



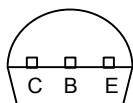
Micro Commercial Components
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BC546,B BC547,A,B,C BC548,A,B,C

Features

- Through Hole Package
- 150°C Junction Temperature

Pin Configuration
Bottom View



NPN Silicon Amplifier Transistor 625mW

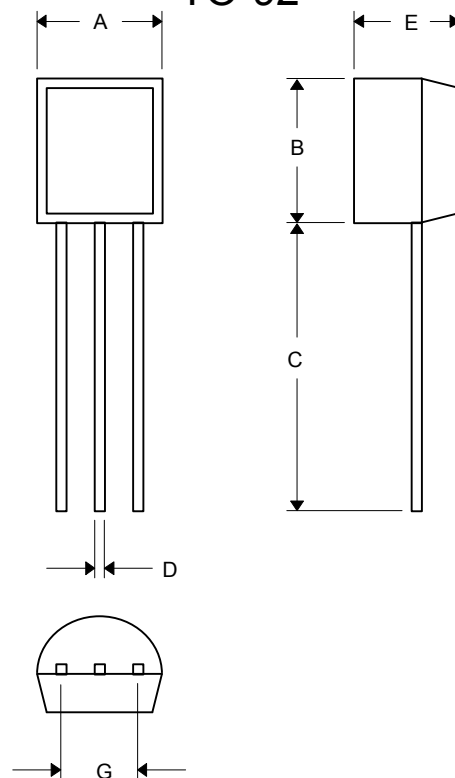
Mechanical Data

- 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@ $T_A=25^{\circ}C$	P_d	625 5.0	mW mW/°C
Power Dissipation@ $T_C=25^{\circ}C$	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					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector–Emitter Breakdown Voltage ($I_C = 1.0\text{ mA}$, $I_B = 0$)	BC546 BC547 BC548	$V_{(BR)CEO}$	65 45 30	— — —	— — —	V
Collector–Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{Adc}$)	BC546 BC547 BC548	$V_{(BR)CBO}$	80 50 30	— — —	— — —	V
Emitter–Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{A}$, $I_C = 0$)	BC546 BC547 BC548	$V_{(BR)EBO}$	6.0 6.0 6.0	— — —	— — —	V

ON CHARACTERISTICS

DC Current Gain ($I_C = 10\text{ }\mu\text{A}$, $V_{CE} = 5.0\text{ V}$)	BC547A/548A BC546B/547B/548B BC548C	h_{FE}	— — —	90 150 270	— — —	—
($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$)	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	
($I_C = 100\text{ mA}$, $V_{CE} = 5.0\text{ V}$)	BC547A/548A BC546B/547B/548B BC548C		— — —	120 180 300	— — —	
Collector–Emitter Saturation Voltage ($I_C = 100\text{ mA}$, $I_B = 5.0\text{ mA}$)		$V_{CE(sat)}$	—	---	0.3	V
Base–Emitter Saturation Voltage ($I_C = 100\text{ mA}$, $I_B = 5.0\text{ mA}$)		$V_{BE(sat)}$	—	—	1.0	V
Base–Emitter On Voltage ($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$) ($I_C = 10\text{ mA}$, $V_{CE} = 5.0\text{ V}$)		$V_{BE(on)}$	0.55 —	— —	0.7 0.77	V

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = 10\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 100\text{ MHz}$)	BC546 BC547 BC548	f_T	150 150 150	300 300 300	— — —	MHz
Output Capacitance ($V_{CB} = 10\text{ V}$, $I_C = 0$, $f = 1.0\text{ MHz}$)		C_{obo}	—	1.7	4.5	pF
Input Capacitance ($V_{EB} = 0.5\text{ V}$, $I_C = 0$, $f = 1.0\text{ MHz}$)		C_{ibo}	—	10	—	pF
Small–Signal Current Gain ($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 1.0\text{ kHz}$)	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 ($I_C = 0.2\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $R_S = 2\text{ k}\Omega$, $f = 1.0\text{ kHz}$, $\Delta f = 200\text{ Hz}$)	BC546 BC547 BC548	NF	— — —	2.0 2.0 2.0	10 10 10	dB

