5	A ∅	
8	JAN2N3500	800M\$∇	115n ∅			1.1u ∅	5.0 ∅	10 ∅	100u ∅	20 # Δ		8.0p ∇	N	Si	200J	TO5	A ∅	
9	JAN2N3501	800M\$∇	115n ∅			1.1u ∅	5.0 ∅	10 ∅	100u ∅	35 # Δ		8.0p ∇	N	Si	200J	TO5	A ∅	
10	JAN2N3634	800M\$∇	400n ∅			600n ∅	5.0 ∅	10 ∅	100u ∅	25 # Δ		10p ∇	P	Si	200J	TO5	A ∅	
11	JAN2N3636	800M\$∇	400n ∅			600n ∅	5.0 ∅	10 ∅	100u ∅	25 # Δ		10p ∇	P	Si	200J	TO5	A ∅	
12	2N3919	800M\$Δ	500n ∅		1u		15m\$ ∅	2.0 ∅	2 ∅	40 # Δ			N	Si	150J	TO3	C ∅	
13	2N3920	800M\$Δ	500n ∅		1u		15m\$ ∅	2.0 ∅	2 ∅	100 # Δ			N	Si	150J	TO3	C ∅	
14	2N4209	850M\$Δ	15n	10n	20n	10n	300m	30 ∅	10m ∅	120 # ∇	150	3.0p	P	Si	200J	TO18	A ∅	
15▼	MM4208	850M\$Δ	15n ∅		20n	20n ∅	1.2 ∅	30 ∅	10m ∅	120 # ∇	18	3.0p ∇	P-AN	Si	200J	TO18	A ∅	
16▼	MM4208A	850M\$Δ	15n ∅		20n	20n ∅	1.2 ∅	30 ∅	10m ∅	120 # ∇	18	3.0p ∇	P-AN	Si	200J	TO18	A ∅	
17▼	MM4209	850M\$Δ	15n ∅		20n	20n ∅	1.2 ∅	30 ∅	10m ∅	120 # ∇	18	3.0p ∇	P-AN	Si	200J	TO18	A ∅	
18▼	MM4209A	850M\$Δ	15n ∅		20n	20n ∅	1.2 ∅	30 ∅	10m ∅	120 # ∇	18	3.0p ∇	P-AN	Si	200J	TO18	A ∅	
19	JAN2N3635	850M\$∇	400n ∅			600n ∅	5.0 ∅	10 ∅	100u ∅	25 # Δ		10p ∇	P ∅	Si	200J	TO5	A ∅	
20	JAN2N3637	850M\$∇	400n ∅			600n ∅	5.0 ∅	10 ∅	100u ∅	55 # Δ		10p ∇	P ∅	Si	200J	TO5	A ∅	
21	2N4872	900M\$Δ	15n	10n	20n	10n	700m	30 ∅	10m ∅	50 # Δ	130	3.0p ∇	P	Si	200J	TO18	A ∅	
22	2N769	900M\$	30n\$				35m	500m ∅	20m	55	24	1.5p	P-MD	Ge	100J	TO18	A	
23	JAN2N3250A	900M\$∇	35n	35n	175n	50n	1.2 ∅	1.0 ∅	10m ∅	50 # Δ	25	6.0p ∇	P ∅	Si	200S	TO18	A ∅	
24	JAN2N3251A	900M\$∇	35n	35n	200n	50n	1.2 ∅	1.0 ∅	10m ∅	100 # Δ	25	6.0p ∇	P ∅	Si	200S	TO18	A ∅	
25	2N2784	1000M\$	9.0n ∅		5.0n	9.0n ∅	300m	500m ∅	10m ∅	40 Δ	87	3.0p ∇	N-PE	Si	200J	TO18	A ∅	
26	2N2784/46	1000M\$	9.0n ∅		5.0n	9.0n ∅	400m	500m ∅	10m ∅	40 Δ	87	3.0p ∇	N-PE	Si	200J	TO46	A ∅	
27	2N709A46	1.0G\$	15n ∅			15n ∅	400m	500m ∅	10m ∅	60	100	3.0p ∇	NPE	Si	200J	TO46	A ∅	
28	MPSL07	1.0G\$	20n ∅	15n\$		40n ∅	310m	1.0 ∅	50m ∅	35	15	1.9p	P-AN	Si	135J	TO92	A	
29	2N797	1000M\$	40n ∅			80n ∅	150m	500m ∅	50m	85	14	4.0p\$ ∇	N-ME	Ge	100	TO18	A ∅	
30	JAN2N869A	1000M\$∇	50n ∅			80n ∅	360m	5.0 ∅	10 ∅	120 # ∇	15	6.0p ∇	P ∅	Si	200J	TO18	A ∅	
31	JAN2N4453	1000M\$∇	50n ∅			80n ∅	300m	5.0 ∅	10 ∅	120 # ∇	15	6.0p ∇	P ∅	Si	200J	TO46	A ∅	
32	JAN2N559	1000M\$∇	95n	50n ∅	95n	100n	300m ∅	500m ∅	10m ∅	120 # ∇		6.0p ∇	P	Ge	150S	TO18	A ∅	
33	MPSL08	1.2G	20n ∅	20n\$		40n ∅	310m	1.0 ∅	50m ∅	35	15	1.9p	P-AN	Si	135J	TO92	A	
34	2N709/46	1280M	15n ∅			15n ∅	400m	500m ∅	10m ∅	55	100	3.0p ∇	N-PL	Si	200J	TO46	A ∅	
35	2N3959	1300M\$Δ	2.0n ∅			1.6n ∅	400m	1.0 ∅	10m ∅	40 Δ	200	2.5p	N-A	Si	200J	TO18	A	
36	2N4251	1300M\$Δ	4.0n	16n	52n	8.0n	1.3 ∅	5.0 ∅	1.0m ∅	62 Δ		2.0p ∇	N	Si	200J	TO46	A ∅	
37	2N3633	1300M\$Δ	9.0n ∅		5.0n	9.0n ∅	300m	500m ∅	10m ∅	150 ∇	70	2.5p ∇	N-PE	Si	200J	TO18	A ∅	
38	2N3960	1600M\$Δ	2.0n ∅			1.6n ∅	400m	1.0 ∅	10m ∅	40 Δ	200	2.5p	N-A	Si	200J	TO18	A	
39	MMT3960A	2.2G\$	750pt			850pt	225m	1.0 ∅	10m ∅	200 ∇		1.3p	AN	Si	135J	u43	D	
40	MMT3960	2.25G	650ut	1.0n		750nt	225m	1.0 ∅	30m	80 # Δ		1.3p	N-AN	Si	125J	u43	D	
41#	2SC989	3000M\$	700pt ∅			500p ∅	150m	1.0 ∅	30m ∅	30 # Δ		1.5p ∇	N-PE	Si	150J	X79	C ∇	



# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	LEO	DESCRIPTION
1	2N5236*	N			T039	A	Max.Rad Level-300T NVT:hFE-10 min;VCE(sat)-70 max;all pulsed
2#	AS223	1 P-AD		Ge	T07		IC-100mA max;ICBO-2.0uA;Pc-83mW;VBE0-2.0V;tr-1.0ns
3	NS11101	1 N		Si	T018	A	ICBO-1.0uA max;Ih-300mA;VH-9.0V;IA-2.0mA;Ip-2.0A;BVCEs-110V min.
4	NS11111	1 N		Si	T018	A	ICBO-1.0uA max;Ih-300mA;VH-9.0V;IA-2.0mA;Ip-1.5A;BVCEs-60V min.
5#	RT1110	1 N-PL		Si	T018	A	BVCEs-190V max;ICBO-1.0uA max;tr-1.0ns max;tf-2.5ns max.
6#	RT1111	1 N-PL		Si	T018	A	BVCEs-120V max;ICBO-1.0uA max;tr-1.0ns max;tf-2.5ns max.
7#	RT1116	1 N-PL		Si	T018	A	BVCEs-280V max;ICBO-1.0uA max;tr-1.0ns max;tf-2.5ns max.
8	2N592	2 P		Ge	T05		Pt-125mW;VCBO-20V;ICBO-5.0uA max;hfe-80 typ;Cob-35pf;NF-16db
9	2N593	2 P		Ge	T09		Pt-125mW;VCBO-40V;ICBO-5.0uA max;hfe-80 typ;Cob-35pf;NF-16db.
10	2N594	2 N		Ge	T05	A5	Pc-15W max;BVCO-20V;IC-30A max;fab-1.5Mc min.
11	2N595	2 N		Ge	T05	A5	Pc-15W max;BVCO-20V;IC-30A max;fab-3.0Mc min.
12	2N596	2 N		Ge	T05	A5	Pc-15W max;BVCO-20V;IC-30A max;fab-5.0Mc min.
13	2N1169	2 N		Ge	T05	A	Pc-12W max; BVCO-25V; IC-40A max;tr-350ns;tf-200ns;fab-7.0Mc.
14	2N1170	2 N		Ge	T05	A	Pc-12W max; BVCO-40V; IC-40A max;tr-350ns;tf-200ns;fab-7.0Mc
15	2N1640	2 P/Δ		Si	T05	A	Pc-25W max;BVCO-30V;IC-50mA max;fab-40Mc typ.
16	2N1641	2 P/Δ		Si	T05	A	Pc-25W max;BVCO-30V;IC-50mA max;fab-80Mc Typ.
17	2N1642	2 P/Δ		Si	T05	A	Pc-25W max;BVCO-30V;IC-50mA max;fab-1.2Mc Typ.
18	2N1891*	2 N		Ge	T05	A5	Pc-150mW;VEBO-25V max;VCBO-25V max;fab-5.0Mc min.
19	2N1994	2 N-A		Ge	T05	A5	Pc-15W max;BVCO-30V;IC-30A max;ton-1500ns;toff-1800ns;fab-3Mc
20	2N1995	2 N-A		Ge	T05	A5	Pc-15W max;BVCO-25V;IC-30A max;ton-1300ns;toff-1800ns;fab-5Mc
21	2N1996	2 N-A		Ge	T05	A5	Pc-15W max;BVCO-20V;IC-30A max;ton-1100ns;toff-1800ns;fab-8Mc
22	2N2474	2 P-Δ		Si	T05	A	Pc-15W max;BVCO-30V;VEBO-30V;BVCEO-15V;hFE-15;VO-6mV max.
23	2N2968	2 P-PA		Si	T05	A	Pd-150mW max;hFE-15 at 100uA;BVCEO-30V; IC-50mA max.
24	2N2969	2 P-PA		Si	T018	A	Pd-150mW max;hFE-15 at 100uA;BVCEO-30V; IC-50mA max.
25	2N2970	2 P-PA		Si	T05	A	Pd-150mW max;hFE-10 at 100uA;BVCEO-20V; IC-50mA max.
26	2N2971	2 P-PA		Si	T018	A	Pd-150mW max;hFE-10 at 100uA;BVCEO-20V; IC-50mA max.
27#	AC130	2 N-A		Ge	T01		Pc-14W max; BVCO-20V; IC-1A max; fab-2.0Mc.
28	C106*	2 P		Si	T05	A	VO-2.0mV max;hFE-30 min at VCE-50V;RCE(SAT)-4.0 ohms max.
29	C201	2 P-Δ		Si	T05		Pc-25W max;BVCO-40V;IC-50mA max;fab-40Mc.
30	C302	2 P-Δ		Si	T05		Pc-25W max;BVCO-12V;IC-50mA max;fab-80Mc.
31	C402	2 P-Δ		Si	T05		Pc-25W max;BVCO-15V;IC-50mA max;fab-80Mc.
32	C502	2 P-Δ		Si	T05		Pc-25W; BVCO-30V; IC-50mA; BVCEO-10V.
33	C651	3 N-Δ		Si	T05		Pc-25W max; ICBO-10uA
34	C652	3 N-Δ		Si	T05		Pc-25W max; ICBO-10uA
35	2N2707	5		Ge	T01	A	Matched pair of 2N2430 and 2N2706, hFE1/2-1.1 max.
36	2N3838†	5 Δ		Si	L19c		Pt-35W;BVCO-60V;hFE-35 min;tf-200Mc min;tr-40ns;tf-90ns.
37	JAN2N3838†	5 P-N		Si	L19c		Pd 350m both;BVCO 60V;VBE0 5.0V;BVCEO 40V;ICBO 10n at VCB 50V
38#	2N4079	5 P		Ge	T01	A	2N4077/2N4078;hFE1/hFE2 1.40 max. at VCB 0.0 and IE 500mA
39	2N4107	5 P		Ge	T01	A	2N4105/2N4106;hFE1/hFE2-1.25 at VCB-0V;IE-500mA.
40	2N4136	5		Ge	T01	A	Pair of 2N2430 and 2N4131;hFE1/hFE2-1.4 at VCB-0.0V and IE-300mA.
41	2N4854†	5		Si	L19b		Pc-30W each;VC1-2-120V max;BVCO-60V max;IC-600mA;BVCEO-40V max.
42	JAN2N4854†	5 P-N		Si	L19e		Pd 600m both;BVCO 60V;VBE0 5.0V;BVCEO 40V;ICBO 10n at VCB 50V.
43	2N4855†	5		Si	L19b		Pc-30W each;VC1-2-120V max;BVCO-60V max;IC-600mA;BVCEO-40V max
44	40396	5 N-P		Ge	T01	A	Pt-30W(each);VCBO-18V max;VEBO-2.5V max
45	AC127/AC128	5		Ge	T01		Matched pair of AC127 and AC128
46	AC127/AC132	5		Ge	T01		Matched pair of AC127 and AC132
47#	AC127/AC152	5		Ge	T01		BVCO-32V; IC-500mA; hFE1/2-1.25
48#	AC153/AC176	5 A		Ge	T07	A	Matched pair of AC153 and AC176.
49#	AC153K/AC176K	5 A		Ge	X9a	A	Matched pair of AC153K and AC176K
50#	AC187/01/AC188/01	5 A		Ge	X9c	A	hFE1/2-.89 min; BVCO-25V, IC peak-2A.
51#	AC187/AC188	5 A		Ge	T01	A	hFE1/2-.89 min; BVCO-25V; IC peak-2A.
52#	AC187K/AC188K	5 A		Ge	X9a	A	Matched pair of AC187K and AC188K.
53#	AD161/AD162	5		Ge	MD6b		BVCO-32V;IC-2.0A;ft-1.0Mc;Pd-3.0W;hFE-40min;hFE1/2-1.25max.
54#	BFX79	5 DPE		Si	L19		BVCO-80V;BVCEO-60V;Pt-600mW;ft-100Mc;hFE-100 at IC-500mA.
55#	BFX80	5 DPL		Si	L19		BVCO-60V;BVCEO-60V;Pt-500mW;ft-40Mc min;hFE-200 at IC-0.1mA.
56#	BFX81	5 DPE		Si	L19		BVCO-25V;BVCEO-20V;Pt-500mW;ft-350Mc min;hFE-30 min at IC-10mA.
57	FP4339/2N4339	5 P-N		Si	ZA25		Vp match-30%;IDSS match-5%;BVGSS-40V max;Pc-30W max
58	FP4340/2N4340	5 P-N		Si	ZA25		Vp match-30%;IDSS match-5%;BVGSS-50V max;Pc-30W max.
59	MD985	5 E		Si	L19		VCBO-60V;VCEO-30V;Pc-500mW;ft-200Mc min;hFE-35 min. at IC-10mA.
60	MD985F	5 E		Si	X22		VCBO-60V;VCEO-30V;Pc-250mW;ft-200Mc min;hFE-35 min. at IC-10mA.
61	MD986	5 E		Si	L19		VCBO-40V;VCEO-15V;Pc-500mW;ft-200Mc min;hFE-25 min. at IC-10mA.
62	MD986F	5 E		Si	X22		VCBO-40V;VCEO-15V;Pc-250mW;ft-200Mc min;hFE-25 min. at IC-10mA.
63	MD6001†	5 P-N-EA		Si	L66		Pt-600mW(both sides);VCEO-30V;hFE-40 min,120 max. at 150mA and 10V.
64	MD6001F†	5 P-N-EA		Si	T089		Pd(both sides)-350mW;VCEO-30V;hFE-40-120 at 150mA,10V
65	MD6002†	5 P-N-EA		Si	L66		Pt-600mW(both sides);VCEO-30V;hFE-100 min,120 max. at 150mA and 10V
66	MD6002F†	5 P-N-EA		Si	T089		Pd(both sides)-350mW;VCEO-30V;hFE-100-300 at 150mA,10V.
67	MD6003	5 P-AN		Si	L2d		Pd 600mW(both sides);BVCO 50V;BVCEO 30V;VBE0 5.0V;ICBO 100nA;hFE 40 min
68	MD6100	5 P-N-EA		Si	L66		Pt-600mW(both sides);VCEO-45V;hFE-100 at 100uA;5.0V.
69	TD600	5 PLT		Si	L19b		Pt-400mW;hFE1/2-.90min;ft 20MHz min;IC-500mA max.
70	TD601	5 PLT		Si	L19b		Pt-400mW;ft-20MHz min;hFE at 10uA-100min;IC-500mA max.
71	TD602	5 PLT		Si	L19b		Pt-400mW;ft-200MHz min;hFE at 1.0mA-50min;IC-500mA max.
72	TD700	5 P-N-PLT		Si	L19d		Pt 400mW;hFE1/2-.90 min;BVCO 40V;BVCEO 30V;hFE 120 min.at IC 1.0mA;ft 20M min.
73	TD701	5 P-N-PLT		Si	L19d		Pt 400mW;BVCO 40V;BVCEO 30V;VBE0 5.0V;hFE 100 min.at IC 10uA;ft 20MHz min.
74	TD702	5 P-N-PLT		Si	L19d		Pt 400mW;BVCO 40V;BVCEO 30V;VBE0 5.0V;hFE 120 min.at IC 150mA;ft 200MHz min.
75	TIS60M	5 N-PL		Si	T092		Consist of TIS60 and TIS61;Available only with matching TIS61M.
76	TIS61M	5 P-PL		Si	T092		Consist of TIS61 and TIS60;Available only with matching TIS60M.
77	TIS92M	5 N		Si	X55	A	Same as TIS92, available only with matching TIS93M
78	TIS93M	5 P		Si	X55	A	Same as TIS93, available only with matching TIS92M
79	UD3007†	5 PE		Si	L59		BVCO-60V;BVCEO-40V;VBE0-5.0V;hFE-100-300 at IC-150mA;ft-200Mc.
80#	2AC132	6 P-A		Ge	T01		Matched Pair AC132; hFE1/hFE2-1.25 max.
81#	2AC187	6 A-N		Ge	T01		Pt-.8W;VCBO-25V max;IC-2A pulsed;hFE-100 min;ft-5MHz.
82#	2AC188	6 P-A		Ge	T01		Matched pair of AC188;hFE1/2-1.25 max at IC-500mA.
83#	2AC117	6 P-A		Ge	T05		hFE 1/2-1.2 max;VBE(1-2)-250mV max.
84#	2AC118	6 P-A		Ge	T05		hFE 1/2-1.2 max;VBE(1-2)-250mV max.
85#	2AC119	6 P-A		Ge	T05		hFE 1/2-1.2 max;VBE(1-2)-250mV max.
86#	2AD139	6 P-A		Ge	MD11		Matched Pair AD139; hFE1/hFE2-1.25 max.
87#	2AD140	6 P-E		Ge	T03		Matched Pair of AD140; hFE1/hFE2-1.25 to 1.0
88#	2AD149	6 P-A		Ge	T03		BVCO-50V; hfe-30 min. at 0.0V and 1.0 IC; ICBO-.35mA
89#	2AD161	6		Ge	T09		Pt-4W;VCBO-32V;IC-3A pulsed;hFE-80 min;ft-3MHz.
90#	2AD162	6 P		Ge	MD17c	C	Matched Pair of AD162;hFE1/2-1.1 at VCE-1.0V;IC-50mA
91#	2AT329	6 N-PL		Si	MM12a		Matched pair of AT329; hFE/hFE2-.75 max.
92#	2AT331	6 P-PL		Si			Matched Pair of AT331; hFE/hFE2-.75 max.
93#	2BC119	6 N-PE		Si	T039		Matched Pair of BC119;hFE 1/2-.80min-1.25max at IC of 300mA
94#	2BC138	6 N-DPE		Si	T039		Matched Pair of BC138;hFE 1/2 1.0min-1.25max at IC of 1.0A.
95#	2BC139	6 P-DPE		Si	T05		Matched Pair of BC139;hFE1/2-1.25 max;Pt-70W each.
96#	2BC142	6 N-PE		Si	T039		Matched Pair of BC142;hFE 1/2-.80min-1.0max at IC of 50mA.
97#	2BC143	6 P-PE		Si	T039		Matched Pair of BC143;hFE 1/2-.80min-1.25max at IC of 500mA.
98#	2BC144	6 N-DPE		Si	T05		Matched Pair of BC144;hFE1/2-1.25 max;Pt-70W each.
99#	2BC221	6 P-DPE		Si	T0105		Matched Pair of BC221;hFE 1/2 1.0min-1.25max at IC of 200mA
100#	2BC222	6 N-DPE		Si	T0105		Matched Pair of BC222;hFE 1/2 1.0min-1.25max at IC of 200mA.
101#	2BC286	6 N-DPE		Si	T05		Matched Pair of BC286;hFE 1/2-.80min-1.25max at IC of 500mA.
102#	2BC288	6 N-DPE		Si	T039		Matched Pair of BC288;hFE 1/2-.80min-1.25max at IC of 2.0A.
103#	2BD124	6 N-PE		Si	MD17c	C	Matched pair of BD124;Ib(1-2) 2.0mA max;BVCO 70V
104#	2BD131	6 N-PE		Si	T0126	D	Pt 11W;BVCO 70V;hFE 280 max at IC 500m, VCE 12V;hFE1/2 1.2.
105#	2BDY20	6 N-D		Si	T03	C	Matched pair of BDY20;hFE1/2 1.6 at IC 400mA,VCE 4.0V.
106#	2BDY38	6 N-D		Si	T03	C	Matched pair of BDY38;hFE1/2 1.5 at IC 200mA, VCE 4.0V
107#	2C444*	6 N-DPL		Si	L2b		Pt-.50W;hFE1/2-.70 min;VBE(1-2)-20mV max;ft-200Mc min.
108#	2N2X	6 N-PL		Si	T05		BVCO-60V; ICBO-.01uA; Matched pair for hFE1/hFE2-9 min, 1.1 max
109	2N282	6 P		Ge	R8		Matched pair of 2N281

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MIDWG #	LEA CODE	DESCRIPTION
1	2N2060*	6 N	N	Si	L2t	Pt-6W;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-10uV/deg C.
2	JAN2N2060*	6 N	N	Si	L2b	Pt-600mW both;VBE(1-2)-.005V;hFE1/2-90 min;ΔVBE(1-2)-80mV.
3	2N2060A*	6 N	N	Si	L2t	Pt-600mW both;VBE(1-2)-3.0mV max;hFE1/2-90 min.
4	2N2060B*	6 N	N	Si	L2t	Pt-600mW;VCBO-100V;hFE1/2-85 min;VBE(1-2)-1.5mV;hFE-120 max
5	2N2223*	6 N	N	Si	L2t	Pt-6W;hFE1/2-80 min;VBE(1-2)-15mV max;ΔVBE(1-2)ΔT-25uV/deg.C.
6	2N2223A*	6 N	N	Si	L2t	Pt-6W;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-25uV/deg.C.
7	2N2281	6 P-E	N	Si	TO18	A Matched pair of 2N2280, ΔVBE-100uV max.
8	2N2414	6 N	N	Si	L2t	Pc-50W max;fT-50Mc min;VCBO-75V;Ic-5A max;hFE-50 min;/Ic-10ma
9#	2N2431MP	6 P-A	N	Ge	TO1	Matched Pair 2N2431,3.0W out Class B;hFE1/hFE2-1.25 max.
10	2N2453*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uV/deg.C
11	2N2453A*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-5.0mV max
12	2N2480*	6 N	N	Si	L2t	Pt-6W;hFE1/2-80 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-15uV/deg.C
13	2N2480A*	6 N	N	Si	L2t	Pt-6W;hFE1/2-80 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-15uV/deg.C
14	2N2639*	6 N	N	Si	L2t	Pt-6W;hFE1/2-90 min;VBE(1-2)-5mV;ΔrBE1-2/ΔT-10uV/deg.C
15	JAN2N2639*	6 N	N	Si	L2b	Pt-600mW both;hFE1/2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uA/deg.C.
16	2N2640*	6 N	N	Si	L2t	Pt-6W;hFE1/2-80 min;VBE(1-2)-10mV;ΔrBE1-2/ΔT-20uV/deg.C.
17	2N2642*	6 N	N	Si	L2t	Pt-6W;hFE1/2-90 min;VBE(1-2)-5mV;ΔrBE1-2/ΔT-10uV/deg.C.
18	JAN2N2642*	6 N	N	Si	L2b	Pt-600mW both;hFE1/2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uA/deg.C.
19	2N2643*	6 N	N	Si	L2t	Pt-6W;hFE1/2-80 min;VBE(1-2)-10mV;ΔrBE1-2/ΔT-20uV/deg.C.
20	2N2652*	6 N	N	Si	L2t	Pt-6W;hFE1/2-85 min;VBE(1-2)-3mV;ΔVBE1-2/ΔT-10uV/deg.C.
21	2N2652A*	6 N	N	Si	L2t	Pd-600mW both;hFE1/2-90 min;VBE(1-2)-3mV;ΔVBE1-2/ΔT-10uV/deg.C.
22	2N2706MP	6 P	N	Ge	TO1	Matched Pair of 2N2706 for hFE1/2.
23	2N2720*	6 N	N	Si	L2t	Pt-600mW;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE1-2/ΔT-1mV
24	2N2721*	6 N	N	Si	L2t	Pt-600mW;hFE1/2-80 min;VBE(1-2)-10mV max;ΔVBE1-2/ΔT-2mV
25	2N2722*	6 N	N	Si	L2t	Pt-600mW;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE1-2/ΔT-1mV.
26	2N2802*	6 P	N	Si	L17k	Pt-50W;hFE1/2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uV/deg.C.
27	2N2803*	6 P	N	Si	L17k	Pt-50W;hFE1/2-80 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-20uV/deg.C.
28	2N2805*	6 P	N	Si	L17k	Pt-50W;hFE1/2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)ΔT-10uV/deg.C.
29	2N2806*	6 P	N	Si	L17k	Pt-50W;hFE1/2-80 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-20uV/deg.C.
30	2N2903*	6 N	N	Si	L2t	Pt-30W;hFE1/2-80 min;VBE(1-2)-1.0mV max;ΔVBE(1-2)ΔT-20uV/deg.C.
31	2N2903A*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-5.0mV max
32	2N2910*	6 N	N	Si	L2b	Pt-600mW both;hFE1/2-80 min;VBE(1-2)-10mV;ΔVBE(1-2)ΔT-20uV/deg C
33	2N2915*	6 N	N	Si	L2t	Pt-50W;hFE1/2-90 min;VBE(1-2)-5.0mV max;VCE(sat)-.35 ohms
34	2N2915A*	6 N	N	Si	L2t	hFE1/2-85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg C.
35	2N2916*	6 N	N	Si	L2t	Pt-50W;hFE1/2-90 min;VBE(1-2)-5.0mV;ΔVBE(1-2)-80mV.
36	2N2916A*	6 N	N	Si	L2t	hFE1/2-85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg.C.
37	2N2917*	6 N	N	Si	L2t	Pt-50W;hFE1/2-80 min;VBE(1-2)-10mV;ΔVBE(1-2)-1.6mV.
38	2N2918*	6 N	N	Si	L2t	Pt-50W;hFE1/2-80 min;VBE(1-2)-10mV;ΔVBE(1-2)-1.6mV.
39	2N2919*	6 N	N	Si	L2t	Pt-50W;hFE1/2-90 min;1VBE(1-2)-5.0mV;ΔVBE(1-2)-80mV
40	JAN2N2919*	6 N	N	Si	L2v	Pt-50W both;hFE1/2-1.1max;ΔVBET-2-800uVmax;IEBO-2.0nA max.
41	2N2919A*	6 N	N	Si	L2t	hFE1/2-85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg C.
42	2N2920*	6 N	N	Si	L2t	Pt-50W;hFE1/2-90 min;VBE(1-2)-5.0mV;ΔVBE(1-2)-80mV
43	JAN2N2920*	6 N	N	Si	L2v	Pt-50W both;hFE1/2-1.1max;ΔVBET-2-800uVmax;IEBO-2.0nA max
44	2N2920A*	6 N	N	Si	L2t	hFE1/2-85 min;VBE(1-2)-2.0mV max;Pt-5W;ΔVBE(1-2)ΔT-5uV/deg.C.
45	2N2936	6 N	N	Si	L2b	VCBO-60V max.each;VCEO-55V max.each;VEBO-5.0V max.each;Pc-6W
46	2N2937	6 N	N	Si	L2b	VCBO-60V max.each;VCEO-55V max.each;VEBO-5.0V max.each;Pc-6W
47	2N2974*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-80mV.
48	2N2975*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-80mV.
49	2N2976*	6 N	N	Si	L2t	Pt-30W;hFE1/2-80 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-1.6mV.
50	2N2977*	6 N	N	Si	L2t	Pt-30W;hFE 1/2-80min;VBE(1-2)-10mV max;ΔVBE(1-2)ΔT-1.6mV
51	2N2978*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-80mV
52	2N2979*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-80mV
53	2N2980*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-3mV max;ΔVBE(1-2)ΔT-10uV/deg C
54	2N2981*	6 N	N	Si	L2t	Pt-30W;hFE1/2-80 min;VBE(1-2)-.015V max;ΔVBE(1-2)ΔT-25uV/deg.C
55	2N2982*	6 N	N	Si	L2t	Pt-30W;hFE1/2-90 min;VBE(1-2)-.005V max;ΔVBE(1-2)ΔT-15uV/deg.C
56	2N3043	6 N-PE	N	Si	L2t	Minature dual 2N930;hFE 100-300 at 10uA;10% match;NF-5.0db max.
57	2N3044	6 N-PL	N	Si	L2f	Minature dual 2N930;hFE 100-300 at 10uA;20% match;NF-5.0db max.
58	2N3045	6 N-PL	N	Si	L2f	Minature dual 2N930;hFE 100-300 at 10uA;NF-5.0db max.
59	2N3046	6 N-PL	N	Si	L2f	Minature dual 2N929;hFE 50-200 at 10uA;10% match;NF-5.0db max.
60	2N3047	6 N-PL	N	Si	L2f	Minature dual 2N929;hFE 50-200 at 10uA;20% match;NF-5.0db max.
61	2N3048	6 N-PL	N	Si	L2f	Minature dual 2N929;hFE 50-200 at 10uA;NF-5.0db max.
62	2N3049	6 N-PL	N	Si	L2f	Minature dual 2N412, 10% hFE match; NF-6.0db max
63	2N3050	6 P-PE	N	Si	L2f	Minature dual 2N412, 20% hFE match; NF-6.0db max.
64	2N3051	6 P-PE	N	Si	L2f	Minature dual 2N412;td-15nsec;tr-20nsec;ts-120nsec;tf-30nsec
65	2N3052	6 N-PE	N	Si	L2f	Minature dual 2N706-2N914 type;ton-62nsec max;toff-55nsec max
66	2N3333*	6 P	N	Si	L21c	Pt-40mW;I <sub>D(on)</sub> 1/2-.95 min;VGS1/2-.95 min;VGS(1-2)-15mV
67	2N3334*	6 P	N	Si	L21c	Pt-40mW;I <sub>D(on)</sub> 1/2-.95 min;VGS1/2-.95 min;VGS(1-2)-20mV
68	2N3335*	6 P	N	Si	L21c	Pt-40mW;I <sub>D(on)</sub> 1/2-.90 min;VGS1/2-.90 min;VGS(1-2)-40mV.
69	2N3336*	6 P	N	Si	L21c	Pt-40mW;I <sub>D(on)</sub> 1/2-.80 min;VGS1/2-.80 min;VGS(1-2)-80mV.
70	2N3347*	6 P	N	Si	L17k	Pt-6W;hFE1/2-90 min;R(sat)-500ohms.
71	2N3348*	6 P	N	Si	L17k	Pt-6W;hFE1/2-80 min;R(sat)-500ohms.
72	2N3349*	6 P	N	Si	L17k	Pt-6W;hFE1/2-60 min;R(sat)-500ohms.
73	2N3350*	6 P	N	Si	L17k	Pt-6W;hFE1/2-90 min;R(sat)-500ohms.
74	2N3351*	6 P	N	Si	L17k	Pt-6W;hFE1/2-80 min;R(sat)-500ohms
75	2N3352*	6 P	N	Si	L17k	Pt-6W;hFE1/2-60 min;R(sat)-500ohms.
76	2N3409*	6 N	N	Si	L2y	Pt-600mW both;hFE1/2-80 min;VBE(1-2)-10mV;VC1C2-100V.
77	2N3410*	6 N	N	Si	L2y	Pt-600mW both;hFE1/2-90 min;VBE(1-2)-10mV;VC1C2-100V.
78	2N3411*	6 N	N	Si	L2y	Pt-600mW both;hFE1/2-90 min;VBE(1-2)-5.0mV;VC1C2-100V.
79	2N3423*	6 N	N	Si	L2t	Pt-45W;hFE1/2-80 min;VBE(1-2)-10mV;ΔVBE(1-2)ΔT-4uV/deg C
80	2N3424*	6 N	N	Si	L2t	Pt-45W;hFE1/2-90 min;VBE(1-2)-5mV;ΔVBE(1-2)ΔT-2uV/deg.C
81	2N3513	6 N	N	Si	L22	Pt-75W both sides;VCBO-80V max;VCEO-40V max;VEBO-5.0V max
82	2N3515	6 N	N	Si	X27	Pt-1.4W both sides;VCBO-80V max;VCEO-40V max;VEBO-5.0V max
83	2N3516	6 N	N	Si	L22	Pt-75W both sides;VCBO-100V max;VCEO-60V max;VEBO-7.0V max
84	2N3518	6 N	N	Si	X27	Pt-1.4W both sides;VCBO-100V max;VCEO-60V max;VEBO-7.0V max
85	2N3520	6 N	N	Si	X27	Pt-1.4W both sides;VCBO-60V max;VCEO-30V max;VEBO-7.0V max
86	2N3521	6 N	N	Si	L23	Pt-1.5W both sides;VCBO-70V max;VCEO-55V max;VEBO-7.0V max
87	2N3522	6 N	N	Si	L22	Pt-75W both sides;VCBO-70V max;VCEO-55V max;VEBO-7.0V max.
88	2N3524	6 N	N	Si	X27	Pt-1.4W both sides;VCBO-70V max;VCEO-55V max;VEBO-7.0V max
89	2N3587*	6 N	N	Si	L2t	Pt-600mW;VBE 1-2-20mV max;ΔVBE(1-2)ΔT-1.2mV max;VC1C2-50V
90	2N3680*	6 N	N	Si	L2t	Pt-600mW;hFE1/2-85 min;VBE(1-2)-3mV max;ΔVBE(1-2)ΔT-400uV
91	2N3728*	6 N	N	Si	L2t	Pt-55W;hFE1/2-80 min;VBE(1-2)-5mV max;ΔVBE(1-2)ΔT-20uV/deg C
92	2N3729*	6 N	N	Si	L17e	Pt-55W;hFE1/2-90 min;VBE(1-2)-3mV max;ΔVBE(1-2)ΔT-10uV/deg C
93	2N3802*	6 P	N	Si	L17e	Pt-360mW;hFE1/2-80 min;VBE1-2-8.0mV max
94	2N3803*	6 P	N	Si	L17e	Pt-360mW;hFE1/2-80 min;VBE1-2-8.0mV max
95	2N3804*	6 P	N	Si	L17e	Pt-360mW;hFE1/2-90 min;VBE1-2-8.0mV max
96	2N3804A*	6 P	N	Si	L17e	Pt-36W;hFE1/2-95 min;VBE1/2-5mV max;ΔVBE(1-2)ΔT-50mV/deg C.
97	2N3805*	6 P	N	Si	L17e	Pt-360mW;hFE1/2-90 min;VBE1-2-8.0mV max
98	2N3805A*	6 P	N	Si	L17e	Pt-36W;hFE1/2-95 min;VBE1/2-5mV max;ΔVBE(1-2)ΔT-50mV/deg C
99	2N3808*	6 P	N	Si	L17k	Pt-600mW;hFE1/2-80 min;VBE1-2-8.0mV max
100	2N3809*	6 P	N	Si	L17k	Pt-600mW;hFE1/2-80 min;VBE1-2-8.0mV max
101	2N3810*	6 P	N	Si	L17k	Pt-600mW;hFE1/2-90 min;VBE1-2-5.0mV max
102	JAN2N3810	6 P	N	Si	L17h	Pt(both sides)-60W;hFE1/2-.90to 1.0;VBE(1-2)-.005max;VCBO-60V
103	2N3810A*	6 P	N	Si	L17h	Pt-6W;hFE1/2-.95 min;VBE1/2-5mV max;ΔVBE(1-2)ΔT-50mV/deg C
104	2N3811*	6 P	N	Si	L17k	Pt-600mW;hFE1/2-.90 min;VBE1-2-5.0mV max
105	JAN2N3811	6 P	N	Si	L17h	Pt(both sides)-60W;hFE1/2-.90to 1.0;VBE(1-2)-.005max;VCBO-60V
106	2N3811A*	6 P	N	Si	L17h	Pt-6W;hFE1/2-.95 min;VBE1/2-5mV max;ΔVBE(1-2)ΔT-50mV/deg C
107	2N3814*	6 P	N	Si	L17s	Pt-35W;VBE(1-2)-8.0mV max;hFE1/2-1.0 max at IC-1mA;VCE-5V
108	2N3815*	6 P	N	Si	L17s	Pt-35W;VBE(1-2)-8.0mV max;hFE1/2-1.0 max at IC-1mA;VCE-5V
109	2N3816*	6 P	N	Si	L17s	Pt-35W;VBE(1-2)-5.0mV max;hFE1/2-1.0 max at IC-1mA;VCE-5V
110	2N3816A*	6 P	N	Si	L17s	Pt-35W;hFE1/2-95 min;VBE1/2-5mV max;ΔVBE(1-2)ΔT-50mV/deg.C

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	Y200	S/a	TO200 Ser.	LEADS	CODE	DESCRIPTION
1	2N3817*	6	PN	Si	L17s						Pt. 35W;VBE(1-2):5.0mV max;hFE1/2:1.0 max at IC=1mA;VCE=5V.
2	2N3817A*	6	PN	Si	L17s						Pt. 35W;hFE1/2: .95 min;VBE1/2:2.5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 50mV/deg C.
3	2N3907*	6	PN	Si	L2t						Pt. 6W;hFE1/2: .90 min;VBE(1-2):2.5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 5uV/deg.C.
4	2N3908*	6	PN	Si	L2t						Pt. 6W;hFE1/2: .90 min;VBE(1-2):2.5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 5uV/deg.C.
5	2N3921*	6	PN	Si	L21						Pt. 300mW;gm 1/2-.95min;VGS(1-2):5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T: 10uV/°C.
6	2N3922*	6	PN	Si	L21						Pt. 300mW;gm 1/2-.95min;VGS(1-2):5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T: 25uV/°C.
7	2N3934*	6	PN	Si	L21						Pt. 300mW;gm 1/2-.95min;VGS(1-2):5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T: 10uV/°C.
8	2N3935*	6	PN	Si	L21						Pt. 300mW;gm 1/2-.95min;VGS(1-2):5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T: 25uV/°C.
9	2N3954	6	PN	Si	L61a						Pt. 50W;IDSS1/2: .95 min;VGS(1-2):5mV max;Yfs1/2: .97 min
10	2N3954A*	6	PN	Si	L61a						Pt. 50W;IDSS1/2: .95 min;VGS(1-2):5mV; $\Delta$ VGS(1-2)/ $\Delta$ T: 5mV
11	2N3955	6	PN	Si	L61a						Pt. 50W;IDSS1/2: .95 min;VGS(1-2):10mV max;Yfs1/2: .95 min
12	2N3955A*	6	PN	Si	L61a						Pt. 50W;IDSS1/2: .95 min;VGS(1-2):5mV; $\Delta$ VGS(1-2)/ $\Delta$ T: 1.5mV.
13	2N3956	6	PN	Si	L61a						Pt. 50W;IDSS1/2: .95 min;VGS(1-2):15mV max;Yfs1/2: .95 min
14	2N3957	6	PN	Si	L61a						Pt. 50W;IDSS1/2: .90 min;VGS(1-2):20mV max;Yfs1/2: .90 min
15	2N3958	6	PN	Si	L61a						Pt. 50W;IDSS1/2: .85 min;VGS(1-2):25mV max;Yfs1/2: .85 min
16	2N4009	6	PN	Si	TO46					A0	Matched Pair 2N4006;Voff: .02mV; $\Delta$ RS(ON):5.0 ohms; $\Delta$ VCB:100mV max
17	2N4010	6	PN	Si	TO46					A0	Matched Pair 2N4007;Voff: .02mV; $\Delta$ RS(ON):5.0 ohms; $\Delta$ VCB:100mV max
18	2N4011	6	PN	Si	TO46					A0	Matched Pair 2N4008;Voff: .02mV; $\Delta$ RS(ON):5.0 ohms; $\Delta$ VCB:100mV max
19	2N4015*	6	PN	Si	L17k						BVCBO-60V;IC:300mA max;Pt. 50W;VBE(1-2):5.0mV;hFE1/2: .90 min
20	2N4016*	6	PN	Si	L17k						BVCBO-60V;IC:300mA max;Pt. 50W;VBE(1-2):2.5mV;hFE1/2: .90 min
21	2N4020*	6	PN	Si	L17k						BVCBO-45V;IC:200mA max;Pt. 60W;VBE(1-2):5.0mV;hFE1/2: .80 min
22	2N4021*	6	PN	Si	L17k						BVCBO-60V;IC:200mA max;Pt. 60W;VBE(1-2):5.0mV;hFE1/2: .80 min
23	2N4022*	6	PN	Si	L17k						BVCBO-60V;IC:200mA max;Pt. 60W;VBE(1-2):5.0mV;hFE1/2: .80 min
24	2N4023*	6	PN	Si	L17k						BVCBO-45V;IC:200mA max;Pt. 60W;VBE(1-2):3.0mV;hFE1/2: .90 min
25	2N4024*	6	PN	Si	L17k						BVCBO-60V;IC:200mA max;Pt. 60W;VBE(1-2):3.0mV;hFE1/2: .90 min
26	2N4025*	6	PN	Si	L17k						BVCBO-60V;IC:200mA max;Pt. 60W;VBE(1-2):3.0mV;hFE1/2: .90 min
27	2N4044	6	PN	Si	L2m						BVCBO-60V;IC:10mA;Pt. 75W;VBE(1-2):3.0mV;hFE1/2: .90 min
28	2N4045	6	PN	Si	L2m						BVCBO-45V;IC:10mA;Pt. 75W;VBE(1-2):5.0mV;hFE1/2: .80 min.
29	2N4082	6	PN	Si	L21						VGS(off)at ID=50nA-3.0V;Yfs-300umhos min;Yfs1/2: .95 min;BVDS-50V
30	2N4083	6	PN	Si	L21						VGS(off)at ID=50nA-3.0V;Yfs-300umhos min;Yfs1/2: .95 min;BVDS-50V
31	2N4084	6	PN	Si	L21						VGS(off)at ID=1.0nA-3.0V;Yfs-1500umhos min;Yfs1/2: .95 min;BVDS-50V
32	2N4085	6	PN	Si	L21						VGS(off)at ID=1.0nA-3.0V;Yfs-1500umhos min;Yfs1/2: .95 min;BVDS-50V
33	2N4100*	6	PN	Si	L2m						VBE1-VBE2 - 5.0mVmax;IB1-IB2-10nAmax; $\Delta$ (IB1-IB2)-70nA/deg.C max
34	2N4241MP	6	PN	Ge	TO1						Matched Pair of 2N4241 for hFE1/2.
35	2N4878*	6	PN	Si	L2p						Pt. 5W;hFE1/2: .90 min;VBE(1-2):3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 3uV/deg C
36	2N4879*	6	PN	Si	L2p						Pt. 5W;hFE1/2: .85 min;VBE(1-2):5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 5uV/deg C
37	2N4880*	6	PN	Si	L2p						Pt. 5W;hFE1/2: .80 min;VBE(1-2):5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 10uV/deg C
38	2N4937*	6	PN	Si	L17k						Pt. 6W;VBE(1-2):3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 1.0mV/deg C;hFE1/2: .85 min
39	2N4938*	6	PN	Si	L17k						Pt. 60W;VBE(1-2):5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 2mV/deg C;hFE1/2: .70 min
40	2N4940*	6	PN	Si	L17d						Pt. 35W;hFE1/2: .80 min;VBE(1-2):5mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 2.0mV max
41	2N4941*	6	PN	Si	L17d						Pt. 35W;hFE1/2: .90 min;VBE(1-2):3mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 1.0mV max
42	2N5045*	6	PN	Si	L21						Pt. 400mW;VGS(1-2):5.0mV;Yfs1/2: .95 min;IGSS1-2: 10nA max.
43	2N5046*	6	PN	Si	L21						Pt. 400mW;VGS(1-2):10mV;Yfs1/2: .90 min;IGSS1-2: 10nA max
44	2N5047*	6	PN	Si	L21						Pt. 400mW;VGS(1-2):15mV;Yfs1/2: .80 min;IGSS1-2: 10nA max
45	2N5117*	6	PN	Si	L17c						Pt. 75W;VBE(1-2):3mV; $\Delta$ VBE(1-2):3uV/deg.C;hFE1/2: .90 min
46	2N5118*	6	PN	Si	L17c						Pt. 75W;VBE(1-2):5mV; $\Delta$ VBE(1-2):5uV/deg.C;hFE1/2: .85 min
47	2N5119*	6	PN	Si	L17c						Pt. 75W;VBE(1-2):5mV; $\Delta$ VBE(1-2):10uV/deg.C;hFE1/2: .80 min
48	2N5120*	6	PN	Si	L17c						Pt. 500mW;VBE(1-2):3mV; $\Delta$ VBE(1-2):3uV/°C;hFE1/2: .90min
49	2N5121*	6	PN	Si	L17c						Pt. 800mW;VBE(1-2):5mV; $\Delta$ VBE(1-2):5uV/°C;hFE1/2: .85min.
50	2N5122*	6	PN	Si	L17c						Pt. 500mW;VBE(1-2):5mV; $\Delta$ VBE(1-2):10uV/°C;hFE1/2: .80min
51	2N5123*	6	PN	Si	L17w						Pt. 750mW;VBE(1-2):3mV; $\Delta$ VBE(1-2):3uV/°C;hFE1/2: .90min
52	2N5124*	6	PN	Si	L17w						Pt. 750mW;VBE(1-2):5mV; $\Delta$ VBE(1-2):5uV/°C;hFE1/2: .85min.
53	2N5125*	6	PN	Si	L17w						Pt. 750mW;VBE(1-2):5mV; $\Delta$ VBE(1-2):10uV/°C;hFE1/2: .80min
54	2N5196*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 5.0mV max;Yfs1/2: .97 min
55	2N5197*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 5.0mV max;Yfs1/2: .97 min
56	2N5198*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 10mV max;Yfs1/2: .95 min
57	2N5199*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 15mV max;Yfs1/2: .95 min
58	2N5255*	6	PN	Si	L17t						Pt. 43W;hFE1/2: .80 min;VBE(1-2):5.0mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 20uV/deg C
59	2N5256*	6	PN	Si	L17t						Pt. 43W;hFE1/2: .90 min;VBE(1-2):3.0mV max; $\Delta$ VBE(1-2)/ $\Delta$ T: 10uV/deg C
60	2N5257*	6	PN	Si	L58						Pt. 50W;VGS(1-2):5mV; $\Delta$ VGS(1-2):5uV/deg.C;Yfs1/2: .97 min
61	2N5258*	6	PN	Si	L58						Pt. 50W;VGS(1-2):10mV; $\Delta$ VGS(1-2):10uV/deg.C;Yfs1/2: .97 min.
62	2N5259*	6	PN	Si	L58						Pt. 50W;VGS(1-2):15mV; $\Delta$ VGS(1-2):25uV/deg.C;Yfs1/2: .95 min
63	2N5505*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.5umhos;VGS(1-2):15mV;VGS(1-2)/TA: 8mV
64	2N5506*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.5umhos;VGS(1-2):15mV;VGS(1-2)/TA: 8mV
65	2N5507*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.5umhos;VGS(1-2):15mV;VGS(1-2)/TA: 1.9mV
66	2N5508*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.5umhos;VGS(1-2):15mV;VGS(1-2)/TA: 1.9mV
67	2N5509*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.5umhos;VGS(1-2):25mV;VGS(1-2)/TA: 3.8mV
68	2N5510*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.0umhos;VGS(1-2):5mV;VGS(1-2)/TA: 8mV
69	2N5512*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.0umhos;VGS(1-2):15mV;VGS(1-2)/TA: 8mV
70	2N5513*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.0umhos;VGS(1-2):5mV;VGS(1-2)/TA: 1.9mV
71	2N5514*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.0umhos;VGS(1-2):15mV;VGS(1-2)/TA: 1.9mV
72	2N5514*	6	PN	Si	L21						Pt. 3W;IG(1-2):50pA;Yos(1-2):1.0umhos;VGS(1-2):25mV;VGS(1-2)/TA: 3.8mV
73	2N5515*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 5.0mV max;Yfs1/2: .97 min;CMRR 100dB min
74	2N5516*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 5.0mV max;Yfs1/2: .97 min;CMRR 100dB min.
75	2N5517*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 10mV max;Yfs1/2: .95 min;CMRR 90dB min.
76	2N5518*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 15mV max;Yfs1/2: .95 min;Yos(1-2): 100nmho.max
77	2N5519*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .90 min;VGS(1-2): 15mV max;Yfs1/2: .90 min;Yos(1-2): 100nmho.max
78	2N5520*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 5.0mV max;Yfs1/2: .97 min;CMRR 100dB min
79	2N5521*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 5.0mV max;Yfs1/2: .97 min;CMRR 100dB min
80	2N5522*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 10mV max;Yfs1/2: .95 min;CMRR 90dB min
81	2N5523*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .95 min;VGS(1-2): 15mV max;Yfs1/2: .95 min;Yos(1-2): 100nmho.max.
82	2N5524*	6	PN	Si	L61						Pt. 375mW;IDSS1/2: .90 min;VGS(1-2): 15mV max;Yfs1/2: .90 max;Yos(1-2): 100nmho.max.
83	2N5545*	6	PN	Si	L61a						Pt. 40W;IDSS1/2: .95 min; $\Delta$ VGS(1-2)/ $\Delta$ T: 8mV;Yos(1-2): 1.0umho
84	JAN2N5545*	6	PN	Si	L21						Pt. 40mV both Yfs1/2: .970 min;VGS(1-2): 5.0mV max; $\Delta$ VGS(1-2)/ $\Delta$ T: 1.0mV max
85	2N5546*	6	PN	Si	L61a						Pt. 40W;IDSS1/2: .90 min; $\Delta$ VGS(1-2)/ $\Delta$ T: 1.6mV;Yos(1-2): 2.0umho
86	JAN2N5546*	6	PN	Si	L21						Pt. 40mV both Yfs1/2: .950 min;VGS(1-2): 10mV max; $\Delta$ VGS(1-2)/ $\Delta$ T: 2.0mV max
87	2N5547*	6	PN	Si	L61a						Pt. 40W;IDSS1/2: .90 min; $\Delta$ VGS(1-2)/ $\Delta$ T: 3.2mV;Yos(1-2): 3.0umho

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	L C O D E	DESCRIPTION
1#	20C36	6	P-A	Ge	T03		Matched Pair of OC36;hFE 1/2-1.2
2#	20C74	6	P	Ge	R8		Matched Pair of OC74;hFE1/2-1.15 at IE-50mA;VCE-6.0V.
3#	20C83	6	P-A	Ge	R8		Matched Pair of OC83
4#	20C84	6	P-A	Ge	R8		Matched pair of OC84;hFE1/2-83 min.
5#	2X2N3055†	6	N-D	Si	T03	∅	Pt 1.17W;hFE1/2 1.6 at VCE 4.0V;IC 400mA;ft 1.0MHz.
6#	3N151*	6	P-MOS	Si	L53		Pt 325mW;ID1/2-90min;VGS(1-2)-250mV;Yfs 1/2-80min;Yos 1/2-10umhos.
7#	3N165*	6	P-A	Si	L18c		Pt 525mW;Yfs 1/2-.85min;VGS(th)1-2 100mV;max;tr 30nS;ton 15nS;toff 50nS.
8#	3N188*	6	PMOSA	Si	L58b		Pt 525mW;Yfs 1/2-.85 min;VGS(th)1-2 100mV;tr 30nS;td 15nS;toff 50nS.
9#	3N190*	6	PMOSA	Si	L58b		Pt 525mW;Yfs 1/2-.85 min;VGS(th)1-2 100mV;tr 30nS;td 15nS;toff 50nS.
10#	12A104	6	N-PL	Si	L2		Pt-250mW;W;ICBO-2.0mA max;hFE-25min;VBE1/2-5.0mV max;ft-60Mc min.
11#	12A105	6	N	Si	T018		Pt 300mW both Sides;BVCEO 60Vmin;hFE match .90/1.0;VBE match 30mV.
12#	12A107	6	N	Si	T018		Pt 300mW Both Sides;BVCEO 100Vmin; hFE match .90/1.0;VBE match 3.0mV.
13#	12A108	6	N-PL	Si	T018		Pt-.75W both sides;VCBO-50V min;hFE match-40%;VBE match-15mV.
14#	A600	6	N-PL	Si	L2b		VBE(1-2)-10mV;IC-50mA;max;BVCEO-50V;ICBO-10nA;max;hFE1/2-.90
15#	A601	6	N-PL	Si	L2b		VBE(1-2)-10mV;IC-50mA;max;BVCEO-50V;ICBO-10nA;max;hFE1/2-.90
16#	A602	6	N-PL	Si	L2b		VBE(1-2)-10mV;IC-50mA;max;BVCEO-50V;ICBO-10nA;max;hFE1/2-.90
17#	A603	6	N-PL	Si	L2b		VBE(1-2)-10mV;IC-50mA;max;BVCEO-50V;ICBO-10nA;max;hFE1/2-.90
18#	A604	6	N-PL	Si	L2b		VBE(1-2)-10mV;IC-50mA;max;BVCEO-50V;ICBO-10nA;max;hFE1/2-.90
19#	A605	6	N-PL	Si	L2b		VBE(1-2)-10mV;IC-50mA;max;BVCEO-50V;ICBO-10nA;max;hFE1/2-.90
20#	A606	6	N-PL	Si	L2b		VBE(1-2)-10mV;IC-50mA;max;BVCEO-50V;ICBO-10nA;max;hFE1/2-.90
21#	A6401*	6	N-PL	Si	X56a	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
22#	A6405*	6	N-PL	Si	X56	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
23#	A6411*	6	N-PL	Si	X56a	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
24#	A6415*	6	N-PL	Si	X56	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
25#	A6421*	6	N-PL	Si	X56a	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
26#	A6425*	6	N-PL	Si	X56	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
27#	A6431*	6	N-PL	Si	X56a	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
28#	A6435*	6	N-PL	Si	X56	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
29#	A6441*	6	N-PL	Si	X56a	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
30#	A6445*	6	N-PL	Si	X56	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
31#	A6451*	6	N-PL	Si	X56a	A	Pt 300mW both sides;hFE1/2 1.0 max;VBE(1-2) 3.0mV max.
32#	A6455*	6	N-PL	Si	X56	A	Pt 300mW both sides;hFE 1/2 1.0 max; VBE (1-2) 15mV max.
33#	A6491*	6	N-PL	Si	X56a	A	Pt-30W;hFE(1-2)-90min;VBE 1-VBE2)-1.0mV max;BVCEO-30V.
34#	A6495*	6	N-PL	Si	X56	A	Pt-30W;hFE(1-2)-90min;VBE 1-VBE2)-1.0mV max;BVCEO-30V.
35#	A1480	6	N-PE	Si	T018		Pt-300mW max;VCEO-5.0V;VEBO-5.0V;Voffset-250uV max;ΔVoff-50uV.
36#	ADY27*	6	P-A	Ge	MD17f	∅	hFE1/hFE2 1.25 max;Pt 27.5W;ICEV 150uA;ft 450kHz.
37#	BC140-6*	6	N-PEA	Si	T039	A∅	Pt-3.7W at 45°C case;Vsat 1.4V max;hFE 1/2-1.25max.
38#	BC140-10*	6	N-PEA	Si	T039	A∅	Pt-3.7W at 45°C case;Vsat 1.4V max;hFE 1/2-1.25max.
39#	BC140-16*	6	N-PEA	Si	T039	A∅	Pt-3.7W at 45°C case;Vsat 1.4V max;hFE 1/2-1.25max.
40#	BC141-6*	6	N-PEA	Si	T039	A∅	Pt-3.7W at 45°C case;Vsat 1.4V max;hFE 1/2-1.25max.
41#	BC141-10*	6	N-PEA	Si	T039	A∅	Pt-3.7W at 45°C case;Vsat 1.4V max;hFE 1/2-1.25max.
42#	BC141-16*	6	N-PEA	Si	T039	A∅	Pt-3.7W at 45°C case;Vsat 1.4V max;hFE 1/2-1.25max.
43#	BC328/BC338	6	P-PL	Si	X64b	A	hFE1/hFE2 1.41 max;Pt 360mW;BVCEs 30V;ft 100MHz.
44#	BC337/BC327	6	N-PE	Si	X64b	A	hFE1/hFE2 1.41 max;Pt 360mW;BVCEs 50V;ft 100MHz.
45#	BCW25*	6	NPL	Si	L2		Pt-600mW;hFE1/2-1.0max;VBE(1-2)-20mV max;VBE(1-2)ΔTA-30uV/°C max.
46#	BCY55	6	N-PP	Si	X44		Pc-300mW;VCB-45V;IC-30mA;ΔVBE-1uV/deg.C;ΔIB-50nA/deg.C
47#	BCY87	6	N-PL	Si	L17u		VBE(1-2)-3.0mV max;IB(1-2)-25nA max;ΔV/ΔT-1.0uV/deg.C
48#	BCY88	6	N-PL	Si	L17u		VBE(1-2)-6.0mV max;IB(1-2)-80nA max;ΔV/ΔT-2.0uV/deg.C.
49#	BCY89	6	N-PL	Si	L17u		VBE(1-2)-10mV max;IB(1-2)-300nA max;ΔV/ΔT-4.0uV/deg.C.
50#	BD135-BD136MP	6	N-PL	Si	X100	B∅	hFE1/2 1.3 typ, 1.6 max at IC 150mA, VCE 2.0V.
51#	BD137-BD138MP	6	N-PL	Si	X100	B∅	hFE1/2 1.3 typ, 1.6 max at IC 150mA, VCE 2.0V.
52#	BD139-BD140MP	6	N-PL	Si	X100	B∅	hFE1/2 1.3 typ, 1.6 max at IC 150mA, VCE 2.0V.
53#	BFW39	6	N	Si	L2		Pt-40W;IC-30mA;hFE1/2-90 min;VBE(1-2)-5mV;hFE-60 min.
54#	BFW39A	6	N	Si	L2		hFE1/2-85 min;VBE(1-2)-2.0mV max;Pt-50W.
55#	BFW40	6	N	Si	L2		Pt-40W;IC-30mA;hFE1/2-99 min;VBE(1-2)-5mV;hFE-150 min.
56#	BFW40A	6	N	Si	L2		Pt-50W device;hFE1/2-1.1 max;ΔVBE-10uV/°C deg max.
57#	BFW51	6	N	Si	L2j		ft-60MHz min;LVCEO-45V;hFE-60 to 240;VBE(1-2)3mV;hFE1/2-90 min.
58#	BFW51A	6	N	Si	L2j		ft-60MHz min;LVCEO-60V;hFE-60 to 240;VBE(1-2)1.5mV;hFE1/2-90 min.
59#	BFW52	6	N	Si	L2j		ft-60MHz min;LVCEO-45V;hFE-150 to 600;VBE(1-2)3mV;hFE1/2-90 min.
60#	BFW52A	6	N	Si	L2j		ft-60MHz min;LVCEO-60V;hFE-150 to 600;VBE(1-2)1.5mV;hFE1/2-90 min.
61#	BFX11*	6	P-DPE	Si	L2d		Pt-40W each;ICBO-10nA max;hFE1/2-80 min;ΔVBE-5.0mV max.
62#	BFX15*	6	N-PL	Si	L2d		Pt-50W each;VBE1/2-5.0mV max;hFE1/2-90 min;ICBO-10nA max.
63#	BFX16*	6	N-DPL	Si	L50		Pt-50W total;BVCEO-45V;hFE1/2-80 min;VBE1/VBE2-5.0mV max.
64#	BFX36*	6	P-DPE	Si	L2b		Pt-40W each;hFE1/hFE2-90 min;VBE1/2-3.0mV max;ICBO-10nA max
65#	BFX70*	6	N-DPL	Si	L2b		Pt-6W;hFE1/2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)/ΔT-10uV/deg.C.
66#	BFX71*	6	N-DPL	Si	L2b		Pt-6W;hFE1/2-80 min;VBE(1-2)-15mV max;ΔVBE(1-2)/ΔT-25uV/deg.C.
67#	BFX72*	6	N-DPL	Si	L2b		Pt-6W;hFE1/2-90 min;VBE(1-2)-5.0mV max;ΔVBE(1-2)/ΔT-25uV/deg.C.
68#	BFX99*	6	N-DPL	Si	L2b		Pt-6W;hFE1/2-90 min;VBE(1-2)-1.5mV max;ΔVBE(1-2)-50mV max.
69#	BFY81	6	NDPL	Si	L2b		Pt-60W;BVCEO-45V;ft-60Mc min;hFE1/2-80 min;VBE(1-2)-10mV max.
70#	BFY82	6	NDPL	Si	L2b		Pt-50W;BVCEO-60V;ft-250Mc min;hFE1/2-80 min;VBE(1-2)-15mV max.
71#	BFY83	6	NDPL	Si	L2b		Pt-60W;BVCEO-100V;ft-50Mc min;hFE1/2-80 min;VBE(1-2)-15mV max.
72#	BFY84	6	NDPE	Si	L2b		Pt-38W;BVCEO-30V;ft-600Mc min;hFE1/2-80 min;VBE(1-2)-15mV max.
73#	BFY85*	6	N-PE	Si	L2t		Pt-260mW;hFE Diff. 20% max;VBE Diff. 10mV max.
74#	BFY86*	6	N-PE	Si	L2t		Pt-260mW;hFE Diff. 10% max;VBE Diff. 5.0mV max.
75#	BFY91	6	N-PL	Si	L2t		ft-60Mc;BVCEO-45V;hFE-60-240/10uA;5mV-VBE match;10%hFE match.
76#	BFY92	6	N-PL	Si	L2t		ft-60Mc;BVCEO-45V;hFE-60-240/10uA;10mV-VBE match;20%hFE match.
77#	BN209	6	N	Si	L2b		Pt(both sides)-250mW;hFE1/hFE2-80 min;VBE1-VBE2-10mV max.
78#	D12A8	6	N-PL	Si	L17f		Pt(both sides)-500mW;hFE1/2-60 min;VBE(1-2)-15mV max.
79#	D12E026	6	N-PL	Si	L2b		hFE1/2-80 min, 1.0 max;VBE(1-2)-15mV max;Pc-800mW both.
80#	D12E109	6	N-PL	Si	L2p		Pt(both sides)-300mW;VCBO-60V;IC-50mA;hFE1/2-90 min.
81#	D12E126	6	N-PL	Si	L2p		hFE1/2-60 min, 1.0 max;VBE(1-2)-15mV max;Pc-500mW both.
82#	FM1100*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)-2.0mVmax;IG(1-2)10nA max;Yfs 1-2 1.0 max.
83#	FM1101*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max; VGS(1-2)5.0mVmax;IG(1-2)10nA max;Yfs 1/2 1.0 max.
84#	FM1102*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0 max.
85#	FM1103*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0 max.
86#	FM1104*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0 max.
87#	FM1105*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)2.0mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
88#	FM1106*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)5.0mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0 max.
89#	FM1107*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0 max.
90#	FM1108*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2) 10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0 max.
91#	FM1109*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0 max;VGS(1-2)25mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0 max.
92#	FM1110*	6	N	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2) 10mVmax;IG(1-2)50nAmax;Yfs 1/2 1.0max.
93#	FM1111*	6	N	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)50mVmax;IG(1-2)50nAmax Yfs 1/2 1.0 max.
94#	FM1200*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)2.0mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
95#	FM1201*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)5.0mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
96#	FM1202*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
97#	FM1203*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
98#	FM1204*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)25mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
99#	FM1205*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2) 20mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
100#	FM1206*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)5.0mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
101#	FM1207*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
102#	FM1208*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
103#	FM1209*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)25mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
104#	FM1210*	6	N	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)50nAmax;Yfs 1/2 1.0max.
105#	FM1211*	6	N	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)50mVmax;IG(1-2)50nAmax;Yfs 1/2 1.0max.
106#	FM3954*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)5.0mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
107#	FM3954A*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)5.0mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
108#	FM3955*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)10mVmax;IG(1-2)10nAmax;Yfs 1/2 1.0max.
109#	FM3955A*	6	N∅	Si	L74		Pd 500mW;IDSS 1/2 1.0max;VGS(1-2)5.0mVmax;IG(1-2)10nA



# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	LEAD	DESCRIPTION
					Y200 s/a TO200 Ser.		
1	FM3957*	6	NØ	Si	L74		Pd 500mW; IDSS 1/2 1.0max; VGS(1-2)20mVmax; IG(1-2)10nAmax; Yfs 1/2 1.0max.
2	FM3958*	6	NØ	Si	L74		Pd 500mW; IDSS 1/2 1.0max; VGS(1-2) 25mVmax; IG(1-2)nAmax; Yfs 1/2 1.0max.
3	FT2974	6	N-DPL	Si	L2j		Pt-3W ea; IC-30mA; hFE1/2-1 max; VBE(1-2)-2 max; hFE-60 min; VCB0-45V.
4	FT2978	6	N-DPL	Si	L2j		Pt-3W ea; IC-30mA; hFE1/2-1 max; VBE(1-2)-2mV; hFE-60 min; VCB0-60V.
5	FT4020	6	P-DPE	Si	L17e		BVCEO-45V; 20% hFE match; Cob-6.0pf; VBE(1-2)-5.0mV; ICBO-10nA max
6	FT4021	6	P-DPE	Si	L17e		BVCEO-60V; 20% hFE match; Cob-6.0pf; VBE(1-2)-5.0mV; ICBO-10nA max.
7	FT4022	6	P-DPE	Si	L17e		BVCEO-60V; 20% hFE match; Cob-6.0pf; VBE(1-2)-5.0mV; ICBO-10nA max.
8	FT4023	6	P-DPE	Si	L17e		BVCEO-45V; 10% hFE match; Cob-6.0pf; VBE(1-2)-3.0mV; ICBO-10nA max.
9	FT4024	6	P-DPE	Si	L17e		BVCEO-60V; 10% hFE match; Cob-6.0pf; VBE(1-2)-3.0mV; ICBO-10nA max.
10	FT4025	6	P-DPE	Si	L17e		BVCEO-60V; 10% hFE match; Cob-6.0pf; VBE(1-2)-3.0mV; ICBO-10nA max.
11	HSC3921*	6	N-E#	Si	L21e		VGS(1-2) 5.0mV max; IDSS1/2 1.0; yfs1/2 1.0.
12	HSC3954*	6	N-E#	Si	L21e		VGS(1-2) 5.0mV max; IDSS1/2 1.0; yfs1/2 1.0.
13	LDA400MP	6	N	Si	u34	P	Matched Pair LDA400 Pt-360mW; hFE 1/2-90 min; VBE 1/2-10mV max; ΔVBE 1-2/ΔTA-10uV/°C max
14	LDA401MP*	6	N	Si	u34	P	Matched Pair LDA 401 Pt-360mW; hFE1/2-90min; VBE1/2-10mVmax; ΔVBE1-2/ΔTA-10uV/°C max.
15	MD708A*	6	N-AN	Si	L66a		Pt-400mW(both sides); hFE1/2-90 min; VBE1/2-5.0mV max; ton-16ns max.
16	MD708AF*	6	N-AN	Si	T089		Pt-350mW(both sides); hFE1/2-8 min; VBE1/2-10mV max; ton-16ns max.
17	MD708B*	6	N-AN	Si	L66a		Pt-400mW(both sides); hFE1/2-90 min; VBE1/2-5.0mV max; ton-16ns max.
18	MD708BF*	6	N-AN	Si	T089		Pt-350mW(both sides); hFE1/2-8 min; VBE1/2-10mV max; ton-16ns max.
19	MD918A*	6	N-EA	Si	L66a		Pt-400mW(both sides); hFE1/2-90 min; VBE1/2-5.0mV max; VCEO-15V.
20	MD918AF*	6	N-EA	Si	T089		Pd(both sides)-350mW; VCEO-15V; hFE1/2-90 min; VBE1-2-5.0mV max.
21	MD918B*	6	N-EA	Si	L66a		Pt-400mW(both sides); hFE1/2-80 min; VBE1/2-10mV max; VCEO-15V.
22	MD918BF*	6	N-EA	Si	T089		Pd(both sides)-350mW; VCEO-15V; hFE1/2-80 min; VBE1-2-10mV max.
23	MD981	6	N-E	Si	L2d		Pt(both sides)-600mW; VCB0-60V; IC-500mA; hFE-35 min.
24	MD981F	6	N-E	Si	L2f		Pt(both sides)-350mW; VCB0-60V; IC-500mA; hFE-35 min.
25	MD982	6	P-E	Si	L17c		Pt(both sides)-600mW; VCB0-60V; IC-500mA; hFE-35 min.
26	MD982F	6	P-E	Si	L17d		Pt(both sides)-350mW; VCB0-60V; IC-500mA; hFE-35 min.
27	MD984	6	P-E	Si	L17v		Pt(both sides)-600mW; VCB0 40V; IC-200mA; hFE-25 min.
28	MD984F	6	P-E	Si	T089		Pt(both sides)-350mW; VCB0 40V; IC-200mA; hFE-25 min.
29	MD990	6	P-E	Si	L17c		Pt(both sides)-600mW; VCB0-50V; IC-600mA; hFE-50 min.
30	MD1120	6	N	Si	L2w		hFE-30/120 at IC-100uA; VBE1-2 max-10mV at IC-100uA.
31	MD1120F	6	N	Si	X22		hFE-30/120 at IC-100uA; VBE1-2 max-10mV at IC-100uA.
32	MD1121	6	N	Si	L2w		hFE-30/120 at IC-100uA; VBE1-2 max-10mV at IC-100uA.
33	MD1121F	6	N	Si	X22		hFE-30/120 at IC-100uA; VBE1-2 max-10mV at IC-100uA.
34	MD1122	6	N	Si	L2w		hFE-30/120 at IC-100uA; VBE1-2 max-10mV at IC-100uA.
35	MD1122F	6	N	Si	X22		hFE-30/120 at IC-100uA; VBE1-2 max-10mV at IC-100uA.
36	MD1126	6	N-E	Si	L2d		Pt(both sides)-400mW; VCB0-40V; IC-200mA; hFE-30 min.
37	MD1127	6	N-E	Si	L2d		Pt(both sides)-400mW; VCB0-40V; IC-200mA; hFE-30 min.
38	MD11281	6	N-PE	Si	L2d		Pt(both sides)-400mW; VCB0-40V; hFE-25 min at IC-10mA and VCE-1V.
39	MD1129	6	N	Si	L2w		hFE-100/300 at IC-100uA; VBE1/2-5.0mV max. at IC-100uA.
40	MD1129F	6	N	Si	X22		hFE-100/300 at IC-100uA; VBE1/2-5.0mV max. at IC-100uA.
41	MD1130	6	P	Si	L2w		hFE-100/300 at IC-100uA; VBE1/2-5.0mV max. at IC-100uA.
42	MD1130F	6	P	Si	X22		hFE-100/300 at IC-100uA; VBE1/2-5.0mV max. at IC-100uA.
43	MD1131	6	N-E	Si	L2d		VCB0-30V; VCEO-15V; IC-50mA max; ft-600Mc min; hFE-50 min at IC-1mA.
44	MD1131F	6	N-E	Si	L2f		VCB0-30V; VCEO-15V; IC-50mA max; ft-600Mc min; hFE-50 min at IC-1mA.
45	MD1132	6	N-E	Si	L2w		hFE-50 min. at IC-1.0mA; VBE1-2-5.0mV max. at IC-1.0mA.
46	MD1132F	6	N-E	Si	X22		hFE-50 min. at IC-1.0mA; VBE1-2-5.0mV max. at IC-1.0mA.
47	MD1134	6	N-E	Si	R131b		Pt-600mW(both sides); VCB0 40V; hFE 50 min. at IC 10mA and VCE 1.0V.
48	MD2369A*	6	N-AN	Si	L66a		Pt-600mW(both sides); hFE1/2-90 min; VBE1/2-5.0mV max; ton-15ns max.
49	MD2369AF*	6	N-AN	Si	T089		Pt-350mW(both sides); hFE1/2-90 min; VBE1/2-5mV max; ton-15ns max.
50	MD2369B*	6	N-AN	Si	L66a		Pt-600mW(both sides); hFE1/2-80 min; VBE1/2-10mV max; ton-15ns max.
51	MD2369BF*	6	N-AN	Si	T089		Pt-350mW(both sides); hFE1/2-80 min; VBE1/2-10mV max; ton-15ns max.
52#	MD2974	6	N-PLØ	Si	R148a		Pd 250mW(both sides); hFE1/2-90 min; VBE(1-2) 5.0mV max; ΔVBE(1-2) 800uV max.
53#	MD2975	6	N-PLØ	Si	R148a		Pd 250mW(both sides); hFE1/2-90 min; VBE(1-2) 5.0mV max; ΔVBE(1-2) 800uV max.
54#	MD2978*	6	N-PLØ	Si	R148a		Pd 250mW(both sides); hFE1/2-90 min; VBE(1-2) 5.0mV max; ΔVBE(1-2) 800uV max.
55#	MD2979*	6	N-PLØ	Si	R148a		Pd 250mW(both sides); hFE1/2-90 min; VBE(1-2) 5.0mV max; ΔVBE(1-2) 800uV max.
56	MD3250	6	P-AN	Si	L17c		Pt(both sides)-600mW; VCB0-50V; IC-50mA; hFE1/2-90min.
57	MD3250A	6	P-AN	Si	L17c		Pt(both sides)-600mW; VCB0-50V; IC-50mA; hFE1/2-90 min; VBE(1-2)-5mVmax
58	MD3250AF	6	P-AN	Si	L17d		Pt(both sides)-350mW; VCB0-50V; IC-50mA; hFE1/2-90min; VBE(1-2)-5mVmax
59	MD3250F	6	P-AN	Si	L17d		Pt(both sides)-350mW; VCB0-50V; IC-50mA; hFE1/2-90min.
60	MD3251	6	P-AN	Si	L17c		Pt(both sides)-600mW; VCB0-50V; IC-50mA; hFE1/2-90min.
61	MD3251A	6	P-AN	Si	L17c		Pt(both sides)-600mW; VCB0-50V; IC-50mA; hFE1/2-90min; VBE(1-2)-5mVmax
62	MD3251AF	6	P-AN	Si	L17d		Pt(both sides)-350mW; VCB0-50V; IC-50mA; hFE1/2-90min; VBE(1-2)-5mVmax
63	MD3251F	6	P-AN	Si	L17d		Pt(both sides)-350mW; VCB0-50V; IC-50mA; hFE1/2-90min.
64	MD5000*	6	P-EA	Si	L66b		Pd(both sides)-400mW; VCEO-15V; hFE1/2-70 min; VBE(1-2)-5.0mV max.
65	MD5000A*	6	P-EA	Si	L66b		Pd(both sides)-400mW; VCEO-15V; hFE1/2-90 min; VBE(1-2)-5.0mV max.
66	MD5000B*	6	P-EA	Si	L66b		Pd(both sides)-400mW; VCEO-15V; hFE1/2-80 min; VBE(1-2)-10mV max.
67	MD8001	6	N-EA	Si	L2v		Pt-600mW; VBE1/2-15mV; IB1/2-1.0uA max; VCEO-40V max.
68	MD8002*	6	N-EA	Si	L2v		Pt-600mW; VBE1/2-15mV; IB1/2-1.0uA max; VCEO-50V max.
69	MD8003*	6	N-EA	Si	L2v		Pt-600mW; VBE1/2-15mV; IB1/2-1.0uA max; VCEO-60V max.
70	ME501Z	6	N-PE	Si	L2v		BVCEO-10V; VBEBO-3.0V; ICBO-10nA max at VCB-10V; hFE-60min/IC-100uA.
71	ME502	6	N-PE	Si	L2		Pair of 2N1893, Darlington Amplifier, hFE-750 min. at IC-10mA.
72	ME504	6	N-PE	Si	L2		VCB0-30V; VBEBO-3.0V; ICBO-10nA max; VCB-15V; hFE-100 min/IC-100uA.
73	MEM551*	6	P	Si	L54		Pt-112mW; Yfs 1/2-80 min; Gfs(1-2) 200mV max; VGST-6.0V max.
74	MEM551C*	6	P	Si	L54		Pt 85mW; Yfs 1/2-80 min; Gfs(1-2) 200mV max; VGST 6.0V max.
75	MMF1	6	N	Si	X74	DH	Yfs 1/2-98 min; VGS(1-2)-5mV max; ΔVGS(1-2)/ΔT-10uV/deg.C.
76	MMF2	6	N	Si	X74	DH	Yfs 1/2-95 min; VGS(1-2)-5mV max; ΔVGS(1-2)/ΔT-10uV/deg.C.
77	MMF3	6	N	Si	X74	DH	Yfs 1/2-98 min; VGS(1-2)-5mV max; ΔVGS(1-2)/ΔT-25uV/deg.C.
78	MMF4	6	N	Si	X74	DH	Yfs 1/2-95 min; VGS(1-2)-5mV max; ΔVGS(1-2)/ΔT-25uV/deg.C.
79	MMF5	6	N	Si	X74	DH	Yfs 1/2-98 min; VGS(1-2)-5mV max; ΔVGS(1-2)/ΔT-50uV/deg.C.
80	MMF6	6	N	Si	X74	DH	Yfs 1/2-95 min; VGS(1-2)-5mV max; ΔVGS(1-2)/ΔT-50uV/deg.C.
81	MQ3799A*	6	P-EAØ	Si	L56c		Pt-50W; hFE1/2-90 min; VBE1/2-3mV max; ΔVBE(1-2)/ΔT-10uV/deg.C max.
82#	MT102B*	6	P-MOS	Si	L54a		ΔThreshold Voltage-200mV max; ΔrDS-600 max; Δgm-35uA/V typ.
83#	MTD2974	6	N-DPLØ	Si	u82		Pt 140mW(both sides); hFE1/2 900m min; VBE(1-2) 3.0mV max; ΔVBE(1-2)/ΔT 10uV/°C.
84#	MTD2975	6	N-DPLØ	Si	u82		Pt 140mW(both sides); hFE1/2 900m min; VBE(1-2) 3.0mV max; ΔVBE(1-2)/ΔT 10uV/°C.
85#	MTD2978	6	N-DPLØ	Si	u82		Pt 140mW(both sides); hFE1/2 900m min; VBE(1-2) 3.0mV max; ΔVBE(1-2)/ΔT 10uV/°C.
86#	MTD2979	6	N-DPLØ	Si	u82		Pt 140mW(both sides); hFE1/2 900m min; VBE(1-2) 3.0mV max; ΔVBE(1-2)/ΔT 10uV/°C.
87#	NF550*	6	N	Si	L74		IDSS1/2 .97 typ; VGS1/2 5.0mV typ; VGS 800uV typ at VDS 15V, ID 2.0mA.
88	NS7200	6	P-PL	Si	L8a		Pt-600mW; VBE1/2-3.0mV max; hFE1/2-1.0 max; ft-60Mc.
89	NS7201	6	P-PL	Si	L8a		Pt-600mW; VBE1/2-5.0mV max; hFE1/2-1.0 max; ft-60Mc.
90	NS7300	6	N-PL	Si	L2b		BVCB0-40V; Pt-600mW; hFE-100 min; VBE(1-2)-10mV; hFE1/2-90-1.0
91	NS7301	6	N-PL	Si	L2b		BVCB0-40V; Pt-600mW; hFE-100 min; VBE(1-2)-10mV; hFE1/2-80-1.0
92	NS7302	6	N-PL	Si	L2b		BVCB0-40V; Pt-600mW; hFE-100 min; VBE(1-2)-10mV; hFE1/2-50-1.0
93	NS7303	6	N-PL	Si	L2j		BVCB0-40V; Pt-400mW; hFE-100 min; VBE(1-2)-10mV; hFE1/2-90-1.0
94	NS7304	6	N-PL	Si	L2j		BVCB0-40V; Pt-400mW; hFE-100 min; VBE(1-2)-10mV; hFE1/2-80-1.0
95	NS7305	6	N-PL	Si	L2j		BVCB0-40V; Pt-400mW; hFE-100 min; VBE(1-2)-10mV; hFE1/2-50-1.0
96	QD100-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 15% max; VBE(1-2) 5.0mV max; IB(1-2) 25nA max.
97	QD100-78*	6	P-E	Si	L2d		Pt 750mW(both sides); hFE1/2 15% max; VBE(1-2) 5.0mV max; IB(1-2) 25nA max.
98	QD101-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1-2) 5.0nA max.
99	QD101-78*	6	P-E	Si	L2d		Pt 750mW(both sides); hFE1/2 10% max; VBE(1-2) 3.0mV max; IB(1-2) 10nA max.
100	QD102-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1-2) 5.0nA max.
101	QD102-78*	6	P-E	Si	L2d		Pt 750mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1-2) 5.0nA max.
102	QD103-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1-2) 5.0nA max.
103	QD103-78*	6	P-E	Si	L2d		Pt 750mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1-2) 5.0nA max.
104	QD104-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1-2) 5.0nA max.
105	QD104-78*	6	P-E	Si	L2d		Pt 750mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1-2) 5.0nA max.
106	QD400-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 15% max; VBE(1-2) 5.0mV max; IB(1-2) 5.0nA max.
107	QD400-78*	6	P-E	Si	L2d		Pt 750mW(both sides); hFE1/2 15% max; VBE(1-2) 5.0mV max; IB(1-2) 5.0nA max.
108	QD401-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 10% max; VBE(1-2) 3.0mV max; IB(1-2) 2.0nA max.
109	QD401-78*	6	P-E	Si	L2d		Pt 750mW(both sides); hFE1/2 10% max; VBE(1-2) 3.0mV max; IB(1-2) 2.0nA max.
110	QD402-71*	6	P-E	Si	L2p		Pt 500mW(both sides); hFE1/2 10% max; VBE(1-2) 1.5mV max; IB(1

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	DWG #	L E O A D E	DESCRIPTION
				Y200 s/a TO200 Ser.		
1	QD402-78*	6	PE	Si	L2d	Pt 750mW(both sides);hFE1/2 10% max;VBE(1-2) 1.5mV max;IB(1-2) 2.0nA max.
2	QD403-71*	6	PE	Si	L2p	Pt 500mW(both sides);hFE1/2 10% max;VBE(1-2) 1.5mV max;IB(1-2) 2.0nA max.
3	QD403-78*	6	PE	Si	L2d	Pt 750mW(both sides);hFE1/2 10% max;VBE(1-2) 1.5mV max;IB(1-2) 2.0nA max.
4	QD404-71*	6	PE	Si	L2p	Pt 500mW(both sides);hFE1/2 10% max;VBE(1-2) 1.5mV max;IB(1-2) 2.0nA max.
5	QD404-78*	6	PE	Si	L2d	Pt 750mW(both sides);hFE1/2 10% max;VBE(1-2) 1.5mV max;IB(1-2) 2.0nA max.
6	SA2253*	6	N	Si	L8a	BVCBO-40V;gm1/hFE1/hFE2-7/1.0;VBE1-VBE2-20mV at IC:100uA
7	SA2738*	6	N	Si	L2t	Pt-6W;hFE1/2-90 min;VBE(1-2)-1.5mV max;ΔVBE(1-2)/ΔT-3uV/deg.C
8	SA2739*	6	N	Si	L2t	Pt-6W;hFE1/2-90 min;VBE(1-2)-2.5mV max;ΔVBE(1-2)/ΔT-5uV/deg.C
9	SD5010*	6	P-MOS	Si	L53	Pt 325mW(each side) at 25°C Case temp;Yfs 1/2 800m min;VGS(1-2) 70mV
10	SD5011*	6	P-MOS	Si	L54	Pt 325mW(each side) at 25°C Case temp;Yfs 1/2 800m min;VGS(1-2) 70mV
11	SD5012*	6	P-MOS	Si	L53	Pt 325mW(each side) at 25°C Case temp;Yfs 1/2 800m min;VGS(1-2) 70mV
12	SD5013*	6	P-MOS	Si	L54	Pt 325mW(each side) at 25°C Case temp;Yfs 1/2 800m min;VGS(1-2) 70mV
13	SD5014*	6	P-MOS	Si	L53	Pt-325mW(each side) at 25°C case temp;Yfs 1/2 80min;VGS 1/2-200mV max.
14	SD5015*	6	P-MOS	Si	L54	Pt-325mW(each side) at 25°C case temp;Yfs 1/2 80min;VGS 1/2-200mV max.
15	SD5050*	6	N-MOS	Si	L53	Pt-325mW(each side) at 25°C case temp;Yfs 1/2 80min;VGS 1/2-200mV max.
16	SD5051*	6	N-MOS	Si	L54	Pt-325mW(each side) at 25°C case temp;Yfs 1/2 80min;VGS 1/2-200mV max.
17#	SFT918	6	N-PL	Si	L2b	Pt-300mW each;ft-600 MHz min;hFE-50 min
18#	SFT918A	6	N-PL	Si	L2b	Pt-300mW each;ft-600 MHz min;hFE 1/2-90 min;VBE (1-2)-5.0mV max.
19#	SFT918B	6	N-PL	Si	L2b	Pt-300mW each;ft-600 MHz min;hFE 1/2-80 min;VBE (1-2)-10mV max.
20#	SL301A*	6	N	Si	L44a	BVCBO-35V;BVCEO-16V;IC-50mA;hFE(1-2)-900m;VCE-600mV;ΔVBE(1-2)-3.0mV
21#	SL301AE*	6	N	Si	L44b	BVCBO-35V;BVCEO-16V;IC-50mA;hFE(1-2)-900m;VCE-600mV;ΔVBE(1-2)-3.0mV
22#	SL301B*	6	N	Si	L44a	BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-500m;VCE-1.0V;ΔVBE(1-2)-12mV
23#	SL301BE*	6	N	Si	L44b	BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-500m;VCE-1.0V;ΔVBE(1-2)-12mV
24#	SL301C*	6	N	Si	L44a	BVCBO-25V;BVCEO-10V;IC-50mA;VCE-600mV
25#	SL301CE*	6	N	Si	L44b	BVCBO-25V;BVCEO-10V;IC-50mA;VCE-600mV
26#	SL301E*	6	N	Si	L44a	BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-800m;VCE-600mV;ΔVBE(1-2)-5.0mV
27#	SL301EE*	6	N	Si	L44b	BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-800m;VCE-600mV;ΔVBE(1-2)-5.0mV
28#	SL303AE*	6	N	Si		BVCBO-35V;BVCEO-16V;IC-50mA;hFE(1-2)-900m;VCE-600mV;ΔVBE(1-2)-3.0mV
29#	SL303AT*	6	N	Si		BVCBO-35V;BVCEO-16V;IC-50mA;hFE(1-2)-900m;VCE-600mV;ΔVBE(1-2)-3.0mV
30#	SL303BE*	6	N	Si		BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-500m;VCE-1.0V;ΔVBE(1-2)-12mV
31#	SL303BT*	6	N	Si	L43a	BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-500m;VCE-1.0V;ΔVBE(1-2)-12mV
32#	SL354BE*	6	N	Si	L67	BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-500m;VCE-1.0V;ΔVBE(1-2)-12mV
33#	SL354BF*	6	N	Si	L67	BVCBO-30V;BVCEO-12V;IC-50mA;hFE(1-2)-500m;VCE-1.0V;ΔVBE(1-2)-12mV
34	SMT100	6	P	Si	L17a	BVCEO-45V;IC-30mA max;Pt-60W;VBE(1-2)-20mV;Cob-6 Opf
35	SMT101	6	P	Si	L17a	BVCEO-45V;IC-30mA max;Pt-60W;VBE(1-2)-20mV;Cob-6 Opf
36	SMT102	6	P	Si	L17a	BVCEO-45V;IC-30mA max;Pt-60W;VBE(1-2)-10mV;hFE1/hFE2-80 min
37	SMT103	6	P	Si	L17a	BVCEO-45V;IC-30mA max;Pt-60W;VBE(1-2)-10mV;hFE1/hFE2-80 min
38	SMT104	6	P	Si	L17a	BVCEO-45V;IC-30mA max;Pt-60W;VBE(1-2)-5.0mV;hFE1/hFE2-90 min
39	SMT105	6	P	Si	L17a	BVCEO-45V;IC-30mA max;Pt-60W;VBE(1-2)-5.0mV;hFE1/hFE2-90 min
40	SP2080F	6	N	Si	T089	Pt-350mW(both sides);hFE 1/2-90min;VBE(1-2)-5.0mV max;ΔVBE(1-2)/ΔT-10uV/°C
41	SP2223AF	6	N	Si	T089	Pt-350mW(both sides);hFE 1/2-80min;VBE(1-2)-15mV max;ΔVBE(1-2)/ΔT-25mV/°C
42	SP2920F	6	N	Si	T089	Pt-350mW(both sides);hFE 1/2-90min;VBE(1-2)-5.0mV;ΔVBE(1-2)-800uV
43	SPT0801	6	N-DPL	Si	T089	hFE1/hFE2-0.8minΔ VBE1-VBE2-1.6mV max;NF-4.0db max
44	SP10810	6	P-DPE	Si	T089	hFE1/hFE2-0.8minΔ VBE1-VBE2-4.0mV max;hFE-35min at 10mA;1.0V
45	SU2074*	6	N	Si	L21	Pt-300mW;gm1/2-.95 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-10uV/deg.C
46	SU2075*	6	N	Si	L21	Pt-300mW;gm1/2-.95 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-15uV/deg.C
47	SU2076*	6	N	Si	L21	Pt-250mW;gm1/2-.95 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-10uV/deg.C
48	SU2077*	6	N	Si	L21	Pt-250mW;gm1/2-.95 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-25uV/deg.C
49	SU2078*	6	N	Si	L21	Pt-250mW;gm1/2-.95 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-35uV/deg.C
50	SU2079*	6	N	Si	L21	Pt-250mW;gm1/2-.95 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-60uV/deg.C
51	SU2080*	6	N	Si	L21	Pt-250mW;gm1/2-.90 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-35uV/deg.C
52	SU2081*	6	N	Si	L21	Pt-250mW;gm1/2-.90 min;VGS(1-2)-15mV max;ΔVGS(1-2)/ΔT-60uV/deg.C
53	SU2098*	6	N	Si	L21	Pt-3W;gm1/2-.95 min;VGS(1-2)-5mV;ΔVGS(1-2)/ΔT-10uV/deg.C max
54	SU2098A*	6	N	Si	L21	Pt 300mW;gm1/2 .95 min;VGS(1-2)5.0mV;ΔVGS(1-2)/ΔT 10uV/°C max.
55	SU2098B*	6	N	Si	L21	Pt 300mW;gm1/2 .95 min;VGS(1-2)5.0mV;ΔVGS(1-2)/ΔT 25uV/°C max
56	SU2099*	6	N	Si	L21	Pt-3W;gm1/2-.95 min;VGS(1-2)-5mV;ΔVGS(1-2)/ΔT-25uV/deg.C max.
57	SU2099A*	6	N	Si	L21	Pt 300mW;gm1/2 .95 min;VGS(1-2)5.0mV;ΔVGS(1-2)/ΔT 5.0uV/°C max.
58	TD100*	6	N-PL	Si	L2u	Pt-40W;hFE1/2-90 min;VBE(1-2)-5mV max;ΔVBE(1-2)/ΔT-20uV/deg.C max
59	TD101*	6	N-PL	Si	L2u	Pt-40W;hFE1/2-90 min;VBE(1-2)-10mV max;ΔVBE(1-2)/ΔT-30uV/deg.C max
60	TD200*	6	N-PL	Si	L2z	Pt 400mW;hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 20uV/°C max.
61	TD201*	6	N-PL	Si	L2z	Pt 400mW;hFE1/2 .90 min;VBE(1-2) 10mV max;ΔVBE(1-2)/ΔT 20uV/°C max
62	TD250*	6	N-PL	Si	L2z	Pt 400mW;hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 1.5mV max.
63	TD400*	6	P-PL	Si	L17m	Pt-400mW;hFE1/2-90min;VBE1/2-5.0mV max;ΔVBE(1-2)/ΔT-20uV/deg.C
64	TD401*	6	P-PL	Si	L17m	Pt-400mW;hFE1/2-90min;VBE1/2-10mV max;ΔVBE(1-2)/ΔT-30uV/deg.C
65	TD500*	6	P-PL	Si	L17w	Pt 400mW;hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 20uV/°C max.
66	TD501*	6	P-PL	Si	L17w	Pt 400mW;hFE1/2 .90 min;VBE(1-2) 10mV max;ΔVBE(1-2)/ΔT 30uV/°C max.
67	TD550*	6	P-PL	Si	L17w	Pt 400mW;hFE1/2 .90 min;VBE(1-2) 5.0mV max;ΔVBE(1-2)/ΔT 1.5uV/°C max.
68	TIS25	6	N-PE	Si	L21a	FET;BVGSS-50V;IDSS-8.0mA max;Yfs match 5.0%;Yfs-1500umhos min.
69	TIS26	6	N-PE	Si	L21a	FET;BVGSS-50V;IDSS-8.0mA max;Yfs match 10%;Yfs-1500umhos min.
70	TIS27	6	N-PE	Si	L21a	FET;BVGSS-50V;IDSS-8.0mA max;Yfs match 20%;Yfs-1500umhos min
71	TIS68*	6	N-PE	Si	T092	Pt-360mW;Yfs1/2-.95 min;VGS(1-2)-5.0mV max;IGSS1/2-10nA max.
72	TIS69*	6	N-PE	Si	T092	Pt-360mW;Yfs1/2-.90 min;VGS(1-2)-10mV max;IGSS1/2-10nA max.
73	TIS70*	6	N-PE	Si	T092	Pt-360mW;Yfs1/2-.80 min;VGS(1-2)-15mV max;IGSS1/2-10nA max
74#	U231*	6	N	Si	L61	IG(1-2) 10nA max;VGS(1-2) 5.0mV max;ΔVGS(1-2)/ΔT 10uV/°C
75#	U232*	6	N	Si	L61	IG(1-2) 10nA max;VGS(1-2) 10mV max;ΔVGS(1-2)/ΔT 25uV/°C
76#	U233*	6	N	Si	L61	IG(1-2) 10nA max;VGS(1-2) 15mV max;ΔVGS(1-2)/ΔT 50uV/°C
77#	U234*	6	N	Si	L61	IG(1-2) 10nA max;VGS(1-2) 20mV max;ΔVGS(1-2)/ΔT 75uV/°C
78#	U235*	6	N	Si	L61	IG(1-2) 10nA max;VGS(1-2) 25mV max;ΔVGS(1-2)/ΔT 100uV/°C
79#	U257*	6	N	Si	L54b	IDSS1/2 1.0 max;gfs1/2 1.0 max;goss(1-2) 20umho max;VGS(1-2) 100mV max.
80	UCX2910*	6	N-Δ	Si	L2d	Pt-75W;hFE1/2-90 min;VBE(1-2)-1mV;tr-20ns;tf-20ns.
81	UPA15	6	N-PE	Si	L5	Pc-.6W max;hFE1/hFE2-8 min;hFE-40 min at 1mA;VBE1/VBE2-10W max.
82#	ZDT11	6	N-PL	Si	L2h	ΔVEC-100uV max; VEC-2.0mV
83#	ZDT20	6	N-PL	Si	L2h	hFE1/hFE2-1.0 max; VBE1-VBE2-20mV max.
84#	ZDT21	6	N-PL	Si	L2h	hFE1/hFE2-1.0 max; VBE1-VBE2-5.0mV max.
85#	ZDT40	6	N-PL	Si	L2d	PL-500mW(both sides);Pair of ZT 82.
86#	ZDT41	6	N-PL	Si	L2d	PL-500mW(both sides);Pair of ZT 84.
87#	ZDT42	6	N-PL	Si	L2d	PL-500mW(both sides);VBE(1-2)-5mV max;hFE1/hFE2-1.0 max.
88#	ZDT44	6	N-PL	Si	L2d	PL-500mW(both sides);VBE(1-2)-10mV max;hFE1/hFE2-1.0 max.
89#	ZDT45	6	N-PL	Si	L2d	PL-500mW(both sides);VBE(1-2)-10mV max;hFE1/hFE2-1.0 max.
90	1N4378	7	N	Si	X69	Pd-50mW;ID-25nA max;IL-1mA min;tr-2usec max;VCE-30V;VEC-6V
91	1N5722	7	N-PLΔ	Si	X83d	50mW;IL 3.0mAmax;ID25nAmax;tr 2.5us max; tf 25us max.
92	1N5723	7	N-PLΔ	Si	X83d	Pt 50mW;IL 5.0mAmax;ID25nAmax; tr 2.5us max; tf 25us max.
93	1N5724	7	N-PLΔ	Si	X83d	Pt 50mW;IL8.0mAmax;ID25nAmax; tr 2.5us max; tf 25us max.
94	1N5725	7	N-PLΔ	Si	X83d	Pt 50mW;IL7.0mAmin;ID25nAmax;tr 2.5us max; tf 25us max.
95	2N469	7	P-A	Ge	X42	BVCBO-6.0V;hFE-50;hie-3.0kΩ;ICBO-15uA;Sens-11uA/FC;Cob-30pf.
96	2N469A	7	P	Ge	X42	Sensitivity 149uA per foot candle;Pt 50mW;BVCBO 20V min;ICBO 8.0uA.
97	2N986	7	N	Si	X8	Pc-.50W max; BVCBO-100V; Photo-Sens-3.1uA/fc max.
98	JAN2N986	7	N	Si	X8	Pc-500mW;BVCBO-100Vmax; Photo Sens-3.0uA/fc;Idark-.01uAmax.
99	2N2452	7	N	Si	X8	Pc-.50W max; BVCBO-100V; Photo-Sens-10.3uA/fc max.
100	2N5777	7	NΔ	Si	T092	B Darlingtion;IL 250mA max;Pt 200mW;ID 100nA max;tr 250uS max;tf 150uS max
101	2N5778	7	NΔ	Si	T092	B Darlingtion;IL 250mA max;Pt 200mW;ID 100nA max;tr 250uS max;tf 150uS max
102	2N5779	7	NΔ	Si	T092	B Darlingtion;IL 250mA max;Pt 200mW;ID 100nA max;tr 250uS max;tf 150uS max
103	2N5780	7	NΔ	Si	T092	B Darlingtion;IL 250mA max;Pt 200mW;ID 100nA max;tr 250uS max;tf 150uS max
104#	BP101	7	N-PE	Si	X8e	A∅ Pt-300mW;Ic-80uA min BVCEO 25V;VBEBO 5.0V;Sens-1.0 lum max;VCE-25V.
105#	BPX25	7	N-PLΔ	Si	X8h	A∅ Pt 300mW;BVCEO 32V;BVCEO 32V;Spectral Response 800nm;tr 1.8us;tf 1.8us.
106#	BPX29	7	N-PE	Si	X29	A∅ Pt-30W;ICE(L)-1.0mA;ICE(D)-1.0uA max;Sens-130uA/mW/cm. sq.
107#	BPX30	7	NΔ	Si	X8	A∅ Pt-500mW;ICE(D)-1.0uA max;Sens-100mA/mW/cm2;tr-3.0usec;tf-3.0usec
108#	BPX38	7	N-PE	Si	X29c	A∅ Pt-500mW;Ic-1.0mA min VCE(SAT) 300mV;Sens-1.0 lum max;VCE-25V.
109#	BPX43	7	N-PE	Si	X8a	A∅ Pt-300mW;Ic-5.0mA min;Sens-1.0 lum max;VCE-25V
110#	BPX81	7	N-PE	Si		A∅ Pt 50mW;B 1000 Lux at IC 600uA to 2.5mA.

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	Y200 s/a TO200 Ser.	L E O A D E	DESCRIPTION
1▼	#BPX82	7	N-PE	Si				2 Photo trans;Pt 50mW;B 1000 Lux at IC 600uA to 2.5mA
2▼	#BPX83	7	N-PE	Si				3 photo trans;Pt 50mW;B 1000 Lux at IC 600uA to 2.5mA.
3▼	#BPX86	7	N-PE	Si				6 photo trans;Pt 50mW;B 1000 Lux at IC 600uA to 2.5mA
4▼	#BPX89	7	N-PE	Si				9 photo trans;Pt 50mW;B 1000 Lux at IC 600uA to 2.5mA
5#	BPY60	7	N-DPL	Si	X8c		A∅	Pt-87W;Sens-250uA/mW/sq.cm;tr light-1.0usec max;tf light-10usec max
6#	BPY61/I	7	N-PL	Si	X69			Pt-50mW;IC-50mA at B-1000lux;Spectral Sensitivity-1.0uM max.
7#	BPY61/II	7	N-PL	Si	X69			Pt-50mW;IC-1.5mA at B-1000lux;Spectral Sensitivity-1.0uM max.
8#	BPY61/III	7	N-PL	Si	X69			Pt-50mW;IC-3.0mA at B-1000lux;Spectral Sensitivity-1.0uM max
9#	BPY62/I	7	NPE	Si	X8a		A5	Pt-20W;IC-1.0mAmin.atB-1000lux;Sens-1.0uM;VCE-15V.
10#	BPY62/II	7	NPE	Si	X8a		A5	Pt-20W;IC-2.0mAmin.atB-1000lux;Sens-1.0uM;VCE-15V
11#	BPY62/III	7	NPE	Si	X8a		A5	Pt-20W;IC-4.0mAmin atB-1000lux;Sens-1.0uM;VCE-15V
12#	BPY65	7	N-DPL	Si	X8		A∅	Pt-5W;Sens-250uA/mW/cm;tr light-1.0usec max;tf light-10usec max.
13#	BPY76	7	NΔT	Si	u75			Pt-100mW;ICE(D)-100nA max;Sens-300uA/mW/cm2;tr-3.0usec;tf-3.0usec
14▼	CLT2010	7	N-PEΔ	Si	X8g		A	Pd 250mW;BVBCBO 80V;BVCEO 50V;IL 600mA max;ID 25nA max;tr 3.0u typ;tf 3.0u typ
15▼	CLT2020	7	N-PEΔ	Si	X8g		A	Pd 250mW;BVBCBO 60V;BVCEO 30V;IL 1.2mA max;ID 25nA max;tr 3.0u typ;tf 3.0u typ
16▼	CLT2030	7	N-PEΔ	Si	X8g		A	Pd 250mW;BVBCBO 40V;BVCEO 15V;IL 3.0mA max;ID 25nA max;tr 3.0u typ;tf 3.0u typ
17#	E1P	7	P	Ge				Idark-10uA, Ilight-10mA; Sens-.30uA/lumen
18#	FF102*	7	N-EΔ	Si	R150		DH	IG(light)7.5nA/FCmin; ID(light)15uA/FC; tr 30ns, tf 50ns.
19	FF108*	7	N-EΔ	Si	R150a		DH	IG(light)3.0nAmin; ID(light)15uA/FC; tr 30ns; tf 30ns
20	FF409*	7	N-EΔ	Si	R135a		DB	IG(light) 12nA/FC; ID(light)144uA/FC; tr 25ns; tf 40ns
21	FF411*	7	N-EΔ	Si	R135b		DB	IG(light)2.5nAmin; ID(light)144uA/FC; tr 25ns; tf 25ns.
22	FF600*	7	N-EΔ	Si	R150		DH	IG (light) 75nA/FC min, ID(light) 800uA/FC; tr 30ns, tf 50ns
23	FF617*	7	N-EΔ	Si	R150a		DH	IG(light)12.5nAmin; ID(light)800uA/FC; tr 30ns, tf 50ns
24#	GPT	7	P	Ge				Idark-2.0mA max; Ilight-50mA; Sens-.30uA/lm.
25▼	GS101	7	N-PLΔ	Si	X83			Pd 50mW;IL 1.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 3.5us;tf 20us.
26▼	GS103	7	N-PLΔ	Si	X83			Pd 50mW;IL 5.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 3.5us;tf 20us.
27▼	GS161	7	N-PLΔ	Si	u54			Pd 50mW;IL 1.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 2.0us;tf 8.0us.
28▼	GS163	7	N-PLΔ	Si	u54			Pd 50mW;IL 5.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 800ns;tf 6.0us
29▼	GS165	7	N-PLΔ	Si	u54			Pd 50mW;IL 10.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 1.2us;tf 6.0us
30▼	GS167	7	N-PLΔ	Si	u54			Pd 50mW;IL 20mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 700ns;tf 7.0us.
31▼	GS201	7	N-PLΔ	Si	X98a			Pd 50mW;IL 1.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 3.5us;tf 20us
32▼	GS203	7	N-PLΔ	Si	X98a			Pd 50mW;IL 5.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 3.5us;tf 20us.
33▼	GS261	7	N-PLΔ	Si	X97a			Pd 50mW;IL 1.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 2.0us;tf 8.0us
34▼	GS263	7	N-PLΔ	Si	X97a			Pd 50mW;IL 5.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 800ns;tf 6.0us.
35▼	GS265	7	N-PLΔ	Si	X97a			Pd 50mW;IL 10.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 1.2us;tf 6.0us
36▼	GS267	7	N-PLΔ	Si	X97a			Pd 50mW;IL 20mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 700ns;tf 7.0us.
37	GS300	7	N-PLΔ	Si	X90a			Pt-50mW;IL-1.0mA min;ID-1.0nA;VCE (SAT) -30V;tr-7.0us max;tf-40us max
38	GS302	7	N-PLΔ	Si	X90a			Pt-50mW;IL-10mA min;ID-1.0nA;VCE (SAT) -30V;tr-7.0us max;tf-40us max
39	GS370	7	N-PLΔ	Si	X90a			Pt-50mW;IL-1.0mA min;ID-20nA;VCE (SAT) -30V;tr-7.0us max;tf-40us max.
40	GS372	7	N-PLΔ	Si	X90a			Pt-50mW;IL-10mA min;ID-20nA;VCE (SAT) -30V;tr-7.0us max;tf-40us max.
41	GS400	7	N-PLΔ	Si	X90			Pt-50mW;IL-10mA min;ID-1.0nA;VCE (SAT) -30V;tr-5.0us max;tf-15us max.
42	GS403	7	N-PLΔ	Si	X90			Pt-50mW;IL-50mA min;ID-1.0nA;VCE (SAT) -30V;tr-8.0us max;tf-12us max.
43	GS420	7	N-PLΔ	Si	X90			Pt-50mW;IL-1.0mA min;ID-1.0nA;VCE (SAT) -30V;tr-2.0us max;tf-12us max.
44	GS422	7	N-PLΔ	Si	X90			Pt-50mW;IL-5.0mA min;ID-1.0nA;VCE (SAT) -30V;tr-3.0us max;tf-8.0us max
45	GS423	7	N-PLΔ	Si	X90			Pt-50mW;IL-10mA min;ID-1.0nA;VCE (SAT) -30V;tr-1.5us max;tf-12us max.
46	GS470	7	N-PLΔ	Si	X90			Pt-50mW;IL-1.0mA min;ID-20nA;VCE (SAT) -30V;tr-3.0us max;tf-12us max
47▼	GS501	7	N-PLΔ	Si	X97b			Pd 50mW;IL 1.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 3.5us;tf 20us.
48▼	GS503	7	N-PLΔ	Si	X98b			Pd 50mW;IL 5.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 3.5us;tf 20us
49▼	GS561	7	N-PLΔ	Si	X97b			Pd 50mW;IL 1.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 2.0us;tf 8.0us
50▼	GS563	7	N-PLΔ	Si	X97b			Pd 50mW;IL 5.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 800ns;tf 6.0us
51▼	GS565	7	N-PLΔ	Si	X97b			Pd 50mW;IL 10.1mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 1.2us;tf 6.0us
52▼	GS567	7	N-PLΔ	Si	X97b			Pd 50mW;IL 20mA max;ID 1.0nA;BVCEO 50V min;BVCEO 12V min;tr 700ns;tf 7.0us
53	GS600	7	N-PLΔ	Si	X29d		A	Pt 400mW;IL 20mA min;ID 5.0nA;VCE(SAT) 300mV;tr 3.0us;tf 20us
54	GS603	7	N-PLΔ	Si	X29d		A	Pt 400mW;IL 5.0mA min;ID 5.0nA;VCE(SAT) 300mV;tr 3.0us;tf 20us.
55	GS606	7	N-PLΔ	Si	X29d		A	Pt 400mW;IL 30mA min;ID 5.0nA;VCE(SAT) 300mV;tr 3.0us;tf 20us
56	GS609	7	N-PLΔ	Si	X29d		A	Pt 400mW;IL 50mA min;ID 5.0nA;VCE(SAT) 300mV;tr 3.0us;tf 20us.
57	GS610	7	N-PLΔ	Si	X29			Pt-150mW;IL-1.0mA min;ID-1.0nA;VCE (SAT) -30V;tr-2.0us max;tf-30us max.
58	GS612	7	N-PLΔ	Si	X29			Pt-150mW;IL-10mA min;ID-1.0nA;VCE (SAT) -30V;tr-1.5us max;tf-40us max
59	GS670	7	N-PLΔ	Si	X29			Pt-150mW;IL-1.0mA min;ID-20nA;VCE (SAT) -30V;tr-2.0us max;tf-30us max
60	GS680	7	N-PLΔ	Si	X29d		A	Pt 400mW;IL 20mA min;ID 5.0nA;VCE(SAT) 300mV;tr 3.0us;tf 20us.
61	GS683	7	N-PLΔ	Si	X29d		A	Pt 400mW;IL 5.0mA min;ID 5.0nA;VCE(SAT) 300mV;tr 3.0us;tf 20us
62	GS686	7	N-PLΔ	Si	X29d		A	Pt 400mW;IL 30mA min;ID 5.0nA;VCE(SAT) 300mV;tr 3.0us;tf 20us
63▼	HEP312s	7	P	Si	U52			BVCEO 30V;BVCEO 5.0V;Pd 100mW;ICEO 1.0uA;SRCEO 100mA.
64	L14A502	7	N-PL	Si	X9			Pt-300mW max;BVBCBO-45V;BVCEO-45V;BVCEO-5.0;IL-50mA max;ID-10nA max
65▼	L14E1	7	N-PLΔ	Si	TO92		D	Pt 200mW;BVBCBO 50V;BVCEO 50V;IL 300uA max;ID 100nA max;ton 6.0us max;toff 6.0us max
66▼	L14E2	7	N-PLΔ	Si	TO92		D	Pt 200mW;BVBCBO 50V;BVCEO 50V;IL 700uA max;ID 100nA max;ton 15us max;toff 10us max
67▼	L14E3	7	N-PLΔ	Si	TO92		D	Pt 200mW;BVBCBO 50V;BVCEO 50V;IL 1.0uA max;ID 100nA max;ton 20us max;toff 15us max
68▼	L14E4	7	N-PLΔ	Si	TO92		D	Pt 200mW;BVBCBO 50V;BVCEO 50V;BVCEO 5.0V;IL 50uA min;ID 100nA max
69	LS400	7	N-PLΔ	Si	X69			Pt-50mW;IL-3.0mA typ;ID-25nA max;tr-1.5us;tf-15us typ BVCEO-50V;BVCEO-6.0V
70	LS500	7	N-PLΔ	Si	X83c			Pt-50mW;IL-1.0mA typ;ID-25nA max;tr-1.5us;tf-15us typ BVCEO-50V;BVCEO-7.0V
71#	MEL11	7	NΔ	Si	L3g			Pt 360mW;IL 2.0mA;ID 100nA max;tr 100us;td 60us;ts 500ns;tf 75us.
72#	MEL12	7	NΔ	Si	L3g			Pt 360mW;IL 3.0mA;ID 100nA max;tr 100us;td 60us;ts 500ns;tf 75us.
73#	MEL31	7	N	Si	R110		A	Pt 360mW;BVBCBO 40V;I light 10uA;I dark 50nA
74#	MEL32	7	N	Si	R110		A	Pt 360mW;BVBCBO 60V;I light 30uA;I dark 50nA.
75▼	MRD14B	7	NΔT	Si	TO92		B	Darlington;Pd 200mW;BVBCBO 18V;IL 2.0mA;Sens. .80um;tr 250us max;tf 150us max.
76	MRD100*	7	NANΔ	Si	u43			Pd-50mW;BVBCBO-80V;BVCEO-40V;ICEO(dark)-100nAmax;Sens Rad CEO-100nA/mW/sq.cm
77	MRD150*	7	NANΔ	Si	u43			Pd-50mW;BVBCBO-80V;BVCEO-40V;ICEO(dark)-100nAmax;Sens Rad CEO-100nA/mW/sq.cm
78	MRD200	7	N-AN	Si	X83			Pt-.05W;ICEO(dark)-25nA;BVCEO-50V;Sens-2.0uA/lum/ft.sq. min.
79	MRD210	7	N	Si	X83a			BVCEO-50V;ICEO-25nA at 25deg C;SICE-.4uA/lum/ft-2min;LS-.8um typ
80	MRD250	7	N	Si	X83a			BVCEO-50V;ICEO-25nA at 25deg C;SICE-.8uA/lum/ft-2min;LS-.8um typ.
81	MRD300	7	N-AN	Si	X8d		A	Pt-.25W;ICEO(dark)-25nA;BVCEO-50V;Sens-4.0uA/lum/ft.sq. min.
82	MRD310	7	N	Si	X83a			BVCEO-50V;ICEO-25nA at 25deg C;SICE-1uA/lum/ft-2min;LS-.8um typ.
83	MRD450*	7	NANΔ	Si	u52			Pd 100mW;BVCEO-40V;ICEO(dark)-100nA max;Sens Rad CEO-100nA/mW/sq.cm
84	MRD600	7	N	Si	X83b			Detector;SRCE-40uA/mW/cm 2 min;IL-800uA min;Pd-50mW;VCEO-50V.
85▼	MRD810	7	NANΔ	Si	R152		C	Pd 250mW;BVCEO 35V;BVCEO 5.0V;Sens 200 A/mW/cm2;tr 5.0us max;tf 6.0us.
86▼	MRD3050	7	N-ANΔ	Si	X8f		A∅	Pd 400mW;BVCEO 30V;BVCEO 5.0V;Rad.Sens. 20uA/mW/cm2;tr 2.0us;tf 3.5us
87▼	MRD3051	7	N-ANΔ	Si	X8f		A∅	Pd 400mW;BVCEO 30V;BVCEO 5.0V;Rad.Sens. 40uA/mW/cm2;tr 2.0us;tf 3.5us.
88▼	MRD3052	7	N-ANΔ	Si	X8f		A∅	Pd 400mW;BVCEO 30V;BVCEO 5.0V;Rad.Sens. 20uA/mW/cm2;tr 2.0us;tf 3.5us.
89▼	MRD3053	7	N-ANΔ	Si	X8f		A∅	Pd 400mW;BVCEO 30V;BVCEO 5.0V;Rad.Sens. 50uA/mW/cm2;tr 2.0us;tf 3.5us.
90▼	MRD3054	7	N-ANΔ	Si	X8f		A∅	Pd 400mW;BVCEO 30V;BVCEO 5.0V;Rad.Sens. 125uA/mW/cm2;tr 2.0us;tf 3.5us.
91▼	MRD3055	7	N-ANΔ	Si	X8f		A∅	Pd 400mW;BVCEO 30V;BVCEO 5.0V;Rad.Sens. 300uA/mW/cm2;tr 2.0us;tf 3.5us.
92▼	MRD3056	7	N-ANΔ	Si	X8f		A∅	Pd 400mW;BVCEO 30V;BVCEO 5.0V;Rad.Sens. 400uA/mW/cm2;tr 2.0us;tf 3.5us.
93	OCF70	7	P	Ge	R9			Pt-25mW;BVCEO-7.5V;IC-20mA; Sens-10uA/fc
94	OCF71	7	P	Ge	R9			Pt-50mW; BVCEO-25V; IC-20mA; Sens-30A/lm
95#	OS14	7	P-A	Ge	X6			VCE-20V max;IC-50mA max;Pt-.15W;ID-250uA;IL-2.5mA at 500 Lux
96#	OS18	7	N-D	Si	X6			VCE-30V max;IC-20mA max;Pt-.40W;ID-.20uA;IL-50uA at 500 Lux.
97#	P20	7	N-PL	Si	X6			Pt-.87Wmax;BVBCBO-80Vmin;BVCEO-7Vmin;Sens-20uA/mW/cm min
98#	P21	7	N-PL	Si	X8			Pt-.50Wmax;BVBCBO-80Vmin;BVCEO-7Vmin;Sens-20uA/mW/cm min.
99	P102*	7	P-D∅	Si	X8			IGSS(dk)-10nA max;Sin-.40uA/mW/cm2 min;tr/td-10/1.5usec typ.
100	P236	7	N	Si	X88		DH	Pt-300mW;Sens-3uA/mW/cm.sq.;lg(DARK)-30pA;IGSS(DARK)-25nA;Vp-2V.
101	P237	7	N	Si	X88		DH	Pt-300mW;Sens-3uA/mW/cm.sq.;lg(DARK)-30pA;IGSS(DARK)-25nA;Vp-3V.
102	P238	7	N	Si	X88		DH	Pt-300mW;Sens-3uA/mW/cm.sq.;lg(DARK)-30pA;IGSS(DARK)-25nA;Vp-5V.
103#	PH241N*	7	N-PEΔ	Si	X8f		DB∅	Pd 300mW; IGSS(light)15nA/FC;ID(light)40uA/FC.
104#	PH242N*	7	N-PEΔ					

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG # Y200 s/a TO200 Ser.	L E A D E	DESCRIPTION
1	TIL63	7	N-PLA	Si	X99		ID 25nA max;IL 400uA min;VCEO 50V;VECO 7.0V;Pd 50mW;tr 1.5us;tf 1.5us.
2	TIL64	7	N-PLA	Si	X99		ID 25nA max;IL 400uA min;VCEO 50V;VECO 7.0V;Pd 50mW;tr 1.5us;tf 1.5us.
3	TIL65	7	N-PLA	Si	X99		ID 25nA max;IL 1.0mA min;VCEO 50V;VECO 7.0V;Pd 50mW;tr 1.5us;tf 1.5us.
4	TIL66	7	N-PLA	Si	X99		ID 25nA max;IL 2.5mA min;VCEO 50V;VECO 7.0V;Pd 50mW;tr 1.5us;tf 1.5us.
5	TIL67	7	N-PLA	Si	X99		ID 25nA max;IL 6.0mA min;VCEO 50V;VECO 7.0V;Pd 50mW;tr 1.5us;tf 1.5us.
6	TIL601	7	N-PLA	Si	X83c		Pt-50mW;IL-3.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
7	TIL602	7	N-PLA	Si	X83c		Pt-50mW;IL-5.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
8	TIL603	7	N-PLA	Si	X83c		Pt-50mW;IL-8.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
9	TIL604	7	N-PLA	Si	X83c		Pt-50mW;IL-7.0mA min;ID-25nA max;tr-1.5uS;tf-15uS BVCEO-50V;BVECO 7.0V.
10	TIL605	7	N-PLA	Si	u54a		Pt-50mW;IL-3.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
11	TIL606	7	N-PLA	Si	u54a		Pt-50mW;IL-5.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
12	TIL607	7	N-PLA	Si	u54a		Pt-50mW;IL-8.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
13	TIL608	7	N-PLA	Si	u54a		Pt-50mW;IL-7.0mA min;ID-25nA max;tr-1.5uS;tf-15uS BVCEO-50V;BVECO 7.0V.
14	TIL609	7	N-PLA	Si	X97		Pt-50mW;IL-3.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
15	TIL610	7	N-PLA	Si	X97		Pt-50mW;IL-5.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
16	TIL611	7	N-PLA	Si	X97		Pt-50mW;IL-8.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
17	TIL612	7	N-PLA	Si	X97		Pt-50mW;IL-7.0mA min;ID-25nA max;tr-1.5uS;tf-15uS BVCEO-50V;BVECO 7.0V.
18	TIL613	7	N-PLA	Si	X98		Pt-50mW;IL-3.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
19	TIL614	7	N-PLA	Si	X98		Pt-50mW;IL-5.0mA max;ID-25nA max;tr-1.5uS;tf-15uS;BVCEO-50V;BVECO 7.0V.
20	TIL615	7	N-PLA	Si	X98		Pt-50mW;IL-8.0mA max;ID-25nA max;tr-1.5uS;tf-15uS BVCEO-50V;BVECO 7.0V.
21	TIL616	7	N-PLA	Si	X98		Pt-50mW;IL-7.0mA min;ID-25nA max;tr-1.5uS;tf-15uS BVCEO-50V;BVECO 7.0V.
22	TSP3	7	P-E	Si	X8b	A	Pt. 20W;ID-100mA max;Spectral Sensitivity-.75uM max.
23#	ZM100	7	N-PE	Si	X29a		Pd 300mW;IL 1.0mA/Lum/sq.ft;ID 1.0uA;ton 40uSec;toff 100uSec.
24#	ZM110	7	N	Si	X8d	A	Pd 500mW;IC(DK)1.0uA;IL 180uA/lum/sq.ft;Max.tr.tff 2.8uSec;Pk Spectral Response .80um
25	2N489	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-6.8k ohms max;IV-8.0mA min;Ip-20uA max.
26	2N489A	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-6.8k ohms max;IV-8.0mA min;Ip-15uA max.
27	JAN2N489A	9	P	Si	R33	CA	Pt. 60W;VB2E-60V;RBB-6.8kΩ max;n-.62 max;Ip-12uA max.
28	2N489B	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-6.8kohms max;IV-8.0mA min;Ip-6.0uA max.
29	2N490	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-9.1kohms max;IV-8.0mA min;Ip-20uA max.
30	2N490A	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-9.1kohms max;IV-8.0mA min;Ip-15uA max.
31	JAN2N490A	9	P	Si	R33	CA	Pt. 60W;VB2E-60V;RBB-9.1kΩ max;n-.62 max;Ip-12uA max.
32	2N490B	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-9.1kohms max;IV-8.0mA min;Ip-6.0uA max.
33	2N490C	9	P	Si	R33	CC	Pt. 45W;RBB 9.1kohms;n .51 min;VEB(sat) 4.0V max.
34	2N491	9	P	Si	R33		Pt. 45W;n-.68 max;RBB-6.8kohms max;IV-8.0mA min;Ip-20uA max.
35	2N491A	9	P	Si	R33		Pt. 45W;n-.68 max;RBB-6.8kohms max;IV-8.0mA min;Ip-15uA max.
36	JAN2N491A	9	P	Si	R33	CA	Pt. 60W;VB2E-60V;RBB-6.8kΩ max;n-.68 max;Ip-12uA max.
37	2N491B	9	P	Si	R33		Pt. 45W;n-.68 max;RBB-6.8kohms max;IV-8.0mA min;Ip-6.0uA max.
38	2N492	9	P	Si	R33		Pt. 45W;n-.68 max;RBB-9.1kohms max;IV-8.0mA min;Ip-20uA max.
39	2N492A	9	P	Si	R33		Pt. 45W;n-.68 max;RBB-9.1kohms max;IV-8.0mA min;Ip-15uA max.
40	JAN2N492A	9	P	Si	R33	CA	Pt. 60W;VB2E-60V;RBB-9.1kΩ max;n-.68 max;Ip-12uA max.
41	2N492B	9	P	Si	R33		Pt. 45W;n-.68 max;RBB-9.1kohms max;IV-8.0mA min;Ip-6.0uA max.
42	2N492C	9	P	Si	R33	CC	Pt. 45W;RBB 9.1kohms;n .56 min;VEB(sat) 4.3V max.
43	2N493	9	P	Si	R33		Pt. 45W;n-.75 max;RBB-6.8kohms max;IV-8.0mA min;Ip-20uA max.
44	2N493A	9	P	Si	R33		Pt. 45W;n-.75 max;RBB-6.8kohms max;IV-8.0mA min;Ip-15uA max.
45	JAN2N493A	9	P	Si	R33	CA	Pt. 60W;VB2E-60V;RBB-6.8kΩ max;n-.75 max;Ip-12uA max.
46	2N493B	9	P	Si	R33		Pt. 45W;n-.75 max;RBB-6.8kohms max;IV-8.0mA min;Ip-6.0uA max.
47	2N494	9	P	Si	R33		Pt. 45W;n-.75 max;RBB-9.1kohms max;IV-8.0mA min;Ip-20uA max.
48	2N494A	9	P	Si	R33		Pt. 45W;n-.75 max;RBB-9.1kohms max;IV-8.0mA min;Ip-15uA max.
49	JAN2N494A	9	P	Si	R33	CA	Pt. 60W;VB2E-60V;RBB-9.1kΩ max;n-.75 max;Ip-12uA max.
50	2N494B	9	P	Si	R33		Pt. 45W;n-.75 max;RBB-9.1kohms max;IV-8.0mA min;Ip-6.0uA max.
51	2N494C	9	P	Si	R33	CC	Pt. 45W;RBB 9.1kohms;n .62 min;VEB .1 4.6V max.
52	2N1671	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-9.1kohms max;IV-8.0mA min;Ip-25uA max.
53	2N1671A	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-9.1kohms max;IV-8.0mA min;Ip-25uA max.
54	2N1671B	9	P	Si	R33		Pt. 45W;n-.62 max;RBB-9.1kohms max;IV-8.0mA min;Ip-6.0uA max.
55	2N1671C	9	P	Si	R33	CC	Pt. 450mW;VB2E 30V;VB2B1 35V;RBB 4.7 to 9.1kΩ;n .47 to .62;IB2(mod) 6.8 to 22mA.
56	2N2166	9	P	Si	R33	CC	Pt. 45W;VB2B1 35V max;Ie 70mA;n .80 max;IP 25uA max.
57	2N2417	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .62 max;Ip 12uA max;IB2(MOD) 22mA max.
58	2N2417A	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .62 max;VEB1(SAT) 5.0V max;IV 8.0mA min.
59	JAN2N2417A	9	P	Si	T072	CA	Pt. 35W;VB2E-60V;RBB-6.8kΩ max;n-.62 max;Ip-12uA max.
60	2N2417B	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .62 max;Ip 6.0uA max;VOB1 3.0V min.
61	2N2418	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .62 max;Ip 12uA max;IB2(MOD) 22mA max.
62	2N2418A	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .62 max;VEB1(SAT) 5.0V max;IV 8.0mA min.
63	JAN2N2418A	9	P	Si	T072	CA	Pt. 35W;VB2E-60V;RBB-9.1kΩ max;n-.62 max;Ip-12uA max.
64	2N2418B	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .62 max;Ip 6.0uA max;VOB1 3.0V min.
65	2N2419	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .68 max;Ip 12uA max;IB2(MOD) 22mA max.
66	2N2419A	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .68 max;VEB1(SAT) 5.0V max;IV 8.0mA min.
67	JAN2N2419A	9	P	Si	T072	CA	Pt. 35W;VB2E-60V;RBB-6.8kΩ max;n-.68 max;Ip-12uA max.
68	2N2419B	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .68 max;Ip 6.0uA max;VOB1 3.0V min.
69	2N2420	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .68 max;Ip 12uA max;IB2(MOD) 22mA max.
70	2N2420A	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .68 max;VEB1(SAT) 5.0V max;IV 8.0mA min.
71	JAN2N2420A	9	P	Si	T072	CA	Pt. 35W;VB2E-60V;RBB-9.1kΩ max;n-.68 max;Ip-12uA max.
72	2N2420B	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .68 max;Ip 6.0uA max;VOB1 3.0V min.
73	2N2421	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .75 max;Ip 12uA max;IB2(MOD) 22mA max.
74	2N2421A	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .75 max;VEB1(SAT) 5.0V max;IV 8.0mA min.
75	JAN2N2421A	9	P	Si	T072	CA	Pt. 35W;VB2E-60V;RBB-6.8kΩ max;n-.75 max;Ip-12uA max.
76	2N2421B	9	P	Si	R149	CC	Pt. 300mW;RBB 6.8kΩ max;n .75 max;Ip 6.0uA max;VOB1 3.0V min.
77	2N2422	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .75 max;Ip 12uA max;IB2(MOD) 22mA max.
78	2N2422A	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .75 max;VEB1(SAT) 5.0V max;IV 8.0mA min.
79	JAN2N2422A	9	P	Si	T072	CA	Pt. 35W;VB2E-60V;RBB-9.1kΩ max;n-.75 max;Ip-12uA max.
80	2N2422B	9	P	Si	R149	CC	Pt. 300mW;RBB 9.1kΩ max;n .75 max;Ip 6.0uA max;VOB1 3.0V min.
81	2N2646	9	P	Si	T072	CC§	Pt. 30W;RBB 9.1kohms;Ip 5.0uA max;Iv 4.0mA min.
82	2N2647	9	P	Si	T072	CC§	Pt. 30W;n .82;RBB 9.1kohms;Ip 2.0uA max;Iv 8.0mA min.
83	2N2840	9	P	Si	T072	CA	Pt. 30W;VB2E 30V;VBB 35V;Ip 10uA max;Iv 70mA max.
84	2N3479	9	P	Si	R33	GF	Pc 40W;RBB 9.1kohms max;n .62 max;Iv 4.0mA min;Ip 20uA max.
85	2N3480	9	P	Si	R33	GF	Pc 40W;RBB 9.1kohms max;n .75 max;Iv 4.0mA min;Ip 20uA max.
86	2N3481	9	P	Si	R33	GF	Pc 40W;RBB 9.1kohms max;n .85 max;Iv 4.0mA min;Ip 20uA max.
87	2N3483	9	P	Si	R33	GF	Pc 40W;RBB 9.1kohms max;n .75 max;Iv 4.0mA min;Ip 5.0uA max.
88	2N3484	9	P	Si	R33	GF	Pc 40W;RBB 9.1kohms max;n .85 max;Iv 4.0mA min;Ip 5.0uA max.
89	2N3980	9	P	Si	T072	CA	Pt. 36W;IE 50mA;RBB 8.0kohms;n .82 max;Ip 2.0uA max;Iv 10mA max.
90	2N4851	9	P	Si	T072	CA	Pd 30W;RBB 9.1kohms max;n .75 max;Iv 2.0mA max;Ip 2.0uA max;IE(DC).
91	2N4852	9	P	Si	T072	CA	Pd 30W;RBB 9.1kohms max;n .85 max;Iv 4.0mA max;Ip 2.0uA max.
92	2N4853	9	P	Si	T072	CA	Pd 30W;RBB 9.1kohms max;n .85 max;Iv 6.0mA max;Ip 40uA max.
93	2N4870	9	P	Si	T092	CB	Pd 30W;VB2B1 35V max;Iv 2.0mA min;VOB1 3.0V min;n .75 max.
94	2N4871	9	P	Si	T092	CB	Pd 30W;VB2B1 35V max;Iv 4.0mA min;VOB1 5.0V min;n .85 max.
95	2N4891	9	P	Si	X55	CB	Pt-360mW max;rbb-9.1kohms max;n-.82 max;Ip-5.0uA max.
96	2N4892	9	P	Si	X55	CB	Pt-360mW max;rbb-9.1kohms max;n-.69 max;Ip-2.0uA max.
97	2N4893	9	P	Si	X55	CB	Pt-360mW max;rbb-12kohms max;n-.82 max;Ip-2.0uA max.
98	2N4894	9	P	Si	X55	CB	Pt-360mW max;rbb-12kohms max;n-.86 max;Ip-1.0uA max.
99	2N4947	9	P	Si	R33a	CC§	Pt. 36W;RBB 9.1kohms max;n .69 max;Ip 2.0uA max.
100	JAN2N4947	9	P	Si	R33a	CA	Pt-360mW;RBB 9.1kΩ max;n-.69 max;Ip-2.0uA max;VB2E-30V.
101	2N4948	9	P	Si	R33a	CC§	Pt. 36W;RBB 12kohms max;n .82 max;Ip 2.0uA max.
102	JAN2N4948	9	P	Si	R33a	CA	Pt-360mW;RBB 12kΩ max;n-.82 max;Ip-2.0uA max;VB2E-30V.
103	2N4949	9	P	Si	R33a	CC§	Pt. 36W;RBB 12kohms max;n .86 max;Ip 1.0uA max.
104	JAN2N4949	9	P	Si	R33a	CA	Pt-360mW;RBB 12kΩ max;n-.86 max;Ip-1.0uA max;VB2E-30V.
105	2N5431	9	P	Si	R141	CA	Pt. 30W;n .80 max;RBB 8.5kohms;Ip 4.0uA max;Iv 2.0mA min.
106	JAN2N5431	9	P	Si	R33a	CC	Pt 300m;Ie 50mA;RBB 8.5kΩ max;n .80 max;Iv 2.0mA min;Ip 400nA max.
107#	2SH11	9	N	Si	T05		Pc-450mW;N-.58/.75;VBB-4500ohms;Ie(DC)-50mA.
108#	2SH12	9	N	Si	T05		Pc-450mW;N-.47/.62;VBB-4500ohms;Ie(DC)-50mA.
109#	2SH13	9	P	Si	T05		Pt. 45W.
110#	2SH14	9	P	Si	T05		Pt. 45W.



# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	Y200 s/a TO200 Ser.	LEO A D E	DESCRIPTION
1#	Z5H20	9 N	SI	SI	T018		CB	Pt 200mW;n .90 max;RBB 4.0kohms min;IV 2.0mA min;IP 8.0uA min.
2#	Z5H22	9 N	SI	SI	T018		CB	Pt 200mW;n .85 max;RBB 4.0kohms min IV 4.0mA min;IP 4.0uA min.
3#	D5E37	9 N	SI	SI	R33a		CA	Pt .30W;RBB 12kohms max;lv 4.0mA min;n .85 max;lp 25uA max.
4	D5E43	9 P	SI	SI	R141		CA	Pt 300mW;lv 6.0mA min;n .82 max;lp 2.0uA;RBB0 9.1kΩ max.
5	D5E44	9 P	SI	SI	R141		CA	Pt 300mW;lv 4.0mA min;n .82 max;lp 5.0uA;RBB0 9.1kΩ max.
6	D5E45	9 P	SI	SI	R141		CA	Pt 300mW;lv 8.0mA min;n .82 max;lp 2.0uA;RBB0 9.1kΩ max.
7	D5K1	9 P-PL	SI	SI	R33a		CC	Pt .30W;RBB 8.2kohms max;lv 2.0mA typ;n .62 max.
8	D5K2	9 P-PL	SI	SI	R33a		CC	Pt .20W;RBB 15kohms max;lv 2.0mA typ;n .62 max.
9	D13T1	9 P-PL	SI	SI	T098		CC	Programmable;Pt-300mW;lv-5.0uAmax;lp-5.0uAmax;Vf-1.5Vmax.
10	DT3T2	9 P-PL	SI	SI	T098		CC	Programmable;Pt-300mW;lv-25uAmax;lp-1.0uAmax;Vf-1.5Vmax.
11▼	HEP310\$	9	SI	SI	T092		CB	le 50mA;RBB0 9.1kΩ;Pd 300mW;IEO at VBE of 30V is 1.0uA;lv 4.0mA at VBB
12▼	HEPS9001\$	9	SI	SI	T092		CE	IT 200mA;lg±20mA;VGKF 40V;VGKR 5.0V;VAK40V;Pd 375mW;Adjustable.
13#	MEU21	9 PA	SI	SI	R110c		CE	Pt 300mW;lp 2.0uA max;Vf 1.5V max;Vo 6.0V min;tr 80ns max.
14#	MEU22	9 PA	SI	SI	R110c		CE	Pt 300mW;lp 150nA;Vf 1.5V max;Vo 6.0V min;tr 80ns max.
15▼	MPU131	9 NT	SI	SI	T092		CE	Programmable;Pd 375mW;lp 1.2uA;lv 18uA;IT 200mA;tr 40ns.
16▼	MPU132	9 NT	SI	SI	T092		CE	Programmable;Pd 375mW;lp 190nA;lv 18uA;IT 200mA;tr 40ns.
17▼	MPU133	9 NT	SI	SI	T092		CE	Programmable;Pd 375mW;lp 80nA;lv 18uA;IT 200mA;tr 40ns.
18▼	MPU231	9 N	SI	SI	T018		CE	Programmable;Pd 250mW;lp 1.2uA;lv 18uA;IT 200mA;tr 40ns.
19▼	MPU232	9 N	SI	SI	T018		CE	Programmable;Pd 250mW;lp 190nA;lv 18uA;IT 200mA;tr 40ns.
20▼	MPU233	9 N	SI	SI	T018		CE	Programmable;Pd 250mW;lp 80nA;lv 18uA;IT 200mA;tr 40ns.
21	MU851	9 N-AN	SI	SI	u43		CB	Pd 200mW;VB2E 30V;VB2B1 28V;RBB 9.1kohms max;lp 2.0uA max.
22	MU852	9 N-AN	SI	SI	u43		CB	Pd 200mW;VB2E 30V;VB2B1 28V;RBB 9.1kohms max;lp 2.0uA max.
23	MU853	9 N-AN	SI	SI	u43		CB	Pd 200mW;VB2E 30V;VB2B1 28V;RBB 9.1kohms max;lp 400nA max.
24	MU4891	9 PANT	SI	SI	X20d		CB	Pt .30W;n .82 max;RBB 9.1kohms;lv 2.0mA;lp 5.0uA max;VEB1(sat)4V. max
25	MU4892	9 PANT	SI	SI	X20d		CB	Pt .30W;n .69 max;RBB 9.1kohms;lv 2.0mA;lp 2.0uA max;VEB1(sat)4V. max
26	MU4893	9 PANT	SI	SI	X20d		CB	Pt .30W;n .82 max;RBB 12kohms;lv 2.0mA;lp 2.0uA max;VEB1(sat)4V. max
27	MU4894	9 PANT	SI	SI	X20d		CB	Pt .30W;n .86 max;RBB 12kohms;lv 2.0mA;lp 1.0uA max;VEB1(sat)4V. max
28#	ST20	9 P	SI	SI	T072		CA	Pt 200mW;VB2E 20V;VBB 20V;IV 20mA max;fab 20MHz.
29#	ST50	9 P	SI	SI	T072		CA	Pt-500mW;VB2E-30V;VBB-20V;lv-50mA max;fab-200kHz.
30	2N941*	10 P-A	SI	SI	T018		A	Voff-1.0mV max; loff-1.0n Amps.
31	2N942*	10 P-A	SI	SI	T018		A	Voff-3.0mV max; loff-3.0n Amps.
32	2N943*	10 P-A	SI	SI	T018		A	Voff-2.0mV max; loff-1.0n Amps; fab-1.0Mc min.
33	2N944*	10 P-A	SI	SI	T018		A	Voff-3.0mV max; loff-1.5n Amps; fab-1.0Mc min.
34	2N945*	10 P-A	SI	SI	T018		A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
35	2N946*	10 P-A	SI	SI	T018		A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
36	2N1676*	10 P-A	SI	SI	T05		A	Voff-1.0mV max; VCE(sat)-10V at IC-5.0mA;ft-42Mc Typ.
37	2N1677*	10 P-A	SI	SI	T05		A	Voff-3.0mV max; VCE(sat)-10V at IC-5.0mA;ft-32Mc Typ
38	2N1917*	10 P-A	SI	SI	T05		A	Voff-1.0mV max; loff-1.0n Amps.
39	2N1918*	10 P-A	SI	SI	T05		A	Voff-3.0mV max; loff-3.0n Amps.
40	2N1919*	10 P-A	SI	SI	T05		A	Voff-2.0mV max; loff-1.0n Amps; fab-1.0Mc min.
41	2N1920*	10 P-A	SI	SI	T05		A	Voff-3.0mV max; loff-1.5n Amps; fab-1.0Mc min.
42	2N1921*	10 P-A	SI	SI	T05		A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
43	2N1922*	10 P-A	SI	SI	T05		A	Voff-4.0mV max; loff-2.0n Amps; fab-1.0Mc min.
44	2N2162*	10 P-PA	SI	SI	T05		A	Voff-2.0mV max; rS-20 ohms; ft-14Mc min.
45	2N2163*	10 P-PA	SI	SI	T05		A	Voff-2.0mV max; rS-20 ohms; ft-14Mc min.
46	2N2164*	10 P-PA	SI	SI	T05		A	Voff-1.5mV max; rS-20 ohms; ft-24Mc min.
47	2N2165*	10 P-PA	SI	SI	T05		A	Voff-3.0mV max; rS-20 ohms; ft-10Mc min.
48	2N2166*	10 P-PA	SI	SI	T05		A	Voff-3.0mV max; rS-30 ohms; ft-10Mc min.
49	2N2167*	10 P-PA	SI	SI	T05		A	Voff-2.5mV max; rS-20 ohms; ft-16Mc min.
50	2N2185*	10 P	SI	SI	T018		A	Voff-2.5mV max; ts-250ns max.
51	2N2186*	10 P	SI	SI	T018		A	Voff-2.5mV max; ΔVoff-50uV max; ts-250ns max.
52	2N2187*	10 P	SI	SI	T018		A	Voff-2.5mV max; ΔVoff-50uV max; ts-250ns max.
53	2N2274*	10 P	SI	SI	T018		A	Voff-3.5mV max; ts-250ns.
54	2N2275*	10 P	SI	SI	T018		A	Voff-3.5mV max; ΔVoff±100uV max; ts-250ns
55	2N2276*	10 P	SI	SI	T018		A	Voff-2.5mV max; ts-250ns.
56	2N2277*	10 P	SI	SI	T018		A	Voff-2.5mV max; ΔVoff±100uV max; ts-250ns.
57	2N2278*	10 P	SI	SI	T018		A	Voff-2.25mV max; ts-250ns.
58	2N2279*	10 P	SI	SI	T018		A	Voff-2.25mV max; ΔVo-50uV max; ts-250ns
59	2N2280*	10 P-E	SI	SI	T018		A	Voff-2.0mV max; ts-250ns; REC(sat)-18 ohms max.
60	2N2330*	10 N	SI	SI	T05		A	Voff-.75mV max;loff-1.0nA max;ft-100Mc min.
61	2N2331*	10 N	SI	SI	T018		A	Voff-.75mV max;loff-1.0nA;ft-100Mc min.
62	2N2356*	10 N*	SI	SI	L6		A	Voff-80uVmax;IEBO1or2-10nAmax;rs-40Ωmax;ΔIOFF-5nAmax.
63	2N2356A*	10 N	SI	SI	L6		A	Voff-50uV max; loff-2nA max; BVECO-7.0V. max.
64	2N2432*	10 N	SI	SI	T018		A	Pc-600mW at 25 deg.C Case;VEC(off)-50mV;Ccb-12pf;r(ON)-20 ohms
65	2N2432A*	10 N	SI	SI	T018		A	Pc-600mW at 25 deg.C Case;ICES-10nA;hFE(INV)-3.0;VEC(ofs)-70mV max.
66	2N2569*	10 N-PE	SI	SI	T018		A	Pc-300mW;Voff-50mV max;hFE-50 min;loff-2.0nA max
67	2N2570*	10 N-PE	SI	SI	T018		A	Pc-300mW;Voff-1.0mV max;hFE-50 min;loff-2.0nA max
68	2N2944A	10 P	SI	SI	T046		A	Pt-400mW;rec(on)-4.0ohms max;VEC(ofs)-30mV max
69	JAN2N2944A*	10 PA	SI	SI	T046		A	Voff-.30mV max;rec(on)-4.0Ω max;hFE(inv)-50 min;tr-100nsec
70	2N2945A	10 P	SI	SI	T046		A	Pt-400mW;rec(on)-6.0ohms max;VEC(ofs)-50mV max
71	JAN2N2945A*	10 PA	SI	SI	T046		A	Voff-.50mV max;rec(on)-6.0Ω max;hFE(inv)-30 min;tr-100nsec
72	2N2946A	10 P	SI	SI	T046		A	Pt-400mW;rec(on)-8.0Ω max;VEC(ofs)-80mV max.
73	JAN2N2946A*	10 PA	SI	SI	T046		A	Voff-.80mV max;rec(on)-8.0Ω max;hFE(inv)-20 min;tr-100nsec
74	2N3217*	10 P-E	SI	SI	T046		A	Voff-1.0mV max; Rsat-30 ohms max. at IE-10mA;IB-1.0mA max.
75	2N3218*	10 P-E	SI	SI	T046		A	Voff-2.0mV max; Rsat-50 ohms max. at IE-10mA;IB-1.0mA.
76	2N3219*	10 P-E	SI	SI	T046		A	Voff-3.0mV max. Rsat-60 ohms max. at IE-10mA;IB-1.0mA.
77	2N3317*	10 P	SI	SI	R98		A	Voff-1.75mV max. at IB-50mA;RS-20 ohms max. at IB-1mA;IE-10mA
78	2N3318*	10 P	SI	SI	R98		A	Voff-1.5mV max. at IB-50mA;RS-18 ohms max. at IB-1mA;IE-10mA
79	2N3319*	10 P	SI	SI	R98		A	Voff-1.5mV max. at IB-50mA;RS-18 ohms max. at IB-1mA;IE-10mA
80	2N3343*	10 PA	SI	SI	T05		A	Voff-1.2mV max;hFC-4 min;R(at)-35 ohms max;Toff-2.5usec max.
81	2N3344*	10 PA	SI	SI	T05		A	Voff-1.2mV max;hFC-1.5 min;R(sat)-20 ohms max;Toff-2.5usec max.
82	2N3345*	10 PA	SI	SI	T05		A	Voff-3.0mV max;hFC-1.2 min;R(sat)-25 ohms max;Toff-2.5usec max.
83	2N3346*	10 PA	SI	SI	T05		A	Voff-1.2mV max;hFC-1.5 min;R(sat)-20 ohms max;Toff-2.5usec max
84	2N3401*	10 P	SI	SI	T05		A	Voff-.01V max;hFE(inv)-1.85 min;R(sat)-50ohms.
85	2N3677	10 P	SI	SI	T046		A	Voff-1.0mV;RS-8.0 ohms max;/hFE/ at 1 Mc-5.0.
86	2N3840	10 P	SI	SI	T046		A	Pc-400mW;BVBCO-50V;BVCEO-50V;BVEBO-50V;hFE-50 min./IC-1.0mA
87	2N3841	10 P	SI	SI	T018		A	Pc-300mW;BVBCO-100V;BVCEO-100V;BVEBO-80V;hFE-20 min./IC-1.0mA
88	2N3842	10 P	SI	SI	T018		A	Pc-300mW;BVBCO-120V;BVCEO-120V;BVEBO-120V;hFE-20 min./IC-1.0mA
89	2N3910*	10 P	SI	SI	T046		A	Voff-1.2mV max;rd-40ohms max;VCE(sat)-30V max;hFE(inv)-5.0 min
90	2N3911*	10 P	SI	SI	T046		A	Voff-.90mV max;rd-25ohms max;VCE(sat)-30V max;hFE(inv)-10 min.
91	2N3912*	10 P	SI	SI	T046		A	Voff-.60mV max;rd-20ohms max;VCE(sat)-30V max;hFE(inv)-15 min.
92	2N3913*	10 P	SI	SI	T018		A	Voff-1.2mV max;rd-40 ohms max;VCE(sat)-3V max;hFE(inv)-5.0 min.
93	2N3914*	10 P	SI	SI	T018		A	Voff-.90mV max;rd-25 ohms max;VCE(sat)-3V max;hFE(inv)-10 min
94	2N3915*	10 P	SI	SI	T018		A	Voff-.60mV max;rd-20 ohms max;VCE(sat)-3V max;hFE(inv)-15 min.
95	2N3977*	10 P	SI	SI	T046		A	Voff-1.25mV max;rd-20 ohms max;VCE(sat)-10mV max.
96	2N3978*	10 P	SI	SI	T046		A	Voff-2.0mV max;rd-35 ohms max;VCE(sat)-15mV max.
97	2N3979*	10 P	SI	SI	T046		A	Voff-3.0mV max;rd-45 ohms max;VCE(sat)-15mV max.
98	2N4980*	10 PA	SI	SI	T046		A	Voff-1.2mV;rs(ON)-16 ohms max;hFE(INV) min-7;VECO-30V max
99	2N4981*	10 PA	SI	SI	T046		A	Voff-1.4mV;rs(ON)-18 ohms max;hFE(INV) min-6;VECO-50V max.
100	2N4982*	10 PA	SI	SI	T046		A	Voff-1.6mV;rs(ON)-20 ohms max;hFE(INV) min-5;VECO-70V max.
101	2N5066*	10 NA	SI	SI	T046		A	Pt-400mW;VCES-20V;Voff-1.0mV max;rs(ON)-8.0 ohms max.
102	2N5229*	10 P	SI	SI	T046		A	Voff-.50mV;hFE(inv)-15;r(on)-6.0 ohms;ccb-5.0pf.
103	2N5230*	10 P	SI	SI	T046		A	Voff-.50mV;hFE(inv)-15;r(on)-8.0 ohms;ccb-5.0pf
104	2N5231*	10 P	SI	SI	T046		A	Voff-.80mV;hFE(inv)-15;r(on)-10 ohms;ccb-5.0pf.
105	2S306*	10 P-A	SI	SI	T05		A	Pc-50mW;Voff-1.0mV;IEO-10nA max;rd-200 ohms max.
106	2S307*	10 P-A	SI	SI	T05		A	Pc-50mW;Voff-1.0mV;IEBX-10nA max;rd-20 ohms max.
107	2S326*	10 P-A	SI	SI	T05		A	Pc-50mW;Voff-1.0mV;IEO-10nA max;rd-200 ohms max.
108	2S327*	10 P-A	SI	SI	R51		A	Pc-50mW;Voff-1.0mV;IEBX-10nA max;rd-20 ohms max.
109	3N62	10 NA	SI	SI	T072		GD	Voff 200uV max;rs(on) 100Ω;BVE1E20 6V;IE1E20 005uA,ton 250ns.
110	3N63	10 NA	SI	SI	T072		GD	Voff 100uV max;rs(on) 100Ω;BVE1E20 6V;IE1E20 005uA,ton 250ns.

