

Small Signal Transistors (PNP)

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.
- ◆ Halogen-free

MECHANICAL DATA

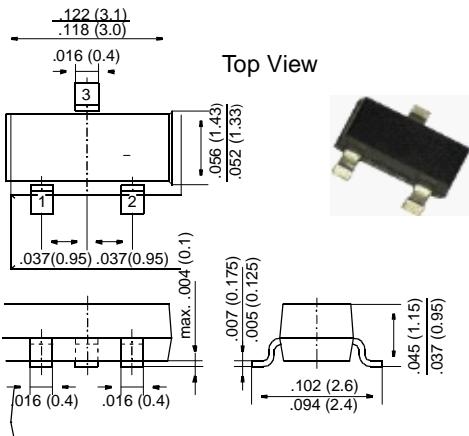
Case: SOT-23 Plastic Package

Weight: approx. 0.008 g

Marking code

Type	Marking
BC807-16	5A
-25	5B
-40	5C
BC808-16	5E
-25	5F
-40	5G

SOT-23



Dimensions in inches and (millimeters)

Pin configuration
 1 = Base, 2 = Emitter, 3 = Collector.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Value	Unit
Collector-Emitter Voltage	$-V_{CES}$	50	V
	$-V_{CES}$	30	V
Collector-Emitter Voltage	$-V_{CEO}$	45	V
	$-V_{CEO}$	25	V
Emitter-Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	500	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
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	-65 to +150	°C

¹⁾ Device on fiberglass substrate, see layout

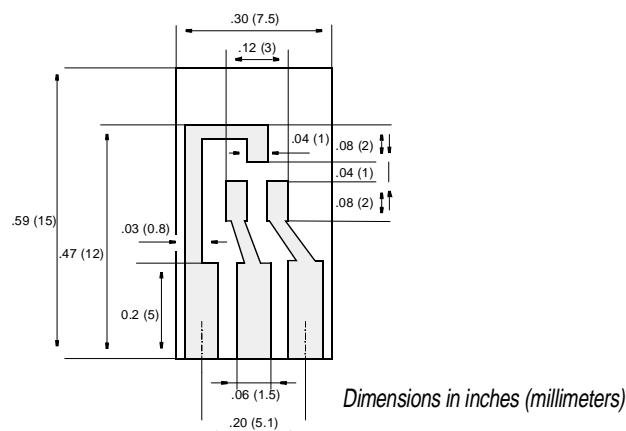
ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 1$ V, $-I_C = 100$ mA					
Current Gain Group-16					
-25	h_{FE}	100	—	250	—
-40	h_{FE}	160	—	400	—
at $-V_{CE} = 1$ V, $-I_C = 300$ mA					
-16	h_{FE}	250	—	600	—
-25	h_{FE}	60	—	—	—
-40	h_{FE}	100	—	—	—
-40	h_{FE}	170	—	—	—
Thermal Resistance Junction Substrate Backside	R_{thSB}	—	—	320 ¹⁾	K/W
Thermal Resistance Junction to Ambient Air	R_{thJA}	—	—	450 ¹⁾	K/W
Collector Saturation Voltage at $-I_C = 500$ mA, $-I_B = 50$ mA	$-V_{CEsat}$	—	—	0.7	V
Base-Emitter Voltage at $-V_{CE} = 1$ V, $-I_C = 300$ mA	$-V_{BE}$	—	—	1.2	V
Collector-Emitter Cutoff Current at $-V_{CE} = 45$ V	BC807 BC808	$-I_{CES}$	—	100	nA
at $-V_{CE} = 25$ V		$-I_{CES}$	—	100	nA
at $-V_{CE} = 25$ V, $T_j = 150$ °C		$-I_{CES}$	—	5	μA
Emitter-Base Cutoff Current at $-V_{EB} = 4$ V		$-I_{EBO}$	—	100	nA
Gain-Bandwidth Product at $-V_{CE} = 5$ V, $-I_C = 10$ mA, $f = 50$ MHz		f_T	—	100	—
Collector-Base Capacitance at $-V_{CB} = 10$ V, $f = 1$ MHz		C_{CBO}	12		pF

