



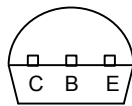
Micro Commercial Components
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BC546,B BC547,A,B,C BC548,A,B,C

Features

- Through Hole Package
- 150°C Junction Temperature

Pin Configuration
Bottom View



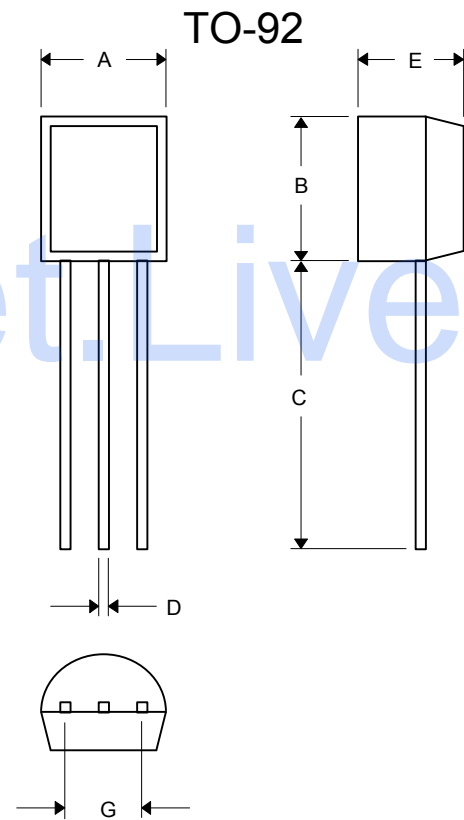
NPN Silicon Amplifier Transistor 625mW

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	

BC546 thru BC548C



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 (I _C = 10 μA, V _{CE} = 5.0 V)	BC547A/548A BC546B/547B/548B BC548C	h _{FE}	— — —	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 (I _C = 2.0 mA, V _{CE} = 5.0 V) (I _C = 10 mA, V _{CE} = 5.0 V)		V _{BE(on)}	0.55 —	— —	0.7 0.77	V

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product (I _C = 10 mA, V _{CE} = 5.0 V, f = 100 MHz)	BC546 BC547 BC548	f _T	150 150 150	300 300 300	— — —	MHz
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 (I _C = 2.0 mA, V _{CE} = 5.0 V, f = 1.0 kHz)	BC546 BC547/548 BC547A/548A BC546B/547B/548B BC547C/548C	h _{fe}	125 125 125 240 450	— — 220 330 600	500 900 260 500 900	—
Noise Figure (I _C = 0.2 mA, V _{CE} = 5.0 V, R _S = 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

