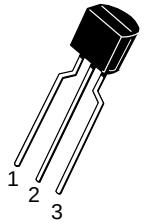
PNP Epitaxial Silicon Transistor

BC638



TO−92−3
CASE 135AR
Bent Lead

1. Emitter
2. Collector
3. Base

Features

- Switching and Amplifier Applications
- Complement to BC637
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

ABSOLUTE MAXIMUM RATINGS

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

Parameter	Symbol	Value	Unit
Collector−Emitter Voltage at R_{BE} = 1 kΩ	V_{CER}	−60	V
Collector−Emitter Voltage	V_{CES}	−60	V
Collector−Emitter Voltage	V_{CEO}	−60	V
Emitter−Base Voltage	V_{EBO}	−5	V
Collector Current	I_C	−1	A
Peak Collector Current	I_{CP}	−1.5	A
Base Current	I_B	−100	mA
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	−65 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.

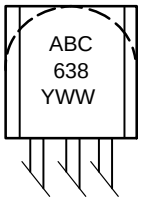
THERMAL CHARACTERISTICS (Note 1)

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

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	1	W
Dissipation Derate Above 25°C	P_D	8	mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	125	°C/W

1. 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 Code
BC638 = Device Code
YWW = Date Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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ELECTRICAL CHARACTERISTICS

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = −10 mA, I_B = 0	−60			V
I_{CBO}	Collector Cut−Off Current	V_{CB} = −30 V, I_E = 0			−0.1	μA
I_{EBO}	Emitter Cut−Off Current	V_{EB} = −5 V, I_C = 0			−10	μA
h_{FE1}	DC Current Gain	V_{CE} = −2 V, I_C = −5 mA	25			
h_{FE2}		V_{CE} = −2 V, I_C = −150 mA	40		160	
h_{FE3}		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.

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping
BC638TA	BC638	TO−92−3, case 135AR (Pb−Free)	2,000 Units / Fan Fold

TYPICAL PERFORMANCE CHARACTERISTICS

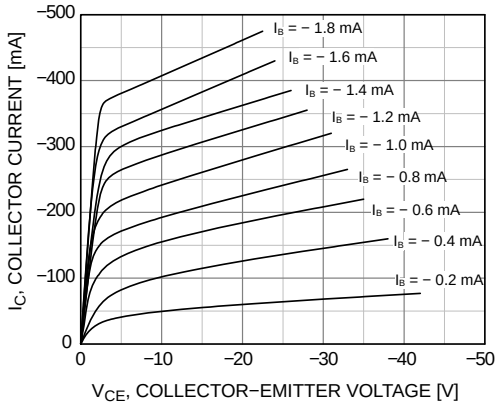


Figure 1. Static Characteristic

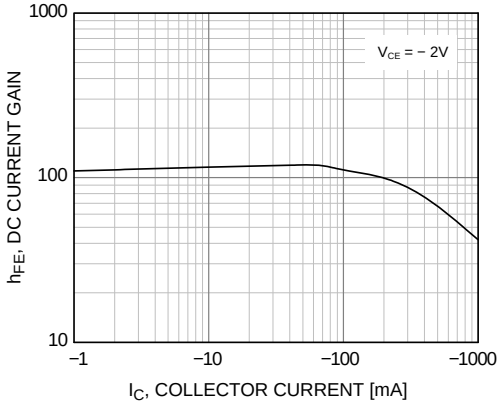


Figure 2. DC Current Gain

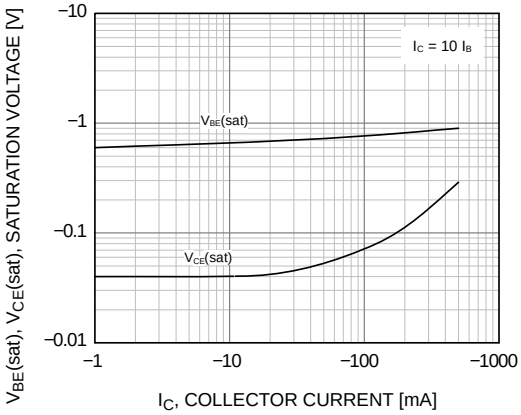


Figure 3. Base−Emitter Saturation Voltage and Collector−Emitter Saturation Voltage

