

BC546A/B/C
BC547A/B/C
BC548A/B/C

NPN Silicon
Amplifier Transistor
625mW

Features

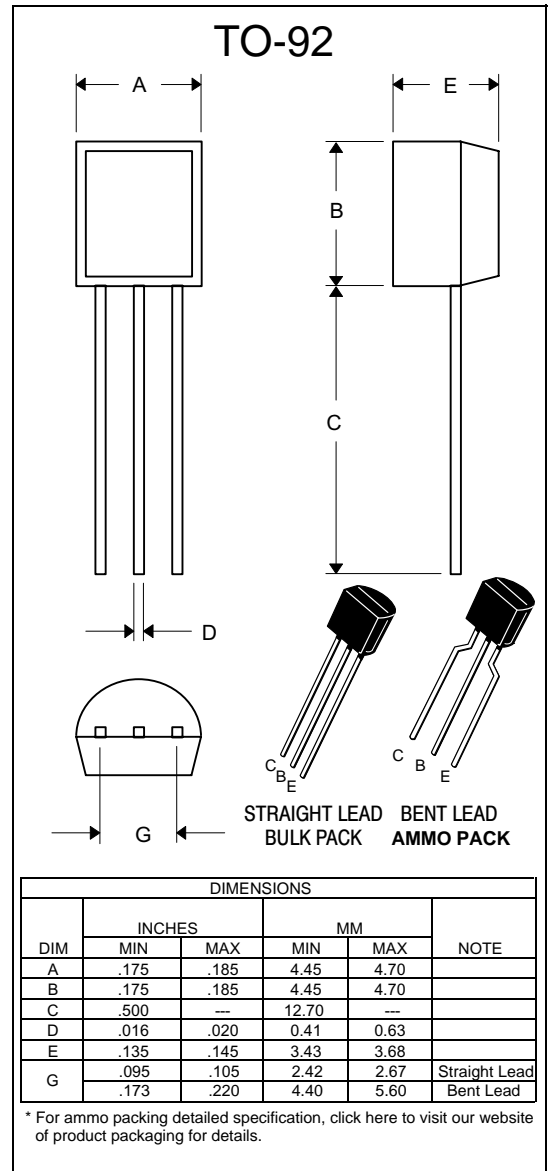
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Through Hole Package
- 150°C Junction Temperature
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

Mechanical Data

- Case: TO-92, Molded Plastic
- Polarity:indicated as below

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



BC546 thru BC548

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	65	—	—	V
	BC547	45	—	—	
	BC548	30	—	—	
Collector–Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{A}$)	BC546	80	—	—	V
	BC547	50	—	—	
	BC548	30	—	—	
Emitter–Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{A}$, $I_C = 0$)	BC546	6.0	—	—	V
	BC547	6.0	—	—	
	BC548	6.0	—	—	

ON CHARACTERISTICS

DC Current Gain ($I_C = 10\text{ }\mu\text{A}$, $V_{CE} = 5.0\text{ V}$)	BC546A/547A/548A	h_{FE}	—	90	—	—
	BC546B/547B/548B		—	150	—	
	BC546C/547C/548C		—	270	—	
($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$)	BC546A/547A/548A		110	180	220	
	BC546B/547B/548B		200	290	450	
	BC546C/547C/548C		420	520	800	
($I_C = 100\text{ mA}$, $V_{CE} = 5.0\text{ V}$)	BC546A/547A/548A		—	120	—	
	BC546B/547B/548B		—	180	—	
	BC546C/547C/548C		—	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	V
			—	—	0.77	

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = 10\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 100\text{ MHz}$)	BC546	f_T	150	300	—	MHz
	BC547		150	300	—	
	BC548		150	300	—	
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 ($I_C = 2.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$, $f = 1.0\text{ kHz}$)	BC546A/547A/548A	h_{fe}	125	220	260	—
	BC546B/547B/548B		240	330	500	
	BC546C/547C/548C		450	600	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	NF	—	2.0	10	dB
	BC547		—	2.0	10	
	BC548		—	2.0	10	

