

# 12. SWITCHING TRANSISTORS

IN ORDER OF (1) MAX RISE TIME, (2) fab & (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-NPN N-NPN	MATERIAL	MAX. TEMP (°C)	DWG # Y200 s/a TO200 Ser.	L E O A D E
								Vcb (V)	Ic (A)	hFE								
1#	2SC269	400MΔ	20n∅		20n	40n∅	150m	1.0 ∅	10m∅	200 ∇	25	6.0p∇	N-PE	Si	150J	W3a		
2#	2SC356	400MΔ	20n∅		20n	40n∅	300m	1.0 ∅	10m∅	60	4.5p	4.5p	NPE	Si	175J	TO46	A∅	
3#	BFV29	400MΔ	20n	15n	30n	20n	150m	1.0 ∅	100m∅	10 # Δ	4.5p	4.5p	PPE	Si	200S	S5a	P	
4#	KS6106	400M	20n	10n	150n	50n		5.0	1.0	15 Δ	20p	20p	N-PE	Si	200J	TO39		
5#	KS6109	400M	20n	20n	100n	40n		5.0	1.0	15 Δ	20p	20p	N-PE	Si	200J	TO60		
6#	KS6111	400M	20n	25n	90n	30n		5.0	1.0	15 Δ	20p	20p	N-PE	Si	200J	TO60		
7#	MMT72	400MΔ	20n∅		20n	20n∅	225m	2.0 ∅	10m∅	30 ∇ Δ	30	6.0p∇	N-AN	Si	135J	W6	C	
8#	TP5140	400M	20n		20n	20n	200m	1.0	10m	40		5.0p	N	Si	200	TO92	A	
9#	2SC321H	450MΔ	20n∇		30n	25n∇	360m	1.0 ∅	10m∅	35 Δ	3.5m	6.0p∇	N-PE	Si	175J	TO18	A	
10#	2N2710	500MΔ	20n∅		20n	35n∅	360m	1.0 ∅	10m∅	40 # Δ	8.0	4.0p∇	N	Si	200	TO18	A∅	
11#	2N3639	500MΔ	20n	10n	20n	12n	500m∅	.30 ∅	10m∅	30 Δ #		3.5p∇	P	Si	125J	R110	A	
12#	2N3640	500MΔ	20n	10n	20n	12n	500m∅	.30 ∅	10m∅	30 Δ #		3.5p∇	P	Si	125J	R110	A	
13#	2SC1834	500MΔ	20n∅		20n	40n∅	300m	1.0 ∅	10m∅	60 Δ	2.0	3.0p	N-E	Si	150J	TO92	A	
14#	2N2475	600MΔ	20n∅		6.0n	15n∅	500m∅	400m∅	20m∅	30 Δ	2.0	200S	N	Si	200S	R179a	B	
15#	BSV36	600MΔ	20n∅		6.0n	15n∅	550m	400m∅	20m∅	150 ∇	2.5	3.0p∇	N-PL	Si	175J	X156f	C	
16#	2N3832	800MΔ	20n	15n	10n	20n	200m	5.0 ∅	2.0m	25 Δ	4.0	4.5p∇	N	Si	200S	TO72	G	
17#	BSW25	800MΔ	20n∅		25n∅	25n∅	1.2 ∅	500m∅	30m∅	40 # Δ		4.5p∇	P-DPE	Si	200J	TO18	A∅	
18#	MPSL07	1.0GΔ	20n∅	15n∅		40n∅	3.10m	1.0 ∅	50m∅	35	15	1.9p	P-AN	Si	135J	TO92	A	
19#	MPSL08	1.2G	20n∅	20n∅		40n∅	3.10m	1.0 ∅	50m∅	35	15	1.9p	P-AN	Si	135J	TO92	A	
20#	BSR12	1.5GΔ	20n∅			30n∅	200m			120 ∇ #	150 #	4.5p∇	Pt	Si	150J	X156e	A	
21#	BSR12R	1.5GΔ	20n∅			30n∅	200m			120 ∇ #	150 #	4.5p∇	Pt	Si	150J	X156e	A	
22#	2N2381	300MΔ	22n∅			45n∅	750m∅	1.0 ∅	400m∅	25 Δ	2.0	6.0p∇	P	Ge	100S	TO39	A∅	
23#	2N2382	300MΔ	22n∅			45n∅	750m∅	1.0 ∅	400m∅	25 Δ	2.0	6.0p∇	P	Ge	100S	TO39	A∅	
24#	3N163		24n	12n∅		50n∅	375m	15	10m	2.0 Δ	2.5 ∅	2.5p∅	P-MOSΔ	Si	200S	TO72	DM	
25#	3N164		24n	12n∅		50n∅	375m	15	10m	1.0 Δ	300 ∅	2.5p∅	P-MOSΔ	Si	200S	TO72	DM	