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG # Y200 s/a T0200 Ser.	LEO ADE	DESCRIPTION
1	3N64	10	NA	Si	T072	GD	Voff 50uV max;rs(on) 100Ω;BVE1E20 6V;IE1E20 .005uA;ton 250ns.
2	3N65	10	NA	Si	T072	GD	Voff 200uV max;rs(on) 100Ω;BVE1E20 10V;IE1E20 .005uA;ton 20ns.
3	3N66	10	NA	Si	T072	GD	Voff 100uV max;rs(on) 100Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
4	3N67	10	NA	Si	T072	GD	Voff 50uV max;rs(on) 100Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
5	3N68	10	NA	Si	T072	GD	Voff 200uV max;rs(on) 50Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
6	3N68A	10	NA	Si	T072	GD	BVE1E2S 10V min;Voff .20mV max;IE1E2S 5nA max;ton .25us;Toff .25us.
7	3N69	10	NA	Si	T072	GD	Voff 100uV max;rs(on) 50Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
8	3N70	10	NA	Si	T072	GD	Voff 50uV max;rs(on) 50Ω;BVE1E20 10V;IE1E20 .005uA;ton 250ns.
9	3N71*	10	N	Si	T072	GC	Voff 50uV max;hFE(inv)2.5 min;BVE1E2S 8V min;IE1E20 5nA max.
10	3N72*	10	N	Si	T072	GC	Voff 100uV max;hFE(inv) 2.5 min;BVE1E2S 8V min;IE1E20 5nA max.
11	3N73*	10	N	Si	T072	GC	Voff 200uV max;hFE(inv) 1.5 min;BVE1E2S 8V min;IE1E20 5nA max.
12	3N74*	10	NA	Si	T072	GC	Voff 50uV max;IE1E2S 2nA max;BVE1E2S 18V max;ΔVoff/ΔT 75uV/°C.
13	JAN3N74*	10	N	Si	T072	GC	VE1E2(ofs)-50uV max;re1e2(on)-10Ω min;Ce2b-5pf max.
14	3N75*	10	NA	Si	T072	GC	Voff 100uV max;IE1E2S 2nA max;BVE1E2S 18V max;ΔVoff/ΔT 125uV/°C.
15	JAN3N75*	10	N	Si	T072	GC	VE1E2(ofs)-100uV max;re1e2(on)-10Ω min;Ce2b-5pf max.
16	3N76*	10	NA	Si	T072	GC	Voff 200uV max;IE1E2S 2.0nA max;BVE1E2S 18V max;ΔVoff/ΔT 175uV/°C.
17	JAN3N76*	10	N	Si	T072	GC	VE1E2(ofs)-200uV max;re1e2(on)-10Ω min;Ce2b-5pf max.
18	3N77*	10	NA	Si	T072	GC	Voff 50uV max;IE1E2S 5.0nA max;BVE1E2S 12V max;ΔVoff/ΔT 75uV/°C.
19	3N78*	10	NA	Si	T072	GC	Voff 100uV max;IE1E2S 5.0nA max;BVE1E2S 12V max;ΔVoff/ΔT 125uV/°C.
20	3N79*	10	NA	Si	T072	GC	Voff 200uV max;IE1E2S 10nA max;BVE1E2S 12V max;ΔVoff/ΔT 175uV/°C.
21	3N87*	10	N	Si	T072	GC	Voff 50uV max;IE1E2S 20pA max;BVE1E2S 10V max;ΔVoff/ΔT 100uV/°C.
22	3N88*	10	N	Si	T072	GC	Voff 100uV max;IE1E2S 20pA max;BVE1E2S 10V max;ΔVoff/ΔT 100uV/°C.
23	3N90*	10	PA	Si	T072	GD	Voff 50uV max;BVE1E20 50V;IE1E20 1.0nA max;ΔVoff/ΔT 75uV/°C.
24	3N91*	10	PA	Si	T072	GD	Voff 100uV max;BVE1E20 50V;IE1E20 1.0nA max;ΔVoff/ΔT 125uV/°C.
25	3N92*	10	PA	Si	T072	GD	Voff 200uV max;BVE1E20 50V;IE1E20 1.0nA max;ΔVoff/ΔT 175uV/°C.
26	3N93*	10	P	Si	T072	GD	Voff 50uV max;BVE1E20 50V;IE1E20 1.9nA max;ΔVoff/ΔT 75uV/°C.
27	JAN3N93*	10	P	Si	T072	GD	Voff-50uV max;RE1E2-50Ω max;tr-20nsec max;ts-250nsec max.
28	3N94*	10	PA	Si	T072	GD	Voff 100uV max;BVE1E20 50V;IE1E20 1.0nA max;ΔVoff/ΔT 125uV/°C.
29	3N95*	10	PA	Si	T072	GD	Voff 200uV max;BVE1E20 50V;IE1E20 10nA max;ΔVoff/ΔT 175uV/°C.
30	3N100	10	PA	Si	T072	GC	Pt .30W;Voff 50uV max;IC 50mA;BVCEO 20V;rs 50Ω max.
31	3N101	10	PA	Si	T072	GC	Pt .30W;Voff 50uV max;IC 50mA;BVCEO 30V;rs 50Ω max.
32	3N102	10	PA	Si	T072	GC	Pt .30W;Voff 50uV max;IC 50mA;BVCEO 40V;rs 50Ω max.
33	3N103	10	PA	Si	T072	GC	Pt .30W;Voff 50uV max;IC 50mA;BVCEO 50V;rs 50Ω max.
34	3N104	10	PA	Si	T072	GC	Pt .30W;Voff 50uV max;IC 50mA;BVCEO 60V;rs 50Ω max.
35	3N105	10	PA	Si	T072	GC	Pt .30W;Voff 250uV max;IC 50mA;BVCEO 20V;rs 100Ω max.
36	3N106	10	PA	Si	T072	GC	Pt .30W;Voff 250uV max;IC 50mA;BVCEO 40V;rs 100Ω max.
37	3N107	10	PA	Si	T072	GC	Pt .30W;Voff 250uV max;IC 50mA;BVCEO 60V;rs 100Ω max.
38	3N108	10	P	Si	T072	GC	VE1B0 50V;IE1E2 .10nA max;re1/e2(on) 50Ω max.
39	JAN3N108*	10	P	Si	T072	GC	Pt-600mW case;IE1E2-.10nA max;VE1E2/-30V;re1e2(on)-50Ω max.
40	3N109	10	P	Si	T072	GC	VE1B0 50V;IE1E2 .10nA max;re1/e2(on) 50Ω max.
41	3N110	10	P	Si	T072	GC	VE1B0 30V;IE1E2 .50nA max;re1/e2(on) 50Ω max.
42	3N111	10	P	Si	T072	GC	VE1B0 30V;IE1E2 .50nA max;re1/e2(on) 50Ω max.
43	3N114*	10	P	Si	T072	GD	Voff 50uV max;BVE1E20 12V;IE1E20 1.0nA max;ΔVoff/ΔT 75uV/°C.
44	3N115*	10	P	Si	T072	GD	Voff 100uV max;BVE1E20 12V;IE1E20 1.0nA max;ΔVoff/ΔT 125uV/°C.
45	3N116*	10	P	Si	T072	GD	Voff 200uV max;BVE1E20 12V;IE1E20 1.0nA max;ΔVoff/ΔT 175uV/°C.
46	3N117*	10	P	Si	T072	GD	Voff 50uV max;BVE1E20 20V;IE1E20 1.0nA max;ΔVoff/ΔT 75uV/°C.
47	3N118*	10	P	Si	T072	GD	Voff 100uV max;BVE1E20 20V;IE1E20 1.0nA max;ΔVoff/ΔT 125uV/°C.
48	3N119*	10	P	Si	T072	GD	Voff 200uV max;BVE1E20 20V;IE1E20 1.0nA max;ΔVoff/ΔT 175uV/°C.
49	3N120*	10	NA	Si	T072	GC	BVE1E20 20V;Voff 10uV max;ΔVoff/ΔT 20uV/°C;(on)25Ω max.
50	3N121*	10	NA	Si	T072	GC	BVE1E20 20V;Voff 10uV max;ΔVoff/ΔT 20uV/°C;(on)25Ω max.
51	3N123*	10	NA	Si	T072	GD	BVE1E20 25V;Voff 25mV max;IE1E20 1.0nA max;ΔVO/ΔT 150uV/°C.
52	3N127*	10	N	Si	T072	GC	IB-10mA;IE-10mA;Ceb-2.0pf;Vo-10uV.
53	JAN3N127*	10	N	Si	T072	GC	VE1E2(ofs)-10uV max;re1e2(on)-1.0Ω min;Ce2b-2pf max.
54	3N129*	10	PA	Si	T072	GC	VE1E2/ΔT 10uV max;rs(on) 15Ω max;V(BR)E1E2 10V;VE1E2 30uV.
55	3N130*	10	PA	Si	T072	GC	VE1E2/ΔT 10uV max;rs(on) 15Ω max;V(BR)E1E2 20V;VE1E2 30uV.
56	3N131*	10	PA	Si	T072	GC	VE1E2/ΔT 10uV max;rs(on) 15Ω max;V(BR)E1E2 30V;VE1E2 30uV.
57	3N132*	10	PA	Si	T072	GC	VE1E2/ΔT 10uV max;rs(on) 15Ω max;V(BR)E1E2 40V;VE1E2 30uV.
58	3N133*	10	PA	Si	T072	GC	VE1E2/ΔT 10uV max;rs(on) 15Ω max;V(BR)E1E2 50V;VE1E2 30uV.
59	3N134*	10	PA	Si	T072	GC	VE1E2/ΔT 25uV max;rs(on) 15Ω max;V(BR)E1E2 15V;VE1E2 100uV.
60	3N135*	10	PA	Si	T072	GC	VE1E2/ΔT 25uV max;rs(on) 15Ω max;V(BR)E1E2 30V;VE1E2 100uV.
61	3N136*	10	PA	Si	T072	GC	VE1E2/ΔT 25uV max;rs(on) 15Ω max;V(BR)E1E2 50V;VE1E2 100uV.
62	5	10	N-DM	Si	L6	A	Matched pair; ICBO-10uA; BVCEO-20V; VBEBO-5.0V.
63	6	10	N-DM	Si	X32	A	Matched pair; ICBO-10uA; BVCEO-20V; VBEBO-5.0V.
64	7	10	N-PE	Si	X33	A	Matched pair; ICBO-2.0nA; BVCEO-45V; ft-30Mc.
65	10	10	N-DM	Si	OV13	A	Matched pair; ICBO-2.0nA; BVCEO-45V; ft-30Mc.
66	12C101	10	N-PL	Si	L1a	A	Pt-500mW; VCEO-20V; ΔVoff-50uV max; Δloff-2mA max.
67	12C102	10	N-PL	Si	L1a	A	Pt-500mW; VCEO-20V; ΔVoff-100uV max; Δloff-2.0mA max.
68	20	10	P-A	Si	OV13	A	Matched pair; ICBO-2.0uA; BVCEO-20V; VBEBO-12V.
69	30	10	P-A	Si	X33a	A	Matched pair; ICBO-2.0uA; BVCEO-20V; VBEBO-12V.
70	40	10	P-A	Si	X33c	A	Matched pair; ICBO-25nA; BVCEO-35V; BVCEO-40V.
71	50	10	P-A	Si	X33e	A	Matched pair; ICBO-3.0uA; BVCEO-25V; BVCEO-25V.
72	60	10	P-A	Si	X33b	A	Matched pair; ICBO-2.0uA; BVCEO-36V; VBEBO-12V.
73	70	10	P-A	Si	X33d	A	Matched pair; ICBO-3.0nA; BVCEO-6.0V; VBEBO-10V.
74	A569	10	N	Si	T018	A	Matched Pair of 2N2569; Voff ±50uV.
75	A570	10	N	Si	T018	A	Matched Pair of 2N2570; Voff ±100uV.
76#	BFV34*	10	P-PE	Si	u34b	P	Pt. 15W;hFE(inv)-6.0 min;VEC(ofs)-30mV;rec(on)-20 ohms.
77#	BFV35*	10	P-PE	Si	u34b	P	Pt. 15W;hFE(inv)-4.0 min;VEC(ofs)-50mV;rec(on)-35 ohms.
78#	BFV36*	10	P-PE	Si	u34b	P	Pt. 15W;hFE(inv)-3.0 min;VEC(ofs)-80mV;rec(on)-45 ohms.
79#	BFV37*	10	N-PE	Si	u34b	P	Pt. 15W;hFE(inv)-2.0 min;VEC(ofs)-50mV;rec(on)-20 ohms.
80#	BFV38*	10	N-PE	Si	u34b	P	Pt. 15W;hFE(inv)-3.0 min;VEC(ofs)-40mV;rec(on)-15 ohms.
81#	BFV89*	10	N-PE	Si	u28a	B	Pt. 30W;hFE(inv)-2.0 min;VEC(ofs)-40mV;rec(on)-15 ohms.
82#	BFV89A*	10	N-PE	Si	u28a	B	Pt. 30W;hFE(inv)-3.0 min;VEC(ofs)-70mV;rec(on)-15 ohms.
83#	BSV22*	10	N-MOS*	Si	T072	DW	Pt 200mW;Voff 30uV max;Roff 100MΩ;Cob 4.0pf max.
84#	BSX82*	10	N-MOS*	Si	T033	DW	Pt 250mW;Voff 30uV max;Cob 4.0pf max;RS(off) 20MΩ.
85#	BSY89*	10	N-PE	Si	T018	A	Voff 1.0mV max;rs-20 ohms;cob-12pf;ft-40Mc min.
86#	C7076*	10	N-PEΔ	Si	T018	A	Voff 2.0mVmax;rs 20Ωmax; BVCEO 15Vmin; IEBO 2.0nA max.
87	LDS207*	10	N-PEΔ	Si	u34	P	Pt-36W;hFE(INV)-20min;Voff-10mV max;rec(on)-4 ohms max
88	ME209*	10	N-PE	Si	T018	A	Voff-250uV max; Ioff-2.0n Amps max; Rsat-15ohms.
89	ME214*	10	N-PE	Si	T018	A	Voff-500uV max; Ioff-2.0n Amps max; Rsat-15ohms.
90#	UPA36A	10	N-PE	Si	L6a	A	Pt-200mW;VCEO-5.0V;VECR-5.0V;IC-50mA;IE-50mA;ΔVoff-50uV max;Δloff-1.0nA max.
91#	ZDT10	10	N-PL	Si	L2h	A	ΔVEC-250uV max;VEC-2.0mV;IE1E2-10nA max.
92#	ZDT30*	10	N-PE	Si	T072	GC	VE1E2 50uV at IB 500uA;IE1E20 10nA at VE1E2 5.0 to 5.0V;rs 15Ω.
93#	ZDT31*	10	N-PE	Si	T072	GC	VE1E2 50uV at IB 500uA;IE1E20 10nA at VE1E2 5.0 to 5.0V;rs 15Ω.
94#	2C111*	11	N-DPL	Si	L2b	A	VCEO-12V min;Pt-38W;ft-200Mc min;ton-40nsec;hFE-80 at IC-10mA.
95#	2C415*	11	N-DPL	Si	L2b	A	VCEO-35V min;Pt-43W;ft-100Mc;ICBO-3.0nA;hFE-60 min at IC-10uA.
96#	2C425*	11	N-DPL	Si	L2b	A	VCEO-60V min;Pt-51W;ft-40Mc min;ICBO-1.0nA;hFE-85 at IC-10mA.
97	2N898	11	N-PL	Si	L4	A	Pc-50W max;BVCEO-100V;hFE-1600 min;IC-10mA;BVCEO-60V;ICBO-010uA.
98	2N999	11	N	Si	L4	A	Pc-50W; hFE-70000 max. pulsed at IC-100mA and VCE-10V.
99	2N2641*	11	N	Si	L2t	A	Pt-6W;VCE(sat)-100ohms max;VBE-60V min;hFE-50 min.
100	2N2644*	11	N	Si	L2t	A	Pt-6W;VCE(sat)-100ohms max;VBE-60V min;hFE-100 min.
101	2N2785	11	N	Si	L4	A	Pc-50W; BVCEO-60V; hFE-2,000-20,000
102	2N2804*	11	P	Si	L17k	A	Pt-50W;hFE-20-120 at IC-10mA;VCE-5V;VCE(SAT)-5V.
103	2N2807*	11	P	Si	L17k	A	Pt-50W;hFE-40-120 at IC-10mA;VCE-5V;VCE(sat)-5V.
104	2N2913*	11	N	Si	L2t	A	Pt-50W;ICBO-10uA at 150 deg.C;VBE(ON)-70V max;VCE(sat)-35V max.
105	2N2914*	11	N	Si	L2t	A	Pt-50W;ICBO-10uA at 150 deg.C;VBE(ON)-70V max;VCE(sat)-35V max.
106	2N3425*	11	N	Si	L2t	A	Pt-4W;VCI2-200V;ton-50nsec max;toff-90nsec max.
107	2N3800*	11	P	Si	L17e	A	Pt-360mW;hFE-100 min. at IC-10uA;VCE(sat)-20V max.
108	2N3801*	11	P	Si	L17e	A	Pt-360mW;hFE-225 min. at IC-10uA;VCE(sat)-20V max.
109	2N3806*	11	P	Si	L17k	A	Pt-600mW;hFE-100 min. at IC-10uA;VCE(sat)-20V max.
110	2N3807*	11	P	Si	L17k	A	Pt-600mW;hFE-225 min. at IC-10uA;VCE(sat)-20V max.

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MDWG #	Y200 s/a TO200 Ser.	LEODE	DESCRIPTION
1	2N3812*	11	P-0	9	L17s		Pt-35W;hFE-100 min. at IC-10uA, VCE-5.0V.
2	2N3813*	11	P-0	9	L17s		Pt-35W;hFE-225 min. at IC-10uA, VCE-5.0V.
3	2N3836	11	N-Δ	9	L35		Pt-1.0W;ton-500nsec;toff-1.0usec;BVCEO-80V;ICEX-500uA.
4	2N3837	11	N-Δ	9	L35		Pt-1.0W;ton-500nsec;toff-1.0usec;BVCEO-100V;ICEX-500uA.
5	2N4017*	11	P-0	9	L17x		Pt-600mW;hFE-60 min at VCE of 5.0V and IC of 1.0uA;IEBO-10nA max.
6	2N4018*	11	P-0	9	L17x		Pt-600mW;hFE-60 min at VCE of 5.0V and IC of 1.0uA;IEBO-10nA max.
7	2N4019*	11	P-0	9	L17x		Pt-600mW;hFE-180 min at VCE of 5.0V and IC of 1.0uA;IEBO-10nA max.
8	2N4939	11	P-0	9	L17k		Pt-60W;BVC1C2-200V max;hFE-50 min;BVCEO-50 max;IC-50mA max.
9	2N4942	11	P-0	9	L17d		Pt-35W;BVCEO-50 max;hFE-50 min;ICBO-0.2uA max.
10	2N4955*	11	N	9	L2s		Pt-45W;NF-4.5db at 10kohms.
11	2N5254*	11	P-0	9	L17t		Pt-43W;hFE-50 min;VBCO-40V;VEBO-5.0V;ft-40M min.
12	2N5305	11	N	9	L3f		Pt-40W;VCB1-25V max;VCE-25V max;IC-20A max;hFE-2000 min;ft-60Mc min.
13	2N5306	11	N	9	L3f		Pt-4W;VCB1-25V max;VCE-25V max;IC-2A max;hFE-7000 min;ft-80Mc min.
14	2N5307	11	N	9	L3f		Pt-4W;VCB1-40V max;VCE-40V max;IC-2A max;hFE-2000 min;ft-80Mc min.
15	2N5308	11	N	9	L3f		Pt-4W;VCB1-40V max;VCE-40V max;IC-2A max;hFE-7000 min;ft-80Mc min.
16	2N5390	11	N	9	L35a		Pt-1W;VCB1-120V max;VCE-80V max;IC-2A max;hFE-2000 min;ft-40Mc min.
17 #	20C26	11	P	9	MD3		VCBO 40V;VCEO 20V;IC 3.5A;Pt 12W;hFE 20 min.
18 #	20C30	11	P	9	MD17c	∅	VCBO 32V;VCEO 16V;IC 1.4A;Pt 40W;hFE 32.
19 #	2V205*	11	P-DPE	9	L17a		Pt-45W;ft-100Mc min;BVCEO-15V;hFE-55 at IC-10mA.
20 #	2V435*	11	P-DPE	9	L17a		Pt-45W;ft-100Mc min;Pt-55W;ft-100Mc min;ICBO-50nA;ton-50ns;toff-100ns.
21	3N189*	11	P-MOSΔ	9	L58b		Pt 525mW;tr 30ns;td 15ns;toff 50ns.
22	3N191*	11	P-MOSΔ	9	L58b		Pt 525mW;tr 30ns;td 15ns;toff 50ns.
23	4JD12X009	11	N-PL	9	L42		Contains 3-2N1613 transistors and a 1N914 diode;Pt-300mW.
24	40675*	11	N-PE	9	L68		VCCEO-35V;VEBO-3.5V;Pt-100W;IC-10A;ICES-30mA max;Cob-250pF max.
25 #	BF71	11		9	T084		Pt-4W;BVCEO-60V min;hFE-100 min;ft-200MHz min;Toff-40ns max.
26 #	BFV71	11		9	T084		Pt-4W;BVCEO-60V min;hFE-100 min;ft-350MHz min;Toff-18ns max.
27 #	BFV73	11		9	T084		Pt-4W;BVCEO-60V min;hFE-40 min;ft-350MHz min;Toff-18ns max.
28 #	BFV73N	11		9	MP126		Pt-4W;BVCEO-60V min;hFE-40 min;ft-350MHz min;Toff-18ns max.
29 #	BFV75	11		9	T089		Pt-4W;BVCEO-45V min;IC-30mA max;ft-30MHz min.
30 #	BFV76	11		9	T089		Pt-4W;BVCEO-15V min;VCE(off)-500uV;Rc(on)-20 ohms.
31 #	BFV81	11		9	T084		Pt-4W;BVCEO-12V min;ft-400MHz min;Toff-90us max.
32 #	BFV81N	11		9	MP126		Pt-4W;BVCEO-12V min;ft-400MHz min;Toff-90us max.
33 #	BFV83A	11		9	T084		VCBO-60V min;hFE-100 min;VCE(sat)-4.0V max.
34 #	BFV83AN	11		9	MP126		VCBO-60V min;hFE-100 min;VCE(sat)-4.0V max.
35 #	BFV95	11		9	T084		VCBO-60V min;hFE-40 min;VCE(sat)-4.0V max.
36 #	BFV95N	11		9	MP126		VCBO-60V min;hFE-40 min;VCE(sat)-4.0V max.
37 #	BFX87	11	N	9	L4		Pc-50W;hFE-7000 max, pulsed at IC-100mA and VCE-10V.
38 #	FI0049*	11	P-DPL	9	L18a		Pt-1.7W max;IDSS-1.0nA max;BVDS-30V max;BVGS-25V max.
39 #	FT701	11	P-DPL	9	L51a		Pt-60W; VDS VDS-30V ID 200mA, IG-10mA.
40	FT4017	11	P-DPE	9	L17e		VCBO-80V;BVCEO-80V;IC-200mA max;hFE-100 min at 10uA, 5.0V.
41	FT4018	11	P-DPE	9	L17e		VCBO-80V;BVCEO-60V;IC-200mA max;hFE-100 min at 10uA, 5.0V.
42	FT4019	11	P-DPE	9	L17e		VCBO-45V;BVCEO-45V;IC-200mA max;hFE-250 min at 10uA, 5.0V.
43	L14B	11	N-PLT	9	T098	B	Photo-Darlington Amp;Pt-150mW;IL-100mA;VCEO-12V;VCBO-18V.
44	M108*	11	P-MOSΔ	9	L51b		FET;BVDS-30V;BVGS-30V;IGSS-100pA;DS-1200;Pt-500mW;Cgss-4.0pF.
45	M107*	11	P-MOSΔ	9	L51b		FET;BVDS-30V;BVGS-30V;IGSS-100pA;DS-1200;Pt-500mW.
46	M108*	11	P-MOSΔ	9	L51b		FET;BVDS-30V;BVGS-30V;IGSS-1.0pA;DS-1200;Pt-500mW.
47	MD708*	11	N-AN	9	L66a		Pt-400mW(both sides);ton-16ns max;toff-30ns max;ts-25ns max.
48	MD708F*	11	N-AN	9	T089		Pt-350mW(both sides);ton-16ns max;toff-30ns max;ts-25ns max.
49	MD918*	11	N-EA	9	L66a		Pt-400mW(both sides);VCEO-15V;hFE-50 min at 1.0mA and 5.0V.
50	MD918F*	11	N-EA	9	T089		Pd(both sides)-350mW;VCEO-15V;hFE-50 min at 1.0mA, 5.0V.
51	MD2218*	11	N-AN	9	L17k		Pt-600mW;td 20ns max;tr 40ns max;ts 280ns max;tf 70ns max.
52	MD2218A*	11	N-AN	9	R131b		Pt-600mW(both sides);td 15ns max;tr 30ns max;ts 250ns;tf 60ns.
53	MD2218AF*	11	N-AN	9	L17d		Pt-350mW;td 15ns max;tr 30ns max;ts 250ns max;tf 60ns max.
54	MD2218F*	11	N-AN	9	L17d		Pt-350mW;td 20ns max;tr 40ns max;ts 280ns max;tf 70ns max.
55	MD2219*	11	N-AN	9	L17k		Pt-600mW;td 20ns max;tr 40ns max;ts 280ns max;tf 70ns max.
56	MD2219A*	11	N-AN	9	L17k		Pt-600mW;td 15ns max;tr 30ns max;ts 250ns max;tf 60ns max.
57	MD2219AF*	11	N-AN	9	L17d		Pt-350mW;td 15ns max;tr 30ns max;ts 250ns max;tf 60ns max.
58	MD2219F*	11	N-AN	9	L17d		Pt-350mW;td 20ns max;tr 40ns max;ts 280ns max;tf 70ns max.
59	MD2369*	11	N-AN	9	L66a		Pt-600mW(both sides);ton-15ns max;toff-20ns max;ts-13ns max.
60	MD2369F*	11	N-AN	9	T089		Pt-350mW(both sides);ton-15ns max;toff-20ns max;ts-13ns max.
61	MD2904*	11	P-AN	9	L17k		Pt-600mW;td 12ns max;tr 35ns max;ts 100ns max;tf 40ns max.
62	MD2904A*	11	P-AN	9	L17k		Pt-600mW;td 12ns max;tr 35ns max;ts 100ns max;tf 40ns max.
63	MD2904AF*	11	P-AN	9	L17d		Pt-600mW;td-12ns max;tr-35ns max;ts-100ns max;tf-40ns max.
64	MD2904F*	11	P-AN	9	L17d		Pt-600mW;td-12ns max;tr-35ns max;ts-100ns max;tf-40ns max.
65	MD2905*	11	P-AN	9	L17k		Pt-600mW;td 12ns max;tr 35ns max; ts 100ns max;tf 40ns max.
66	MD2905A*	11	P-AN	9	L17k		Pt-600mW;td 12ns max;tr 35ns max;ts 100ns max;tf 40ns max.
67	MD2905AF*	11	P-AN	9	L17d		Pt-600mW;td-12ns max;tr-35ns max;ts-100ns max;tf-40ns max.
68	MD2905F*	11	P-AN	9	L17d		Pt-600mW;td-12ns max;tr-35ns max;ts-100ns max;tf-40ns max.
69	MD3133*	11	P-AN	9	L17c		Pd-600mW;ton-75ns max;toff-150ns max;hFE-25 min at 1.0mA, 10V.
70	MD3133F*	11	P-AN	9	T089		Pd-350mW;ton-75ns max;toff-150ns max;hFE-25 min at 1.0mA, 10V.
71	MD3134*	11	P-AN	9	L17c		Pd-600mW;ton-75ns max;toff-150ns max;hFE-50 min at 1.0mA, 10V.
72	MD3134F*	11	P-AN	9	T089		Pd-350mW;ton-75ns max;toff-150ns max;hFE-50 min at 1.0mA, 10V.
73	MD3725*	11	N-ANΔ	9	L2t		Pt-600mW;ton-45ns;toff-75ns;VCE(sat)-26V.
74	MD3725F*	11	N-ANΔ	9	L2f		Pt-350mW;ton-45ns;toff-75ns;VCE(sat)-26V.
75	MD4957*	11	P-AN	9	L17k		Pt-400mW;hFE-150 max;NF-2.6 typ;ft-1000 min.
76	MEM550*	11	P	9	L53		Pt-112mW;VGS1-8.0V max;BVDS-50V;BVGS-40V;ID(ON)-5.0mA;ID-25mA.
77	MHM1001	11	N-PL	9	T05	A0	Pc-1.34W; BVCEO-60V; BVCEO-40V; hFE-3000 min. at IC-100mA.
78	MHM1101	11	N-PL	9	T018	A0	Pc-1.0W; BVCEO-60V; BVCEO-40V; hFE-3000 min. at IC-100mA.
79	MHM1201	11	N-PL	9	T047	GG	Pt-2.0W max;BVCEO-60V min;VCEO-40V min;VEBO-12V min; TJ-125deg.C.
80	MHM2001	11	N-PL	9	R89c	GG	Pt-2.0W at 100°C;BVCEO-120V;IC-3.0A;hFE-1.0k min.
81	MHM2011	11	N-PL	9	R89a	GG	Pt-2.0W max;BVCEO-60V min;BVCEO-40V min;VEBO-15V min;IC-3.0A max.
82	MHM2012	11	N-PL	9	R89a	GG	Pt-2.0W max;BVCEO-80V min;BVCEO-60V min;VEBO-15V min;IC-3.0A max.
83	MHM2013	11	N-PL	9	R89a	GG	Pt-2.0W max;BVCEO-100V min;BVCEO-80V min;VEBO-15V min;IC-3.0A max.
84	MHM2014	11	N-PL	9	R89a	GG	Pt-2.0W max;BVCEO-60V min;BVCEO-40V min;VEBO-15V min;IC-3.0A max.
85	MHM2015	11	N-PL	9	R89a	GG	Pt-2.0W max;BVCEO-80V min;BVCEO-60V min;VEBO-15V min;IC-3.0A max.
86	MHM2016	11	N-PL	9	R89a	GG	Pt-2.0W max;BVCEO-100V min;BVCEO-80V min;VEBO-15V min;IC-3.0A max.
87	MHM2017	11	N-PL	9	R89a	GG	Pt-2.0W max;BVCEO-60V min;BVCEO-40V min;VEBO-15V min;IC-3.0A max.
88	MHM2101	11	N-PL	9	MT42a		Pt-12.5W at 100 deg.C;BVCEO-120V;IC-3.0A;hFE-1000 min.
89	MHM2111	11	N-PL	9	MT42		Pt-12.5W max;BVCEO-60V min;BVCEO-40V min;VEBO-15V min;IC-3A max.
90	MHM2112	11	N-PL	9	MT42		Pt-12.5W max;BVCEO-80V min;BVCEO-60V min;VEBO-15V min;IC-3A max.
91	MHM2113	11	N-PL	9	MT42		Pt-12.5W max;BVCEO-100V min;BVCEO-80V min;VEBO-15V min;IC-3A max.
92	MHM2114	11	N-PL	9	MT42		Pt-12.5W max;BVCEO-60V min;BVCEO-40V min;VEBO-15V min;IC-3A max.
93	MHM2115	11	N-PL	9	MT42		Pt-12.5W max;BVCEO-80V min;BVCEO-60V min;VEBO-15V min;IC-3A max.
94	MHM2116	11	N-PL	9	MT42		Pt-12.5W max;BVCEO-100V min;BVCEO-80V min;VEBO-15V min;IC-3A max.
95	MHM2117	11	N-PL	9	MT42		Pt-12.5W max;BVCEO-60V min;BVCEO-40V min;VEBO-15V min;IC-3A max.
96	MHM2201	11	N-PL	9	MT53	GH	Pt-12.5W at 100°C;BVCEO-120V;IC-3.0A;hFE-1000 min.
97	MHM2211	11	N-PL	9	MT53	GH	Pt-12.5W max;BVCEO-60V;BVCEO-40V min;VEBO-15V min.
98	MHM2212	11	N-PL	9	MT53	GH	Pt-12.5W max;BVCEO-80V;BVCEO-60V min;VEBO-15V min.
99	MHM2213	11	N-PL	9	MT53	GH	Pt-12.5W max;BVCEO-100V;BVCEO-80V min;VEBO-15V min.
100	MHM2214	11	N-PL	9	MT53	GH	Pt-12.5W max;BVCEO-60V;BVCEO-40V min;VEBO-15V min.
101	MHM2215	11	N-PL	9	MT53	GH	Pt-12.5W max;BVCEO-80V;BVCEO-60V min;VEBO-15V min.
102	MHM2216	11	N-PL	9	MT53	GH	Pt-12.5W max;BVCEO-100V;BVCEO-80V min;VEBO-15V min.
103	MHM2217	11	N-PL	9	MT53	GH	Pt-12.5W max;BVCEO-60V;BVCEO-40V min;VEBO-15V min.
104 #	ML101A	11	P-MOS	9	L25		Single device;Rd(on) 850Ω max;VGS(th) 6.0V max;ID 50mA max.
105 #	ML101B	11	P-MOS	9	L25		Single device;Rd(on) 850Ω max;VGS(th) 6.5V max;ID 50mA max.
106 #	ML102A	11	P-MOS	9	L54		Matched pair of devices;ΔRon 400 max;VGS(th)6.0V max;ID 50mA max.
107 #	ML102B	11	P-MOS	9	L54		Matched pair of devices;ΔRon 400 max;VGS(th)6.5V max;ID 50mA max.
108 #	MQ2218*	11	N-AN	9	L56		Four devices;Pt 500mW;td 20ns max;tr 40ns max;ts 280ns max;tf 70ns max.
109	MQ2219A*	11	N-AN	9	L56		Four devices;Pt 500mW;td 15ns max;tr 30ns max;ts 250ns max;tf 60ns max.
110	MQ2904*	11	P-AN	9	L56		Four devices;Pt 500mW;td 12ns max;tr 35ns max;ts 100ns max; tf 40ns max.

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	L E O A D E	DESCRIPTION
1	MQ2905A*	11	P-AN	Si	L56		Four devices:Pt 500mW;td 12ns max;tr 35ns max;ts 100ns max;tf 40ns max.
2	MQ3725*	11	N-ANΔ	Si	L56c		Pt-500mW;ton-45ns;toff-75ns;VCE(sat)-26V.
3	MQ3799*	11	P-EA∅	Si	L56c		Pt-500W;ft max-500MchFE-300 to 900 at IC-1.0mA.
4#	MTD2972	11	N-DPL∅	Si	u82		BVCBO 45V min;Pt 140mW(both sides);hFE 60-240 at Ic 10uA;VCE 5.0V.
5#	MTD2973	11	N-DPL∅	Si	u82		BVCBO 45V min;Pt 140mW(both sides);hFE 150-600 at Ic 10uA;VCE 5.0V.
6	RA1	11	N	Si	TO12		Pc-3W;BVCEO-45V;TC-0.02%/deg.C at 0-70 deg.C;hFE-10min at 50mA
7	RA1A	11	N	Si	TO12		Pc-3W;BVCEO-45V;TC-0.05%/deg.C at 0-70 deg.C;hFE-10min at 50mA
8	RA1B	11	N	Si	TO12		Pc-3W;BVCEO-45V;TC-0.02%/deg.C at 0-70 deg.C;hFE-10min at 50mA
9	RA1C	11	N	Si	TO12		Pc-3W;BVCEO-45V;TC-0.01%/deg.C at 0-70 deg.C;hFE-10min at 50mA
10	RA2	11	N	Si	TO12		Pc-3W;BVCEO-45V;TC-0.02%/deg.C at 55-150 deg.C;hFE-40min at 50mA
11	RA2A	11	N	Si	TO12		Pc-3W;BVCEO-45V;TC-0.05%/deg.C at 55-150 deg.C;hFE-40min at 50mA
12	RA2B	11	N	Si	TO12		Pc-3W;BVCEO-45V;TC-0.02%/deg.C at 55-150 deg.C;hFE-40min at 50mA
13	RA3	11	N	Si	TO12		Pc-3W;BVCEO-60V;TC-0.02%/deg.C at 55-150 deg.C;hFE-30min at 50mA
14	RA3A	11	N	Si	TO12		Pc-3W;BVCEO-60V;TC-0.05%/deg.C at 55-150 deg.C;hFE-30min at 50mA
15	RA3B	11	N	Si	TO12		Pc-3W;BVCEO-60V;TC-0.02%/deg.C at 55-150 deg.C;hFE-30min at 50mA
16	S708*	11	N-PE	Si			Dual Chip;BVCBO-55V;BVCEO-30V;Cob-6.0pf;Po-4.0W.
17	S715*	11	N-PE	Si	TO39		Dual Chip;BVCBO-55V;BVCEO-30V;Cob-6.0pf;Po-2.5W.
18	SP328F	11	P	Si	TO89		Pt-350mW(both sides);VEBO-20V;hFE-(9-22)at 3.0mA,500mV.
19	SP328QF	11	P	Si	TO86		Pt-500mW;VEBO-20V;hFE-(9-22)at 3.0mA,500mV.
20	SP329F	11	P	Si	TO89		Pt-350mW(both sides);VEBO-20V;hFE-(18-44)at 3.0mA,500mV.
21	SP329QF	11	P	Si	TO86		Pt-500mW;VEBO-20V;hFE-(9-22)at 3.0mA,500mV.
22	SP706F	11	N	Δ	Si	TO89	Pt-350mW(both sides);ts-60ns;hFE-20min at 10mA,1.0V.
23	SP708F	11	N	Δ	Si	TO89	Pt-350mW(both sides);ton-16ns;toff-30ns;ts-25ns.
24	SP918F	11	N	Δ	Si	TO89	Pt-350mW(both sides);VCEO-15V;hFE-20min at 3.0mA,1.0V.
25	SP929QF	11	N	Δ	Si	TO86	Pt-500mW;VCEO-45V;hFE-40min at 10uA,5.0V.
26	SP930QF	11	N	Δ	Si	TO86	Pt-500mW;VCEO-45V;hFE-100min at 10uA,5.0V.
27	SP1132F	11	P	Si	TO89		Pt-350mW(both sides);VCEO-30V;hFE-(30-90)at 150mA,10V.
28	SP1711F	11	N	Δ	Si	TO89	Pt-350mW(both sides);VCEO-75V;hFE-100min at 150mA,10V.
29	SP1890F	11	N	Δ	Si	TO89	Pt-350mW(both sides);VCEO-60V;hFE-(100-300)at 150mA,10V.
30	SP1893F	11	N	Δ	Si	TO89	Pt-350mW(both sides);VCEO-80V;hFE-(40-120)at 150mA,10V.
31	SP2218AF	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-15ns;tr-30ns;ts-250ns;tf-60ns.
32	SP2218F	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-20ns;tr-40ns;ts-280ns;tf-70ns.
33	SP2219AF	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-15ns;tr-30ns;ts-250ns;tf-60ns.
34	SP2219F	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-20ns;tr-40ns;ts-280ns;tf-70ns.
35	SP2221AF	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-15ns;tr-30ns;ts-250ns;tf-60ns.
36	SP2221AQF	11	N	Δ	Si	TO86	Pt-500mW(both sides);td-15ns;tr-30ns;ts-265ns;tf-60ns.
37	SP2221F	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-20ns;tr-40ns;ts-280ns;tf-70ns.
38	SP2221QF	11	N	Δ	Si	TO86	Pt-500mW;td-20ns;tr-40ns;ts-280ns;tr-70ns.
39	SP2222AF	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-15ns;tr-30ns;ts-265ns;tf-60ns.
40	SP2222AQF	11	N	Δ	Si	TO86	Pt-500mW;td-15ns;tr-30ns;ts-265ns;tf-60ns.
41	SP2222F	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-20ns;tr-40ns;ts-280ns;tf-70ns.
42	SP2222QF	11	N	Δ	Si	TO86	Pt-500mW;td-20ns;tr-40ns;ts-280ns;tr-70ns.
43	SP2369AF	11	N	Δ	Si	TO89	Pt-350mW(both sides);ton-12ns;toff-18ns;ts-13ns.
44	SP2369F	11	N	Δ	Si	TO89	Pt-350mW(both sides);ton-12ns;toff-18ns;ts-13ns.
45	SP2483QF	11	N	Δ	Si	TO86	Pt-500mW;VCEO-60V;hFE-40min at 10uA,5.0V.
46	SP2484F	11	N	Δ	Si	TO89	Pt-350mW(both sides);VCEO-60V;hFE-100min at 10uA,5.0V.
47	SP2484QF	11	N	Δ	Si	TO86	Pt-500mW;VCEO-60V;hFE-100min at 10uA,5.0V.
48	SP2604QF	11	P	Si	TO86		Pt-500mW;VCEO-45V;hFE-40min at 10uA,5.0V.
49	SP2605QF	11	P	Si	TO86		Pt-500mW;VCEO-45V;hFE-100min at 10uA,5.0V.
50	SP2904AF	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-180ns;tf-50ns.
51	SP2904AQF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-190ns;tf-50ns.
52	SP2904F	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-180ns;tf-50ns.
53	SP2904QF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-190ns;tf-50ns.
54	SP2905AF	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-180ns;tf-50ns.
55	SP2905AQF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-190ns;tf-50ns.
56	SP2905F	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-180ns;tf-50ns.
57	SP2905QF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-190ns;tf-50ns.
58	SP2906AF	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-80ns;tf-30ns.
59	SP2906AQF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-90ns;tf-30ns.
60	SP2906F	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-80ns;tf-30ns.
61	SP2906QF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-90ns;tf-30ns.
62	SP2907AF	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-80ns;tf-30ns.
63	SP2907AQF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-90ns;tf-30ns.
64	SP2907F	11	P	Δ	Si	TO89	Pt-350mW(both sides);td-10ns;tr-40ns;ts-80ns;tf-30ns.
65	SP2907QF	11	P	Δ	Si	TO86	Pt-500mW;td-10ns;tr-40ns;ts-90ns;tf-30ns.
66	SP2946F	11	P	Si	TO89		Pt-350mW(both sides);VEBO-40V;Vo-800uV max at IB-200uA.
67	SP3019F	11	N	Δ	Si	TO89	Pt-350mW(both sides);VCEO-80V;hFE-15min at 1.0A, 10V.
68	SP3020F	11	N	Δ	Si	TO89	Pt-350mW(both sides);VCEO-80V;hFE-15min at 1.0A, 10V.
69	SP3115F	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-20ns;tr-75ns;ts-300ns;tf-100ns.
70	SP3116F	11	N	Δ	Si	TO89	Pt-350mW(both sides);td-20ns;tr-75ns;ts-300ns;tf-100ns.
71	SP3133F	11	P	Δ	Si	TO89	Pt-350mW(both sides);ton-75ns;toff-150ns;hFE-25min at 1.0mA, 10V.
72	SP3134F	11	P	Δ	Si	TO89	Pt-350mW(both sides);ton-75ns;toff-150ns;hFE-50min at 1.0mA, 10V.
73	SP3135F	11	P	Δ	Si	TO89	Pt-350mW(both sides);ton-75ns;toff-150ns;hFE-25min at 1.0mA, 10V.
74	SP3136F	11	P	Δ	Si	TO89	Pt-350mW(both sides);ton-75ns;toff-150ns;hFE-50min at 1.0mA, 10V.
75	SP3724QD	11	N	Δ	Si	TO116	Pt-800mW;ton-35ns;toff-60ns;hFE-10min at 1.0A, 1.0V.
76	SP3724QF	11	N	Δ	Si	TO86	Pt-500mW;ton-35ns;toff-60ns;hFE-10min at 1.0A, 1.0V.
77	SP3725F	11	N	Δ	Si	TO89	Pt-350mW(both sides);ton-45ns;toff-75ns;hFE-30min at 500mA, 2.0V.
78	SP3725QD	11	N	Δ	Si	TO116	Pt-800mW;ton-35ns;toff-60ns;hFE-10min at 1.0A, 1.0V.
79	SP3725QF	11	N	Δ	Si	TO86	Pt-500mW;ton-35ns;toff-60ns;hFE-10min at 1.0A, 1.0V.
80	SP10800	11	N-DPL	Si	TO89		BVCBO-45V;hFE-150min at 1.0mA-5V;ICBO-10mA max;NF-4.0db max
81	SP10811	11	P-DPE	Si	TO89		BVCBO-15V;hFE-35 min at 10mA-1.0V;ICBO-10mA max;Cobo-10pf max.
82	TD102*	11	N-PLT	Si	L2u		Pt 400mW;hFE 100 min.at VCE 5.0V and IC 10uA;ft 120MHz max;Vsat 20Ω max.
83	TD202*	11	N-PLT	Si	L2z		Pt 400mW;hFE 100 min.at VCE 5.0V and IC 10uA;ft 120MHz max;Vsat 20Ω max.
84	TD402*	11	P-PLT	Si	L17m		Pt 400mW;hFE 100 min at VCE 5.0V and IC 10uA;ft 100MHz max;Vsat 20Ω max.
85	TD502*	11	P-PLT	Si	L17w		Pt 400mW;hFE 100 min at VCE 5.0V and IC 10uA;ft 100MHz max;Vsat 20Ω max.
86	TD2219*	11	N-PLTΔ	Si	L2u		Pt 400mW;hFE 35 min.at VCE 10V and IC 100uA;Vsat 2.6Ω max.
87	TD2905*	11	P-PLTΔ	Si	L17m		Pt 400mW;hFE 35 min.at VCE 10V and IC 100uA;Vsat 2.6Ω max.
88	UC2139	11	N-PE∅	Si	L21b		FET;BVDS 30V;ID(on)-6.0mA;gm-750umhos.
89	UC2148	11	N-PE∅	Si	L21b		FET;BVDS 30V;ID(on)-15mA;gm-1000umhos.
90	UC2149	11	N-PE∅	Si	L21b		FET;BVDS 50V;ID(on)-2.0mA;gm-2000umhos.
91	UC2766*	11	P-MOSΔ	Si			Pt-525mW;td-18n max;tr-36n max;toff-60n max;IG-10pA max;VSDS-30V min.
92	UD3005†	11	N-PE	Si	L56a		BVCBO-60V;BVCEO-40V;VEBO-5.0V;hFE-100-300 at IC-150mA;ft-200Mc.
93	UD3008†	11	P-PE	Si	L56b		BVCBO-60V;BVCEO-40V;VEBO-5.0V;hFE-100-300 at IC-150mA;ft-200Mc.
94	2N2451*	13	NDPE	Si	TO46		Rad. Res. Switch; Irradiation-10kT nvt.
95	2N5065*	13	N-PEΔ	Si	R83a	A∅	Pc-2.5W;hFE-19 typ. at VCE-50V;ton-15nsec max;toff-35nsec max.
96	2N5106*	13	N	Si	TO39	A	Post Rad. of 300T nvt;ICBO-100nA;hFE-8.0 at VCE-10V;IC-150mA
97	2N5107*	13	N	Si	TO18	A∅	Post Rad. of 300T nvt;ICBO-100nA;hFE-8.0 at VCE-10V;IC-150mA
98	2N5144*	13	NΔ	Si	TO18	A∅	Post Rad. of 300T NVT;tr-35ns;td-10ns;ts-35ns;tf-30ns;MAX;ft-250MHz min.
99	2N5145*	13	NΔ	Si	TO39	A∅	Post Rad. of 300T NVT;tr-35ns;td-10ns;ts-35ns;tf-30ns;MAX;ft-250MHz min.
100	2N5200*	13	N	Si	TO46	A∅	Pd-1.2W;Post Rad. of 300T nvt;hFE-10 min;ICES-0.5uA max.
101	2N5201*	13	N	Si	TO46	A∅	Pd-1.2W;Post Rad. of 300T nvt;hFE-12 min;ICES-0.5uA max.
102	2N5244*	13	P	Si	TO18	A∅	Pd-360mW;Post Rad-300T NVT;ICES-1.0A max;tr-40ns;ts-100ns;td-15ns;tf-50ns.
103	2N5292*	13	P	Si	TO18	A∅	Max.Rad.Level-300T-nvt;hFE-10min;tr-12ns;tf-15ns.
104	2N5332*	13	P	Si	TO46	A∅	Max.Rad.Level-1000T NVT;hFE-10 min;pulsed;tr-8ns;ts-70ns;tf-16ns.
105	JAN2N5332*	13	P Δ	Si	TO46	A∅	Ipp-25mA max;Radiation-1000TNVT;tr-8.0ns max;tf-16ns max.
106	2N5399*	13	NΔ	Si	TO46	A∅	Max.Rad.-1000T nvt;Post Rad. hFE-12 min;ICBO-10uA;tr-8ns;tf-16ns.
107	JAN2N5399*	13	NΔ	Si	TO46	A∅	Ipp-25mA max;Radiation-1000TNVT;tr-8.0ns max;tf-16ns max.
108	2N5527*	13	N	Si	R81j	A∅	Max.Rad.Level-500T NVT;hFE-15 min pulsed;ICBO-1mA;VCE(sat)-6.7 max.
109	2N5528*	13	N	Si	TO59	A∅	Max.Rad.Level-500T NVT;hFE-15 min pulsed;ICBO-1mA;VCE(sat)-6.7 max.
110	2N5529*	13	N	Si	TO61	A∅	Max.Rad.Level-500T NVT;hFE-15 min pulsed;ICBO-1mA;VCE(sat)-6.7 max.



# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	U S E	STRUCTURE	MATERIAL	DWG # Y200 s/a TO200 Ser.	L C E A D E	DESCRIPTION
1	2N5530*	13	N	Si	T061	A	Max.Rad.Level-500T NVT;hFE-15 min.pulsed;ICBO-1mA;VCE(sat)-6.7 max.	
2	2N5531*	13	N	Si	R81j	A	Max.Rad.Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.	
3	2N5532*	13	N	Si	T059	A	Max.Rad.Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.	
4	2N5533*	13	N	Si	T061	A	Max.Rad.Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.	
5	2N5534*	13	N	Si	T061	A	Max.Rad.Level-500T NVT;hFE-7 min.pulsed;ICBO-1mA;VCE(sat)-1 max.	
6	2N5535*	13	N	Si	T061	A	Max.Rad.Level-500T NVT;hFE-15 min.pulsed;ICBO-1mA;td-25ns;tf-300ns.	
7	2N5536*	13	N	Si	T061	A	Max.Rad.Level-500T NVT;hFE-15 min.pulsed;ICBO-1mA;td-25ns;tf-300ns.	
8	2N5537*	13	N	Si	T061	A	Max.Rad.Level-500T NVT;hFE-10 min.pulsed;ICBO-2mA;td-25ns;tf-300ns.	
9	2N5538*	13	N	Si	T061	A	Max.Rad.Level-500T NVT;hFE-10 min.pulsed;ICBO-2mA;td-25ns;tf-300ns.	
10	2N5763*	13	PA	Si	T018	A	Pt 1.8W;Post Rad.500T NVT;ICBO 25ntr 40ns max;td 10ns max;tf 200ns max;tf 50ns max.	
11	2N5938*	13	N	Si	u79	A	Max. Rad. Level 100T NVT;hFE 10 min.	
12	2N5939*	13	N	Si	TO111	A	Max. Rad. Level 100T NVT;hFE 10 min.	
13	2N5940*	13	N	Si	TO111	A	Max. Rad. Level 100T NVT;hFE 10 min.	
14	BR100B*	13	N	Si	MT27	A	Max. Rad. Level-500T nvt;Post Rad hFE-25;ICBO-1.0mA	
15	BR100D*	13	N	Si	T060	A	Max. Rad. Level-500T nvt;Post Rad hFE-25;ICBO-1.0mA	
16	BR101B*	13	N	Si	MT27	A	Max. Rad. Level-500T nvt;Post Rad hFE-15;ICBO-1.0mA	
17	BR101D*	13	N	Si	T060	A	Max. Rad. Level-500T nvt;Post Rad hFE-15;ICBO-1.0mA	
18	PPR1006*	13	N	Si	MT27	A	Post Rad hFE-15 at Ic 3.0A;VCE 5.0V.	
19	PPR1007*	13	N	Si	T060	A	Post Rad hFE-15 at Ic 3.0A;VCE 5.0V.	
20	PPR1008*	13	N	Si	MT27	A	Post Rad hFE-7.0 at Ic 3.0A;VCE 5.0V.	
21	PPR1009*	13	N	Si	T060	A	Post Rad hFE-7.0 at Ic 3.0A;VCE 5.0V.	
22	PPR1010*	13	N	Si	T061	A	Post Rad hFE-15 at Ic 10A;VCE 5.0V.	
23	PPR1011*	13	N	Si	T061	A	Post Rad hFE-15 at Ic 10A;VCE 5.0V.	
24	PPR1012*	13	N	Si	T061	A	Post Rad hFE-10 at Ic 10A;VCE 5.0V.	
25	PPR1013*	13	N	Si	T061	A	Post Rad hFE-10 at Ic 10A;VCE 5.0V.	
26	PT12	14	N-PL	Si	T046	A	Press 1.0psid nom;temp.coeff.±.20V/°C;hFE 10 nom;BVCEO 120.	
27	PT13	14	N-PL	Si	T046	A	Press 1.0psid nom;temp.coeff.±.05V/°C;hFE 10 nom;BVCEO 120.	
28	PT22	14	N-PL	Si	T046	A	Press 2.0psid nom;temp.coeff.±.20V/°C;hFE 10 nom;BVCEO 120.	
29	PT23	14	N-PL	Si	T046	A	Press 2.0psid nom;temp.coeff.±.05V/°C;hFE 10 nom;BVCEO 120.	
30	PT52	14	N-PL	Si	T046	A	Press 5.0psid nom;temp.coeff.±.20V/°C;hFE 10 nom;BVCEO 120.	
31	PT53	14	N-PL	Si	T046	A	Press 5.0psid nom;temp.coeff.±.05V/°C;hFE 10 nom;BVCEO 120.	
32	PT-H2	14	N-PL	Si	T046	A	Press 50psid nom;temp.coeff.±.20V/°C;hFE 10 nom;BVCEO 120.	
33	PT-H3	14	N-PL	Si	T046	A	Press 50psid nom;temp.coeff.±.05V/°C;hFE 10 nom;BVCEO 120.	
34	PT-L2	14	N-PL	Si	T046	A	Press 10psid nom;temp.coeff.±.20V/°C;hFE 10 nom;BVCEO 120.	
35	PT-L3	14	N-PL	Si	T046	A	Press 10psid nom;temp.coeff.±.05V/°C;hFE 10 nom;BVCEO 120.	
36	PT-M2	14	N-PL	Si	T046	A	Press 25psid nom;temp.coeff.±.20V/°C;hFE 10 nom;BVCEO 120.	
37	PT-M3	14	N-PL	Si	T046	A	Press 25psid nom;temp.coeff.±.05V/°C;hFE 10 nom;BVCEO 120.	
38	M22P2	15	N-PL	Si	u58a	T	BVCEO-25V;BVCEO-18V;VBEBO-5.0V;Ic-100mA;hFE-70min at Ic 2.0mA and VCE 4.5V.	
39	M22P3	15	N-PL	Si	u58a	T	BVCEO-25V;BVCEO-18V;VBEBO-5.0V;Ic-100mA;hFE-110min at Ic 2.0mA and VCE 4.5V.	
40	M22P4	15	N-PL	Si	u58a	T	BVCEO-25V;BVCEO-18V;VBEBO-5.0V;Ic-100mA;hFE-150min at Ic 2.0mA and VCE 4.5V.	
41	M23P-X504	15	N-PE	Si	u70	T	2N2219-22 chips	
42	M23P-X509	15	N-PE	Si	u70	T	2N3975 chip	
43	M23P-X516	15	N-PE	Si	u70	T	2N3976 chip	
44	M24P-X502	15	N-PE	Si	u58a	T	2N2714 chip	
45	M26P-X504	15	N-PE	Si	u59a	T	2N2484 chip	
46	M26P-X505	15	N-PE	Si	u59a	T	2N930 chip	
47	M26P-X516	15	N-PE	Si	u59a	T	2N3859 chip	
48	M26P-X517	15	N-PE	Si	u59a	T	2N5232 chip	
49	M26P-X531	15	N-PE	Si	u59a	T	2N929 chip	
50	M26P-X558	15	N-PE	Si	u59a	T	2N5172 chip	
51	M26P-X560	15	N-PE	Si	u59a	T	2N3860 chip	
52	M28P-X507	15	N-PE	Si	u59a	T	2N3855A chip.	
53	M28P-X508	15	N-PE	Si	u59a	T	2N3856A chip.	
54	M32P-X503	15	N-PE	Si	u71	T	2N3414 chip.	
55	M32P-X506	15	N-PE	Si	u71	T	2N3416 chip.	
56	M32P-X508	15	N-PE	Si	u71	T	2N3417 chip.	
57	M32P-X509	15	N-PE	Si	u71	T	2N3415 chip.	
58	M63P-X503	15	N-PE	Si	u72	T	2N918 chip.	
59	M67P-X504	15	N-PE	Si	u70	T	2N2905-07 chips.	
60	M73P1	15	N-PE	Si	u73	T	Darlington chip;BVCEO-18V;VBEBO-12V;hFE-3.0k at Ic-2.0mA and VCE-5.0V.	
61	M73P-X502	15	N-PE	Si	u73	T	2N5306 Darlington chip.	
62	M82P-X500	15	N-PE	Si	u74	T	2N708 chip.	
63	TH95	15	P-PE	Si	u66	GP	BVCEO50V;BVCEO50V;VBEBO50V;Ic100mAmax;hFE20min at Ic3.0mAandVCE500mV.	
64	TH2192	15	N-PE	Si	u64	T	BVCEO60V;BVCEO40V;VBEBO50V;Ic1.0mAmax;hFE100min at Ic50mAandVCE10V.	
65	TH2221	15	N-PE	Si	u48	T	2N2221 chip;Aluminum Contacts;Gold Metallization on back.	
66	TH2221A	15	N-PE	Si	u48	T	2N2221A chip;Aluminum Contacts;Gold Metallization on back.	
67	TH2222	15	N-PE	Si	u48	T	2N2222 chip;Aluminum Contacts;Gold Metallization on back.	
68	TH2222A	15	N-PE	Si	u48	T	2N2222A chip;Aluminum Contacts;Gold Metallization on back.	
69	TH2369	15	N-PE	Si	u60	T	BVCEO40V;BVCEO15V;VBEBO4.5V;Ic500mAmax;hFE40min at Ic10mAand VCEVCE5.0V	
70	TH2906	15	P-PE	Si	u48	T	2N2906 chip;Aluminum Contacts;Gold Metallization on back.	
71	TH2906A	15	P-PE	Si	u48	T	2N2906A chip;Aluminum Contacts;Gold Metallization on back.	
72	TH2907	15	P-PE	Si	u48	T	2N2907 chip;Aluminum Contacts;Gold Metallization on back.	
73	TH2907A	15	P-PE	Si	u48	T	2N2907A chip;Aluminum Contacts;Gold Metallization on back.	
74	TH2926	15	N-PE	Si	u58	T	BVCEO18V;BVCEO18V;VBEBO5.0V;Ic100mAmax;hFE35min at Ic2.0mAandVCE10V.	
75	TH2944	15	P-PE	Si	u67	T	BVCEO15V;BVCEO10V;VBEBO15V;Ic100mAmax;hFE80min at Ic1.0mAandVCE500mV.	
76	TH2945	15	P-PE	Si	u67	T	BVCEO25V;BVCEO20V;VBEBO25V;Ic100mAmax;hFE40min at Ic1.0mAandVCE500mV.	
77	TH2946	15	P-PE	Si	u67	T	BVCEO40V;BVCEO35V;VBEBO40V;Ic100mAmax;hFE30min at Ic1.0mAandVCE500mV.	
78	TH3638	15	P-PE	Si	u48	T	BVCEO25V;BVCEO25V;VBEBO4.0V;Ic500mAmax;hFE30min at Ic50mAandVCE10V.	
79	TH3877	15	N-PE	Si	u59	T	BVCEO70V;BVCEO70V;VBEBO4.0V;Ic50mAmax;hFE20min at Ic2.0mAandVCE4.5V.	
80	TH3904	15	N-PE	Si	u62	T	BVCEO60V;BVCEO40V;VBEBO6.0V;Ic200mAmax;hFE100min at Ic10mAandVCE5.0V.	
81	TH3906	15	P-PE	Si	u63	T	BVCEO40V;BVCEO40V;VBEBO5.0V;Ic200mAmax;hFE100min at Ic10mAandVCE5.0V.	
82	TH4258	15	P-PE	Si	u61	T	BVCEO12V;BVCEO12V;VBEBO4.5V;Ic50mAmax;hFE30min at Ic10mAandVCE5.0V.	
83	TH4384	15	N-PE	Si	u48	T	2N4384 chip;Aluminum Contacts;Gold Metallization on back.	
84	TH4386	15	N-PE	Si	u48	T	2N4386 chip;Aluminum Contacts;Gold Metallization on back.	
85	TH4413	15	P-PE	Si	u48	T	2N4413 chip;Aluminum Contacts;Gold Metallization on back.	
86	TH4415	15	P-PE	Si	u48	T	2N4415 chip;Aluminum Contacts;Gold Metallization on back.	
87	TH7500	15	P-PE	Si	u65	T	BVCEO60V;BVCEO40V;VBEBO5.0V;Ic1.0mAmax;hFE100min at Ic50mAandVCE10V.	
88	TH7501	15	P-PE	Si	u65	T	BVCEO60V;BVCEO60V;VBEBO5.0V;Ic1.0mAmax;hFE100min at Ic50mAandVCE10V.	
89	2N2723	16	N-PL	Si	L4	F	hFE 1.5k-15k;BVCEO 60V.	
90	2N2724	16	N-PL	Si	L4	F	hFE 5.0k-60k;BVCEO 45V.	
91	2N2725	16	N-PL	Si	L4	F	hFE 1.5k-15k;BVCEO 45V.	
92	2N4974	16	P	Si	L55	F	Pt 800mW;BVCEO 40V;BVCEO 30V;VBEBO 10V;hFE 5000 min	
93	2N4975	16	P	Si	L55	F	Pt 800mW;BVCEO 40V;BVCEO 30V;VBEBO 10V;hFE 1000 min.	
94#	BDY87	16	NA	Si		F	Pt 35W;BVCEO 20V;hFE 2.5k at IC 4.0A;VCE 2.0V.	
95#	BDY88	16	NA	Si		F	Pt 35W;BVCEO 40V;hFE 2.5k at IC 4.0A;VCE 2.0V.	
96#	BDY89	16	NA	Si		F	Pt 35W;BVCEO 60V;hFE 2.5k at IC 4.0A;VCE 2.0V.	
97#	D16P1	16	N-PE	Si	L3h	F	BVCEO 18V;BVCEO 12V;VBEBO 12V;Pt 400mW;ft 60MHz min;hfe 2000 min.	
98#	D40C1	16	NA	Si	X51c	F	Pd 1.2W;BVCEO 30V;VBEBO 13V;hFE 10k to 60k;ft 75MHz;ts 350ns;tf 800ns.	
99#	D40C2	16	NA	Si	X51c	F	Pd 1.2W;BVCEO 30V;VBEBO 13V;hFE 40k min;ft 75MHz;ts 350ns;tf 800ns.	
100#	D40C4	16	NA	Si	X51c	F	Pd 1.2W;BVCEO 40V;VBEBO 13V;hFE 10k to 60k;ft 75MHz;ts 350ns;tf 800ns.	
101#	D40C5	16	NA	Si	X51c	F	Pd 1.2W;BVCEO 40V;VBEBO 13V;hFE 40k min;ft 75MHz;ts 350ns;tf 800ns.	
102#	D40C7	16	NA	Si	X51c	F	Pd 1.2W;BVCEO 50V;VBEBO 13V;hFE 10k to 60k;ft 75MHz;ts 350ns;tf 800ns.	
103#	HEPS9100S	16	N	Si	TO92	A	BVCEO;BVCEO30V;VBEBO10V;Ic300V;Pd500mW;ft200MHz;hFE20k;ICBO100nA;ALL MINIMUM.	
104#	HEPS9120S	16	P	Si	TO92	A	BVCEO;BVCEO30V;VBEBO8.0V;Ic300V;Pd500mW;ft175MHz;hFE50k;ICBO100nA;ALL MINIMUM.	
105	MCH2005F	16	Δ	Si	L76	F	Pd 500mW;hFE 1.0k min. at IC 1.0A;VCE 10V;BVCEO 30V;BVCEO 30V;ts 350ns max.	
106	MJ900	16	P	Si	TO3	C	BVCEO 60V;BVCEO 60V;VBEBO 5.0V;Pd 90W;ICBO 200u;hFE 1.0k min.	
107	MJ901	16	P	Si	TO3	C	BVCEO 80V;BVCEO 80V;VBEBO 5.0V;Pd 90W;ICBO 200u;hFE 1.0k min.	
108	MJ1000	16	N	Si	TO3	C	BVCEO 60V;BVCEO 60V;VBEBO 5.0V;Pd 90W;ICBO 200u;hFE 1.0k min.	
109	MJ1001	16	N	Si	TO3	C	BVCEO 80V;BVCEO 80V;VBEBO 5.0V;Pd 90W;ICBO 200u;hFE 1.0k min.	
110#	MJ2500	16	P	Si	L78	F	Pd 150W;BVCEO 60V;BVCEO 60V;VBEBO 5.0V;ICBO 400uA max;hFE 1000 min.	

