

2N6182 thru 2N6185 (SILICON)
2N6186 thru 2N6189

MEDIUM-POWER PNP SILICON TRANSISTORS
 . . . designed for switching and wide-band amplifier applications.

- Low Collector-Emitter Saturation Voltage –
 $V_{CE(sat)} = 1.2 \text{ Vdc (Max) @ } I_C = 10 \text{ Adc}$
- DC Current Gain Specified to 5 Amperes
- Excellent Safe Operating Area
- Packaged in the Compact, High Dissipation TO-59 Case
- Isolated Collector Configuration
- 2N6182 thru 2N6185 Complement to NPN 2N5477 thru 2N5480
 2N6186 thru 2N6189 Complement to NPN 2N5346 thru 2N5349

**10 AMPERE
 POWER TRANSISTORS**
PNP SILICON
80-100 VOLTS
60 WATTS

***MAXIMUM RATINGS**

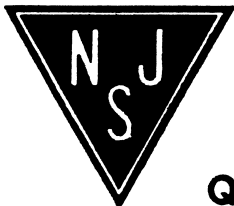
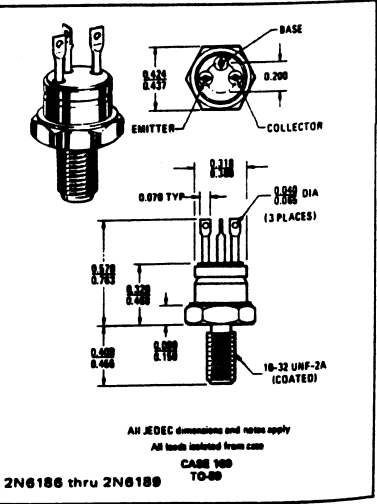
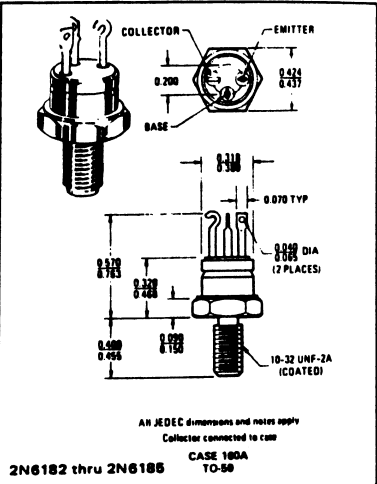
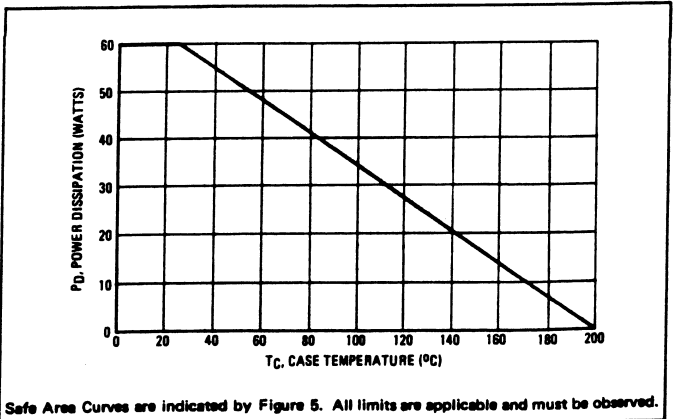
Rating	Symbol	2N6182 2N6183 2N6186 2N6187	2N6184 2N6185 2N6188 2N6189	Unit
Collector-Emitter Voltage	V_{CEO}	80	100	Vdc
Collector-Base Voltage	V_{CB}	80	100	Vdc
Emitter-Base Voltage	V_{EB}	6.0		Vdc
Collector Current – Continuous	I_C	10		A dc
Base Current	I_B	2.0		A dc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	60		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}	2.91	$^\circ\text{C/W}$

*Indicates JEDEC Registered Data

FIGURE 1 – POWER-TEMPERATURE DERATING



2N6182 thru 2N6185, 2N6186 thru 2N6189 (continued)

