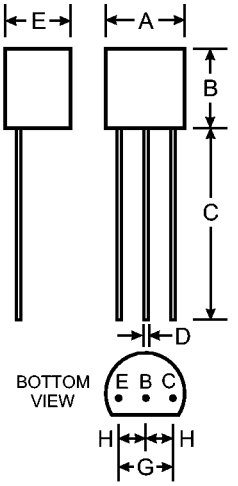
BC556 - BC558

PNP EPITAXIAL PLANAR TRANSISTOR

Features

- Ideal for Switching and AF Amplifier Applications
- Divided into Current Gain subgroups
- Complementary NPN Types Available (BC546 thru BC548)



TO-92		
Dim	**Min**	**Max**
A	4.45	4.70
B	4.46	4.70
C	12.7	—
D	0.41	0.63
E	3.43	3.68
G	2.42	2.67
H	1.14	1.40
All Dimensions in mm		

Mechanical Data

- Case: T0-92, Plastic
- Leads: Solderable per MIL-STD-202, Method 208
- Pin Connections: See Diagram
- Weight: 0.18 grams (approx)

Maximum Ratings

25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Collector-Base Voltage	BC556 BC557 BC558	$-V_{CBO}$	80 50 30	V
Collector-Emitter Voltage	BC556 BC557 BC558	$-V_{CEO}$	65 45 30	V
Emitter-Base Voltage		$-V_{EBO}$	5.0	V
Collector Current		$-I_C$	100	mA
Peak Collector Current		$-I_{CM}$	200	mA
Peak Emitter Current		$-I_{EM}$	200	mA
Power Dissipation (Note 1)		P_d	500	mW
Operating and Storage Temperature Range		T_j, T_{STG}	-65 to +150	°C

Electrical Characteristics 25°C unless otherwise specified

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
h-Parameters Small Signal Current Gain							
Current Gain Group	A	h_{fe}	—	220	—	—	
	B	h_{fe}	—	330	—	—	
	C	h_{fe}	—	600	—	—	
Input Impedance	Group A	h_{je}	1.6	2.7	4.5	kΩ	V_{CE} = -5.0V, I_C = -2.0mA, f = 1.0kHz, Note 2
	B	h_{je}	3.2	4.5	8.5	kΩ	
	C	h_{je}	6.0	8.7	15	kΩ	
Output Admittance	Group A	h_{oe}	—	18	30	µS	
	B	h_{oe}	—	30	60	µS	
	C	h_{oe}	—	60	110	µS	
Reverse Voltage Transfer Ratio	Group A	h_{re}	—	$1.5x10^{-4}$	—	—	
	B	h_{re}	—	$2x10^{-4}$	—	—	
	C	h_{re}	—	$3x10^{-4}$	—	—	
DC Current Gain							Note 2
Current Gain Group	A		—	90	—		V_{CE} = -5.0V, I_C = -10µA
	B		—	150	—		
	C		—	270	—		
	Group A	h_{FE}	110	180	220	—	V_{CE} = -5.0V, I_C = -2.0mA
	B		200	290	450		
	C		420	500	800		
	Group A		—	120	—		V_{CE} = -5.0V, I_C = -100mA
	B		—	200	—		
	C		—	400	—		
Thermal Resistance, Junction to Ambient		$R_{\theta JA}$	—	—	250	K/W	Note 1
Collector-Emitter Saturation Voltage		$-V_{CE(SAT)}$	—	80 250	300 650	mV	I_C = -10mA, I_B = -0.5mA I_C = -100mA, I_B =-5.0mA
Base-Emitter Saturation Voltage		$-V_{BE(SAT)}$	—	700 900	—	mV	I_C = -10mA, I_B = -0.5mA I_C = -100mA, I_B = -5.0mA
Base-Emitter Voltage		$-V_{BE}$	600 —	660 —	750 800	mV	V_{CE} = -5.0V, I_C = -2.0mA V_{CE} = -5.0V, I_C = -10mA
Collector Cutoff Current	BC556	$-I_{CES}$		0.2	15	nA	V_{CE} = -80V
	BC557	$-I_{CES}$		0.2	15	nA	V_{CE} = -50V
	BC558	$-I_{CES}$		0.2	15	nA	V_{CE} = -30V
	BC556	$-I_{CES}$	—	—	4.0	µA	V_{CE} = -80V, T_j = 125°C
	BC557	$-I_{CES}$		—	4.0	µA	V_{CE} = -50V, T_j = 125°C
	BC558	$-I_{CES}$		—	4.0	µA	V_{CE} = -30V, T_j = 125°C
		$-I_{CBO}$		—	15	nA	V_{CB} = -30V
		$-I_{CBO}$		—	5.0	µA	V_{CB} = -30V, T_j = 125°C
Gain Bandwidth Product		f_T	—	150	—	MHz	V_{CE} = -5.0V, I_C = -10mA, f = 100MHz
Collector-Base Capacitance		C_{CBO}	—	—	6.0	pF	V_{CB} = -10V, f = 1.0MHz
Noise Figure		NF	—	2.0	10	dB	V_{CE} = -5V, I_C = -200µA, R_G = 2.0kΩ, f = 1.0kHz, Δf = 200Hz

Notes: 1. Leads maintained at ambient temperature at a distance of 2mm from case.
2. Current gain subgroup "C" is not available for BC856.

