NPN Epitaxial Silicon Transistor

BC63916

Bent Lead

TO−92−3
CASE 135AR

Features

- Switching and Amplifier Applications
- These are Pb−Free Devices

ABSOLUTE MAXIMUM RATINGS (Note 1)

(Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Value	Unit
V_{CER}	Collector−Emitter Voltage at R_{BE} = 1 kΩ	100	V
V_{CES}	Collector−Emitter Voltage	100	V
V_{CEO}	Collector−Emitter Voltage	80	V
V_{EBO}	Emitter−Base Voltage	5	V
I_C	Collector Current	1	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	−55 to 150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

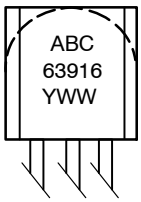
THERMAL CHARACTERISTICS (Note 2)

(Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	830	mW
	Derate Above T_A = 25°C	6.6	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient	150	°C/W

2. PCB size: FR−4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

MARKING DIAGRAM



A = Assembly Location
BC63916 = Specific Device Code
Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
BC63916−D74Z	TO−92−3 (Pb−Free)	2000 / FNFLD
BC63916−D2TZ	TO−92−3 (Pb−Free)	2000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS (Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{CBO}	Collector−Base Breakdown Voltage	I_C = 100 μA, I_E = 0	100	–	–	V
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = 10 mA, I_B = 0	80	–	–	V
BV_{EBO}	Emitter−Base Breakdown Voltage	I_E = 10 μA, I_C = 0	5.0	–	–	V
I_{CBO}	Collector Cut−Off Current	V_{CB} = 30 V, I_E = 0	–	–	100	nA
I_{EBO}	Emitter Cut−Off Current	V_{EB} = 5 V, I_C = 0	–	–	10	μA
$h_{FE}1$	DC Current Gain	V_{CE} = 2 V, I_C = 5 mA	25	–	–	
$h_{FE}2$		V_{CE} = 2 V, I_C = 150 mA	100	–	250	
$h_{FE}3$		V_{CE} = 2 V, I_C = 500 mA	25	–	–	
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = 500 mA, I_B = 50 mA	–	–	0.5	V
V_{BE}(on)	Base−Emitter On Voltage	V_{CE} = 2 V, I_C = 500 mA	–	–	1	V
f_T	Current Gain Bandwidth Product	V_{CE} = 5 V, I_C = 10 mA, f = 50 MHz	–	100	–	MHz

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL PERFORMANCE CHARACTERISTICS

