RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

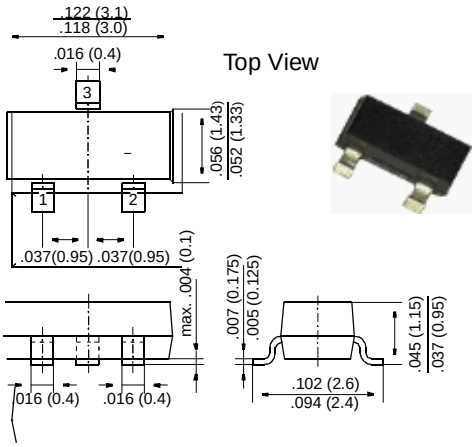
BC807
BC808

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

SOT-23



Dimensions in inches and (millimeters)

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

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

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

		Symbol	Value	Unit
Collector-Emitter Voltage	**BC807**	$-V_{CES}$	50	V
	BC808	$-V_{CES}$	30	V
Collector-Emitter Voltage	**BC807**	$-V_{CEO}$	45	V
	BC808	$-V_{CEO}$	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

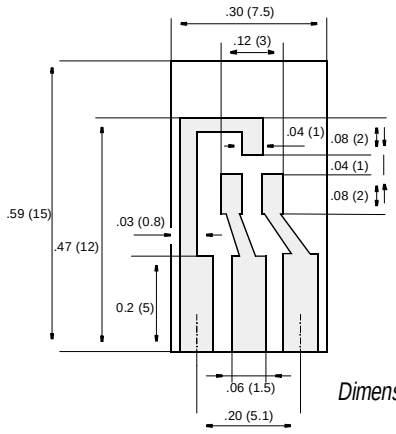
ELECTRICAL CHARACTERISTICS

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	h_{FE}	100	–	250	–
-25	h_{FE}	160	–	400	–
-40	h_{FE}	250	–	600	–
at $-V_{CE}$ = 1 V, $-I_C$ = 300 mA **-16**	h_{FE}	60	–	–	–
-25	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**	$-I_{CES}$	–	–	100	nA
at $-V_{CE}$ = 25 V **BC808**	$-I_{CES}$	–	–	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	–	MHz
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



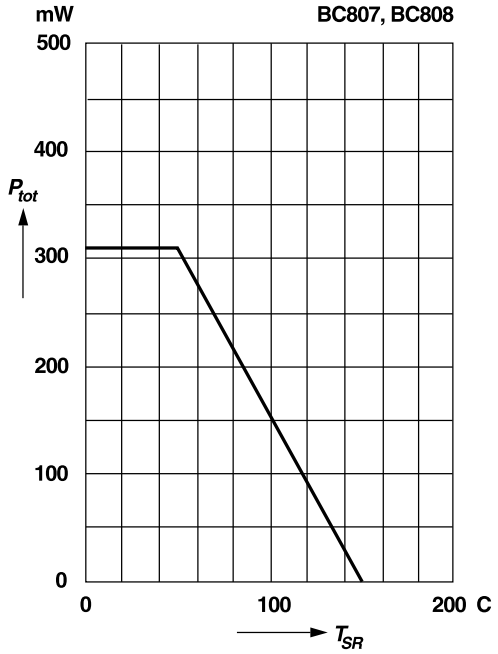
Dimensions in inches (millimeters)

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

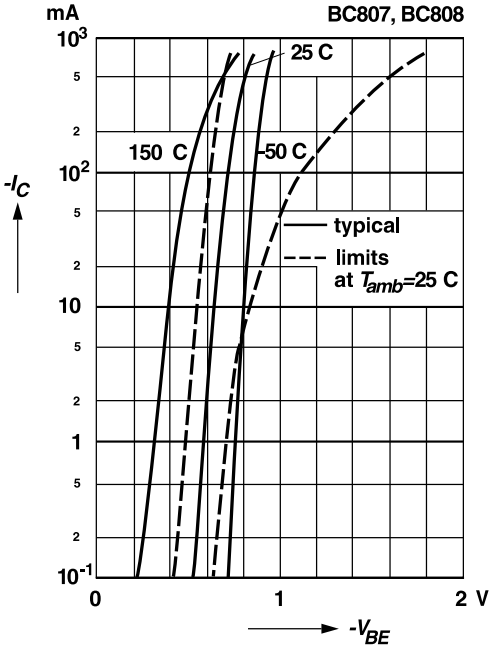
RATING AND CHARACTERISTICS CURVES (BC807/ BC808)