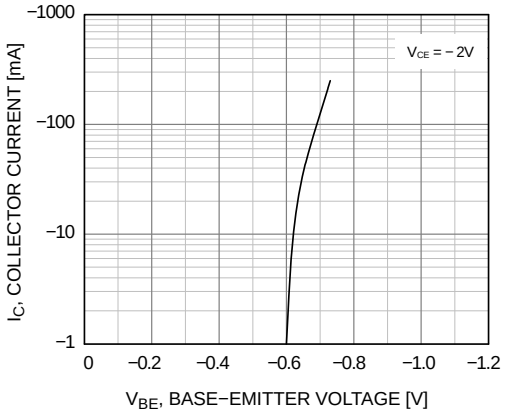


Figure 4. Base−Emitter On Voltage

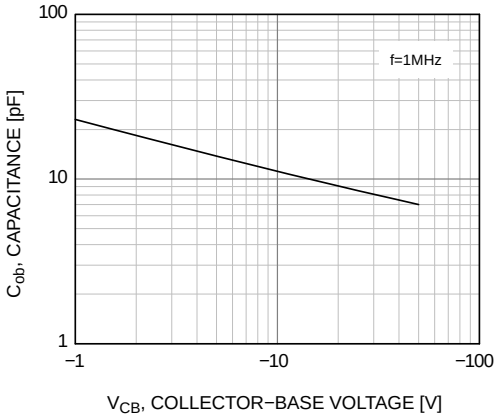
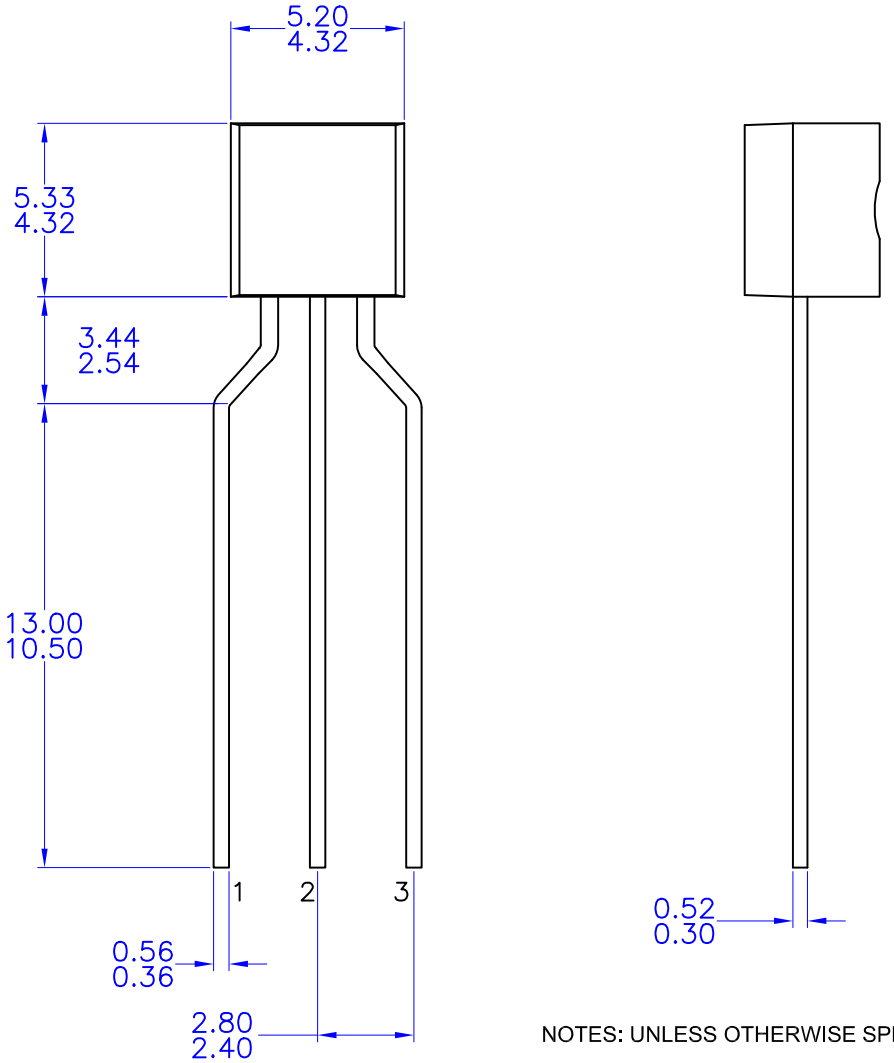


Figure 5. Collector Output Capacitance

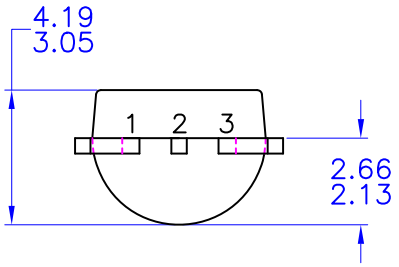
TO−92 3 4.83x4.76 LEADFORMED
CASE 135AR
ISSUE O

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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DESCRIPTION:	**TO−92 3 4.83X4.76 LEADFORMED**	**PAGE 1 OF 1**

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