



Micro Commercial Components

Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

## Features

- Through Hole Package
- 150°C Junction Temperature
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Marking: Type Number

## Mechanical Data

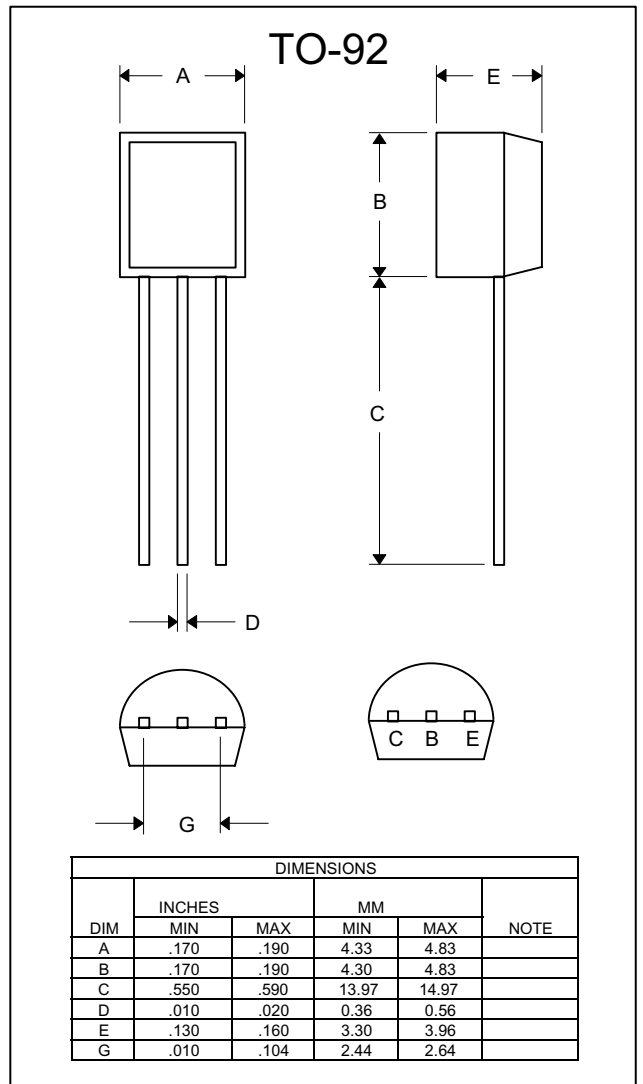
- Case: TO-92, Molded Plastic
- Polarity: indicated as above.

### 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

**BC546,B**  
**BC547,A,B,C**  
**BC548,A,B,C**

**NPN Silicon**  
**Amplifier Transistor**  
**625mW**



# 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	65	—	—	V
	BC547	45	—	—	
	BC548	30	—	—	
Collector–Base Breakdown Voltage (I <sub>C</sub> = 100 μAdc)	BC546	80	—	—	V
	BC547	50	—	—	
	BC548	30	—	—	
Emitter–Base Breakdown Voltage (I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0)	BC546	6.0	—	—	V
	BC547	6.0	—	—	
	BC548	6.0	—	—	

## ON CHARACTERISTICS

DC Current Gain (I <sub>C</sub> = 10 μA, V <sub>CE</sub> = 5.0 V)	BC547A/548A	h <sub>FE</sub>	—	90	—	—
	BC546B/547B/548B		—	150	—	
	BC548C		—	270	—	
(I <sub>C</sub> = 2.0 mA, V <sub>CE</sub> = 5.0 V)	BC546	110	—	450	—	
	BC547	110	—	800		
	BC548	110	—	800		
	BC547A/548A	110	180	220		
	BC546B/547B/548B	200	290	450		
	BC547C/BC548C	420	520	800		
(I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 5.0 V)	BC547A/548A	—	120	—	—	
	BC546B/547B/548B	—	180	—		
	BC548C	—	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	V	
		—	—	0.77		

## 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	h <sub>fe</sub>	125	—	500	—
	BC547/548		125	—	900	
	BC547A/548A		125	220	260	
	BC546B/547B/548B		240	330	500	
	BC547C/548C		450	600	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