¹⁾ Device on fiberglass substrate, see layout

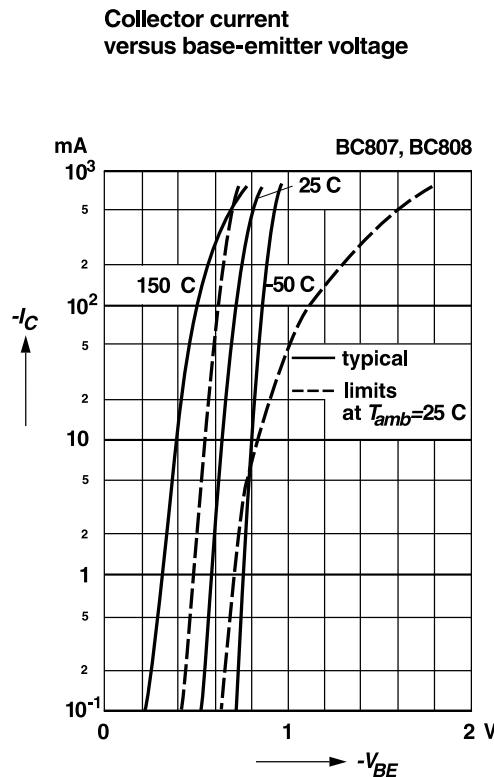
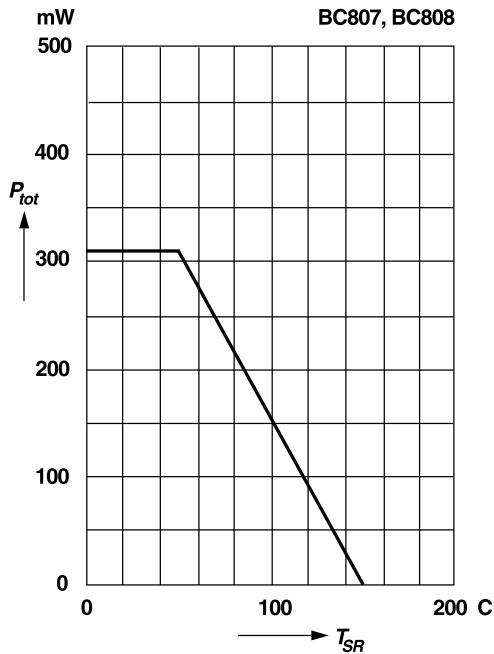
Layout for R_{thJA} test



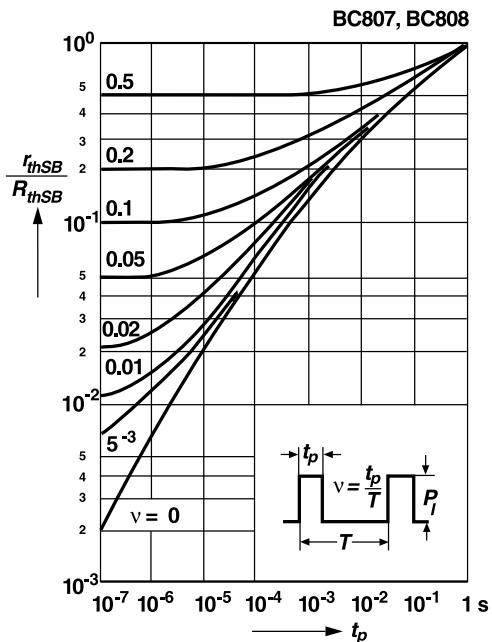
Thickness: Fiberglass 0.059 in (1.5 mm)
Copper leads 0.012 in (0.3 mm)

RATING AND CHARACTERISTICS CURVES (BC807/ BC808)

