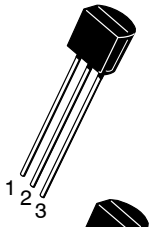
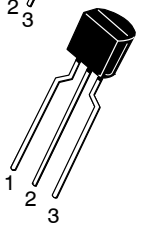
NPN Epitaxial Silicon Transistor

BC546 / BC547 / BC548 / BC549 / BC550



TO−92
CASE 135AN



TO−92
CASE 135AR

1. Collector 2. Base 3. Emitter

Features

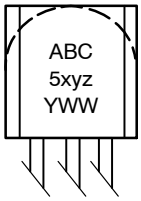
- Switching and Amplifier
- High−Voltage: BC546, V_{CEO} = 65 V
- Low−Noise: BC549, BC550
- Complement to BC556, BC557, BC558, BC559, and BC560
- These are Pb−Free Devices

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Collector−Base Voltage BC546 BC547 / BC550 BC548 / BC549	V_{CBO}	 80 50 30	V
Collector−Emitter Voltage BC546 BC547 / BC550 BC548 / BC549	V_{CEO}	 65 45 30	V
Emitter−Base Voltage BC546 / BC547 BC548 / BC549 / BC550	V_{EBO}	 6 5	V
Collector Current (DC)	I_C	100	mA
Collector Power Dissipation	P_C	500	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	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.

MARKING DIAGRAM



BC5xyz	= Device Code
x	= 4 or 5
y	= 6, 7, 8, 9 or 0
z	= A, B, C
A	= Assembly Location
Y	= Year
WW	= Work Week

ORDERING INFORMATION

See detailed ordering and shipping information on page 4 of this data sheet.

NOTE: Some of the devices on this data sheet have been **DISCONTINUED**. Please refer to the table on page 4.

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

Symbol	Parameter		Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut−off Current		V_{CB} = 30 V, I_E = 0			15	nA
h_{FE}	DC Current Gain		V_{CE} = 5 V, I_C = 2 mA	110		800	
V_{CE}(sat)	Collector−Emitter Saturation Voltage		I_C = 10 mA, I_B = 0.5 mA		90	250	mV
			I_C = 100 mA, I_B = 5 mA		250	600	
V_{BE}(sat)	Base−Emitter Saturation Voltage		I_C = 10 mA, I_B = 0.5 mA		700		mV
			I_C = 100 mA, I_B = 5 mA		900		
V_{BE}(on)	Base−Emitter On Voltage		V_{CE} = 5 V, I_C = 2 mA	580	660	700	mV
			V_{CE} = 5 V, I_C = 10 mA			720	
f_T	Current Gain Bandwidth Product		V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz		300		MHz
C_{ob}	Output Capacitance		V_{CB} = 10 V, I_E = 0, f = 1 MHz		3.5	6.0	pF
C_{ib}	Input Capacitance		V_{EB} = 0.5 V, I_C = 0, f = 1 MHz		9		pF
NF	Noise Figure	BC546 / BC547 / BC548	V_{CE} = 5 V, I_C = 200 μA, f = 1 kHz, R_G = 2 kΩ		2.0	10.0	dB
		BC549 / BC550			1.2	4.0	
		BC549	V_{CE} = 5 V, I_C = 200 μA, R_G = 2 kΩ, f = 30 to 15000 MHz		1.4	4.0	
		BC550			1.4	3.0	

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.

h_{FE} CLASSIFICATION

Classification	A	B	C
h_{FE}	110 ~ 220	200 ~ 450	420 ~ 800

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TYPICAL PERFORMANCE CHARACTERISTICS

