Micro Commercial Components
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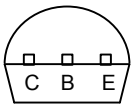
BC546,B
BC547,A,B,C
BC548,A,B,C

NPN Silicon
Amplifier Transistor
625mW

Features

- Through Hole Package
- 150°C Junction Temperature

Pin Configuration
Bottom View



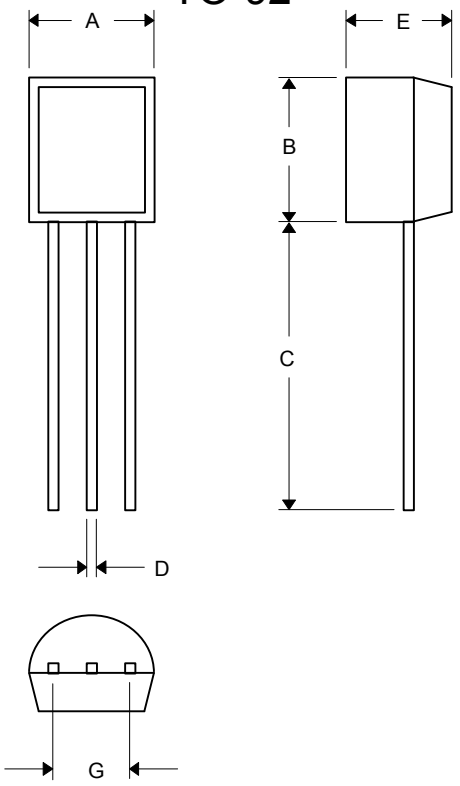
Mechanical Data

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

Maximum Ratings @ 25°C Unless Otherwise Specified

Charateristic		Symbol	Value	Unit
Collector-Emitter Voltage	BC546	V_{CEO}	65	V
	BC547		45	
	BC548		30	
Collector-Base Voltage	BC546	V_{CBO}	80	V
	BC547		50	
	BC548		30	
Emitter-Base Voltage		V_{EBO}	6.0	V
Collector Current(DC)		I_C	100	mA
Power Dissipation@T_A=25°C		P_d	625 5.0	mW mW/°C
Power Dissipation@T_C=25°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

TO-92



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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	

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector–Emitter Breakdown Voltage (I_C = 1.0 mA, I_B = 0)	BC546 BC547 BC548	$V_{(BR)CEO}$	65 45 30	— — —	— — —	V
Collector–Base Breakdown Voltage (I_C = 100 μAdc)	BC546 BC547 BC548	$V_{(BR)CBO}$	80 50 30	— — —	— — —	V
Emitter–Base Breakdown Voltage (I_E = 10 μA, I_C = 0)	BC546 BC547 BC548	$V_{(BR)EBO}$	6.0 6.0 6.0	— — —	— — —	V
ON CHARACTERISTICS						
DC Current Gain		h_{FE}				—
(I_C = 10 μA, V_{CE} = 5.0 V)	BC547A/548A BC546B/547B/548B BC548C		— — —	90 150 270	— — —	
(I_C = 2.0 mA, V_{CE} = 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_C = 100 mA, V_{CE} = 5.0 V)	BC547A/548A BC546B/547B/548B BC548C		— — —	120 180 300	— — —	
Collector–Emitter Saturation Voltage (I_C = 100 mA, I_B = 5.0 mA)		$V_{CE(sat)}$	—	---	0.3	V
Base–Emitter Saturation Voltage (I_C = 100 mA, I_B = 5.0 mA)		$V_{BE(sat)}$	—	—	1.0	V
Base–Emitter On Voltage		$V_{BE(on)}$				V
(I_C = 2.0 mA, V_{CE} = 5.0 V)			0.55	—	0.7	
(I_C = 10 mA, V_{CE} = 5.0 V)			—	—	0.77	
SMALL–SIGNAL CHARACTERISTICS						
Current–Gain — Bandwidth Product		f_T				MHz
(I_C = 10 mA, V_{CE} = 5.0 V, f = 100 MHz)	BC546 BC547 BC548		150 150 150	300 300 300	— — —	
Output Capacitance (V_{CB} = 10 V, I_C = 0, f = 1.0 MHz)		C_{obo}	—	1.7	4.5	pF
Input Capacitance (V_{EB} = 0.5 V, I_C = 0, f = 1.0 MHz)		C_{ibo}	—	10	—	pF
Small–Signal Current Gain		h_{fe}				—
(I_C = 2.0 mA, V_{CE} = 5.0 V, f = 1.0 kHz)	BC546 BC547/548 BC547A/548A BC546B/547B/548B BC547C/548C		125 125 125 240 450	— — 220 330 600	500 900 260 500 900	
Noise Figure		NF				dB
(I_C = 0.2 mA, V_{CE} = 5.0 V, R_S = 2 kΩ, f = 1.0 kHz, Δf = 200 Hz)	BC546 BC547 BC548		— — —	2.0 2.0 2.0	10 10 10	