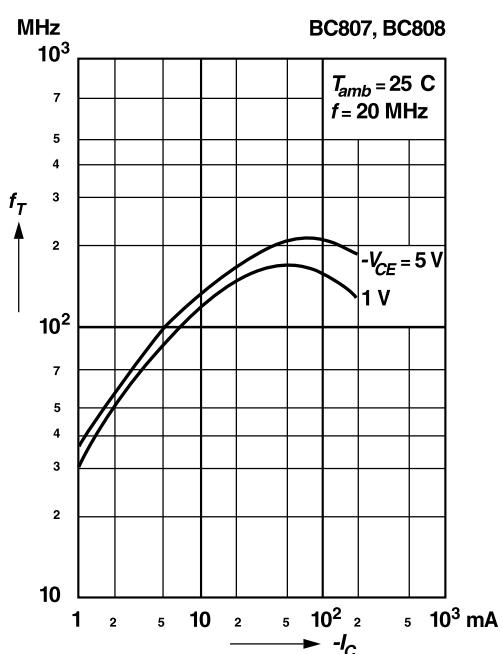
Admissible power dissipation
versus temperature of substrate backside
Device on fiberglass substrate, see layout



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

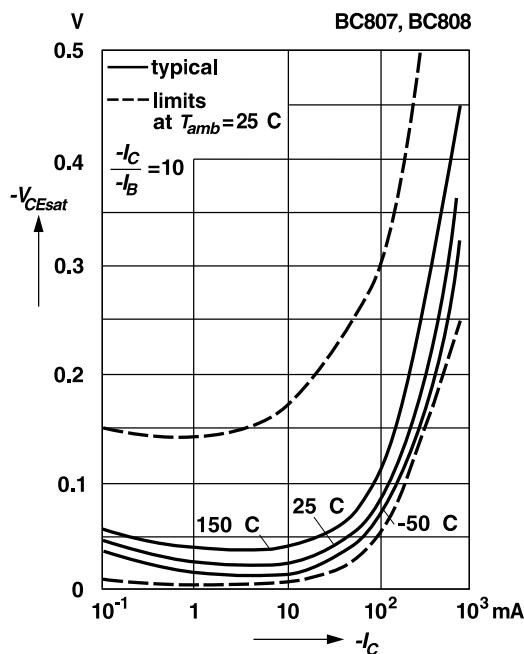


Gain-bandwidth product
versus collector current

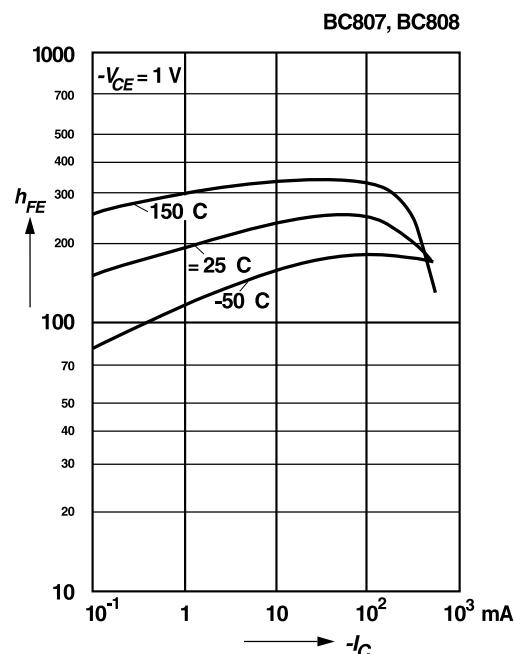


RATING AND CHARACTERISTICS CURVES (BC807/ BC808)

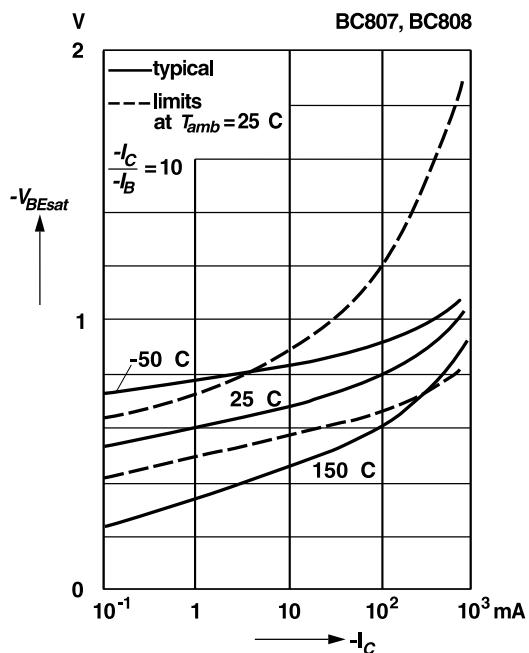
Collector saturation voltage
versus collector current



