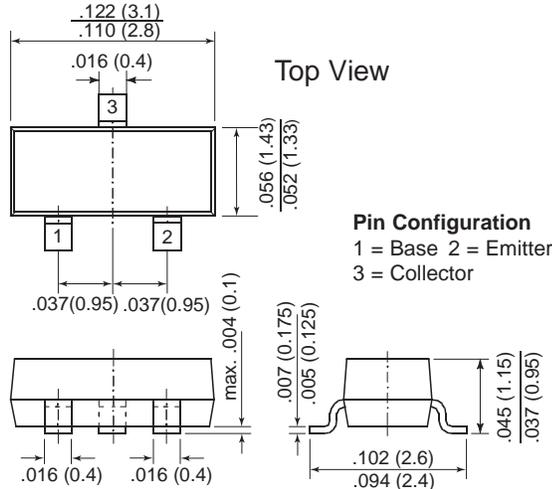


Small Signal Transistors (PNP)

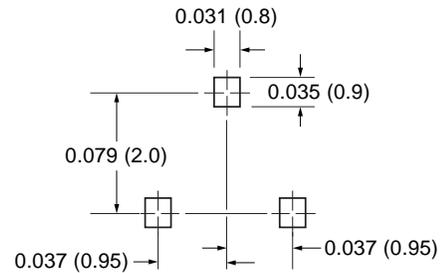


TO-236AB (SOT-23)



Dimensions in inches and (millimeters)

Mounting Pad Layout



Mechanical Data

Case: SOT-23 Plastic Package

Weight: approx. 0.008 grams

Marking BC807-16 = 5A BC808-16 = 5E

Codes: -25 = 5B -25 = 5F
 -40 = 5C -40 = 5G

Packaging Codes/Options:

E8/10K per 13" reel (8mm tape), 30K/box

E9/3K per 7" reel (8mm tape), 30K/box

Features

- PNP Silicon Epitaxial Planar Transistors for switching, AF driver and amplifier applications.
- Especially suited for automatic insertion in thick and thin-film circuits.
- These transistors are subdivided into three groups (-16, -25, and -40) according to their current gain.
- As complementary types, the NPN transistors BC817 and BC818 are recommended.

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage (Base shorted)	-V _{CES}	50	V
		30	
Collector-Emitter Voltage (Base open)	-V _{CEO}	45	V
		25	
Emitter-Base Voltage	-V _{EBO}	5	V
Collector Current	-I _C	800	mA
Peak Collector Current	-I _{CM}	1000	mA
Peak Base Current	-I _{BM}	200	mA
Peak Emitter Current	I _{EM}	1000	mA
Power Dissipation at T _{SB} = 50 °C	P _{tot}	310 ⁽¹⁾	mW
Thermal Resistance Junction to Ambient Air	R _{θJA}	450 ⁽¹⁾	°C/W
Thermal Resistance Junction to Substrate Backside	R _{θSB}	320 ⁽¹⁾	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _s	-65 to +150	°C

Note: (1) Device on fiberglass substrate, see layout on next page.

Small Signal Transistors (PNP)