# 13. MISCELLANEOUS TRANSISTORS

IN ORDER OF (1) CATEGORY & (2) TYPE No.

LINE No.	TYPE No.	CATEGORY	STRUCTURE	MATERIAL	DWG #	LEO A D E	DESCRIPTION
1▼	MJ2501	16	P	Si	L78		Pd 150W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 400uA max;hFE 1000 min.
2▼	MJ3000	16	N	Si	L78a		Pd 150W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 400uA max;hFE 1000 min.
3▼	MJ3001	16	N	Si	L78a		Pd 150W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 400uA max;hFE 1000 min.
4▼	MJ4000	16	N	Si	L78a		Pd 75W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 200uA max;hFE 1000 min.
5▼	MJ4001	16	N	Si	L78a		Pd 75W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 200uA max;hFE 1000 min.
6▼	MJ4010	16	P	Si	L78		Pd 75W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 200uA max;hFE 1000 min.
7▼	MJ4011	16	P	Si	L78		Pd 75W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 200uA max;hFE 1000 min.
8▼	MJ4030	16	P	Si	L78		Pd 150W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 1.0mA max;hFE 1000 min.
9▼	MJ4031	16	P	Si	L78		Pd 150W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 1.0mA max;hFE 1000 min.
10▼	MJ4032	16	P	Si	L78		Pd 150W;BVCBO 100V;BVCEO 100V;BVEBO 5.0V;ICBO 1.0mA max;hFE 1000 min.
11▼	MJ4033	16	N	Si	L78a		Pd 150W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 1.0mA max;hFE 1000 min.
12▼	MJ4034	16	N	Si	L78a		Pd 150W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 1.0mA max;hFE 1000 min.
13▼	MJ4035	16	N	Si	L78a		Pd 150W;BVCBO 100V;BVCEO 100V;BVEBO 5.0V;ICBO 1.0mA max;hFE 1000 min.
14▼	MJE1090	16	P†	Si	L78b		Pd 70W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
15▼	MJE1091	16	P†	Si	L78b		Pd 70W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
16▼	MJE1092	16	P†	Si	L78b		Pd 70W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
17▼	MJE1093	16	P†	Si	L78b		Pd 70W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
18▼	MJE1100	16	N†	Si	L78c		Pd 70W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
19▼	MJE1101	16	N†	Si	L78c		Pd 70W;BVCBO 60V;BVCEO 60V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
20▼	MJE1102	16	N†	Si	L78c		Pd 70W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
21▼	MJE1103	16	N†	Si	L78c		Pd 70W;BVCBO 80V;BVCEO 80V;BVEBO 5.0V;ICBO 200uA max;hFE 750 min.
22	MPSA12	16	N	Si	TO92	A	Pd 310mW;hFE 20k min. at IC 10mA,VCE 5.0V;BVCEO 20V;VCE(sat) 1.0V. max.
23	RM3005	16	N	Si	TO72		Pd 500mW;hFE 2.0k min;VCB 100V max.
24	RM3022	16	N-PL	Si	TO18	A∅	Pd 1.8W max;hFE 1.6k min. at IC 10mA;BVCBO 60V.
25#	SL305B	16	N-E*	Si	L63		Pt 600mW;BVCBO 50V;hFE 600 typ. at IE 10mA;ft 600MHz.

# 14. TYPES WITH U.S. MILITARY SPECIFICATIONS

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/
2N43A	GESY	6A	2N458B	none	217A	2N657	FSC	74E	2N1008B	MOTA	186A	2N1183B	KSC	143B
2N44A	GESY	6A			AMEND		GESY	Ø			AMEND		RCA	AMEND
2N78A	GESY	90A					TEC	2			EL			2
		USAF	2N461	GESY	45A	2N665	TII	58D	2N1011	MOTA	67A	2N1184	KSC	143B
2N117	TII	2B		MOTA	AMEND		KSC	135A			EL		RCA	AMEND
2N118	TII	2B			2	2N695	MOTA	NAVY	2N1016B	SEN	102A			2
2N119	TII	2B			USAF		none	99E		SIL	Ø	2N1184A	KSC	143B
2N123	none	30A	2N463	none	70A	2N696		AMEND		SPC	102A		RCA	AMEND
		USAF			AMEND		FSC	1	2N1016C	WESY	102A			2
2N128	SPR	9B			1		TSC	99E		SIL	102A	2N1184B	KSC	143B
2N158	KSC	24D			NAVY	2N697		AMEND		SEN	102A		RCA	AMEND
2N167A	GESY	11C	2N464	none	49C		FSC	1	2N1016D	SIL	102A			2
2N174A	DEL	13B			AMEND		TSC	123A		SEN	102A		KSC	143B
	MOTA	AMEND			1	2N700A		EL		WESY	102A		RCA	Ø
		2	2N465	MOTA	49C	2N702		153B		SIL	102A			AMEND
2N220	none	1A			AMEND		TII	AMEND		SEN	102A			2
2N240	SPR	25B			1			1	2N1021A	SEN	102A			EL
2N297A	KSC	36C			EL			1		WESY	102A		MOTA	71D
	MOTA	Ø	2N466M	GIC	51D	2N703		153B		none	217A			AMEND
2N326	KSC	40B		MOTA	AMEND		MOTA	AMEND	2N1022A	none	AMEND			1
2N328A	CRY	110B	2N467	GIC	1		TII	1			217A		none	165
	NSC			MOTA	49C	2N705		AMEND			AMEND			SigC
	RAYN				AMEND		MOTA	1	2N1025M	CRY	78B	2N1224	APX	189A
	SOD				1		TII	86A	2N1026M	CRY	78B		RCA	AMEND
	SPR		2N489A	†GESY	EL	2N706		AMEND		SPR	78B	2N1225	APX	189A
2N329A	CRY	110B		†TII	75B		FSC	120C	2N1039	KSC	89C		RCA	AMEND
	NSC		2N490A	†TII	AMEND		ITT			TII	AMEND	2N1234	CRY	179
	RAYN			†TII	1		MOTA		2N1041		89C		SOD	AMEND
	SOD		2N491A	†GESY	75B		RAYN			KSC	Ø	2N1302		1
2N331	SPR	4D		†TII	Ø	2N708		TSC		TII	AMEND		GIC	SigC
2N333	MOTA	37C		†TII	AMEND		TSC	312B	2N1042		1		RCA	126B
	TEC	1	2N492A	†GESY	75B		ITT			KSC	137B	2N1303	TII	
2N333A	none	37C		†TII	AMEND	2N718A	†MOTA	181C	2N1043	TII	137B		GESY	126B
		AMEND	2N493A	†TII	1		†FSC	Ø	2N1044	KSC	137B		KSC	
2N335	TEC	37C		†TII	AMEND		†MOTA	AMEND	2N1045	TII	137B	2N1304	TII	126B
	TII	1	2N494A	†GESY	75B	2N720A	†RAYN	2	2N1046	TII	137B		TII	126B
2N335A	TEC	37C		†TII	AMEND	2N744	†TSC	182C		TII	88	2N1305	TII	126B
		AMEND	2N497	†TII	1		†TSC	Ø	2N1047A		AMEND		GIC	
2N336	TEC	37C		†TII	AMEND	2N757A	FSC	273A		SEN	2	2N1306	TII	126B
	TII	1	2N498	GESY	74E	2N759A	TII	NAVY	2N1048A	SIL	NAVY		TII	
2N336A	none	37C		TII	AMEND	2N760A	none	218A			176A	2N1307	TII	126B
		AMEND	2N499	GESY	74E		none	218A		SEN	AMEND		GIC	
2N337	TEC	69D		TII	AMEND		RAYN	Ø	2N1049A	SIL	176A	2N1307	TII	126B
	TII	1	2N499A	MOTA	72C	2N869A	TSC	283B		SIL	AMEND		GIC	
2N338	TEC	69D		SPR	AMEND	2N910	†MOTA	Ø	2N1050A	SEN	176A	2N1308	TII	126B
	TII	1			2		†FSC	274B		SIL	AMEND		TII	
2N341	TII	31B		MOTA	72C	2N911	RAYN	EL	2N1051	SEN	176A	2N1309	TII	126B
2N342	TII	16E		SPR	AMEND		TSC	274B	2N1072	SIL	AMEND		TII	
2N342A	none	16E			2	2N912	†FSC	EL		none	216A	2N1310	TII	
2N343	TII	16E	2N501A	MOTA	62B		RAYN	274B	2N1094	none	NAVY		TII	
2N358A	GIC	63C		SPR	AMEND	2N914	TSC	EL			163	2N1310	TII	136A
	TII	AMEND	2N502A	MOTA	112C		†FSC	274B	2N1099	none	AMEND	2N1310	TII	NAVY
			2N502B	SPR	EL	2N916	†FSC	373	2N1118	none	161	2N1310	TII	122C
2N384	RCA	27E		MOTA	112C		†MOTA	Ø	2N1119	CRY	AMEND	2N1310	TII	Ø
2N388	GIC	65B	2N526	MOTA	EL	2N916	USAF	271A	2N1120	SPR	138C	2N1310	TII	133A
	RCA		2N537	SPR	60E		Ø	Ø	2N1120	CRY	139B	2N1310	TII	Ø
	TII	173A		none	100A		FSC	AMEND	2N1120	SPR	AMEND	2N1310	TII	133A
2N389	SEN			MOTA	AMEND	2N918	RAYN	Ø	2N1120	CRY	139B	2N1310	TII	Ø
	SIL		2N539	none	1		TSC	NAVY	2N1120	SPR	AMEND	2N1310	TII	133A
2N393	TII	77C			SigC		†MOTA	301A	2N1120	CRY	139B	2N1310	TII	Ø
	MOTA	AMEND	2N539A	KSC	38C	2N918	INSC	Ø	2N1120	SPR	AMEND	2N1310	TII	133A
2N396A	SPR	1		SOD	38C		†RAYN	AMEND	2N1120	CRY	139B	2N1310	TII	Ø
2N398A	GESY	64D	2N545	KSC	84A		†TEC	1	2N1120	CRY	139B	2N1310	TII	133A
	MOTA	174A		SOD	AMEND		ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
	RCA	AMEND	2N559	TEC	1		†TSC		2N1120	SPR	AMEND	2N1310	TII	133A
2N404	GIC	20B			AMEND	2N929	†TSC	253B	2N1120	SPR	AMEND	2N1310	TII	Ø
	RCA	AMEND	2N560	none	73B		†TSC		2N1120	SPR	AMEND	2N1310	TII	133A
2N404A	TII	2	2N574	SOD	46B		†TSC		2N1120	SPR	AMEND	2N1310	TII	Ø
	GIC	20B			EL		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N416	GIC	56B	2N575	SOD	46B	2N930	†TSC		2N1120	SPR	AMEND	2N1310	TII	Ø
		EL			EL		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N417	GIC	56B	2N575A	SOD	46B		ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
2N422	none	66B			EL		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N424	SEN	NAVY	2N598	GIC	197C		ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
	SIL	173A			AMEND		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N425	TII	Ø			2		ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
	GIC	41B	2N599	GIC	166C		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N426	GIC	EL			AMEND	2N962	ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
		41B			3		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N427	GIC	1	2N600	GIC	NAVY		ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
	TII	AMEND			197C	2N964	ITT		2N1120	SPR	AMEND	2N1310	TII	133A
		1	2N604	none	AMEND		ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
2N428	GIC	EL			2		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
	TII	44D	2N650A	MOTA	175C	2N986	ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
		AMEND	2N651A	MOTA	175C		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N456B	none	217A	2N652A	MOTA	175C	2N987	ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
		AMEND	2N656	FSC	74E		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
2N457B	none	217A		GESY	AMEND		ITT		2N1120	SPR	AMEND	2N1310	TII	Ø
		AMEND		TII	2		ITT		2N1120	SPR	AMEND	2N1310	TII	133A
		1					ITT		2N1120	SPR	AMEND	2N1310	TII	133A

# 14. TYPES WITH U.S. MILITARY SPECIFICATIONS

IN TYPE NUMBER SEQUENCE

TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/	TYPE No.	MFRS	MIL-S-19500/
2N1506A	none	265 AMEND 1	2N2060	†FSC †GESY †MOTA †RAYN †TII	270B AMEND 2	2N2432 (cont.)	†NSC †TEC †TII	313A AMEND 1	2N2904A (cont.)	†TII †TSC †TII	290B AMEND 1	2N3331	†none	378A USAF
2N1549A	MOTA	332 EL	2N2079A	†MOTA	340	2N2432A	†TCRY †TEC †TII	268B USAF	2N2905	†MOTA †NSC †RAYN †SPR †TEC †TII	290B AMEND 1	2N3332	†none	378A USAF
2N1550A	MOTA	332 EL	2N2084	†APX	277C	2N2481	†FSC †MOTA †RAYN	268B USAF		†MOTA †RAYN †TII	290B AMEND 1	2N3375	†MOTA †NSC †RCA	341B AMEND 1
2N1551A	MOTA	332 EL	2N2151	†TEC	277C			268B USAF	2N2905A	†TII †TSC †TII	290B AMEND 1	2N3418	†none	393 AMEND 4
2N1552A	MOTA	332 EL	2N2218	†FSC †MOTA †NSC †RAYN †TEC †TII	251E AMEND 1	2N2484	†RAYN †TSC †none	376 USAF		†MOTA †NSC †RAYN †TII	290B AMEND 1	2N3419	†none	393 AMEND 4
2N1553A	MOTA	331 AMEND 1				2N2497	†none	378A USAF		†MOTA †NSC †RAYN †TII	290B AMEND 1	2N3420	†TII	393 AMEND 4
2N1554A	MOTA	331 AMEND 1	2N2218A	†FSC †MOTA †NSC †RAYN †TII	251E AMEND 1	2N2498	†none	378A USAF	2N2906	†TII †TSC †TII	291B AMEND 1	2N3421	†TII	393 AMEND 4
2N1555A	MOTA	331 AMEND 1	2N2219	†FSC †GESY †TII	251E AMEND 1	2N2499	†none	378A USAF		†MOTA †NSC †RAYN †TII	291B AMEND 1	2N3422	†TII	393 AMEND 4
2N1556A	MOTA	331 AMEND 1				2N2553	†TII	378A USAF	2N2906A	†MOTA †NSC †RAYN †TII	291B AMEND 1	2N3439	†RCA	368 AMEND 1
2N1557A	MOTA	330A AMEND 2	2N2219A	†MOTA †NSC †RAYN †TEC †TII	251E AMEND 1	2N2555	†TII	378A USAF		†MOTA †NSC †RAYN †TII	291B AMEND 1	2N3440	†RCA	368 AMEND 1
2N1558A	MOTA	330A AMEND 2				2N2557	†TII	378A USAF	2N2907	†TII †MOTA †NSC †RAYN †TEC †TII	291B AMEND 1	2N3441	†RCA	369 AMEND 1
2N1559A	MOTA	330A AMEND 2	2N2221	†FSC †MOTA †NSC †RAYN †SPR †TII	255E AMEND 1	2N2559	†TII	378A USAF		†MOTA †NSC †RAYN †TII	291B AMEND 1	2N3442	†RCA	370 AMEND 1
2N1560A	MOTA	330A AMEND 2				2N2604	†TII	378A USAF	2N2907A	†TII †MOTA †NSC †RAYN †TEC †TII	291B AMEND 1	2N3444	†RCA	370 AMEND 1
2N1613	†FSC †MOTA †RAYN †TII †TSC	181C AMEND 2	2N2221A	†FSC †MOTA †NSC †RAYN †SPR †TII	255E AMEND 1	2N2605	†TII	378A USAF		†MOTA †NSC †RAYN †TII	291B AMEND 1	2N3444	†MOTA †SEN	347 AMEND 1
2N1646	none	223B USAF				2N2606	†TII	378A USAF	2N2911	†TII †MOTA †NSC †RAYN †TEC †TII	381 AMEND 2	2N3449	†MOTA †TII	338 AMEND 1
2N1651	none	219A AMEND 4	2N2222	†FSC †MOTA †NSC †RAYN †SPR †TII	255E AMEND 1	2N2607	†TII	378A USAF		†MOTA †NSC †RAYN †TII	381 AMEND 2	2N3467	†none	348 AMEND 2
2N1652	none	219A AMEND 4				2N2608	†TII	378A USAF	2N2919	†FSC †NSC †RAYN †CRY	355A AMEND 2	2N3468	†MOTA †TII	348 AMEND 2
2N1653	MOTA	219A AMEND 4	2N2222A	†FSC †MOTA †NSC †RAYN †SPR †TII	255E AMEND 1	2N2609	†TII	378A USAF		†MOTA †NSC †RAYN †TII	355A AMEND 2	2N3468	†none	348 AMEND 2
2N1711	†FSC †TSC †TII	225D AMEND 2				2N2631	†TII	378A USAF	2N2944A	†TII †MOTA †NSC †RAYN †TEC †TII	382 AMEND 1	2N3468	†none	348 AMEND 2
2N1714	†TII	263A AMEND 2	2N2273	†FSC †MOTA †NSC †RAYN †SPR †TII	244B AMEND 1	2N2639	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3485A	†MOTA	392 AMEND 1
2N1715	†TII	263A AMEND 2				2N2642	†TII	378A USAF	2N2945A	†TII †MOTA †NSC †RAYN †TEC †TII	382 AMEND 1	2N3486A	†MOTA	392 AMEND 1
2N1716	†TII	263A AMEND 2	2N2369A	†FSC †MOTA †NSC †RAYN †SPR †TII	317D AMEND 1	2N2642	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3498	†MOTA	366A AMEND 1
2N1717	†TII	263A AMEND 2				2N2708	†TII	378A USAF	2N2946A	†TII †MOTA †NSC †RAYN †TEC †TII	382 AMEND 1	2N3498	†MOTA	366A AMEND 1
2N1722	†SEN †TEC †TII	262F AMEND 2	2N2377	†FSC †MOTA †NSC †RAYN †SPR †TII	288 AMEND 2	2N2708	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3498	†MOTA	366A AMEND 1
2N1724	†SEN †TEC †TII	262F AMEND 2				2N2812	†TII	378A USAF	2N2996	†TII †MOTA †NSC †RAYN †TEC †TII	382 AMEND 1	2N3499	†MOTA	366A AMEND 1
2N1853	†RCA	171B NAVY	2N2417A	†FSC †MOTA †NSC †RAYN †SPR †TII	289 AMEND 3	2N2814	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
2N1854	†RCA	172B NAVY				2N2834	†TII	378A USAF	2N2997	†TII †MOTA †NSC †RAYN †TEC †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
2N1890	†FSC †TSC †TII	225D AMEND 2	2N2418A	†FSC †MOTA †NSC †RAYN †SPR †TII	244B AMEND 1	2N2834	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
2N1893	†FSC †TSC †TII	182C AMEND 2				2N2857	†TII	378A USAF	2N2997	†TII †MOTA †NSC †RAYN †TEC †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
2N2015	†RCA	248A AMEND 1	2N2419A	†FSC †MOTA †NSC †RAYN †SPR †TII	317D AMEND 1	2N2858	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
2N2016	†RCA	248A AMEND 1	2N2420A	†FSC †MOTA †NSC †RAYN †SPR †TII	288 AMEND 2	2N2858	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
2N2034	†none	381 AMEND 1	2N2421A	†FSC †MOTA †NSC †RAYN †SPR †TII	289 AMEND 3	2N2858	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
			2N2422A	†FSC †MOTA †NSC †RAYN †SPR †TII	317D AMEND 1	2N2858	†TII	378A USAF		†MOTA †NSC †RAYN †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1
			2N2432 cont.next col.	†CRY	313A	cont.next col.			2N3013	†TII †MOTA †NSC †RAYN †TEC †TII	382 AMEND 1	2N3500	†MOTA	366A AMEND 1





# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE

**THE PREFIX LETTERS OF THE OUTLINE DRAWING NUMBERS INDICATE THE FOLLOWING:**

- L — MULTIPLE Lead Type
- MD — MOUNTED Type — DIAMOND Base
- MM — MOUNTED Type — MISCELLANEOUS
- MS — MOUNTED Type — SQUARE and
- MT — MOUNTED Type — THREADED
- OV — OVAL Case
- R — ROUND Case
- TO — JEDEC Type
- u — MICROMINIATURE Case
- x — MISCELLANEOUS Configuration including Phototransistor
- Y200/TO200 — JEDEC "200" Series
- ZA — DRAWING REFERENCE INFORMATION

## NOTES:

These outline drawings are intended as a guide for the user. They should not be used for construction purposes without first checking with the appropriate manufacturer.

These drawings are referenced in the Technical Sections of this D.A.T.A. BOOK in accordance with information supplied by the manufacturers.

The DO and TO drawings have been reproduced from JEDEC Publication No. 12E (May 1964) with the permission of the National Electrical Manufacturer's Association - Electrical Industries Associates. JEDEC designations are assigned only to outlines submitted by the JS-10 Committee on Mechanical Standardization. The procedure of assigning and announcing the JEDEC designation constitutes registration.

All drawings have circular symmetry unless indicated.

**L1**

L1 - TO77 - DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION  
L1A - TO71 - DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

**L2**

	E1	B1	C1	E2	B2	C2	OUTLINE
L2	3	2	1	5	6	7	RI31
L2b	3	2	1	5	6	7	TO77
L2d	3	2	1	5	6	7	TO78
L2f	2	1	9	4	5	7	TO89
L2g	3	2	1	4	5	6	TO78
L2h	1	2	3	7	6	5	RI02e
L2i	1	2	3	5	6	7	TO71
L2m	3	2	1	5	6	7	TO70
L2p	3	2	1	5	6	7	TO71
L2r	3	2	1	5	6	7	RI36
L2s	3	2	1	5	6	7	RI37
L2t	3	2	1	5	6	7	RI31c
L2u	1	3	2	4	6	5	RI38
L2v	3	2	1	5	6	6	RI31d
L2w	3	2	1	5	6	7	RI31b
L2y	3	2	1	5	6	7	RI31f
L2z	1	2	3	4	5	6	RI38

**L3**

	E	B	C	POLARITY	OUTLINE
L3	1	2	3	NPN	TO18
L3a	1	2	3	NPN	TO5
L3b	1	2	3	PNP	TO18
L3c	1	2	3	PNP	TO5
L3d	1	2	3	NPN	TO53
L3e	1	2	3	NPN	TO98
L3f	2	1	3	NPN	TO98
L3g	1	2	3	NPN	RI10c
L3h	1	3	2	NPN	TO98

**L4**

	E1	B	C	E2	OUTLINE
L4	1	2	3	4	TO72
L4a	1	2	3	4	TO46

**L5**

NO CONNECTION

DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

**L6**

OUTLINE DRAWINGS  
L6 TO5 dimensions except for number of leads  
L6a RI44

**L8**

	INTERNAL CONFIGURATION	OUTLINE DRAWING
L8	TO33	
L8a	RS2	

**L10**

TO5

DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

**L11**

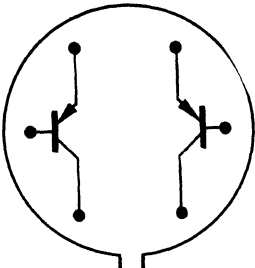
TO5

DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

# 15. OUTLINE DRAWINGS

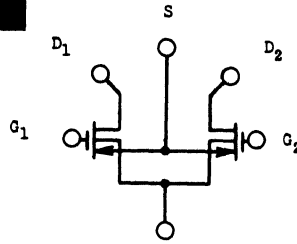
IN DRAWING NUMBER SEQUENCE

L 17



	E1	B1	C1	E2	B2	C2	OUTLINE
L17a	3	2	1	5	6	7	TO77
L17b	3	2	1	5	6	7	R52b
L17c	3	2	1	5	6	7	TO78
L17d	2	1	9	4	5	7	TO89
L17e	1	2	3	5	6	7	TO71
L17f	3	2	1	5	6	7	R52
L17g	3	2	1	5	6	7	R131b
L17h	3	2	1	4	5	6	R131a
L17j	3	2	1	5	6	7	R131
L17k	3	2	1	5	6	7	R131c
L17m	1	3	2	4	6	5	R138
L17s	2	1	9	4	5	7	X22
L17t	3	2	1	5	6	7	R137
L17u	1	6	7	2	5	3	TO71
L17v	3	2	1	4	5	6	R52a
L17w	1	2	3	4	5	6	R138
L17x	3	2	1	5	6	7	R131a

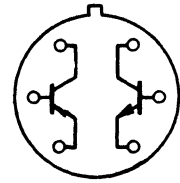
L 18



SUBSTRATE

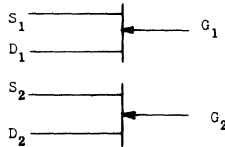
	D1	G1	D2	G2	S	SUBSTRATE	OUTLINE
L18	1	2	7	6	8	4	TO77
L18a	1	3	7	5	8	4	TO76
L18b	1	2	7	6	8	4	TO78
L18c	1	3	7	5	8	4	TO99

L 19



	NPN			PNP			OUTLINE
	E1	B1	C1	E2	B2	C2	
L19	3	2	1	5	6	7	TO77
L19a	3	2	1	5	6	7	TO78
L19b	1	3	2	4	6	5	R138
L19c	2	1	9	4	5	7	TO89
L19d	1	2	3	4	5	6	R138
L19e	1	2	3	4	5	6	R52

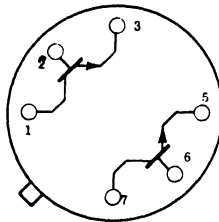
L 21



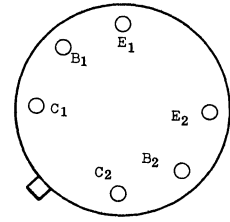
	S1	D1	G1	S2	D2	G2	OUTLINE
L21	1	2	3	5	6	7	TO71
L21a	1	2	3	5	6	7	TO76
L21b	1	2	3	4	5	6	R120
L21c	2	1	9	4	5	7	TO89
L21d	1	2	3	4	5	6	TO71
L21e	1	2	3	4	5	6	R148

TO18 Dimensions except for Lead configurations

L 22

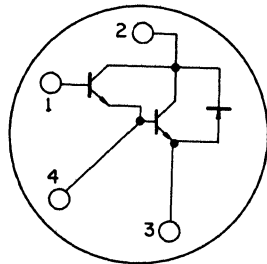


L 23



R33 Dimensions except for internal configurations

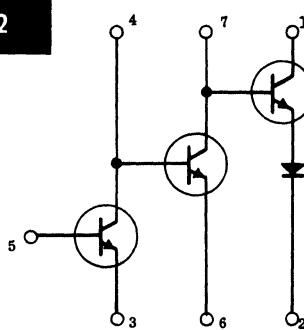
L 35



X19 DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

	B1	C1	E1	B2	OUTLINE
L35	1	2	3	4	X19
L35a	3	4	1	2	TO33

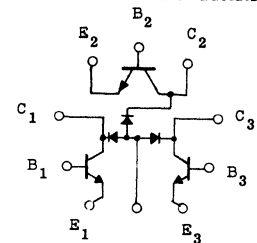
L 42



TO77 OUTLINE

L 43

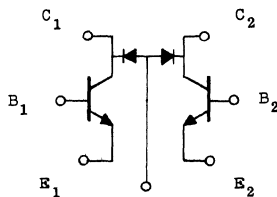
TO5 DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION



	E1	B1	C1	E2	B2	C2	E3	B3	C3	OUTLINE
L43	1	2	3	4	5	6	7	8	9	TO5
L43a	1	2	3	4	5	6	7	8	9	TO78
L43b	2	3	4	14	13	12	5	6	7	X91

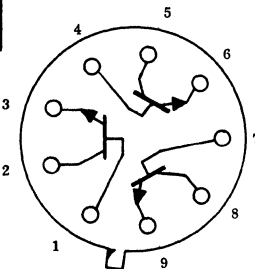
L 44

TO5 DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION



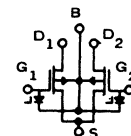
	E1	B1	C1	E2	B2	C2	OUTLINE
L44	1	2	3	7	6	5	TO5
L44a	1	2	3	7	6	5	TO78
L44b	2	3	4	14	13	12	X91

L 50



R129 OUTLINE AND DIMENSIONS

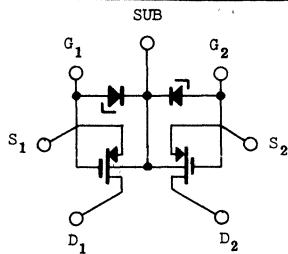
L 51



	G1	D1	B	G2	D2	S	OUTLINE
L51	3	1	4	5	7	8	TO78
L51a	3	1	4	5	7	8	TO76
L51b	3	1	4	5	7	8	TC99

# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

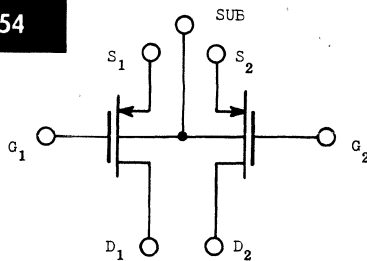
**L 53**



TO77 DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

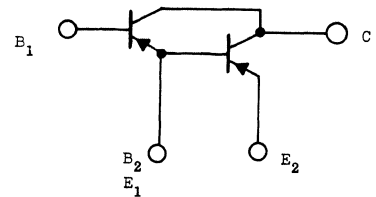
OUTLINE	D <sub>1</sub>	S <sub>1</sub>	G <sub>1</sub>	G <sub>2</sub>	S <sub>2</sub>	D <sub>2</sub>	SUBSTRATE
TO77	1	2	3	5	6	7	4 8

**L 54**



OUTLINE	S <sub>1</sub>	D <sub>1</sub>	G <sub>1</sub>	S <sub>2</sub>	D <sub>2</sub>	G <sub>2</sub>	SUB
L54	TO77	2	1	3	6	7	5 4
L54a	TO5	1	3	2	7	5	6 8
L54b	TO78	1	2	3	5	6	7 4

**L 55**



B <sub>1</sub>	B <sub>2</sub> & E <sub>1</sub>	E <sub>2</sub>	C	OUTLINE
2	4	1	3	TO12

**L 56**

E1	B1	C1	C2	B2	E2	C3	B3	E3	C4	B4	E4	POLARITY	OUTLINE
L56	3	2	1	7	6	5	8	9	10	14	13	PNP	TO86
L56a	2	1	13	12	3	4	5	10	11	16	8	NPN	TO85
L56b	2	1	13	12	3	4	5	10	11	16	8	PNP	TO85
L56c	3	2	1	5	6	7	10	9	8	12	13	NPN	TO86
L56d	1	2	3	5	6	7	10	9	8	12	13	PNP	TO84
L56e	1	2	3	5	6	7	10	9	8	12	13	PNP	X84
L56f	1	2	3	5	6	7	10	9	8	12	13	NPN	TO84
L56g	1	2	3	5	6	7	10	9	8	12	13	NPN	X84
L56h	4	3	2	6	5	4	9	10	14	13	12	NPN	TO84
L56i	4	3	2	6	5	4	9	10	14	13	12	NPN	X84

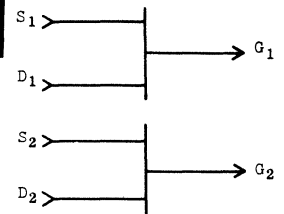
**L 58**

S1	D1	G1	S2	D2	G2	POLARITY	OUTLINE
L58	1	2	3	4	5	6	N TO71
L58a	1	2	3	4	5	6	P RS2b
L58b	2	1	3	6	7	5	P TO99

**L 59**

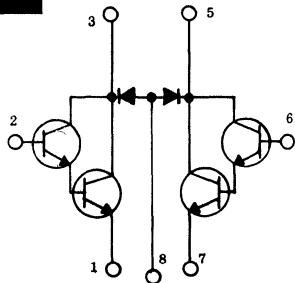
NPN				PNP				OUTLINE					
E1	B1	C1	E2	B2	C2	E3	B3	C3	E4	B4	C4	OUTLINE	
L59	2	1	13	4	3	12	11	10	5	9	8	6	TO85

**L 61**



S <sub>1</sub>	D <sub>1</sub>	G <sub>1</sub>	S <sub>2</sub>	D <sub>2</sub>	G <sub>2</sub>	OUTLINE	
L61	1	2	3	4	5	6	R120
L61a	1	2	3	5	6	7	TO71
L61c	2	3	1	5	4	6	RS2

**L 63**

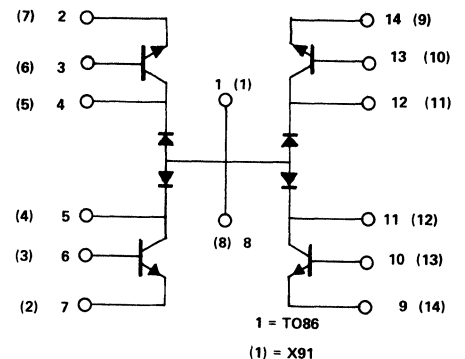


TO77 DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

**L 66**

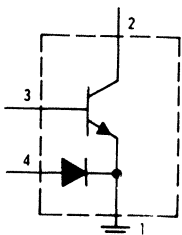
LEAD CONFIGURATION								OUTLINE	
1	2	3	4	5	6	7	8	OUTLINE	
L66	C	B	E	OMIT	E	B	C	OMIT	TO99
L66a	NPN				NPN				TO99
L66b	PNP				PNP				TO99

**L 67**



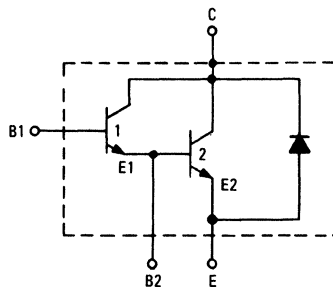
**L 68**

IN MT67a PACKAGE

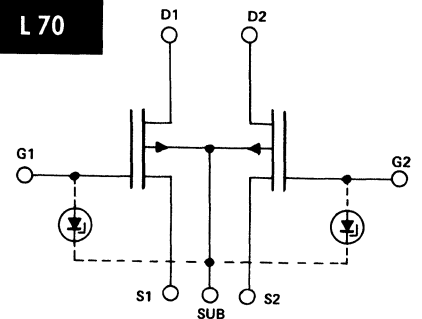


**L 69**

IN MD39 PACKAGE



**L 70**



S <sub>1</sub>	G <sub>1</sub>	D <sub>1</sub>	S <sub>2</sub>	G <sub>2</sub>	D <sub>2</sub>	SUB	OUTLINE	
L70	1	3	2	7	5	6	4	TO99

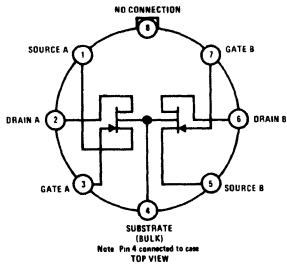
L70a - ZENER DIODES OMITTED

# 15. OUTLINE DRAWINGS

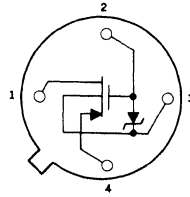
IN DRAWING NUMBER SEQUENCE

L74

TO99-OUTLINE

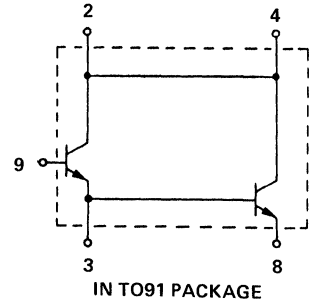


L75

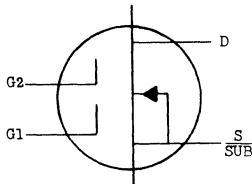


TO33 DIMENSIONS EXCEPT FOR INTERNAL CONFIGURATION

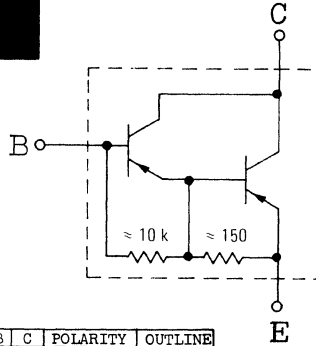
L76



L77

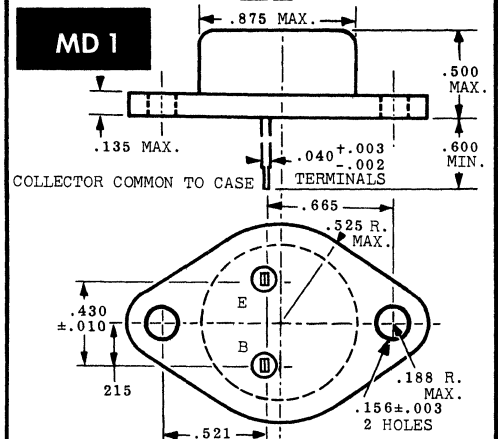


L78

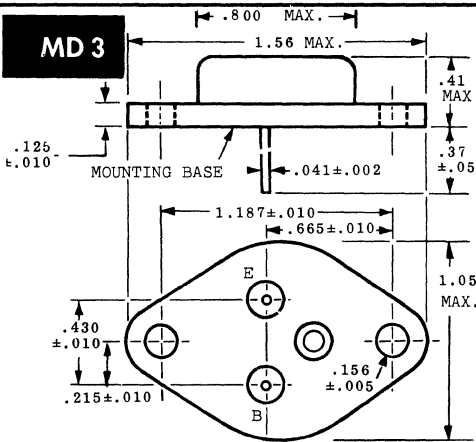


	E	B	C	POLARITY	OUTLINE
L78	2	1	3	PNP	TO3
L78a	2	1	3	NPN	TO3
L78b	1	3	2	PNP	X58a
L78c	1	3	2	NPN	X58a

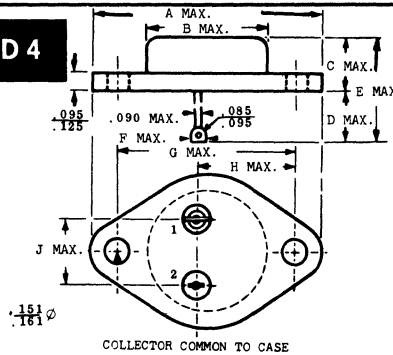
MD 1



MD 3

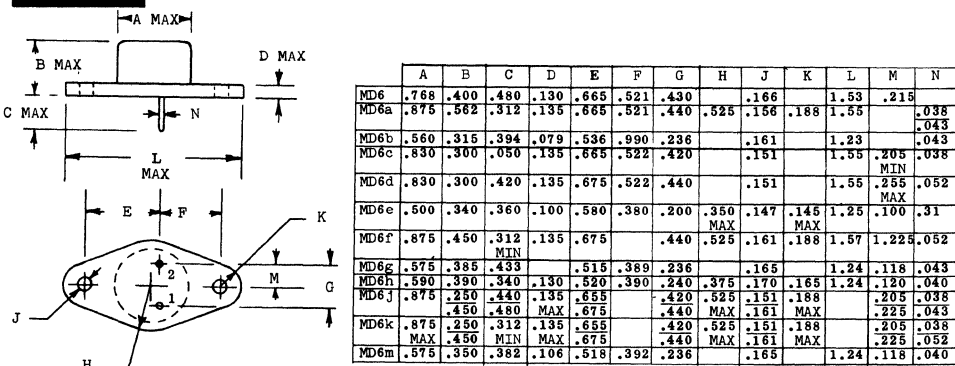


MD 4

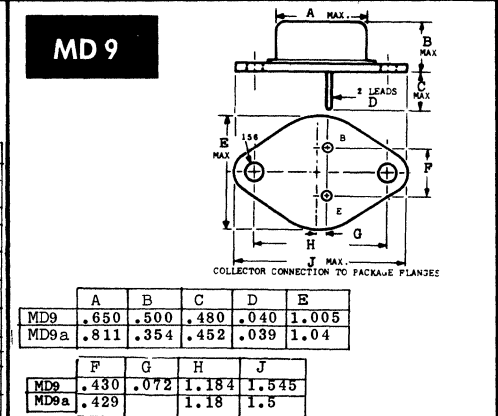


	A	B	C	D	E	F	G	H	J
MD4	1.531	.783	.380	.665	1.032	.145	1.192	.670	.440
MD4a		.773	.338	.376		.198	1.191	.672	.440

MD 6



MD 9





# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

### MD 10

COLLECTOR COMMON TO CASE

	A	B	C	D	E	F	G	H
MD10	.570	1.22	.949	.322	.785	.355		.295
MD10a	.590	1.22	.949	.322	.785	.355		.295
MD10b	.590	1.30	.949	.322	.785	.355		.295
MD10c	.551	1.22	.913	.244	.743	.413	.523	
MD10d	.551	1.22	.913	.244	.743	.413	.523	.263
MD10e	.500	1.25	.962	.210	.700	.360	.580	.340
MD10f	.492	1.26	.969	.201	.709	.393	.579	.315

### MD 11

GOLD PLATED

### MD 14

NOTE 1: Lead diameter is controlled in the zone between .050 and .250 from the base seat. Between .250 and end of lead a max. of .021 is held.

### MD 16

### MD 17

	A	B	C	D	E	F	G	H	J
MD17	1.18	.350	.350	.071	.562	.900	.157	.506	.226
MD17a		.350	.382	.106	.562	.900	.157	.506	.226
MD17b	1.23	.315	.394	.079	.562	.900	.157	.506	.226
MD17c	1.23	.350	.354	.106	.574	.897	.157	.506	.226
MD17d	1.56	.275	.400	.150	.900	1.18	.157	.506	.226
MD17e	1.20	.291	.374	.078	.553	.901	.157	.506	.226
MD17f	1.23	.314	.413	.078	.559	.909	.165	.526	.250
	1.54	.345	.472	.078	.790	1.18	1.61	.650	.424
					.800			.780	.434

### MD 18

	A	B	C	D	E	F	G	H	J
MD18	1.30	2.09	1.69	1.41	.990	.146	.589	.450	.760
MD18a	1.22	2.32	1.81	1.54	1.20	.138	.610	.547	.512

### MD 21

SEATING PLANE

	A	B	C	D	E	F	G	H	J	K
MD21	.761	.333	.108	.430	.058	1.181	.658	.161	.168	.495
MD21a	.769	.359	.112	.470	.062	1.191	.672	.171	.178	.505
MD21a	.800	.300	.114	.440	.059	1.177	.655	.151	.188	.525
		MAX		MAX		1.197	.675	.161	MAX	MAX

### MD 23

	A	B	C	D	E	F
MD23	.295	.374	.020	.898	.512	.159
MD23a		.376		.904	.520	.164
MD23a	.386	.433	.020	.898	.512	.159
MD23b	.390	.340	.130	.910	.520	.170

### MD 24

### MD 25

NOTES FOR MD25

NOTE 1: Index tab shown for 40255 or 40256 for lead orientation corresponding to that for MD-14 Outline. For lead identification, refer to terminal diagram.

NOTE 2: Index tab shown for 40255 or 40256 for lead orientation corresponding to that 4 HOLES (NOTE 3) for TO-37 Outline.

NOTE 3: .070 MIN., .074 MAX. Dia. Countersunk 90 degrees or Counterbored .125 Dia. x .025 Deep.

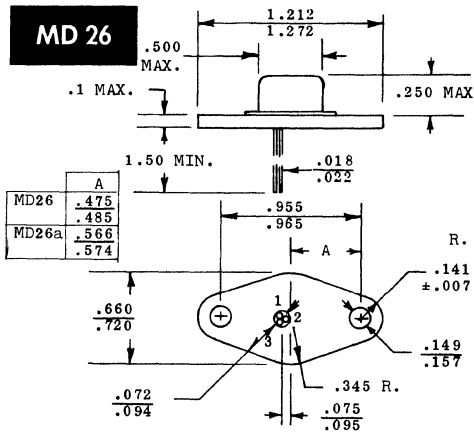
NOTE 1

NOTE 2

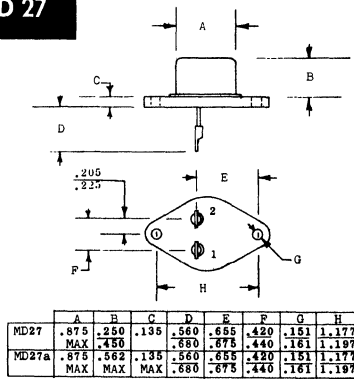
# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE

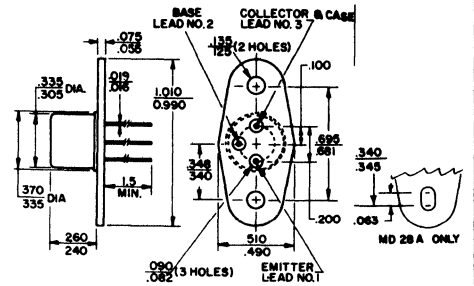
**MD 26**



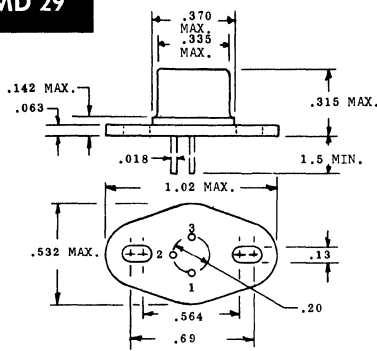
**MD 27**



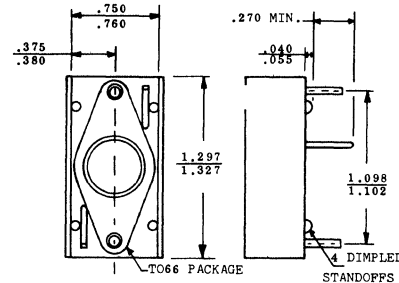
**MD 28**



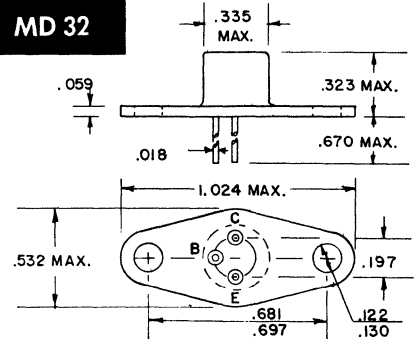
**MD 29**



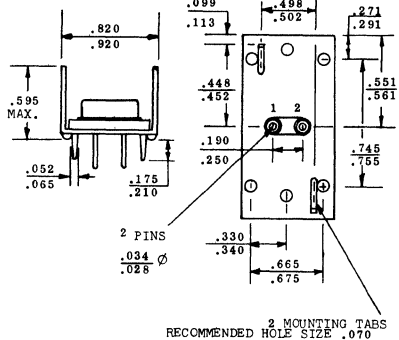
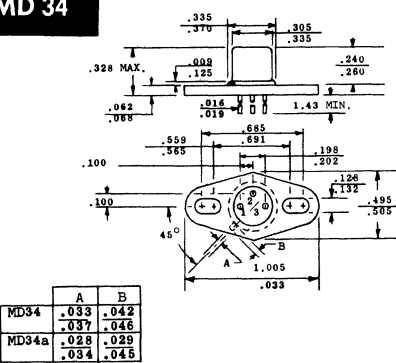
**MD 30**



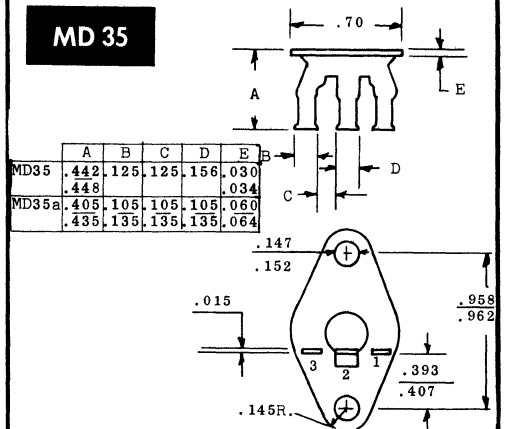
**MD 32**



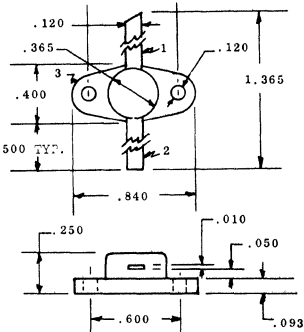
**MD 34**



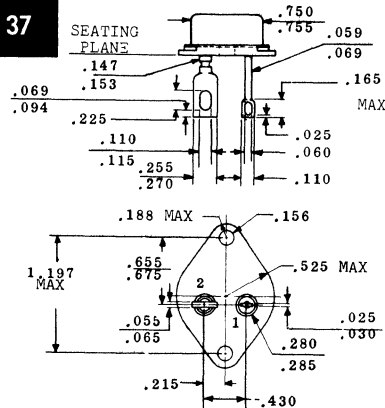
**MD 35**



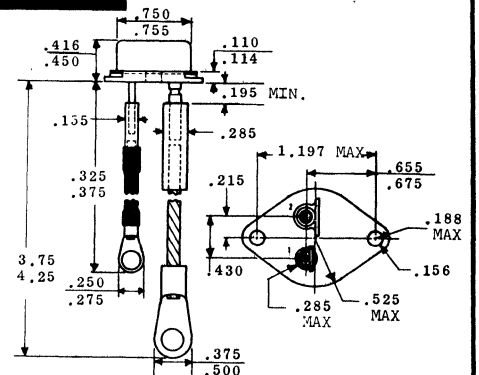
**MD 36**



**MD 37**



**MD 38**



# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

### MD 40

	A	B	C	D	E	F	G	H
MD40	.549	.364	.354	.137	.070	.037	.137	.137
	.570	MAX.	.393	MAX.	.086	.041	.177	.177
MD40a	.744	.346	.433	.157	.039	.037	.157	.177
	.783	MAX.	.473	MAX.	.055	.041	.216	.216

	J	K	N	N	F	O	R
MD40	.789	1.25	.897	.503	.228	.157	
	MAX.	MAX.	.913	.527	.244	.165	
MD40a	1.02	1.57	1.18		.417	.150	.653
	MAX.	MAX.	1.33		.440	.161	.877

### MD41

\* - CLEARANCE HOLES FOR BOTH PINS SHOULD BE .285 MIN. DIA

### MD42

### MM3

1/4-28UNF-2B TAP  
1/4-28UNF-2B TAP

3-.022 TINNED LEADS EQUALLY SPACED ON .156 PIN CIRCLE DIA.

### MM7

### MM8

### MM9

TC5 PACKAGE WELDED TO HEAT - RADIATORS

2 HOLES

4 DIMPLED STANDOFFS

MOUNTING TABS (LEAD No. 2 BEHIND MOUNTING TAB)

### MM10

### MM11

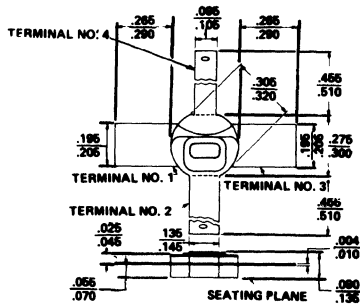
### MM12

	A	B	C	D	E	F	G
MM12	.118	.157	.295	.433	.007	.098	
MM12a	.130	.200	.170		.018	.500	.050
					DIA.		
MM12b	.137	.236	.216		.018	.492	.050
MM12c	.870	.157	.177		.018	.492	.050

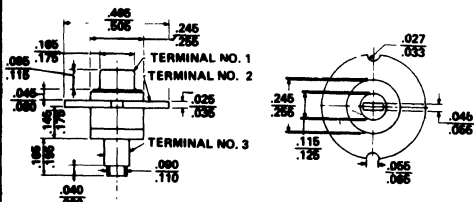
### MM13

# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

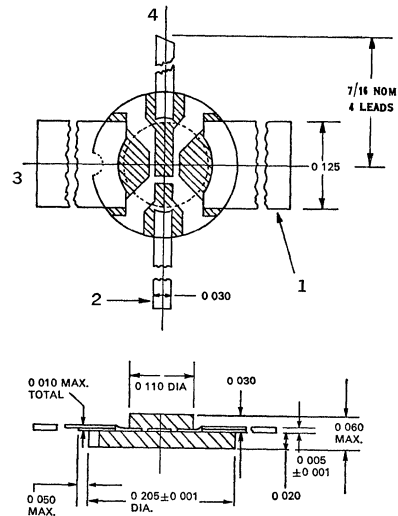
**MM 14**



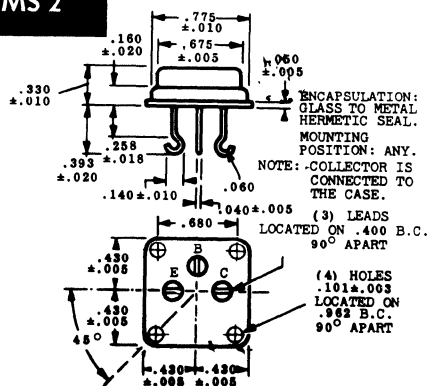
**MM 15**



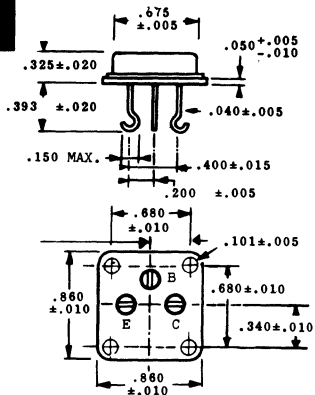
**MM 16**



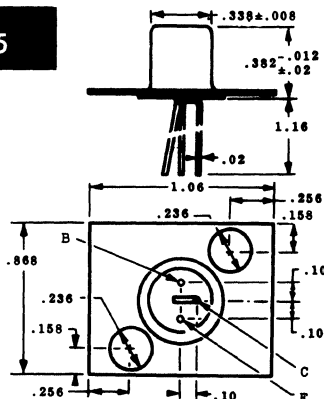
**MS 2**



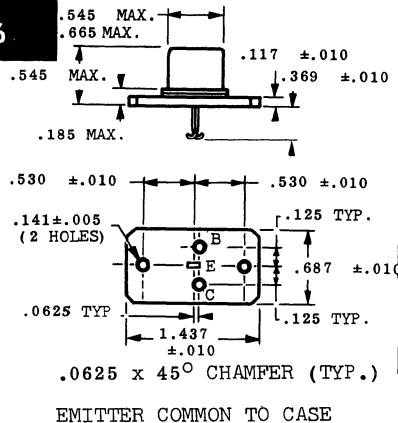
**MS 3**



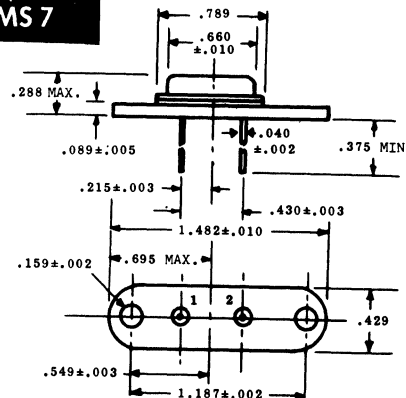
**MS 5**



**MS 6**



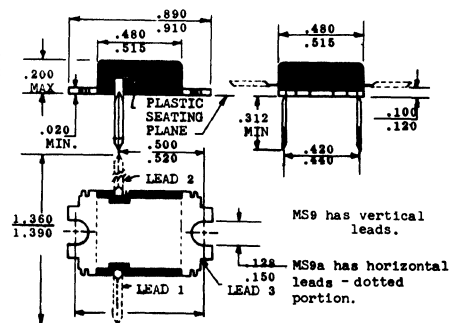
**MS 7**



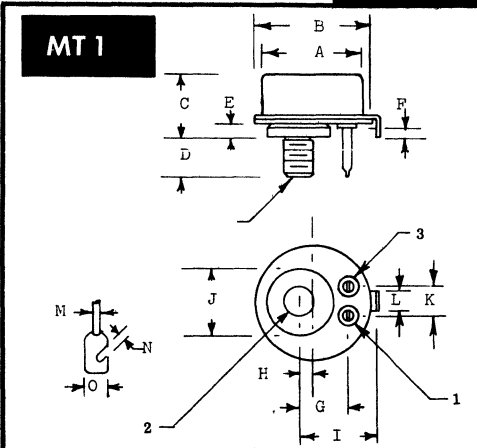
**MS 8**

SAME AS T053  
COLLECTOR ISOLATED FROM CASE

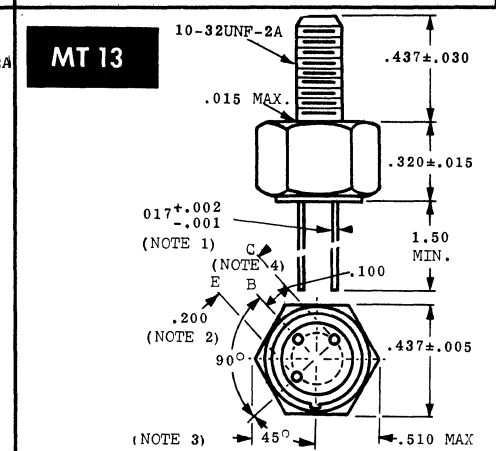
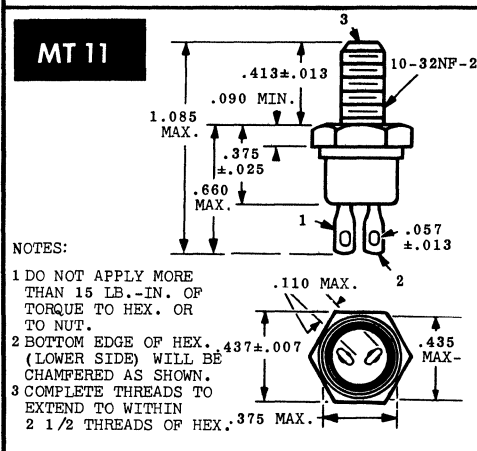
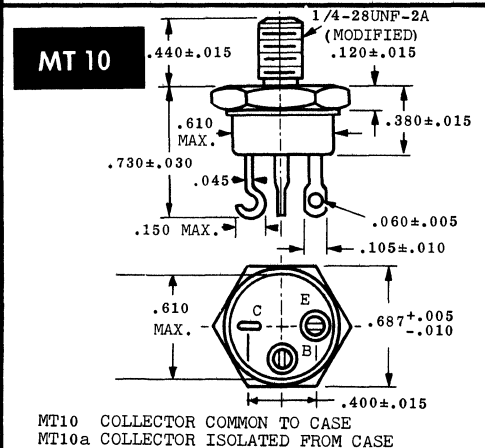
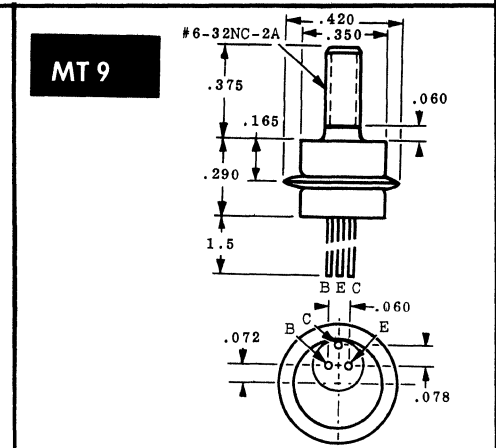
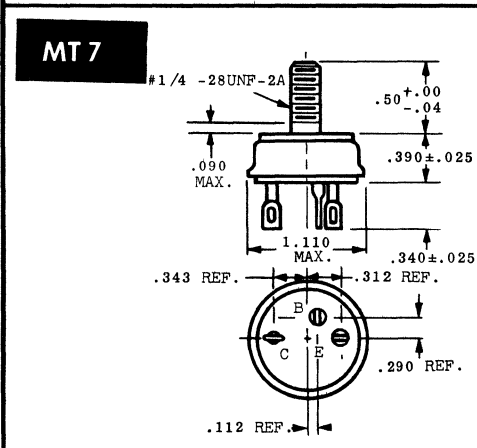
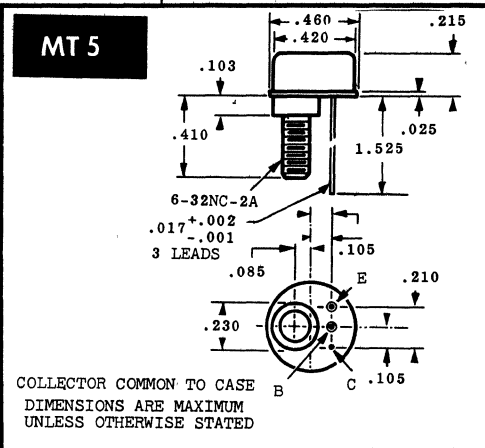
**MS 9**



# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

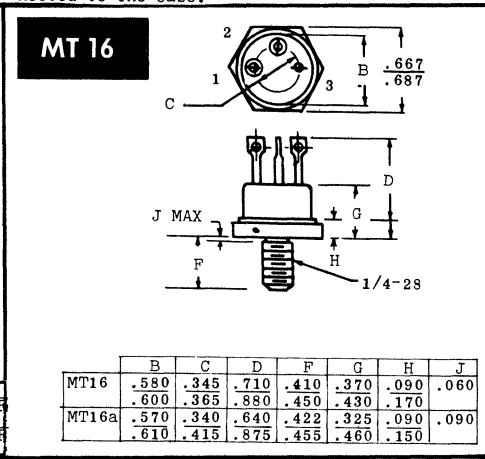
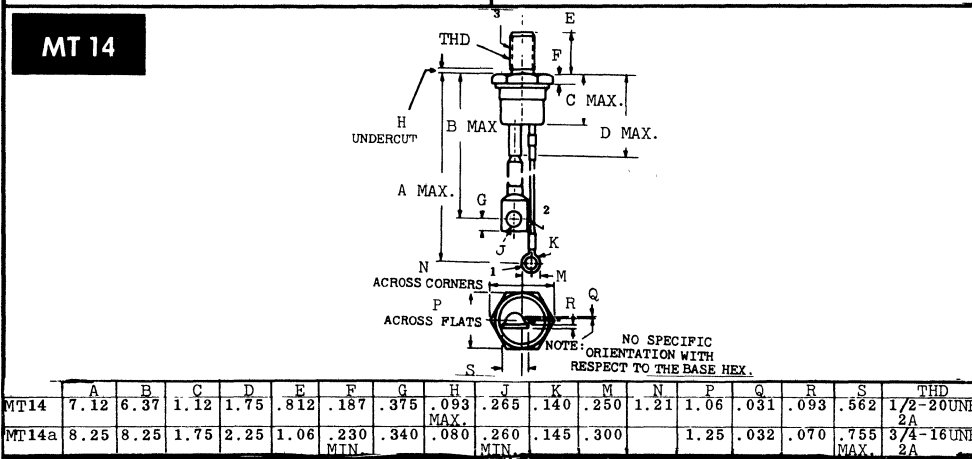


	MT1	MT1a	MT1b
A	1.046	1.046	1.130 MAX.
E	1.281	1.281	1.280-1.240
C	.546 MAX.	.546 MAX.	.560 MAX.
D	.562	.562	.580-.550
E	.125	.125	.140 MAX.
F	.020	.020	.190-.130
G	.500	.500	.520-.480
H	.156	.156	.170-.140
I	.828	.828	.850-.810
J	.750	.750	.770-.730
K	.375	.375	.360-.400
L	.156	.156	.170-.140
M	.060±.005	.060±.005	.055-.083
N	.055 hole	.062±.008	.055-.075
O		.120±.010	.110-.166



NOTES FOR MT-13:

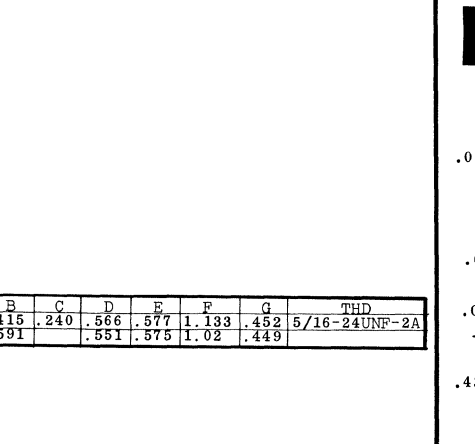
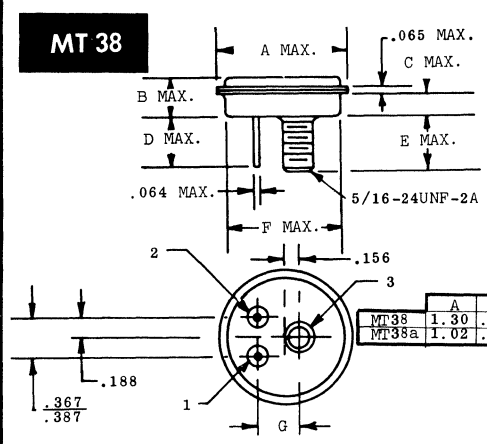
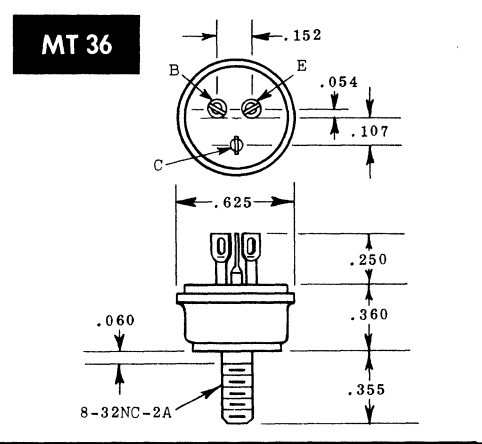
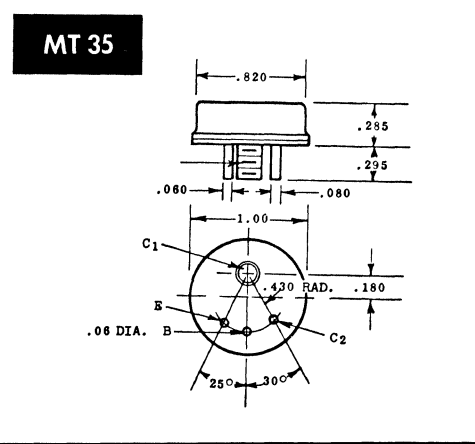
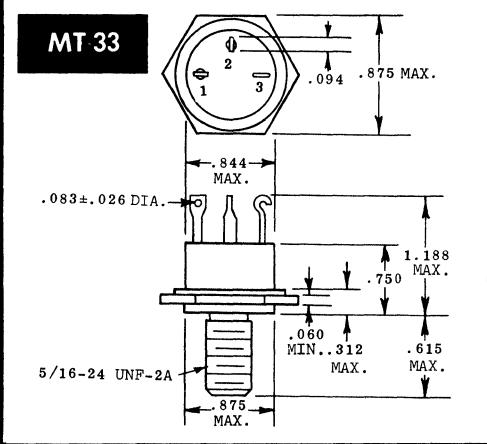
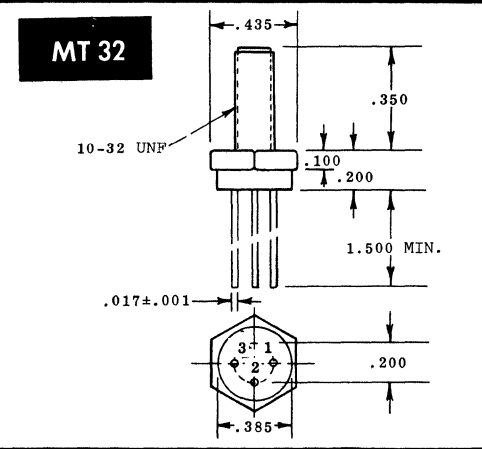
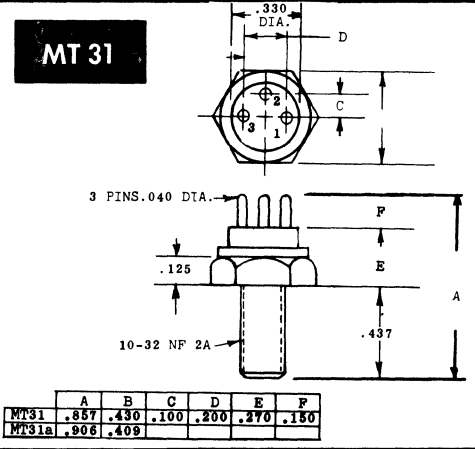
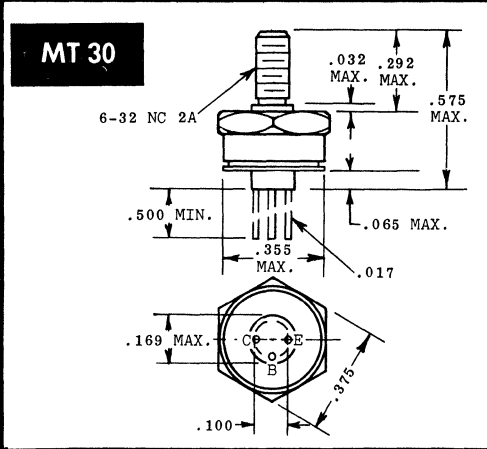
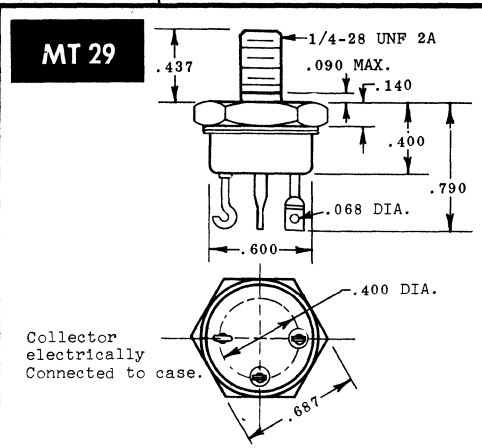
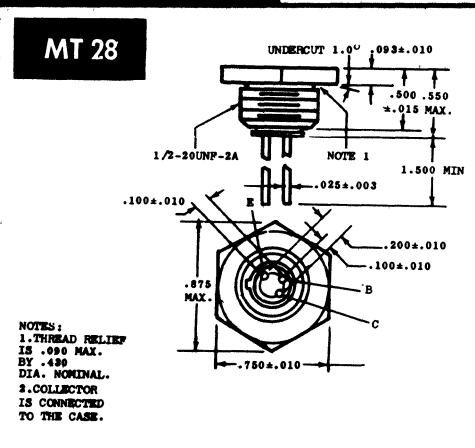
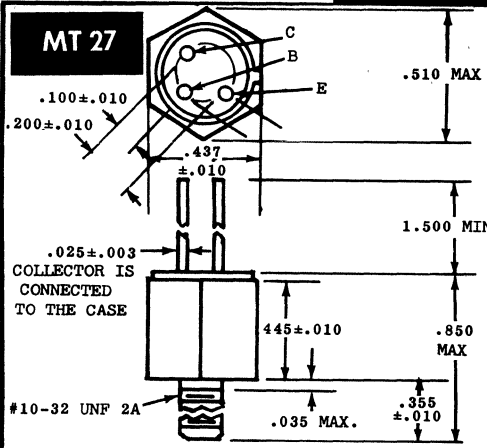
- The specified lead diameter applies in a zone between .050 and .250 from the base seat. Between .250 and 1.5 a maximum of .021 diameter is held. Outside of these zones the lead diameter is not controlled.
- Leads having maximum diameter (.019) measured in gaging plane .054±.001 below base seat of the device shall be within .007 of their true location relative to the maximum diameter (.510) circumscribing the hex.
- The position of the leads in relation to the hex flats is not controlled.
- The collector is electrically connected to the case.