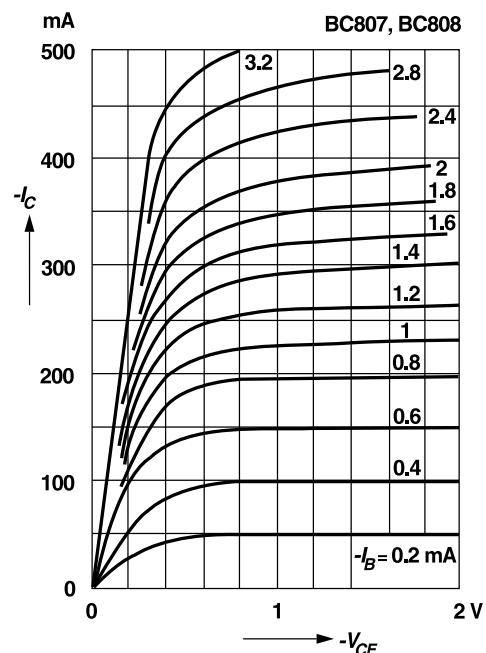
DC current gain
versus collector current



Base saturation voltage
versus collector current

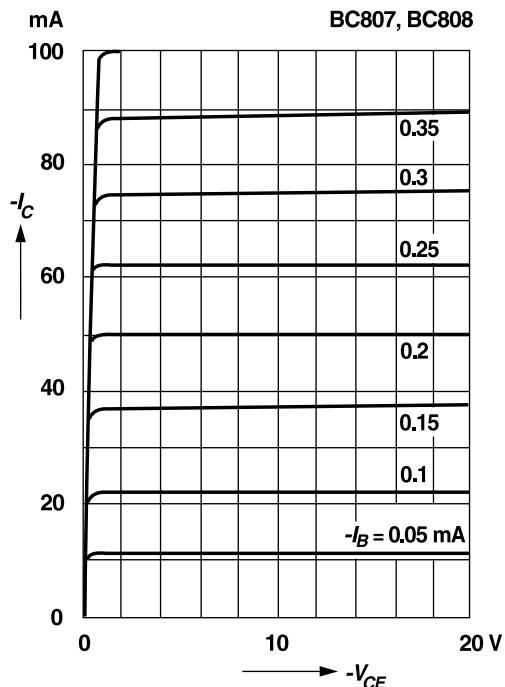


Common emitter
collector characteristics

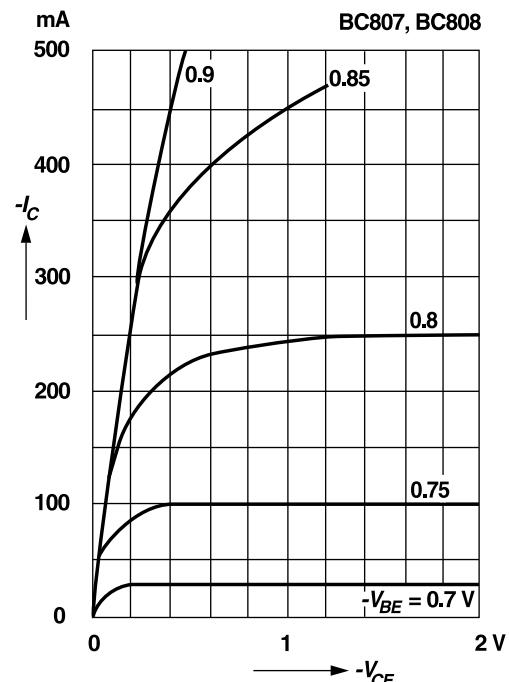


RATING AND CHARACTERISTICS CURVES (BC807/ BC808)

Common emitter
collector characteristics



Common emitter
collector characteristics



PACKAGING OF DIODE

REEL PACK

PACKAGE	PACKING CODE	REEL (EA)	COMPONENT SPACE(mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SOT-23/-3L	-T	3,000	---	---	178	438*438*220	180,000	---

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