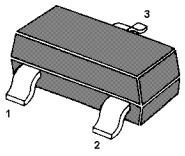
BC817 / BC818-AH

NPN Silicon Epitaxial Planar Transistors

Features

- AEC-Q101 Qualified
- These transistors are subdivided into three groups -16, -25 and -40, according to their current gain. As complementary types the PNP transistors BC807 and BC808 are recommended.
- Halogen and Antimony Free(HAF), RoHS compliant



1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

Applications

- For switching, AF driver and amplifier applications

Absolute Maximum Ratings (T_a = 25℃)

Parameter		Symbol	Value	Unit
Collector Base Voltage	BC817 BC818	V_{CBO}	50 30	V
Collector Emitter Voltage	BC817 BC818	V_{CEO}	45 25	V
Emitter Base Voltage		V_{EBO}	5	V
Collector Current		I_C	500	mA
Total Power Dissipation [1)]		P_{tot}	300	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	- 55 to + 150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient [1)]	$R_{\theta JA}$	417	℃/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℃

Parameter			Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 1 V, I_C = 100 mA	Current Gain Group	-16 -25 -40	h_{FE} h_{FE} h_{FE}	100 160 250	- - -	250 400 600	- - -
at V_{CE} = 1 V, I_C = 500 mA			h_{FE}	40	-	-	-
Collector Base Cutoff Current at V_{CB} = 20 V			I_{CBO}	-	-	100	nA
Emitter Base Cutoff Current at V_{EB} = 5 V			I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage at I_C = 10 μA		BC817 BC818	$V_{(BR)CBO}$	50 30	-	-	V
Collector Emitter Breakdown Voltage at I_C = 10 mA		BC817 BC818	$V_{(BR)CEO}$	45 25	-	-	V
Emitter Base Breakdown Voltage at I_E = 10 μA			$V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at I_C = 500 mA, I_B = 50 mA			$V_{CE(sat)}$	-	-	0.7	V
Base Emitter Voltage at I_C = 500 mA, V_{CE} = 1 V			$V_{BE(on)}$	-	-	1.2	V
Transition Frequency 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_{ob}	-	5	-	pF

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

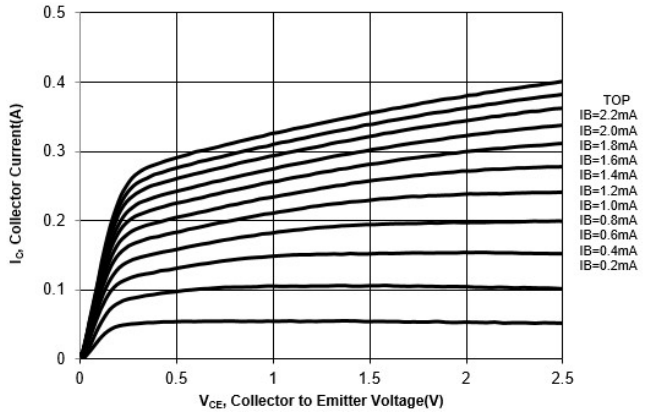


Fig. 2 Collector Current vs. Base to Emitter Voltage

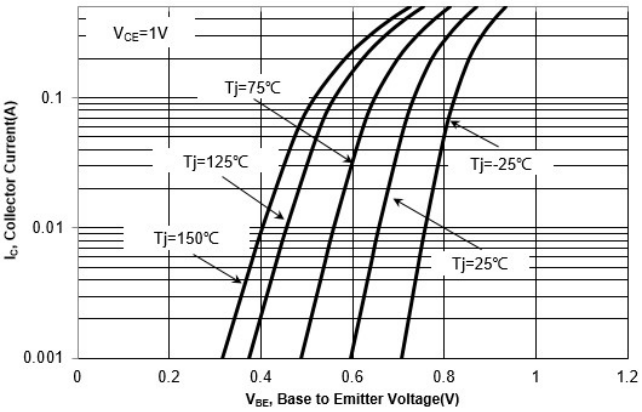


Fig. 3 DC Current Gain vs. Collector Current

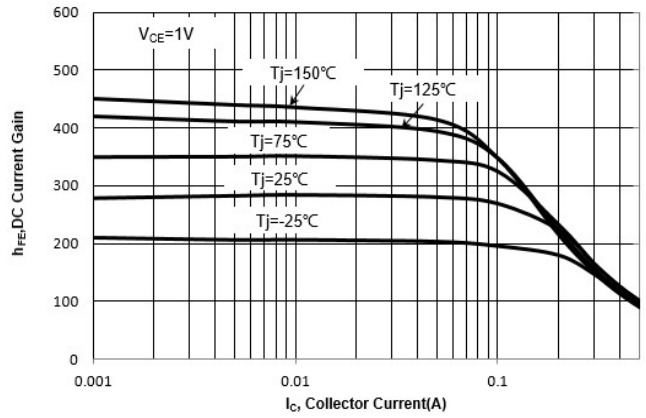
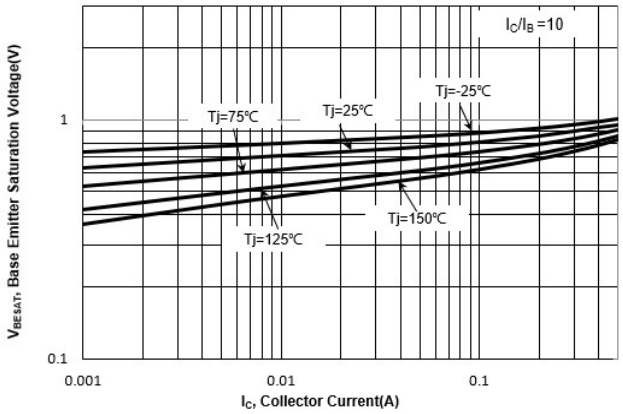