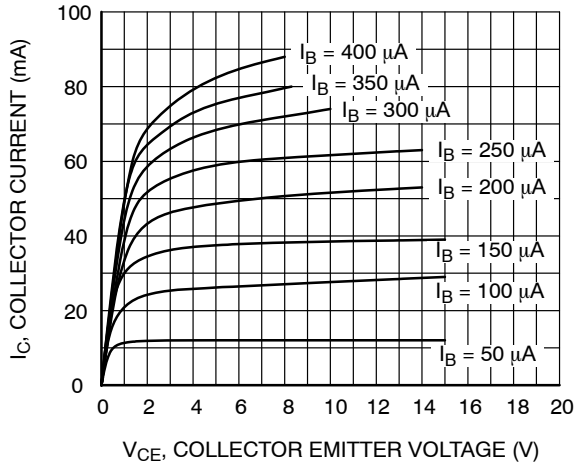


Figure 1. Static Characteristic

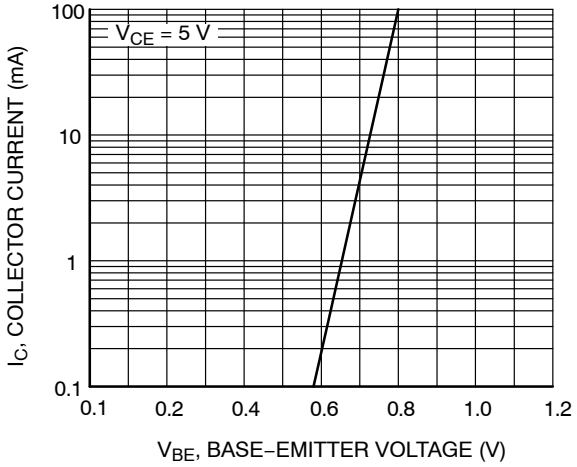


Figure 2. Transfer Characteristics

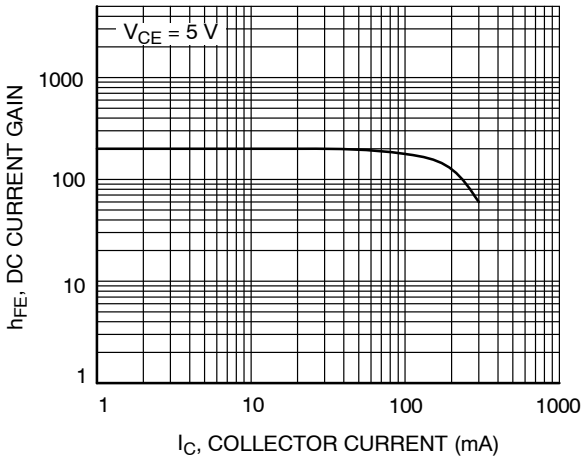


Figure 3. DC Current Gain

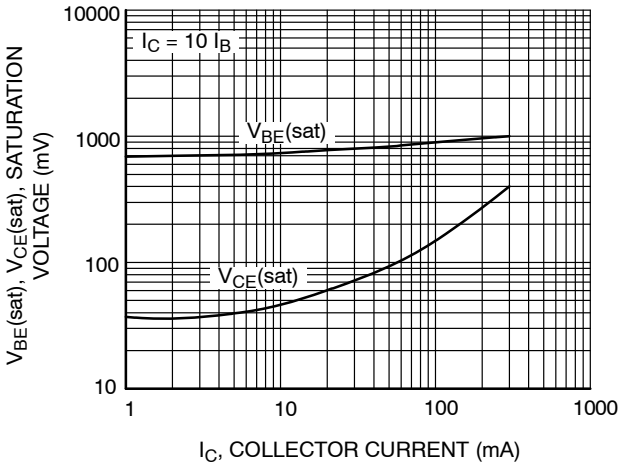


Figure 4. Base−Emitter Saturation Voltage and Collector−Emitter Saturation Voltage