BC546 thru BC548C

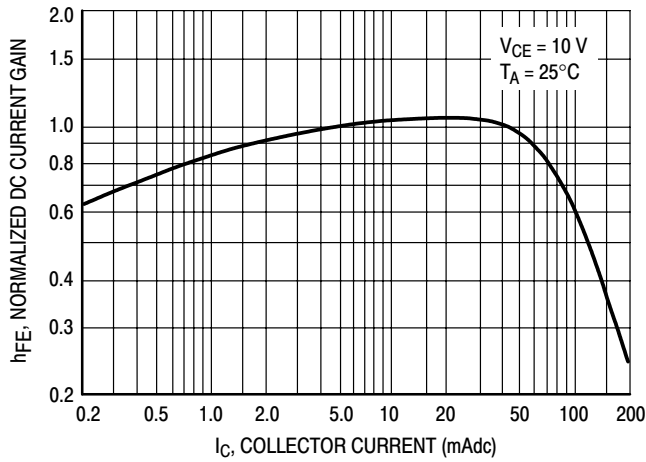


Figure 1. Normalized DC Current Gain

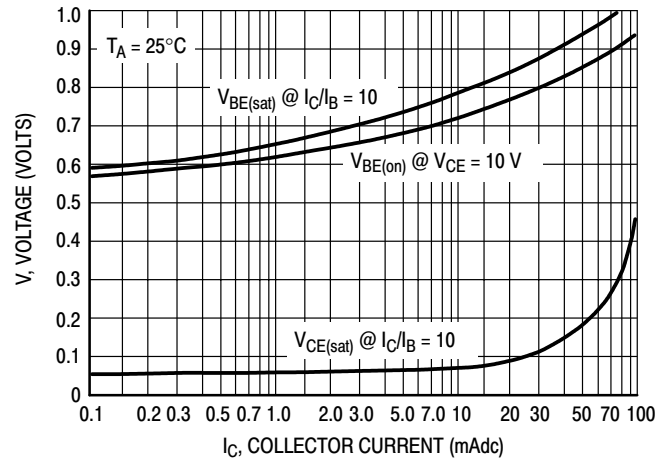


Figure 2. "Saturation" and "On" Voltages

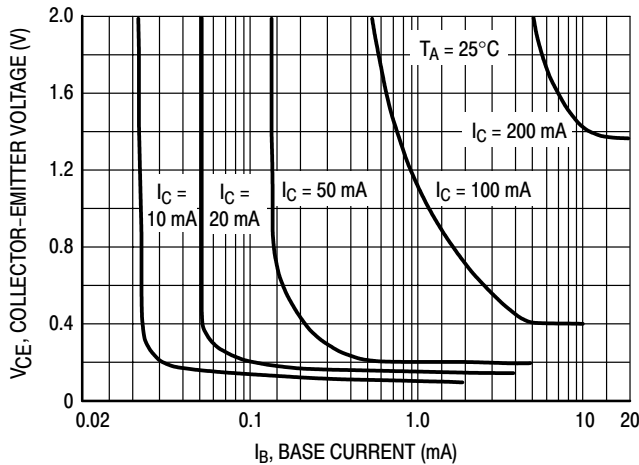


Figure 3. Collector Saturation Region

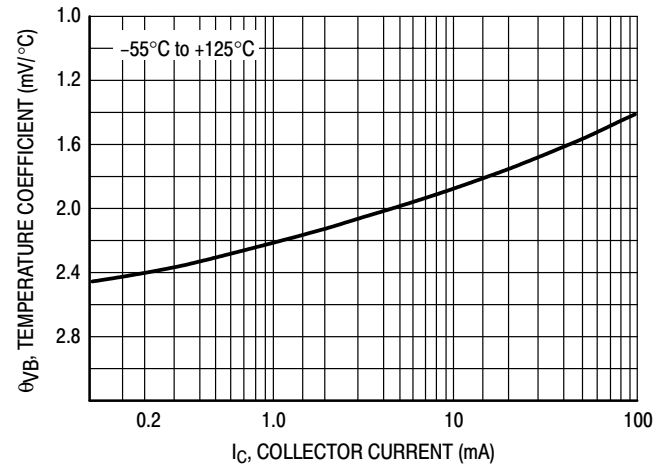


Figure 4. Base-Emitter Temperature Coefficient