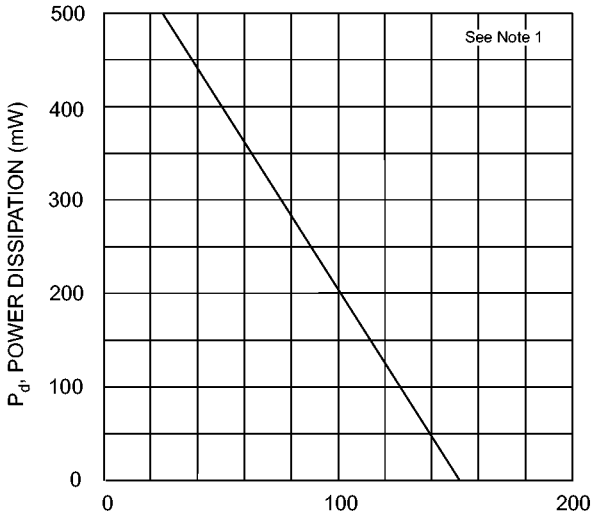


Fig. 1, Power Derating Curve

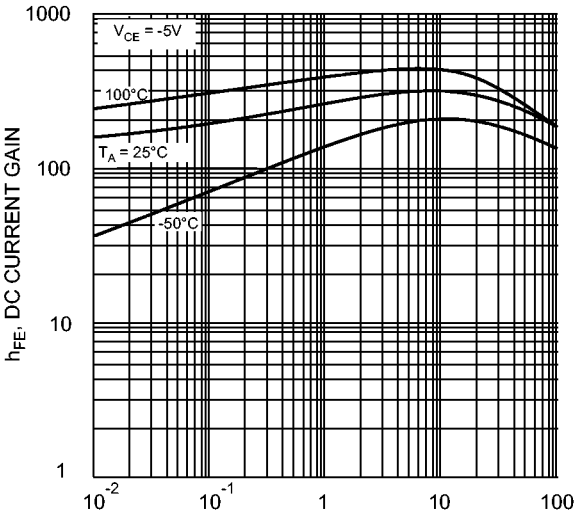


Fig. 2, DC Current Gain vs Collector Current

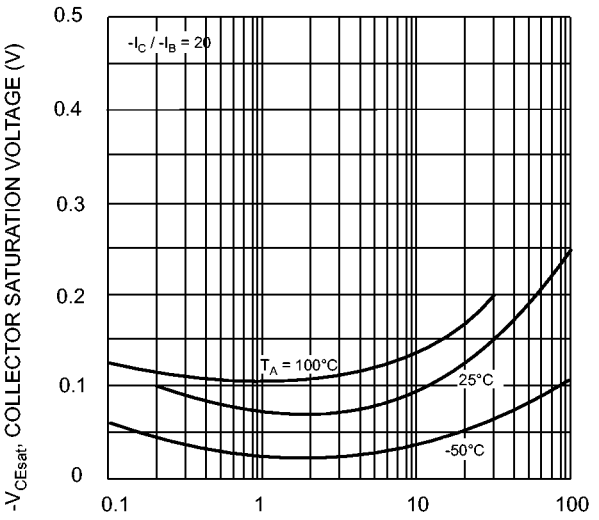


Fig. 3, Collector Sat. Voltage vs Collector Current

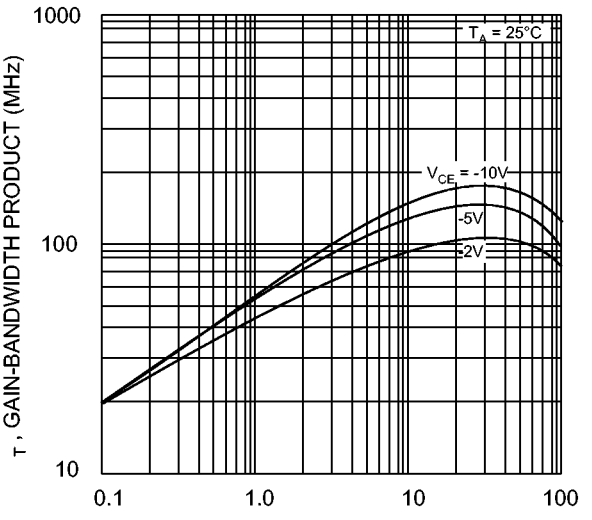


Fig. 4, Gain-Bandwidth Product vs Collector Current