

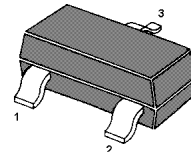
BC807 / BC808-AH

PNP Silicon Epitaxial Planar Transistors

For switching, AF driver and amplifier applications

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.



1.Base 2.Emitter 3.Collector

SOT-23 Plastic Package

Features

- AEC-Q101 Qualified and PPAP Capable
- Halogen and Antimony Free(HAF), RoHS compliant

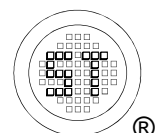
Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter		Symbol	Value	Unit
Collector Base Voltage	BC807 BC808	$-V_{CBO}$	50 30	V
Collector Emitter Voltage	BC807 BC808	$-V_{CEO}$	45 25	V
Emitter Base Voltage		$-V_{EBO}$	5	V
Collector Current		$-I_C$	500	mA
Power Dissipation		P_{tot}	300	mW
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	417	$^\circ\text{C/W}$

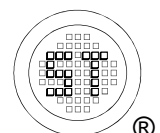
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



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Electrical Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $-V_{CE} = 1\text{ V}$, $-I_C = 100\text{ mA}$ at $-V_{CE} = 1\text{ V}$, $-I_C = 500\text{ mA}$	Current Gain Group -16	h_{FE}	100	-	250	-
	-25	h_{FE}	160	-	400	-
	-40	h_{FE}	250	-	600	-
		h_{FE}	40	-	-	-
Collector Base Cutoff Current at $-V_{CB} = 20\text{ V}$	$-I_{CBO}$	-	-	100	nA	
Emitter Base Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	-	100	nA	
Collector Base Breakdown Voltage at $-I_C = 10\text{ }\mu\text{A}$	BC807 BC808 $-V_{(BR)CBO}$	50 30	-	-	V	
Collector Emitter Breakdown Voltage at $-I_C = 10\text{ mA}$	BC807 BC808 $-V_{(BR)CEO}$	45 25	-	-	V	
Emitter Base Breakdown Voltage at $-I_E = 10\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	-	V	
Collector Emitter Saturation Voltage at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$	$-V_{CE(sat)}$	-	-	0.7	V	
Base Emitter Voltage at $-I_C = 500\text{ mA}$, $-V_{CE} = 1\text{ V}$	$-V_{BE(on)}$	-	-	1.2	V	
Transition Frequency at $-V_{CE} = 5\text{ V}$, $-I_C = 10\text{ mA}$, $f = 50\text{ MHz}$	f_T	80	-	-	MHz	
Collector Base Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{cbo}	-	9	-	pF	