26#	3N172		24n			50n∅	375m	15	10m	4.0 ∅		3.5p∅	P	Si	200S	TO72	DM∅	
27#	3N173		24n			50n∅	375m	15	10m	4.0 ∅		3.5p∅	P	Si	200S	TO72	DM∅	
28#	2N3512	250MΔ	24n	6.0n	30n	15n	4.0 ∅	1.0 ∅	500m∅	10 # Δ	2.6	10p∇	N	Si	200S	TO5	A∅	
29#	40283	250MΔ	24n	6.0n	30n	15n	2.0 ∅	1.0 ∅	500m∅	10 # Δ	2.6	10p∇	N-DPE	Si	200S	TO46	A∅	
30#	2N5188		25n	10n	35n	15n	800m		50 ∅	150m∅	25 Δ	3.3	N	Si	200S	TO39	A∅	
31#	E177		25n∇	20n∇	20n∇	25n∇	350m				0.8 #	40p∅	P	Si	125A	TO106	DA	
32#	IRFD113		25n	20n	25n∇	20n	1.0				300 ∅	150p∇	N	Si	150J	X195	DF	
33#	J177		25n	20n	20n	25n	350m						N	Si	125J	TO92	DR	
34#	MEM563		25n	15n		120n∅	650m∅	10	2.0m	2.0 Δ	100 ∅	4.0p∅	N #	Si	125J	TO72	DC	
35#	U305		25n	25n		40n	350m				110 ∅	27p∅	P #	Si	150S	TO18	DA∅	
36#	2H1256	25.0MΔ	25n∅			40n∅	300m	10	2.0m	25 Δ	60	10p∇	P-ME	Si	175A	TO18		
37#	2H1258	25.0MΔ	25n∅			40n∅	300m	10	2.0m	75 Δ	60	10p∇	P-ME	Si	175A	TO18		
38#	2N1254	30MΔ	25n∅			40n∅	275m	1.0 ∅	10m∅	25 ∇	30	10p∇	P	Si	200S	TO5		
39#	2N1256	30MΔ	25n∅			40n∅	275m	1.0 ∅	10m∅	25 ∇	30	10p∇	P	Si	200S	TO5		
40#	2H1255	40.0MΔ	25n∅			60n∅	300m	10	2.0m	40 Δ	30	10p∇	P-ME	Si	175A	TO18		
41#	2H1257	40.0MΔ	25n∅			60n∅	300m	10	2.0m	40 Δ	30	10p∇	P-ME	Si	175A	TO18		
42#	2H1259	40.0MΔ	25n∅			60n∅	300m	10	2.0m	25 Δ	30	10p∇	P-ME	Si	175A	TO18		
43#	2N1259	40MΔ	25n∅			60n∅	275m	1.0 ∅	10m∅	25 ∇	30	10p∇	P	Si	200S	TO5		
44#	2N1255	50MΔ	25n∅			60n∅	275m	1.0 ∅	10m∅	40 ∇	30	10p∇	P	Si	200S	TO5		
45#	2N1257	50MΔ	25n∅			60n∅	275m	1.0 ∅	10m∅	40 ∇	30	10p∇	P	Si	200S	TO5		
46#	2N1258	50MΔ	25n∅			60n∅	275m	1.0 ∅	10m∅	75 ∇	60	10p∇	P	Si	200S	TO5		
47#	2SA503	50.0MΔ	25n∇		500n∇	80n∇	6.0m∅	2.0 ∅	150m∅	300 ∇	5.3	30p∇	P-PE	Si	175J	TO39	A∅	
48#	2SA504	50.0MΔ	25n∇		500n∇	80n∇	6.0m∅	2.0 ∅	150m∅	300 ∇	5.3	30p∇	P-PE	Si	175J	TO39	A∅	
49#	2N2235	100MΔ	25n∅		600n∅	600n∅	10 #	2.0 ∅	500m∅	20 Δ	2.5	35p∇	N	Si	150C	TO3	C∅	
50#	2N2237	100MΔ	25n∅		600n∅	600m	10 #	2.0 ∅	100m∅	125 # ∇	2.5	90p∇	N-E	Si	150S	TO8	A∅	
51#	2SC106	100MΔ	25n	20n	210n	20n	15 ∅	5.0 ∅	0.5m	20	3.0		N	Si	175J	TO8		
52#	BSX72	100MΔ	25n∇		150n∇	150n∇	3.1 * ∅	10 ∅	150m∅	250 ∇ #	8.0p	8.0p	N-PE	Si	200J	TO39	A∅	
53#	BSX75	100MΔ	25n∇		150n∇	150n∇	1.3 * ∅	10 ∅	150m∅	250 ∇ #	8.0p	8.0p	N-PE	Si	200J	TO18	A∅	