BC546 thru BC548

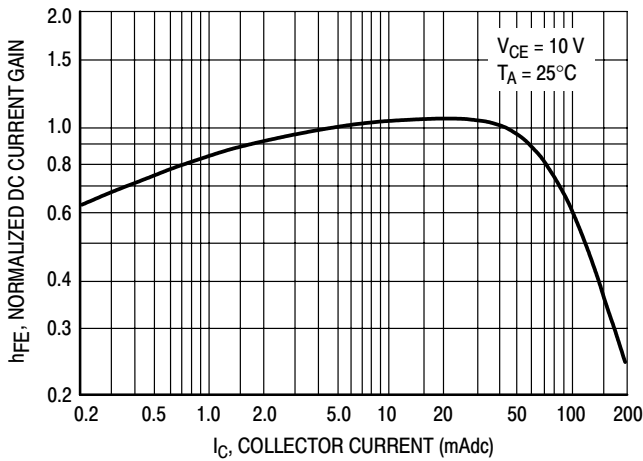


Figure 1. Normalized DC Current Gain

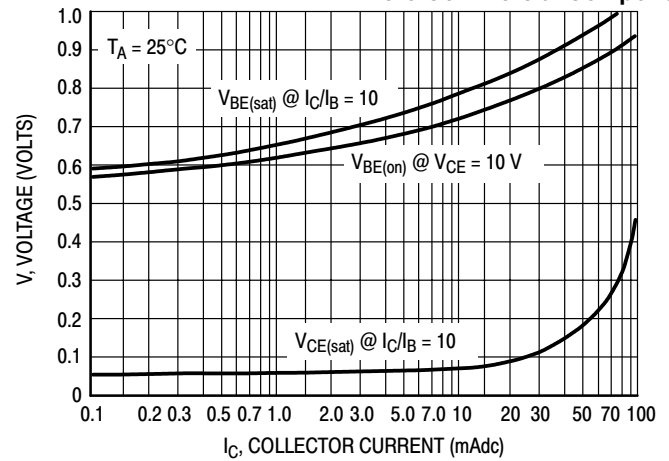


Figure 2. "Saturation" and "On" Voltages

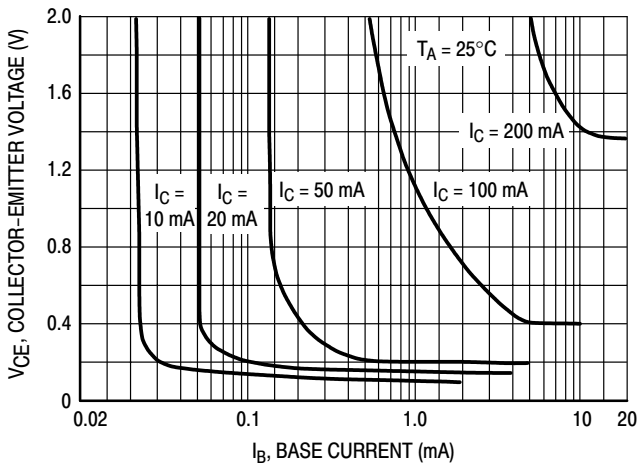


Figure 3. Collector Saturation Region

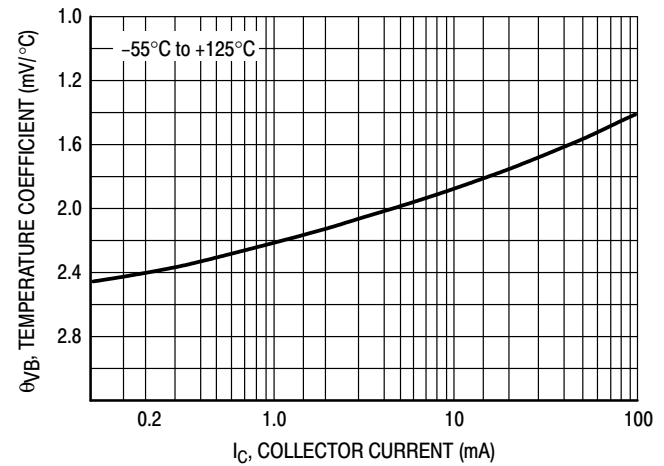


Figure 4. Base-Emitter Temperature Coefficient

BC547/BC548

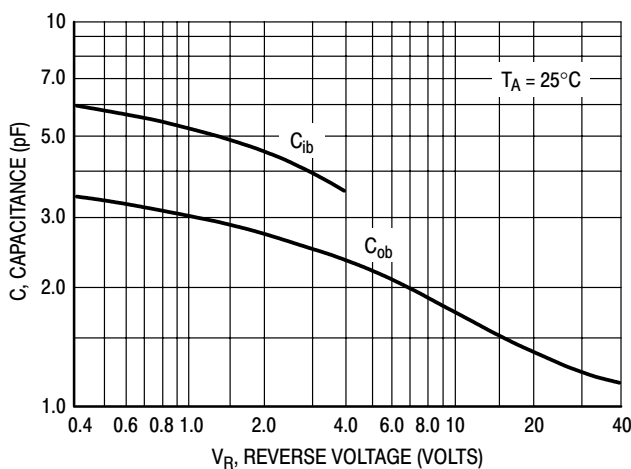


Figure 5. Capacitances