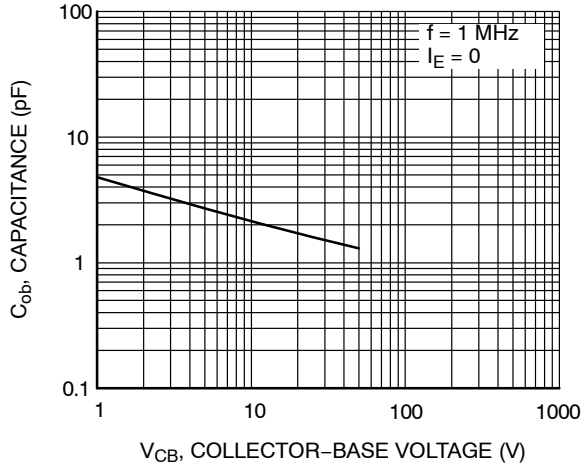


Figure 5. Output Capacitance

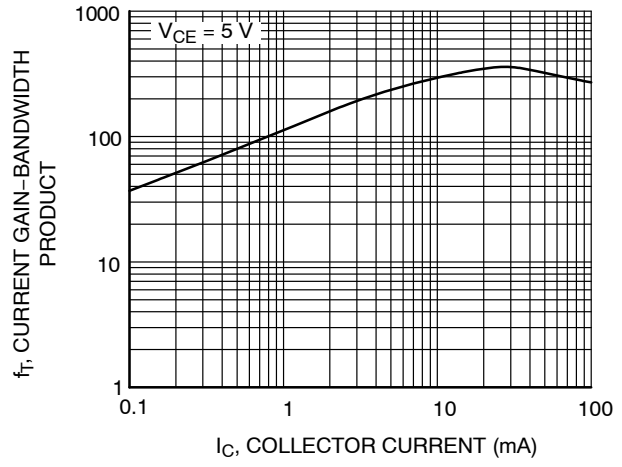


Figure 6. Current Gain Bandwidth Product

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ORDERING INFORMATION

Part Number	Marking	Package	Packing Method†
BC546ABU	BC546A	TO−92−3 (Pb−Free)	10000 / Bulk Bag
BC546CTA	BC546C	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC547B	BC547B	TO−92−3 (Pb−Free)	10000 / Bulk Bag
BC547BBU	BC547B	TO−92−3 (Pb−Free)	10000 / Bulk Bag
BC547BTF	BC547B	TO−92−3 (Pb−Free)	2000 / Tape & Reel
BC547CBU	BC547C	TO−92−3 (Pb−Free)	10000 / Bulk Bag
BC547CTA	BC547C	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC549BTA	BC549B	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC549CTA	BC549C	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC550CBU	BC550C	TO−92−3 (Pb−Free)	10000 / Bulk Bag

DISCONTINUED (Note 1)

BC546ATA	BC546A	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC546BTA	BC546B	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC546BTF	BC546B	TO−92−3 (Pb−Free)	2000 / Tape & Reel
BC547ATA	BC547A	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC547BTA	BC547B	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC547CTFR	BC547C	TO−92−3 (Pb−Free)	2000 / Tape & Reel
BC548BU	BC548	TO−92−3 (Pb−Free)	10000 / Bulk Bag
BC548BTA	BC548B	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC548CTA	BC548C	TO−92−3 (Pb−Free)	2000 / Ammo Pack
BC549BTF	BC549B	TO−92−3 (Pb−Free)	2000 / Tape & Reel
BC550CTA	BC550C	TO−92−3 (Pb−Free)	2000 / Ammo Pack

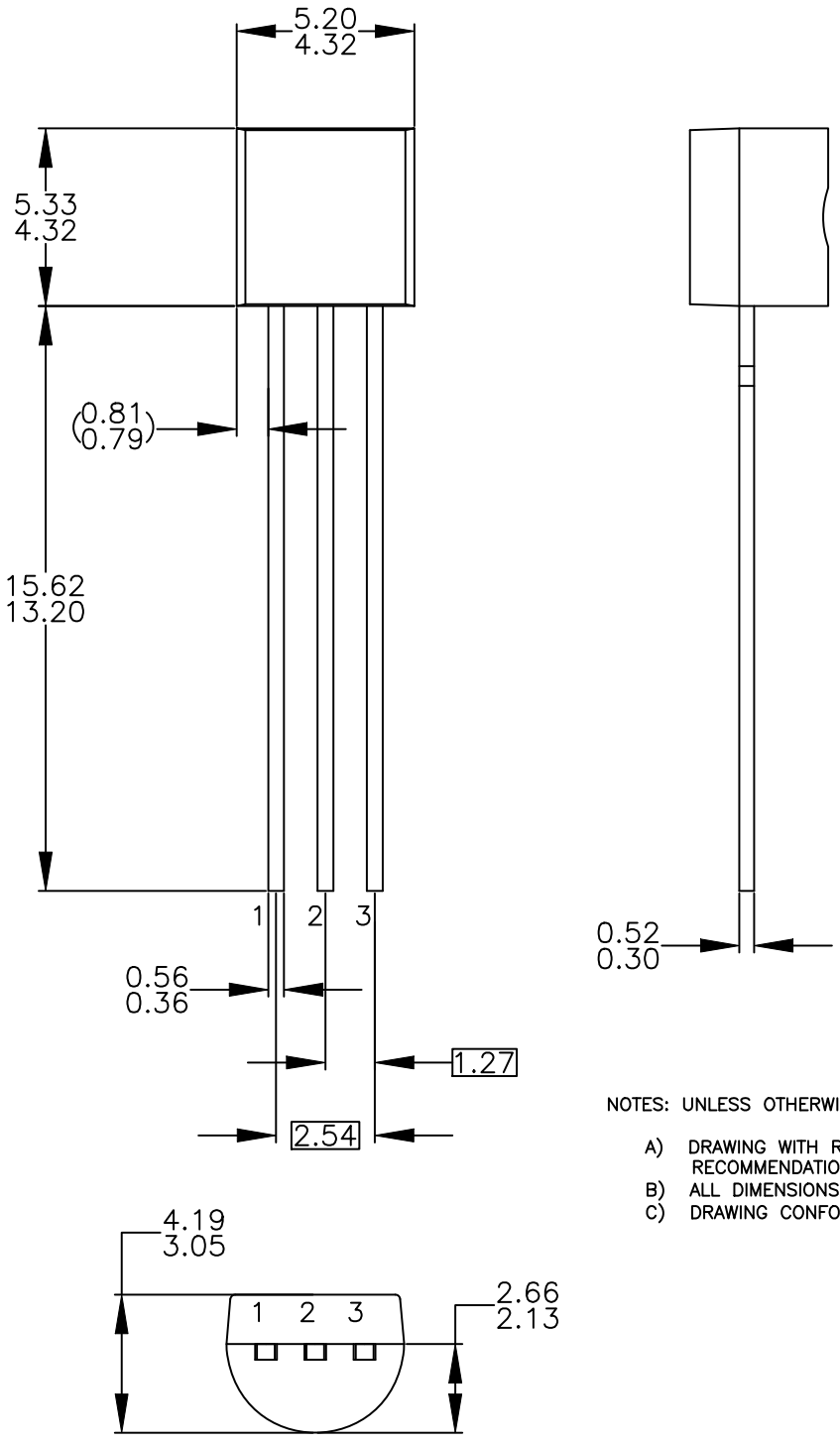
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