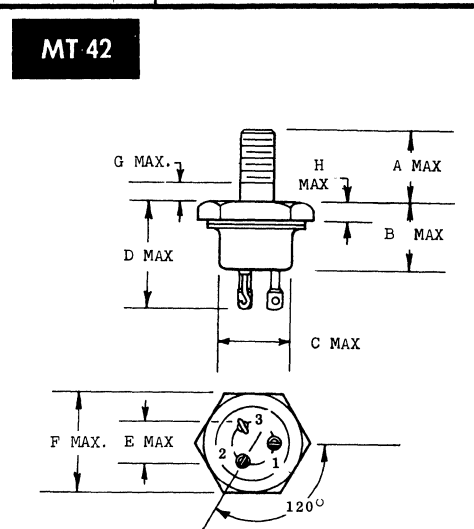
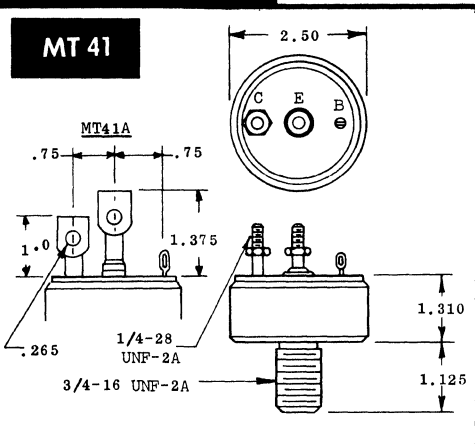
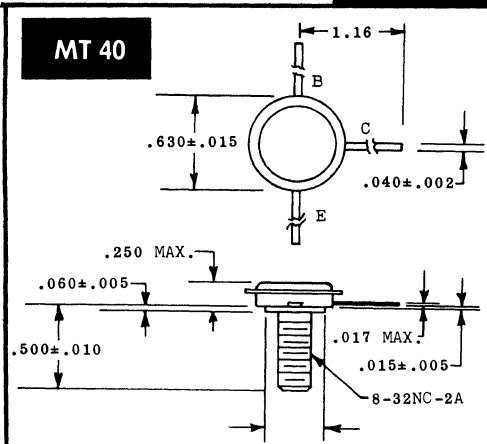


# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE



# 15. OUTLINE DRAWINGS

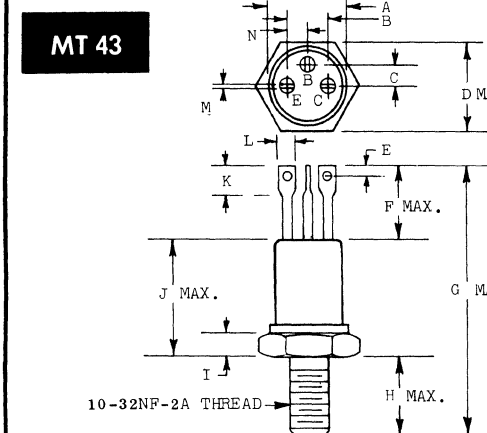
IN DRAWING NUMBER SEQUENCE



	A	B	C	D	E
MT42	.437	.394	.352	.669	.185
MT42a	.440	.400	.355	.675	.190
MT42b	.455	.468	.380	.763	.145
MT42c	.425	.390	.375	.650	.200

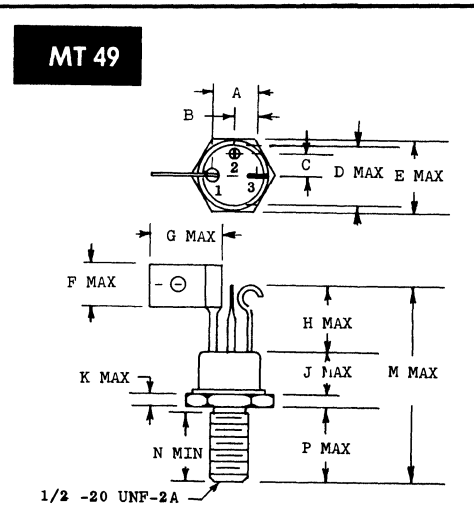
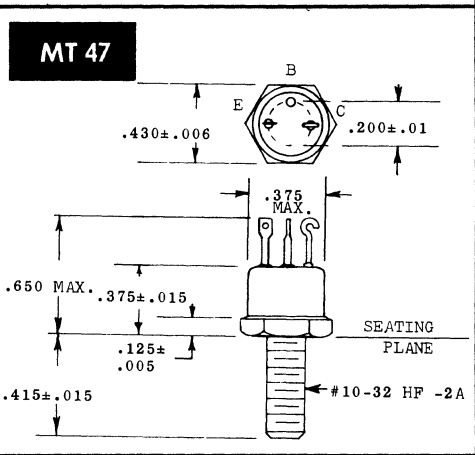
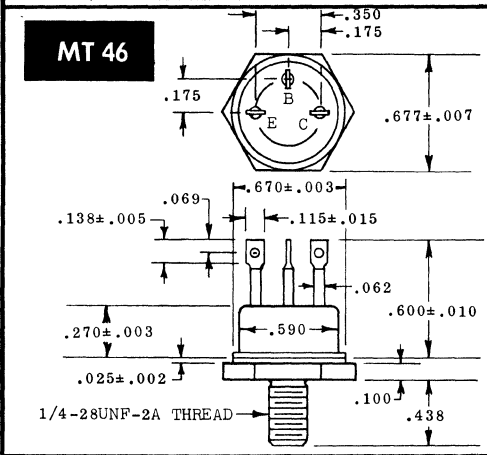
	F	G	H	THD
MT42	.437	.125	.078	10-32NPF-2A
MT42a	.437	.125	.078	10-32NPF-2A
MT42b	.437	.078	.150	10-32UNF-2A
MT42c	.437	.550	.078	10-32NPF-2A



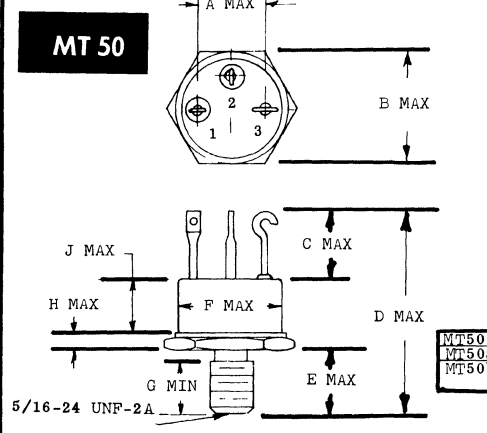
	A	B	C	D	E	F	G
MT43	.332	.210	.105	.438	.055	.330	1.25
MT43a	.437	.215	.110	.437		.295	1.22

	H	I	J	K	L	M	N
MT43	.455	.099	.455	.125	.090	.024	.105
MT43a	.455	.150	.468				



	A	B	C	D	E	F	G	H	J	K	M	N	P
MT49	.584	.335	.312	.903	1.067	.640	.890	.880	.530	.213	2.433	.700	.810
MT49a	.254	.317	.910	1.062				.485	.590	.185	2.495	.690	.815



	A	B	C	D	E	F	G	H	J	THREAD
MT50	.505	.875	.482	1.513	.490	.766	.359	.148	.375	5/16-24UNF-2A
MT50a	.415	.687	.350	1.245	.455	.610	.365	.125	.315	1/4-28UNF-2A
MT50b	.510	.875	.497	1.497	.490	.775		.060	.343	5/16-24UNF-2A
								MIN.		

# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

### MT 52

### MT 53

	A	B	C	D	E	F	G	H	J	THD
MT53	.669	.115	.348	.394	.437	.078	.437	.190	.90°	10-32NF-2A
MT53e	.870	.090	.318	.320	.400	.078	.423	.180		10-32UNF-2A
	.768	.158	.380	.468	.455		.438	.215		

### MT 55

### MT 56

NOTE: COLLECTOR CONNECTED TO CASE.

### MT 58

### MT 59

	A	B	C	D	E	F	G
MT59	.125	.655	.500	.155	.375		
MT59b	.118	.655	.500	.155	.375		
MT59c	.145	.655	.500	.155	.375		
MT59d	.118	.787	.626	.614	.394	.378	.276
MT59e		.641	.484	.157	.394	.378	
MT59f	.145	.615	.355	.160	.365	.365	.250
MT59g	.145	.670	.385	.155	.365	.250	
MT59h	.137	.700			.396		.295
					MAX		MAX
MT59j	.145	.645	.550	.145	.355		.240
	MAX	MAX	MAX	MAX	MAX		MAX
					.375		.260

	H	J	K	M	N	P	THREAD
	.060	.030	.015	.055	.030	.450	8-32UNC-2B
	.060	.030	.015	.055	.030	.450	8-32UNC-2B
	.060	.030	.015	.055	.030	.450	8-32UNC-2B
	.079	.079	.0039	.063	.118	.450	8-32UNC-2B
		.033	.016	.075	.033	.250	M5
	.060	.223	.006	.070	.223	.375	8-32UNC-2A
	.060	.030	.015	.055	.290	.250	8-32UNC-2A
				MIN			
	.078	.031	.020	.125	.031	.275	8-32
	MAX	MAX	MAX	MAX	MAX	MAX	
	.060	.030	.014	.055		.500	8-32UNC2A
				.016	MIN		

### MT 60

### MT 62

	A	B	C	D	E	F	G	H	J	K
MT62	.420	.380	.250	.375	.005	.765	.440	.190	.100	10-32
MT62a	.860	.425	.380	.600	.007	.850	.440	.260	.150	1/4-28
MT62b	.431	.350	.250	.407	.005	.725	.440	.190	.110	10-32UNF-2A

### MT 63

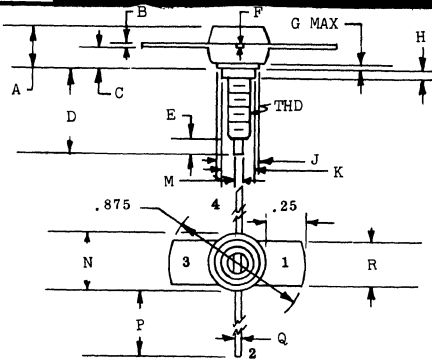
	A	B	C	D	E
MT63	1.250	.520	.375	.610	.185
MT63a	1.240	.500	.438	.594	.140
			.468	.718	

### MT 65

# 15. OUTLINE DRAWINGS

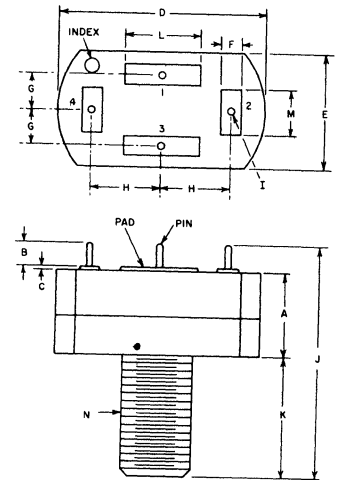
IN DRAWING NUMBER SEQUENCE

**MT 66**



	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	THD
MT66	.165	.015	.055	.515	.145	.015	.020	.060	.285	.250	.060	.375	.500	.030	.290	8-32UNC2A
MT66a	.220	.003	.106	.512	.118	.007			.323	.275	.079	.433	.075	.079	.118	M4
MT66b	.200	.008	.110	.435	.017				.280		.060	.400	.400	.028	.290	8-32UNC2A
		.010	.120	.477										.032		

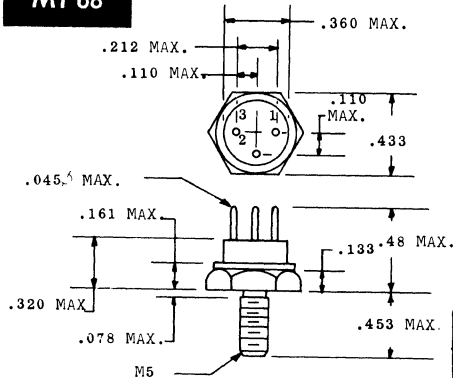
**MT 67**



	A	B	C	D	E	F	G	H	I	J
MT67	.218	.072	.015	.469	.337	.055	.089	.140	.021	.655
MT67a	.234	.085	MAX	.490	.345		.105	.150	.023	.724
	.280	.069	.015	.650	.360	.055	.111	.213	.020	.785
		.315	.088	MAX	.680	.380	.065	.131	.233	.850

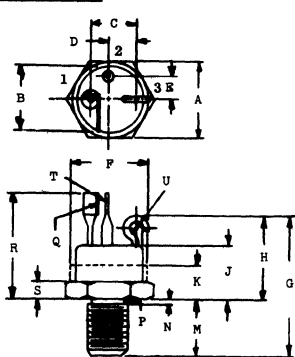
	K	L	M	N
MT67	.360	.145		10-32UNF-2A
	.390			
MT67a	.420	.235	.135	1/4-28UNF-2A
	.460	.250	.150	

**MT 68**



	A	B	C
MT68	.212	.453	M5
	MAX	MAX	
MT68a	.185	.250	10-32
	.215	.270	UNF-2A

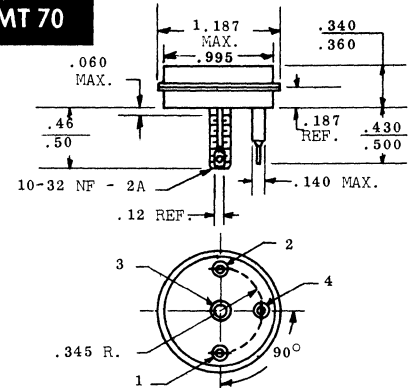
**MT 69**



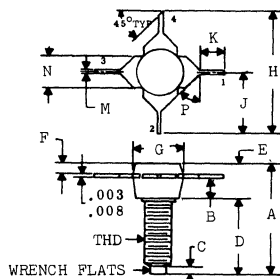
	A	B	C	D	E	F	G	H	J	K
MT69	1.04	.885	.531	.219	.281	.915	1.82	1.048	.688	.375
	1.07	.915	.609	.266	.328	1.08	2.14	1.313	.797	MAX
MT69a	1.03						1.82			.090
	1.06						2.57			.400
MT69b	1.04	.890		.234	.297		1.93	1.15	.720	
	1.08	.910		.254	.317		2.07	1.26		
MT69c	1.04	.885		.219	.281		1.82	1.04	.688	
	1.07	.915		.266	.328		2.13	1.31	.797	

	M	N	P	Q	R	S	T	U
MT69	.781	.156	.425	.180	1.35	.090	.078	.234
	.828	MAX	.500	.210	1.75	.270	.109	.281
MT69a	.781	.156	.425		1.04			.234
	.828	MAX	.500		1.75			.281
MT69b	.785	.125			1.58	1.65	.084	.245
	.815	MAX			1.68	1.85	.104	.270
MT69c	.781	.156		.180	1.35		.078	
	.828	MAX		.210	1.75		.109	

**MT 70**



**MT 71**

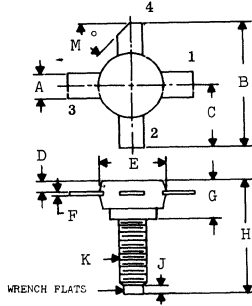


	A	B	C	D	E	F	G	H	J	K	M	N	P	THD
MT71	.675		.120	.360	.195	.065	.365	1.055	.520	.180	.025	.220		8-32N.C.2A
	.695		.130	.350	.215	.085	.385	1.065	.540		.035	TYP		8-32UNC
MT71a	.597	.066	.137	.393	.149	.065	.396	1.106	.335		.030	.220		
	.680	MAX	.531	MAX	MAX	MAX	MAX	MAX	.355		.036	.230		
MT71b	.710		.100	.465	.245	.080	.365	1.055	.520	.220	.025	.215	35°	8-32N.C.3A
	.750		.130	.475	.275	.100	.385	1.065	.540	.230	.035	.225		
MT71c	.710		.100	.465	.245	.080	.365	1.055	.524	.175	.025	.215	45°	8-32N.C.3A
	.750		.130	.475	.275	.100	.325	1.065	.524	.185	.035	.225		
MT71d	.610		.115	.492	.178	.055	.278	1.05	.525	.225	.025	.225	35°	8-32N.C.3A
	.650		.145	.512	.198	.065	.286	1.06	.535		.035			



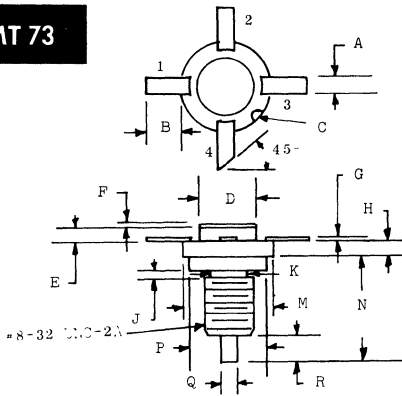
# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

**MT 72**



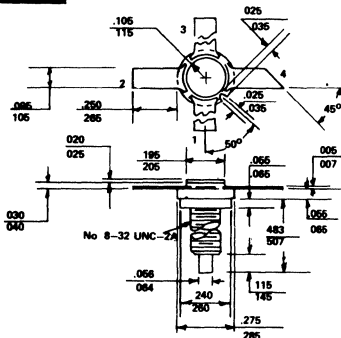
	A	B	C	D	E	F	G	H	J	K	M
MT72	.220 .230	1.055 1.065	.520 .540	.065 .085	.465 .485	.003 .008	.240 .260	.710 .730	.120 .130	8-32N.C.2A	45°
MT72a	.225	1.0 MTN			.390 MAX	.005 .010	.195	.640	.115	8-32UNC24THD	45°
MT72b	.120 .125		.358 .378		.220 .240	.008 MAX	.200	.305 MAX	.145	6-32	30°
MT72c	.146	.984 1.142		.102	.375 MAX	.005 MAX	.226	.687	.134	8-32UNC	
MT72d	.223 MAX			.045 TYP	.355 .375	.006 TYP	.155 .165	.595 .635	.130	8-32UNC-2A	45°
MT72e	.225 MAX			.104 TYP	.490 .510	.006 TYP	.260 .280	.700 .750	.120	8-32UNC-2A	45°
MT72f	.078	.866			.275	.003	.242	.774	.118	J50M3	45°
MT72g	.220 .230	1.095 MIN			.355 .385	.004 .008	.205 .225	.630 .750		8-32UNC2ATHD	45°
MT72h	.220 .230	1.055 1.065	.520 .540	.080 .100	.355 .385	.004 .007	.245 .275	.710 .750	.100 .130	8-32NC3A	45°
MT72j	.031			.082	.398	.157		.484		8-32UNC-2A	

**MT 73**

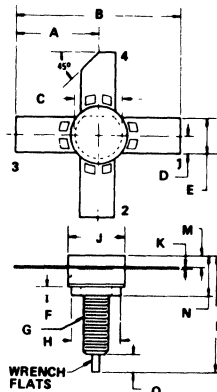


	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R
MT73	.060	.100	NA	.200	.025	.010	.005	.070	.078 MAX	.120 .163	.276 .286	.483 .527	.245 .255	.060 over flats on a .120 dia	.115 .145
MT73a	.095 .105	.250 .265	.025 .035	.195 .205	.030 .040	.020 .025	.005 .007	.055 .065	NA	NA	.275 .285	.483 .527	.240 .260	.056 over flats on a .115 .120dia	.115 .145

**MT 74**



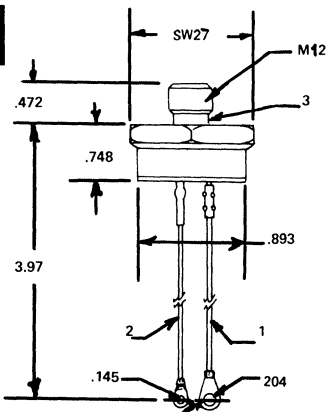
**MT 75**



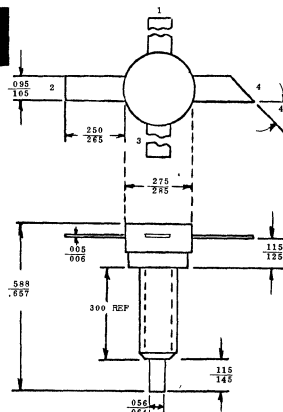
	A	B	C	D	E	F	G
MT75	.520 .540	1.05 1.06	.325	.110 .115	.220 .230	.075	10-32NC3A
MT75a	.515 .535	1.05 1.06		.110 .115	.220 .230	.080 .100	8-32NC3A
MT75b	.520 .530	1.05 1.06	.420	.110 .115	.220 .230	.080 .100	10-32NC3A
MT75c						.071 .085	.075 .081
MT75d	.525 .535	1.05 1.06		.112	.225	.060	8-32NC2A
MT75e	.520 .540	1.05 1.06		.112 .114	.220 .230		8-32NC3A

	H	J	K	M	N	P	Q
MT75	.305 .383	.365 .383	.005	.080 .100	.245 .275	.710 .750	.100 .130
MT75a	.321 .329	.365 .385	.005	.080 .100	.245 .275	.600 .640	
MT75b		.490 .510	.005	.080 .100	.245 .275	.835 .750	.110 .130
MT75c	.295 MAX	.295 MAX	.003	.100	.275	.716	.121
MT75d	.246 .254	.275 .286	.005	.055 .065	.178 .198	.610 .650	.115 .145
MT75e		.465			.240	.710	
		.485			.260	.730	

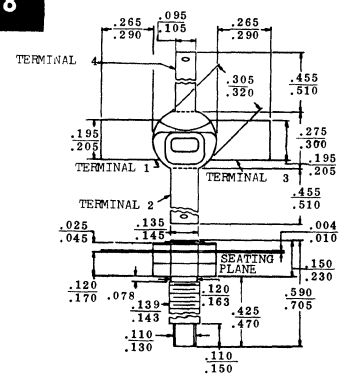
**MT 76**



**MT 77**



**MT 78**



# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

### MT 79

**Terminal Connection**

- ① Collector
- ② Emitter
- ③ Base
- ④ Emitter

### MT 80

Emitter Connected to Stud

### MT 81

	A	B	C	D
MT81	.278	.178	.610	2A
MT81a	.286	.198	.650	3A
	.385	.275	.845	

### MT83

	A	B	C	D	E	F	G	H	J	K	M	N	P	Q
MT83	.516	.311	.240	.077	.031	.374	.200	.421	.112	.118	.009	.063	.110	M4
MT83a	.531	.319	.256	.081	.043	MAX	.230	.445	.124	.118	.006	.059	.106	M4
MT83b		.307		.061	.031	.365	.216	.378	.094	.118	.010	.177		M6
		.322		.060	.047	.401	MAX	.382	.011		.014			
		.347		.115	.095	.374	.399	.767	.219	.177				
		.361		.121	.101	MAX		.239						

### MT84

### MT85

### OV1

### OV 3

### OV 4

# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

**OV 5**

	A	B	C
OV6	1.532	.053	.496
OV6a	1.437	.058	.490
	MIN		

**OV 6**

MAX. DIMENSIONS GIVEN

**OV 7**

**OV 9**

	A	B	C	D	E	F	G
OV9	.370	.315	.220	1.44	.177	.197	.053
OV9a	.365	.310	.280	1.50	.175	.202	.058
			MIN				

**OV 11**

**OV 13**

**OV 14**

**OV 15**

**OV 16**

**OV 17**

	A
OV17	1.00
	MIN
OV17a	1.50
	MIN

**R 2**

**R 5**

# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

**R 8**

NOTE 1:  
THIS ZONE OF THE LEAD IS NOT TINNED.

NOTE 2:  
THE COLORED DOT INDICATES THE POSITION OF THE COLLECTOR.

	A	B	C
R 8	.619	.236	1.46
R 8a	.375	.250	1.25

**R 9**

NOTE 1:  
THIS ZONE OF THE LEAD IS NOT TINNED.

NOTE 2:  
THE COLORED DOT INDICATES THE POSITION OF THE COLLECTOR.

**R 13**

**R 14**

**R 16**

COLOUR MARK OF COLLECTOR SIDE

**R 18**

COLLECTOR EXPRESS MARK

**R 19**

THE COLORED DOT INDICATES THE POSITION OF THE COLLECTOR

**R 26**

**R 27**

3 LEADS

**R 30**

3 LEADS

**R 31**

NOTE 1 CUT TO .200 FOR USE IN SOCKETS  
LEAD DIAMETER - .017  
BASE CONNECTED TO SHELL

**R 32**

(GLASS EXTENSION)

# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE

**R 33**

	A	B	C	D	F	G	H
RO33	.370	.335	.260	1.5	.200	.029	.031
R 33a	.230	.195	.210	.500	.100	.038	.056

**R 43**

	A	B	C	D	E
R 43	.61	1.45	.018	.043	.087
R 43a	.236	.50	.015	.035	.070

**R 44**

SAME AS TO58.

**R 45**

NOTE 1: Lead diameter is controlled in the zone between .050 and .250 from the cap or base seat. Between .250 and 1.125 or 1.430 a max. of .021 is held.

**R 46**

NOTE 1: Lead diameter is controlled in the zone between .050 and .250 from the base seat. Between .250 and end of lead a max. .021 is held.

NOTE 2: Do not attempt to insert a #2-56 stud in excess of .045.

**R 47**

RO47a - Same as R 47 with all leads .017 over whole length.

**R 48**

**R 50**

**R 51**

	A
R 51	.340 MAX.
R 51a	.370 MAX.

**R52**

	A	B	C
R52	.150	.335	1.50
R52a	.160	.325	1.50
R52b	.165	.355	.500
	MAX.	MAX.	
	.185	.370	

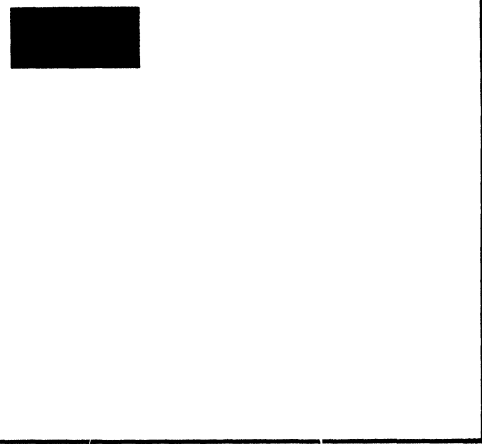
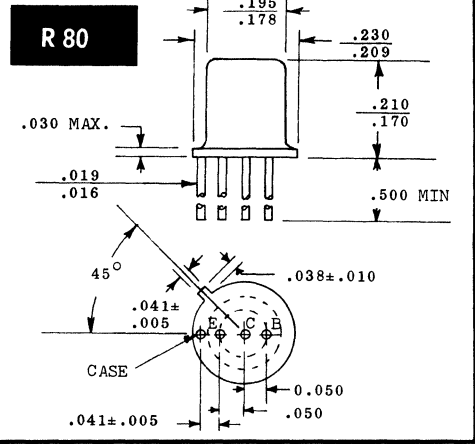
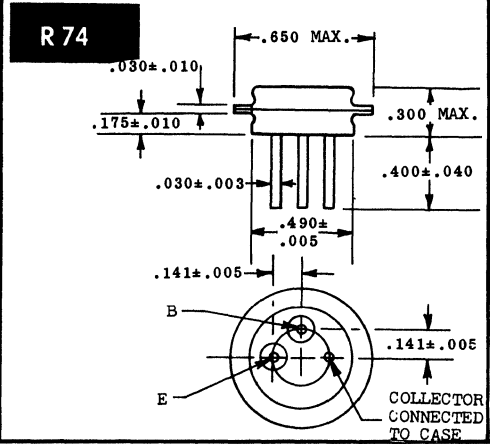
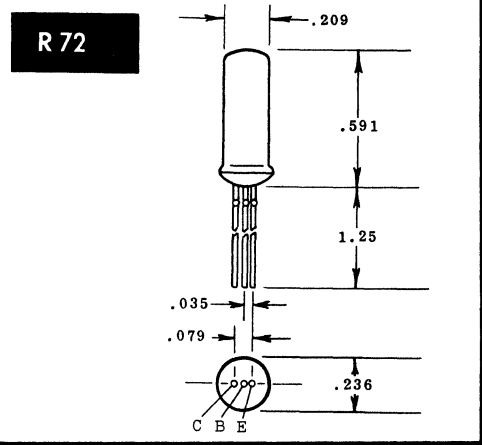
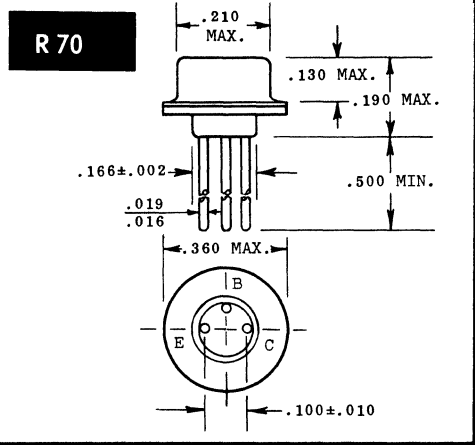
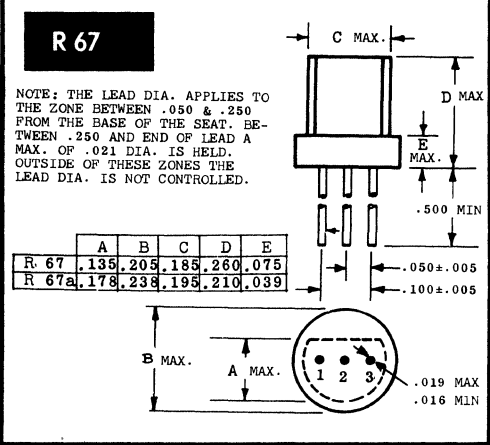
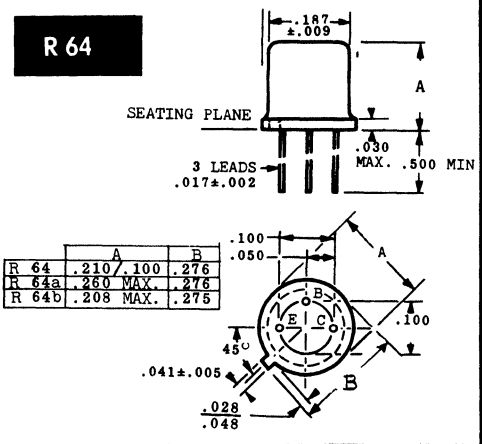
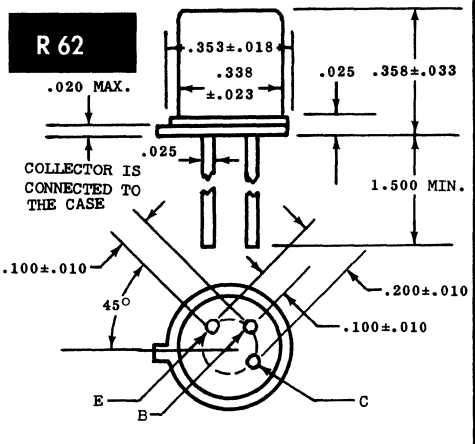
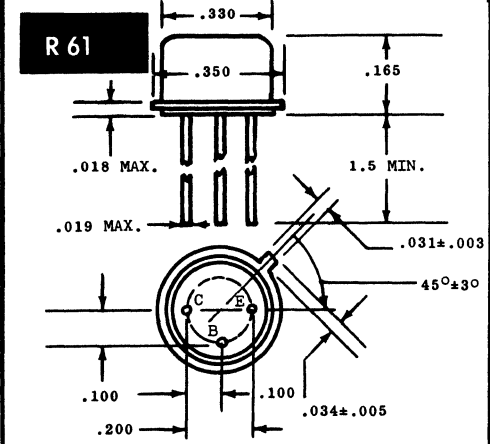
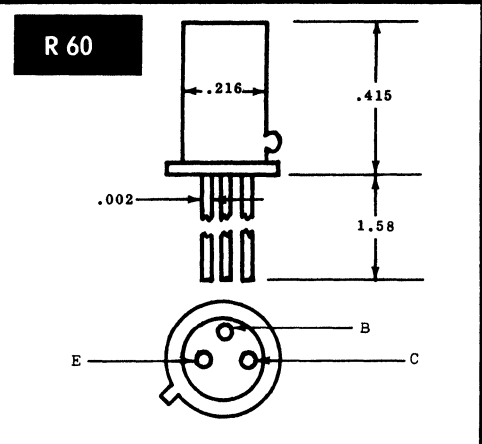
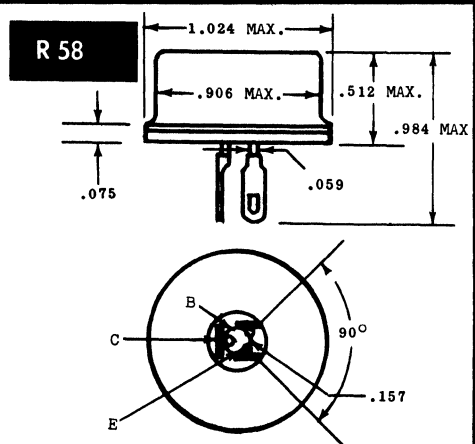
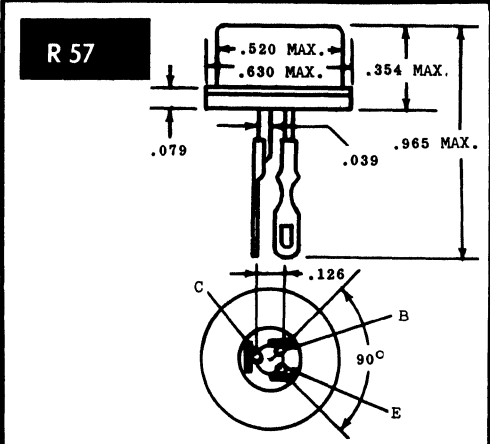
**R 55**

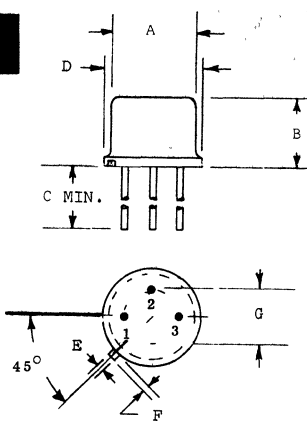
**R 56**

	A	B	C	D	E	F	G	H
R 56	.441	.543	.366	.169	.035	1.378	.020	.276
R 56a	.310	.370	.260	.125		1.500	.017	.200
R 56b	.520	.640	.310			.370	.030	.282



# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

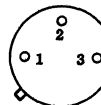
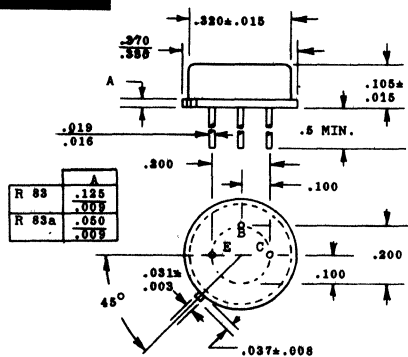
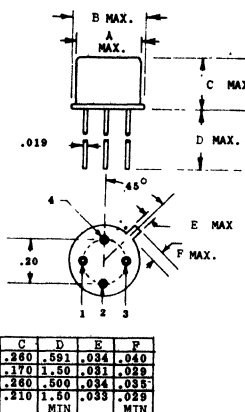
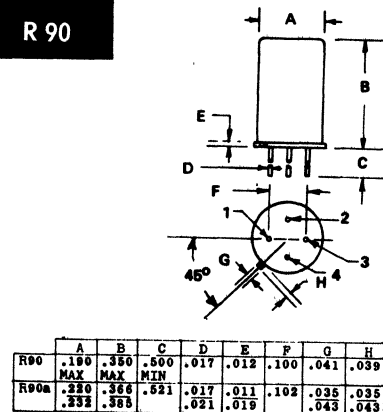
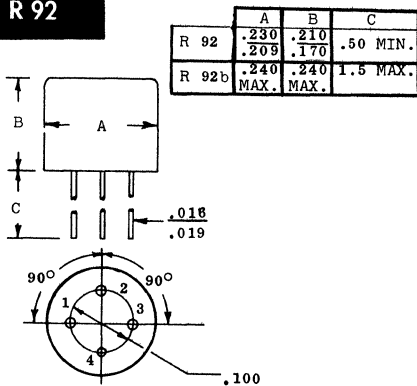
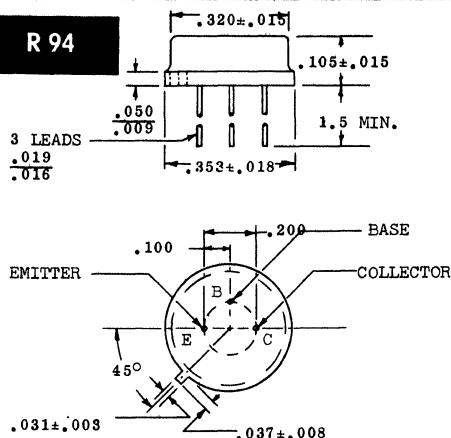
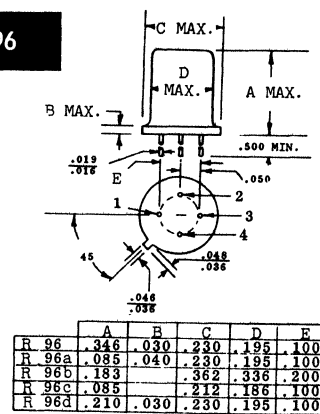
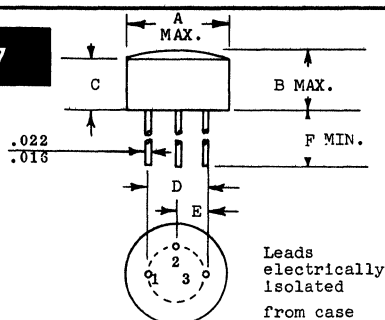


**R 81**


	A	B	C	D	E	F	G
R81	.305 .330	.240 .260	1.50	.370 .335	.028 .034	.029 .045	.200
R81a	.335 .275	.200 .260	.500	.370 .335	.028 .034	.029 .045	.200
R81b	.305 .335	.150 .260	1.50	.370 .335	.028 .034	.029 .045	.200
R81c	.310 .340	.240 .390	1.50	.370 .335	.028 .034	.029 .045	.200
R81d	.320 .330	.240 .260	.500	.370 .335	.028 .034	.029 .045	.200
R81e	.305 .335	.160 .180	.500	.370 .335	.028 .034	.029 .045	.200
R81f	.330 .335	.255 .260	1.00	.370 .335	.028 .034	.029 .045	.200
R81g	.310 .330	.240 .260	1.00	.370 .335	.028 .034	.029 .045	.200
R81h	.305 .335	.240 .260	.500	.370 .335	.028 .034	.029 .045	.200
R81j	.305 .335	.240 .270	1.50	.370 .335	.028 .034	.029 .045	.200
R81k	.181 .193	.065 .085	1.50 MIN	.210 .230	.041	.042	.100
R81p	.275 .335	.200 .260	1.50	.280 .370	.028 .034	.029 .045	.141 .141

**R 82**

SAME AS T05 EXCEPT FOR LEAD DESIGNATION


**R 83**

**R 89**

**R 90**

**R 92**

**R 94**

**R 96**

**R 97**


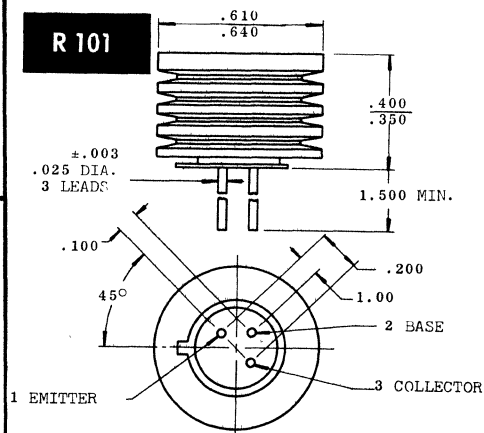
	A	B	C	D	E	F
R97	.330	.250		.200	.100	.400
R97a	.215	.250	.115 .105	.100	.050	.400
R97b	.210	.200		.100	.050	.500
R97c	.215	.200		.100	.050	
R97d	.215	.250		.100	.050	.400
R97e	.320	.220		.200	.100	.400

**R 98**

Same as T018 except without tab

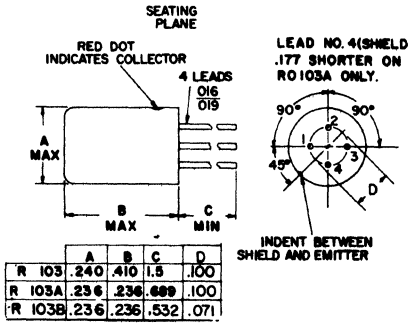
**R 100**

Same as T05 except for lead length of .300 MIN.

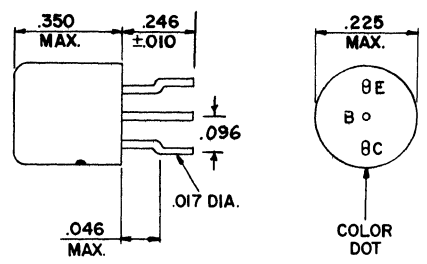
**R 101**


# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

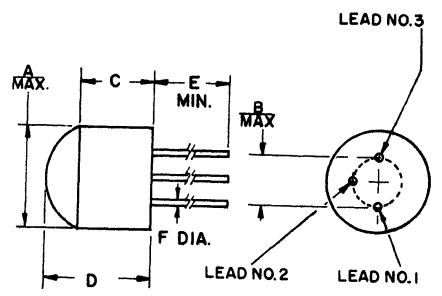
**R 103**



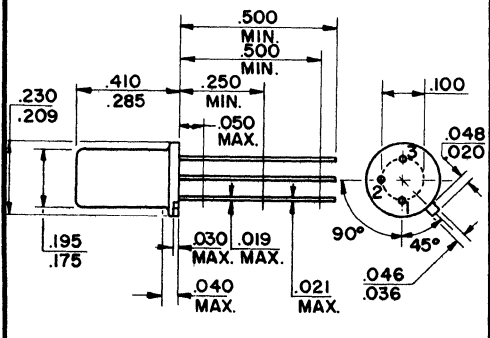
**R 108**



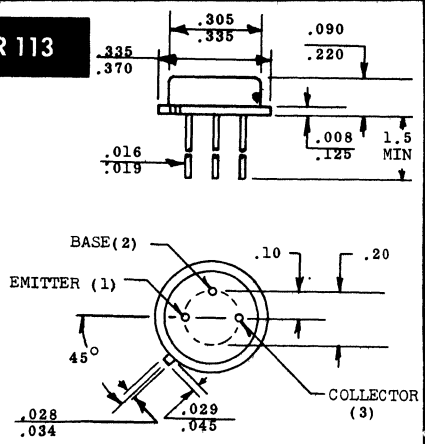
**R 110**



**R 111**

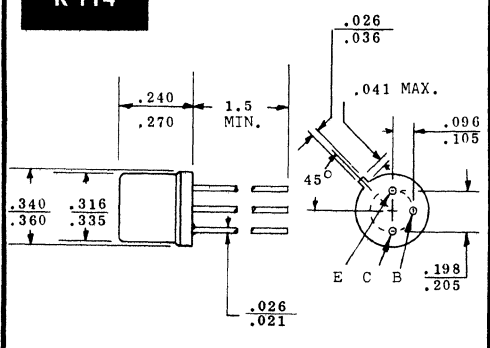


**R 113**

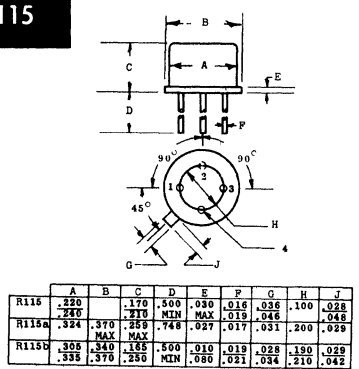


	A	B	C	D	E	F
R110	.310	.100	.100	.140	.400	.016
R110a	.330	.200	.100	.140	.400	.016
R110b	.250	.100	.130	.250	.500	.016
R110c	.210	.100		.200	.490	.019
R110d	.330	.200		.250	.500	.030

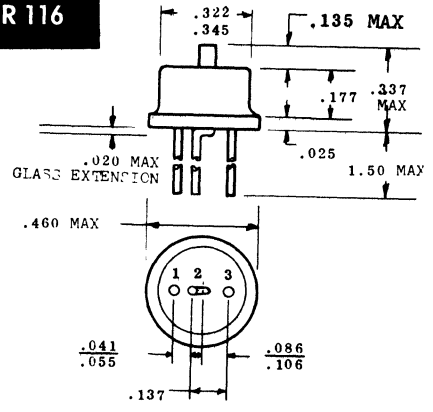
**R 114**



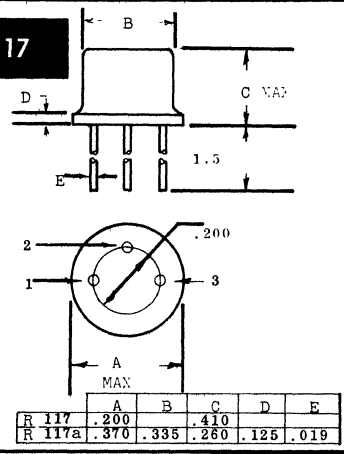
**R 115**



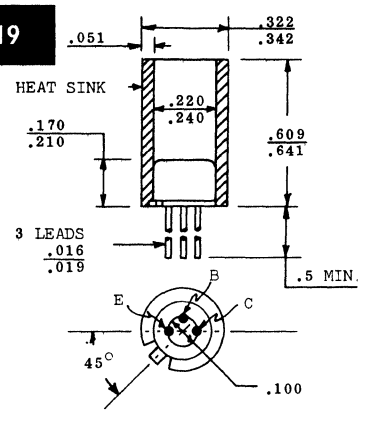
**R 116**



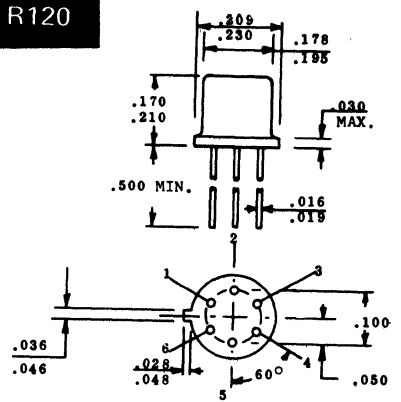
**R 117**



**R 119**



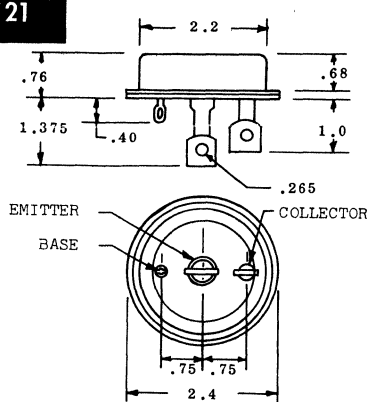
**R 120**



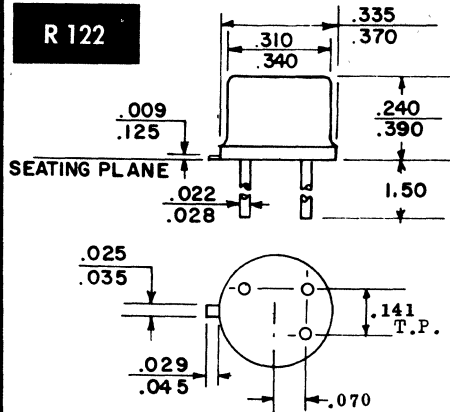
# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE

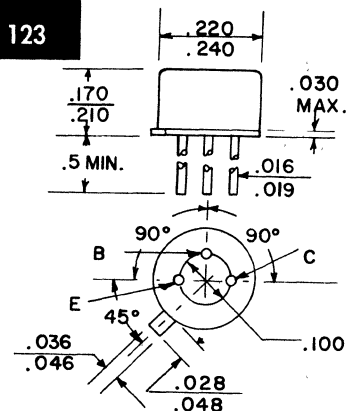
**R 121**



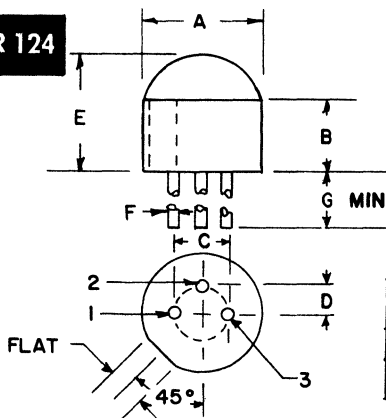
**R 122**



**R 123**

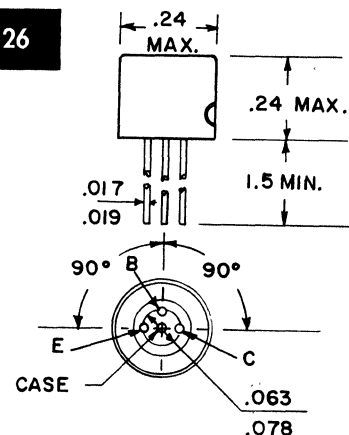


**R 124**

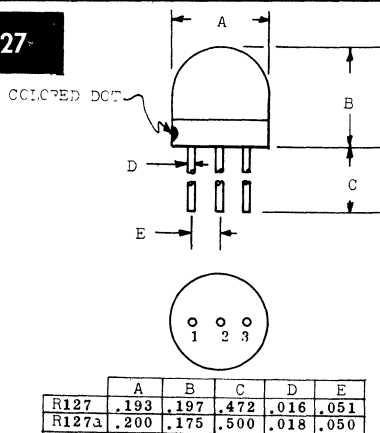


	A	B	C	D	E	F	G	FLAT
R124	.215	.120	.100	.050	.250	.016	.400	.080
R124b	.330	.115	.200	.100	.250	.018	.400	.090
R124c	.325		.200	.100	.240	.016	.500	
						MAX		
R124d	.330	.080	.200		.220	.016	.500	
						MAX		

**R 126**

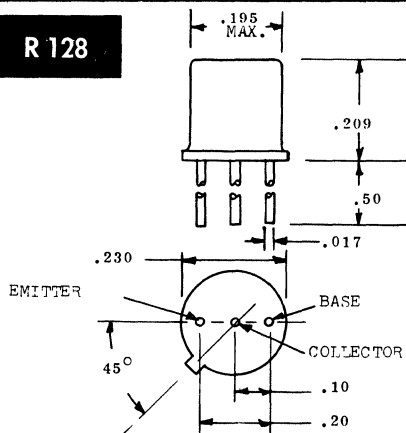


**R 127**

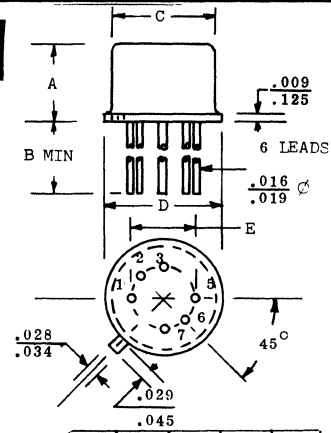


	A	B	C	D	E
R127	.193	.197	.472	.016	.051
R127a	.200	.175	.500	.018	.050

**R 128**

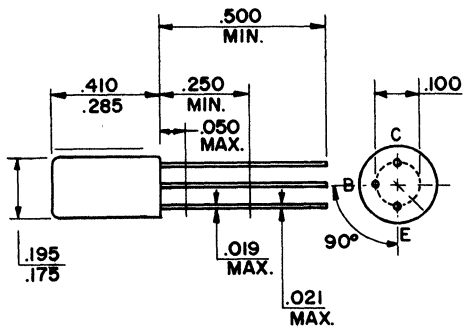


**R 131**

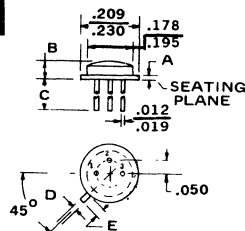


	A	B	C	D	E
R 131	.240	1.50	.305	.335	.200
	.260		.335	.370	
R 131a	.150	1.50	.305	.335	.200
	.180		.335	.370	
R 131b	.150		.305	.335	.200
	.280		.335	.370	
R 131c	.140	.500	.305	.335	.200
	.260		.335	.370	
R 131d	.140	.150	.305	.335	.200
	.260		.335	.370	
R 131e	.170	.500	.178	.209	.100
	.210		.195	.230	

**R 134**

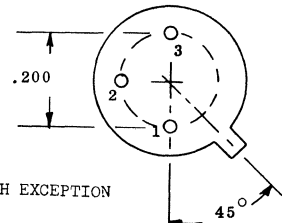


**R 135**



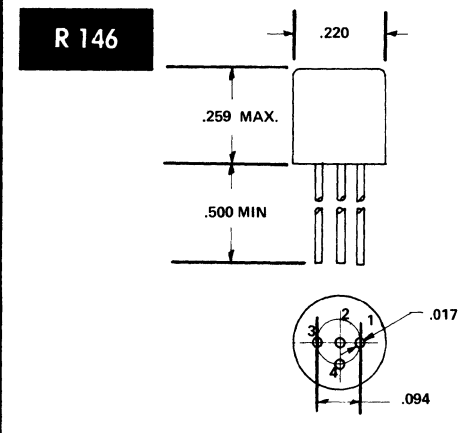
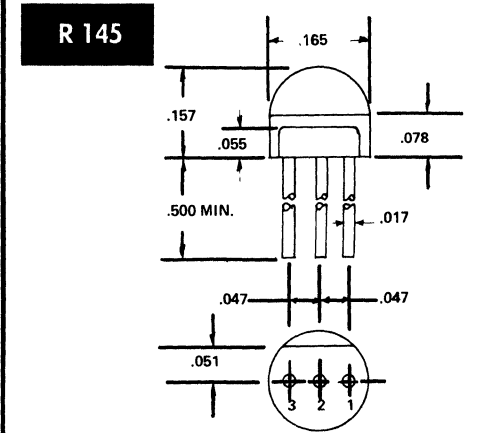
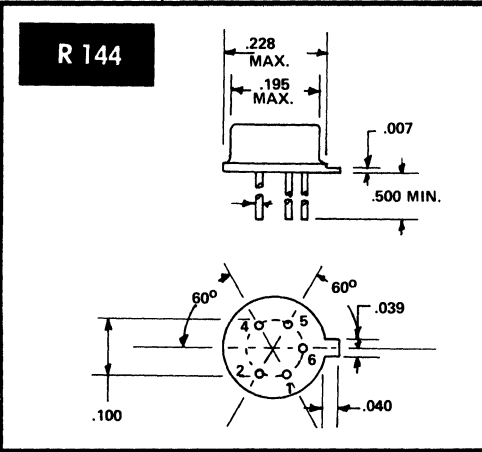
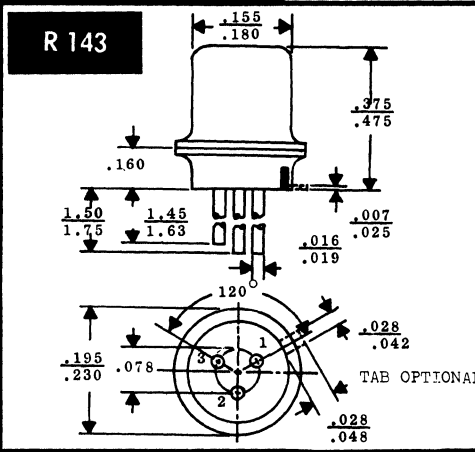
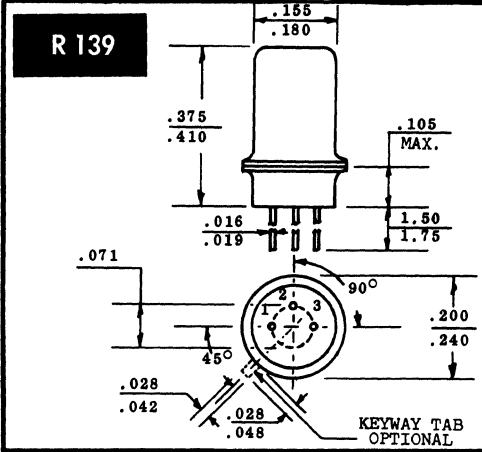
	A	B	C	D	E	LENS
R135	.440	.660	.100	.235	.028	AS SHOWN
	MAX	MAX	MIN	MAX	MAX	
R135a	.018	.370	1.50	.043	.043	AS SHOWN
	MAX	MAX	MIN	MAX	MAX	
R135b	.018	.290	1.50	.043	.043	FLAT TOP GLASS LENS
	MAX	MAX	MIN	MAX	MAX	

**R 133**

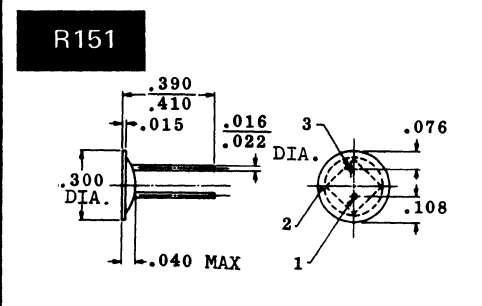
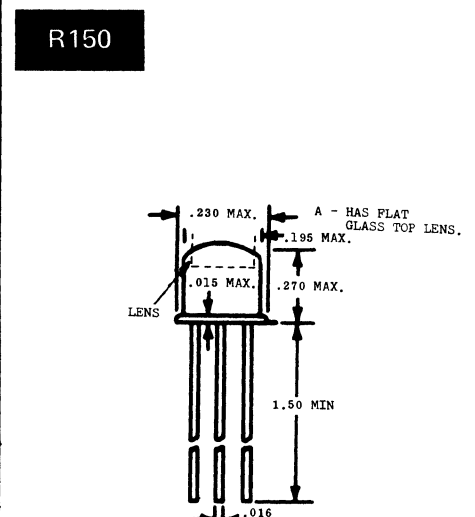
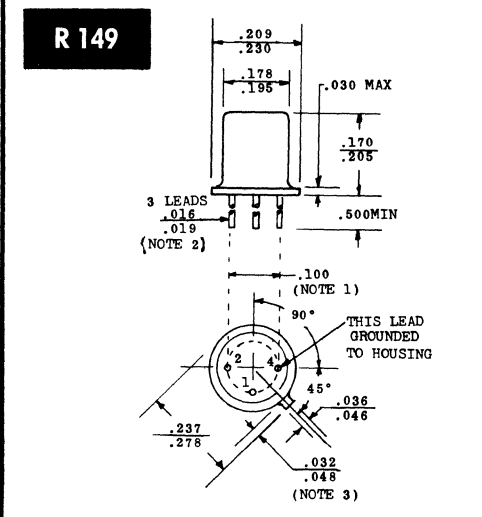
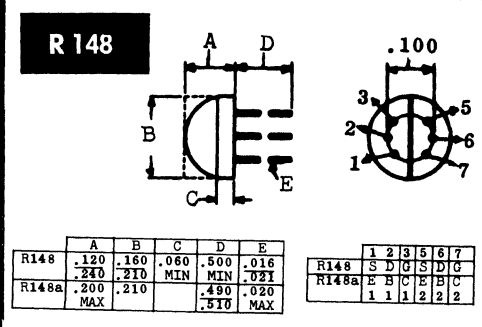


SAME AS TO5 WITH EXCEPTION

# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE



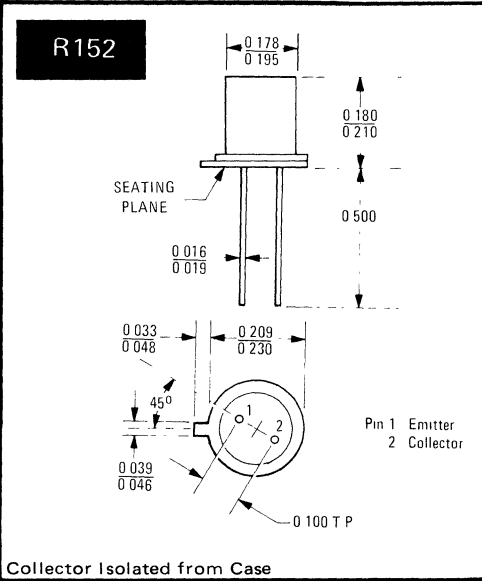
**R 147** SAME DIMENSIONS AS T011, EXCEPT WITH GLASS WINDOW.



**NOTE 1:** Max diameter leads at a gaging plane .054-.001-.000 below base seat to be within .007 of their true location relative to max. width tab and to the max. .230 diameter measured with a suitable gage. When gage is not used, measurement will be made at base seat.

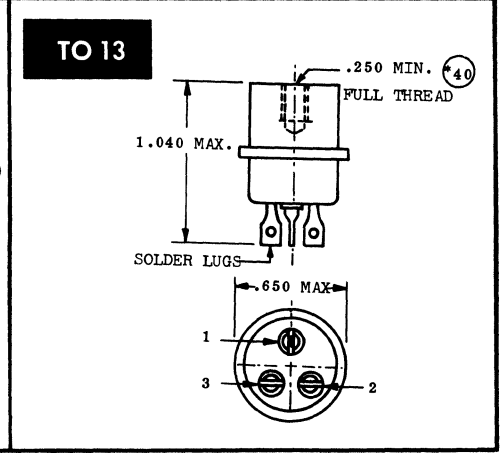
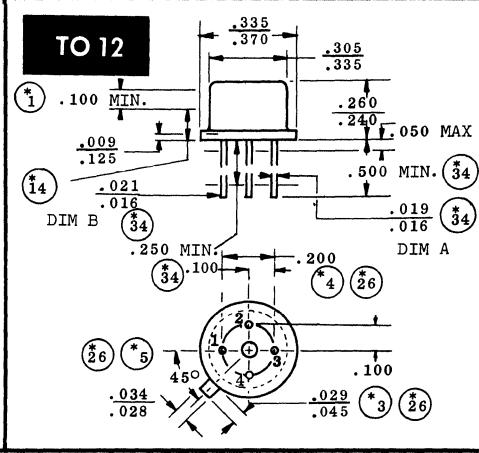
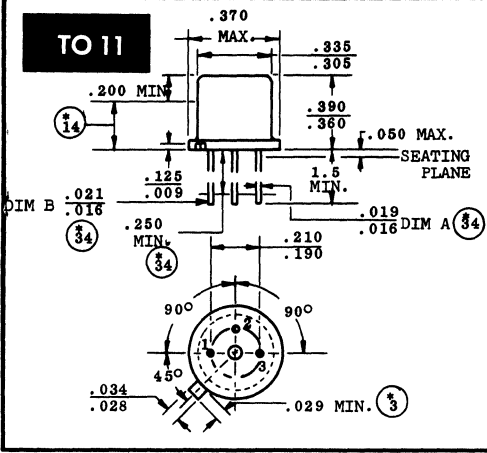
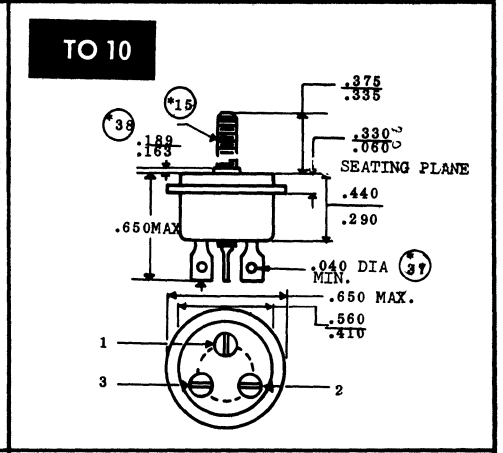
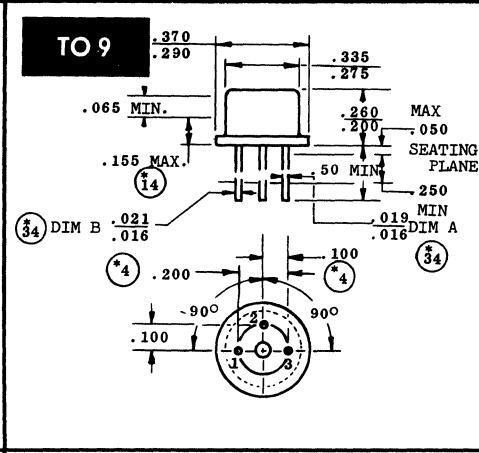
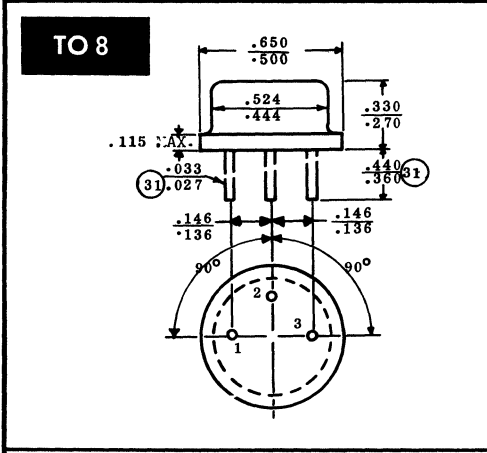
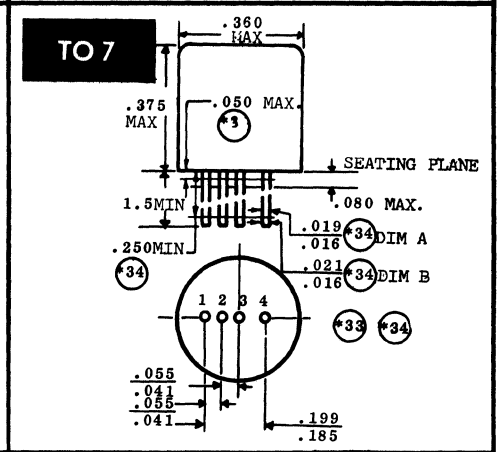
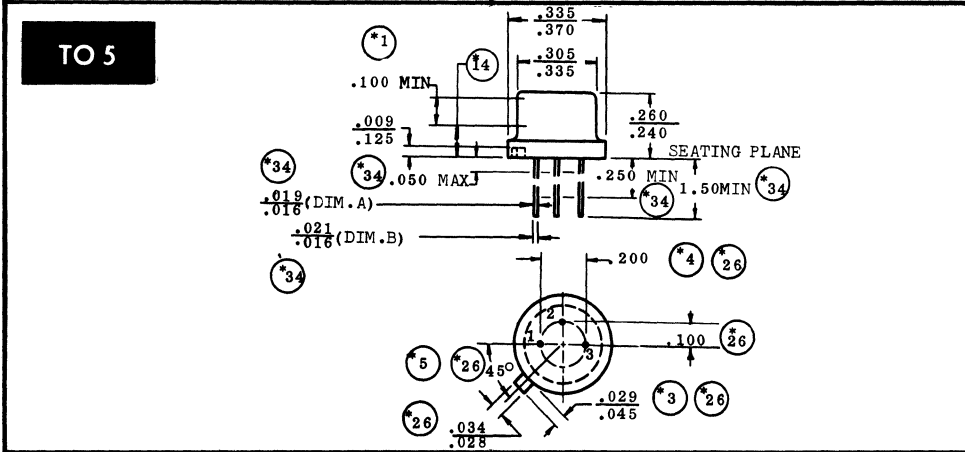
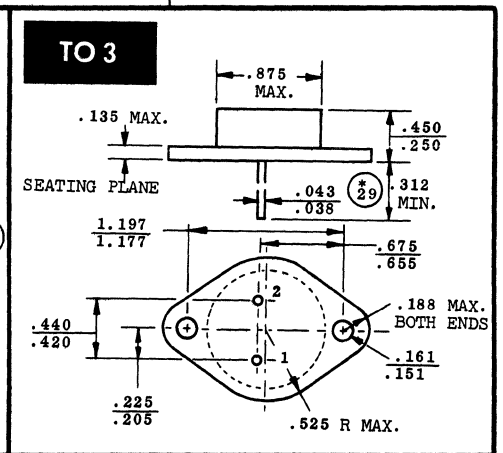
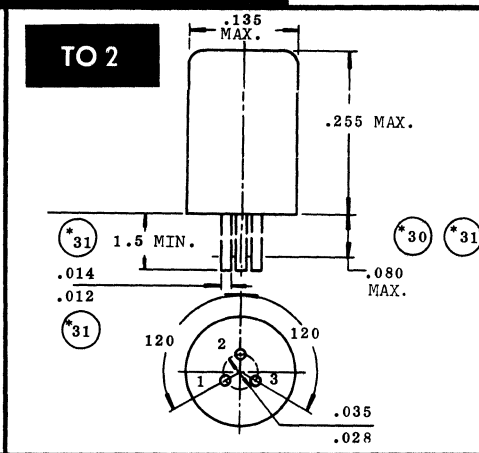
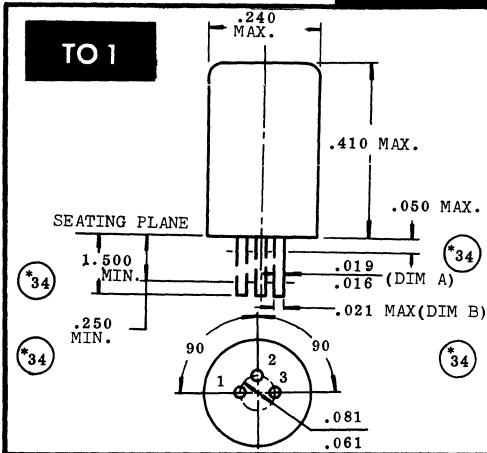
**NOTE 2:** Lead diameter is controlled in the zone between .050 and .250 from the base seat. Between .250 and end of lead a max. of .021 is held.

**NOTE 3:** Calculated by measuring flange diameter. Including tab and excluding tab and subtracting the smaller diameter from the larger diameter.