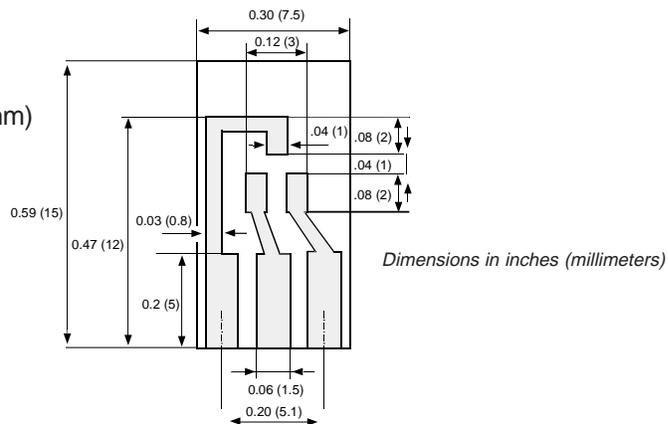
Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit		
DC Current Gain Current Gain Group	h _{FE}	-V _{CE} = 1V, -I _C = 100mA	-16	—	250	—		
			-25	100	—	400	—	
		-V _{CE} = 1V, -I _C = 500mA	-40	—	250	—	600	—
				40	—	—	—	—
Collector Saturation Voltage	-V _{CEsat}	-I _C = 500mA, -I _B = 50mA	—	—	0.7	V		
Base Saturation Voltage	V _{BEsat}	-I _C = 500mA, -I _B = 50mA	—	—	1.3	V		
Base-Emitter Voltage	-V _{BEon}	-V _{CE} = 1V, -I _C = 500mA	—	—	1.2	V		
Collector-Base Cutoff Current	-I _{CB0}	-V _{CB} = 20V	—	—	100	nA		
		-V _{CB} = 20V, T _J = 150°C	—	—	5	μA		
Emitter-Base Cutoff Current	-I _{EB0}	-V _{EB} = 4 V	—	—	100	nA		
Gain-Bandwidth Product	f _T	-V _{CE} = 5V, -I _C = 10mA f = 50 MHz	—	100	—	MHz		
Collector-Base Capacitance	C _{CB0}	-V _{CB} = 10V, f = 1 MHz	—	12	—	pF		

Note: (1) Device on fiberglass substrate, see layout.

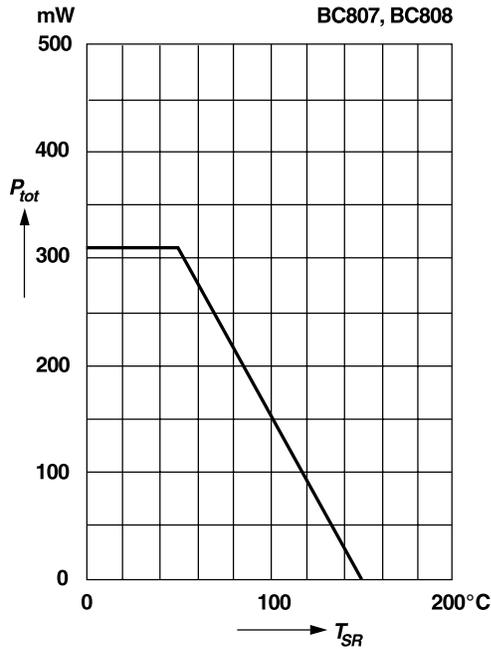
Layout for R_{θJA} test

Thickness: Fiberglass 0.059 in. (1.5 mm)
Copper leads 0.012 in. (0.3 mm)

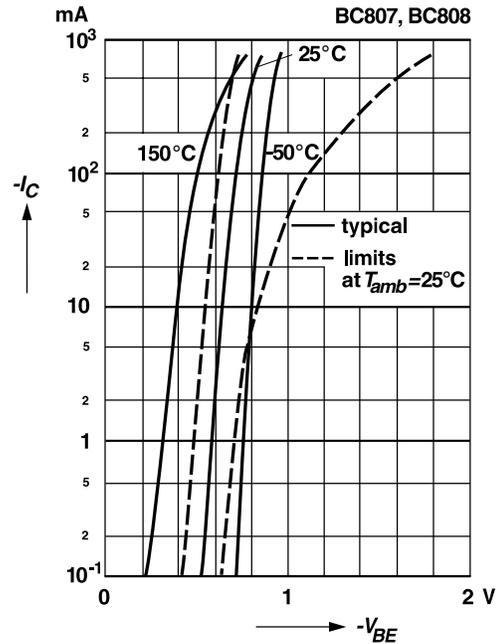


Small Signal Transistors (PNP)

