

SYMBOLS & CODES EXPLAINED

IN TYPE No. CROSS-INDEX & TECHNICAL SECTIONS

- Δ } Indicators of separate manufacturers producing same type number (non-JEDEC) whose characteristics are not the same.
- \square } This manufacturer-identifying symbol (assigned by D.A.T.A.) is an integral part of the type number (in Type No. Cross Index, Technical Data Sections) to avoid the possibility of confusing the devices of one manufacturer with the devices of others.
- $\%$ } Technical Data Sections)
- RT ... Replacement Type; consult manufacturer.

SYMBOLS & CODES COMMON TO MORE THAN ONE TECHNICAL SECTION

LINE No.

- ∇ - New Type
- \blacklozenge - Revised Specifications
- # - Non-JEDEC Type manufactured outside U.S.A.

TYPE No.

- \dagger - Switching type, also listed in Section 12
- \emptyset - 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.
- \S - Radiation Resistant Devices, also listed in Section 13, Category 13.

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
- GA - Gallium Arsenide
- 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
- Δ - Switching, other uses
- \square - Chopper, other uses
- \emptyset - Noise figure 8db or below
- \dagger - Plastic package
- $\%$ - Overlay

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 W/°C (Hz)	3 M E X P	4 ABS. MAX. RATINGS @25°C (V)	5 BV _{cb0} (V)	6 BV _{ceo} (V)	7 BV _{ebo} (V)	8 I _{cb0} @MAX V _{cb} (A)	9 I _c (A)	TYPICAL h _{FE} PARAMETERS				10 h _{oe} (mhos)	COMMON EMITTER			11 h _{ie} (Ω)	12 h _{re} (Ω)	13 C _{ob} (F)	14 STRUC-TURE	15 DWG # s/a TO200 Ser.	16 C A D E
											BIAS I _e (A)	h _{fe}	h _{oe}	h _{ie}		h _{re}								

\emptyset - With infinite heat sink
Following symbols indicate temperature at which derating starts:

\dagger - 40°C	\square - 60°C	\S - 100°C
* - 45°C	\S - 70°C	\blacklozenge - Min.
# - 50°C	Δ - 85°C	

\dagger - f_{ae}
 \S - Gain bandwidth product (f_t)
* - Maximum frequency of oscillation
 \emptyset - Figure of merit (frequency for unity power gain)
 Δ - Minimum
 \square - Maximum

\emptyset - With infinite heat sink

* - 50-65°C	A - Ambient
\emptyset - 70-80°C	C - Case
# - 85-100°C	J - Junction
\blacklozenge - 110-125°C	S - Storage
\dagger - 130-135°C	
\S - 140-165°C	
\square - 170-200°C	
∇ - Over 200°C	

\emptyset - I_C Δ - I_B

\emptyset - V_{CE}

\emptyset - At $V_{CB} < \text{Max. } V_{CB}$ (See Mfr. Spec.)
- I_{CEX} \S - Typical
 \S - I_{CES} * - I_{CER}
 \dagger - At Temp. $> 25^\circ\text{C}$ Δ - I_{CEO}
 \blacklozenge - At Temp. 25°C Case

- Pulsed or Peak
 \S - Minimum

- BV_{CEX} or punch-through
 \emptyset - BV_{CES} \square - $BV_{ceo(sus)}$
 \S - BV_{CER} * - Pulsed
 $\$$ - Indicates min. values given for BV_{cb0} , BV_{ceo} , and BV_{ebo} .