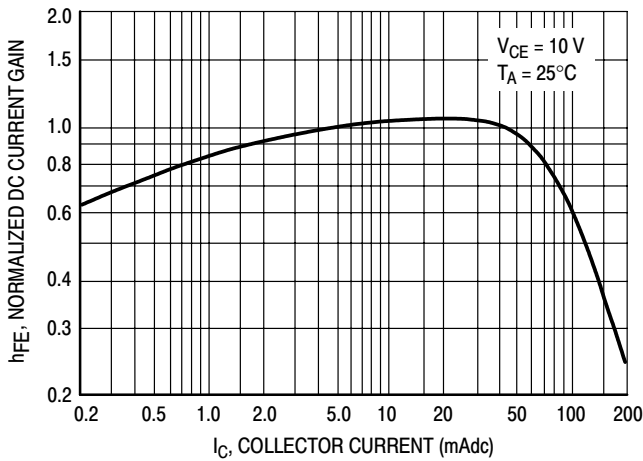


Figure 1. Normalized DC Current Gain

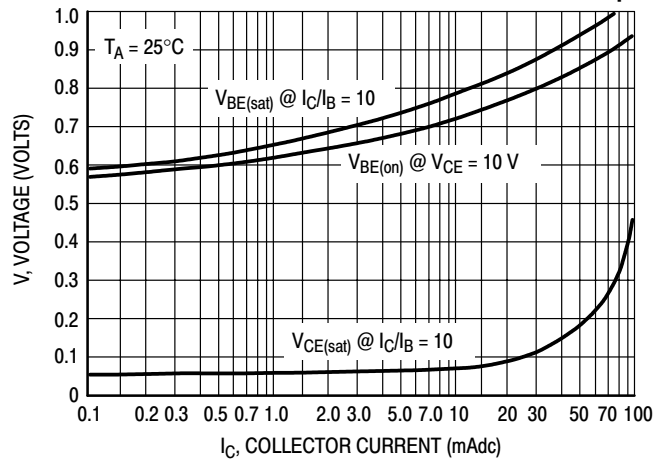


Figure 2. "Saturation" and "On" Voltages

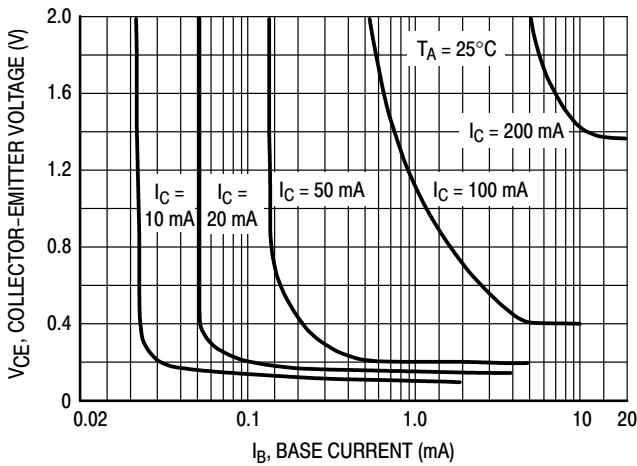


Figure 3. Collector Saturation Region

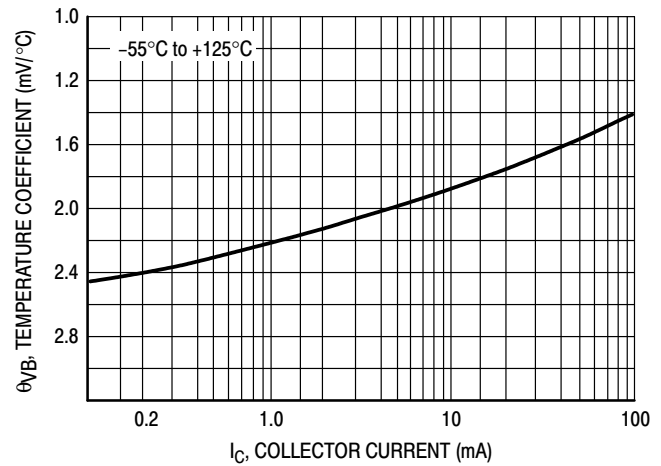


Figure 4. Base-Emitter Temperature Coefficient

## BC547/BC548

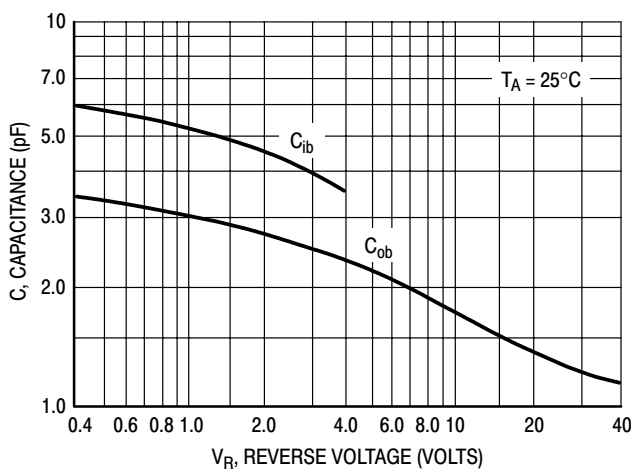


Figure 5. Capacitances

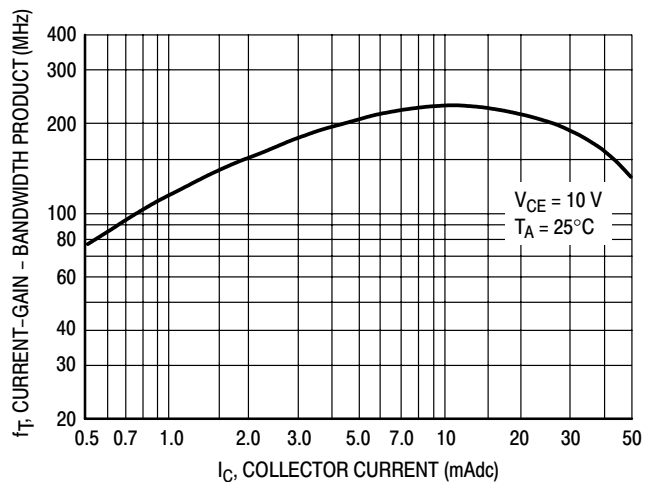