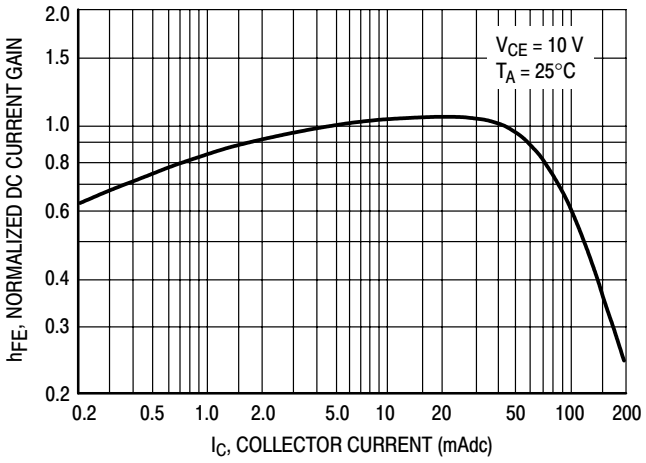


Figure 1. Normalized DC Current Gain

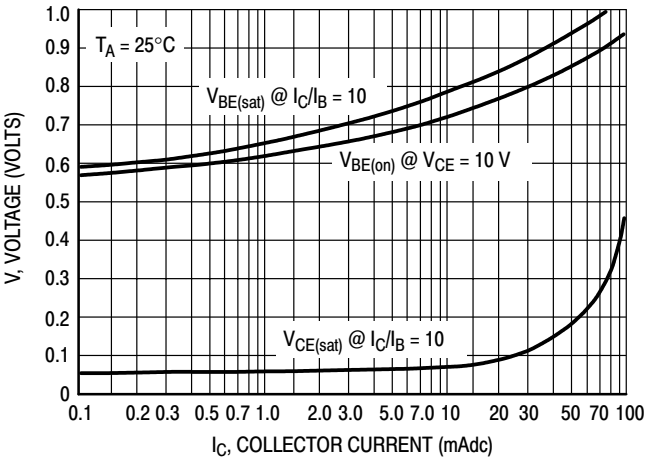


Figure 2. "Saturation" and "On" Voltages

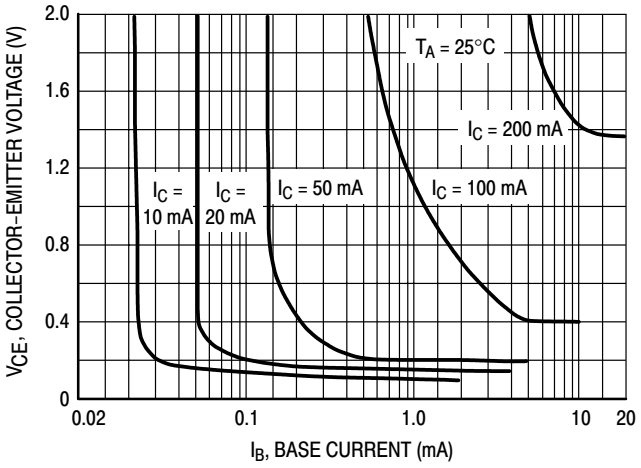


Figure 3. Collector Saturation Region

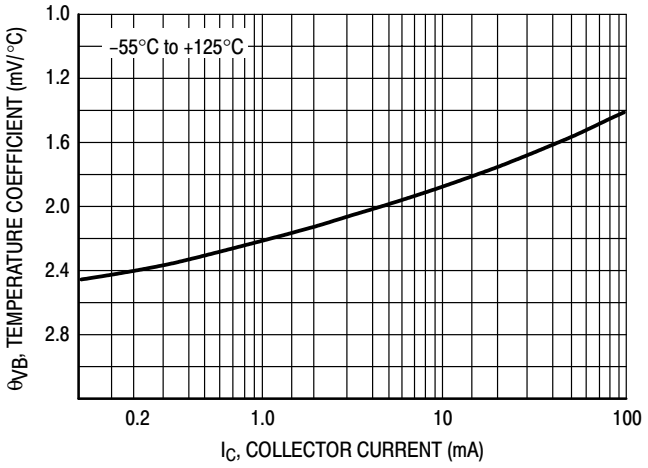


Figure 4. Base–Emitter Temperature Coefficient

BC547/BC548