Admissible power dissipation versus temperature of substrate backside

Device on fiberglass substrate, see layout

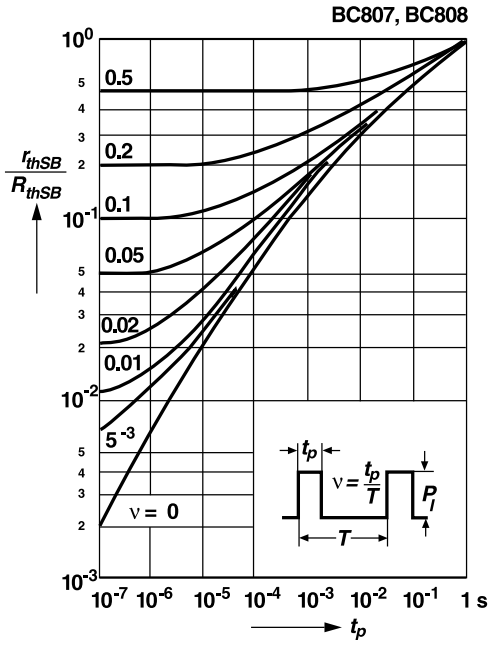


Collector current versus base-emitter voltage

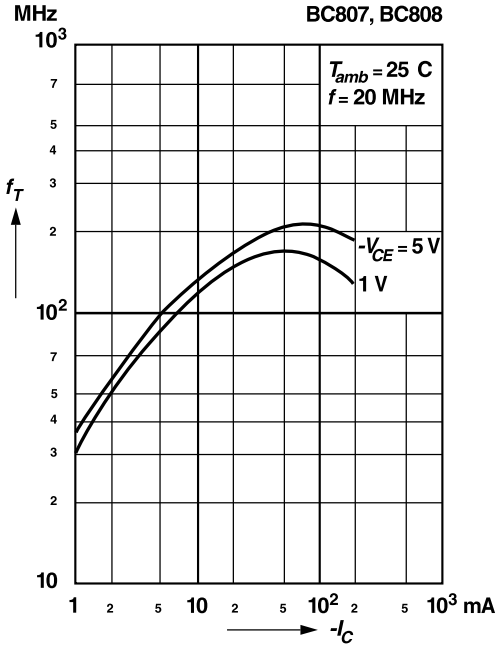


Pulse thermal resistance versus pulse duration (normalized)

Device on fiberglass substrate, see layout

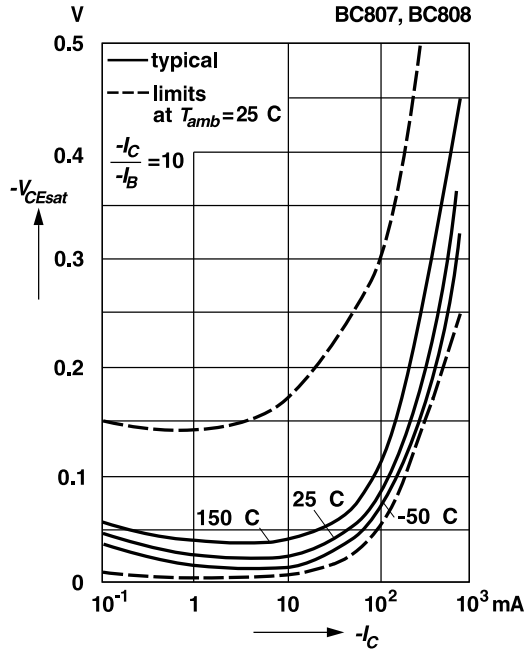


Gain-bandwidth product versus collector current

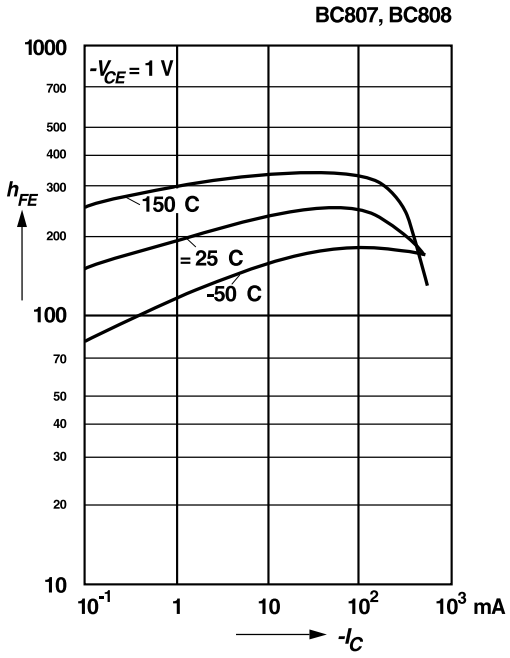


RATING AND CHARACTERISTICS CURVES (BC807/ BC808)

