

2N5344
 2N5345

HIGH VOLTAGE POWER PNP SILICON TRANSISTORS
 . . . designed for high-voltage switching and amplifier applications.

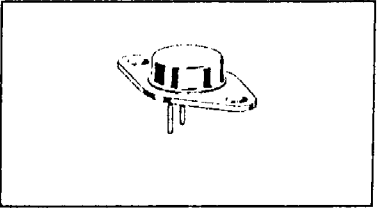
- High Voltage Ratings – $V_{CEO} = 250$ and 300 Vdc
- Fast Switching Times – Typically Less Than 550 ns
 Total @ $V_{CC} = 100$ Vdc
- High Current-Gain-Bandwidth Product –
 $f_T = 60$ MHz (Min) @ $I_C = 100$ mAdc
- Packaged in the Compact, High-Efficiency TO-66 Case

**1 AMPERE
 POWER TRANSISTORS
 PNP SILICON**

250-300 VOLTS
 40 WATTS

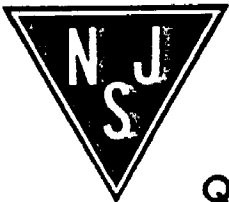
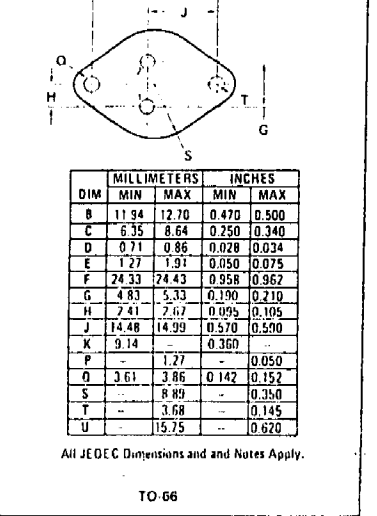
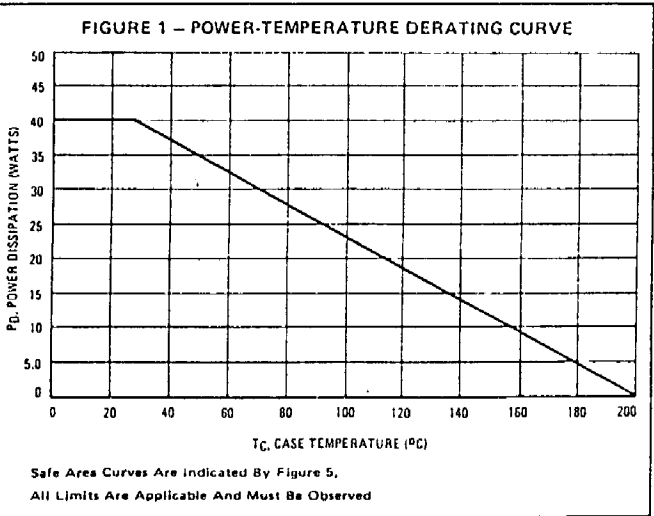
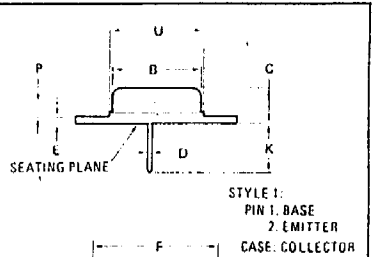
MAXIMUM RATINGS

Rating	Symbol	2N5344	2N5345	Unit
Collector-Emitter Voltage	V_{CEO}	250	300	Vdc
Collector-Base Voltage	V_{CB}	250	300	Vdc
Emitter-Base Voltage	V_{EB}	5.0		Vdc
Collector Current – Continuous	I_C	1.0		Adc
Base Current – Continuous	I_B	0.5		Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	40	228	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	4.38	$^\circ\text{C}/\text{W}$



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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Fig. No.	Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage (1) ($I_C = 10 \text{ mA dc}$, $I_B = 0$)	5	$V_{CE(sus)}$	250 300	—	Vdc
Collector Cutoff Current ($V_{CE} = 225 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$)	10, 12	I_{CEX}	—	100	$\mu\text{A dc}$
($V_{CE} = 270 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$)	2N5345		—	100	
($V_{CE} = 275 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$, $T_C = 150^\circ\text{C}$)	2N5344		—	1.0	mA dc
($V_{CE} = 270 \text{ Vdc}$, $V_{BE(off)} = 1.5 \text{ Vdc}$, $T_C = 150^\circ\text{C}$)	2N5345		—	1.0	
Collector Cutoff Current ($V_{CB} = \text{Rated } V_{CB}$, $I_E = 0$)	—	I_{CBO}	—	0.1	mA dc
Emitter Cutoff Current ($V_{BE} = 5.0 \text{ Vdc}$, $I_C = 0$)	—	I_{EBO}	—	0.1	mA dc
ON CHARACTERISTICS					
DC Current Gain (1) ($I_C = 500 \text{ mA dc}$, $V_{CE} = 5.0 \text{ Vdc}$) ($I_C = 1.0 \text{ A dc}$, $V_{CE} = 5.0 \text{ Vdc}$)	8	h_{FE}	25 7.0	150 —	—
Collector-Emitter Saturation Voltage ($I_C = 1.0 \text{ A dc}$, $I_B = 0.2 \text{ A dc}$)	9, 11, 13	$V_{CE(sat)}$	—	3.0	Vdc
Base-Emitter Saturation Voltage ($I_C = 1.0 \text{ A dc}$, $I_B = 0.2 \text{ A dc}$) ^a	11, 13	$V_{BE(sat)}$	—	1.5	Vdc
DYNAMIC CHARACTERISTICS					
Current-Gain—Bandwidth Product ($I_C = 100 \text{ mA dc}$, $V_{CE} = 20 \text{ Vdc}$, $f = 10 \text{ MHz}$)	—	f_T	60	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_C = 0$)	7	C_{ob}	—	200	pF
SWITCHING CHARACTERISTICS					
Turn-On ($V_{CC} = 100 \text{ Vdc}$, $I_C = 500 \text{ mA dc}$, $I_{B1} = I_{B2} = 50 \text{ mA dc}$)	2, 3	t_{on}	—	200	ns
Turn-Off ($V_{CC} = 100 \text{ Vdc}$, $I_C = 500 \text{ mA dc}$, $I_{B1} = I_{B2} = 50 \text{ mA dc}$)	2, 6	t_{off}	—	700	ns

(1) Pulse Test. Pulse Width = 300 μs . Duty Cycle = 2.0%.

FIGURE 2 — SWITCHING TIME TEST CIRCUIT

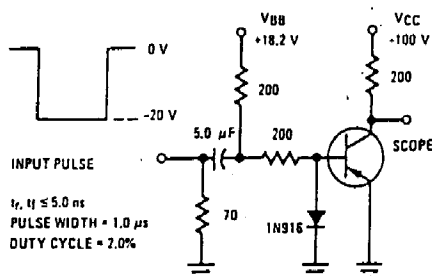


FIGURE 3 — TURN-ON TIME