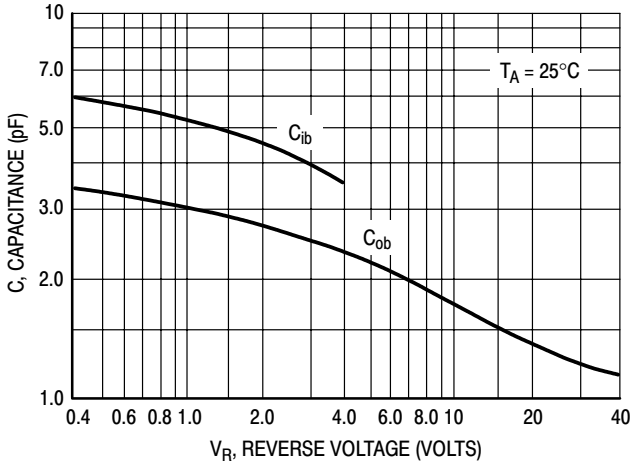


Figure 5. Capacitances

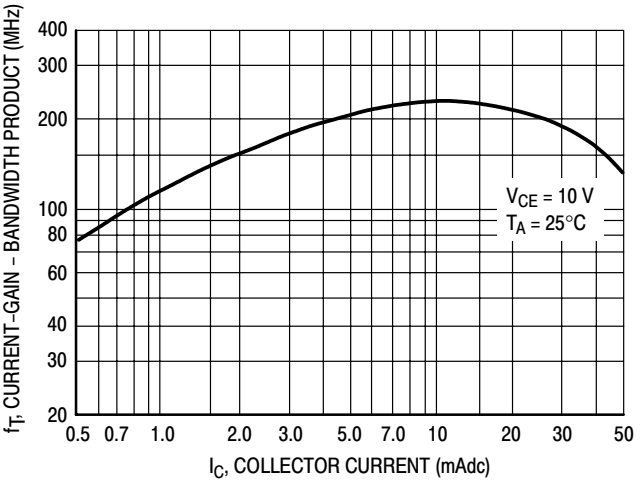


Figure 6. Current–Gain – Bandwidth Product

BC547/BC548

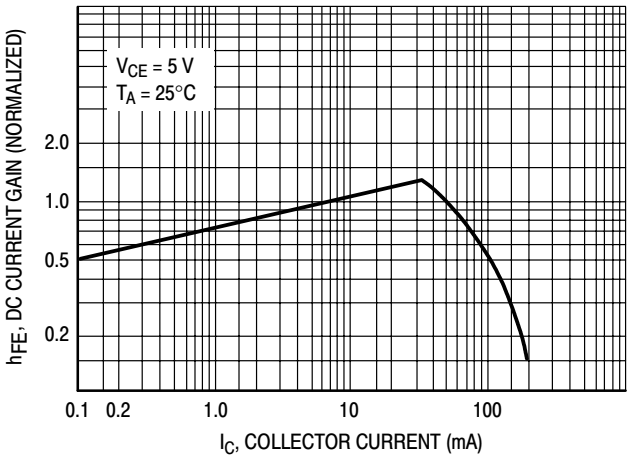


Figure 7. DC Current Gain

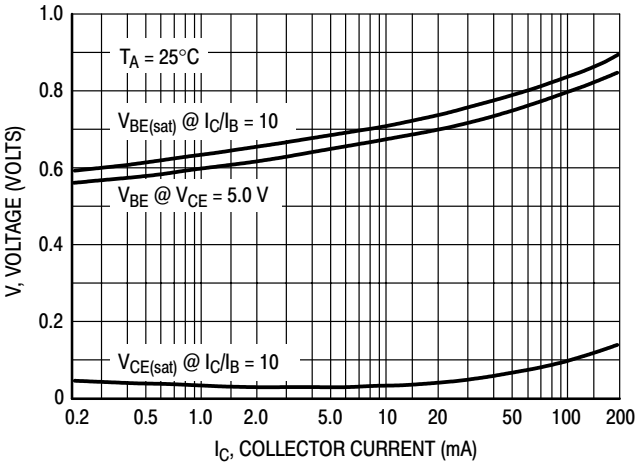


Figure 8. "On" Voltage

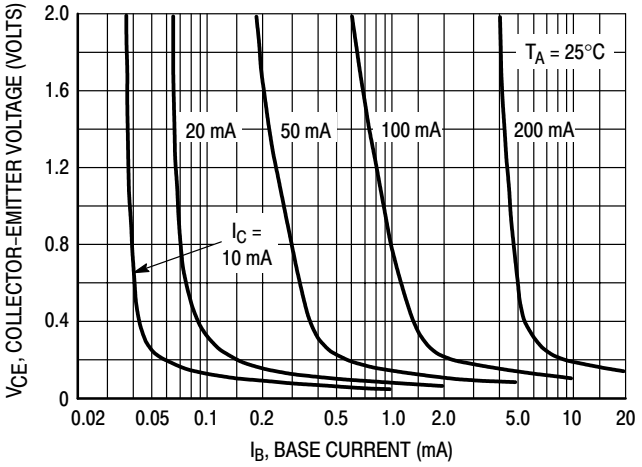