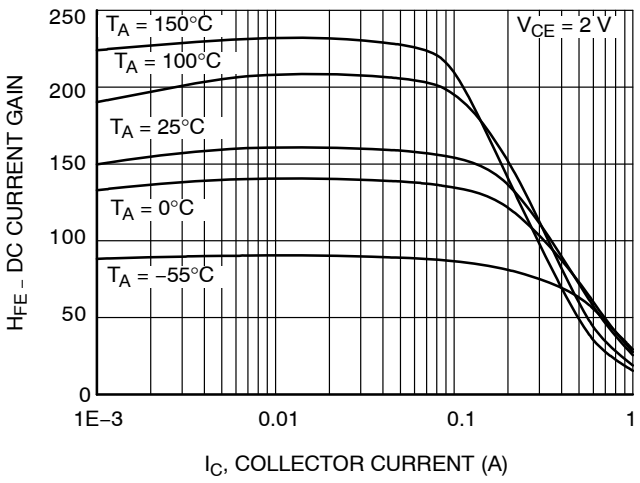


Figure 1. DC Current Gain

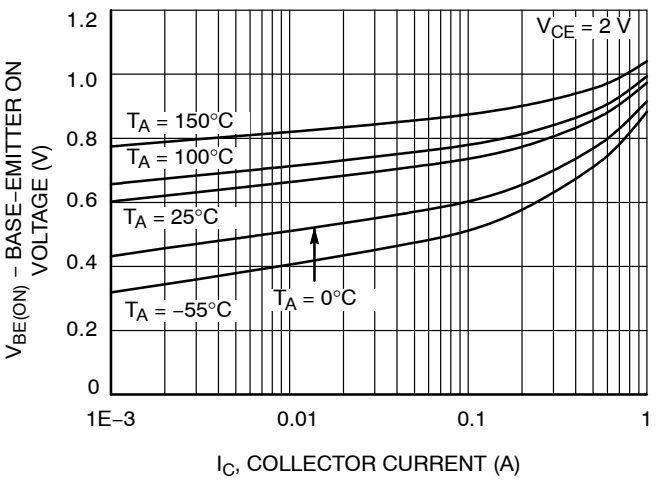


Figure 2. Base−Emitter On Voltage

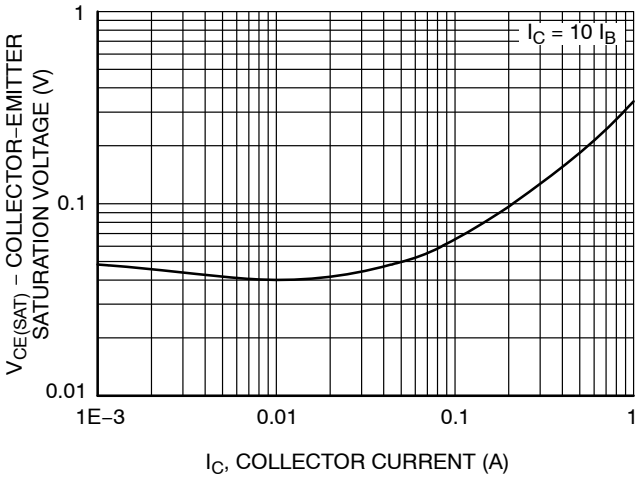


Figure 3. Collector−Emitter Saturation Voltage

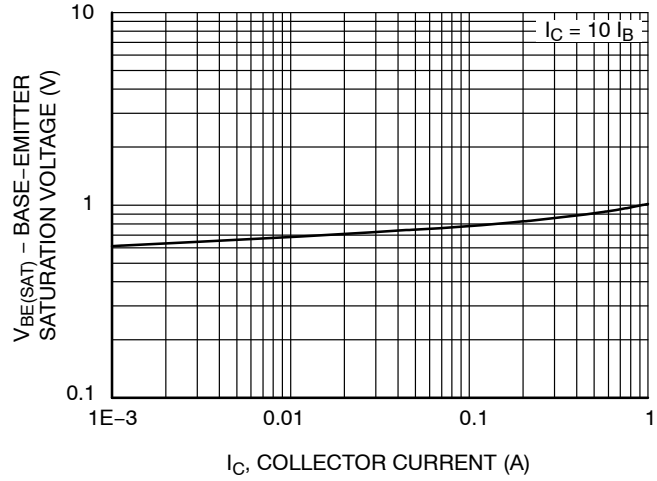


Figure 4. Base−Emitter Saturation Voltage

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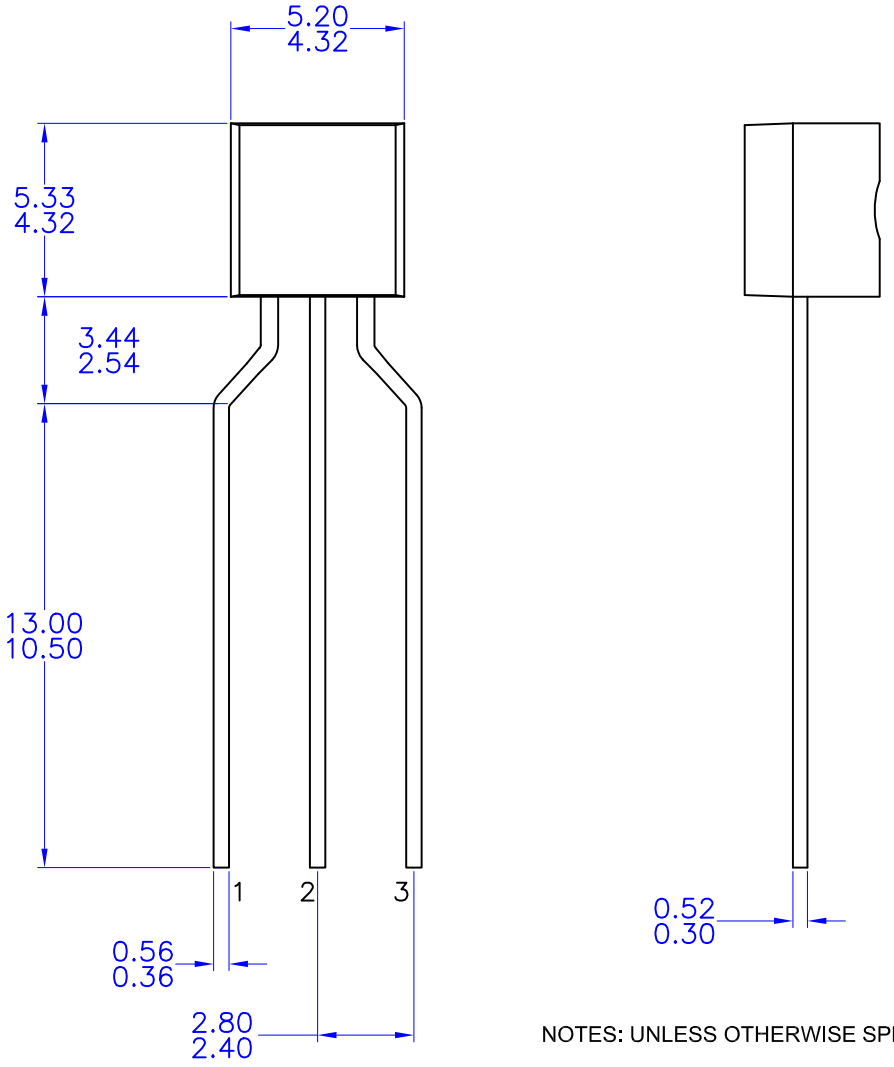

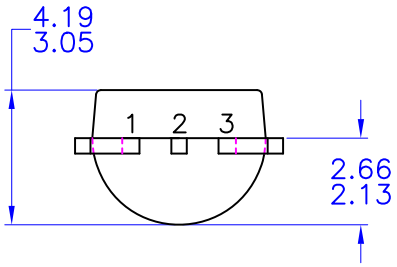

NOTES: UNLESS OTHERWISE SPECIFIED

A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M-1994

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