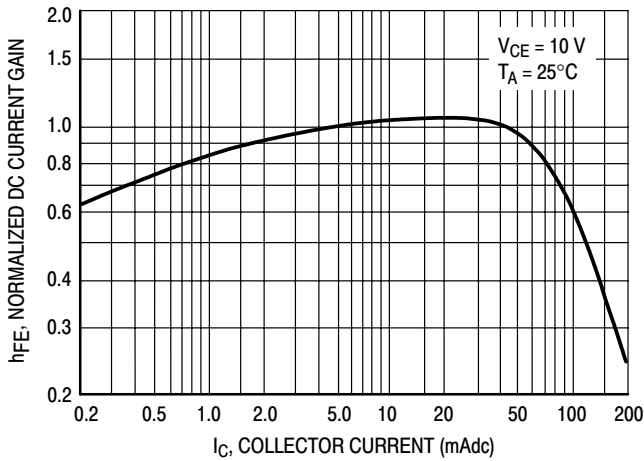


Figure 1. Normalized DC Current Gain

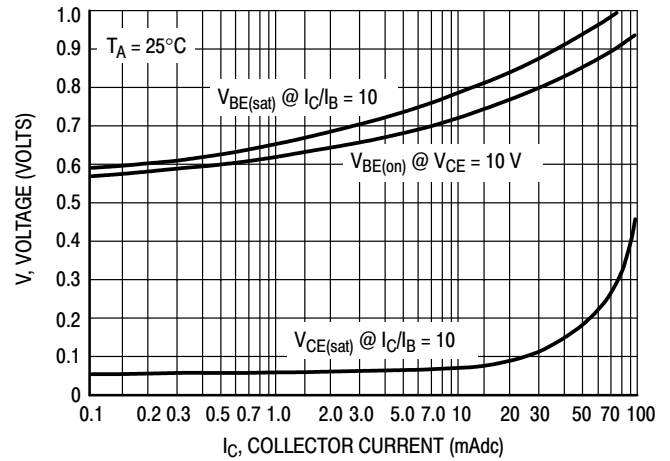


Figure 2. "Saturation" and "On" Voltages

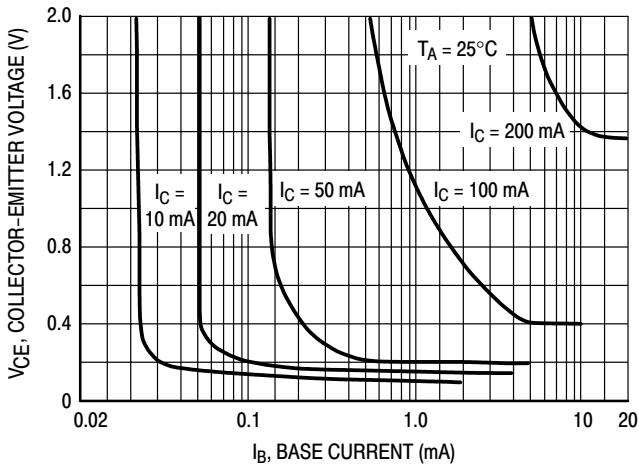


Figure 3. Collector Saturation Region

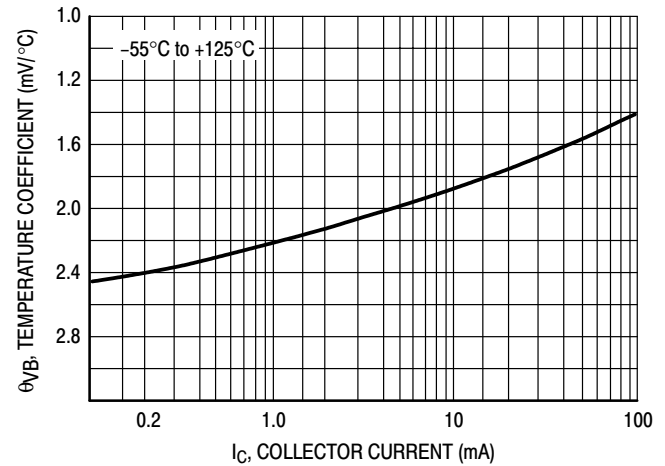


Figure 4. Base-Emitter Temperature Coefficient

BC547/BC548

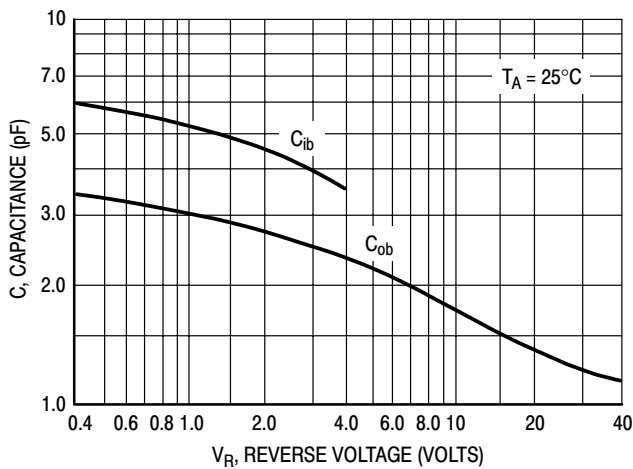


Figure 5. Capacitances

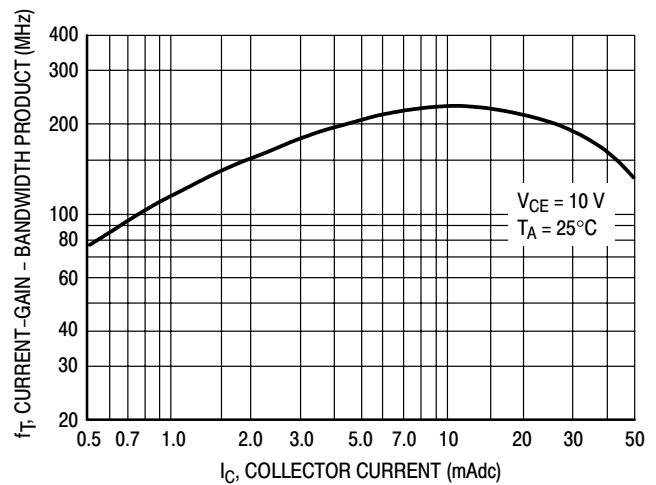


Figure 6. Current-Gain - Bandwidth Product