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

Characteristic	Fig. No.	Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage (1) ($I_C = 50 \text{ mAdc}, I_B = 0$)	—	$V_{CE(sus)}$	80 100	—	Vdc
Collector Cutoff Current ($V_{CE} = 75 \text{ Vdc}, I_B = 0$) ($V_{CE} = 90 \text{ Vdc}, I_B = 0$)	—	I_{CEO}	—	100 100	μAdc
Collector Cutoff Current ($V_{CE} = 75 \text{ Vdc}, V_{BE(off)} = 1.5 \text{ Vdc}$) ($V_{CE} = 90 \text{ Vdc}, V_{BE(off)} = 1.5 \text{ Vdc}$) ($V_{CE} = 75 \text{ Vdc}, V_{BE(off)} = 1.5 \text{ Vdc}, T_C = 150^\circ\text{C}$) ($V_{CE} = 90 \text{ Vdc}, V_{BE(off)} = 1.5 \text{ Vdc}, T_C = 150^\circ\text{C}$)	12	I_{CEX}	—	10 10 1.0 1.0	μAdc mAdc
Collector Cutoff Current ($V_{CB} = \text{Rated } V_{CB}, I_E = 0$)	—	I_{CBO}	—	10	μAdc
Emitter Cutoff Current ($V_{BE} = 6.0 \text{ Vdc}, I_C = 0$)	—	I_{EBO}	—	100	μAdc

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 0.5 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$) ($I_C = 2.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$) ($I_C = 5.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$)	8	h_{FE}	30 60 30 60 20 40	— — 120 240 — —	—
Collector-Emitter Saturation Voltage ($I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$) ($I_C = 10 \text{ Adc}, I_B = 1.0 \text{ Adc}$)	9, 10, 11	$V_{CE(sat)}$	—	0.7 1.2	Vdc
Base-Emitter Saturation Voltage ($I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$) ($I_C = 10 \text{ Adc}, I_B = 1.0 \text{ Adc}$)	10, 11	$V_{BE(sat)}$	—	1.2 2.0	Vdc

DYNAMIC CHARACTERISTICS

Current-Gain-Bandwidth Product (2) ($I_C = 500 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f_{Test} = 10 \text{ MHz}$)	—	f_T	30	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 100 \text{ kHz}$)	7	C_{ob}	—	300	pF
Input Capacitance ($V_{BE} = 2.0 \text{ Vdc}, I_C = 0, f = 100 \text{ kHz}$)	7	C_{ib}	—	1250	pF

SWITCHING CHARACTERISTICS

Delay Time	($V_{CC} = 40 \text{ Vdc}, V_{BE(off)} = 3.0 \text{ Vdc}, I_C = 2.0 \text{ Adc}, I_{B1} = 200 \text{ mAdc}$)	2, 3	t_d	—	100	ns
Rise Time			t_r	—	100	ns
Storage Time	($V_{CC} = 40 \text{ Vdc}, I_C = 2.0 \text{ Adc}, I_{B1} = I_{C2} = 200 \text{ mAdc}$)	2, 6	t_s	—	2.0	μs
Fall Time			t_f	—	200	ns

* Indicates JEDEC Registered Data
 (1) Pulse Test: Pulse Width $\approx 300 \mu\text{s}$, Duty Cycle $\approx 2.0\%$.
 (2) $f_T = I_{hfe} \cdot f_{Test}$

FIGURE 2 - SWITCHING TIME TEST CIRCUIT

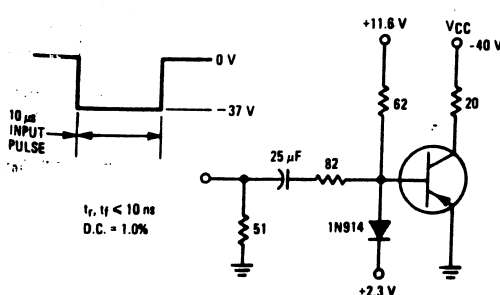


FIGURE 3 - TURN-ON TIME