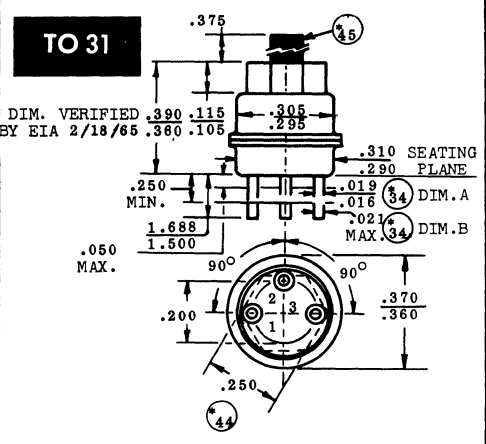
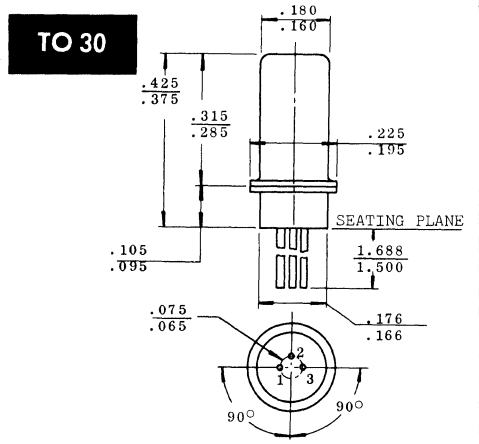
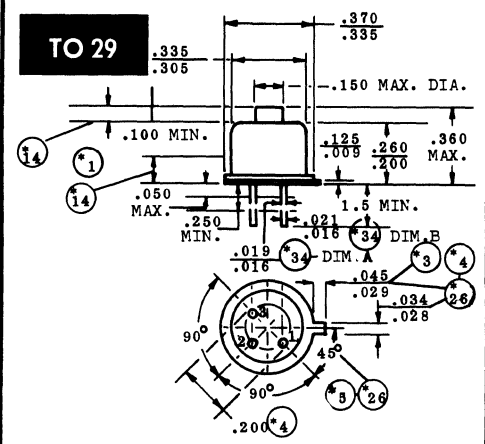
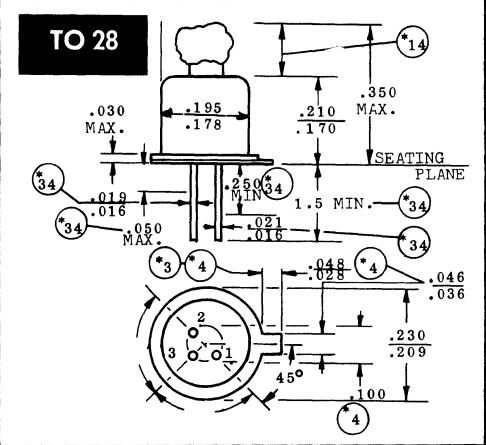
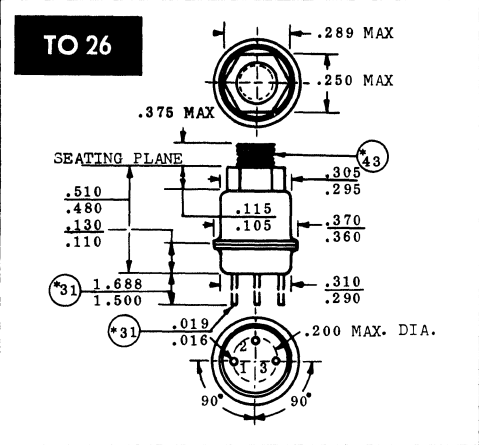
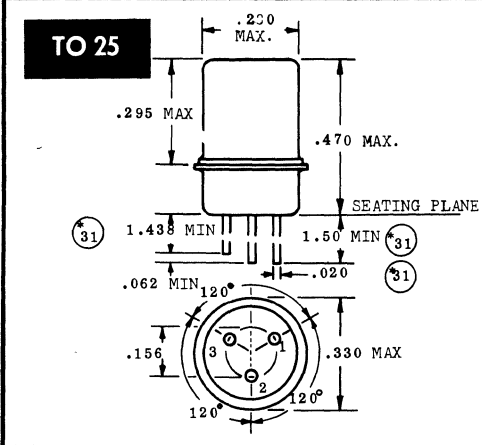
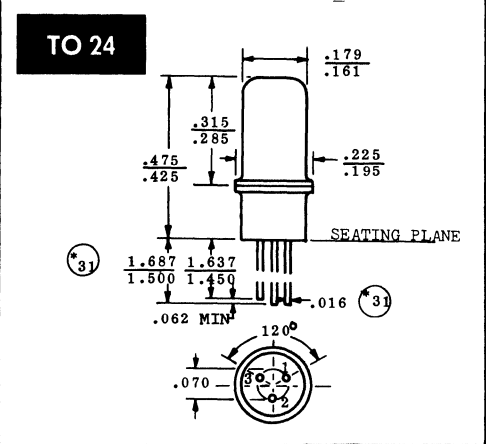
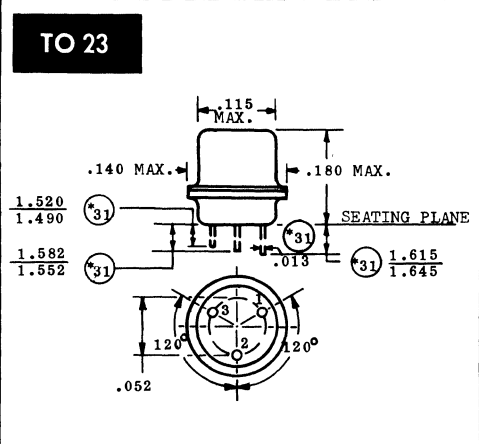
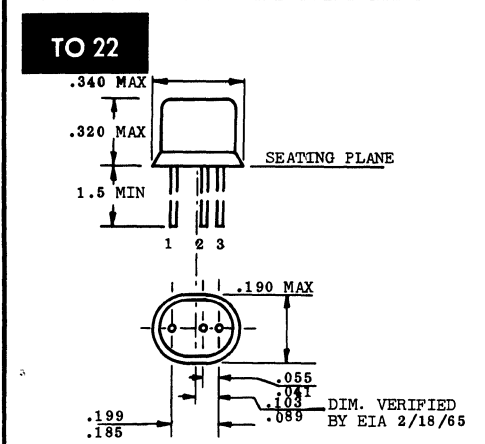
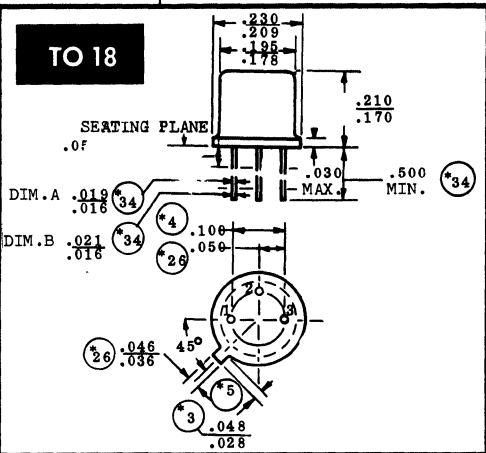
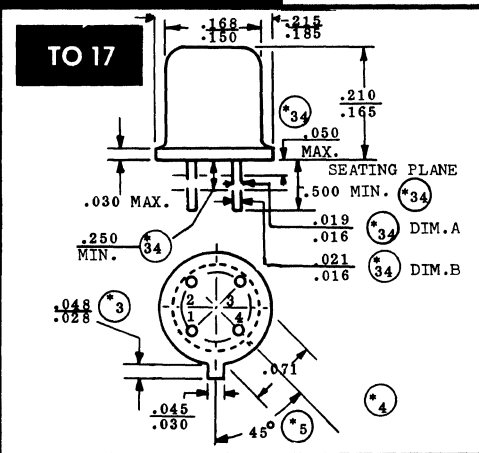
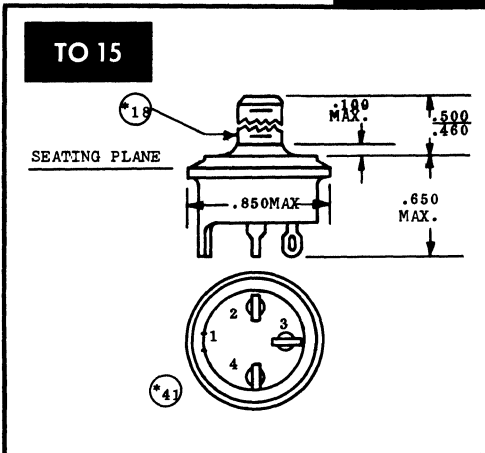




# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE



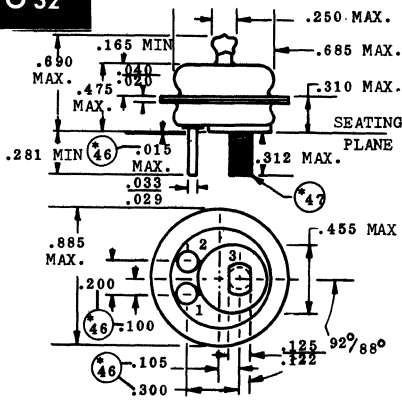
# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE



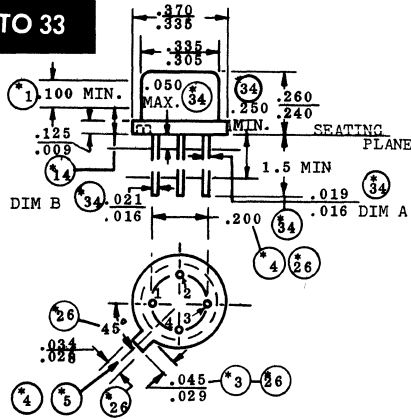
# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE

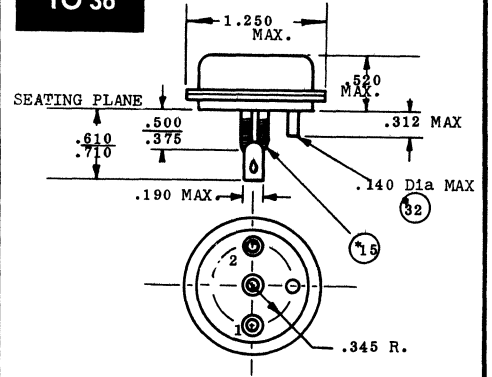
**TO 32**



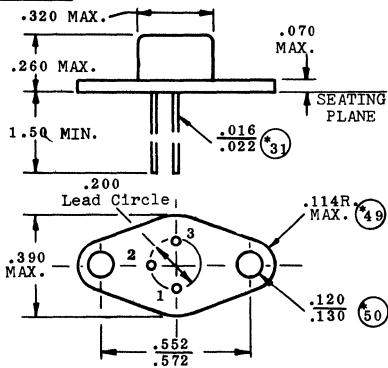
**TO 33**



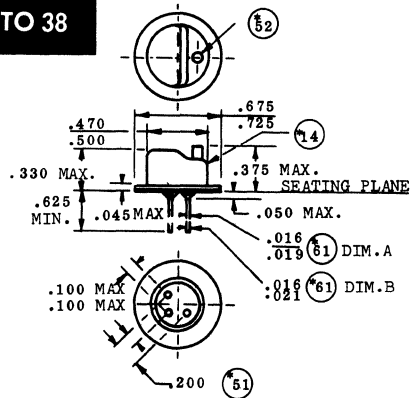
**TO 36**



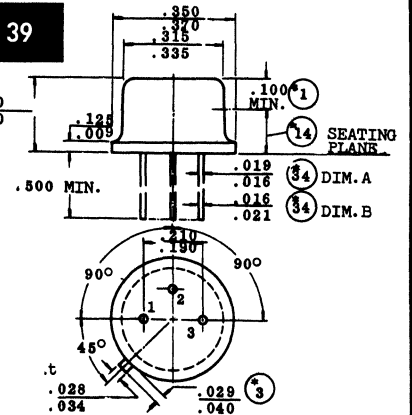
**TO 37**



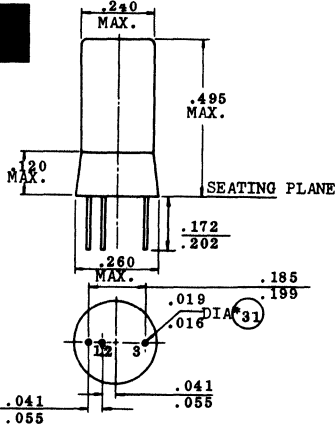
**TO 38**



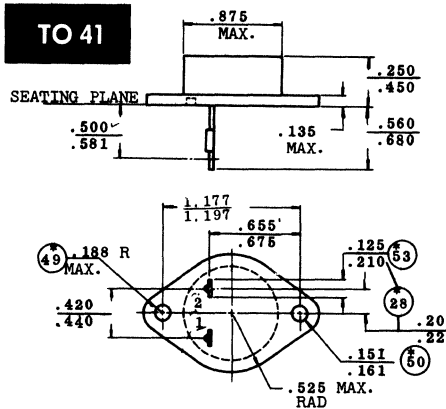
**TO 39**



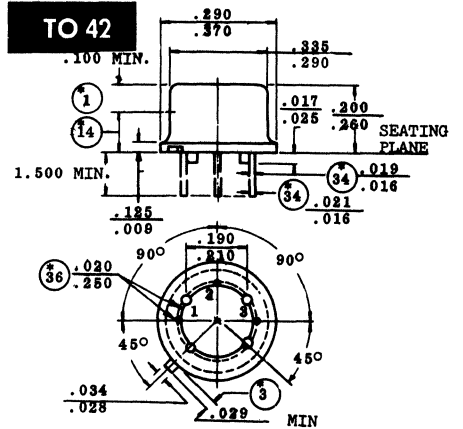
**TO 40**



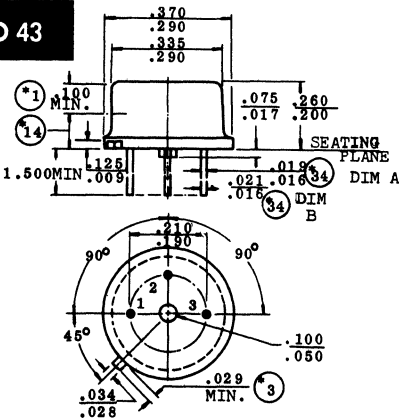
**TO 41**



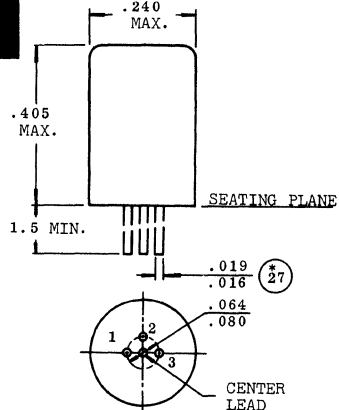
**TO 42**



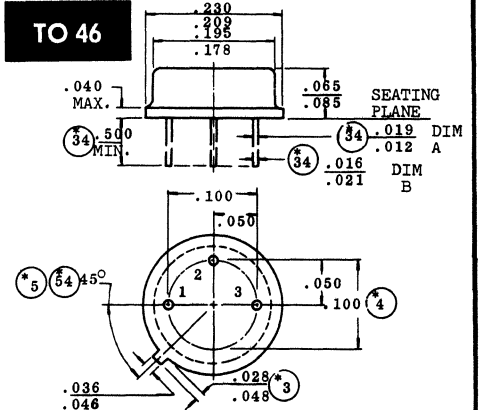
**TO 43**



**TO 44**



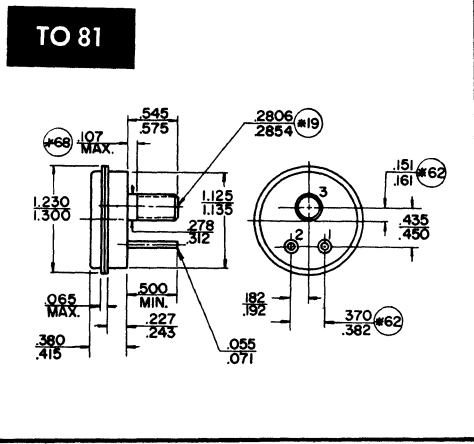
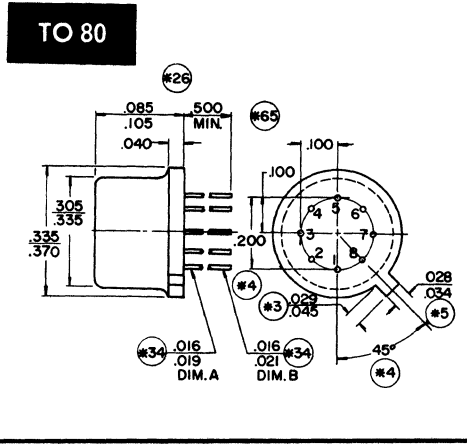
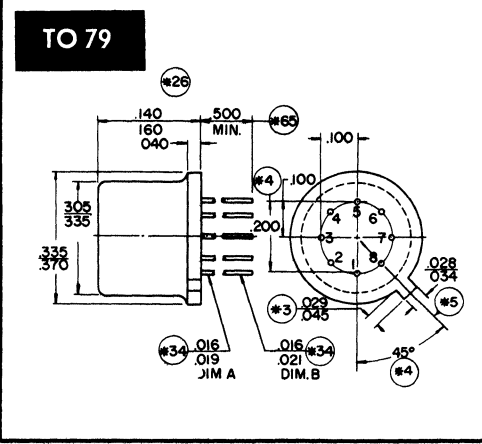
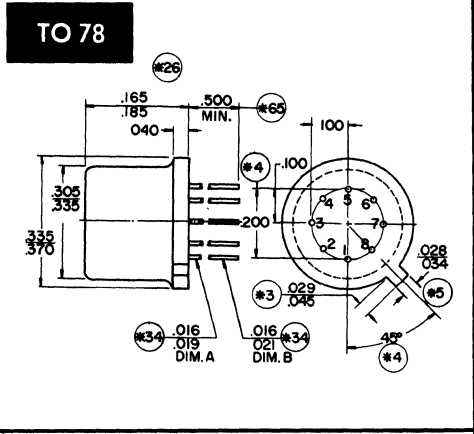
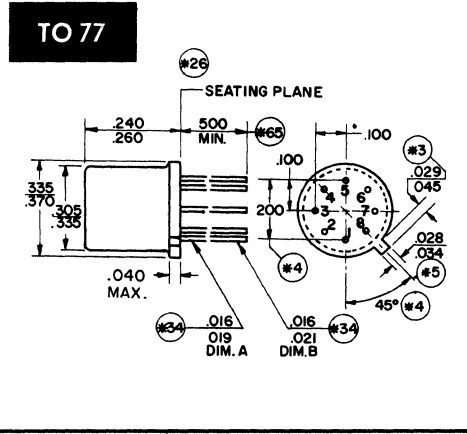
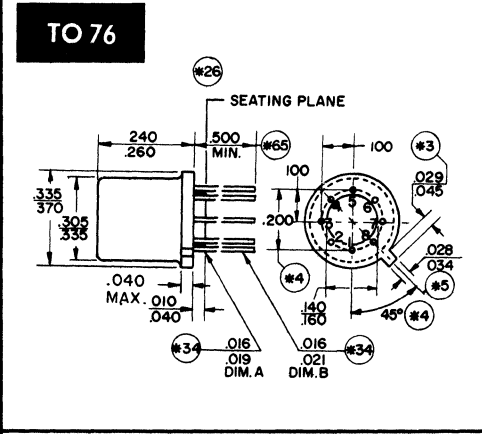
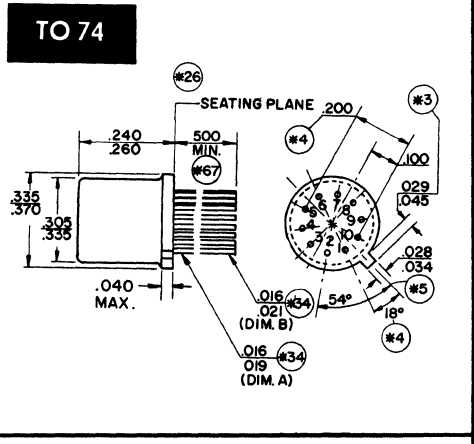
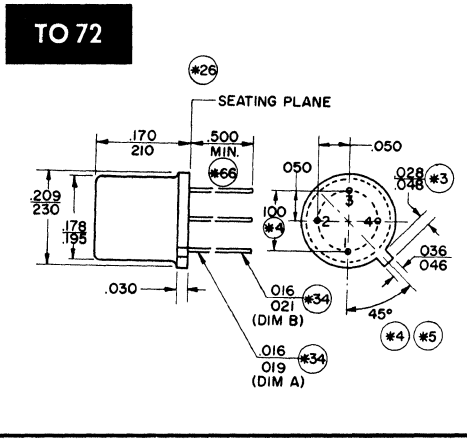
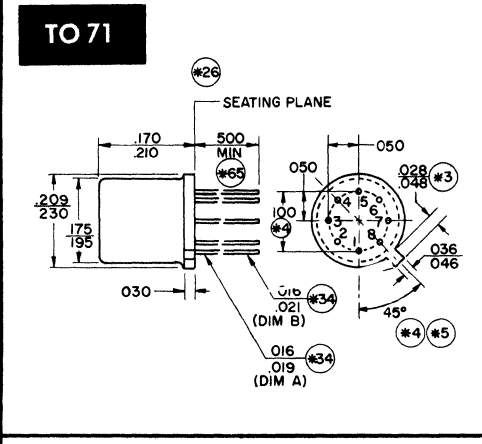
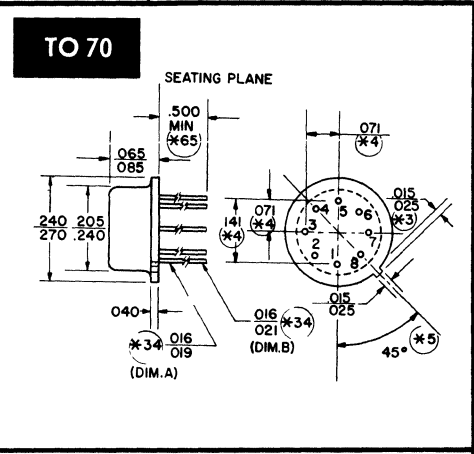
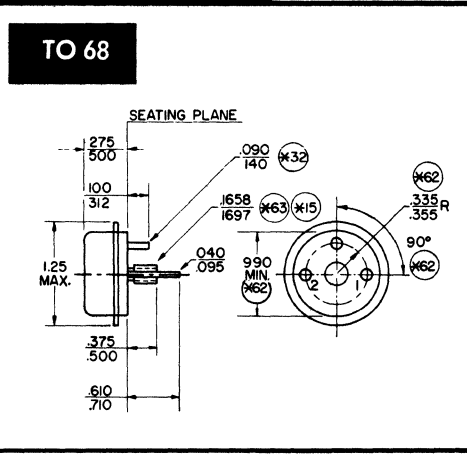
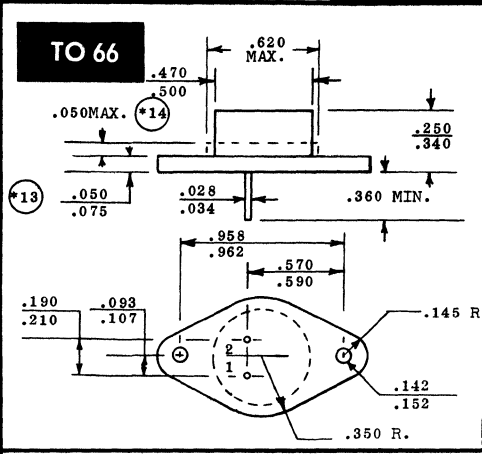
**TO 46**





# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE





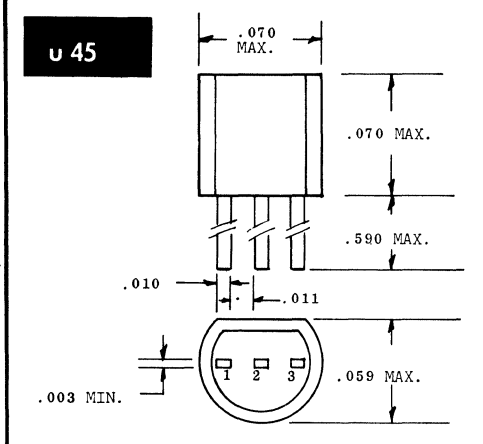
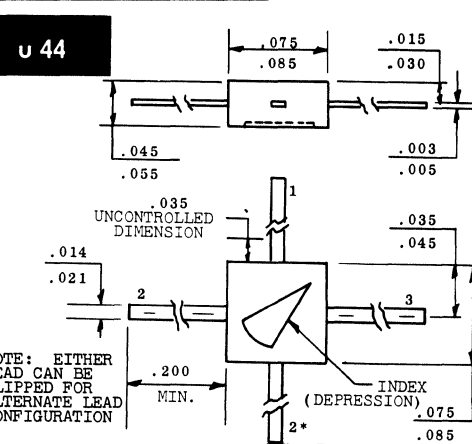
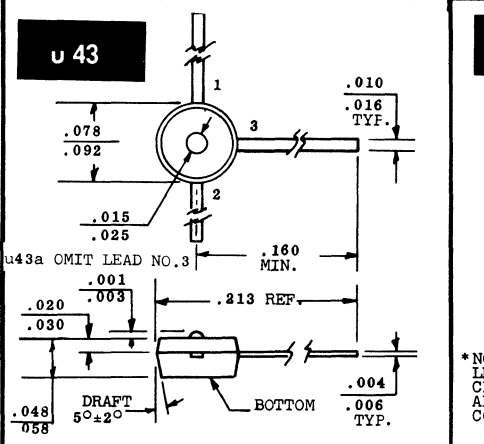
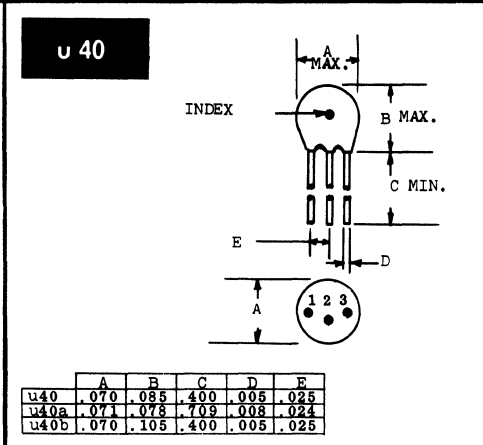
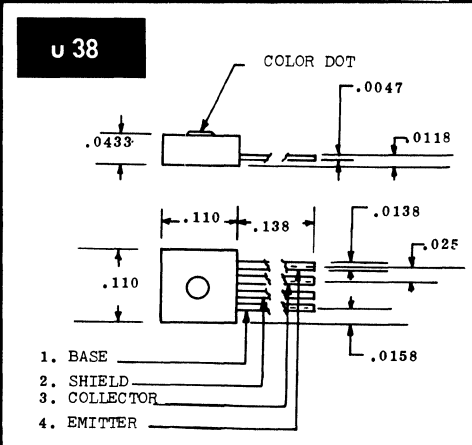
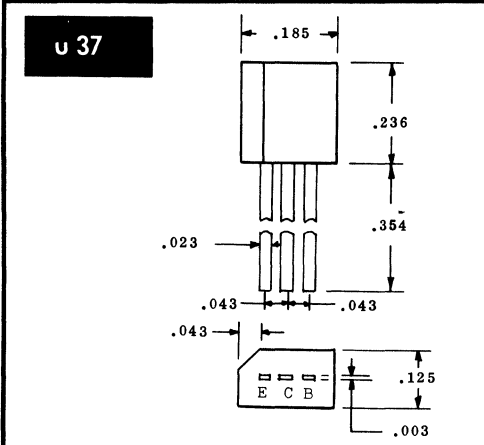
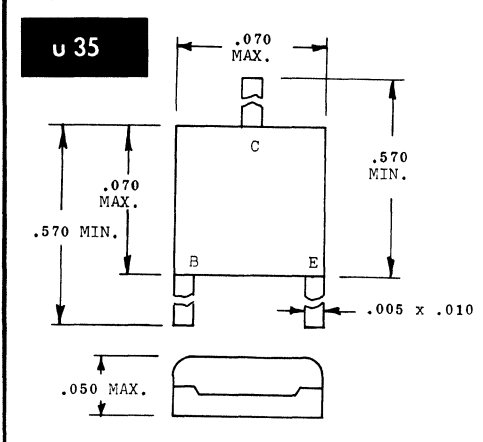
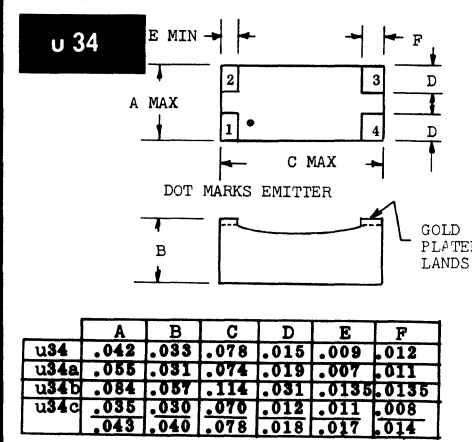
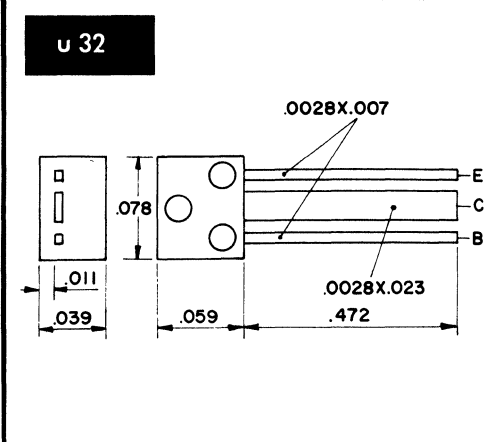
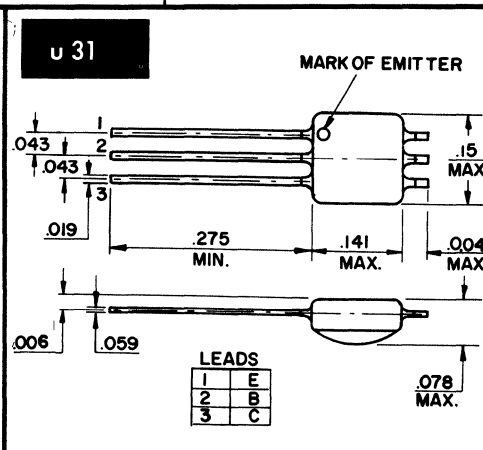
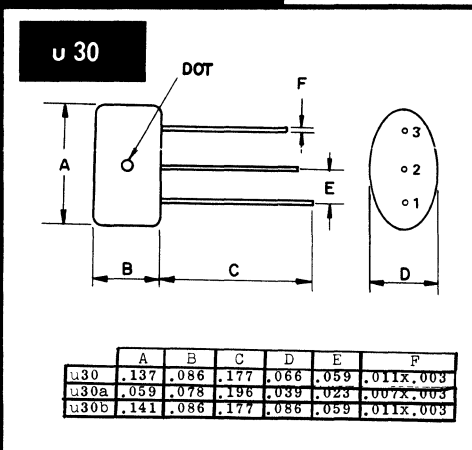
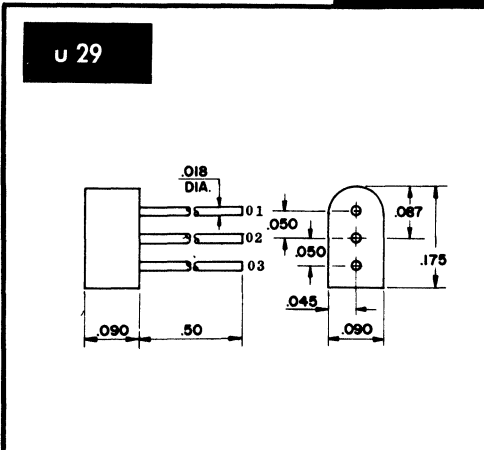






# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE



# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE

**U 47**

	A	B	C
U47	.059	.089	
U47a	.066	.094	.062

**U 48**

**U 49**

**U 50**

**U 51**

**U 52**

**U 53**

**U 54**

	A	B	C	D	E	F	G	H
U54	.084	.016	.016	.004	.009	.059	.044	.060
	.092	.024	.020	.008	.019	.062	.046	.066
U54a	.084	.016	.018	.005	.009	.058	.063	.082
	.092	.024	.032	.010	.019	.061	.067	.088

**U 55**

**U 56**

	A	B	C	D	E	F	G	H	J
U56	.106	.015	.043	.037	.074	.019	.082	.003	.031
	.114		.051				.090	.007	
U56a	.113	.015	.048	.037	.074	.019	.098	.003	.043
	.118		.051				MAX		

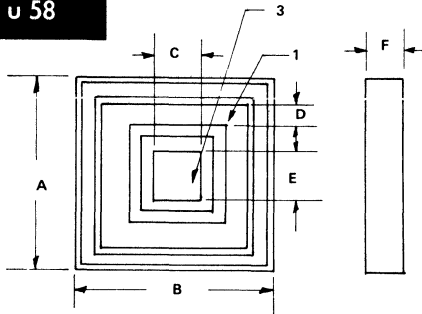
**U 57**



# 15. OUTLINE DRAWINGS

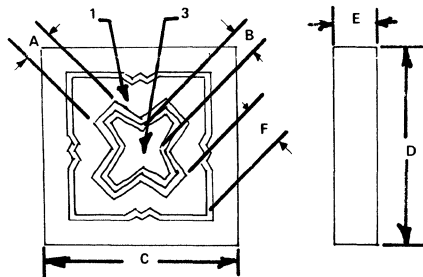
IN DRAWING NUMBER SEQUENCE

u 58



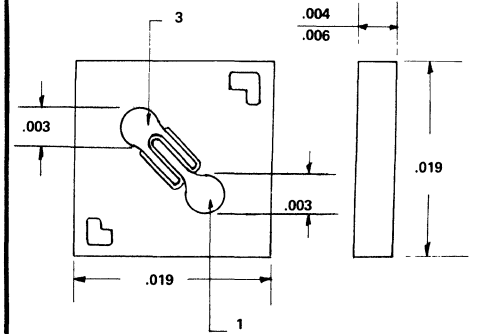
	A	B	C	D	E	F
u58	.023	.023	.006	.002	.006	.004
u58a	.866	.866	.236	.078	.236	.212

u 59

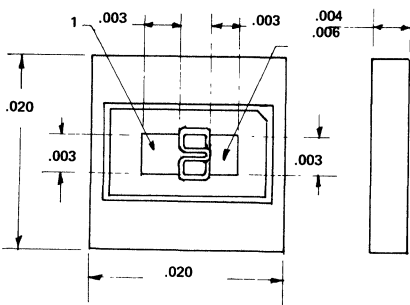


	A	B	C	D	E	F
u59	.004	.003	.019	.019	.004	.006
u59a		.118	.708	.708	.212	.098

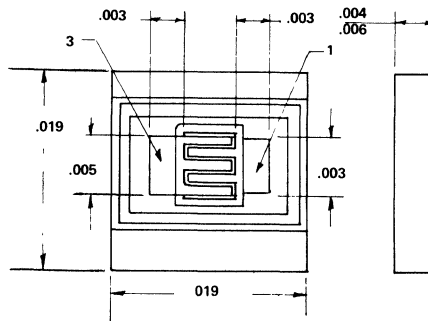
u 60



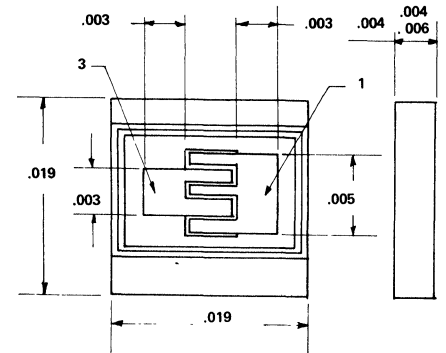
u 61



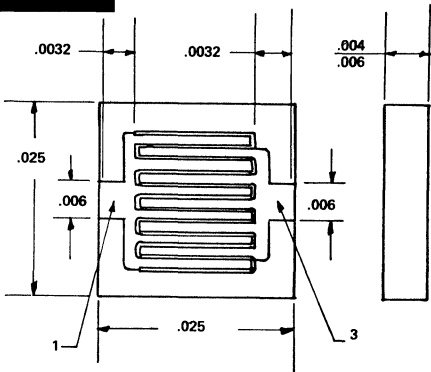
u 62



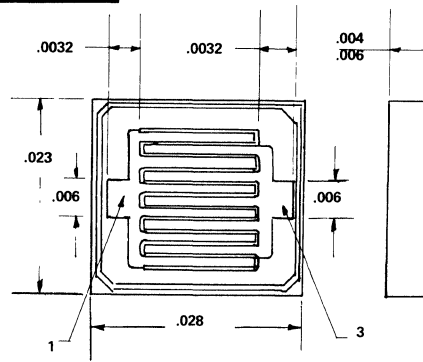
u 63



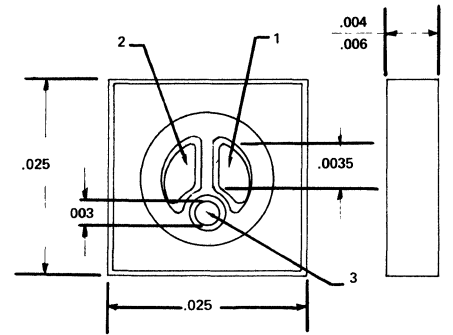
u 64



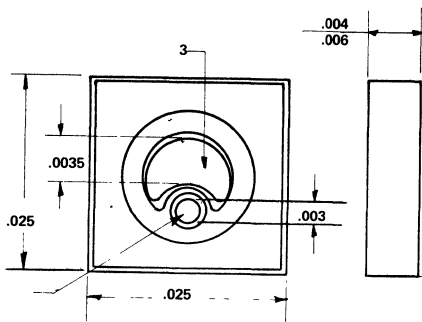
u 65



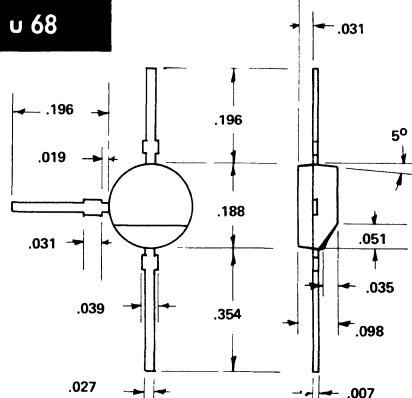
u 66



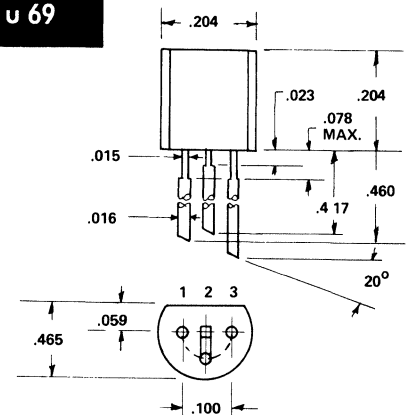
u 67



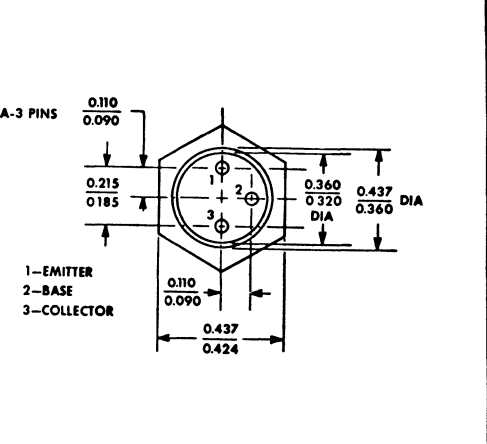
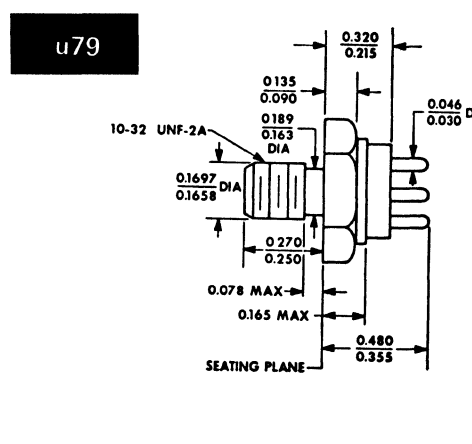
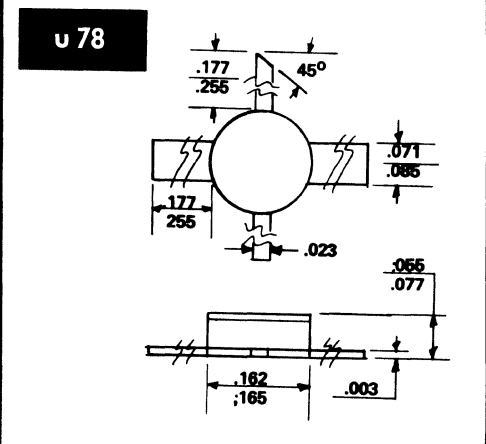
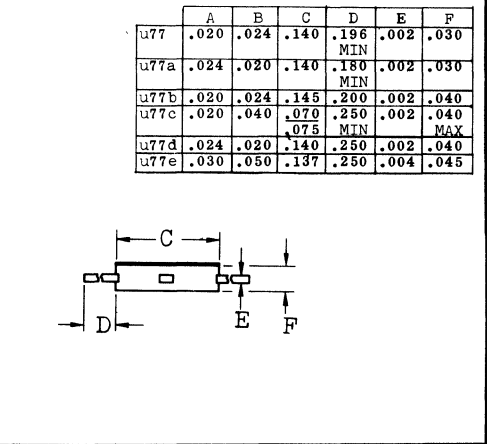
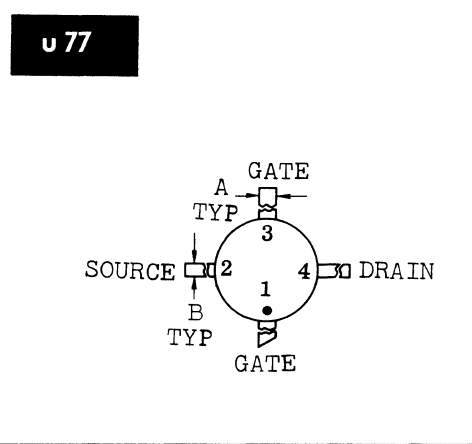
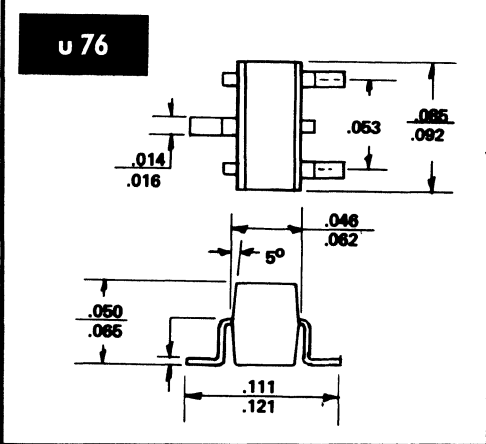
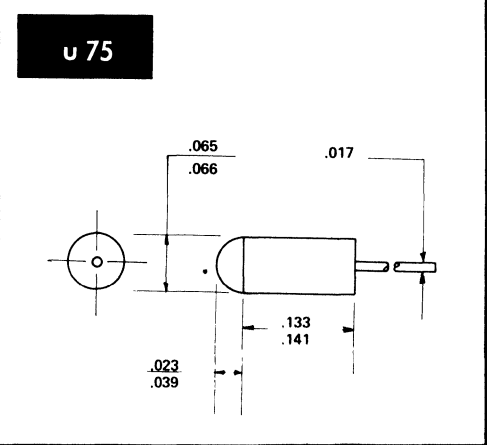
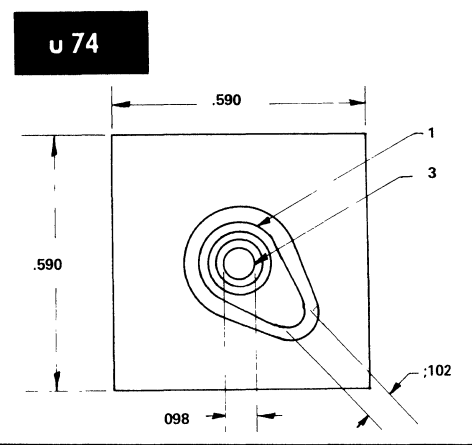
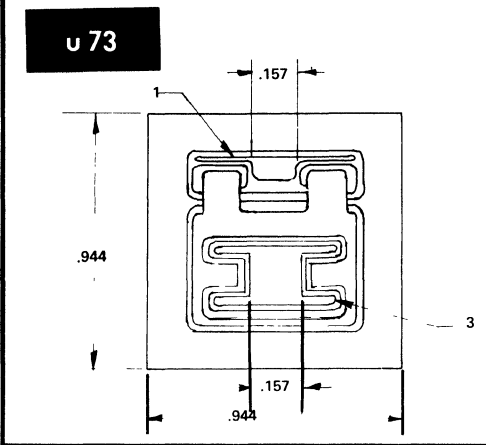
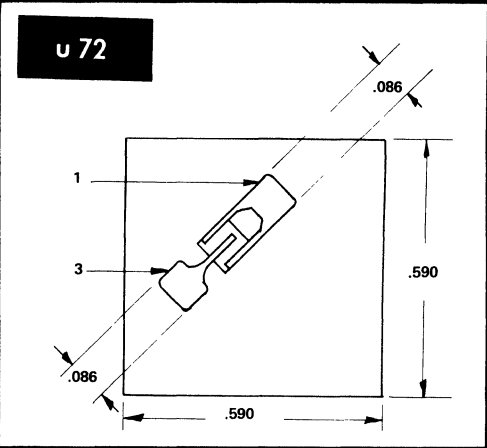
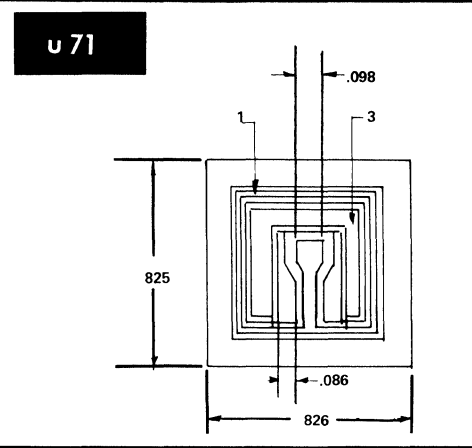
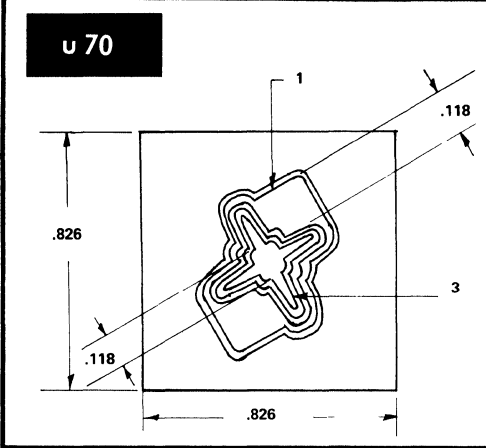
u 68



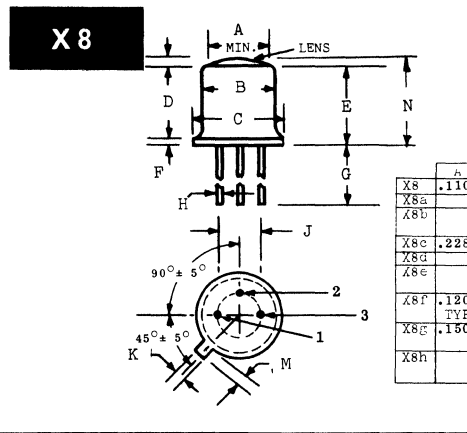
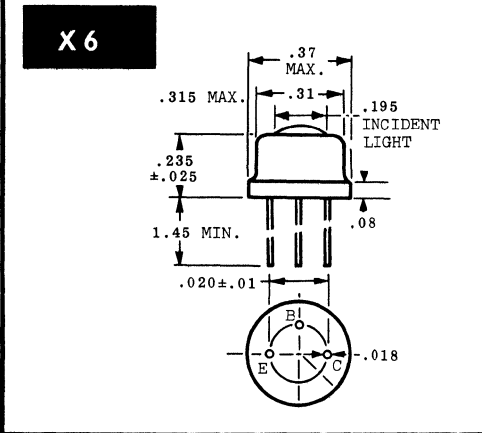
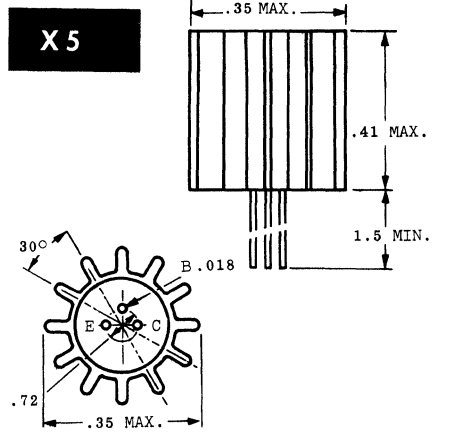
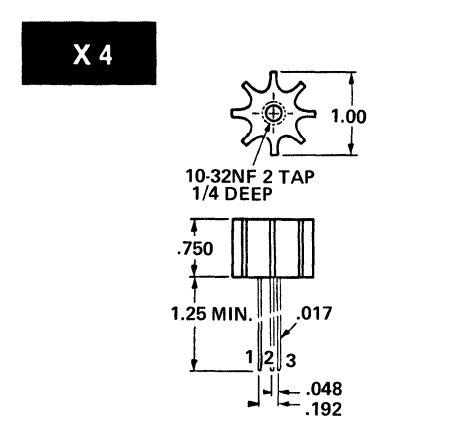
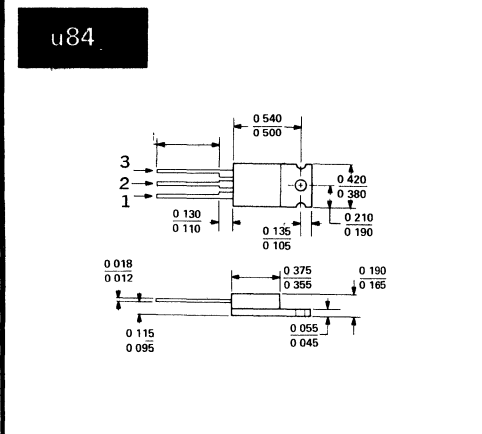
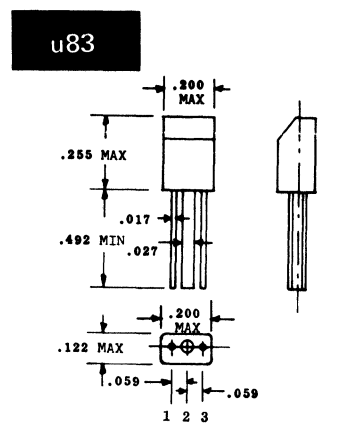
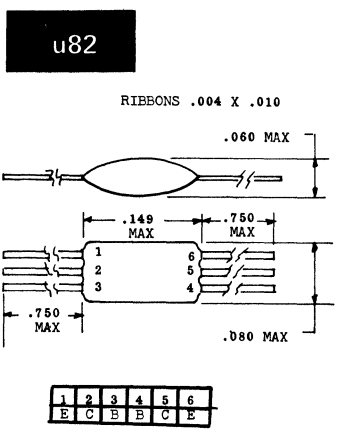
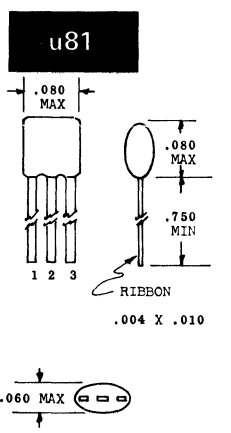
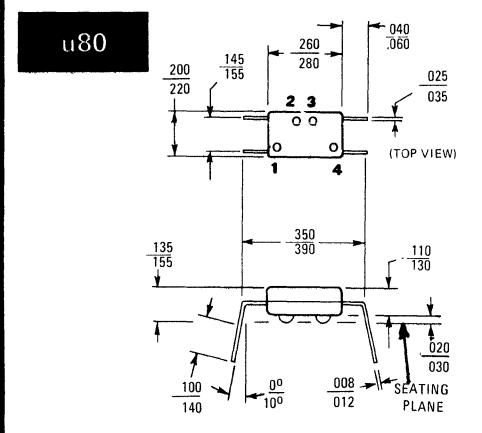
u 69



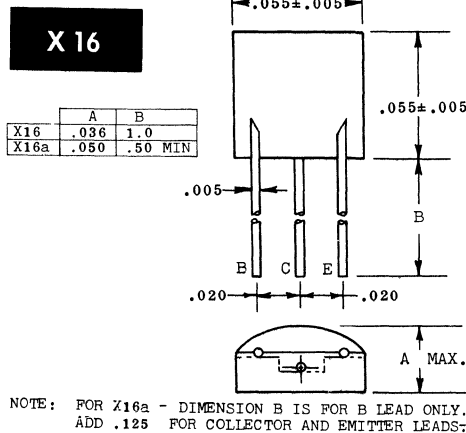
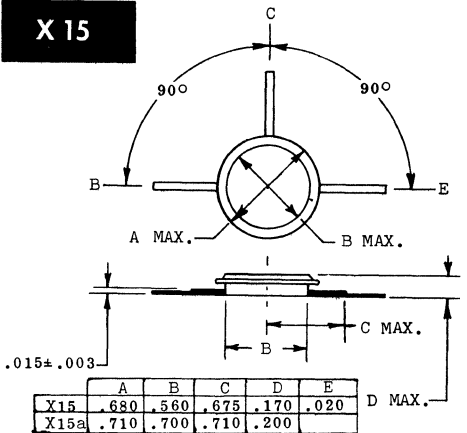
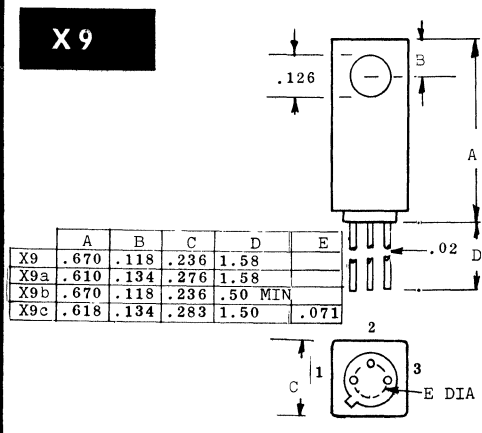
# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE



# 15. OUTLINE DRAWINGS IN DRAWING NUMBER SEQUENCE



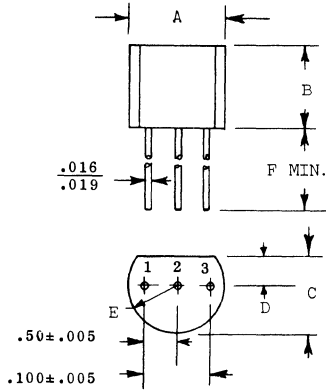
	A	F	C	D	E	F	G	H	J	K	M	N
X8	.110	.186	.220	.020	.190	.030	.500	.017	.100	.040	.038	
X8a	.185	.215			.240		.531	.015	.098			
X8b		.186	.209		.291		.500	.047	.100			
X8c	.228	.334	.370	.039	.260	.010	.500	.015	.200	.031	.043	
X8d	.187	.220			.190	.030	1.50	.019	.100	.041	.042	
X8e		.169					.492	.017	.087			.157
X8f	.120	.178	.209	.180	.170	.030	.500	.016	.100	.036	.028	
X8g	.150	.178	.236	.185	.210	MAX	MIN	.019		.046	.048	
X8h		.190	.215		.210	MAX	MIN	.019	.100	.035		.220
X8i		.189	.230				.500		.100	.046	.046	.272
		MAX	MAX				MIN			MAX	MAX	MAX



# 15. OUTLINE DRAWINGS

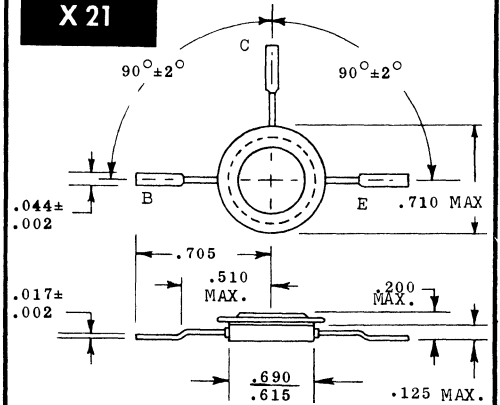
IN DRAWING NUMBER SEQUENCE

**X 20**

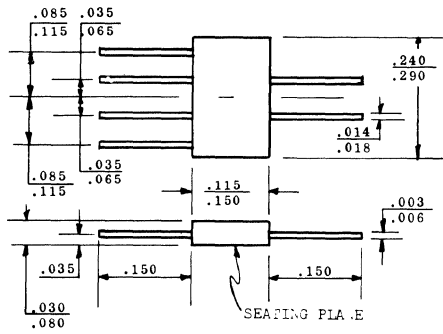


	A	B	C	D	E	F
X20	.200	.180 .210	.160	.095 .105	.095 .105	.500
X20a & b	.200	.180 .210	.160	.055 .065	.055 .105	.500
X20d		.175 .185		.045 .055	.055 .095	.500
X20e	.221	.241	.170	.060		.500
X20f	.175 .205	.170 .210	.125 .165		.020 .105	.450

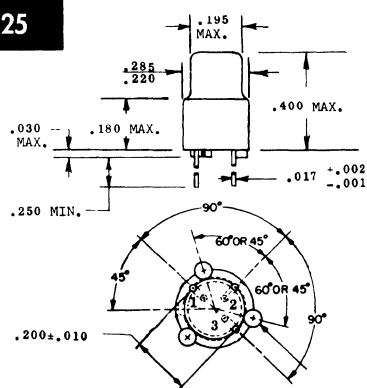
**X 21**



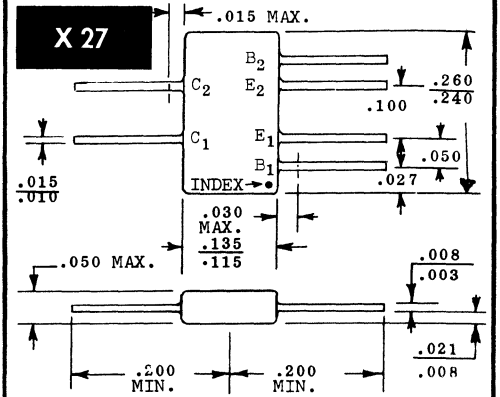
**X 22**



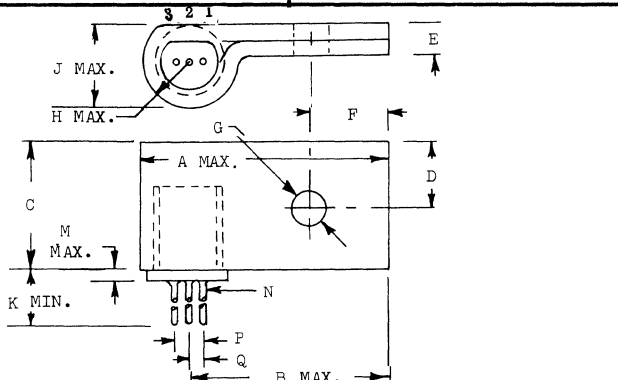
**X 25**



**X 27**

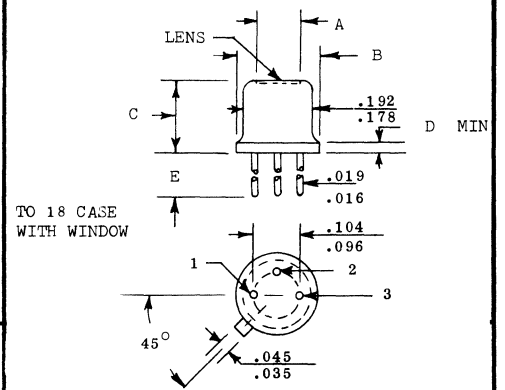


**X 28**

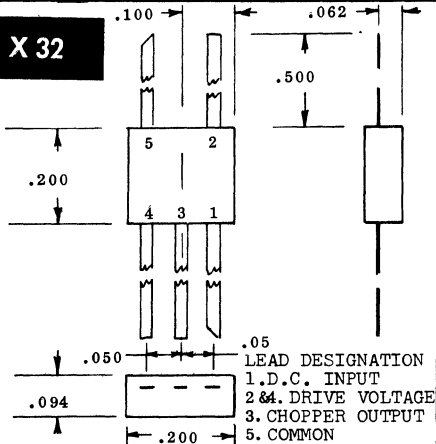


	A	B	C	D	E	F	G	H	J	K	M	N	P	Q
X28	.676	.520	.407	.156	.127	.187	.122	.156	.263	.500	.075	.017	.100	.050
X28a	.728	.551	.374	.187	.125		.118	.177	.295	.787		.016	.100	.050

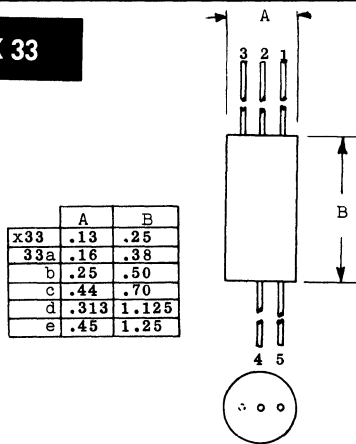
**X 29**



**X 32**



**X 33**

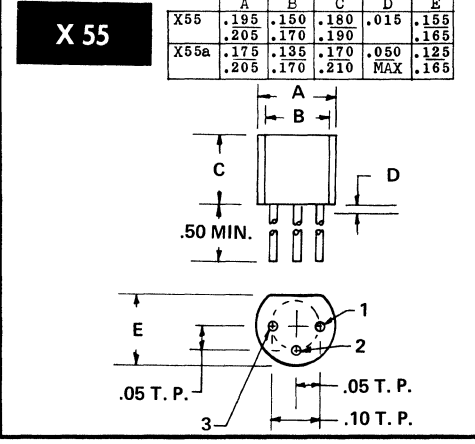
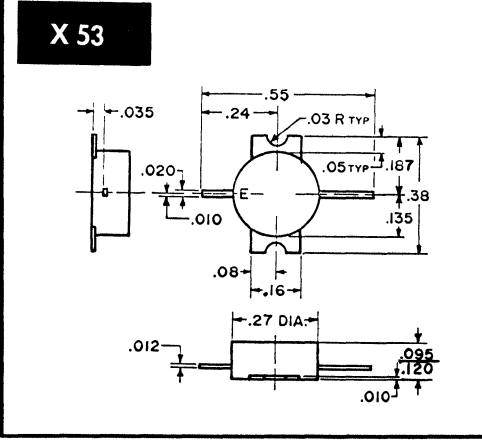
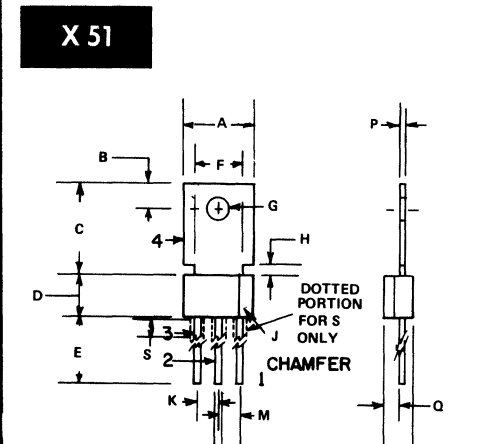
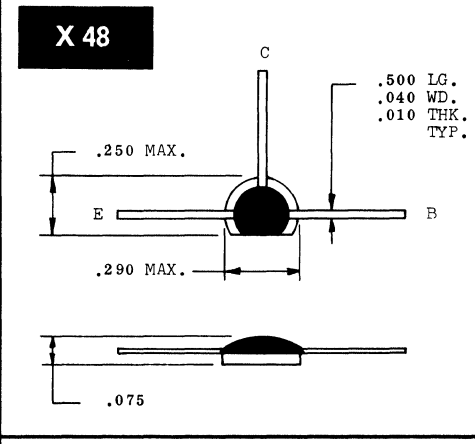
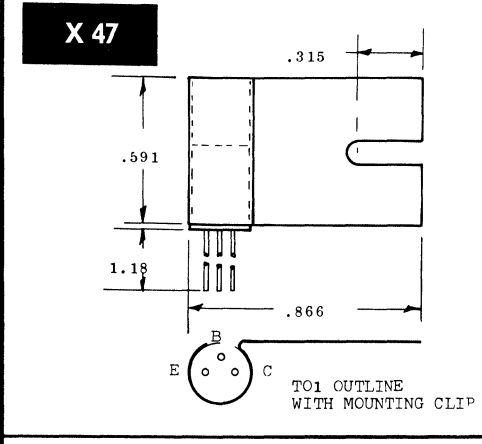
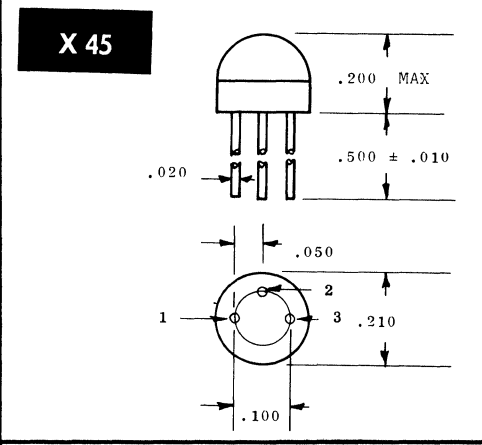
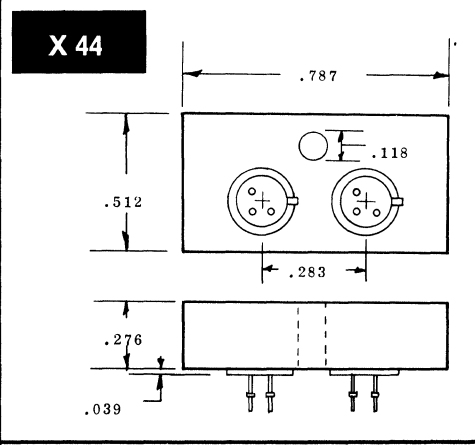
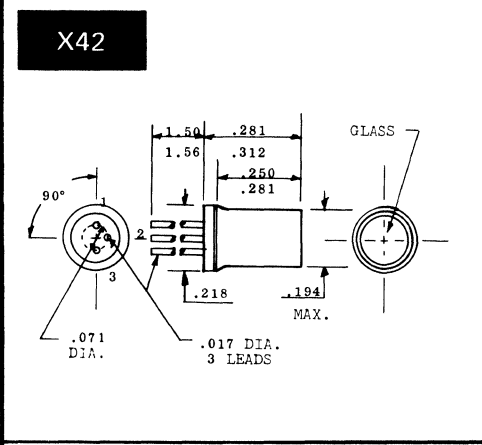
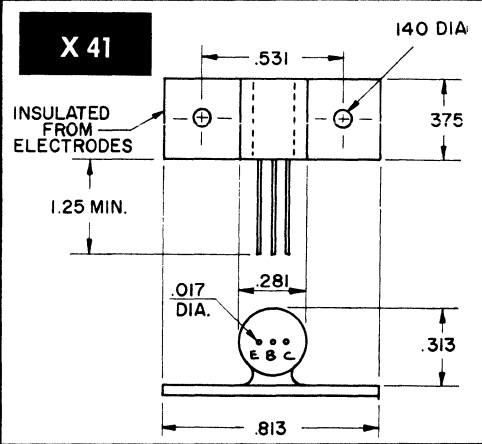
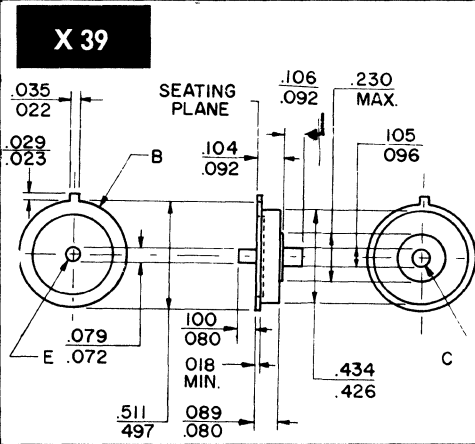
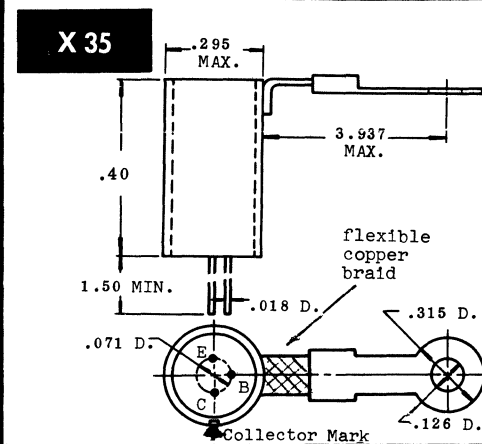


	A	B
x33	.13	.25
33a	.16	.38
b	.25	.50
c	.44	.70
d	.313	1.125
e	.45	1.25

	A	B	C	D	E
X29	.117	.208	.194	.013	.500
	.123	.220	.202		MIN
X29a	.117	.208	.194	.013	.500
	.123	.220	.202		MIN
X29b	.100	.208	.271		.500
		.230			.590
X29c			.204		.492
					.570
X29d		.209	.170	.030	.500
		.230	.210	MAX	MIN

# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE



	A	B	C	D	E	F	G	H
X51	.360	.115	.470	.280	.470	.245	.122	.050
	.400	.135	.530	.320	.600	.255	.128	.070
X51a	.360	.115	.480	.280	.400	.240	.122	.050
	.400	.135	.500	.320	.420	.260	.128	.070
X51b	.382	.154	.583	.347	.453		.158	.098
	.405	.161	.598	.362	.492		.165	MAX.
X51c	.360	.115	.480	.285	.400	.240	.123	
	.400	.135	.520	.315	.420	.260	.127	

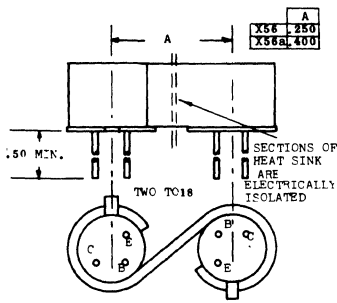
	J	K	M	N	P	Q	R	S
X51	.065	.095	.095	.047	.017	.095	.175	
	.075x45°	.105	.105	.053	.023	.105	.185	
X51a	.065	.095	.095	.024	.019	.095	.170	
	.075x45°	.105	.105	.028	.026	.105	.190	
X51b		.114	.114	.114	.020		.169	
		.122	.122	.122	.024		.185	
X51c	.065	.095	.095	.024	.019	.095	.170	.050
	.075x45°	.105	.105	.028	.026	.105	.190	.060



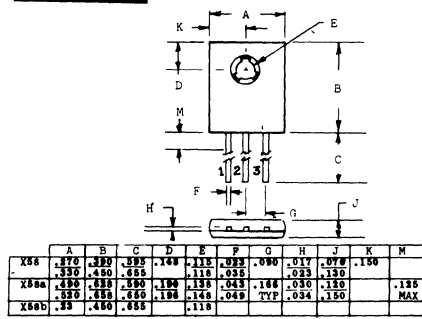
# 15. OUTLINE DRAWINGS

IN DRAWING NUMBER SEQUENCE

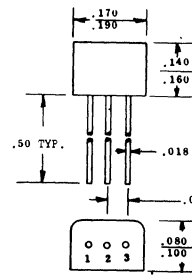
**X 56**



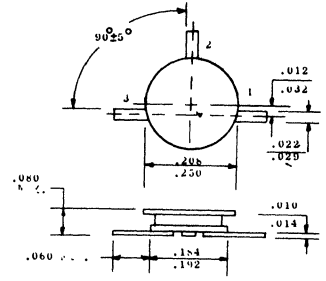
**X 58**



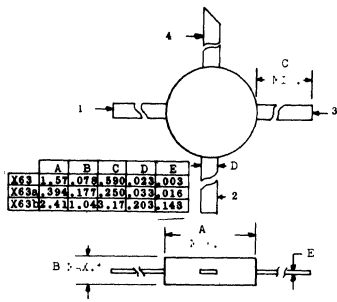
**X 59**



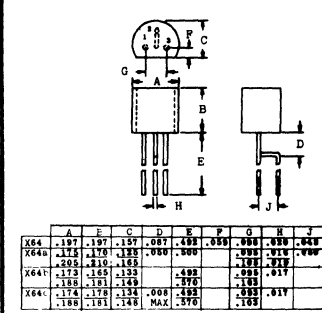
**X 60**



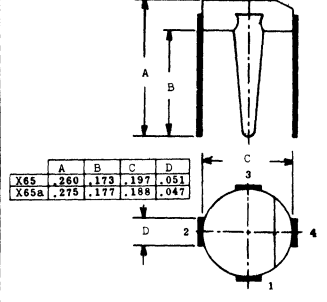
**X 63**



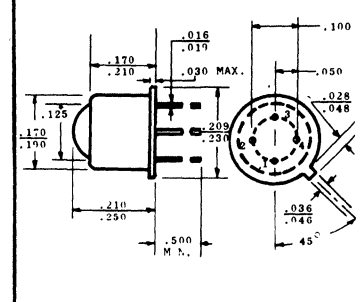
**X 64**



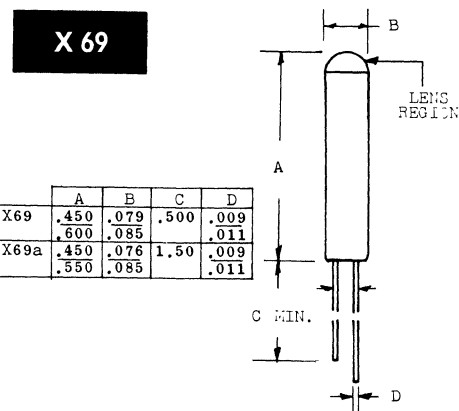
**X 65**



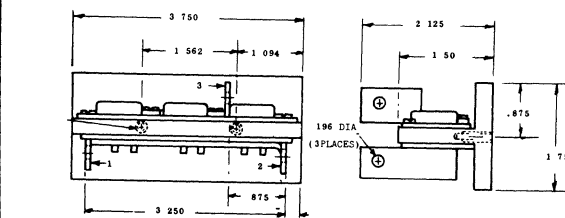
**X 68**



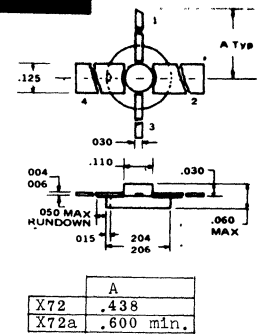
**X 69**



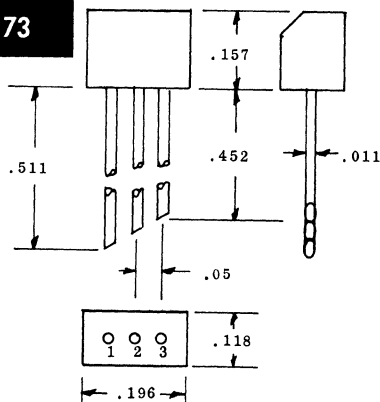
**X 71**



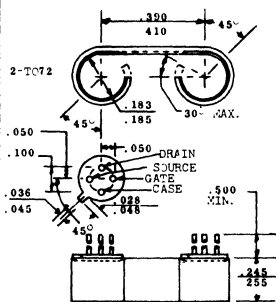
**X 72**



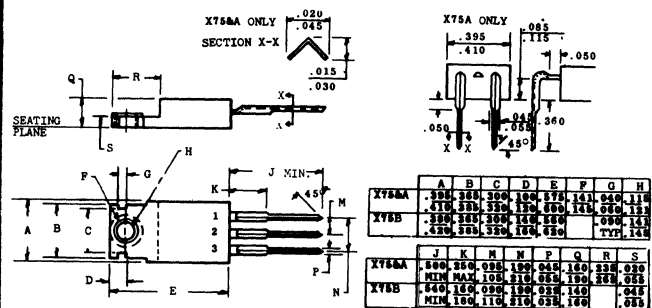
**X 73**



**X 74**



**X 75**







## ZA NOTES

1. The outline drawing for this device may be either MT6 or MT26. Consult manufacturer.
4. Same as TO36 outline except 5mm (metric) thread.
8. Outline available in different package styles. Consult manufacturer for details.
9. Device available with more than one outline.
 

