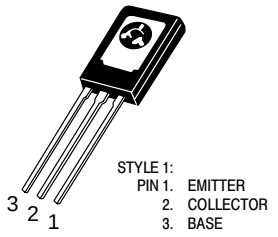
Plastic Medium Power NPN Silicon Transistor

BD159

. . . designed for power output stages for television, radio, phonograph and other consumer product applications.

- Suitable for Transformerless, Line–Operated Equipment
- Thermopad™ Construction Provides High Power Dissipation Rating for High Reliability

0.5 AMPERE
POWER TRANSISTOR
NPN SILICON
350 VOLTS
20 WATTS



CASE 77–09
TO–225AA TYPE

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Collector–Emitter Voltage	V_{CEO}	350	Vdc
Collector–Base Voltage	V_{CB}	375	Vdc
Emitter–Base Voltage	V_{EB}	5.0	Vdc
Collector Current — Continuous Peak	I_C	0.5 1.0	Adc
Base Current	I_B	0.25	Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	20 0.16	Watts W/°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}	6.25	°C/W

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Sustaining Voltage (I_C = 1.0 mAdc, I_B = 0)	BV_{CEO}	350	—	Vdc
Collector Cutoff Current (At rated voltage)	I_{CBO}	—	100	μAdc
Emitter Cutoff Current (V_{EB} = 5.0 Vdc, I_C = 0)	I_{EBO}	—	100	μAdc
ON CHARACTERISTICS				
DC Current Gain (I_C = 50 mAdc, V_{CE} = 10 Vdc)	h_{FE}	30	240	—

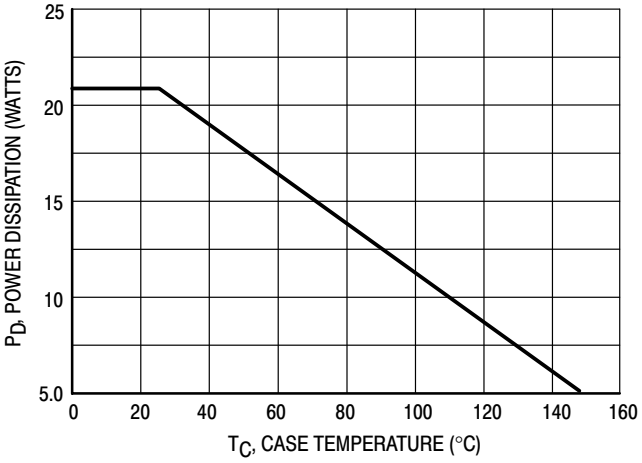


Figure 1. Power–Temperature Derating Curve

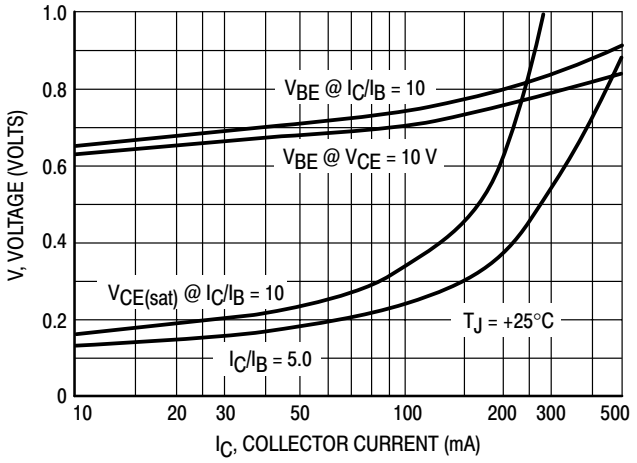


Figure 2. "On" Voltages

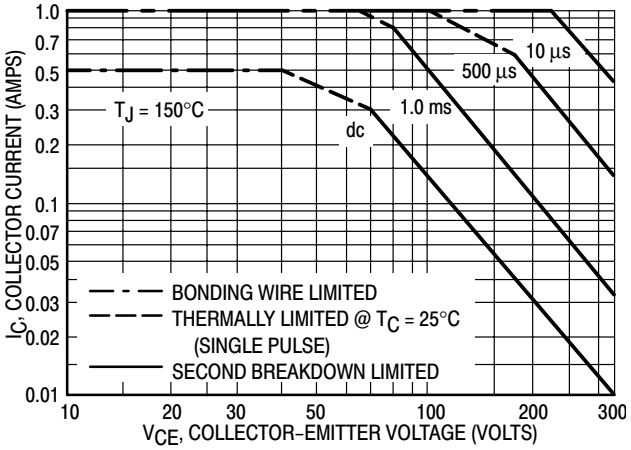


Figure 3. DC Safe Operating Area

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.

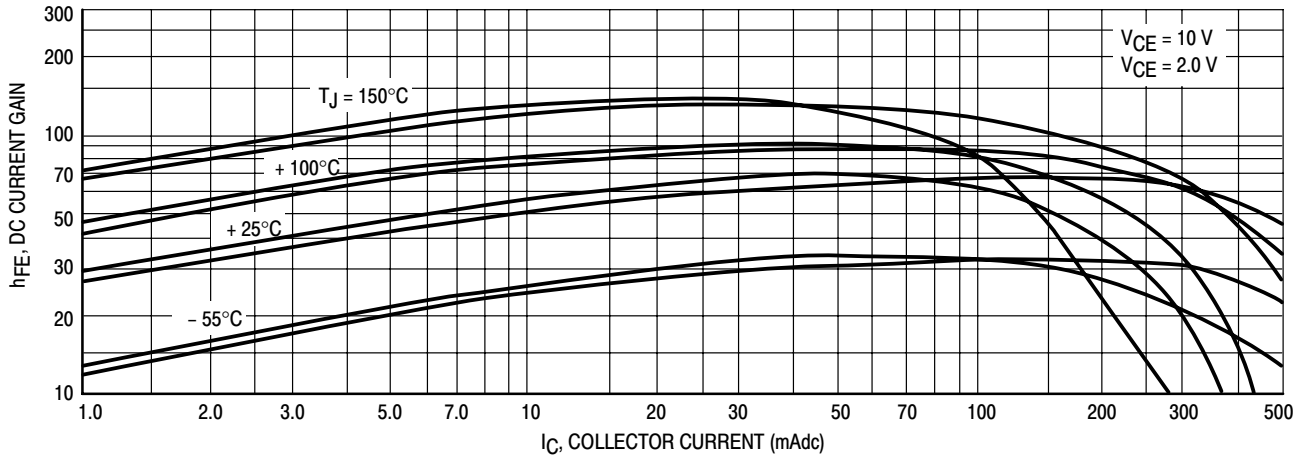
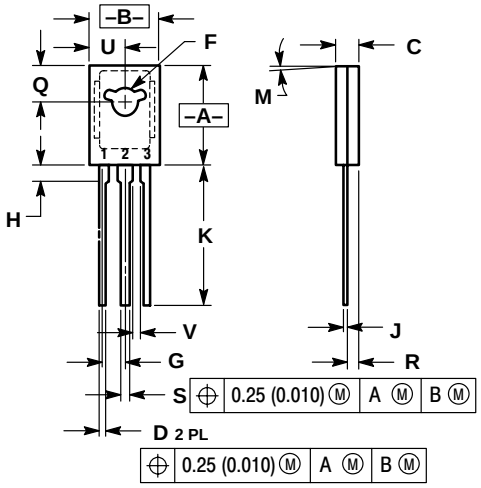


Figure 4. Current Gain

PACKAGE DIMENSIONS

CASE 77−09
TO−225AA TYPE
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

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