54#	2SA922	120MΔ	25n∇	12n∇	180n∇	30n∇	625m	2.0 ∅	100m∅	276 ∇ #	1.0	20p∇	P	Si	150J	R179e	A∅	
55#	KS6130	120M	25n	30n	100n	40n		5.0	20	15 Δ	20	200p	N-PE	Si	200J	TO3	A∅	
56#	2N919	200MΔ	25n∅			360m	1.0 ∅	10m∅	60 ∇	120	20	7.0p∇	N	Si	200J	TO18	A∅	
57#	2N920	200MΔ	25n∅			360m	1.0 ∅	10m∅	120 ∇	120	20	7.0p∇	N	Si	200J	TO18	A∅	
58#	2N4404	200MΔ	25n	15n	175n	35n	5.0 ∅	5.0 ∅	10m∅	40 # Δ		10p∅	P	Si	200S	TO39	A∅	
59#	2N4405	200MΔ	25n	15n	175n	35n	5.0 ∅	5.0 ∅	10m∅	100 # Δ		10p∅	P	Si	200S	TO39	A∅	
60#	D40D1	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	1.0		Nt	Si	150S	B15b	F	
61#	D40D2	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	1.0		Nt	Si	150S	B15b	F	
62#	D40D3	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	1.0		Nt	Si	150S	B15b	F	
63#	D40D4	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	1.0		Nt	Si	150S	B15b	F	
64#	D40D5	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	1.0		Nt	Si	150S	B15b	F	
65#	D40D7	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	2.0		Nt	Si	150S	B15b	F	
66#	U40D8	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	2.0		Nt	Si	150S	B15b	F	
67#	D40D10	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	2.0		Nt	Si	150S	B15b	F	
68#	D40D11	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	1.0 ∅	10 Δ	2.0		Nt	Si	150S	B15b	F	
69#	D40D13	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	100m	150 ∇	2.0		Nt	Si	150S	B15b	F	
70#	D40D14	200MΔ	25n∇		200n∇	50n∇	1.3 #	2.0 ∅	100m	360 ∇	2.0		Nt	Si	150S	B15b	F	
71#	2N2218A	250MΔ	25n	10n	225n	60n	3.0 ∅	10 ∅	10m∅	35 Δ	2.0 #	8.0p∇	N∅	Si	200J	TO5	A∅	
72#	2N2221A	250MΔ	25n	10n	225n	60n	1.2 ∅	10 ∅	1.0m∅	25 Δ	2.0 #	8.0p∇	N	Si	200J	TO18	A∅	
73#	2N2476	250MΔ	25n∅		25n	45n∅	600m	.40 ∅	150m∅	20 Δ	1.5	10p∇	N	Si	200J	TO5	A∅	
74#	2N2477	250MΔ	25n∅		25n	45n∅	600m	.40 ∅	150m∅	40 Δ	1.3	10p∇	N	Si	200J	TO5	A∅	
75#	2N2847	250MΔ	25n∅			40n∅	360m	10	150m∅	140 ∇ # Δ		8.0p∇	N	Si	200J	TO18	A∅	
76#	2N2848	250MΔ	25n∅			40n∅	800m	10	150m∅	140 ∇ # Δ		8.0p∇	N	Si	200J	TO5	A∅	
77#	2N3678	250MΔ	25n	15n	190n	60n	800m	10	150m∅	40 # Δ		8.0p∇	N	Si	200J	TO5	A∅	
78#	2N5581	250MΔ	25n	10n	225n	60n	2.0 ∅	10 ∅	10m∅	35 Δ		8.0p∅	N	Si	200S	TO46	A∅	
79#	2N5845A	250MΔ	25n	15n	38n	27n	1.5 ∅	1.0 ∅	500m∅	35 Δ #		9.0p∅	N	Si	150J	TO92	A	
80#	2SC980																	