



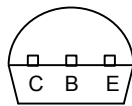
Micro Commercial Components  
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CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

# BC546,B BC547,A,B,C BC548,A,B,C

## Features

- Through Hole Package
- 150°C Junction Temperature

Pin Configuration  
Bottom View



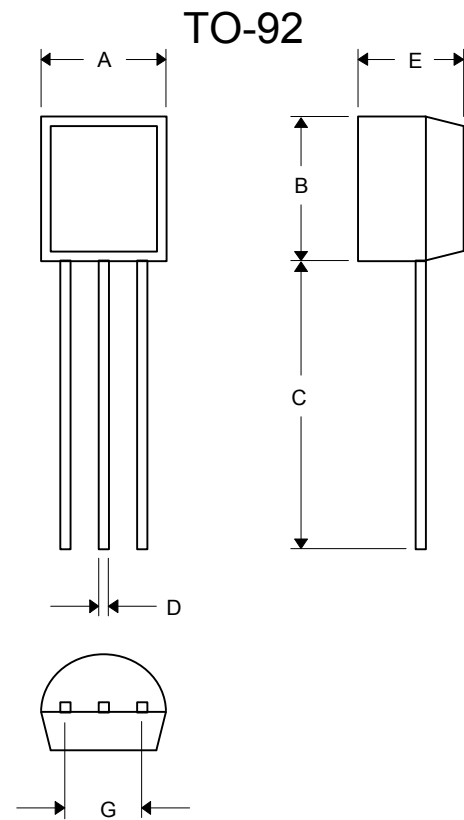
## NPN Silicon Amplifier Transistor 625mW

## Mechanical Data

- Case: TO-92, Molded Plastic
- Polarity: indicated as above.

Maximum Ratings @ 25°C Unless Otherwise Specified

Charateristic	Symbol	Value	Unit
Collector-Emitter Voltage	BC546 BC547 BC548	65 45 30	V
Collector-Base Voltage	BC546 BC547 BC548	80 50 30	V
Emitter-Base Voltage	$V_{EBO}$	6.0	V
Collector Current(DC)	$I_C$	100	mA
Power Dissipation@ $T_A=25^\circ\text{C}$	$P_d$	625 5.0	mW mW/°C
Power Dissipation@ $T_C=25^\circ\text{C}$	$P_d$	1.5 12	W mW/°C
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W
Operating & Storage Temperature	$T_j, T_{STG}$	-55~150	°C



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.175	.185	4.45	4.70	
B	.175	.185	4.46	4.70	
C	.500	---	12.7	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	

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# BC546 thru BC548C



## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit	
<b>OFF CHARACTERISTICS</b>						
Collector–Emitter Breakdown Voltage (I <sub>C</sub> = 1.0 mA, I <sub>B</sub> = 0)	BC546 BC547 BC548	V <sub>(BR)CEO</sub>	65 45 30	— — —	— — —	V
Collector–Base Breakdown Voltage (I <sub>C</sub> = 100 μA <sub>dc</sub> )	BC546 BC547 BC548	V <sub>(BR)CBO</sub>	80 50 30	— — —	— — —	V
Emitter–Base Breakdown Voltage (I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0)	BC546 BC547 BC548	V <sub>(BR)EBO</sub>	6.0 6.0 6.0	— — —	— — —	V

## ON CHARACTERISTICS

DC Current Gain (I <sub>C</sub> = 10 μA, V <sub>CE</sub> = 5.0 V)	BC547A/548A BC546B/547B/548B BC548C	h <sub>FE</sub>	— — —	90 150 270	— — —	—
(I <sub>C</sub> = 2.0 mA, V <sub>CE</sub> = 5.0 V)	BC546 BC547 BC548 BC547A/548A BC546B/547B/548B BC547C/BC548C		110 110 110 110 200 420	— — — 180 290 520	450 800 800 220 450 800	
(I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 5.0 V)	BC547A/548A BC546B/547B/548B BC548C		— — —	120 180 300	— — —	
Collector–Emitter Saturation Voltage (I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5.0 mA)		V <sub>CE(sat)</sub>	—	—	0.3	V
Base–Emitter Saturation Voltage (I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5.0 mA)		V <sub>BE(sat)</sub>	—	—	1.0	V
Base–Emitter On Voltage (I <sub>C</sub> = 2.0 mA, V <sub>CE</sub> = 5.0 V) (I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 5.0 V)		V <sub>BE(on)</sub>	0.55 —	— —	0.7 0.77	V

## SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product (I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 5.0 V, f = 100 MHz)	BC546 BC547 BC548	f <sub>T</sub>	150 150 150	300 300 300	— — —	MHz
Output Capacitance (V <sub>CB</sub> = 10 V, I <sub>C</sub> = 0, f = 1.0 MHz)		C <sub>obo</sub>	—	1.7	4.5	pF
Input Capacitance (V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = 0, f = 1.0 MHz)		C <sub>ibo</sub>	—	10	—	pF
Small–Signal Current Gain (I <sub>C</sub> = 2.0 mA, V <sub>CE</sub> = 5.0 V, f = 1.0 kHz)	BC546 BC547/548 BC547A/548A BC546B/547B/548B BC547C/548C	h <sub>fe</sub>	125 125 125 240 450	— — 220 330 600	500 900 260 500 900	—
Noise Figure (I <sub>C</sub> = 0.2 mA, V <sub>CE</sub> = 5.0 V, R <sub>S</sub> = 2 kΩ, f = 1.0 kHz, Δf = 200 Hz)	BC546 BC547 BC548	NF	— — —	2.0 2.0 2.0	10 10 10	dB

# BC546 thru BC548C

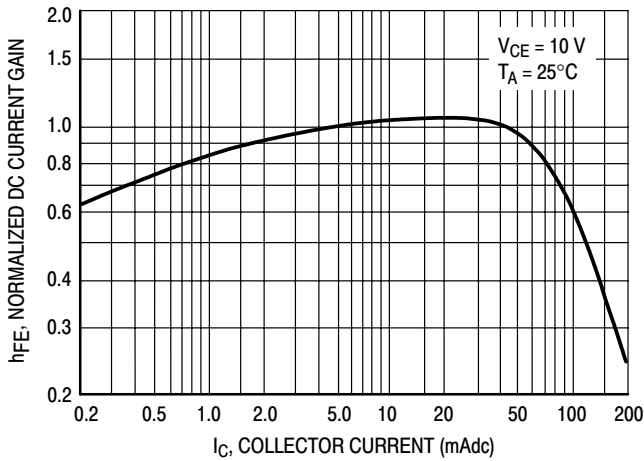


Figure 1. Normalized DC Current Gain

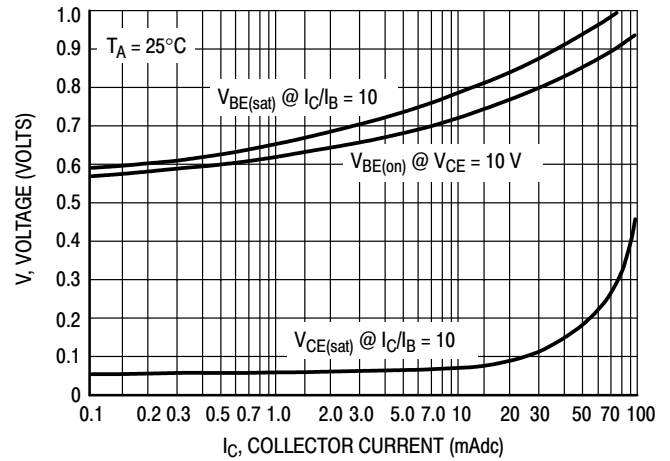


Figure 2. "Saturation" and "On" Voltages

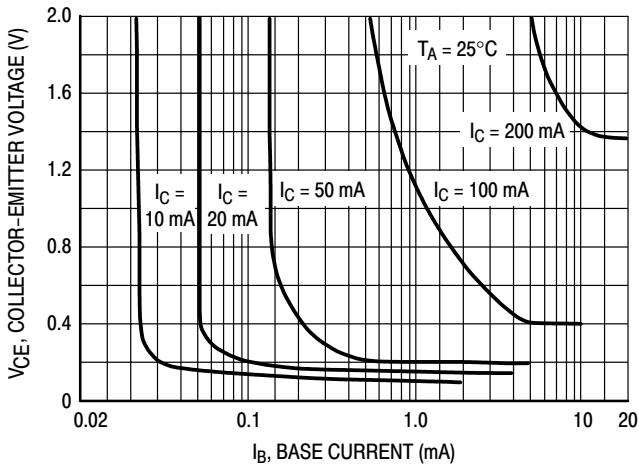


Figure 3. Collector Saturation Region

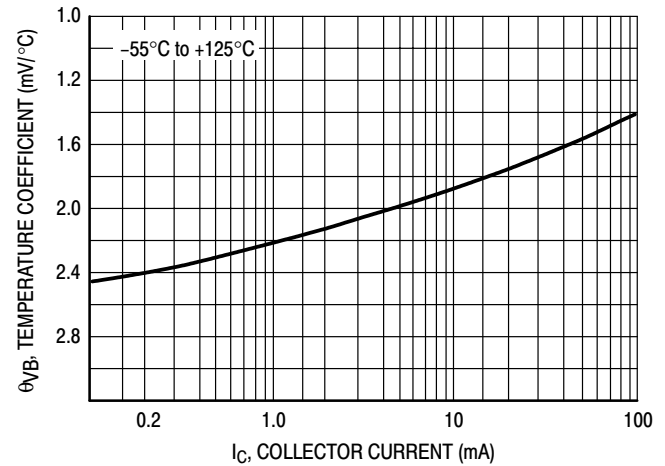


Figure 4. Base-Emitter Temperature Coefficient

## BC547/BC548

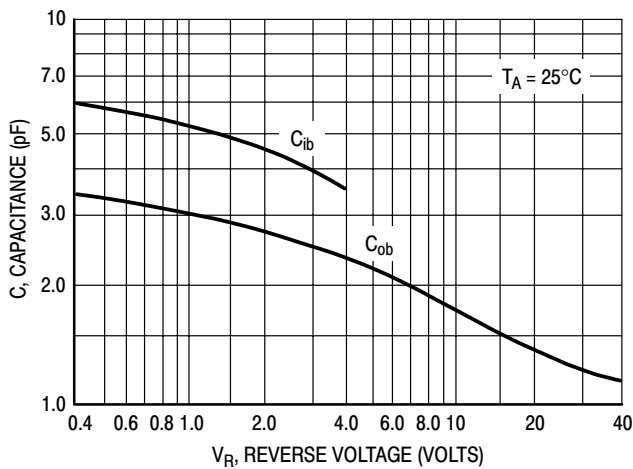