11 b - h parameters are h_{ob} , h_{ib} , h_{rb}
12 \square - Maximum

10 \dagger - h_{FE} Δ - Minimum
- Pulsed \square - Maximum
 \S - h_{FC}
* - Available in selected ranges

\square - Maximum $\$$ - C_{cb} \dagger - C_{re}

$\$$ - Tetrode
- Radiation Resistant Device (Also See Above)

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		T ABS MAX RATINGS @25°C				MAX. lcbp @MAX Vcb (A)		TYPICAL 'h' PARAMETERS			Cob (F)	STRUC-TURE	DWG s/a TO200 Ser.	# C O A D E	
		fab	IN AIR W/°C	M A M X P	BVcbo (V)	BVceo (V)	BVebo (V)	Ic (A)	lcbp (A)	Vcb (V)	le (A)	hfe	COMMON EMITTER	hoe (mhos)					hie (Ω)
1	2N3981†	800m	250MΔ	4.5m	Δ	Δ	60	30	5.0	1.0	300n	1.0	150m	30	1Δ				
2	2N3982†	800m	250MΔ	4.5m	Δ	Δ	50	20	5.0	1.0	300n	1.0	150m	40	1Δ				
3#	2SC971	800m	250MΔ	5.3m	Δ	Δ	60	30	5.0	1.0	1.0u	1.0	150m	60	1#				
4#	2SC502	800m	250MΔ	6.7m	Δ	Δ	60	60	5.0	1.0	1.0u	1.0	200m	30	1#				
5#	2SC580	800m	250MΔ	6.25u	Δ	Δ	60	30	5.0	1.0	1.0u	1.0	100m	30	1#				
6	PT4830	800m	250MΔ	5.3m	Δ	Δ	60	30	4.0		0.5u	1.0	100m	40	1Δ				
7	TA2626†	800m	250MΔ	4.5m	Δ	Δ	75	50	5.0		1.0u	1.0	100m	30	1Δ				
8	TA2750	800m	250MΔ	4.5m	Δ	Δ	60	40	5.0		100u†	1.0	100m	30	1Δ				
9#	C651	800m	300MΔ	4.5m	Δ	Δ	55	35	6.0		5.0u	1.0	100m	70	1				
10	D11E404†	800m	300MΔ	4.5m	Δ	Δ	80	60	5.0		50uΔ	1.0	100m	40	1Δ#				
11	D11E405†	800m	300MΔ	4.7m	Δ	Δ	80	60	5.0		1.0 #	1.0	100m	40	1Δ#				
12	D11E406†	800m	300MΔ	4.5m	Δ	Δ	100	80	5.0		1.0 #	1.0	100m	40	1Δ#				
13	D11E407†	800m	300MΔ	4.7m	Δ	Δ	110	80	5.0		1.0 #	1.0	100m	40	1Δ#				
14#	MT181	800m	300MΔ	4.5m	Δ	Δ	60	60	5.0		200m	1.0	100m	60	1#				
15#	2N2217A	800m	400MΔ	5.6m	Δ	Δ	75	40	6.0		1.0u	1.0	150m	40	1#				
16	2N3123	800m	400MΔ	5.2m	Δ	Δ	60	30	5.0		800m	1.0	150m	100	1#Δ				
17#	BFX14	800m	530MΔ	4.5m	Δ	Δ	25	15	4.0		300m	50u	100m	50	1#				
18	MM1945	800m	600MΔ	5.3m	Δ	Δ	40	3.0			50u	5.0	100m	50	1#				
19	A230	800m	1.0GΔ	4.0m	Δ	Δ	40	30	3.5		200m	5.0	50m	25	1Δ				
20	PT2540	850m	150MΔ	4.8m	Δ	Δ	60	40	4.0		800m	10u	150m	15	1Δ				
21#	BC216A	860m	70MΔ	2.0m	Δ	Δ	45	45	6.0		20m	15n	5.0	10u	40	1Δ			