Fig. 4 V_{BESAT} vs. Collector Current



Electrical Characteristics Curves

Fig. 5 V_{CESAT} vs. Collector Current

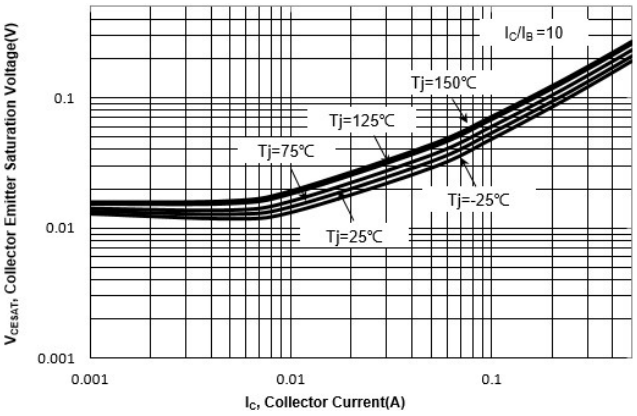


Fig. 6 Output Capacitance

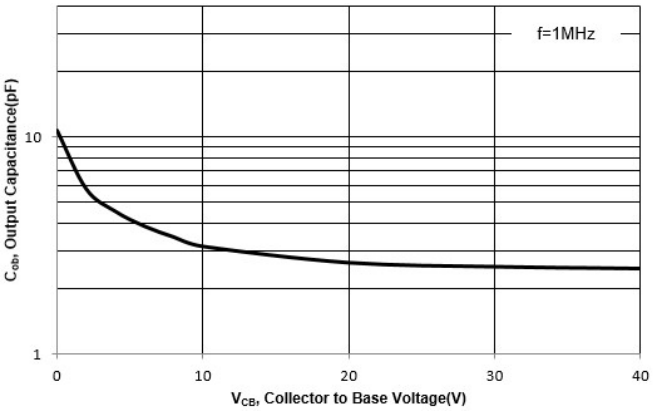
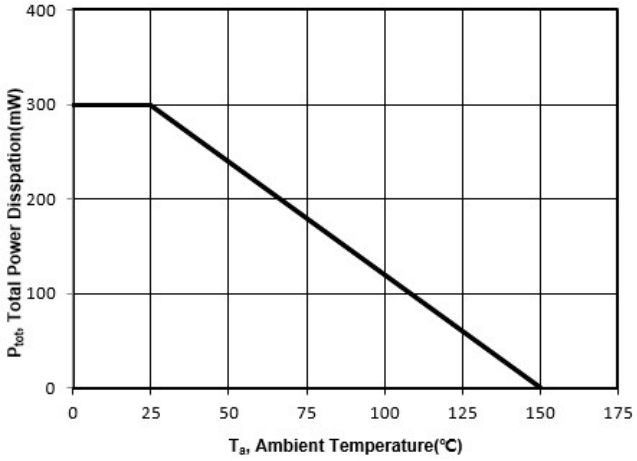
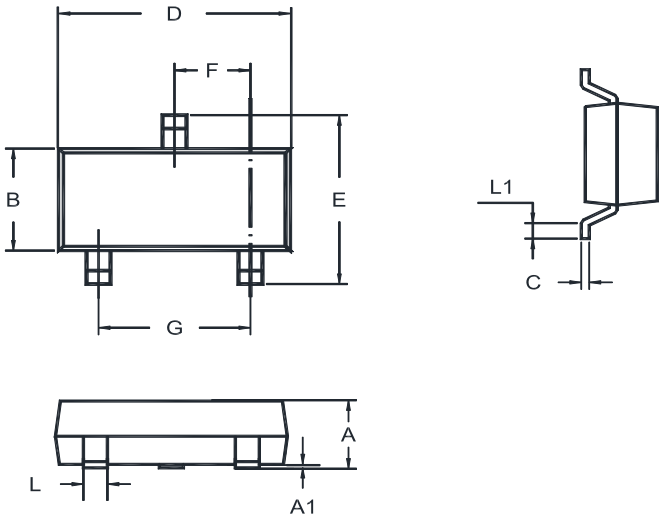


Fig. 7 Power Derating Curve

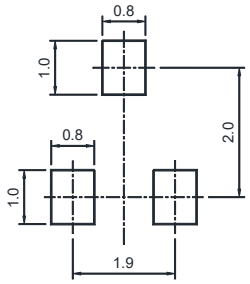


Package Outline (Dimensions in mm) SOT-23



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

Recommended Soldering Footprint

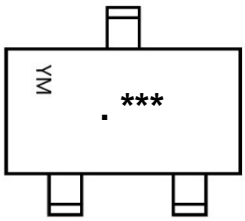


Packing information

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
BC817-16&BC818-16	6CR
BC817-25&BC818-25	6CS
BC817-40&BC818-40	6CT



" • " = HAF (Halogen and Antimony Free)

"YM" = Date Code Marking

"Y" = Year

"M" = Month

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