Figure 6. Current-Gain - Bandwidth Product

# BC546 thru BC548C

## BC547/BC548

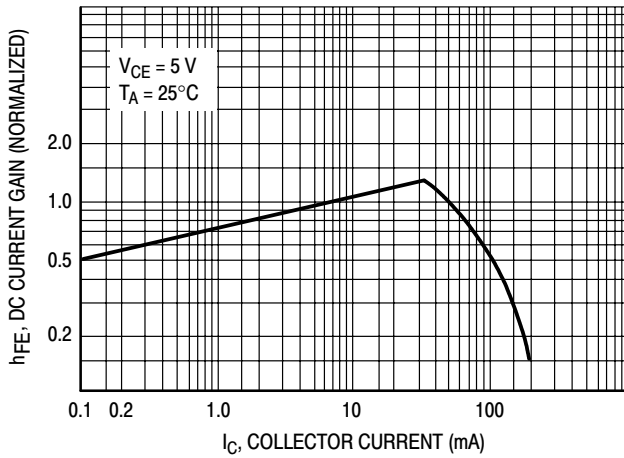


Figure 7. DC Current Gain

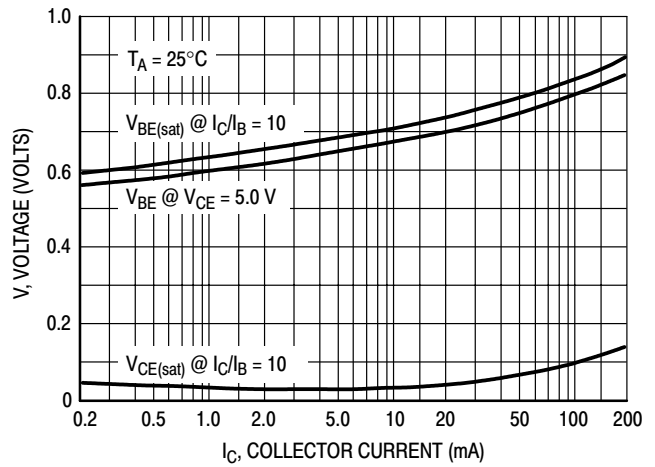


Figure 8. "On" Voltage

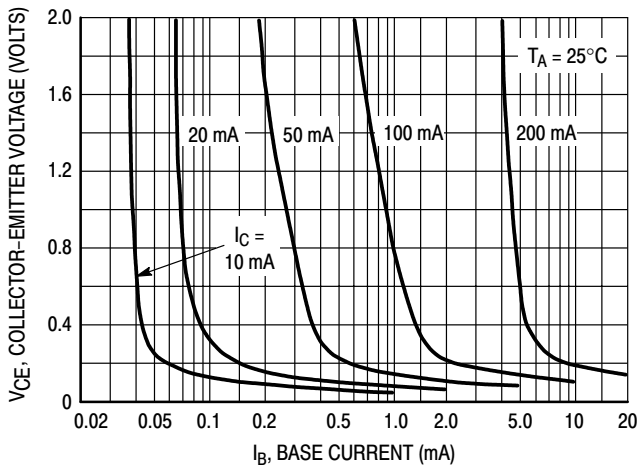


Figure 9. Collector Saturation Region

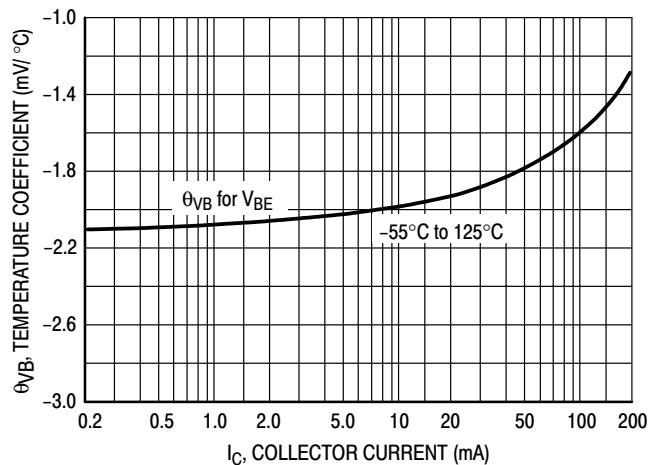


Figure 10. Base-Emitter Temperature Coefficient

## BC546

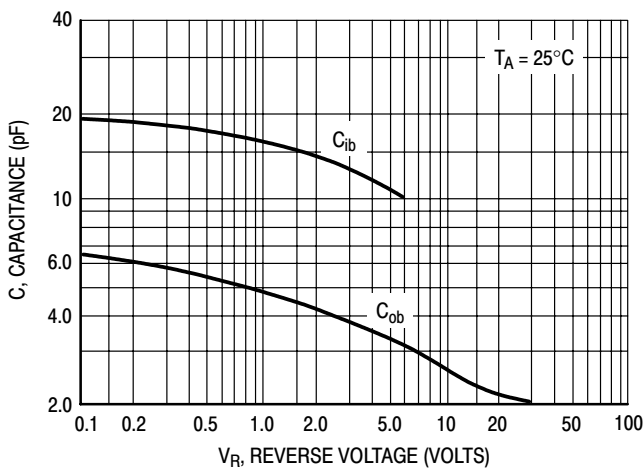


Figure 11. Capacitance