Suffix	Outline
a	u30
b	u30a
11. Device also available R51 outline.
17. The outline drawing for this device may be either L3b (with reduced dissipation) or L3c. Consult manufacturer.
22. The outline drawing for this device may be either TO5, TO13, or ZA23. Consult manufacturer.
23. The outline drawing for this device is identical with a TO13 outline with .022 x 2.5 long tin nickel leads welded to each terminal.
24. The outline drawing for this device may be either TO13 or ZA23. Consult manufacturer.
25. For the outline drawing, refer to the individual slash numbers.
26. Type number with slash S same as X56 outline. Type number with slash L same as X56a outline.
27. The outline drawing for this device may be either R81 or R3a. Consult manufacturer.
29. Type number with R suffix indicates a TO18 package; type number with a S suffix indicates a TO5 package.
30. The outline drawing for this device may be either MT25b or MT42b. Consult manufacturer.

## JEDEC "TO" DRAWING NOTES

1. This zone is controlled for automatic handling. The variation in actual diameter within the zone shall not exceed 0.010 (0.25MM).
2. (All leads) Diameter is uncontrolled to .020 from seating plane and beyond minimum tolerance of lead length (1.5 or .5) from seating plane. Dim. A applies between .020 and .250 from seating plane. Dim B applies between .250 and minimum tolerance of lead length.
3. Measured from maximum diameter of the actual device.
4. Leads having maximum diameter .019 (.483MM) measured in gaging plane .054 - .001 (1.37MM - .025MM - .000MM) below the seating plane of the device shall be within .007 (.178MM) of their true locations.
5. Tab centerline.
6. Diameter (a) concentric within 0.006 total indicator reading. Cap flange shall never extend beyond header periphery. 0.005 max burr or weld flash.
7. Diameter (a) concentric within 0.006 total indicator reading.
8. Applies to thickness of tab.
9. (Three leads), the specified lead diameter applies to the zone between .050 (1.27MM) and .250 (6.35 MM) from the reference plane. Between .250 (6.35MM) and end of lead, a maximum of .021 (.533MM) is held. Outside of the zones the lead diameter is not controlled.

## JEDEC "TO" DRAWING NOTES

10. 6-32NC-2A. Maximum pitch diameter of plated threads shall be basic pitch diameter (.1177, 2.98MM). Reference (screw thread standards for federal services 1957) handbook H28-part 1.
11. Complete threads shall extend to within three threads of the seating plane and shall remain within tolerances to within two threads tip of stud.
12. Maximum (.019, .483MM) diameter leads and maximum (.230, 5.84MM) stud shoulder to within .007 (.178MM) radius of true location relative to the (.460, 11.68MM) diameter flange at a gauging plane .054 (1.37 MM) .001 (.025MM), - .000 (.000MM), from the reference plane.
13. Dimension does not include sealing flanges.
14. The outline contour with exception of hexagon is optional within zones or dimension specified.
15. Pitch diameter of 10-32 UNF-2A (coated) threads. (ASA B1.1-1960).
16. This terminal can be flatten and pierced or hook type.
17. Position of leads in relation to the hexagon is not controlled.
18. Pitch diameter - thread 1/4-28 UNF-2A (coated). Reference screw thread standards for federal services - handbook H-28 or ASA B1.1 - 1960.
19. Pitch diameter - thread 5/16-24 UNF-2A (coated). Reference (screw thread standards for federal services - handbook H-28 or ASA B1.1 - 1960).
20. Contour and orientation of fixed terminal lugs are optional.
21. Minimum flat.
22. Minimum diameter of seating plane.
23. A chamfer (or undercut) on one or both ends of hexagonal portion is optional.
24. Minimum difference in terminal lengths to establish datum line for numbering terminals.
25. Minimum spacing between terminals.
26. The device may be measured by direct methods or by the gage and gaging procedure described on gage drawing GS-1.
27. Four leads.
28. These dimensions should be measured at points .050 to .055 below seating plane. When gage is not used, measurement will be made at seating plane.
29. Two leads.
30. Insulation rundown.
31. Three leads.
32. (Insulated) locator pin.
33. Externally coated devices shall not have coating on the leads beyond this zone.
34. (All leads) Diameter is uncontrolled to .050 from seating plane and beyond minimum tolerance of lead length (1.5 or .5) from seating plane. Dim A applies between .050 and .250 from seating plane. Dim B applies between .250 and minimum tolerance of lead length from seating plane.
35. Four holes.
36. Four equally spaced feet to lie within this zone. Minimum distance between a lead and a foot .031.
37. Angular orientation of individual terminals is undefined.



## JEDEC "TO" DRAWING NOTES

38. Complete threads shall extend to within 2-1/2 threads of the seating plane.
39. The leads shall be essentially straight within this zone.
40. 1/4-28 UNF-2B.
41. Terminals may be referred to by number as follows: Terminal No. 1 is the odd terminal and connected to the case. Other terminals are numbered clockwise from No. 1.
42. Leads having maximum diameter .045 measured in gage plane .031, .001, .000 below the seating plane of the device shall be within .010 of their true position relative to minimum diameter .096 holes in the mounting flange.
43. 8-32 UNF-2A.
44. Hex for standard 1/4 ignition wrench.
45. Pitch diameter of 8-32 UNC-2A (coated) threads (ASA B1.1-1960).
46. Maximum size leads and stud must be within .0055 of the exact positions shown with respect to the .885 maximum diameter measured at points .015 maximum below seating plane.
47. .190-32 UNF-2A. Maximum pitch diameter of plated threads shall be basic pitch diameter .190 reference (screw thread standards for federal services 1957) handbook H28 1957 P1.
48. Lead diameter in this area unrestricted.
49. Both ends.
50. Two mounting holes.
51. Maximum diameter leads measured at a gaging plane .054, .001, .000 below the seating plane shall be within .010 of their true positions with respect to the .725 diameter.
52. Angular orientation of edge optional.
53. Square, radius or diagonal on end of terminal is optional.
54. Index tab for visual orientation only.
56. Leads shall emerge from the body diameter dimension within the limits indicated by the .015/.035, .010 & .025 dimensions.
57. Minimum and Maximum dimensions both apply to the major (largest) diameter only.
58. Radius at corners of mounting flange optional.
59. Angular orientation of terminal ends as shown  $\pm 15$  deg.
60. A .075 clearance from hole centers to .765/.785 diameter for mounting fasteners.
61. (All leads) Diameter is uncontrolled beyond .625 from seating plane. Dim A applies between .050 and .250 from seating plane. Dim B applies between .250 and .625 from seating plane.
62. Measured at seating plane.
63. Complete threads to extend to within 3-1/2 threads of seating plane.
64. Leads having maximum diameter .019 (.483MM) measured in gaging plane .025 (.635MM) .001 (.025MM) - .000 (.000MM) below the seating plane of the device shall be within .007 (.178MM) of their true positions.
65. (Eight leads). Maximum number of leads omitted in this outline, three (3). The number and position of leads actually present are indicated in the product registration. Outline designation determined by the location and minimum angular spacing of any two adjacent leads.

## JEDEC "TO" DRAWING NOTES

66. (Four leads). Maximum number of leads omitted in this outline, none (0). The number and position of leads actually present are indicated in the product registration. Outline designation determined by the location and minimum angular or linear spacing of any two adjacent leads.
67. (Four, six, ten, or twelve leads). Maximum number of leads omitted in this outline, one (1). The number and position of leads actually present are indicated in the product registration. Outline designation determined by the location and minimum angular spacing of any two adjacent leads.
68. Length of incomplete or undercut threads.
69. Lead diameter uncontrolled above the seating plane.
70. Contour and orientation of terminal flats are undefined.
71. The body and terminals of the device, with the exception of the extended lug length, lies within the cylinder defined by the dotted outline.
72. Pitch diameter of 1/2-20 UNF-2A (coated) threads (ASA-B1.1).
73. Leads missing from their designated positions shall also be counted when numbering leads for specific applications.
74. Lead spacing shall be measured within .030 (.762MM) from the point of emergence from the body.
75. Diameter of hole or width of slot out either side of terminals.
76. Lead dimensions uncontrolled in this zone to allow for body and lead finish irregularities.
77. Contour of the package beyond this zone is uncontrolled.
78. Seated height with lead bent at right angles.
79. Flexible leads for terminals 1 and 2 are identified by color coding for specific applications.
80. Pitch diameter of 3/4-16 UNF-2A (coated) threads (ASA B1.1).
81. Irregularity in body outline not controlled in this zone.
82. Terminal configurations optional between the body of the device and the flats on the terminals.
83. Visual or mechanical index is optional if one lead is omitted.
84. The body of the device with exception of the hexagon, thread, and flexible lead extensions lies within the cylinder defined by the dotted outline.
85. Pitch diameter of 1-12 UNF-2A (coated) threads. (ASA Bul. 1-1960)
86. The body of the device with the exception of heat sink and flexible leads lies within the cylinder defined by the dotted outline.
87. Pitch diameter of threads - 1/2-20 UNF2B (ASA Bul. 1-1960).
88. Parallel, twisted or coaxial flexible leads for terminals 1 and 2 are identified by color for specific applications. Coaxial shielded lead has shield as terminal 2.
89. When dimensions less than .180 (4.58mm) are used, clearance in the second fin will be provided.

## JEDEC "TO" DRAWING NOTES

90. The use of either a hook, short tab, or tall tab terminal contour is optional. An index point is required when the tall tab terminal contour (identical to the adjacent terminals) option is used.
91. Elongated hole in tab is optional.
92. With the device seated in a .165 (4.20mm) .010 (.25mm) - .000 (.00mm) hole a maximum force of 20 grams on each of the terminals shall cause the flats of the terminals to contact the seating plane.
93. Use of tab extension is optional
94. Pitch of diameter 5/8-18 UNF-2A (coated) threads (ASA Bul. 1-1960).
95. All terminals.
96. Spacing and angle of the end leads at the point of emergence of body is not controlled.
97. Mechanical index, optional.
98. Orientation of flats not controlled in relation to the leads.
99. Measured from intersection of lead axis and body surface of diameter
100. Dimensions, configurations, and position of leads optional in this zone.
101. Leads shall emerge from the body within the limits of .030 (.76mm) max. above the seating plane and .035 (.88mm) max from the center line.
102. Details of the outline in this zone are optional except that the outline shall not extend beyond the seating plane.
103. An index mark shall be located on the top surface in the quadrant above terminal one.
104. These tolerances are non cumulative.
105. The cross section of each lead having a maximum diameter of .019 (.482 MM) and measured in a gaging plane .054 (1.372 MM)  $\pm$  .001 (.025 MM) - .000 (.000MM) below the seating plane lies in a circle having a diameter of .033 (.838 MM) centered at the true position of the lead axis at its point of exit relative to the maximum body diameter shown.
106. Configuration of package optional within zone specified.
107. This dimension applies to leads 1 and 3 only.
108. Maximum radius of .050 in. (1.27 MM) on all body edges and corners.
109. Lead spacing to be measured between .100 in. (2.54 MM) and .125 in. (3.17 MM) from the point of emergence from the body.

# D.A.T.A. LEAD CODE IDENTIFICATION GUIDE

## LEAD CODE EXPANDER

- ⊘ — Emitter or Source tied to case
- § — Base or Drain tied to case
- ∅ — Collector or Gate tied to case

LEAD CODE	LEAD CONFIGURATION			
	1	2	3	4
A	E	B	C	
B	E	C	B	
C	B	E	C	
D	B	C	E	
E	C	E	B	
F	C	B	E	
G	E	B	C	CASE
H	E	B	CASE	C
J	B	E	C	CASE
K	B	E	CASE	C
L	E	C	B	C
M	B	C	CASE	E
N	C	B	E	E
P	E	B	C	C
R	E	B	E	C
S	E	C	E	B
T	B		E	
U	C	B	E	B
V	C	E	B	E
W	E		C	
X	B	C	E	CASE
	1	2	3	4
Y	B	E	C	E
Z	B	E	B	C
CA	E	B1		B2 CASE
CB	B1	E	B2	
CC	E	B1		B2
CD	E	B2	B1	
CE	K	G	A	
DA	S	G	D	
DB	S	D	G	
DC	D	G	S	
DD	D	S	G	
DE	G	S	D	
DF	G	D	S	
DG	S	G	D	CASE
DH	S	D	G	CASE
DJ	D	S	G	CASE
DK	D	G	S	CASE

LEAD CODE	LEAD CONFIGURATION			
	1	2	3	4
DM	D	G	<u>SUB</u> CASE	S
DN	<u>S</u> SUB	G	D	<u>SUB</u> CASE
DP	D	G	S	<u>SUB</u> CASE
DQ	<u>S</u> SUB	D	G	
DR	S	G	D	<u>SUB</u> CASE
DS	D	G	SUB	S
DT	D	G	S	SUB
DU	S	G1	D	<u>G2</u> CASE
DV	S	G1	D	<u>G2-SUB</u> CASE
DW	D	S	G	<u>SUB</u> CASE
DX	D	G2	G1	<u>S</u> SUB
DY	S	D	<u>G2</u> CASE	G1
DZ	G	D	<u>SUB</u> CASE	S
EA	S	G2	D	S
EB	D	D	G	G
EC	G1	S	G1	<u>G2</u> SUB
ED	G	S1	D	S2
EE	G1	S	G2	D
EF	S1	G	S2	D
GA	E	B1	C	B2
GB	C	B1	E	B2
GC	E1	B	C	E2
GD	E1	B	E2	C
GE	C	E1	B	E2
GG	E2	E1	B	C
GH	E2	B	E1	C
GJ	B	E1	C	E2
GK	B1	E	C	B2
GM	B1	C	E	B2
GN	E	B2	B1	C
GP	E1	E2	B	

**A—BZ** Bipolar  
**CA—CZ** UJT  
**DA—FZ** FET  
**GA—** Multi Element Bipolar

ABBREV.	TERM
<b>A</b>	Anode
<b>E</b>	Emitter
<b>B</b>	Base
<b>C</b>	Collector
<b>S</b>	Source
<b>D</b>	Drain
<b>G</b>	Gate
<b>K</b>	Cathode
<b>Sub</b>	Substrate
<b>Case</b>	Case/Shield

# SECTION 17

## TRANSISTOR

### Manufacturer's Local Offices

Since this D.A.T.A. BOOK provides only basic technical data for initial selection purposes, this section of Manufacturers' Local Offices will facilitate your requesting complete data sheets and application information from a nearby office.

#### TFKG – ALLGEMEINE ELEKTRICITAETS GESELLSCHAFT, AEG-TELEFUNKEN

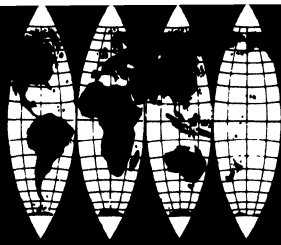
	Zip Code	Telephone No.	Telex
Postfach 940, D 7100 Heilbronn, Germany .....		07131-8821	728746
U. S. A. .... New Jersey..... AEG-Telefunken Corporation .....	07632	201-568-8570	135497
	570 Sylvan Avenue Englewood Cliffs		

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#### APX – AMPEREX ELECTRONIC CORPORATION

	Zip Code	Telephone No.	TWX
Providence Pike, Slatersville, Rhode Island.....	02876	401-762-9000	710-387-1591
CALIFORNIA..... Palo Alto .....	Amperex Electronic Corporation ..... 94303	415-327-0461	910-373-1211
	801 East Charleston Road		
ILLINOIS.....Northlake.....	Amperex Electronic Corporation.....60164	312-261-7877	910-226-1968
	360 East North Avenue	312-261-7878-9	
NEW YORK..... Hicksville .....	Amperex Electronic Corporation .....11802	516-931-6200	516-433-9045
	230 Duffy Avenue		





# Manufacturers' Local Offices

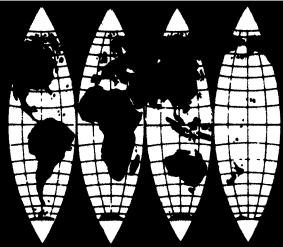
## ATEI – ATES COMPONENTI ELETTRONICI S.p.A.

	Telephone No.	Telex
2 Via Tempesta - 20149, Milan, Italy .....	4695651	31481
ENGLAND..... London, W5..... Ates Electronics Limited .....	01-998-6171	262401
Mercury House Park Royal		

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## BNT – BURNS & TOWNE, INC.

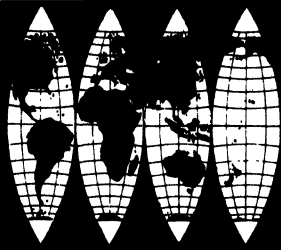
	Zip Code	Telephone No.
18-36 Granite Street, Haverhill, Massachusetts .....	01830	617-373-1501
<b>NATIONAL SALES OFFICE</b>		
NEW YORK..... Hicksville .....	Burns & Towne, Inc. .... 11801	516-935-0522
	550 Old Country Road	
ALABAMA..... Huntsville .....	Space Engineering Sales ..... 35805	205-837-6060
	4306 Governors Drive S. W. Suite R	
ARIZONA..... Scottsdale.....	Vinson Associates, Inc..... 85251	602-947-7371
	44 E. Indian School Road	
CALIFORNIA .....	Los Angeles .....	S. A. Shaw & Company .....
		90049
	2050 Westridge Road	213-472-9691
	Redwood City.....	Carson Electronics Products .....
		94061
	2334 Vera Avenue	415-365-4620
	Post Office Box 1216	
COLORADO..... Englewood.....	Vinson Associates, Inc..... 80110	303-789-2203
	3600 South Lincoln	
CONNECTICUT .....	Great Neck.....	Cooper-Simon & Co., Inc. .... 11021
	(New York)	38 Middle Neck Road
FLORIDA .....	Orlando .....	Space Engineering Sales, Inc..... 32803
		999 Woodcock Road
		Suite 216
IDAHO .....	Bellevue.....	The Al Smith Company .....
	(Washington)	98004
		405 166th Street, S.E.
ILLINOIS.....	Chicago .....	J. Rinaldi, Inc. .... 60646
		6319 North Central Avenue
INDIANA .....	Chicago.....	J. Rinaldi, Inc..... 60646
	(Illinois)	6319 North Central Avenue
MARYLAND .....	Rockville .....	Quality Components, Inc. .... 20851
		Post Office Box 711
		301-933-1623



# Manufacturers' Local Offices

## BNT — BURNS & TOWNE, INC. (Cont'd)

		Zip Code	Telephone No.
18-36 Granite Street, Haverhill, Massachusetts .....		01830	617-373-1501
<b>MASSACHUSETTS</b> .....Needham .....	Comp-Rep Associates, Inc. ....	02192	617-444-2484
	1116 Great Plain Avenue		
<b>MICHIGAN</b> ..... Detroit .....	Hufferd Company .....	48235	313-863-2665
	16257 Meyers Road		
<b>MINNESOTA</b> .....Minneapolis .....	Charles E. Bohlig Associates .....	55416	612-922-7011
	3925 Monterey Avenue South		
<b>MISSOURI</b> ..... St. Louis .....	Coombs Associates .....	63141	314-542-3399
	11734 Lackland Industrial Drive		
<b>NEW MEXICO</b> ..... Albuquerque.....	Vinson Associates, Inc. ....	87110	505-298-7442
	Post Office Box 3295-Station D		
<b>NEW YORK</b> ..... Great Neck .....	Cooper-Simon & Co., Inc. ....	11021	516-487-1142
	38 Middle Neck Road		
	North Chili.....	E. M. C. Sales Company .....	14514
		2450 Westside Drive	716-594-9683
<b>NORTH CAROLINA</b> ....Greensboro .....	Space Engineering Sales, Inc. ....	27410	919-299-0987
	P.O.Box 8298		
<b>OHIO</b> ..... Twinsburg .....	Bridgefield Supply Co. ....	44087	216-425-4209
	2107 Enterprise Pkwy.		
<b>OREGON</b> ..... Bellevue .....	The Al Smith Company .....	98004	206-746-6770
	(Washington) 405 166th Street, S.E.		
<b>PENNSYLVANIA</b> ..... Philadelphia .....	KVA Sales Company .....	19111	215-728-5802
	7208 Rising Sun Avenue		
<b>TEXAS</b> ..... Dallas .....	Stevens Sales Company .....	75234	214-350-2476
	P.O. Box 34493		
<b>VIRGINIA</b> ..... Rockville.....	Quality Components .....	20851	301-933-1623
	(Maryland) Post Office Box 711		
<b>WASHINGTON</b> ..... Bellevue .....	The Al Smith Company .....	98004	206-746-6770
	405 166th Street, S.E.		



## Manufacturers' Local Offices

### BNT – BURNS & TOWNE, INC. (Cont'd)

18-36 Granite Street, Haverhill, Massachusetts .....01830      Telephone No. 617-373-1501

#### INTERNATIONAL

CANADA ..... Ontario ..... Cartwright Agencies ..... 416-528-0294  
153 Main Street  
West Hamilton 10

DENMARK ..... Copenhagen 2100 ...E. V. Johanssen A/S ..... (01)29-56-22      Telex 2771  
SWEDEN ..... Scherfigsvej 1

ENGLAND ..... London W3 ..... Auriema Ltd. ..... 01 993 1461  
23-31 King Street

GERMANY ..... Munich 8000 ..... Auriema Ltd. ..... 0811-53-0448  
AUSTRIA ..... Theresienhohe 13/820  
SWITZERLAND

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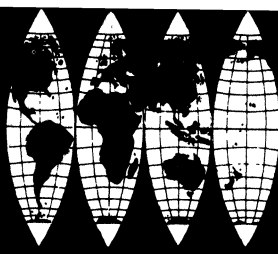
### CSI – CARTER SEMICONDUCTOR INC.

374 Bay View Avenue, Amityville, Long Island, New York .....11701      Telephone No. 516-598-0660      TWX 510-224-6691  
Telex 96-7838

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### CNS – CONTINENTAL SEMI-CONDUCTOR INC.

59 Central Avenue, Farmingdale, New York .....11735      Telephone No. 516-694-3404      Telex 510-224-6444



# Manufacturers' Local Offices

## DEL – DELCO ELECTRONICS DIVISION General Motors Corporation

	Zip Code	Telephone No.	TWX
700 East Firmin Street, Kokomo, Indiana .....	46901	317-457-8461 317-459-2175	DLRA 3174525747
ILLINOIS ..... Chicago* .....	Delco Electronics Division ..... 60656	312-775-5411	
	General Motors Corporation 5151 North Harlem Avenue		
NEW JERSEY ..... Union* .....	Delco Electronics Division ..... 07083	Union 201-687-3770	
	General Motors Corporation Box 1018 Chestnut Station		
		N. Y. C. Area 212-962-6622	

\*Office includes field lab and resident engineer for applications assistance

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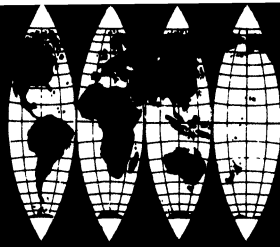
## ETC – ELECTRONIC TRANSISTORS CORPORATION

	Zip Code	Telephone No.
153-13 Northern Boulevard, Flushing, New York .....	11354	212-539-6700
CALIFORNIA ..... Van Nuys .....	Tim-Co Sales Company ..... 91406	213-873-4940
(Southern)	16024 Sherman Way	
OHIO..... Dayton.....	Lionel S. Fedotin ..... 45405	513-275-9345
	3680 Dorset Drive	

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## EMLS – EMIHUS MICROCOMPONENTS LIMITED

	Telephone No.	Telex
Glenrothes, Fife, Scotland .....	Glenrothes 4311	
ENGLAND..... Middlesex.....	Emihus Microcomponents Ltd. ....	Weybridge 47262 23613
	Clive House 1218 Queens Road Weybridge	



# Manufacturers' Local Offices

## FSC – FAIRCHILD SEMICONDUCTOR

Division of Fairchild Camera & Instrument Corporation, 313 Fairchild Drive, Mountain View, California	Zip Code <b>94040</b>	Telephone No. <b>415-962-5011</b>	TWX <b>910-379-6435</b> Cable Address: <b>Fairsemco</b>
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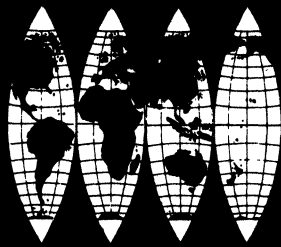
### INTERNATIONAL

<b>FRANCE</b> ..... 75 Paris 13 .....	Fairchild Semiconducteurs S.A. .... 87 Avenue d'Italie	588 37 85	20614
<b>GERMANY</b> ..... 6200 Weisbaden..... (European Headquarters)	Fairchild Halbleiter GmbH ..... Aarstrasse 1	06121/524011	04186588
	6200 Weisbaden .... Fairchild Halbleiter GmbH ..... Wilhelmstrasse 40	06121/371061	04186771
	3000 Hanover ..... Fairchild Halbleiter GmbH ..... Konigsworther Strasse 23	0511/17844	0922922
	8000 Munchen 2 .... Fairchild Halbleiter GmbH ..... Bayerstrasse 15	0811/593632	0524831
	7000 Stuttgart-Nord.Fairchild Halbleiter GmbH ..... Parler Strasse 65	0711/223575	
<b>ITALY</b> ..... 20133 Milan .....	Fairchild Semiconduttori S.p.A. .... Via Giovanni Pascoli 60	236 65 35	34338
<b>SWEDEN</b> ..... 11626 Stockholm ...	Fairchild Semiconductor AB..... Kvarngstan14	40 52 53	17759
<b>UNITED KINGDOM</b> ...Hertfordshire .....	Fairchild Semiconductor Ltd..... Kingmaker House-Enfield Road New Barnet	440 73 11	262835

## FERB – FERRANTI LIMITED

Gem Mill, Chadderton, Oldham, Lancaster, England .....		Telephone No. <b>061-624-6661</b>	Telex <b>668038</b>
<b>AUSTRALIA</b> ..... Sydney N.S.W.	Noyes Bros. Pty. Ltd. .... General Post Office Box 1587	43-0466	AA20745
<b>CANADA</b> ..... Ontario .....	Ferranti Electronics ..... A Division of Ferranti-Packard Electric Ltd. Industry St., Toronto 15	416-762-3661	TWX <b>610-491-1434</b>





# Manufacturers' Local Offices

## FERB — FERRANTI LIMITED (Cont'd)

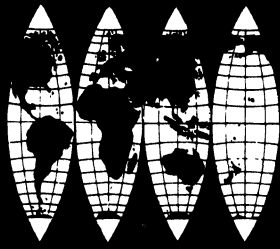
			Telephone No.	Telex
Gem Mill, Chadderton, Oldham, Lancaster, England .....			<b>061-624-6661</b>	<b>668038</b>
<b>DENMARK</b> .....	<b>Copenhagen F.</b> .....	Fredslund Pedersen .....	<b>GODTHAB</b>	<b>5052</b>
		Finsensvej 39	<b>(0136)9050</b>	
<b>ENGLAND</b> .....	<b>London S.W.1</b> .....	Ferranti Ltd. ....	<b>01 834 6611</b>	<b>264055</b>
		Millbank Tower		
		Millbank		
<b>FRANCE</b> .....	<b>Paris 15e</b> .....	CERAM .....	<b>273-07-20</b>	<b>65374</b>
		31, Rue du Docteur Finlay		
<b>GERMANY</b> .....	<b>5 Cologne</b> .....	Anglia Elektrotechnik .....	<b>RUF(0221)211042</b>	<b>8-882897</b>
		Apostelstrasse 1-3		
	<b>8 Munich 2</b> .....	Neumuller and Co. GmbH .....	<b>59 24 21</b>	<b>5-22106</b>
		Karlstrasse, 55		
<b>ITALY</b> .....	<b>20122 Milano</b> .....	Messrs. Mottola .....	<b>780-231</b>	<b>31317</b>
		Piazzetta U. Giordano 2		
<b>SWEDEN</b> .....	<b>Stockholm</b> .....	Sonab Development A.B. ....	<b>08/382660</b>	<b>88289</b>
		Fack S-171 20 Solna		
<b>U. S. A.</b> .....	<b>New York 11803</b> ...	Ferranti Electric Inc. ....	<b>516-293-8383</b>	<b>TWX</b>
		East Bethpage Road		<b>510-224-6483</b>
		Plainview, Long Island		

## GIC — GENERAL INSTRUMENT CORPORATION

		Zip Code	Telephone No.	TWX
Semiconductor Products Group, Sales Headquarters .....	600 West John Street, Hicksville, Long Island, New York	<b>11802</b>	<b>516-733-3333</b>	<b>510-221-1866</b>
<b>CALIFORNIA</b> .....	<b>Tarzana</b> .....	General Instrument Corporation.....	<b>213-873-6500</b>	<b>910-493-1243</b>
		18455 Burbank Boulevard		
<b>ILLINOIS</b> .....	<b>Chicago</b> .....	General Instrument Corporation .....	<b>312-774-7800</b>	<b>910-223-4545</b>
		7366 North Lincoln		

## IDC — INTERNATIONAL DIODE CORPORATION

	Zip Code	Telephone No.
90 Forrest Street, Jersey City, New Jersey .....	<b>07304</b>	<b>201-432-7151</b>



# Manufacturers' Local Offices

## ITT – ITT SEMICONDUCTORS

	Zip Code	Telephone No.	Telex
3301 Electronics Way, West Palm Beach, Florida .....	33407	305-842-2411	513410
<b>ENGLAND</b> ..... Kent .....	ITT Semiconductors Ltd. ....	<b>Footscray 3333</b>	<b>21836</b>
	Footscray, Sidcup		
<b>FRANCE</b> ..... 92, Levallois .....	Intermetall Dep. Semiconductors .....	<b>270 4200</b>	<b>626 27</b>
	de la SPI-ITT 86, rue du President Wilson		
<b>GERMANY</b> ..... 78, Freiburg .....	Intermetall Halbleiterwerk.....	<b>5171</b>	<b>72 716</b>
	der Deutsche ITT Ind. GmbH Post Office Box 840		
<b>ITALY</b> ..... Milano .....	ITT-S Filiale Italiana.....	<b>46 96 183/198</b>	<b>32 351</b>
	Piazza De Angeli Nr. 7	<b>/202</b>	

## KMC – KMC SEMICONDUCTOR CORPORATION

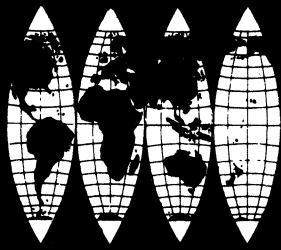
	Zip Code	Telephone No.	TWX
Parker Road, Long Valley, New Jersey .....	07853	201-876-3811	510-235-3350
<b>CALIFORNIA</b> ..... Inglewood .....	KMC Semiconductor Corp. ....	<b>90302</b>	<b>213-673-3004</b>

## LUCB – JOSEPH LUCAS (ELEC.) LTD.

		Telephone No.	Telex
Mere Green Road, Four Oaks, Sutton Coldfield, Warwickshire, England .....		<b>021-308-3501</b>	<b>338461</b>
<b>FRANCE</b> ..... Paris .....	Lucas Service Europe .....	<b>204-54-65</b>	<b>25906 NANTR.</b>
	Boite Postal 85 96 Boulevard du General Leclerc 92-Nanterre		
<b>GERMANY</b> ..... Koln .....	Joseph Lucas (Germany) G.m.b.H.....	<b>5.50.45</b>	<b>LUCA D 887431</b>
	505 Porz b. Koln Postfach 609		

## MEHK – MICROELECTRONICS LTD.

		Telephone No.	Telex
Post Office Box 9477, Kwun Tong, Kowloon, HongKong, B. C. C.....		<b>K-892423</b>	<b>HX3510</b>
<b>ENGLAND</b> ..... Middlesex .....	York House .....	<b>01-903-2721</b>	<b>934263</b>
	Empire Way Wembley		



# Manufacturers' Local Offices

## MST – MS TRANSISTOR CORPORATION

	Zip Code	Telephone No.	TWX
East Gate Boulevard, Garden City, New York .....	11530	212-478-3134	510-222-8258

---

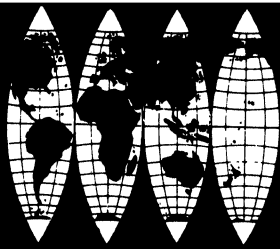
## MULB – MULLARD LIMITED

	Zip Code	Telephone No.	Telex
Mullard House, Torrington Place, London W.C. 1, England .....		01-580 -6633	264341 Cable Mullelectron London WC1
U. S. A. .... New York .....	Mullard, Inc. .... 11735	516-694-8989	961455
	100 Finn Court Farmingdale, Long Island		

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## NSC – NATIONAL SEMICONDUCTOR

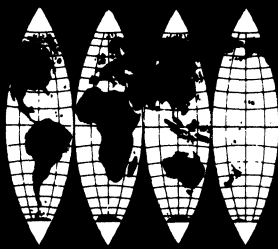
	Zip Code	Telephone No.	TWX	
2900 Semiconductor Drive, Santa Clara, California .....	95051	408-732-5000	910-339-9240	
CALIFORNIA..... Mountain View .....	National Semiconductor .....94040	415-961-4740	910-379-6432	
	2680 Bayshore Frontage Road Suite 112			
	Sherman Oaks .....	National Semiconductor.....91403	213-783-8272	910-495-1773
		Valley Freeway Center Building 15300 Ventura Boulevard Suite 305		
FLORIDA..... Pompano Beach .....	National Semiconductor ..... 33060	305-942-5850		
		1010 East Atlantic Boulevard Suite 12		
ILLINOIS ..... Chicago .....	National Semiconductor ..... 60631	312-613-2660		
		8550 West Bryn Mawr Suite 302		
MARYLAND ..... Towson .....	National Semiconductor ..... 21204	301-823-2151	710-232-1848	
		660 Kenilworth Drive		
MASSACHUSETTS..... Waltham .....	National Semiconductor ..... 02154	617-891-0510	710-326-7578	
		391 Totten Pond Road		
NEW JERSEY ..... Fort Lee .....	National Semiconductor.....07024	201-461-6111	710-991-9795	
		West Cliffs House 2375 Hudson Terrace		



# Manufacturers' Local Offices

## NSC – NATIONAL SEMICONDUCTOR (Cont'd)

			Zip Code	Telephone No.	TWX
2900 Semiconductor Drive, Santa Clara, California .....			95051	408-732-5000	910-339-9240
<b>NEW YORK</b> .....	<b>Rochester</b> .....	National Semiconductor .....	14607	716-461-1070	
		99 Park Avenue			
<b>TEXAS</b> .....	<b>Garland</b> .....	National Semiconductor .....	75040	214-212-0518	910-860-5097
		400 Forrest Gate Drive			
<b>INTERNATIONAL</b>					
<b>DENMARK</b> .....	<b>2110 Copenhagen</b> ... <b>OE</b>	National Semiconductor .....		0192-5610	Telex 6827 Magna
		Vordengborggade 22			
<b>ENGLAND</b> .....	<b>Hertfordshire</b> .....	National Semiconductor .....		Hoddesdon 69571	267-204
		The Precinct Broxbourne			
<b>FRANCE</b> .....	<b>Paris</b> .....	National Semiconductor .....		736-6625	25956
		63, Route de la Garenne 92, Clamart			
<b>GERMANY</b> .....	<b>891 Landsberg</b> .....	National Semiconductor .....		08191-3573	527-223
	<b>/Lech</b>	Lechstrasse 255			
	<b>8 Munich 22</b> .....	National Semiconductor .....		220702	
		Herzog-Rudolfstrasse 3/1			
<b>JAPAN</b> .....	<b>Tokyo</b> .....	Electro-Marketing Corporation .....		359-4521	ELEMART TK4952
		Seiwa Building 3-7-11 Akasaka Minato-ku			
<b>SCOTLAND</b> .....	<b>Greenock</b> .....	National Semiconductor .....		33251	778632
		Larkfield Industrial Estate			



# Manufacturers' Local Offices

## PHIC — PHILIPS ELECTRON DEVICES

Semiconductor Tube and Component Division of Philips Electronics Industries Ltd.  
116 Vanderhoof Avenue, Toronto 17, Ontario, Canada.....

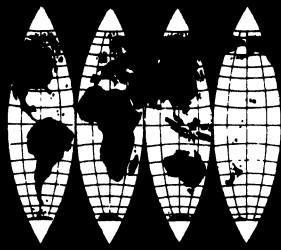
Telephone No.	Telex
416-425-5161	02-2513

## PHIN — PHILIPS GLOEILAMPENFABRIEKEN

	Telephone No.	Cable
Eindhoven, Netherlands .....	040-60000	PHILIPS EINDHOVEN
ARGENTINA ..... Buenos Aires ..... Fapasa I.y.C. .... Melincue 2594	50-9941/8155	
AUSTRALIA ..... Artarmon N.S.W..... Philips Industries Ltd. .... Miniwatt Electronics Div. 20, Herbert Street	43-2171	
AUSTRIA ..... 1072 Wien ..... Wiveg ..... Zieglergasse 6	93 26 22	
BELGIUM ..... Brussels ..... M.B.L.E. .... 80 Rue des Deux Gares	23 00 00	
BRAZIL ..... Sao Paulo ..... Ibrape S. A. .... Av. Paulista 2073-S/Loja	93-5141	
CANADA ..... Toronto 17 ..... Philips Electron Devices (PHIC)* ..... (Ontario) 116 Vanderhoof Ave.	425-5161	
CHILE ..... Santiago..... Philips Chilena S. A. .... Av. Santa Maria 0760	39 40 01	
DENMARK ..... Kobenhavn NV .... Miniwatt A/S ..... Emdrupvej 115A DK-2400	(01)69 16 22	
FINLAND ..... Helsinki 10 ..... Oy Philips A. B. .... Elcoma Division Kaivokatu 8	10 915	
FRANCE ..... Paris 11 ..... R. T. C. (RADF)* ..... La Radiotechnique Compelec Avenue Ledru Rolin 130	797-99-30	
GERMANY ..... 2 Hamburg 1 ..... Valvo GmbH (VALG)* ..... Valvo Haus Burchardstrasse 19	(0411)33 91 31	

\* Manufacturer Code inside ( ) can be found in Section 20  
Manufacturers Code Names & Addresses



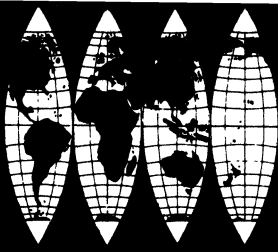


# Manufacturers' Local Offices

## PHIN — PHILIPS GLOEILAMPENFABRIEKEN (Cont'd)

			Telephone No.	Cable
Eindhoven, Netherlands .....			040-60000	PHILIPS EINDHOVEN
<b>GREAT BRITAIN</b> .....	<b>London W.C.1</b> .....	Mullard Ltd. (MULB)* .....	<b>01-580-6633</b>	
		Mullard House Torrington Place		
<b>HONG KONG</b> .....	<b>Hong Kong</b> .....	Philips Hong Kong Ltd. ....	<b>K-42 82 05</b>	
		Components Dept. St. George Bldg., 21st Floor		
<b>INDIA</b> .....	<b>Bombay 18(WB)</b> ....	Inbelec Div. of Philips India Ltd. ....	<b>45 33 86</b>	
		Bandbox Bldg. 254-D, Dr. Annie Besant Road Worli	<b>45 64 20</b> <b>45 29 86</b>	
<b>ITALY</b> .....	<b>Milano</b> .....	Philips S.p.A. ....	<b>6994</b>	
		Sezione Elcoma Piazza IV Novembre 3		
<b>JAPAN</b> .....	<b>Tokyo</b> .....	Nihon Philips .....	<b>(435)5204-5</b>	
		32nd Fl. World Trade Center Bldg. 5,3-chome, Shiba Hamamatsu-cho Minato-ku		
<b>MEXICO</b> .....	<b>Mexico 6, D.F.</b> .....	Electronica S. A. de C. V. ....	<b>5-33-11-80</b>	
		Varsovia No. 36		
<b>NETHERLANDS</b> .....	<b>Eindhoven</b> .....	Philips Nederland N. V. ....	<b>(040)43 33 33</b>	
		Afd. Elonco Boschdijk, VB		
<b>NORWAY</b> .....	<b>Oslo 3</b> .....	Electronica A/S.....	<b>46 39 70</b>	
		Middelthunsgate 27		
<b>SOUTH AFRICA</b> .....	<b>Johannesburg</b> .....	EDAC(Pty.) Ltd. ....	<b>24/6701-2</b>	
		South Park Lane New Doornfontein		
<b>SPAIN</b> .....	<b>Barcelona</b> .....	Copresa S. A. ....	<b>2 32 03 00</b>	
		Balmes 22		
<b>SWEDEN</b> .....	<b>10250</b> .....	Elcoma A. B. ....	<b>08/67 97 80</b>	
	<b>Stockholm 27</b>	Lidingovagen 50		
<b>SWITZERLAND</b> .....	<b>Zuerich</b> .....	Philips A. G. ....	<b>051/44 22 11</b>	
		Edenstrasse 20 CH-8027		

\* Manufacturer Code inside ( ) can be found in Section 20  
Manufacturers Code Names & Addresses



# Manufacturers' Local Offices

## PHIN — PHILIPS GLOEILAMPENFABRIEKEN (Cont'd)

Eindhoven, Netherlands .....	Telephone No. <b>040-60000</b>	Cable <b>PHILIPS EINDHOVEN</b>
<b>TAIWAN</b> ..... Taipei .....	Philips Taiwan Ltd..... Elcoma Division Plastic Bldg.-10th Fl., No.1, Sec.2 Nanking East Road	<b>55 97 42</b>
<b>UNITED STATES</b> .... Rhode Island 02876	Ampere Electronic Corp. (APX)* ..... Sem and Microcircuits Div. Providence Pike, Slatersville	<b>401-762-9000</b>

\* Manufacturer Code inside ( ) can be found in Section 20  
Manufacturers Code Names & Addresses

## PIR — PIRGO ELECTRONICS

130 Central Avenue, Farmingdale, Long Island, New York	Zip Code <b>11735</b>	Telephone No. <b>516-694-9880-1 516-694-9882-3</b>
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This is an affiliate company to Sprague Electric Company—See location of field offices listed under Sprague Electric Company.

## PPC — POWER PHYSICS CORPORATION

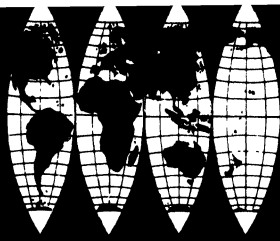
Industrial Way West, Post Office Box 626, Eatontown, New Jersey .....	Zip Code <b>07724</b>	Telephone No. <b>201-542-1393</b>
<b>CALIFORNIA</b> ..... Newport Beach .....	Power Physics Corporation ..... 301 Marine Avenue Post Office Box 381	<b>92662</b> <b>714-675-1881</b>
<b>INTERNATIONAL</b>		Telephone No.
<b>GERMANY</b> ..... Wiesbaden.....	Power Physics GmbH ..... Nerotat 46A	<b>52 22 97</b>

## PTI — POWERTECH INC.

9 Baker Court, Clifton, New Jersey .....	Zip Code <b>07011</b>	Telephone No. <b>201-478-6205</b>	TWX <b>710-989-7057</b>
--	--------------------------	--------------------------------------	----------------------------

## QDC — QUALIDYNE CORPORATION

3699 Tahoe Way, Santa Clara, California .....	Zip Code <b>95051</b>	Telephone No. <b>408-738-0120</b>	TWX <b>910-339-9273</b>
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# Manufacturers' Local Offices

## SCA – SEMICOA

		Zip Code	Telephone No.	TWX
940 South Ajax Avenue, City of Industry, California .....		91744	213-965-2496	
<b>CALIFORNIA</b> .....	<b>San Leandro</b> .....	<b>Wm. Parks Associates</b> .....	<b>94579</b>	<b>415-357-4240</b>
(Northern)		15102 Chapel Court		
(Southern).....	<b>Costa Mesa</b> .....	<b>Rical Associates</b> .....	<b>92626</b>	<b>714-557-6543</b>
		260 Nassau Road		
<b>ILLINOIS</b> .....	<b>Chicago</b> .....	<b>G. McL. Cole Company</b> .....	<b>60656</b>	<b>312-774-3535</b>
		6514 West Higgins Road		<b>910-221-2929</b>
<b>MASSACHUSETTS</b> .....	<b>Lexington</b> .....	<b>Contact Sales Company</b> .....	<b>02173</b>	<b>617-861-1550</b>
		49 Waltham Street		
		P.O. Box 507		

## SES – SEMITRONICS CORPORATION

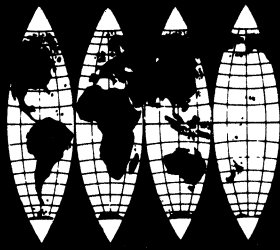
		Zip Code	Telephone No.	TWX
265 Canal Street, New York, New York.....		10013	212-226-5400	710-581-3978
<b>PENNSYLVANIA</b> .....	<b>Philadelphia</b> .....	<b>David Linz</b> .....	<b>19111</b>	<b>215-379-0734</b>
		238 Shelmire Street		
<b>INTERNATIONAL</b>				
<b>GERMANY</b> .....	<b>46 Dortmund</b> .....	<b>Semitronics Corporation</b> .....	<b>0231-528065</b>	<b>Telex</b> <b>HOBAR 822832</b>
		26 Bruderweg		

## SEN – SENSITRON SEMICONDUCTOR

	Zip Code	Telephone No.
<b>DIV. RSM ELECTRON POWER CORPORATION</b> .....	<b>11729</b>	<b>516-586-7600</b>
221 West Industry Court, Deer Park, New York		

## SHWG – SIEMENS AKTIENGESELLSCHAFT

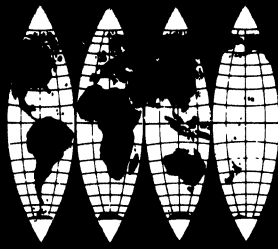
		Zip Code	Telephone No.	Telex
Balanstrasse 73, 8000 Munich 80, Germany			<b>0811-45901</b>	<b>05-22961</b>
<b>CANADA</b> .....	<b>Montreal</b> .....	<b>Siemens Canada, Limited</b> .....	<b>514-695-7300</b>	<b>05-26-7300</b>
		Post Office Box 7300		
		Pointe-Claire P. Q.		
<b>ENGLAND</b> .....	<b>London</b> .....	<b>Siemens U.K. Ltd.</b> .....	<b>01-686-7581</b>	<b>22438</b>
		36 Church Road		
		Croyden CRO ASG		
<b>U. S. A.</b> .....	<b>New Jersey</b> .....	<b>Siemens Corporation</b> .....	<b>08830</b>	<b>201-494-1000</b>
		186 Wood Avenue South		<b>844491</b>
		Iselin		<b>TWX</b> <b>710-998-0588</b>



# Manufacturers' Local Offices

## ESMF — SOCIETE EUROPEENNE DES SEMICONDUCTEURS ET DE MICROELECTRONIQUE

			Telephone No.	Telex
	101 Bd. Murat, 75 Paris 16e, France .....		525-75-75	28060
ARGENTINA .....	Buenos Aires .....	Corte Et Mon .....	27.01.01	012-19.92
		San Juan 1 301		
AUSTRALIA .....	South Melbourne ....	Pantechna Pty. Ltd. ....	69.26.29	Pantechna
		8-12 Eastern Road		
AUSTRIA .....	A 1010-Wien .....	Transalpina Electronica Ltda .....	56.15.71	Inland 12 717
		Elisabethstrasse 8		
BELGIUM .....	B 1050 Bruxelles 5 ..	Thomson S.A.-N.V. ....	49.29.54	23 113
		Avenue Louise 196A		
BRAZIL .....	Sao Paulo .....	Thomson CSF .....	61.64.83	Tesafibra
		Componentes do brasil		Sao Paulo
		Avenue Ibirapuera 2572		
CANADA .....	Ontario .....	E. G. Lomas Ltd. ....	232 71 06	013263
		227 Laurier Avenue West		
		Ottawa 4		
CHILE .....	Santiago .....	Agencias Unidas Ltd. ....	88 914	Agenidas
		Huerfanos 1078		Santiago
		Casella 119D		
DENMARK .....	Copenhagen .....	EV. Johanssen A/S .....	29.56.22	2771
		Scherfigsvej 1		
ENGLAND	London W5	Thomson-CSF (U.K.) Ltd.	579 18 57	Tesafi 25 659
		Bilton House		
		Uxbridge Road		
		Ealing		
FINLAND .....	Helsinki 25 .....	OY Sufra AB .....	49.01.37	Pierrejoly
		Ruusulankatu 20 A 12		
FRANCE .....	13-Aix-en-Provence ..	Sescosem .....	(91)275772	41.665
		Service commercial		
		15, rue Camille		
		Pelletan		
	93-Bagnolet .....	Codirel .....	287.49.99	
		105, rue Sadi-Carnot		

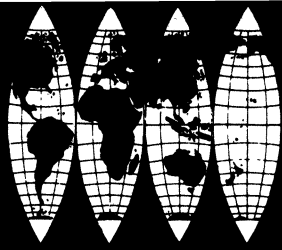


# Manufacturers' Local Offices

## ESMF — SOCIETE EUROPEENNE DES SEMICONDUCTEURS ET DE MICROELECTRONIQUE (Cont'd)

		Telephone No	Telex
101 Bd. Burat, 75 Paris 16e, France .....		525-75-75	28060
<b>FRANCE</b>			
25-Besancon .....	CEPMA (Total Television) .....	(81)83.66.79	
	11, rue de Polygone		
92-Boulogne .....	Les Composants Electroniques .....	604.10.20	
	160, Route de la Reine		
29N-Brest .....	Bellion et Cie .....	(98)44.88.00	
	40, Quai de l'Ouest		
63-Clermont- Ferrand .....	Centre Electronique Diffusion .....	(73)92.14.77	39.926
	Rue Bernard-Brunhes		
92-Courbevoie .....	Cifte .....	333.37.50	
	50, rue J.P. Timbaud		
38-Grenoble .....	Radialex .....	(76)87.35.97	
	3, rue Moyrand		
69-Lyon (6e) .....	Radialex .....	(78)24.51.78	30.238
	74, rue Vendome	(78)24.12.35	
13-Marseille (6e) ...	Cabus et Raulot .....	(91)47.58.10	
	49, rue de Village		
93-Montreuil S/Bois..	Thomson-CSF .....	287.80.90	20.936
	Composants Export		
	128, rue de Paris		
75-Paris (2e) .....	Cie Continentale .....	508.12.42	
	33, rue Vivienne		
64-Pau.....	Societe Sadige .....	(59)27.87.95	
	11, Avenue du Corps		
	Franc Pommies		
76-Rouen .....	Electrotechnique de Normandie .....	(35)70.05.75	
	8, rue de la Croix d'Yonville		
38-Saint-Egreve .....	Sescosem .....	(76) 88.40.61	
	Service Commercial		
42-Saint-Etienne ....	Teissier J. J. S. A. ....	(77)33.12.34	33.666
	2, rue Basse des Rives		

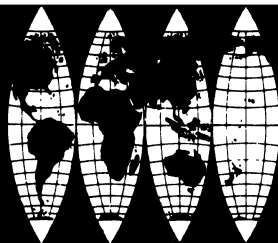




# Manufacturers' Local Offices

## ESMF — SOCIETE EUROPEENNE DES SEMICONDUCTEURS ET DE MICROELECTRONIQUE (Cont'd)

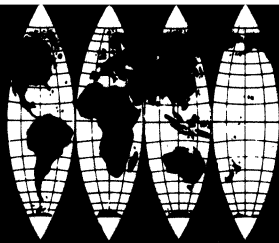
			Telephone No.	Telex
101 Bd. Murat, 75 Paris 16e, France .....			525-75-75	28060
<b>FRANCE</b> (Cont'd)	<b>59-Seclin</b> .....	Side .....	<b>(20)59.69.49</b>	
		Zone industrielle		
	<b>67-Strasbourg</b> .....	Selfco .....	<b>(88)32.59.33</b>	
		31, rue du Fosse des Treize		
	<b>83-Toulon</b> .....	Dimel .....	<b>(94)92.37.93</b>	
		39, Avenue Marceau		
	<b>31-Toulouse</b> .....	Sodimep .....	<b>(61)22.40.12</b>	
		8, rue Jean-Suau	<b>(61)22.41.88</b>	
<b>GERMANY</b> (East)	<b>Berlin 31</b> .....	Thomson-CSF Buro .....	<b>216.30.38</b>	<b>182.665</b>
		Emserstrasse 2		
		Ecke Hohenzollerndamm		
(West)	<b>8000 Munchen 25</b> .....	Sescosem Halbleiter GmbH .....	<b>811.73.10.42</b>	<b>522.916</b>
		Fallstrasse 42		
<b>GREECE</b> .....	<b>Athenes 125</b> .....	Gilbert A Baven.....	<b>228.234</b>	
		29 Lekka Street		
<b>INDIA</b> .....	<b>Bombay 9</b> .....	N. J. International Corporation .....	<b>328.509</b>	<b>PROMPTDEAL</b>
		65, Ashok Chambers		<b>Bombay</b>
		Broach Street		
	<b>Madras 28</b> .....	Southern Electronic .....	<b>76.510</b>	<b>PROMPTDEAL</b>
		20/1 Greenways Road		
<b>ISRAEL</b> .....	<b>Tel-Aviv</b> .....	Cidev .....	<b>621.526</b>	<b>628</b>
		47, Rothschild Boulevard	<b>225.588</b>	
		P.O. Box 2024		
<b>ITALY</b> .....	<b>20.125 Milano</b> .....	Mistral S.p.A.....	<b>68.84.103</b>	<b>Ducati 31.042</b>
		Via Melchiorre Gioia, 72		
<b>MEXICO</b> .....	<b>Mexico 6 D-F</b> .....	Thomson-CSF de Mexico .....	<b>11.35.08</b>	<b>017.73.911</b>
		Hamburgo 108.301		
<b>MOROCCO</b> .....	<b>Casablanca</b> .....	Societe de Fabrications Radioelectriques ...	<b>921.23</b>	<b>21.924</b>
		Marocaines		
		32, Boulevard de la Resistance		
		Palais Mirabeau		



# Manufacturers' Local Offices

## ESMF — SOCIETE EUROPEENNE DES SEMICONDUCTEURS ET DE MICROELECTRONIQUE (Cont'd)

			Telephone No.	Telex
101 Bd. Murat, 75 Paris 16e, France .....			525-75-75	28060
<b>NORWAY</b> .....	<b>Oslo 4</b> .....	<b>Feiring AS</b> .....	<b>21.82.12</b>	<b>16 435 feiring 0</b>
		Sandakervein 46 B Box 4376, Torshov		
<b>PERU</b> .....	<b>Lima</b> .....	<b>Aristides Lozano</b> .....		<b>ALOZANO</b>
		Domingo Ponte 565		
<b>PORTUGAL</b> .....	<b>Lisboa</b> .....	<b>Sd. Com. Rualdo</b> .....		<b>Rualdo</b>
		Rua S. Jose 15		<b>Lisbonne</b>
<b>SOUTH AFRICA</b> .....	<b>Dunswart</b> .....	<b>Allied Electric Pty</b> .....	<b>52.43.41</b>	<b>Solidstate</b>
		P. O. Box 90		<b>Dunswart</b>
	<b>Alberton</b> .....	<b>Comtek</b> .....	<b>869.57.86</b>	<b>J-4376 34</b>
	(transvaal)	P. O. Box 57		
<b>SPAIN</b> .....	<b>San Juan Despi</b> .....	<b>Componentes Electronicos S.A.</b> .....	<b>319.46.50</b>	<b>52.077</b>
	(Barcelona)	Poligono Industrial, Font Santa Calle H. S./N		
<b>SWEDEN</b> .....	<b>17 103 Solna 3</b> .....	<b>Elektrholm AB</b> .....	<b>82.02.80</b>	<b>19.389</b>
		Dalvagen 12 S P. O. Box 305		
<b>SWITZERLAND</b> .....	<b>CH 3000 Berne 9</b> ...	<b>Modulator S.A.</b> .....	<b>23.77.85</b>	<b>32.431</b>
		Fischerweg 11.13		
<b>THE NETHERLANDS</b> ..	<b>La Haye</b> .....	<b>C.G.E. Compagnie Generale d'Electricite N.V.</b>	<b>60.88.10</b>	<b>31.045</b>
		Koninginnegracht 64		
<b>U. S. A.</b> .....	<b>California 91303</b> ...	<b>Nucleonic Products Company Inc.</b> .....	<b>(213)887-1010</b>	<b>651.479</b>
		6660 Variel Avenue Canoga Park		



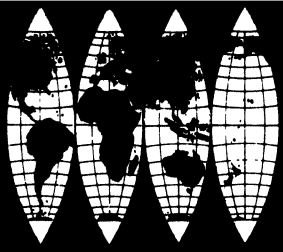
# Manufacturers' Local Offices

## SGSI – SOCIETA GENERALE SEMICONDUCTORI S.p.A.

		Telephone No.	Telex	
Agrate Brianza, Via C. Olivetti, 1 .....		65341/4	31436	
<b>ENGLAND</b> .....	Aylesbury Bucks .....	SGS (United Kingdom) Ltd.....	5977	83245
		Walton Street		
<b>FRANCE</b> .....	Paris 13e.....	SGS France SA .....	336 36 30	25938
		45 Rue Eugene Oudine		
<b>GERMANY</b> .....	809 Wasserburg .....	SGS Deutschland GmbH .....	08071/721	525743
	Inn	Post Box 1269		
<b>ITALY</b> .....	Milano.....	Societa Generale Semiconduttori Spa .....	31 57 49	
		Via Colonna, 9		
<b>SWEDEN</b> .....	19501 Marsta .....	SGS Semiconductor AB.....	0760/40120	10932
		Postbox		
<b>U. S. A.</b> .....	California 90404 ....	Varadyne Inc. ....	213-888-8386	652462
		1805 Colorado Avenue		
		Santa Monica		

## SSI – SOLID STATE DEVICES, INC.

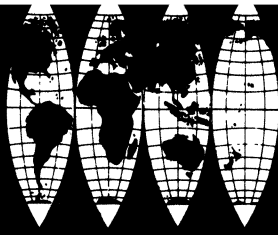
		Zip Code	Telephone No.	TWX	
12741 Los Nietos Road, Santa Fe Springs, California .....		90670	213-698-0529	910-586-1881	
<b>ALABAMA</b> .....	Birmingham .....	Technical Marketing .....	35209	205-871-5431	
		Post Office Box 5971			
<b>ARIZONA</b> .....	Phoenix.....	C. G. Associates .....	85018	602-947-6480	
		Post Office Box 15566			
<b>CALIFORNIA</b> .....	Mt. View .....	Nor-Cal Associates .....	94040	415-961-8121	910-379-6497
		2680 Bayshore Frontage Road			
		Suite 404			
	<b>Pasadena</b> .....	William Kath Associates .....	91105	213-682-1377	
		255 West State Street			
	<b>San Diego</b> .....	Earle & Associates .....	92111	714-278-5441	
		4433 Convoy Street			
		Suite A			
	<b>Tustin</b> .....	RMS Associates .....	92680	714-832-0878	
		13652 Fairmont Way			



# Manufacturers' Local Offices

## SSI – SOLID STATE DEVICES, INC. (Cont'd)

			Zip Code	Telephone No.	TWX
12741 Los Nietos Road, Santa Fe Springs, California .....			90670	213-698-0529	910-586-1881
<b>COLORADO</b> .....	<b>Boulder</b> .....	J. Smith & Associates .....	80303	303-449-7509	
		310 Seminole Drive Post Office Box 3257			
<b>FLORIDA</b> .....	<b>Orlando</b> .....	Technical Marketing.....	32801	305-843-2500	810-850-0161
		1511 East Robinson			
	<b>Hallandale</b> .....	Technical Marketing .....	33009	305-563-8585	
		Post Office Box 127			
	<b>St. Petersburg</b> .....	Technical Marketing .....	33733	305-843-2500	
		Post Office Box 12196			
<b>GEORGIA</b> .....	<b>Marietta</b> .....	Technical Marketing .....	30060	404-435-0079	
		Post Office Box 1152			
<b>ILLINOIS</b> .....	<b>Chicago</b> .....	Communications Engineers .....	60645	312-761-0548	910-221-5004
		7106 North Western Avenue			
<b>INDIANA</b> .....	<b>Fort Wayne</b> .....	Communications Engineers .....	46802	219-743-9866	
		418 East Berry Street			
<b>MASSACHUSETTS</b> .....	<b>Brookline</b> .....	Technology Products Group.....	02146	617-731-0858	
		233 Harvard Street			
<b>MINNESOTA</b> .....	<b>Minneapolis</b> .....	Murphy Associates, Inc.....	55415	612-333-4511	910-576-3417
		730 Chicago Avenue			
<b>NEW JERSEY</b> .....	<b>Riverdale</b> .....	Comp-Tech Sales .....	07457	201-835-0332	
		Post Office Box 50			
<b>NEW MEXICO</b> .....	<b>Albuquerque</b> .....	J. Smith & Associates .....	87108	505-255-2111	
		401-B San Pedro, N.E. Post Office Box 8412			
<b>NEW YORK</b> .....	<b>Lynbrook</b> .....	Comp-Tech Sales.....	11563	516-593-2628	
		Post Office Box 384			
	<b>Manlius</b> .....	Arthur L. Perkins Co.....	13104	315-682-5005	
		Post Office Box 217			
<b>NORTH CAROLINA</b> .....	<b>Greensboro</b> .....	Technical Marketing .....	27405	919-274-2570	
		Post Office Box 6664			

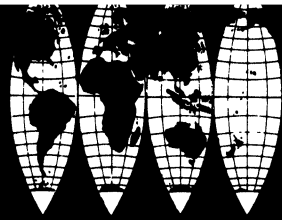


# Manufacturers' Local Offices

## SSI – SOLID STATE DEVICES, INC. (Cont'd)

		Zip Code	Telephone No.	TWX
12741 Los Nietos Road, Santa Fe Springs, California .....		90670	213-698-0529	910-586-1881
<b>OHIO</b> ..... <b>Dayton</b> .....	Communications Engineers.....	45540	513-434-6871	
	4809 Archmore Drive			
<b>PENNSYLVANIA</b> ..... <b>Philadelphia</b> .....	Schibley Associates, Inc. ....	19116	215-676-9885	
	11110 Autobonn Avenue			
	Post Office Box 11598			
<b>VIRGINIA</b> ..... <b>Fairfax</b> .....	Schibley Associates Inc. .	22030	710-833-0697	
	10604 Warwich Avenue			
<b>WASHINGTON</b> ..... <b>Lynnwood</b> .....	Fred Broom Sales Co. ....	98036	206-774-6361	
	Post Office Box 177 AM			
<b>INTERNATIONAL</b>				
<b>CANADA</b> ..... <b>Montreal</b> .....	Future Electronics Corp. ....	251	514-735-5775	610-421-3251
	6655 Cote Des Neiges			
	Suite 310			
<b>ENGLAND</b> ..... <b>London</b> .....	A. Marshall & Son .....		01-452-0161/2	Telex 21492 (COINST LDN)
	28 Cricklewood Broadway			
<b>FRANCE</b> ..... <b>Billancourt</b> .....	Young Electronics .....		604 1050	Telex 20740
	117 Rue Daguesseau			
	92 Boulongne			
<b>GERMANY</b> ..... <b>Offenbach 605</b> ....	Neutron GmbH .....		(0611)853636	
(West)	Bieberer Street 251			
<b>INDIA</b> ..... <b>Bombay 20</b> .....	Vejay Randery .....			
	Lily Court-3rd Floor			
	Church Gate			
<b>ISRAEL</b> ..... <b>Tel-Aviv</b> .....	Technical Development Co., Ltd. ....		31875	
	8, Tayassim Road			
	Post Office Box 14145			
<b>JAPAN</b> ..... <b>Tokyo 160</b> .....	MTT International, Inc. ....		(03)359-4648	
	401 Onoshow Bldg. 6			
	Samon-cho, Shinjuku-ku			
<b>PAKISTAN</b> ..... <b>Karachi 4</b> .....	Mesco Engineering Consultants .....		514302	
	67, Farid Chambers			
	Abdullah Haroun Road			
	Post Office Box 3966			





## Manufacturers' Local Offices

### SOD – SOLITRON DEVICES, INC.

	Zip Code	Telephone No.	TWX
Corporate Offices, 256 Oak Tree Road, Tappan, New York .....	10983	914-359-5050	710-576-2654
<b>CALIFORNIA</b> ..... <b>Canoga Park</b> ..... Solitron Devices, Inc. ....	91303	213-883-3822	910-494-1238
20944 Sherman Way			
<b>San Diego</b> ..... Solitron Devices, Inc.....	92123	714-278-8780	910-335-1221
8808 Balboa Avenue			
<b>FLORIDA</b> ..... <b>Riviera Beach</b> ..... Solitron Devices, Inc. ....	33404	305-848-4311	510-952-6676
1177 Blue Heron Blvd.			
<b>ILLINOIS</b> ..... <b>Des Plaines</b> ..... Solitron Devices, Inc.....	60018	312-824-8127	910-233-2634
2720 Des Plaines Avenue			
<b>MARYLAND</b> ..... <b>Baltimore</b> ..... Solitron Devices, Inc.....	21218	301-243-0060	
2530 N. Charles Street			
<b>MASSACHUSETTS</b> ..... <b>Needham</b> ..... Solitron Devices Inc. ....	92192	617-444-1152	710-325-7514
52 Pickering Street			
<b>TEXAS</b> ..... <b>Dallas</b> ..... Solitron Devices, Inc. ....	75238	214-341-1180	910-861-4296
10511 Church Street			
<b>INTERNATIONAL</b>			
<b>ENGLAND</b> ..... <b>Kent</b> ..... Solidev Ltd.....		(0732) 57541	Telex
Tubbs Hill House			95378
North Entrance, London Road			
Sevenoaks			

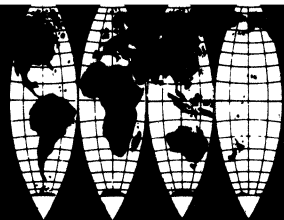
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### SONY – SONY CORPORATION

7-35, Kitashinagawa-6, Shinagawa-Ku, Tokyo, Japan .....

