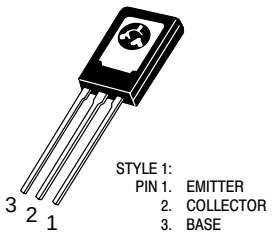
BD180

Plastic Medium Power Silicon PNP Transistor

. . . designed for use in 5.0 to 10 Watt audio amplifiers and drivers utilizing complementary or quasi complementary circuits.

- DC Current Gain — h_{FE} = 40 (Min) @ I_C = 0.15 Adc
- BD180 is complementary with BD179

3.0 AMPERES
POWER TRANSISTOR
PNP SILICON
80 VOLTS
30 WATTS



CASE 77–09
TO–225AA TYPE

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	80	Vdc
Collector–Base Voltage	V_{CBO}	80	Vdc
Emitter–Base Voltage	V_{EBO}	5.0	Vdc
Collector Current	I_C	3.0	Adc
Base Current	I_B	1.0	Adc
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	30 240	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	4.16	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Collector–Emitter Sustaining Voltage* (I_C = 0.1 Adc, I_B = 0)	$V_{(BR)CEO}$	80	—	Vdc
Collector Cutoff Current (V_{CB} = 45 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0) BD180	I_{CBO}	 — —	 — 1.0	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}	—	1.0	mAdc
DC Current Gain (I_C = 0.15 A, V_{CE} = 2.0 V) (I_C = 1.0 A, V_{CE} = 2.0 V)	h_{FE}	 40 15	 250 —	—
Collector–Emitter Saturation Voltage* (I_C = 1.0 Adc, I_B = 0.1 Adc)	$V_{CE(sat)}$	—	0.8	Vdc
Base–Emitter On Voltage* (I_C = 1.0 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$	—	1.3	Vdc
Current–Gain — Bandwidth Product (I_C = 250 mAdc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T	3.0	—	MHz

*Pulse Test: Pulse Width ≦ 300 μs, Duty Cycle ≦ 2.0%.

April, 2002 – Rev. 10
Publication Order Number:
BD180/D

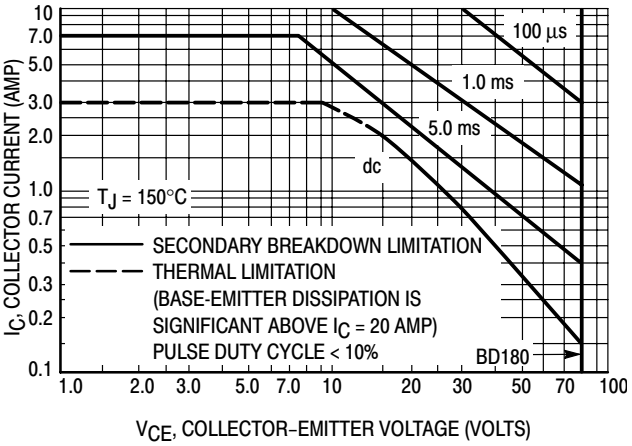


Figure 1. Active Region Safe Operating Area

The Safe Operating Area Curves indicate $I_C - V_{CE}$ limits below which the device will not enter secondary breakdown. Collector load lines for specific circuits must fall within the applicable Safe Area to avoid causing a catastrophic failure. To insure operation below the maximum T_J, power–temperature derating must be observed for both steady state and pulse power conditions.