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

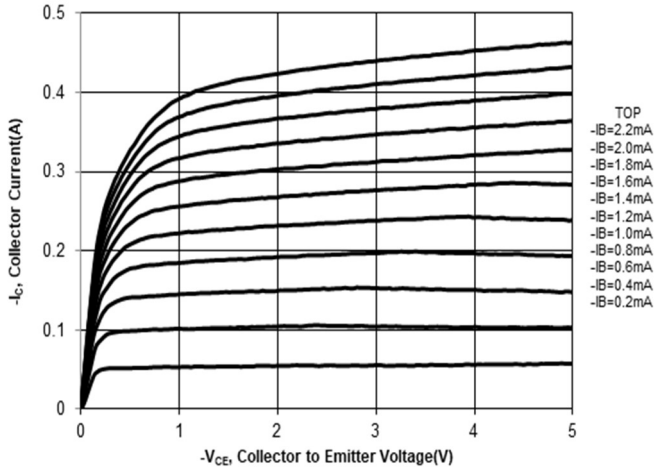


Fig. 2 Output Characteristics Curve

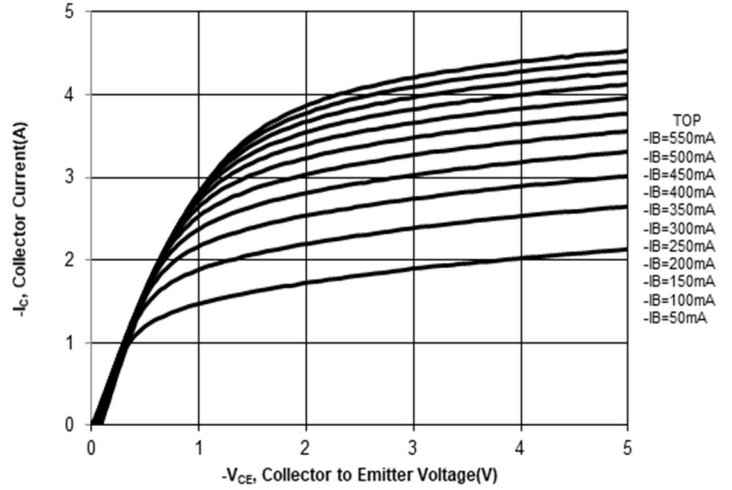


Fig. 3 Collector Current vs. Base to Emitter Voltage

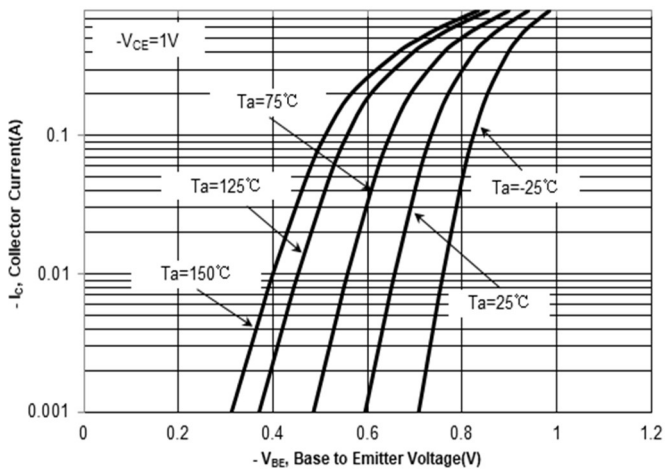
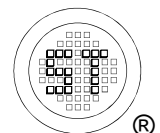
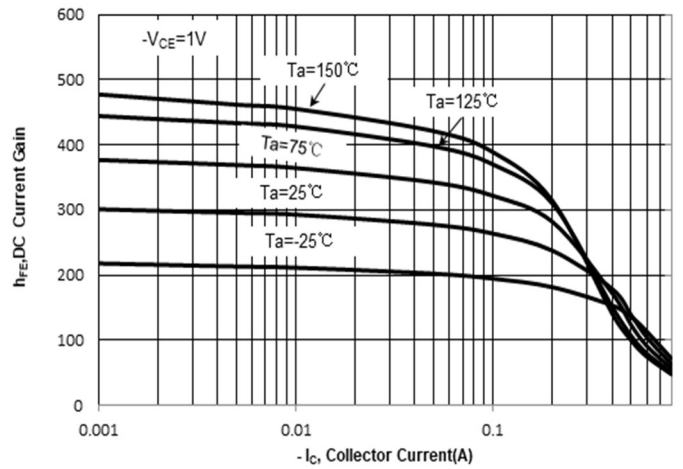