Mail Address: Post Office Box 10  
Tokyo Airport Post Office

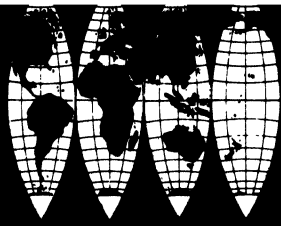
Telephone No. Telex  
Tokyo 442-5111 SONYCORP TK2262



# Manufacturers' Local Offices

## SPR — SPRAGUE ELECTRIC COMPANY

		Zip Code	Telephone No.	Telex
Semiconductor Division, 115 Northeast Cutoff, Worcester, Massachusetts .....		01606	617-853-5000	920467
ALABAMA.....	Huntsville .....	Write to St. Ann, Missouri Office..... or call Operator and ask for WX4000		WX 4000 No charge for WX calls
ARIZONA .....	Tempe .....	Sprague Electric Company .....	85281	602-279-5435
		1047 West University Drive		667384
CALIFORNIA .....	San Francisco .....	William J. Purdy of California.....	94010	415-347-7701
(Northern)		770 Airport Boulevard Burlingame		
(Southern).....	Los Angeles .....	Sprague Electric Company .....	90066	L.A.213-870-0161
		12870 Panama Street		677579
		KCE Corporation .....	90066	213-391-0586
		12870 Panama Street		
(San Diego Cty) .....	San Diego .....	KCE Corporation .....	92123	714-278-7640
		8855 Balboa Avenue		
COLORADO .....	Denver.....	Sprague Electric Company .....	80222	303-756-3611
		1780 South Bellaire Street Suite 102		45571
CONNECTICUT .....	Trumbull .....	Sprague Electric Company .....	06611	203-261-2551
		935 White Plains Road		964267
D. C. ....	Washington.....	Sprague Electric Company .....	20016	202-244-6006
		3900 Wisconsin Ave., N.W.		892410
FLORIDA .....	Orlando .....	Sprague Electric Company .....	32802	305-831-3636
		Post Office Box 530		564456
ILLINOIS .....	Schiller Park .....	Sprague Electric Company .....	60176	312-678-2262
(Northern)		9950 W. Lawrence Avenue		254697
(Southern) .....		Sprague Electric Company.....	63074	314-291-2500
		500 Northwest Plaza St. Ann, Missouri		442416
INDIANA .....	Indianapolis .....	Sprague Electric Company .....	46205	317-253-4247
		2421 Willowbrook Parkway		27452
KANSAS .....	Kansas City .....	Al Gowler & Assoc. ....	66206	913-649-8050
		Post Office Box 6007 Leawood		



# Manufacturers' Local Offices

## SPR – SPRAGUE ELECTRIC COMPANY (Cont'd)

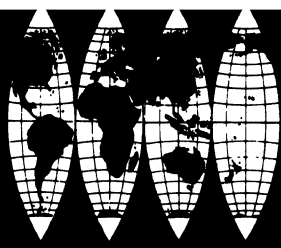
		Zip Code	Telephone No.	Telex
Semiconductor Division, 115 Northeast Cutoff, Worcester, Massachusetts .....		01606	617-853-5000	920467
<b>MASSACHUSETTS</b> .....	<b>Boston</b> .....	Sprague Electric Company.....02158 343 Washington Street Newton	617-969-2520	
	<b>North Adams</b> .....	Sprague Electric Company.....02147 Marshall Street	413-664-4411	926415
<b>MICHIGAN</b> .....	<b>Jackson</b> .....	Sprague Electric Company .....49203 515 South West Avenue	517-787-3934	
<b>MINNESOTA</b> .....	<b>Minneapolis</b> .....	H. M. R. Inc.....55404 9 East 22nd Street	612-335-7734	
<b>MISSOURI</b> .....	<b>St. Ann</b> .....	Sprague Electric Company.....63074 500 Northwest Plaza	314-291-2500	442416
	<b>St. Louis</b> .....	Al Gowler & Assoc. ....63011 7 Trails West 390 Newbury Drive Ballwin	314-227-2020	
<b>NEW JERSEY</b> .....	<b>Wayne</b> .....	Sprague Electric Company.....07470 1479 Route 23	201-696-8200	133409
(Northern)				
(Southern).....	<b>Cherry Hill</b> .....	Sprague Electric Company.....08034 1050 North Kings Highway	609-667-4444	834598
		Trinkle Sales, Inc. ....08034 500 North Kings Highway	609-667-3500	
<b>NEW MEXICO</b> .....	<b>Albuquerque</b> .....	C. T. Carlberg & Associates.....87110 Post Office Box 3177 Station D	505-265-1579	
<b>NEW YORK</b> .....	<b>New York City</b> .....	Sprague Electric Company .....11746 60 Broad Hollow Road Melville	516-549-4141	961378
	<b>Mamaroneck</b> .....	William Rutt, Inc. ....10543 324 Mt. Pleasant Ave.	914-381-2030	
	<b>Syracuse</b> .....	Sprague Electric Company .....13206 2002 Teall Avenue	315-437-7311	
		Mar-Com Associates .....13206 2002 Teall Ave.	315-437-2843	
<b>NORTH CAROLINA</b> ...	<b>Winston Salem</b> .....	Electronic Marketing Assoc. ....27101 928 Burke Street	919-722-5151	806422



# Manufacturers' Local Offices

## SPR — SPRAGUE ELECTRIC COMPANY (Cont'd)

		Zip Code	Telephone No.	Telex
Semiconductor Division, 115 Northeast Cutoff, Worcester, Massachusetts .....		01606	617-853-5000	920467
<b>OHIO</b> .....	<b>Cleveland</b> .....	<b>Sprague Electric Company</b> .....	<b>44022</b>	<b>216-247-6488</b>
(Northern)		24 North Main Street Chagrin Falls, Ohio		
(Southern) .....	<b>Dayton</b> .....	<b>Sprague Electric Company</b> .....	<b>45414</b>	<b>513-278-0781</b>
		4977 Northcott Place		
<b>PENNSYLVANIA</b> .....	<b>(Eastern)</b> .....	<b>Sprague Electric Company</b> .....	<b>08034</b>	<b>215-467-5252(Phila.)</b> <b>609-667-4444(Cherry Hill)</b> <b>834598</b>
		1050 North Kings Highway Cherry Hill, New Jersey		
	<b>(Western)</b> .....	<b>Sprague Electric Company</b> .....	<b>44022</b>	<b>216-247-6488</b>
		24 North Main Street Chagrin Falls, Ohio		
<b>TEXAS</b> .....	<b>Dallas</b> .....	<b>Sprague Electric Company</b> .....	<b>75080</b>	<b>214-235-1256</b> <b>732399</b>
		First Bank and Trust Bldg. Richardson, Texas		
<b>WASHINGTON</b> .....	<b>Seattle</b> .....	<b>Sprague Electric Company</b> .....	<b>98103</b>	<b>206-632-7761</b> <b>32367</b>
		4601 Aurora Avenue North		
<b>CANADA</b> .....	<b>Ontario</b> .....	<b>Sprague Electric of Canada, Ltd.</b> .....		<b>416-766-6123</b> <b>0229930</b>
		10 Bertal Road Toronto 15		
	<b>Quebec</b> .....	<b>Sprague Electric of Canada, Ltd.</b> .....		<b>514-747-7811</b>
		860 Decarie Boulevard Ville St. Laurent, Montreal 9		
<b>EUROPE</b> .....	<b>England</b> .....	<b>Sprague Electric (U.K.) Ltd.</b> .....		<b>West Drayton 4627</b> <b>261524</b>
		159 High Street Yiewsley, Middlesex		
	<b>France</b> .....	<b>Sprague France S.A.R.L.</b> .....	<b>655-19-19</b>	<b>Sprague 25697F</b>
		2 Avenue Aristide Briand 94-Arcueil		
	<b>West Germany</b> .....	<b>Sprague GmbH</b> .....	<b>0611-439407</b>	<b>414008</b>
		Friedberger Anlage 24 6000 Frankfurt am Main		



# Manufacturers' Local Offices

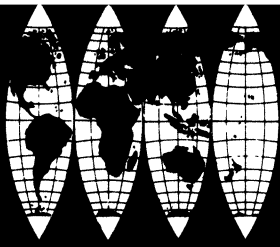
## SPR — SPRAGUE ELECTRIC COMPANY (Cont'd)

	Zip Code	Telephone No.	Telex
Semiconductor Division, 115 Northeast Cutoff, Worcester, Massachusetts .....	01606	617-853-5000	920467
Italy .....		40-34-245	32012
Sprague-Italiana S.p.A. ....			
Viale Legioni Romane, 27			
20147 Milano			
Sprague-Italiana S.p.A. ....		83-33-96	
Via Costantino Maes 82			
Int. 2-B Palazzino			
00162 Rome			
Switzerland .....		(051) 47-01-33	53876
Sprague World Trade Corporation .....			
Farberstrasse 6			
8008 Zurich			
FAR EAST..... Hong Kong .....		70-5254	780-3395
Sprague World Trade Corporation .....			
Post Office Box 14289			

## TADI — TADIRAN

	Telephone No.	Cable
Israel Electronics Industries Limited .....	25422	TADIRAN TEL AV
3 Hashalom Rd., Post Office Box 648, Tel-Aviv, Israel		Telex 03-537
BELGIUM .....		
Bruxelles .....		
Neutron Electronics .....	386173	CETREL
37 Rue de Florence		Telex 24088
ENGLAND .....		
London W3.....		
Impectron Limited .....	01-992-5388	IMPECTRON
Impectron House		LONDON
23-31 King Street		Telex 25864
FRANCE.....		
Paris 16 .....		
JMCO .....	2883267	
59 Rue Chardon Lagache		
HOLLAND .....		
Amsterdam-C .....		
Mijnssen & Co., N.V. ....	020-239543	MIJNSSENCOMPA
Technische Handelen		Telex 14065
serviceonderneming		
Keizersgracht 369		
Postbus 123		
ITALY .....		
20133 Milano .....		
Compelet .....	7384394	
10 Via Calzecchi		
SOUTH AFRICA .....		
Johannesburg .....		
Indentronics Proprietary Ltd. ....	834-4971/2/3	FORMSHEEER
16 Webber Street		Telex 43-7660 JH
Selby		
SWITZERLAND .....		
Zurich .....		
Metronic-AG .....	051/41 84 84	METRONIC Z.
CH 8051 Zurich		Telex 53887
Postfach Dubendorfstr. 333		

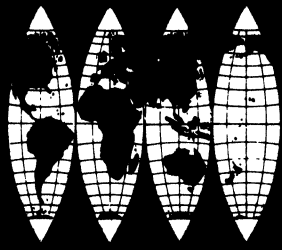




# Manufacturers' Local Offices

## TSC – TELEDYNE SEMICONDUCTOR

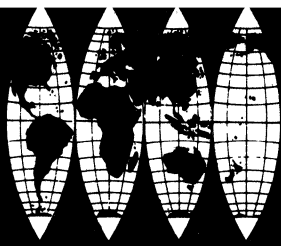
		Zip Code	Telephone No.	TWX
12515 Chadron Avenue, Hawthorne, California (Bi-Polar devices)		90250	213-772-4551	910-325-6217 Telex 65-3422
1300 Terra Bella Avenue, Mountain View, California (Field-effect devices)		94040	415-968-9241	910-478-6494 Telex 34-8416
<b>CALIFORNIA</b>	<b>Hawthorne</b>	Teledyne Semiconductor 12515 Chadron Avenue	90250 213-772-4551	910-325-6217
	<b>Palo Alto</b>	Teledyne Semiconductor 800 San Antonio Road	94303 415-321-4681	910-373-1750
<b>FLORIDA</b>	<b>Winter Park</b>	Teledyne Semiconductor 124 E. Morse Blvd.	32789 305-647-7813	810-853-0254
<b>ILLINOIS</b>	<b>Des Plaines</b>	Teledyne Semiconductor 6600 N. Mannheim Road	60018 312-299-6196	910-233-0897
<b>MARYLAND</b>	<b>Lutherville</b>	Teledyne Semiconductor 1524 York Road	21093 301-825-1920	710-232-1855
<b>MASSACHUSETTS</b>	<b>Westwood</b>	Teledyne Semiconductor 805 W. High Street	02090 617-326-6600	710-394-6549
<b>NEW JERSEY</b>	<b>Little Falls</b>	Teledyne Semiconductor 19 E. Main Street	07424 201-256-8557	710-988-5719
<b>NEW YORK</b>	<b>Liverpool</b>	Teledyne Semiconductor 312 Riverglen Road	13088 315-622-3413	
	<b>Wappingers Fall</b>	Teledyne Semiconductor 895 South Road, Suite 7	12590 914-297-4316	510-248-0053
<b>OHIO</b>	<b>Dayton</b>	Teledyne Semiconductor 3481 Office Park Drive	45439 513-298-7207	810-459-1867
<b>TEXAS</b>	<b>Dallas</b>	Teledyne Semiconductor 6115 Denton Drive	75235 214-357-0259	910-861-4409
<b>INTERNATIONAL</b>				
<b>WEST GERMANY</b>	<b>6200 Wiesbaden</b>	Teledyne Semiconductor 56 Schone Aussicht No. 56	06121-372820	8414186581
<b>HONG KONG</b>	<b>Kowloon</b>	Teledyne Semiconductor 10 Sam Chuk Street, First Floor San Po Kong	K207764	7803549



# Manufacturers' Local Offices

## TII – TEXAS INSTRUMENTS INCORPORATED

		Zip Code	Telephone No.	
Components Group, 13500 North Central Expressway, .....		75222	214-238-2011	
Post Office Box 5012, Dallas, Texas				
<b>ALABAMA</b> .....	<b>Huntsville</b> .....	Texas Instruments.....	<b>35801</b>	<b>205-881-4061</b>
		Sahara Office Park Building		
		Suite 111,		
		3313 Memorial Parkway, S. W.		
<b>ARIZONA</b> .....	<b>Phoenix</b> .....	Texas Instruments .....	<b>85012</b>	<b>602-279-5531</b>
		United Bank Bldg.		
		3550 N. Central Avenue		
		Suite 1702		
<b>CALIFORNIA</b> .....	<b>Hollywood</b> .....	Texas Instruments .....	<b>90028</b>	<b>213-466-7251</b>
		1800 North Argyle Avenue		
	<b>Inglewood</b> .....	Texas Instruments.....	<b>90301</b>	<b>213-673-3943</b>
		5005 West Century Boulevard		
		Suite 208		
	<b>Palo Alto</b> .....	Texas Instruments.....	<b>94306</b>	<b>415-326-6770</b>
		230 California Avenue		
		Suite 201		
	<b>Santa Ana</b> .....	Texas Instruments .....	<b>92701</b>	<b>714-547-6506</b>
		1505 East 17th Street		
		Suite 201		
	<b>San Diego</b> .....	Texas Instruments.....	<b>92117</b>	<b>714-279-2622</b>
		5252 Balboa Avenue Suite 805		
<b>COLORADO</b> .....	<b>Denver</b> .....	Texas Instruments .....	<b>80222</b>	<b>303-758-2151</b>
		2186 South Holly Street		
		Suite 205		
<b>CONNECTICUT</b> .....	<b>Woodbridge</b> .....	Texas Instruments.....	<b>06525</b>	<b>203-389-4521</b>
		300 Amity Road		

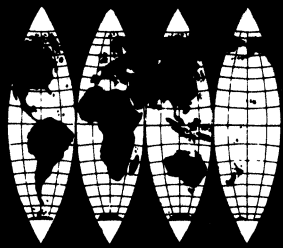


# Manufacturers' Local Offices

## TII – TEXAS INSTRUMENTS INCORPORATED (Cont'd)

		Zip Code	Telephone No.
Components Group, 13500 North Central Expressway, ..... 75222 214-238-2011			
Post Office Box 5012, Dallas, Texas			
<b>FLORIDA</b> .....	<b>Fort Lauderdale</b> .....	Texas Instruments ..... 33311	305-566-3294
		601 West Oakland Park Blvd.	
	<b>Orlando</b> .....	Texas Instruments ..... 32810	305-644-3535
		Orlando Executive Park	
		5400 Diplomat Circle	
		Diplomat Building	
		Suite 252	
	<b>St. Petersburg</b> .....	Texas Instruments ..... 33713	813-898-0807
		300 Bldg. West, Suite 204	
		3151 3rd Avenue North	
<b>ILLINOIS</b> .....	<b>Chicago</b> .....	Texas Instruments.....60646	312-286-1000
		Executive Towers	
		Suite 205	
		5901 North Cicero Avenue	
<b>MASSACHUSETTS</b> .....	<b>Waltham</b> .....	Texas Instruments.....02154	617-891-8450
		60 Hickory Drive	
<b>MICHIGAN</b> .....	<b>Southfield</b> .....	Texas Instruments.....48075	313-352-5720
		Suite 706 West	
		Northland Towers Bldg.	
		15565 Northland Drive	
<b>MINNESOTA</b> .....	<b>Edina</b> .....	Texas Instruments ..... 55435	612-941-4384
		7615 Metro Blvd.	
		Suite 202, A. I. C. Bldg.	
<b>NEW JERSEY</b> .....	<b>Springfield</b> .....	Texas Instruments.....07081	201-376-9400
		25 U. S. Highway No. 22	
		Post Office Box 366	
<b>NEW MEXICO</b> .....	<b>Albuquerque</b> .....	Texas Instruments ..... 87110	505-265-8491
		Suite 9, Marberry Plaza	
		6101 Marble Avenue, N.W.	
<b>NEW YORK</b> .....	<b>Endicott</b> .....	Texas Instruments .....13760	607-785-9987
		112 Nanticoke Avenue	
		Post Office Box 618	
	<b>Fishkill</b> .....	Texas Instruments.....12524	914-896-6793
		167 Main Street	
	<b>New Hyde Park</b> .....	Texas Instruments .....11040	516-488-2200
		4 Nevada Drive	
	<b>Syracuse</b> .....	Texas Instruments .....13206	315-463-9291
		6563 Ridings Road	





# Manufacturers' Local Offices

## TAGS – TRANSISTOR AG

Hohlstrasse 610, Zurich, Switzerland .....	Zip Code <b>8048</b>	Telephone No. <b>62 5611</b>	Telex <b>53809</b>
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## ECD – UNISEM CORPORATION

Post Office Box 11569, Philadelphia, Pennsylvania .....	Zip Code <b>19116</b>	Telephone No. <b>215-355-5000</b>
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<b>CALIFORNIA</b> .....	<b>Burbank</b> .....	Unisem Corporation .....	<b>91503</b>	<b>213-843-6566</b>
		99 East Magnolia Blvd. Suite 210		

	<b>Mountain View</b> .....	Unisem Corporation .....	<b>94040</b>	<b>415-967-7031</b>
		99 East Middlefield Road Suite 6C		

<b>FLORIDA</b> .....	<b>Apopka</b> .....	Unisem Corporation .....	<b>32703</b>	<b>305-886-1414</b>
		Drawer 989		

<b>NEW JERSEY</b> .....	<b>Plainfield</b> .....	Unisem Corporation .....	<b>07069</b>	<b>201-754-0262</b>
		Room 9 203 Park Avenue		

<b>TEXAS</b> .....	<b>Denton</b> .....	Unisem Corporation .....	<b>76201</b>	<b>817-387-9331</b>
		Post Office Box 1494		

## UPI – UNITED-PAGE, INC.

481 Getty Avenue, Paterson, New Jersey .....	Zip Code <b>07503</b>	Telephone No. <b>N.J. 201-279-7500</b>	Cable <b>N.Y. 212-736-9351</b>	<b>UNIPAGE</b>
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<b>CALIFORNIA</b> .....	<b>Los Angeles</b> .....	Alta-Electronic Sales .....	<b>90028</b>	<b>213-462-6029</b>
(Southern)		3349 Cahyenga Blvd.		

<b>FLORIDA</b> .....	<b>Orlando</b> .....	Scott & Assoc. Inc. ....	<b>32803</b>	<b>305-841-4840</b>
		1010 Executive Center Dr. Suite 128		

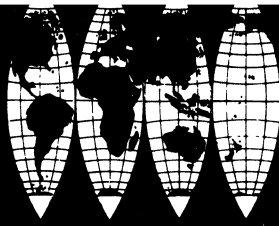
<b>GEORGIA</b> .....	<b>Tucker</b> .....	Bill Brown Co. ....	<b>30084</b>	<b>404-939-7075</b>
<b>ALABAMA</b>		Box 407		
<b>SO. CAROLINA</b>				

<b>HAWAII</b> .....	<b>Honolulu</b> .....	Gene Piety Factors .....	<b>96802</b>	<b>808-841-0185</b>	Telex <b>723-423</b>
		Post Office Box 2903 160 Mokauga Street			

<b>ILLINOIS</b> .....	<b>Des Plaines</b> .....	S. Sterling .....	<b>60018</b>	<b>312-298-4830</b>	TWX <b>910-233-5980</b>
		1001 East Touhy Drive			

<b>MINNESOTA</b> .....	<b>St. Paul</b> .....	Fred Wagner Corporation .....	<b>55116</b>	<b>612-698-0331</b>
<b>SOUTH DAKOTA</b>		542 South Snelling		
<b>WISCONSIN</b>				





# Manufacturers' Local Offices

## UNI – UNITRODE CORPORATION

		Zip Code	Telephone No.	TWX	
580 Pleasant Street, Watertown, Massachusetts .....		02172	617-926-0404	710-327-1296	
<b>CALIFORNIA</b> .....	<b>Sherman Oaks</b> .....	Unitrode Corporation.....	<b>91403</b>	<b>213-783-1301</b>	<b>910-495-1769</b>
		15300 Ventura Blvd. Suite 410			
<b>NEW YORK</b> .....	<b>Union, N.J.</b> .....	Unitrode Corporation .....	<b>07083</b>	<b>201-687-0500</b>	
		420 Chestnut Street Suite 9			
<b>OHIO</b> .....	<b>West Carrollton</b> .....	Unitrode Corporation.....	<b>45449</b>	<b>513-859-5872</b>	
		440 East Dixie Drive			

## WESY – WESTINGHOUSE ELECTRIC CORPORATION

		Zip Code	Telephone No.	
Semiconductor Division, Youngwood, Pennsylvania.....		15697	412-925-7272	
<b>CALIFORNIA</b> .....	<b>Los Angeles</b> .....	Westinghouse Electric Corporation .....	<b>90017</b>	<b>213-482-9660</b>
		600 St. Paul Avenue		
	<b>Sunnyvale</b> .....	Westinghouse Electric Corporation.....	<b>94088</b>	<b>408-735-2191</b>
		Building 73 Handy Avenue		
<b>FLORIDA</b> .....	<b>Orlando</b> .....	Westinghouse Electric Corporation .....	<b>32184</b>	<b>305-80<sup>21</sup></b>
		1010 Executive Center Drive		
<b>ILLINOIS</b> .....	<b>Chicago</b> .....	Westinghouse Electric Corporation.....	<b>6060<sup>2</sup></b>	<b>312-461-720<sup>0</sup></b>
		10 South Riverside Plaza		
<b>MASSACHUSETTS</b> .....	<b>Boston</b> .....	Westinghouse Electric Corporation .....	<b>02199</b>	<b>617-54<sup>20</sup></b>
		800 Boylston Street		
<b>MINNESOTA</b> .....	<b>Minneapolis</b> .....	Westinghouse Electric Corporation .....	<b>55416</b>	<b>6<sup>551</sup></b>
		3501 South Highway 100		<b>48-9810</b>
<b>NEW YORK</b> .....	<b>Mineola</b> .....	Westinghouse Electric Corporation .....	<b>11501</b>	<b>16-579-2174</b>
		1501 Franklin Avenue		
<b>OHIO</b> .....	<b>Cleveland</b> .....	Westinghouse Electric Corporation .....	<b>44<sup>4</sup> 513-461-3720</b>	
		55 Public Square		
	<b>Dayton</b> .....	Westinghouse Electric Corporation .....		
		1306 Farr Drive		

SECTION 18

SEMICONDUCTOR MOUNTING HARDWARE AVAILABILITY  
 Manufacturer's Capability Grid

Company Name & Address	FSCM No.	Free Convection Dissipators	Forced Convection Dissipators	Thermal Connector Dissipator	Sockets	ASSOCIATED HARDWARE
Aavid Engineering Inc. 43 Porter Street Melrose, Massachusetts 02176		X		X		
Accel Industrial Heat Sink Corp. 3040 N. San Gabriel Blvd. So. San Gabriel, California 91777	26701	X				
Admiral Plastics Corp. 3462 San Fernando Road Los Angeles, California 90065						Conversion Pads
Alpha Components Corp. 4087 Glencoe Avenue Venice, California 90291		X		X		
Amaton Electronic Hardware Co., Inc. 81 Rockdale Avenue New Rochelle, New York 10802				X		
AMP Inc. Box 3608 Harrisburg, Pennsylvania 17105						Mounting Hardware Lead Sockets Mounting Tools
Astrodyne Inc. 207 Cambridge Street Burlington, Massachusetts 01083	28023	X	X	X		Mounting Hardware
Atlee Corp. 2 Lowell Avenue Winchester, Massachusetts 01890	99378			X		
Augat Inc. 33 Perry Avenue Attleboro, Massachusetts 02703	91506	X		X	X	Insulator Pads Lead Sockets Mounting Tools
Barnes Corporation Lansdowne Avenue Lansdowne, Pennsylvania 19050	99779				X	Mounting Hardware Lead Sockets
The Birtcher Corporation Industrial Division 741 Monterey Pass Road Post Office Box D Monterey Park, California 91754	07387	X		X		
Brush Metal Oxide Division Elmore, New Jersey 07831						Insulator Pads
Cambion Cambridge 445 Conzonic Corp. Cambridge Massachusetts 02138					X	Mounting Tools
Chemlac Products 8 Fellowship Cherry Hill, New Jersey 08003					X	
Cinch-Monadnock Div. of United-Carr 530 Main Street Fort Lee, New Jersey 07024					X	Insulator Pads

Manufacturers shown in  
 offices which are included  
 in D.A.T.A. BOOK

local

## SECTION 18

**SEMICONDUCTOR MOUNTING HARDWARE AVAILABILITY****Manufacturer's Capability Grid**

<b>Company Name &amp; Address</b>	<b>FSCM No.</b>	<b>Free Convection Dissipators</b>	<b>Forced Convection Dissipators</b>	<b>Thermal Connector Dissipator</b>	<b>Sockets</b>	<b>ASSOCIATED HARDWARE</b>
Carl Cordover and Co. 104 Liberty Avenue Mineola, New York 11501		X				
Daburn Electronics & Cable Co. 2360 Hoffman Street Bronx, New York 10458				X		Insulator Pads
Daedalus Co. 1338 S. Atlantic Blvd. Los Angeles, California 90022		X		X		
Data Device Corp. 100 Tec Street Hicksville, New York 11801					X	
<b>Delbert Blinn Co.</b> <b>P. O. Box 2007</b> <b>Pomona, California 91766</b>	08289	X		X		Hardware Kits Mounting Hardware Insulator and Conversion Pads
Delco Radio Division General Motors Corp. 700 E. Firmin Street Komomo, Indiana 46901	16758	X				Hardware Kits Insulator Pads
Eby, Hugh H., Co. Division of Redm. Corp. 4701 Germantown Avenue Philadelphia, Pennsylvania 19144	72825				X	
Elco Corporation Maryland Rd. & Computer Avenue Willow Grove, Pennsylvania 19090	91662				X	
Electronic Molding Corp. 44 Church Street Pawtucket, Rhode Island 02860	17117				X	
Fabri-Tek Inc. National Connector Division 9210 Science-Center Drive Minneapolis, Minnesota 55428					X	
General Electric Co. Silicone Products Division Waterford, New York 12188						Thermal Joint and Potting Compound
Globe Plastics 1342 So. Signal Drive Pomona, California 91766						Conversion Pads
Grayhill, Inc. 561 Hillgrove Avenue LaGrange, Illinois 60525	81073				X	
IFE Division of Plastic Molding & Engineering Co. 25 Tripps Lane E. Providence, Rhode Island 02914					X	

Manufacturers shown in bold print have local offices which are included in Section 19 of this D.A.T.A.BOOK

## SECTION 18

## SEMICONDUCTOR MOUNTING HARDWARE AVAILABILITY

### Manufacturer's Capability Grid

Company Name & Address	FSCM No.	Free Convection Dissipators	Forced Convection Dissipators	Thermal Connector Dissipator	Sockets	ASSOCIATED HARDWARE
Industrial Electronic Hardware Corp. 109 Prince Street New York, New York 10012	97913				X	Mounting Hardware
International Electronic Research Corp. 135 W. Magnolia Blvd. Burbank, California 91502	98978	X	X	X		Mounting Hardware
Loranger Manufacturing Corporation Post Office Box 948 Warren, Pennsylvania	11535				X	Mounting Hardware
MacDonald and Co. 213 South Brand Blvd. Glendale, California 91204	13102					Mounting Tools
Mauratron Inc. 13333 N. Central Expwy. Dallas, Texas 75231				X		
Modular Devices Inc. 1265 West 135th Street Gardenia, California 90247		X				
Precision Bipbraze Tor 14715 Arminta Street Van Nuys, California 91402	15957	X	X	X		Custom Precision Molding
Reliance Mica Co., Inc. 341 39th Street Brooklyn, New York 11232	08530					Insulator Pads
Risk, George Industries 672 15th Avenue Columbus, Nebraska 68601	24229	X		X		Insulator Pads Joint Compound
Robinson-Nugent Inc. 802 East 8th Street New Albany, Indiana 47150	06776				X	Conversion Pads Mounting Tools
Robison Electronics Inc. 2134 West Rosecrans Avenue Gardenia, California 90249						Conversion Pads
Ross, The Milton, Co. 511 Second Street Pike South Hampton, Pennsylvania 18966	07047				X	Lead Sockets
Space Products Inc. 6631 Sarnia Avenue Long Beach, California 90805	10012					Conversion Pads
The Staver Company, Inc. 41 No. Saxon Avenue Bay Shore, New York 11706	04232	X		X		Insulator Pads
Stauffer-Walker Silicone Corp. Silicone Division 299 Park Avenue New York, New York 10017						Thermal Joint Compound

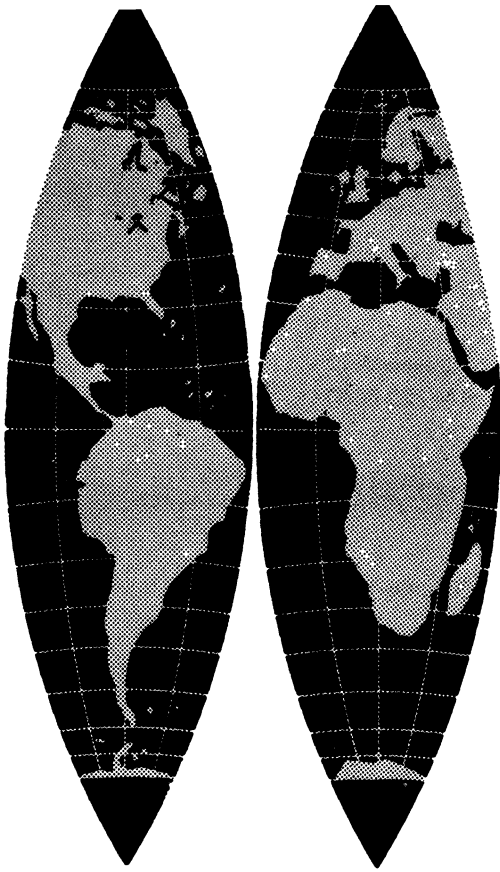
## SECTION 18

**SEMICONDUCTOR MOUNTING HARDWARE AVAILABILITY****Manufacturer's Capability Grid**

<b>Company Name &amp; Address</b>	<b>FSCM No.</b>	<b>Free Convection Dissipators</b>	<b>Forced Convection Dissipators</b>	<b>Thermal Connector Dissipator</b>	<b>Sockets</b>	<b>ASSOCIATED HARDWARE</b>
Thermalloy Company 8719 Diplomacy Row Dallas, Texas 75247	13103	X	X	X		Insulator Pads
UID Electronics Corp. 4105 Pembroke Road Hollywood, Florida 33021	22753				X	
U. S. Terminals Inc. 7502 Camargo Road Cincinnati, Ohio 45243					X	
Vector Electronic Co., Inc. Flower and Grandview Glendale, California 91201	82893				X	Mounting Tools
Wakefield Engineering Teal & Audubon Roads Wakefield, Massachusetts 01880	05820	X	X	X		Mounting Hardware Insulator Pads Thermal Adhesives and Joint Compounds Mounting Tools
Waldom Electronics Inc. 4633 West 53rd Street Chicago, Illinois 60632	92219				X	
Waterbury Pressed Metal Co. 407 Brookside Road Waterbury, Connecticut 06720				X		

Manufacturers shown in bold print have local offices which are included in Section 19 of this D.A.T.A.BOOK





# SECTION 19

## MOUNTING HARDWARE

### Manufacturer's Local Offices

Since mounting hardware is so closely related to the use of solid-state devices, this section of Mounting Hardware Manufacturers Local Offices will provide you with nearby sources of product information.

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#### DELBERT BLINN COMPANY, INC.

	Zip Code	Telephone No.
Post Office Box 2007, 1678 East Mission Boulevard, Pomona, California .....	91756	714-623-1257

# SECTION 20 MANUFACTURERS CODES, NAMES & ADDRESSES



(Manufacturers in order of **D.A.T.A.** code letters)

		AEIL	★ A.E.I. Semiconductors Limited, Carholme Road, Lincoln, England
		AKER	– A/S Akers Electronics, Forskningsvn, 1, Horten, Norway
CDGW–	73445–	<b>APX</b>	– <b>Amperex Electronic Corp., Semiconductor and Receiving Tube Division, Slatersville, Rhode Island 02876</b>
CCYS –		ASC	– American Semiconductor Corp., 4 North Hickory Avenue, Arlington Heights, Illinois 60004
		<b>ATEI</b>	– <b>(ATES) Componetti Elettronici S.p.A., Via Tempesta 2, Milano, Italy</b>
		AVA	★ Avantek, Inc., 2981 Copper Road, Santa Clara, California 95051
		BELI	– Bharat Electronics Limited, Jalahalli PO, Bangalore, 13, South India
		<b>BNT</b>	– <b>Burns &amp; Towne Inc., 18-36 Granita Street, Haverhill, Massachusetts 01830</b>
	12549–	CDLF	– Compagnie Industrielle Francaise Des Tubes Electroniques, 50 Rue J. P. Timbaud, Courbevoie 92, France
		CLA	★ Clairex Electronics, Division of Clairex Corporation, 560 South 3rd Avenue, Mt. Vernon, New York 10550
		<b>CNS</b>	– <b>Continental Semi-Conductor Inc., 59 Central Avenue, East Farmingdale, New York 11735</b>
CCZX –	12498–	CRY	– Crystalonics Division, Teledyne Inc., 147 Sherman Street, Cambridge, Massachusetts 02140
		<b>CSI</b>	– <b>Carter Semiconductor, Inc., 374 Bay View Avenue, Amityville, Long Island, New York 11701</b>
CGM –	16758–	<b>DEL</b>	– <b>Delco Electronic Division, General Motors Corp., 700 East Firmin Street, Kokomo, Indiana 46901</b>
		DETM	– Delsa-Toshiba, S. A. Calzada Aurora No. 303, Cuautitlan, Edo de Mexico
CCZL –	12954–	DIC	– Dickson Electronics Corporation, Post Office Box 1390, Scottsdale, Arizona 85252
		<b>ECD</b>	– <b>Unisem Corporation, Trevose, Pennsylvania 19047</b>
		<b>EMLS</b>	– <b>Emihus Microcomponents Limited, Glenrothes, Fife, Scotland</b>
		<b>ESMF</b>	– <b>Societe Europeenne De Semiconducteurs, Et De Microelectronique, 101 Boulevard Murat, Paris 16e, France</b>
	12045–	<b>ETC</b>	– <b>Electronic Transistors Corporation, 153-13 Northern Boulevard, Flushing, New York 11354</b>
	26611–	FCAJ	– Fujitsu Ltd., No. 1015 Kamikodanaka, Kawasaki, Japan
	12264–	<b>FERB</b>	– <b>Ferranti Ltd., Gem Mill, Chadderton, Oldham, Lancaster, England</b>
CFJ –	07263–	<b>FSC</b>	– <b>Fairchild Semiconductor Corporation, 440 Middlefield Road, Mountain View, California 94041</b>
CG –	03508–	GESY	– General Electric Co., Semicon. Prod. Dept., Electronic Comp. Div., Northern Concourse Bldg., Northern Lights, N. Syracuse, N.Y. 13212
CAKK–	14936–	<b>GIC</b>	– <b>General Instrument Corporation, Post Office Box 600, Hicksville, New York 11802</b>
		GSE	★ General Semiconductor Industries, Inc., 230 West 5th Street, Tempe, Arizona 85281
		GSI	– General Sensors, Inc., Post Office Box 231, Athens, Texas 75751
	92645–	HITJ	– Hitachi Ltd., Electronic Devices & Lightning Apparatus Div., Nippon Building No. 8, 2-chome, Ontemachi, Chiyoda-ku, Tokyo, Japan
		HSC	– Helios Semiconductor, 11762 Western Avenue, Post Office Box 293, Stanton, California 90680
		<b>IDC</b>	– <b>International Diode Corporation, 90 Forrest Street, Jersey City, New Jersey 07304</b>
	17884–	INTG	– Intermetall, Halbleiterwerk der, Deutsche ITT Industries GmbH, 78 Frieberg im Breisgau, Hans-Bunte Strasse 19, Germany
CCUX –	08225–	ITC	– Industro Transistor Corporation, 35-10 36th Avenue, Long Island City, New York 11106
CIT –	15238–	<b>ITT</b>	– <b>ITT Semiconductors, 3301 Electronics Way, West Palm Beach, Florida 33407</b>
		ITTB	– ITT Semiconductors, Footscray, Sidcup, Kent, England
		KER	– Kertron, Inc., 7516 Central Industrial Drive, Riviera Beach, Florida 33407
	20754–	<b>KMC</b>	– <b>KMC Semiconductor Corporation, Parker Road, R.D. 2, Long Valley, New Jersey 07853</b>
CDBS –	14805–	KSC	– KSC Semiconductor Corporation, KSC Way (Katrina Road), Chelmsford, Massachusetts 01824
	18822–	LTFE	– Lignes Telegraphiques and Telephoniques, Conflans-Sainte-Honorine (Seine Et Oise), France
		<b>LUCB</b>	– <b>Joseph Lucas (ELEC.) Ltd., Mere Green Works, Mere Green Road, Four Oaks, Sutton Coldfield, Warwickshire, England</b>
	01619–	MATJ	– Matsushita Electronics Corp., Saiwaicho 1-1 Takatsuki, Osaka, Japan
		<b>MEHK</b>	– <b>Micro Electronics Ltd., Kwun Tong, Hong Kong</b>
		MINA	– Miniwatt, Div. of Philips Electrical Pty., Ltd., 20 Herbert Street, Artarmon, N.S.W., Australia
		MISI	– Mistral S.p.A., Via Melchiorre Gioia, 72, 20125 Milano, Italy
	90144–	MITJ	– Mitsubishi Electric Corporation, 2-12 Marumouchi, Chiyoda-ku, Tokyo, Japan
CGG –	04713–	MOTA	– <b>Motorola Semiconductor Products, 5005 East McDowell Road, Phoenix, Arizona 85008</b>
	24433–	<b>MST</b>	– <b>MS Transistor Corporation, East Gate Boulevard, Garden City, New York 11530</b>
CCWV–	92726–	<b>MULB</b>	– <b>Mullard Limited, Mullard House, Torrington Place, London W.C. 1, England</b>
	94091–	NECJ	– Nippon Electric Co., Ltd., 1753 Shimounumaba, Kawasaki City, Japan
		NJS	– New Jersey Semiconductor Products, Inc., 20 Commerce Street, Springfield, New Jersey 07081
	08257–	NPC	– Nucleonic Products, Co., Inc., Nucleonic Components Devices Division, 6660 Variel Avenue, Canoga Park, California 91303
CCXP –	12040–	<b>NSC</b>	– <b>National Semiconductor Corporation, 2900 Semiconductor Drive, Santa Clara, California 95051</b>
		NTLB	– Newmarket Transistors Ltd., Exning Road, New Market, Cambridge, England
	36204–	<b>PHIC</b>	– <b>Philips Electron Devices, Ltd., 116 Vanderhoof Avenue, Toronto 17, Ontario, Canada</b>

★ New Manufacturers

# SECTION 20 MANUFACTURERS CODES, NAMES & ADDRESSES



(Manufacturers in order of **D.A.T.A.** code letters)

CDGW-	08967	- PHIN	- N. V. Philips Gloeilampenfabrieken, Bldg. B.F., Eindhoven, Netherlands
		PIR	- Pirgo Electronics Inc., 130 Central Avenue, Farmingdale, Long Island, New York 11735
	33178	- PPC	- Power Physics Corporation, Industrial Way West, Post Office Box 626, Eatontown, New Jersey 07724
		PTI	- Power Tech, Inc., 9 Baker Court, Clifton, New Jersey 07011
		QDC	- Qualidyne Corporation, 3699 Tahoe Way, Santa Clara, California 95051
		RADF	- R. T. C. La Radiotechnique-Compelec, Division Tubes Electroniques, 130 Ave. Ledru-Rollin, 75 Paris XI, France
CRP	- 07933	- RAYN	- Raytheon Company, Semiconductor Division, 350 Ellis Street, Mountain View, California 94040
CRC	- 02735	- RCA	- RCA Corporation, Electronic Components, Commercial Engrg. Activity, Harrison, New Jersey 07029
		ROSG	- Dr. Ing. Rudolph Rost, Ubbenstrasse 21, Hanover 1, Germany
		SAKJ	- Sanken Electric Co., Ltd., 1-22-8 Nishi-Ikebukuro, Toshima-ku, Tokyo, Japan
		SCA	- Semicoa, 940 South Ajax Avenue, City of Industry, California 91744
		SELB	- Plessey Microelectronics, Cheney Manor, Swindon, Wiltshire, England
CQN	- 21873	- SEN	- Sensitron Semiconductor, 221 West Industry Court, Deer Park, New York 11729
		SERA	- Servex Semiconductor Division, P.O. Box 26, Oakleigh, Victoria 3166, Australia
		SES	- Semitronics Corporation, 265 Canal Street, New York, New York 10013
		SGSI	- Societa Generale Semiconduttori S.p.A., SGS, Via C. Olivetti 1, Agrate, Milano, Italy
		SHEJ	- Shindengen Electric Mfg. Co., Ltd., 4-2-chome, Ohtemachi, Chiyoda-ku, Tokyo, Japan
	92346	- SHWG	- Siemens Aktiengesellschaft, Semiconductor Division, Rosenheimerstrasse 139, 8000 Munich 80, West Germany
CCSX	- 07256	- SIL	- Silicon Transistor Corporation, East Gate Boulevard, Garden City, New York 11530
CDBN	- 17856	- SIX	- Siliconix, Inc., 2201 Laurelwood Road, Santa Clara, California 95054
		SLCB	- Semitron Limited, Cricklade, Wiltshire, England
CDCD	- 13327	- SOD	- Solitron Devices, Inc., 1177 Blue Heron Boulevard, Riviera Beach, Florida 33304
		SODI	- Solitron Devices, Inc., 8808 Balboa Avenue, San Diego, California 92123
	16402	- SOIF	- Societe Industrielle De Laisons Electriques, 122 Rue Nollet, Paris XVII, France
	18175	- SONY	- SONY Corporation, Atsuigi Plant, 14-1 Asahi-sho 4, Atsuigi-shi, Kanagawa-ken, 243 Japan
		SPC	- Solid Power Corporation, 440 Eastern Parkway, Farmingdale, New York 11735
CSF	- 56289	- SPR	- Sprague Electric Company, North Adams, Massachusetts 01247
	11911	- SSE	- Solid State Electronics Co., 15321 Rayen Street, Sepulveda, California 91343
	30043	- SSI	- Solid State Devices, Inc., 12741 Los Nietos Road, Santa Fe, California 90670
		SSS	- Solid State Scientific Inc., Montgomeryville Industrial Center, Montgomeryville, Pennsylvania 18936
		STL	- Stow Laboratories, Inc., Kane Industrial Drive, Hudson, Massachusetts 01749
		TADI	- Tadiran, Israel Electronics Industries, Ltd., 3 Derech Hashalom (P.O. Box 648), Tel-Aviv, Israel
		TAGS	- Transistor AG, Hohlstrasse 610, 8048 Zurich, Switzerland
CCAB	- 03877	- TEC	- Transitron Electronic Corporation, 168 Albion Street, Wakefield, Massachusetts 01880
		TEK	- Trans-Tek Manufacturing Company, 4405 South Clinton Avenue, South Plainfield, New Jersey 07080
		TFKG	- AEG-Telefunken, 71 Heilbronn (Neckar), Postfach 940, West Germany
CGO	- 02195	- TII	- Texas Instruments Inc., Components Group, Mail Station 49, P.O. Box 5012, Dallas, Texas 75222
CGO	- 02195	- TIIB	- Texas Instruments Ltd., Manton Lane, Bedford, England
		TIIF	- Texas Instruments France, 8050 Freising, Haggarty Strasse, Germany
	18657	- TOSJ	- Tokyo Shibaura Electric Co., 1 Komukaitoshiba Cho, Kawasaki, Japan
CCNL	- 02181	- TRW	- TRW Semiconductors, Inc., 14520 Aviation Blvd., Lawndale, California 90260
		TSAJ	- Tokyo Sanyo Electric Co., Ltd., Semiconductor Division, Oizumimachi, Oragun Gumma, Japan
		TSC	- Teledyne Semiconductor, 12515 Chadron Avenue, Hawthorne, California 90250, (Bi-Polar Devices) 1300 Terra Bella Avenue, Mountain View, California 94040, (FET Devices)
CDAS	-	UNI	- Unitrode Corporation, 580 Pleasant Street, Watertown, Massachusetts 02712
	34428	- UPI	- United Page Inc., 481 Getty Avenue, Paterson, New Jersey 07503
	17895	- VALG	- Valvo GmbH, Burchardstrasse 19, Hamburg 1, Germany
CAY	- 05277	- WESY	- Westinghouse Electric Corporation, Semiconductor Dept., Youngwood, Pennsylvania 15697

★ New Manufacturers

Manufacturers shown in bold print have local offices which are included in Section 17

SYMBOLS & CODES

SYMBOLS & CODES COMMON TO MORE THAN ONE SECTION

**LINE No.**  
 ▼ - New Type  
 ◆ - Revised Specifications  
 # - Non-JEDEC Type manufactured outside U.S.A.

**LEAD CODE**  
 See Lead Code Identification Guide at end of Section 15.

**FOLLOWING TYPE No. (ALL SECTIONS EXCEPT 12)**  
 △ } Each symbol (assigned by D.A.T.A.) indicates an individual manufacturer of a type number when two or three manufacturers inadvertently assigned the same non-JEDEC type number to non-identical types.  
 □ }  
 % }  
 † - Switching type, also listed in Section 12  
 ∅ - Chopper, also listed in Section 13, Category 10  
 \* - These types also included elsewhere with other characteristics. See Type No. Cross Index for alternate line no.  
 § - Radiation Resistant Devices, also listed in Section 13, Category 13.  
 \$ - Replacement Type; consult manufacturer.

**STRUCTURE (All Sections Except 6 & 7)**  
 A - Alloy  
 AN - Annular  
 D - Diffused or drift  
 DM - Diffused mesa  
 E - Epitaxial  
 EA - Epitaxial annular  
 EM - Epitaxial mesa  
 F - Fused  
 G - Grown  
 H - Hometaxial  
 MA - Mico alloy  
 MD - Micro alloy diffused  
 ME - Mesa  
 MOS - Metal oxide silicon  
 PA - Precision alloy  
 PC - Point contact  
 PD - Precision alloy diffused  
 PE - Planar epitaxial  
 PL - Planar  
 S - Surface barrier  
 \* - Matched pair  
 △ - Switching, other uses  
 □ - Chopper, other uses  
 ∅ - Noise figure 8db or below  
 † - Plastic package

2. GERMANIUM PNP 3. GERMANIUM NPN 4. SILICON PNP 5. SILICON NPN -- Low Power Transistors

LINE No	TYPE No.	1 MAX. COLL. DISS. @25°C (W)	2 DERATE IN FREE AIR (Hz)	3 T M E A M X P	4 ABS MAX RATINGS @25°C			7 MAX I <sub>cb</sub> @MAX V <sub>cb</sub> (A)	8 TYPICAL h <sub>FE</sub> PARAMETERS			9 COMMON EMITTER			14 Cob	15 STRUCTURE	16 DWG # Y200 s/a TO200 Ser	17 # E O A D E
					5 BV <sub>cb0</sub> (V)	6 BV <sub>ceo</sub> (V)	6 BV <sub>ebo</sub> (V)		9 I <sub>c</sub> (A)	8 V <sub>cb</sub> (V)	9 I <sub>e</sub> (A)	9 h <sub>fe</sub>	11 hoe (mhos)	12 h <sub>ie</sub> (Ω)				

∅ - With infinite heat sink  
 Following symbols indicate temperature at which derating starts:  
 † - 40°C    □ - 60°C    \$ - 100°C  
 \* - 45°C    § - 70°C    ◆ - Min.  
 # - 50°C    △ - 85°C

† - f<sub>αe</sub>  
 § - Gain bandwidth product (f<sub>T</sub>)  
 \* - Maximum frequency of oscillation  
 ∅ - Figure of merit (frequency for unity power gain)  
 △ - Minimum  
 □ - Maximum

∅ - With infinite heat sink

\* - 50-65°C    A - Ambient  
 ∅ - 70-80°C    C - Case  
 # - 85-100°C    J - Junction  
 † - 110-125°C    S - Storage  
 ◆ - 130-135°C  
 § - 140-165°C  
 § - 170-200°C  
 - Over 200°C

∅ - I<sub>C</sub>    △ - I<sub>B</sub>  
 ∅ - V<sub>CE</sub>  
 # - Pulsed or Peak  
 \$ - Minimum  
 # - At V<sub>CB</sub> < Max. V<sub>CB</sub> (See Mfr. Spec.)  
 # - I<sub>CEX</sub>    \$ - Typical  
 § - I<sub>CES</sub>    \* - I<sub>CER</sub>  
 † - At Temp. > 25°C    △ - I<sub>CEO</sub>  
 ◆ - At Temp. 25°C Case

b - h parameters are h<sub>ob</sub>, h<sub>ib</sub>, h<sub>rb</sub>  
 □ - Maximum

† - h<sub>FE</sub>    △ - Minimum  
 # - Pulsed    □ - Maximum  
 § - h<sub>FC</sub>  
 \* - Available in selected ranges

□ - Maximum    \$ - C<sub>cb</sub>    † - C<sub>re</sub>

\$ - Tetrode

# - Radiation Resistant Device (Also See Above)

# - BV<sub>CEX</sub> or punch-through  
 ∅ - BV<sub>CES</sub>    □ - BV<sub>ceo(sus)</sub>  
 § - BV<sub>CER</sub>    \* - Pulsed  
 \$ - Indicates min. values given for BV<sub>cbo</sub>, BV<sub>ceo</sub>, and BV<sub>ebo</sub>.

6. "P" Channel

7. "N" Channel — SILICON FIELD EFFECT TRANSISTORS

LINE No.	TYPE No.	1 MAX DEVICE DISS @25°C (W)	2 MAX. Vp (V)	3 MAX. Vds (V)	4 ABS. MAX. BVdss (V)	5 MAX. BVgss (V)	6 MAX. Id (A)	7 MAX. Ig (A)	8 MAX. Id(ON) @ Vgs=0 & Vds>Vp (A)	9 MAX. Igss @ Vgs>Vp & Vds=0 (A)	PARAMETERS @25°C		12 Rds (Ω)	13 MAX. Cis (F)	14 DERATE IN FREE AIR W/°C	15 MAX. STRUCTURE TEMP (°C)	16 DWG # Y200 s/a TO200 Ser	17 C E O A D E
											10 TEST COND Vgs Vds (V)	11 COMMON SOURCE gfs (mhos) MIN MAX						

▼ — Matched Type, also listed in Section 13, Category 6

◆ — Phototransistor, also listed in Section 13, Category 7 (See Above Also)

△ — With infinite heat sink

† — Above 25°C; For additional information, consult manufacturer.

† — V<sub>GS</sub>(Cut Off)

△ — V<sub>GST</sub>(Threshold)

% — Typical

△ — Depletion Mode, Type A

§ — Depletion-Enhancement Mode, Type B

\* — Enhancement Mode, Type C

△ — BV<sub>DSSO</sub>

† — BV<sub>DSSX</sub>

△ — BV<sub>DGO</sub>

△ — Typical

† — Pulsed

% — High Frequency (v<sub>fs</sub>)

△ — V<sub>is</sub>

† — Not at given test conditions

% — Maximum

\* — Pulsed

△ — V<sub>GD</sub>

† — V<sub>DG</sub>

∅ — I<sub>D</sub> in mA

△ — I<sub>GDO</sub>

△ — I<sub>DSS</sub> @ V<sub>GS</sub> = 0 and V<sub>DS</sub> ≈ V<sub>P</sub>

∅ — V<sub>GS</sub> > 0

# — Minimum

\* — Typical

% — Pulsed

# — C<sub>iss</sub> (Output Shorted)

△ — C<sub>dgs</sub>

† — C<sub>gss</sub>

% — Not given at test conditions

\* — Typical

∅ — C<sub>dss</sub>

∅ — C<sub>dgo</sub>

§ — C<sub>igs</sub>

**STRUCTURE**

D — Diffused

E — Epitaxial

Ge — Germanium PE

PE — Planar Epitaxial

PL — Planar

# — Junction Type

\* — Insulated Gate (MOS Type)

§ — Matched Pair

△ — Switching, other uses

∅ — Chopper, Other uses

† — Noise figure 8db or below

∅ — Plastic Package

† — Hometaxial

§ — Tetrode

% — Insulated Gate (MNOS Type)

A — Ambient J — Junction

C — Case S — Storage

∅ — Phototransistor Device

△ — Tetrode Device

% — Composite Type

8. GERMANIUM PNP | 9. GERMANIUM NPN | 10. SILICON PNP | 11. SILICON NPN — High Power Transistors

LINE No.	TYPE No.	1 MIN DERATE J to C (W/°C)	2 MAX FREE AIR @ 25°C (W)	3 P <sub>C</sub> MAX (W)	4 T <sub>A</sub> (°C)	ABSOLUTE MAX. RATINGS @25°C			9 MAX. I <sub>co</sub> @ 25°C (A)	BIAS h <sub>FE</sub>		12 MIN (A)	13 MAX (A)	14 f <sub>ae</sub> (Hz)	15 MAX. SAT. RES. (Ω)	16 tr (s)	17 STRUCTURE	DWG # Y200 s/a TO200 Ser	C E O A D E
						5 I <sub>c</sub> (A)	6 I <sub>b</sub> (A)	7 BV <sub>cb0</sub> (V)		8 BV <sub>eb0</sub> (V)	10 V <sub>cb</sub> (V)								

† — 40°C

\* — 45°C

# — 50°C

∅ — 60°C

§ — 75°C

∅ — 80°C

§ — 100°C

∅ — Free Air

∅ — Typical Value

∅ — > 100°C

Symbols indicate temperature at which derating starts.

∅ — With infinite heat sink

Following symbols indicate temp at which derating starts:

† — 40°C

\* — 45°C

# — 50°C

∅ — 60°C

§ — 70°C

∅ — 80°C

∅ — 100°C

∅ — Pulsed

% — Min.

\* — 50-65°C

∅ — 70-80°C

∅ — 85-100°C

∅ — 110-125°C

† — 130-135°C

§ — 140-165°C

§ — 170-200°C

∅ — Over 200°C

A — Ambient

C — Case

J — Junction

S — Storage

∅ — I<sub>E</sub>

§ — Minimum

# — Pulsed or Peak

† — At temperature 25°C Case

∅ — V<sub>ce</sub>

∅ — At V<sub>CB</sub> < Max. V<sub>CB</sub> (see mfr. spec.)

# — I<sub>CEX</sub>

§ — I<sub>CES</sub>

§ — Typical

\* — I<sub>cer</sub>

∅ — At Temp. 25°C Case

† — At Temp. > 25°C

# — BV<sub>CEX</sub> or punch-through

∅ — BV<sub>CES</sub>

§ — BV<sub>CER</sub>

\* — Pulsed

∅ — BV<sub>ceo</sub>(SUS)

§ — Minimum

△ — I<sub>E</sub>

∅ — I<sub>B</sub>

† — At Temp. 25°C Case

§ — Minimum

∅ — I<sub>E</sub>

# — Pulsed

§ — Minimum

† — h<sub>FE</sub>

# — Pulsed

∅ — Typical

\* — Available to selected range narrower than indicated

∅ — Maximum

∅ — t<sub>d</sub> + t<sub>r</sub> = T<sub>on</sub>

§ — t<sub>s</sub>

# — t<sub>f</sub>

† — t<sub>s</sub> + t<sub>f</sub> = T<sub>off</sub>

▼ — Typical Value # — Pulsed

† — f<sub>α<sub>b</sub></sub>

§ — Gain bandwidth product (f<sub>T</sub>)

\* — Maximum frequency of oscillation

∅ — Figure of merit (frequency for unity power gain)

△ — Minimum

∅ — Maximum

§ — Tetrode

# — Radiation Resistant Device (Also see top of reverse side of card.)

SYMBOLS & CODES COMMON TO MORE THAN ONE SECTION

**STRUCTURE** (All Sections)

A	- Alloy	Except 6 & 7)
AN	- Annular	
D	- Diffused or drift	
DM	- Diffused mesa	
E	- Epitaxial	
EA	- Epitaxial annular	
EM	- Epitaxial mesa	
F	- Fused	
G	- Grown	
H	- Hometaxial	
MA	- Mico alloy	
MD	- Micro alloy diffused	
ME	- Mesa	
MOS	- Metal oxide silicon	
PA	- Precision alloy	
PC	- Point contact	
PD	- Precision alloy diffused	
PE	- Planar epitaxial	
PL	- Planar	
S	- Surface barrier	
*	- Matched pair	
△	- Switching, other uses	
◻	- Chopper, other uses	
∅	- Noise figure 8db or below	
†	- Plastic package	

**LINE No.**  
 ▼ - New Type  
 ◆ - Revised Specifications  
 # - Non-JEDEC type manufactured outside U.S.A.

**FOLLOWING TYPE No. (ALL SECTIONS EXCEPT 12)**  
 △ } Each symbol (assigned by D.A.T.A.) indicates an individual manufacturer of a type number when two or three manufacturers inadvertently assigned the same non-JEDEC type number to non-identical types.  
 ◻ }  
 % }  
 † - Switching type, also listed in Section 12  
 ∅ - Chopper, also listed in Section 13, Category 10  
 \* - These types also included elsewhere with other characteristics. See Type No. Cross Index for alternate line number.  
 § - Radiation Resistant Devices, also listed in Section 13, Category 13.  
 ⌘ - Replacement Type; consult manufacturer.

**LEAD CODE**  
 See Lead Code Identification Guide at end of Section 15.

**12. SWITCHING TRANSISTORS**

\* THESE TYPES ALSO INCLUDED ELSEWHERE WITH OTHER CHARACTERISTICS  
 SEE TYPE NO. CROSS INDEX FOR ALTERNATE LINE NO.

LINE No.	TYPE No.	fab (Hz)	MAX RISE TIME tr (s)	MAX DELAY TIME td (s)	MAX STORE TIME ts (s)	MAX FALL TIME tf (s)	MAX. Pc IN FREE AIR @ 25°C (W)	BIAS			MAX. SAT. RES (Ω)	Cob (F)	r'bb X Cob (s)	STRUCTURE		MAX. TEMP (°C)	DWG No.	L C O A D E
								Vcb (V)	Ic (A)	hfe				P-NPN	N-PNP			

† -  $f \alpha_e$   
 § - Gain bandwidth product ( $f_T$ )  
 \* - Maximum frequency of oscillation  
 ∅ - Figure of merit (frequency for unity power gain)  
 △ - Minimum ◻ - Maximum

⌘ - Charge storage time constant  
 ▼ - Stored base charge - picocoulomb  
 ◆ - Total switching time  
 ∅ -  $T_{ON} = t_r + t_d$   
 † - Typical Value

∅ -  $T_{OFF} = t_s + t_f$   
 † - Typical Value  
 \* -  $T_{on} + T_{off} = td + tr + tf + ts$

∅ -  $V_{CE}$   
 ∅ -  $I_c$   
 △ -  $I_B$   
 † -  $h_{fe}$   
 # - Pulsed  
 △ - Minimum  
 ◻ - Maximum  
 \* - Available to selected range narrower than indicated  
 § -  $Y_{fs}$  in millimho (FET's only). Bias values are  $V_{DS}$  &  $I_D$   
 ∅ - With infinite heat sink  
 Following symbols indicate temperature at which derating starts:  
 † - 40°C § - 70°C  
 \* - 45°C ⌘ - 100°C  
 # - 50°C ◆ - 80°C  
 ◻ - 60°C △ - Pulsed

14 Ge - Germanium  
 Si - Silicon  
 § - Tetrode  
 N - NPN or "N" Channel  
 P - PNP or "P" Channel  
 § - Field Effect Transistor  
 # - Radiation Resistant Device (See above also)

† -  $r'_{bb}$   
 ◻ - Maximum  
 ⌘ -  $C_{ob}$   
 § -  $C_{iss}$  (FET's only)  
 § -  $R_{on}$  (FET's only)  
 # - Pulsed

A - Ambient  
 C - Case  
 J - Junction  
 S - Storage

**13. MISCELLANEOUS TRANSISTORS**

LINE No.	TYPE No.	CATEGORY USE	STRUCTURE	MAT	DWG. No.	L C O A D E	DESCRIPTION
----------	----------	--------------	-----------	-----	----------	-------------	-------------

1 - Avalanche Mode  
 2 - Bi-directional  
 4 - Hook Collector  
 5 - Complementary Symmetry (PNP & NPN) Matched Pair  
 6 - Matched Pair  
 7 - Phototransistor  
 9 - Unijunction  
 N - N-type emitter  
 P - P-type emitter  
 10 - Chopper  
 11 - Composite  
 12 - Cryogenic  
 13 - Radiation Resistant Devices  
 14 - Pressure Sensitive  
 16 - Darlington

N - NPN or N Channel  
 P - PNP or P Channel  
 (See above also)

See "TECHNICAL TERM DEFINITIONS" Section on back of last Interpreter Card.



## TECHNICAL TERM DEFINITIONS

**B** — Illumination intensity

**BV<sub>CBO</sub>** — Breakdown voltage, collector-to-base; emitter open-circuit.

**V<sub>(BR)CBO</sub>**

**BV<sub>CEO</sub>** — Breakdown voltage, collector-to-emitter; base open-circuit.

**V<sub>(BR)CEO</sub>**

**BV<sub>CER</sub>** — Breakdown voltage, collector-to-emitter; with specified base-to-emitter resistance.

**V<sub>(BR)CER</sub>**

**BV<sub>CES</sub>** — Breakdown voltage, collector-to-emitter; with base short-circuit to emitter.

**V<sub>(BR)CES</sub>**

**BV<sub>CEx</sub>** — Breakdown voltage, collector - to - emitter; with specified circuit between base and emitter.

**V<sub>(BR)CEX</sub>**

**BV<sub>DGO</sub>** — Breakdown voltage, drain-to-gate; source open circuit (FET).

**V<sub>(BR)DGO</sub>**

**BV<sub>DSX</sub>** — Breakdown voltage, drain-to-source; with specified circuit between gate and source (FET).

**V<sub>(BR)DSX</sub>**

**BV<sub>EBO</sub>** — Breakdown voltage, emitter-to-base; collector open-circuit.

**V<sub>(BR)EBO</sub>**

**BV<sub>GD</sub>** — Breakdown voltage, gate-to-drain (FET).

**V<sub>(BR)GD</sub>**

**BV<sub>GDS</sub>** — Breakdown voltage, gate-to-drain; with source short-circuit to drain (FET).

**V<sub>(BR)GDS</sub>**

**BV<sub>GSS</sub>** — Breakdown voltage, gate-to-source, with drain short-circuit to source (FET).

**V<sub>(BR)GSS</sub>**

**C<sub>ob</sub>** — Output capacitance with input AC open-circuit, common base.

**C<sub>iss</sub>** — Small-signal, short-circuit input capacitance, common source (FET).

**C<sub>rss</sub>** — Magnitude of small - signal, short - circuit reverse transfer capacitance, common source (FET).

**f $\alpha_b$**  — Small signal short-circuit forward current transfer ratio cut off frequency, common base (alpha cut off frequency).

**f<sub>hfb</sub>**

**f $\alpha_e$**  — Small signal short-circuit forward current transfer ratio cut off frequency, common emitter (beta cut off frequency).

**f<sub>hfe</sub>**

**f<sub>t</sub>** — Extrapolated unity gain frequency (gain bandwidth product). Product of the common-emitter current transfer ratio and the frequency of measurement at a frequency where the current gain is decreasing at the rate of 6 db per octave. This frequency is also known as the Transition Frequency.

**g<sub>fs</sub>** — Common source forward transconductance (FET)

**h<sub>FE</sub>** — DC forward current transfer ratio, common emitter.

### MATCHED PAIRS

- a. For all matching parameter ratios one (1) is always the smaller of the two (2) value of the parameter.
- b. For differential values, if one (1) is always the smaller of the two (2) value, the differential is a negative number.

**NOTE:**

**h<sub>FE1</sub>/h<sub>FE2</sub>** — DC current gain ratio.

**V<sub>BE1</sub> - V<sub>BE2</sub>** | — Base-emitter differential voltage.

$\Delta V_{BE1} - V_{BE2} / \Delta T$  — Base - emitter differential voltage change due to a change in temperature.

**I<sub>DSS1</sub>/I<sub>DSS2</sub>** — Zero gate voltage - drain current ratio.

**g<sub>m1</sub>/g<sub>m2</sub>** — Transconductance ratio.

**h<sub>fe</sub>** — Small signal forward current transfer ratio, common emitter.

**h<sub>ib</sub>** — Small signal value of the short-circuit input impedance, common base.

**h<sub>ie</sub>** — Small signal value of the short-circuit input impedance, common emitter.

**h<sub>ob</sub>** — Small signal value of the open-circuit output admittance, common base.

**h<sub>oe</sub>** — Small signal value of the open-circuit output admittance, common emitter.

**h<sub>rb</sub>** — Small signal value of the open-circuit reverse voltage transfer ratio, common base.

**h<sub>re</sub>** — Small signal value of the open-circuit reverse voltage transfer ratio, common emitter.

**I<sub>B</sub>** — Base current, DC.

**I<sub>B(Sat)</sub>** — Base saturation current.

**I<sub>B2(mod)</sub>** — Interbase modulated current (UJT).

**I<sub>C</sub>** — Collector current, DC.

**I<sub>C(Sat)</sub>** — Collector saturation current.

**I<sub>CBO</sub>** — Collector cutoff current, DC, emitter open-circuit.

**I<sub>CES</sub>** — Collector cutoff current, DC, with base shorted to emitter.

**I<sub>CEx</sub>** — Collector cutoff current, DC, with specified circuit between base and emitter.

**I<sub>D</sub>** — Drain current, DC (FET).

**I<sub>D(on)</sub>** — "On" drain current (FET).

**I<sub>DSS</sub>** — Drain current at zero gate voltage (FET).

**I<sub>E</sub>** — Emitter current, DC.

**I<sub>EB2O</sub>** — Emitter reverse current, base-one open-circuit, DC (UJT).

**I<sub>G</sub>** — Gate current, DC (FET).

**I<sub>GSS</sub>** — Gate source reverse current at zero drain-to-source voltage (FET).

**I<sub>off</sub>** — Offset current, DC (FET).

**I<sub>P</sub>** — Peak point emitter current (UJT).

**I<sub>V</sub>** — Valley point emitter current (UJT).

**n** — Intrinsic standoff ratio (UJT).

**NF** — Noise factor or noise figure.

$\lambda_s$  — Wave length of maximum sensitivity

**P<sub>c</sub>** — Collector power dissipation.

**|V<sub>GS1</sub> - V<sub>GS2</sub>|** — Gate-source differential voltage.

$\Delta V_{GS1} - V_{GS2} / \Delta T$  — Gate - source differential voltage change due to a change in temperature.

### FOR DOUBLE EMITTER CHOPPER DEVICES

**V<sub>E1BO</sub> or V<sub>E2BO</sub>** — Emitter-to-base voltage, DC, collector open.

**V<sub>E1CO</sub> or V<sub>E2CO</sub>** — Emitter-to-collector voltage, DC, base open.

**V<sub>E1E2</sub> or V<sub>E2E1</sub>** — Emitter one - emitter two offset voltage.

**I<sub>E1E2O</sub>** — Emitter cutoff current.

**P<sub>d</sub>** — Power Dissipation

**P<sub>T</sub>** — Total power dissipation.

**R<sub>BBO</sub>** — Interbase resistance, with emitter open-circuit.

**r<sub>ds(on)</sub>** — Drain-to-source bulk resistance (FET).

**t<sub>d</sub>** — Delay time.

**t<sub>f</sub>** — Fall time.

**t<sub>off</sub>** — Turn-off time = t<sub>s</sub> + t<sub>f</sub>

**t<sub>on</sub>** — Turn-on time = t<sub>d</sub> + t<sub>r</sub>

**t<sub>r</sub>** — Rise time.

**t<sub>s</sub>** — Storage time.

**S<sub>RCE</sub>** — Collector-emitter radiation sensitivity

**S<sub>ICE</sub>** — Collector-emitter illumination sensitivity

**V<sub>BE</sub>** — Base-to-emitter voltage, DC.

**V<sub>B2E</sub>** — Base-two-to-emitter voltage, DC (UJT).

**V<sub>B2B1</sub>** — Interbase voltage, DC (UJT).

**V<sub>BE(Sat)</sub>** — Base-to-emitter saturation voltage.

**V<sub>CB</sub>** — Collector-to-base voltage, DC.

**V<sub>CBO</sub>** — Collector-to-base voltage, DC, emitter open.

**V<sub>CE</sub>** — Collector-to-emitter voltage, DC.

**V<sub>CE(Sat)</sub>** — Collector-to-emitter saturation voltage.

**V<sub>CEO</sub>** — Collector-to-emitter voltage, DC, base open.

**V<sub>DS</sub>** — Drain-to-source voltage (FET).

**V<sub>EB1</sub>** — Emitter-to-base one voltage, DC (UJT).

**V<sub>EBO</sub>** — Emitter-to-base voltage, DC, collector open.

**V<sub>EB1(Sat)</sub>** — Emitter saturation voltage (UJT).

**V<sub>GS</sub>** — Gate-to-source voltage, DC (FET).

**V<sub>GS(off)</sub>** — Gate-to-source cutoff voltage (FET).

**V<sub>GS(th)</sub>** — Gate-to-source threshold voltage (FET).

**V<sub>OB1</sub>** — Base-one peak pulse voltage (UJT).

**V<sub>off</sub>** — Offset voltage.

**V<sub>P</sub>** — Peak point emitter voltage (UJT).

**V<sub>p</sub>** — Drain-to-source pinch-off voltage (FET).

**V<sub>v</sub>** — Valley point emitter voltage (UJT).

**Y<sub>FE</sub>** — DC forward transmittance with output short-circuit, common emitter.

**Y<sub>fe</sub>** — Magnitude of small signal, short - circuit forward transmittance, common source (FET).

**Y<sub>os</sub>** — Magnitude of small signal, short - circuit output admittance, common source (FET).

### CHOPPERS

**V<sub>(off)</sub>** — Emitter offset voltage

**I<sub>(off)</sub>** — Emitter offset current.

**h<sub>FE (inv)</sub>** — DC current gain, inverted connection.

**R<sub>d</sub>** — Inverted dynamic saturation resistance

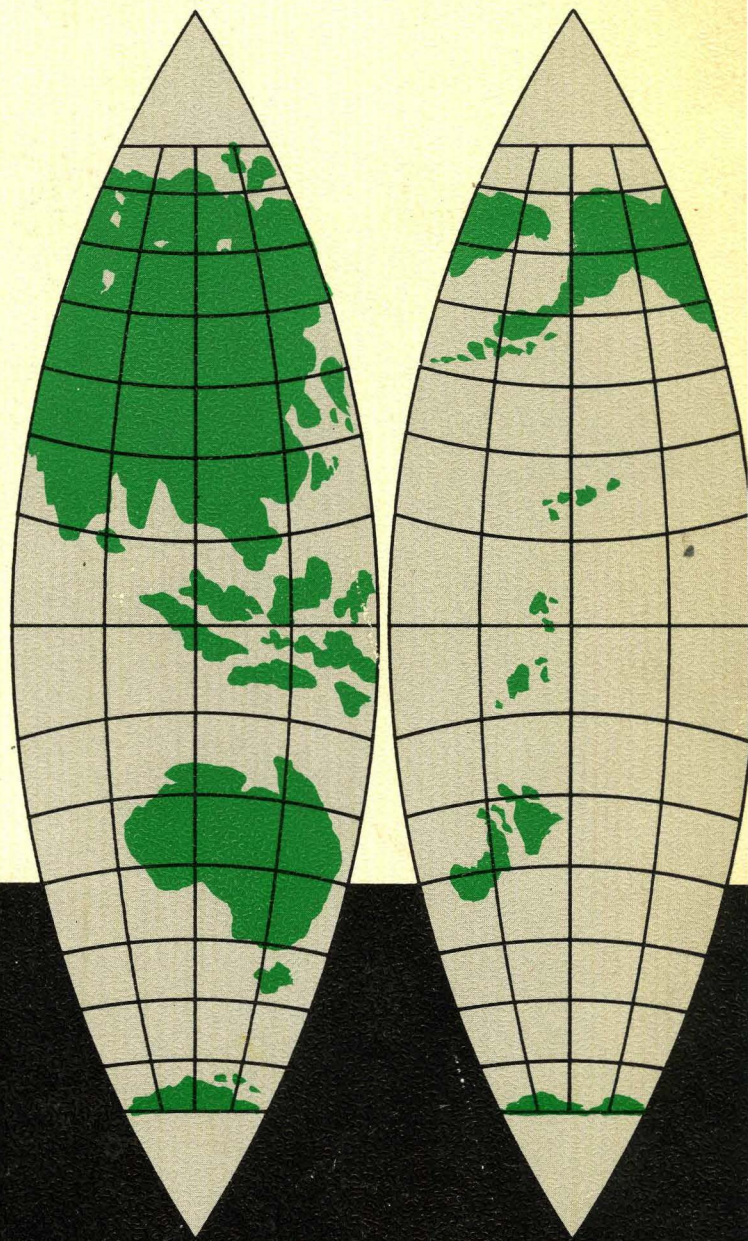
**r<sub>s(on)</sub>** — "On" series resistance.

### DOUBLE COLLECTOR DEVICES

**V<sub>C1C2</sub>** — Collector one - collector two voltage.



# TRANSISTOR D.A.T.A.BOOK



*D.A.T.A.*