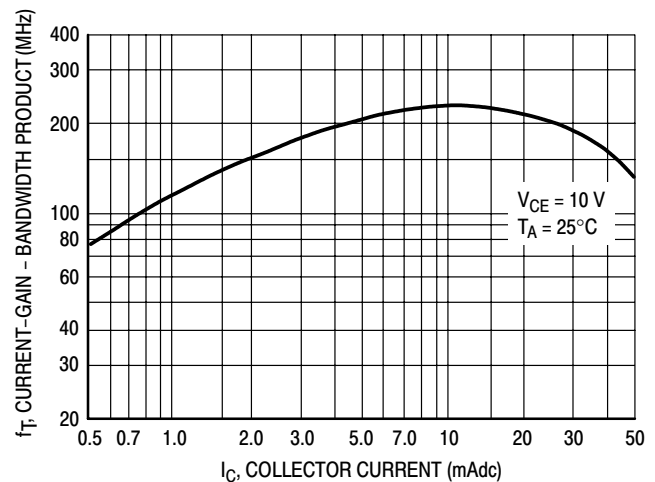


Figure 6. Current-Gain - Bandwidth Product

BC546 thru BC548

BC547/BC548

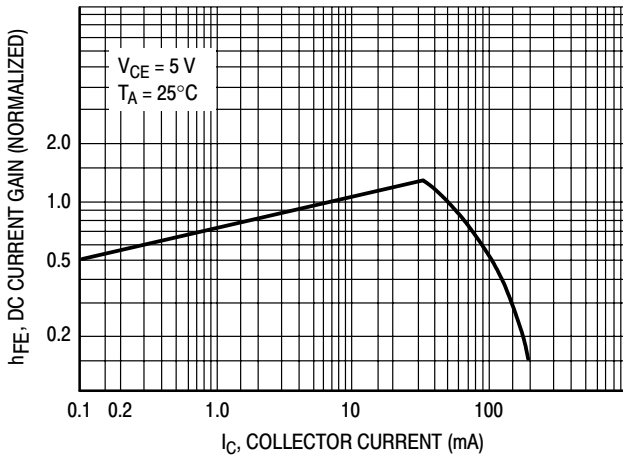


Figure 7. DC Current Gain

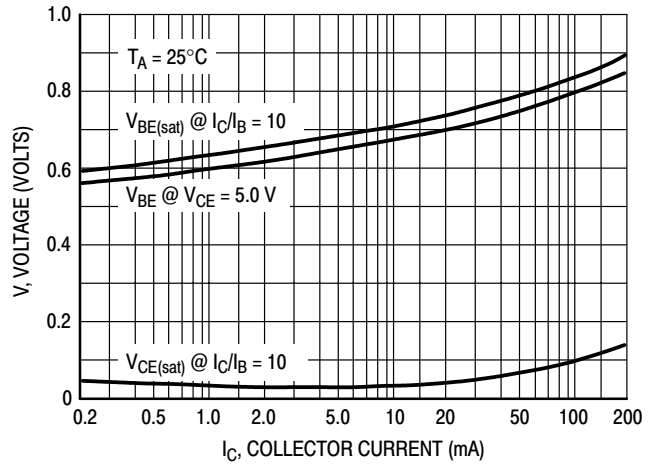


Figure 8. "On" Voltage

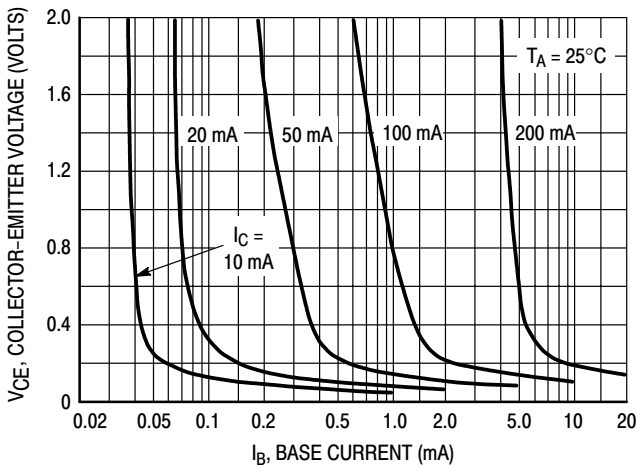


Figure 9. Collector Saturation Region

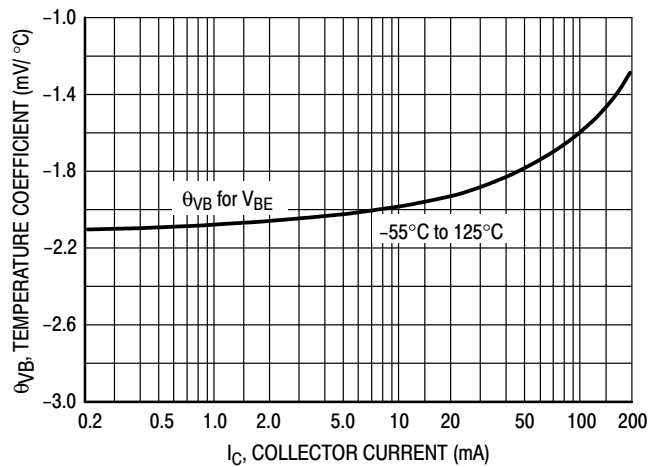


Figure 10. Base-Emitter Temperature Coefficient