BC547/BC548

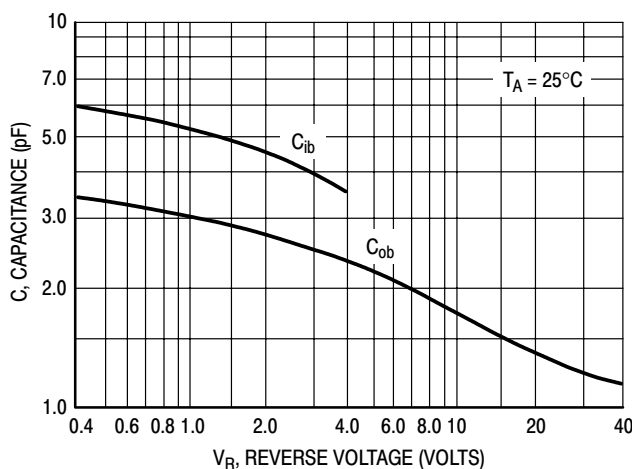


Figure 5. Capacitances

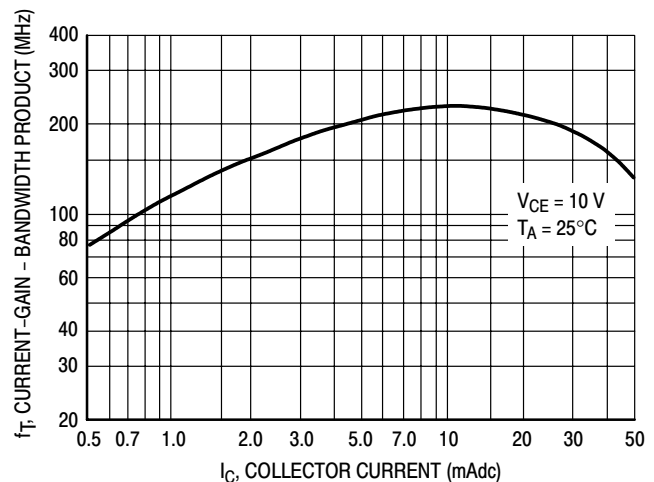


Figure 6. Current-Gain - Bandwidth Product

BC546 thru BC548C

BC547/BC548

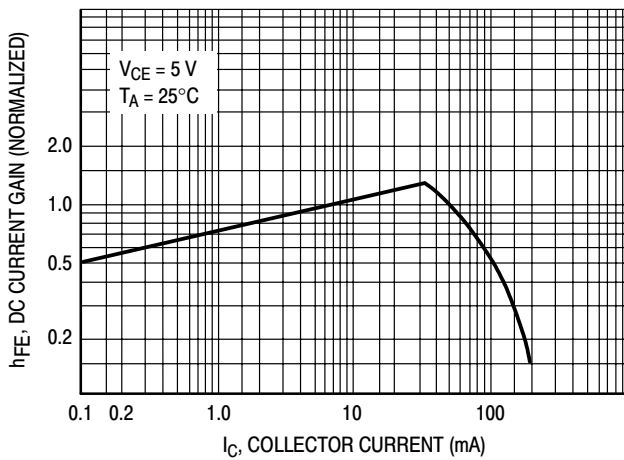


Figure 7. DC Current Gain

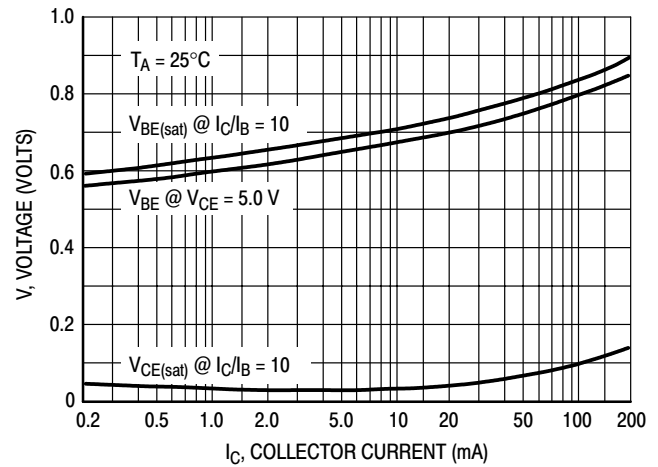


Figure 8. "On" Voltage