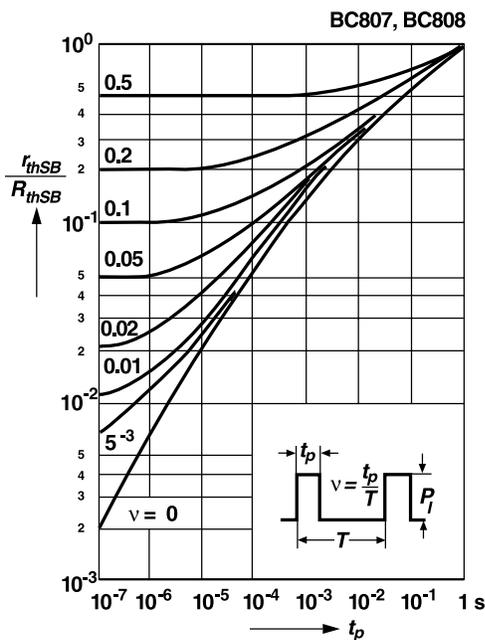
Admissible power dissipation versus temperature of substrate backside
Device on fiberglass substrate, see layout



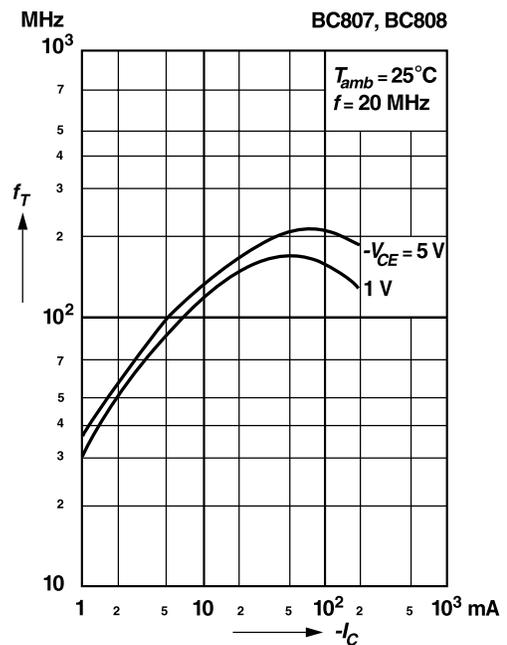
Collector current versus base-emitter voltage



Pulse thermal resistance versus pulse duration (normalized)
Device on fiberglass substrate, see layout

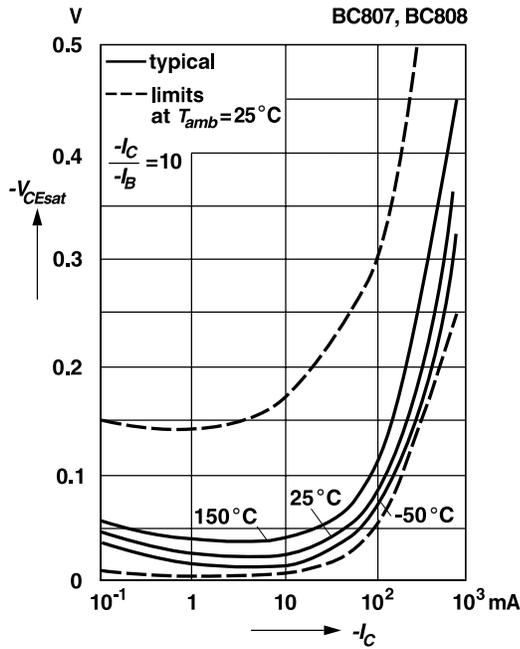


Gain-bandwidth product versus collector current

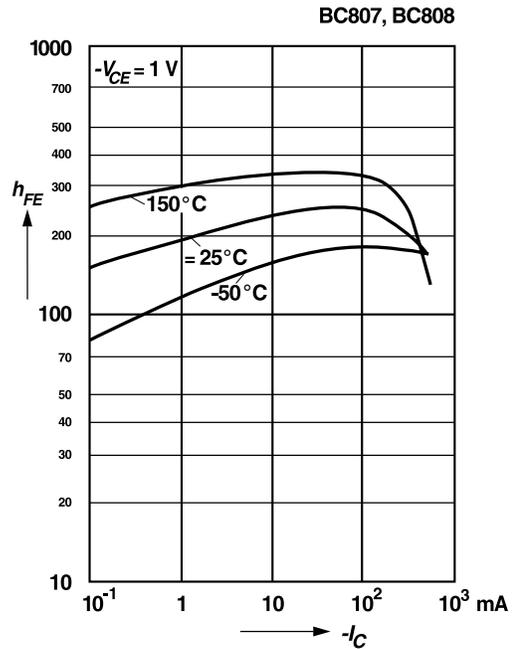


Small Signal Transistors (PNP)