22#	BC216B	860m	70MΔ	2.0m	Δ	Δ	45	45	6.0		20m	15n	5.0	10u	40	1Δ			
23	PT2523	870m	50.MΔ	3.3m	Δ	Δ	180	140	5.0		500m	0.1u	50	10m	20	1Δ			
24	PT2524	870m	50.MΔ	3.3m	Δ	Δ	200	180	5.0		500m	0.1u	50	10m	20	1#Δ			
25	2N841/KVT	880m	40MΔ	5.0m	Δ	Δ	45	45	2.0		50m	1.0u	5.0	1.0m	140				
26	2N709/KVT	880m	800MΔ	5.0m	Δ	Δ	15	6.0	4.0		50m	0.5u	5.0	10m	55	1			
27	2N2784/KVT	880m	1.0GΔ	5.0m	Δ	Δ	15	6.0	4.0		500m	5n	5.0	10m	120	1			
28	2N3633/KVT	880m	1.3GΔ	5.0m	Δ	Δ	15	6.0	4.0		50m	5n	5.0	10m	150	1			
29	D28B	950m	100u	Δ	Δ	Δ	150	150	5.0		100m	1.0u	10	2.0m	250				
30	CDQ10011	1.0	7.6m	Δ	Δ	Δ	55	55	1.0		60m	1.0u	10	5.0m	50				
31	CDQ10012	1.0	7.6m	Δ	Δ	Δ	85	85	1.0		60m	1.0u	10	5.0m	50				
32	CDQ10014	1.0	7.6m	Δ	Δ	Δ	60	60	1.0		60m	1.0u	10	5.0m	20				
33	CDQ10033	1.0	7.6m	Δ	Δ	Δ	85	3.0			60m	1.0u	10	1.0m	53				
34	CDQ10034	1.0	7.6m	Δ	Δ	Δ	125	3.0			60m	1.0u	10	1.0m	53				
35	CDQ10037	1.0	7.6m	Δ	Δ	Δ	85	1.0			60m	1.0u	10	5.0m	20				
36	ST4341	1.0	7.6m	Δ	Δ	Δ	80	5.0			150m	100u	5.0	3.0m	15	Δ			
37	CDQ10044	1.0	6.0M	7.6m	Δ	Δ	85	2.0			60m	50u	10	5.0m	20				
38	CDQ10045	1.0	6.0M	7.6m	Δ	Δ	65	2.0			60m	50u	10	5.0m	59				
39	2N706/KVT	1.0	3.20MΔ	6.7m	Δ	Δ	25	20	3.0		0.5u	1.0	10m	20	1#Δ				
40	2N930/KVT	1.2	3.0MΔ	6.6m	Δ	Δ	45	45	5.0		30m	1.0n	5.0	1.0m	150	Δ			
41	2N708/KVT	1.2	4.80MΔ	6.7m	Δ	Δ	40	15	5.0		0.2u	1.0	10m	30	1#Δ				
42	2N2369/KVT	1.2	8.00MΔ	6.7m	Δ	Δ	40	15	4.5		500m	40u	1.0	10m	80	1			
43	2N717A†	1.8	200MΔ	7.5m	Δ	Δ	75	7.0											
44	PT850	2.0	120MΔ	4.0m	Δ	Δ	120	80	5.0		500m	2.0u	10	150m	40	1Δ#			
45	PT850A	2.8	120MΔ	5.2m	Δ	Δ	120	80	5.0		500m	2.0u	10	150m	40	1Δ#			
46	2N1893/KVT	3	80.MΔ	17m	Δ	Δ	120	80	7.0		0.1u	10	150m	80	1#				
47	2N1613/KVT	3	130M	17m	Δ	Δ	75	50	7.0		0.1u	10	150m	80	1#				
48	2N1711/KVT	3	160M	17m	Δ	Δ	75	50	7.0		0.1u	10	150m	130	1				
49#	BFS10	5.0	500MΔ	40m	Δ	Δ	55	30	3.5		5.0	5.0	50m	120	1#				
50#	BFW69	7.0	400MΔ	40m	Δ	Δ	65	40	4.0		1.0m	5.0	250m	10	1Δ#				
51	MT914	250	300MΔ	1.6m	Δ	Δ	40	5.0			25n	1.0	10m	70	1				