

NPN SWITCHING

TABLE 3 — NPN SILICON PLANAR MEDIUM AND HIGH SPEED SWITCHING TRANSISTORS
The devices shown in this table are characterised for medium and high speed switching applications in Commercial, Industrial and Military equipments.

The devices are listed in order of decreasing Breakdown Voltage (V_{CE0}), decreasing Collector Current (I_C), Power Dissipation (P_{tot}), etc.

Type	V_{CE0} V	Max I_C mA	Max $V_{CE(sat)}$ at			h_{FE} at			f_T Min at		Switching times (Max.) at			Package	Comple- ment
			V	I_C mA	I_B mA	Min	Max	I_C mA	MHz	I_C mA	t_{on} ns	t_{off} ns	I_C mA		
2N3262	100	1500	0.6	1000	100	40	—	500	—	—	40	750	1000	TO-39	—
ZT86	80	500	0.2	50	5	38	85	10	200	10	50*	170*	20	TO-18	—
ZT88	80	500	0.2	50	5	75	170	10	200	10	50*	170*	20	TO-18	—
ZT89	70	500	0.2	50	5	75	250	10	200	10	50*	170*	20	TO-18	ZT189
2N2102	65	1000	0.5	150	15	40	120	150	60	50	(note 1)			TO-39	2N4036
BFX85	60	1000	0.35	150	15	70	—	150	50	50	55*	360*	150	TO-39	—
BFX84	60	1000	0.35	150	15	30	—	150	50	50	55*	360*	150	TO-39	—
BCY65E	60	100	0.35	10	0.25	120	460	2	125	10	150	800	10	TO-18	BCY77
2N1613	50	1000	1.5	150	40	120	150	60	50	(note 1)			TO-39	—	
2N2270	45	1000	0.9	150	15	50	200	150	60	50	(note 1)			TO-39	—
ZT83	45	500	0.2	50	5	38	85	10	200	10	50*	170*	20	TO-18	ZT183
ZT84	45	500	0.2	50	5	75	170	10	200	10	50*	170*	20	TO-18	ZT184
BCY59	45	200	0.35	10	0.25	120	630	2	125	10	150	800	10	TO-18	BCY79
2N2218A	40	800	0.3	150	15	40	120	150	250	20	35	285	150	TO-39	2N2904A
2N2219A	40	800	0.3	150	15	100	300	150	300	20	35	285	150	TO-39	2N2905A
2N2221A	40	800	0.3	150	15	40	120	150	250	20	35	285	150	TO-18	2N2906A
2N2222A	40	800	0.3	150	15	100	300	150	300	20	35	285	150	TO-18	2N2907A
BFY50	35	1000	0.2	150	15	30	—	150	60	50	55*	360*	150	TO-39	—
BFX86	35	1000	0.35	150	15	70	—	150	50	50	55*	360*	150	TO-39	—
ZT81	35	500	0.2	10	2	38	162	10	200	10	50*	170*	20	TO-18	ZT181
ZT82	35	500	0.2	10	2	75	250	10	200	10	50*	170*	20	TO-18	ZT182
2N3512	35	—	0.4	150	7.5	10	—	500	—	—	30	45	150	TO-39	—
BCY58	32	200	0.35	10	0.25	120	630	2	125	10	150	800	10	TO-18	BCY78

*Typical Note 1 $t_{tot} = 30ns$

Continued —

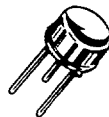
NPN SWITCHING *Continued*

Type	V_{CE0} V	Max I_C mA	Max $V_{CE(sat)}$ at			h_{FE} at		f_T Min at		Switching times (Max.) at			Package	Comple- ment	
			V	I_C mA	I_B mA	Min	Max	I_C mA	MHz	I_C mA	t_{on} ns	t_{off} ns			I_C mA
BFY51	30	1000	0.35	150	15	40	—	150	50	50	55*	360*	1500	TO-39	—
2N2218	30	800	0.4	150	15	40	120	150	250	20	25*	175*	150	TO-39	2N2904
2N2219	30	800	0.4	150	15	100	300	150	250	20	25*	200*	150	TO-39	2N2905
2N2221	30	800	0.4	150	15	40	120	150	250	20	25*	175*	150	TO-18	2N2906
2N2222	30	800	0.4	150	15	100	300	150	250	20	25*	200*	150	TO-18	2N2907
ZT80	25	500	0.2	10	2	38	162	10	200	10	50*	170*	20	TO-18	ZT180
ZT87	25	500	0.2	10	2	75	250	10	200	10	50*	170*	20	TO-18	ZT187
BFY52	20	1000	0.35	150	15	60	—	150	50	50	55*	360*	150	TO-39	—
2N706A	20	—	0.6	10	1	20	—	10	200	10	40	75	10	TO-18	—
2N2369A	15	500	0.2	10	1	—	120	10	—	—	9	13	10	TO-18	—
2N2368	15	500	0.24	10	1	20	60	10	—	—	12	15	10	TO-18	—
2N2369	15	500	0.24	10	1	40	120	10	—	—	12	18	10	TO-18	—
BSY95A	15	200	0.35	10	0.2	50	200	10	200	10	(note 3)		TO-18	—	
2N708	15	—	0.4	10	1	30	120	10	300	10	(note 2)		TO-18	—	
2N2938	13	500	0.4	50	1.6	30	105*	50	500	10	30	30	50	TO-18	—

*Typical Note 2 $t_{stg} = 25ns$ Note 3 $t_{stg} = 50ns$



TO-18



TO-39