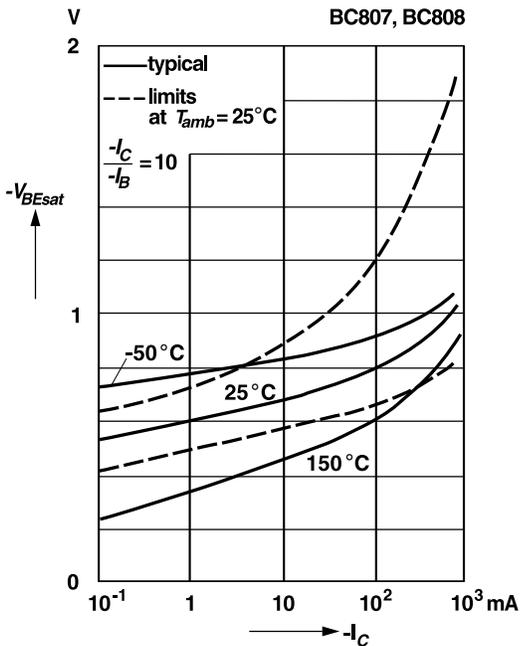
Collector saturation voltage versus collector current



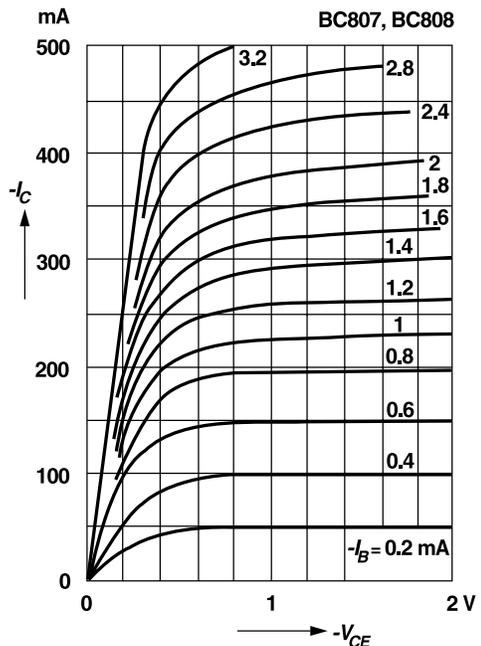
DC current gain versus collector current



Base saturation voltage versus collector current

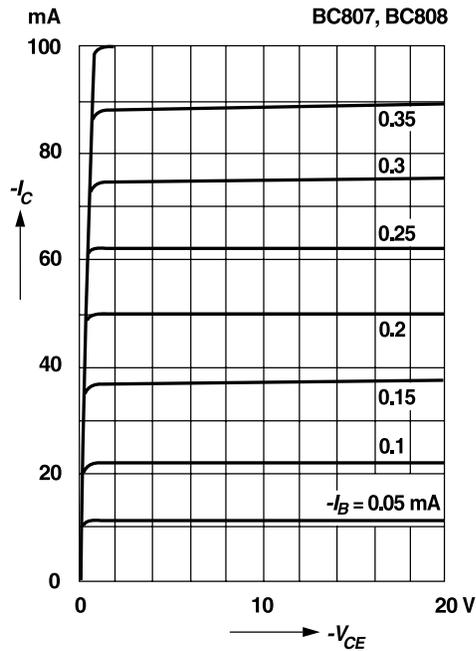


Common emitter collector characteristics



Small Signal Transistors (PNP)

Common emitter collector characteristics



Common emitter collector characteristics