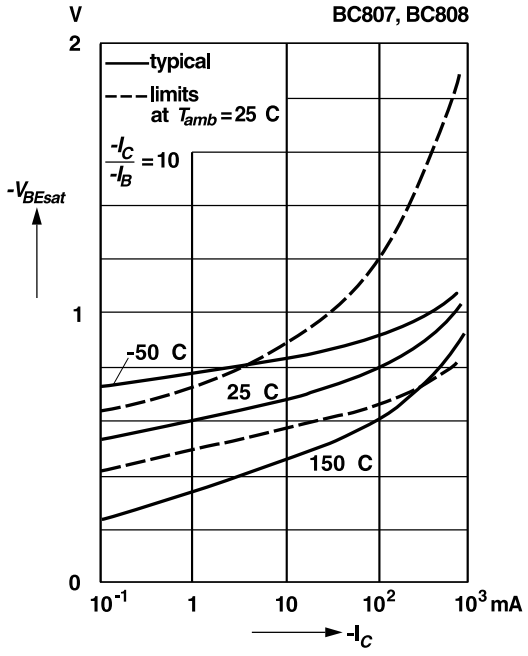
Collector saturation voltage versus collector current



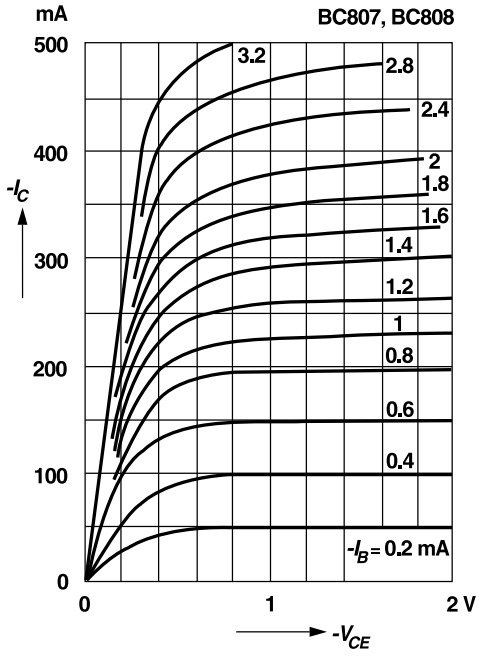
DC current gain versus collector current



Base saturation voltage versus collector current

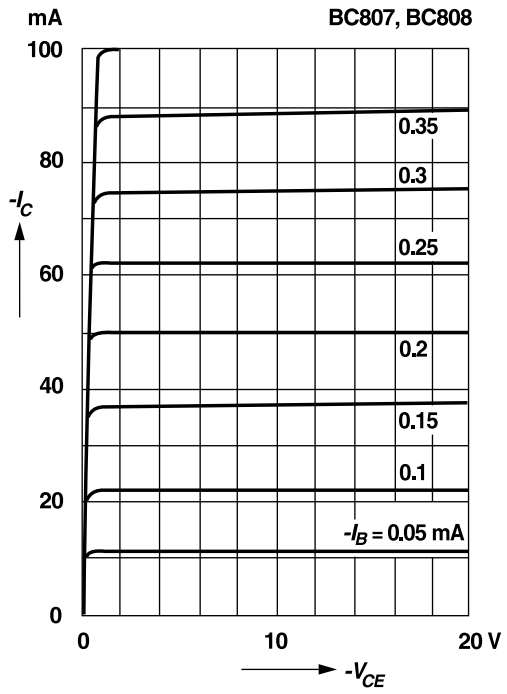


Common emitter collector characteristics

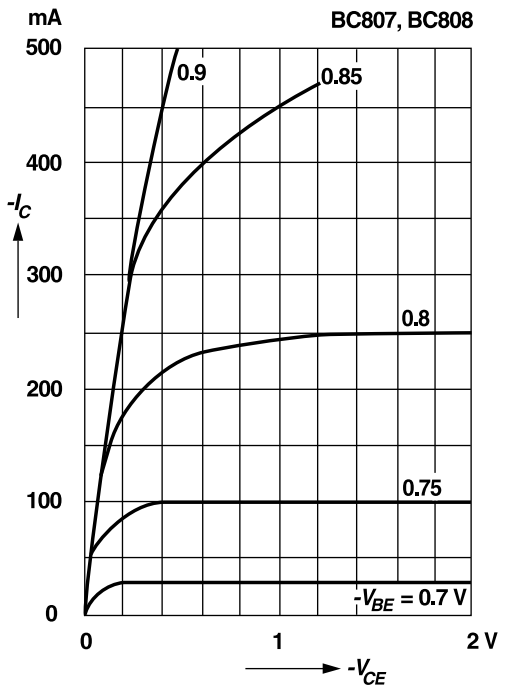


RATING AND CHARACTERISTICS CURVES (BC807/ BC808)

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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