Figure 9. Collector Saturation Region

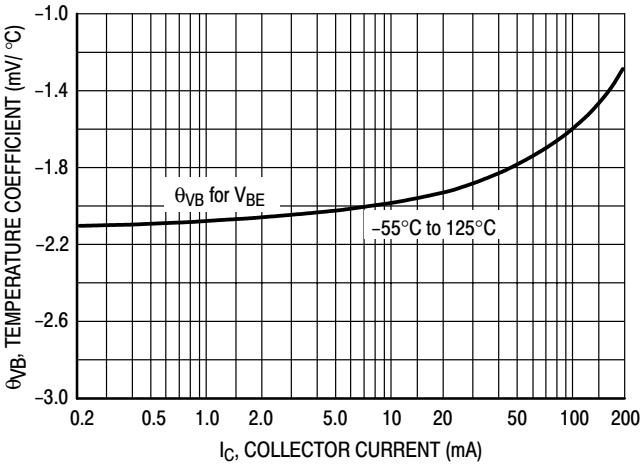


Figure 10. Base–Emitter Temperature Coefficient

BC546

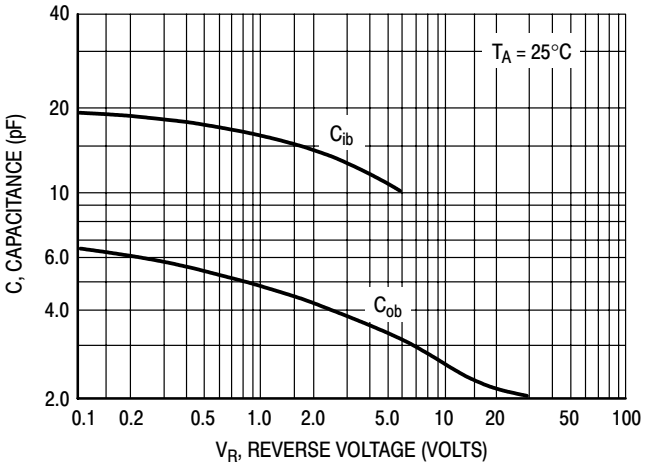


Figure 11. Capacitance

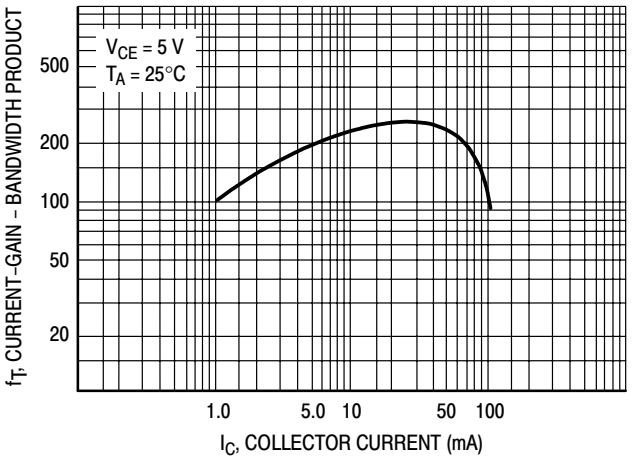


Figure 12. Current–Gain – Bandwidth Product

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