Fig. 4 DC Current Gain vs. Collector Current



Electrical Characteristics Curves

Fig. 5 V_{BESAT} vs. Collector Current

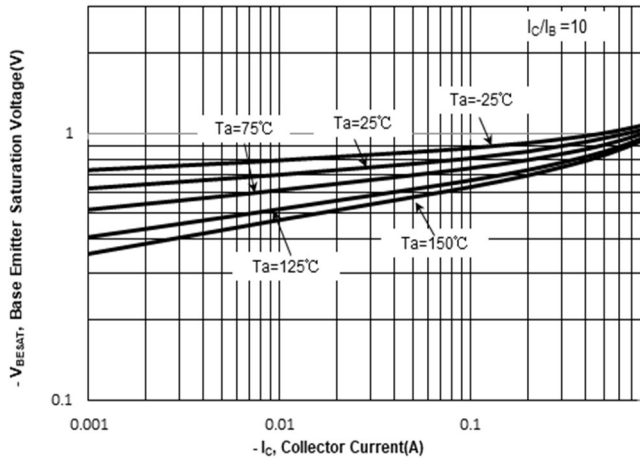


Fig. 6 V_{CESAT} vs. Collector Current

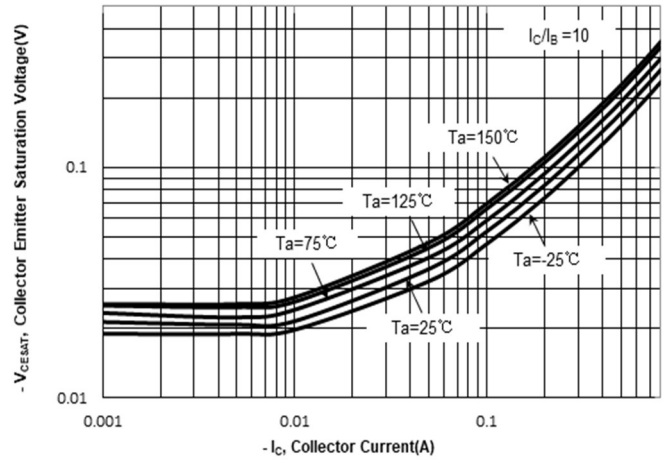


Fig. 7 Output Capacitance

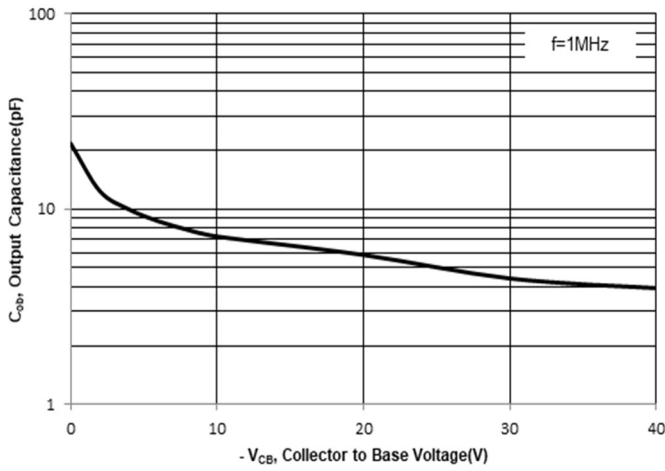
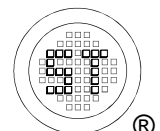
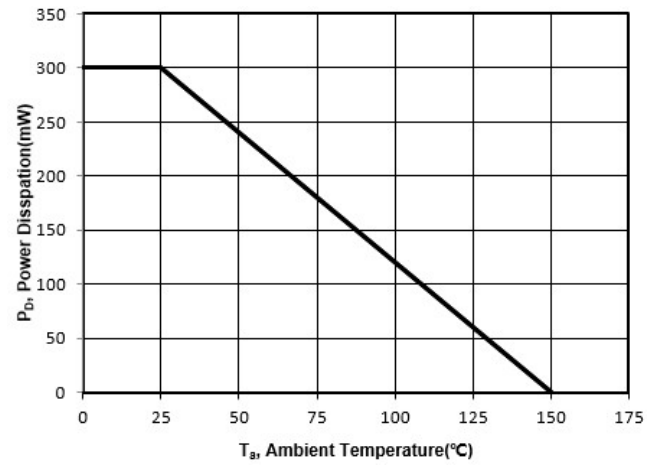


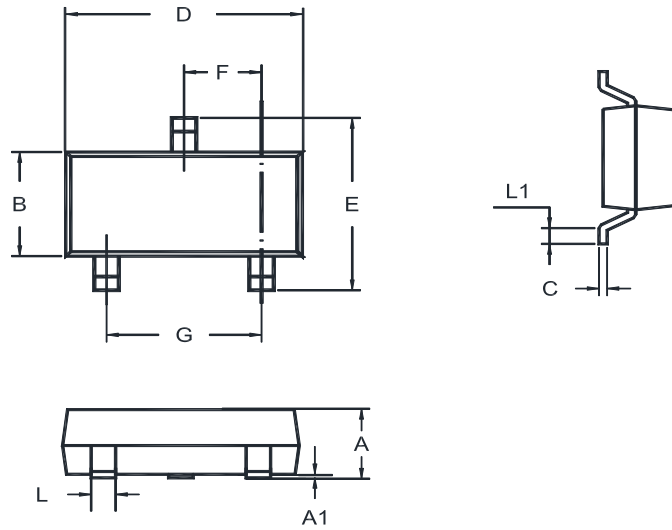
Fig. 8 Power Derating Curve



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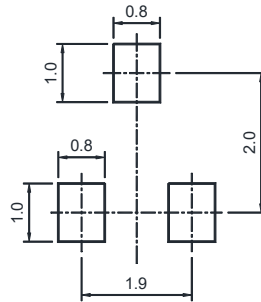
Package Outline (Dimensions in mm)

SOT-23



Unit	A	A1	B	C	D	E	F	G	L	L1
mm	1.20	0.100	1.40	0.19	3.04	2.6	1.02	2.04	0.51	0.2
	0.89	0.013	1.20	0.08	2.80	2.2	0.89	1.78	0.37	MIN

Recommended Soldering Footprint

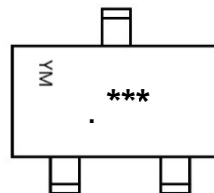


Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

Part No.	Marking Code
BC807-16&BC808-16	5CR
BC807-25&BC808-25	5CS
BC807-40&BC808-40	5CT



"•" = HAF (Halogen and Antimony Free)

"YM" = Date Code Marking

"Y" = Year

"M" = Month

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