BD179G

Plastic Medium-Power Silicon NPN Transistor

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

Features

- High DC Current Gain
- BD179 is complementary with BD180
- These Devices are Pb−Free and are RoHS Compliant*

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	 W mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	4.16	°C/W

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*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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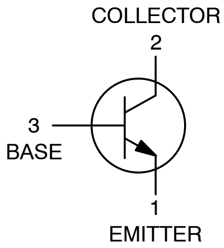
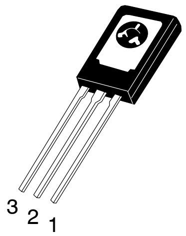
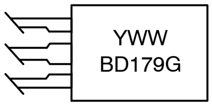
3.0 AMPERES POWER TRANSISTORS NPN SILICON 80 VOLTS, 30 WATTS





TO−225
CASE 77
STYLE 1

MARKING DIAGRAM



Y = Year
WW = Work Week
BD179 = Device Code
G = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping
BD179G	TO−225 (Pb−Free)	500 Units/Box

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

Characteristic	Symbol	Min	Max	Unit
Collector−Emitter Sustaining Voltage (Note 1) (I_C = 0.1 Adc, I_B = 0)	$V_{(BR)CEO}$	80	–	Vdc
Collector Cutoff Current (V_{CB} = 80 Vdc, I_E = 0)	I_{CBO}	–	0.1	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}	 63 15	 160 –	–
Collector−Emitter Saturation Voltage (Note 1) (I_C = 1.0 Adc, I_B = 0.1 Adc)	$V_{CE(sat)}$	–	0.8	Vdc
Base−Emitter On Voltage (Note 1) (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

1. Pulse Test: Pulse Width ≤ 300 As, Duty Cycle ≤ 2.0%.

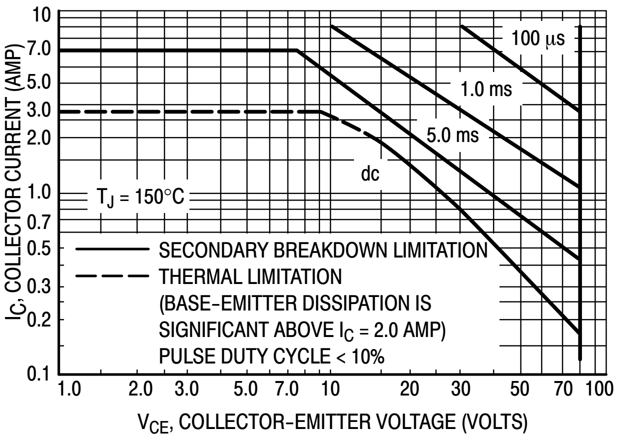


Figure 1. Active Region Safe Operating Area

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.