BC546

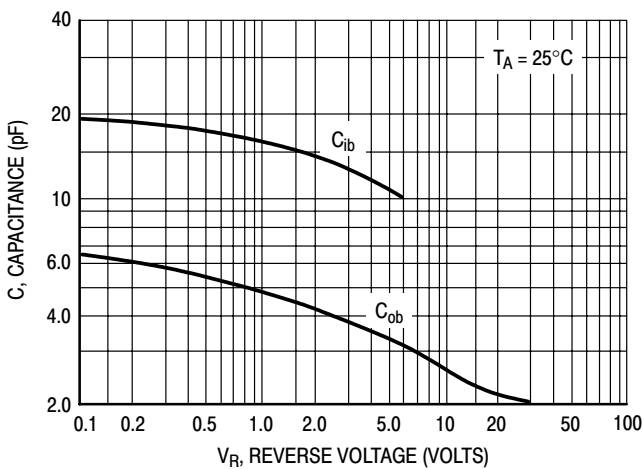


Figure 11. Capacitance

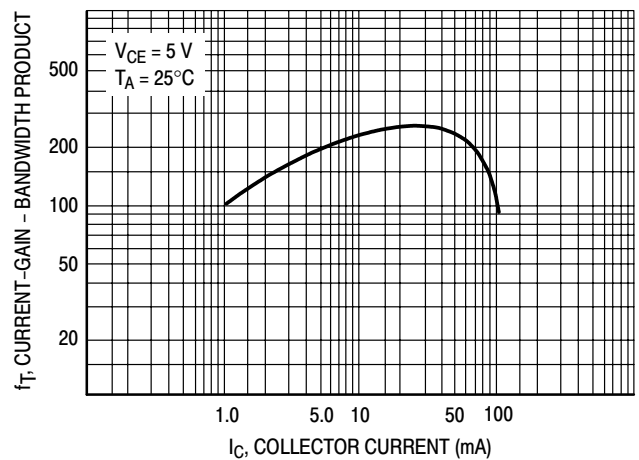


Figure 12. Current-Gain - Bandwidth Product



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Ordering Information :

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 100Kpcs/Carton

Note : Adding "-HF" suffix for halogen free, eg. Part Number-AP-HF

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