BC546 thru BC548C

BC547/BC548

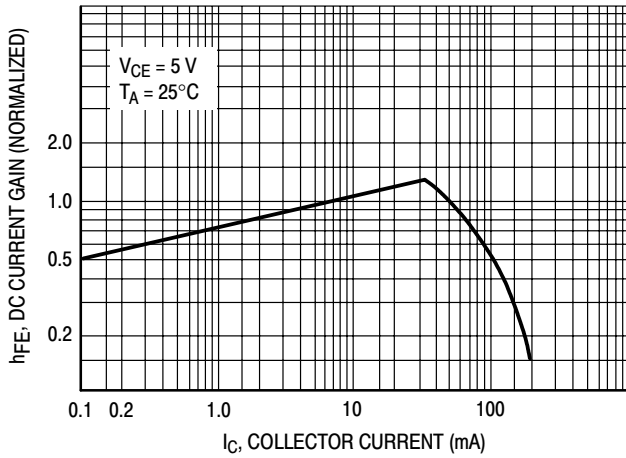


Figure 7. DC Current Gain

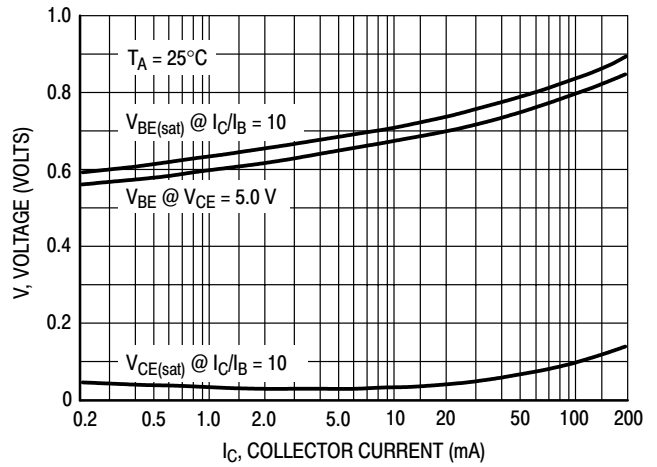


Figure 8. "On" Voltage

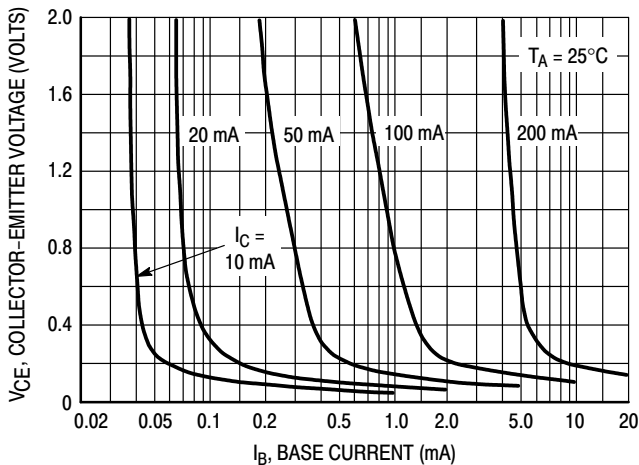


Figure 9. Collector Saturation Region

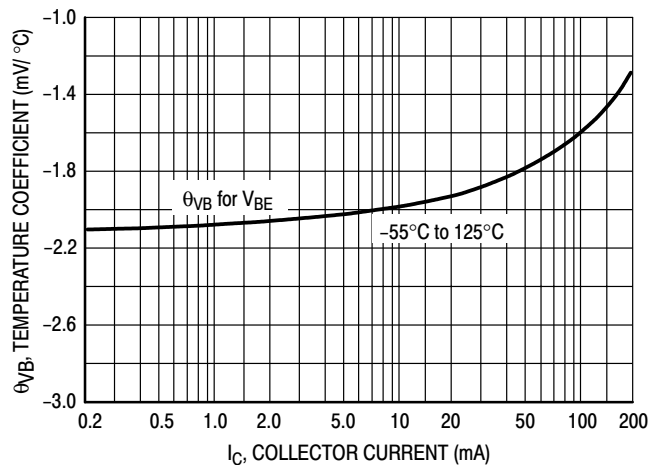


Figure 10. Base-Emitter Temperature Coefficient

BC546

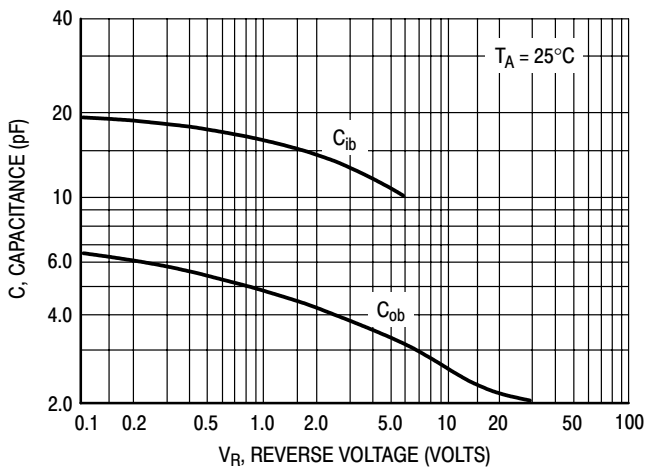


Figure 11. Capacitance

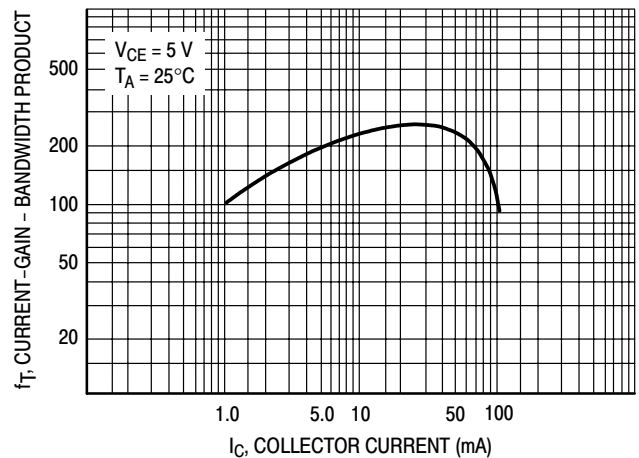


Figure 12. Current-Gain - Bandwidth Product