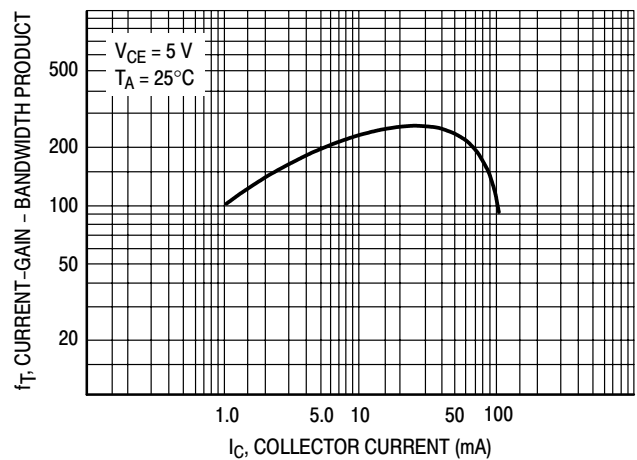


Figure 12. Current-Gain - Bandwidth Product



TM

Micro Commercial Components

**\*\*\*IMPORTANT NOTICE\*\*\***

*Micro Commercial Components Corp.* reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes.

*Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

**\*\*\*APPLICATIONS DISCLAIMER\*\*\***

Products offer by *Micro Commercial Components Corp.* are not intended for use in Medical, Aerospace or Military Applications.