Figure 5. Capacitances

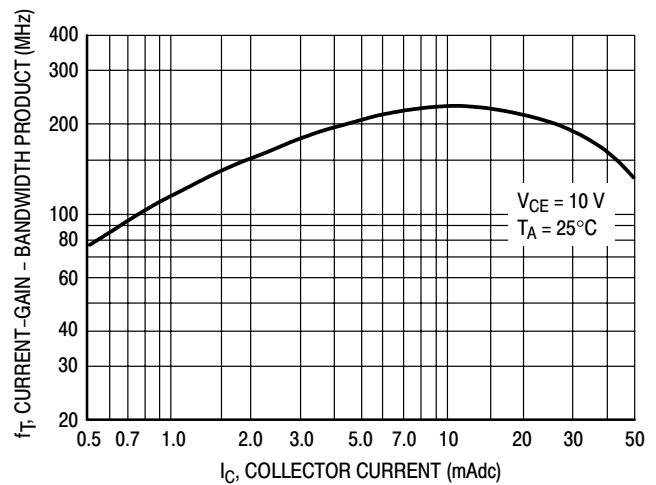


Figure 6. Current-Gain - Bandwidth Product

# BC546 thru BC548C

## BC547/BC548

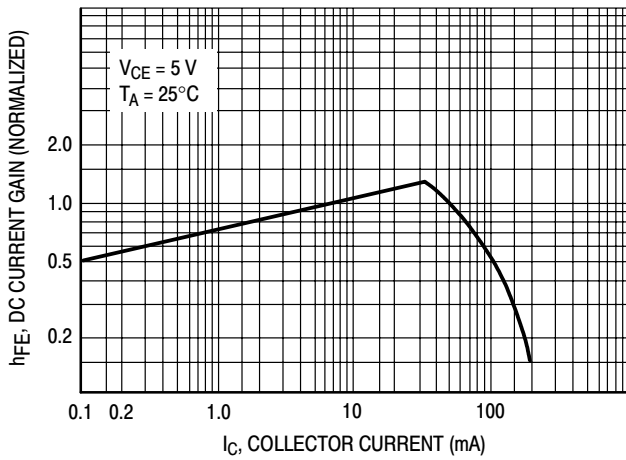


Figure 7. DC Current Gain

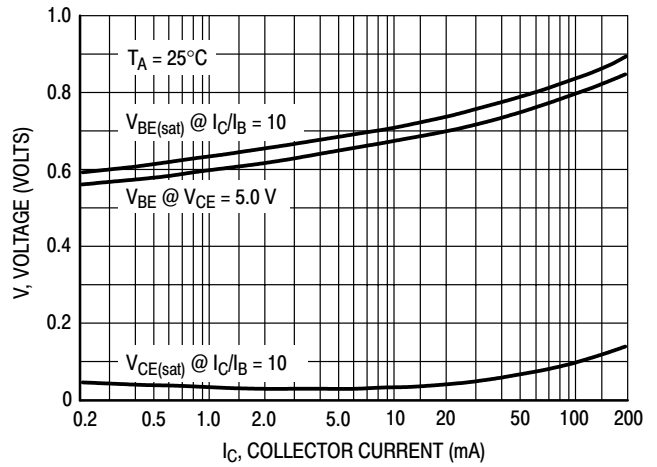


Figure 8. "On" Voltage

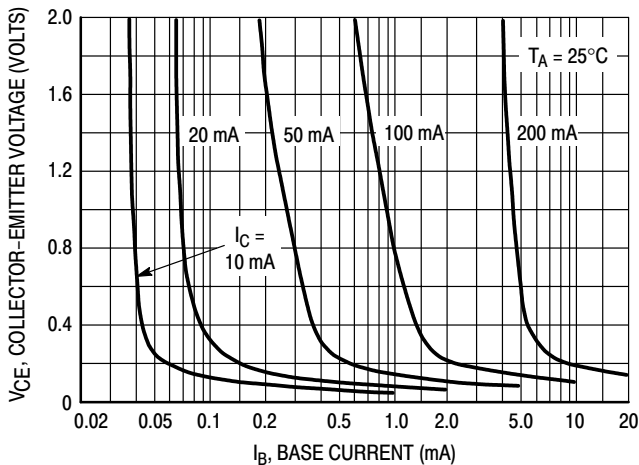


Figure 9. Collector Saturation Region

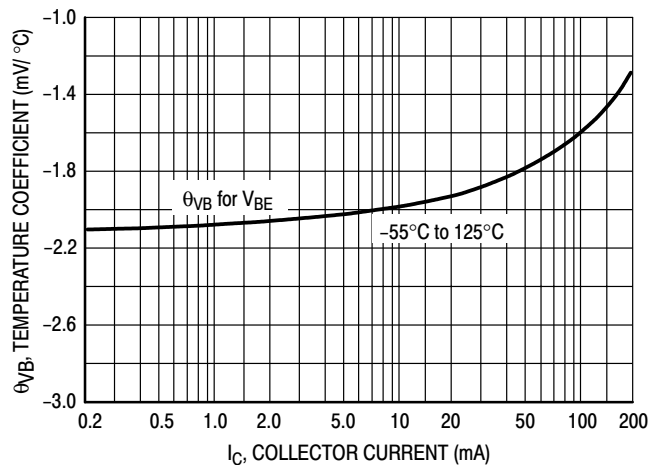


Figure 10. Base-Emitter Temperature Coefficient

## BC546

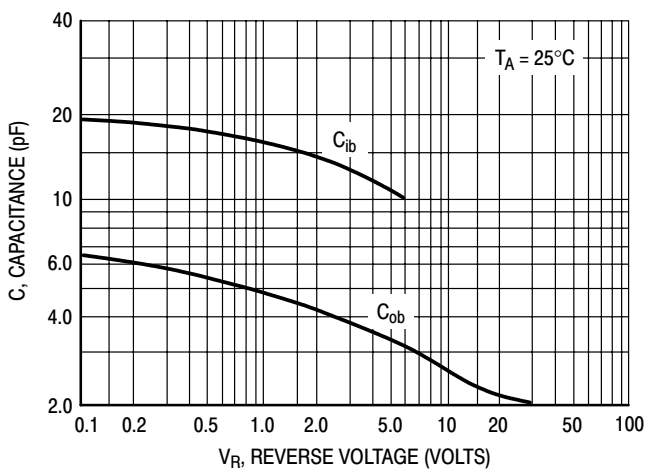


Figure 11. Capacitance

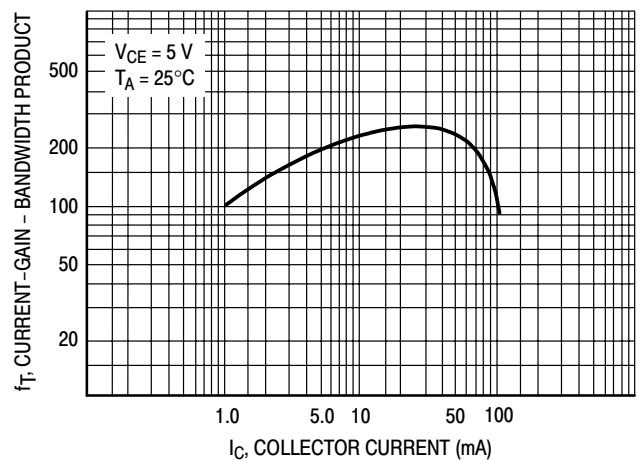


Figure 12. Current-Gain - Bandwidth Product