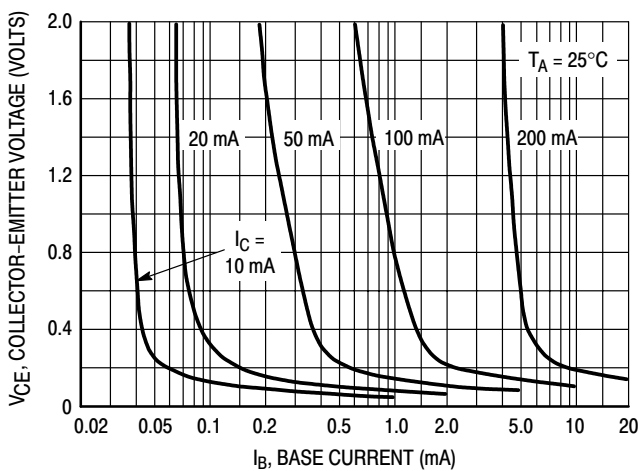


Figure 9. Collector Saturation Region

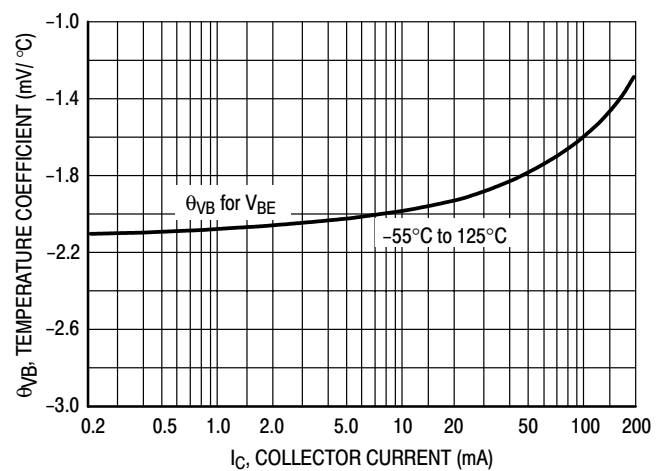


Figure 10. Base-Emitter Temperature Coefficient

BC546

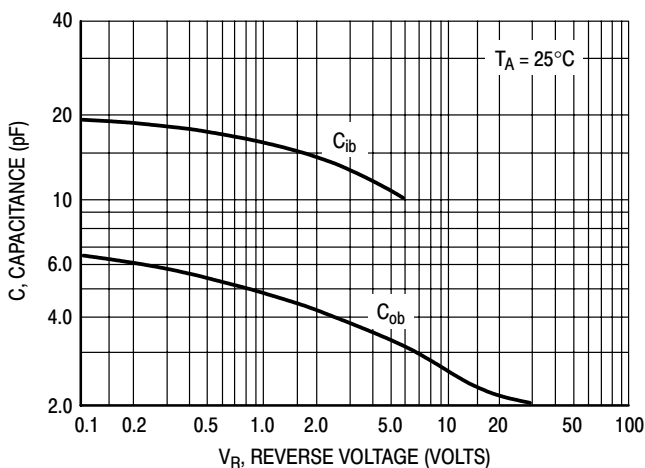


Figure 11. Capacitance

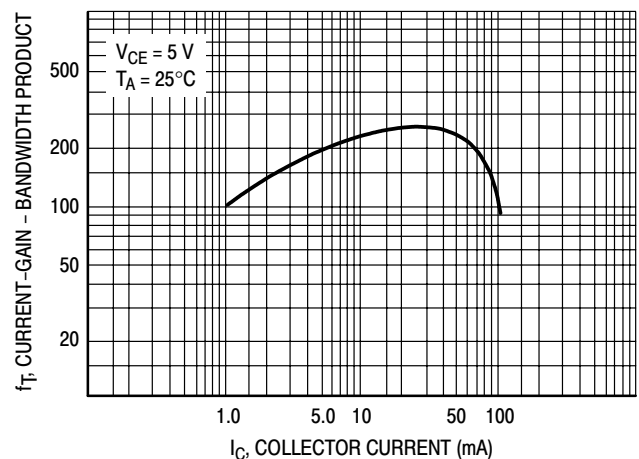


Figure 12. Current-Gain - Bandwidth Product