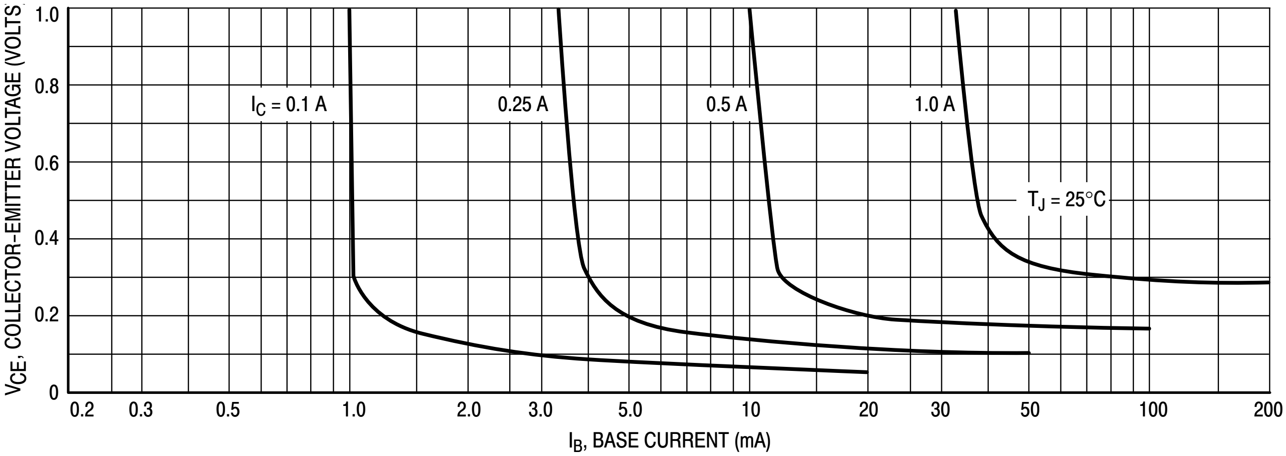


Figure 2. Collector Saturation Region

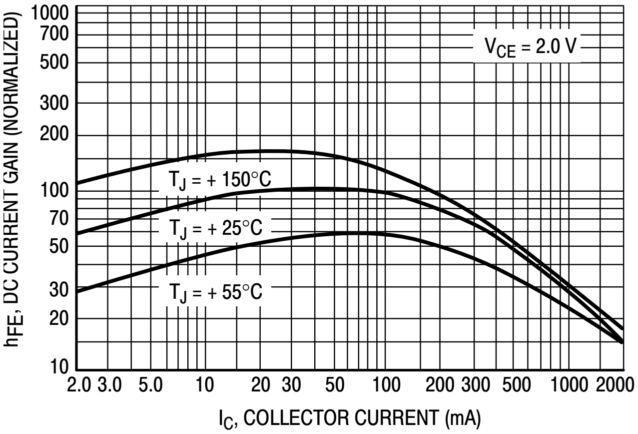


Figure 3. Current Gain

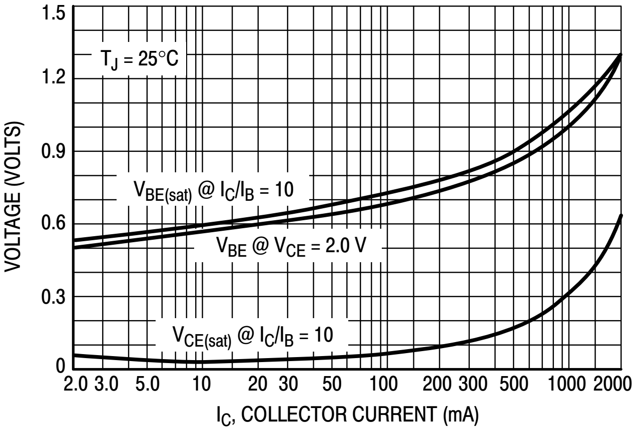


Figure 4. "On" Voltages

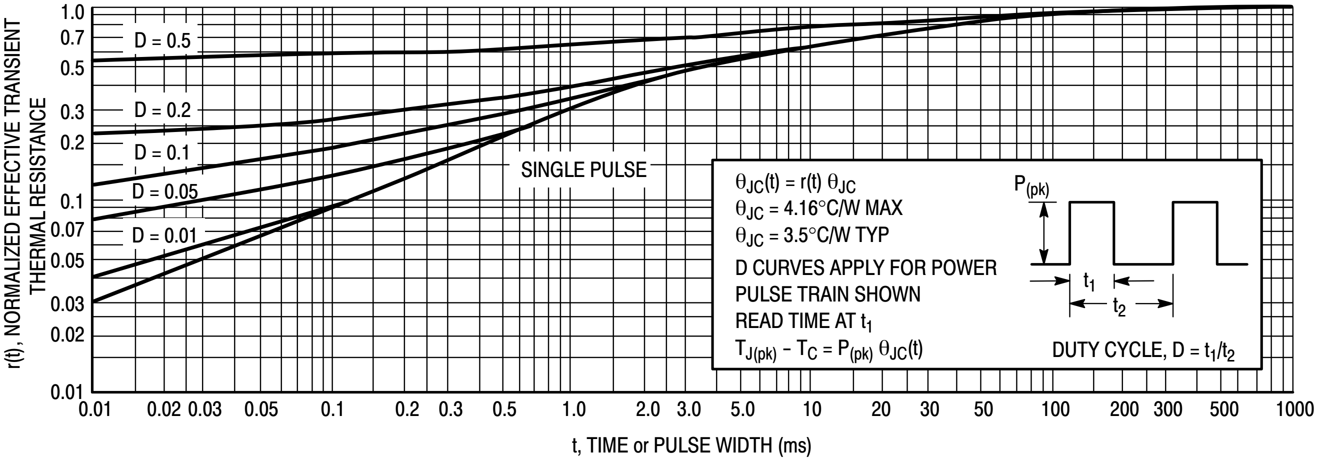
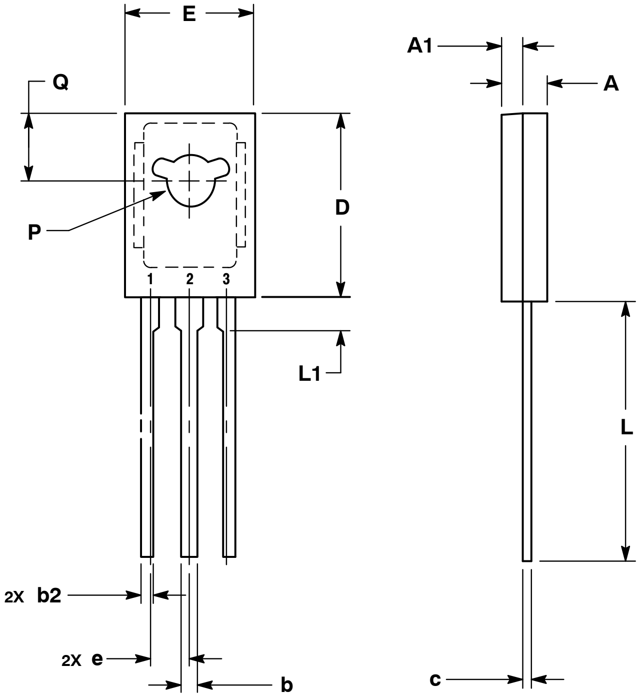


Figure 5. Thermal Response

PACKAGE DIMENSIONS

TO−225
CASE 77−09
ISSUE AB



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. NUMBER AND SHAPE OF LUGS OPTIONAL.

	MILLIMETERS	
DIM	MIN	MAX
A	2.40	3.00
A1	1.00	1.50
b	0.60	0.90
b2	0.51	0.88
c	0.39	0.63
D	10.60	11.10
E	7.40	7.80
e	2.04	2.54
L	14.50	16.63
L1	1.27	2.54
P	2.90	3.30
Q	3.80	4.20

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

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Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.