1. **DISCONTINUED:** These devices are not recommended for new design. Please contact your **onsemi** representative for information. The most current information on these devices may be available on www.onsemi.com.

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TO−92 3 4.825x4.76
CASE 135AN
ISSUE O

DATE 31 JUL 2016



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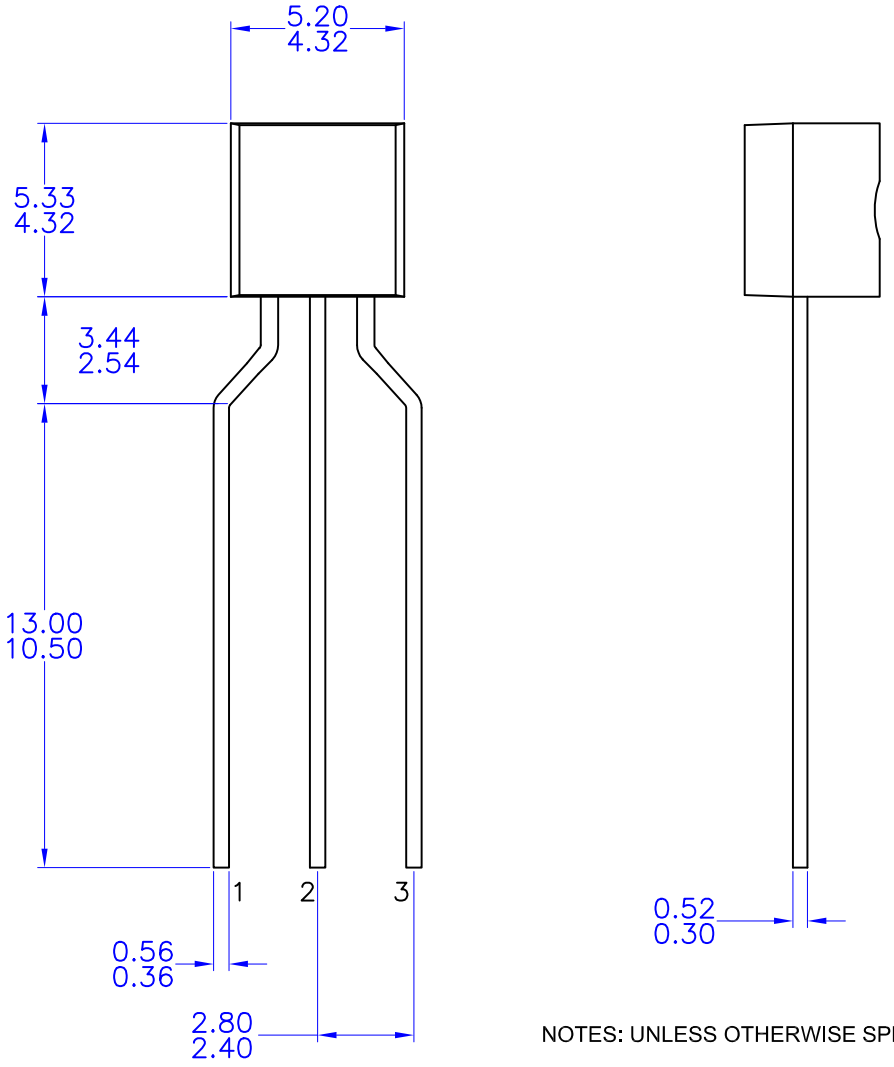
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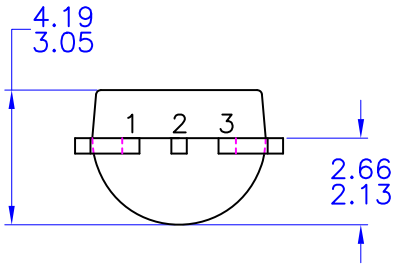
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