

NPN Epitaxial Silicon Transistor

BC63916

Features

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

ABSOLUTE MAXIMUM RATINGS (Note 1)

(Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Value	Unit
V_{CER}	Collector-Emitter Voltage at $R_{BE} = 1\text{ k}\Omega$	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	$^\circ\text{C}$

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 $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$.

THERMAL CHARACTERISTICS (Note 2)

(Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.)

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

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.

ELECTRICAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 100\text{ }\mu\text{A}, I_E = 0$	100	—	—	V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10\text{ mA}, I_B = 0$	80	—	—	V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 10\text{ }\mu\text{A}, I_C = 0$	5.0	—	—	V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 30\text{ V}, I_E = 0$	—	—	100	nA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	10	μA
h_{FE1}	DC Current Gain	$V_{CE} = 2\text{ V}, I_C = 5\text{ mA}$	25	—	—	
h_{FE2}		$V_{CE} = 2\text{ V}, I_C = 150\text{ mA}$	100	—	250	
h_{FE3}		$V_{CE} = 2\text{ V}, I_C = 500\text{ mA}$	25	—	—	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 500\text{ mA}, I_B = 50\text{ mA}$	—	—	0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 2\text{ V}, I_C = 500\text{ mA}$	—	—	1	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}, f = 50\text{ MHz}$	—	100	—	MHz

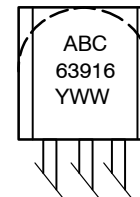
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



Bent Lead

TO-92-3
CASE 135AR

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](#).