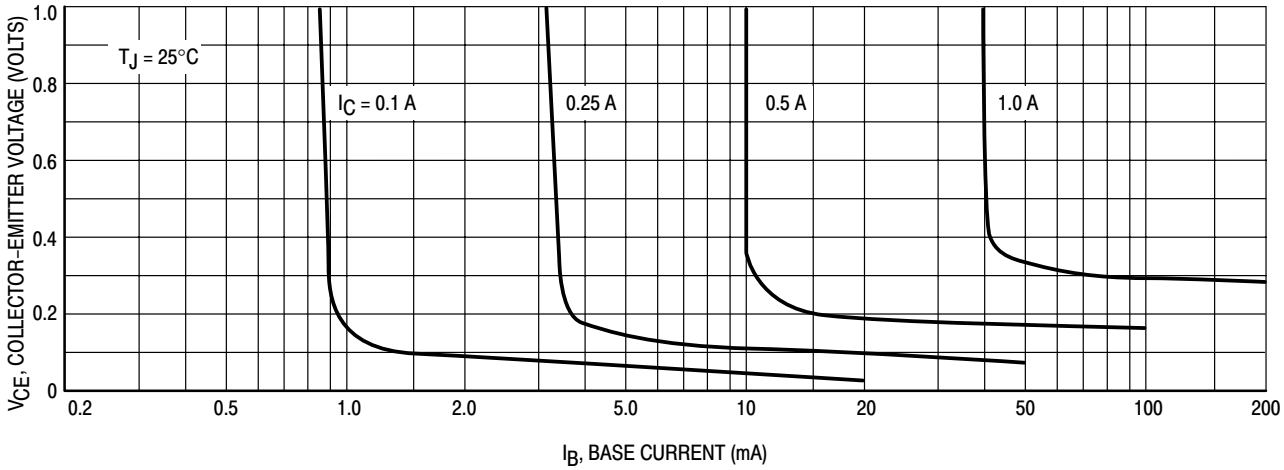


Figure 2. Collector Saturation Region

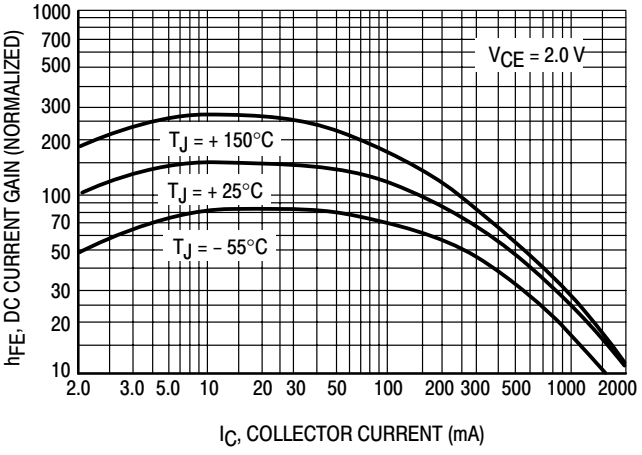


Figure 3. Current Gain

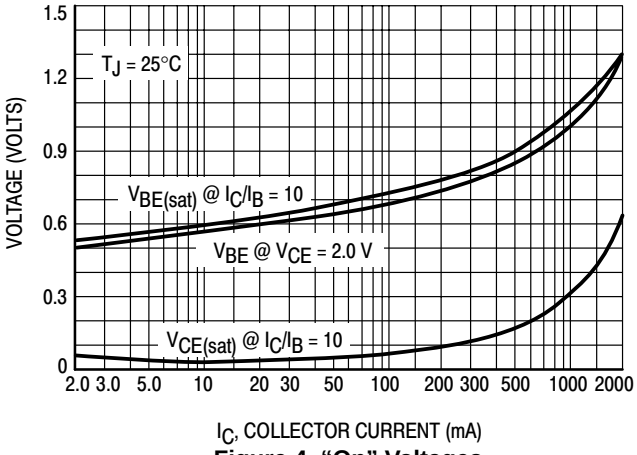


Figure 4. “On” Voltages

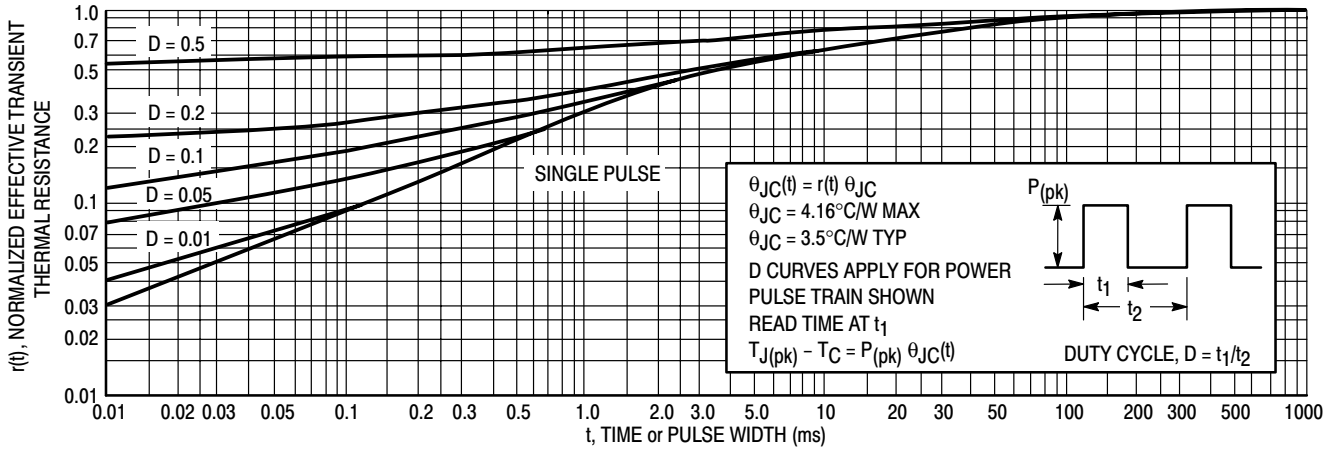
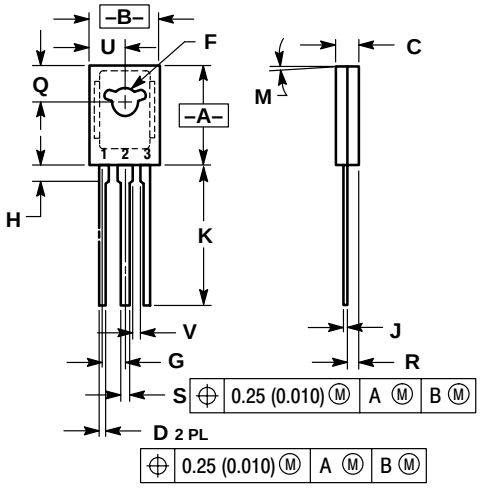


Figure 5. Thermal Response

BD180

PACKAGE DIMENSIONS

TO–225AA
CASE 77–09
ISSUE W



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.425	0.435	10.80	11.04
B	0.295	0.305	7.50	7.74
C	0.095	0.105	2.42	2.66
D	0.020	0.026	0.51	0.66
F	0.115	0.130	2.93	3.30
G	0.094 BSC		2.39 BSC	
H	0.050	0.095	1.27	2.41
J	0.015	0.025	0.39	0.63
K	0.575	0.655	14.61	16.63
M	5° TYP		5° TYP	
Q	0.148	0.158	3.76	4.01
R	0.045	0.065	1.15	1.65
S	0.025	0.035	0.64	0.88
U	0.145	0.155	3.69	3.93
V	0.040	---	1.02	---

STYLE 1:
PIN 1. EMITTER
2. COLLECTOR
3. BASE

PUBLICATION ORDERING INFORMATION

Literature Fulfillment:
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