TYPICAL PERFORMANCE CHARACTERISTICS

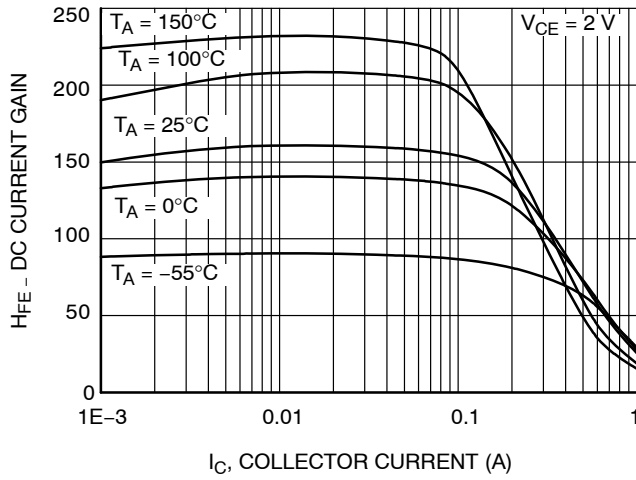


Figure 1. DC Current Gain

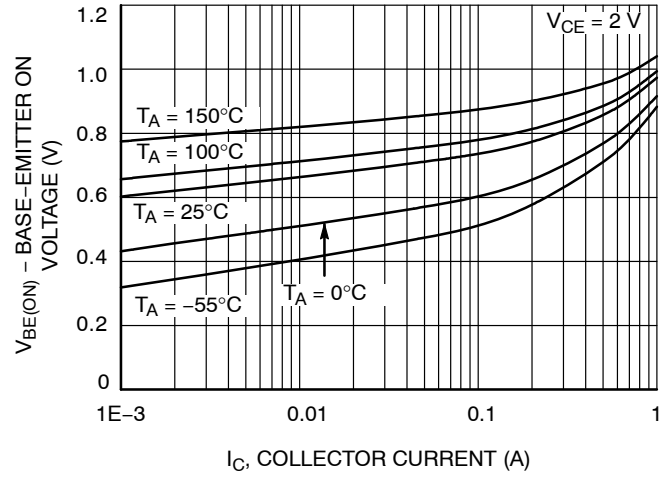


Figure 2. Base-Emitter On Voltage

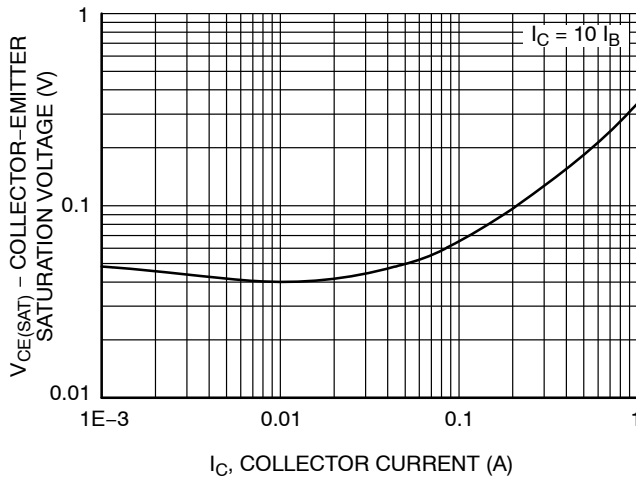


Figure 3. Collector-Emitter Saturation Voltage

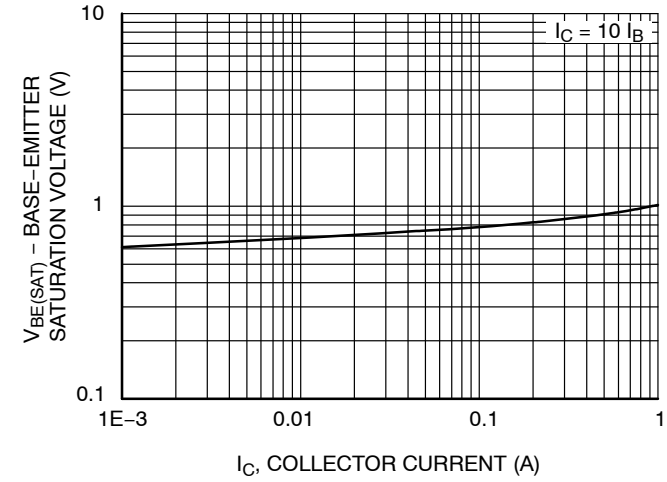
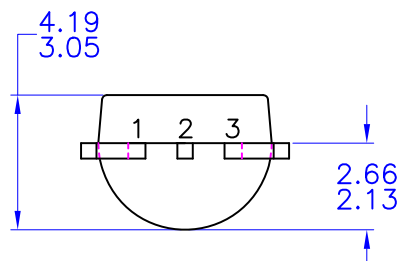
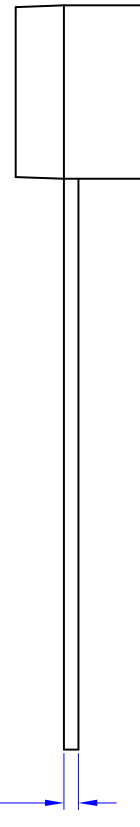
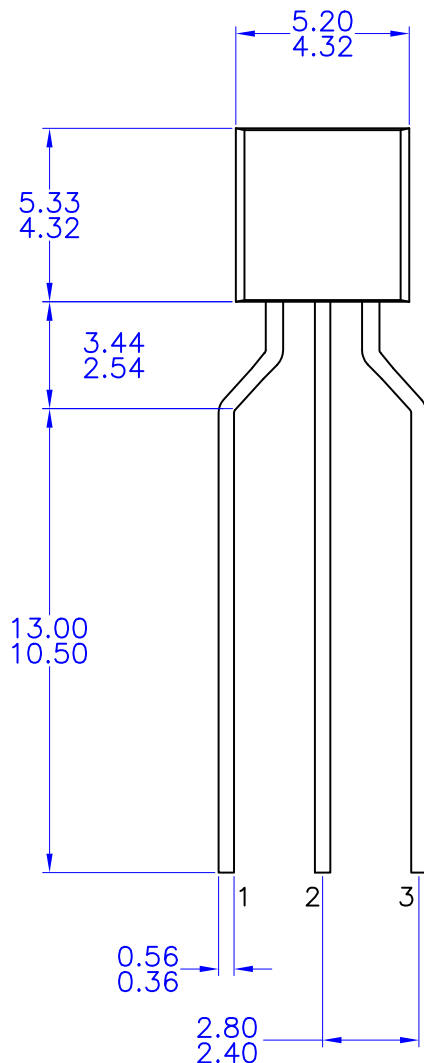


Figure 4. Base-Emitter Saturation Voltage

TO-92 3 4.83x4.76 LEADFORMED
CASE 135AR
ISSUE O

DATE 30 SEP 2016



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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