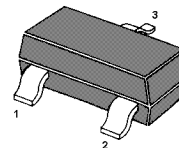


# BC817 / BC818-AH

## NPN Silicon Epitaxial Planar Transistors

### Features

- These transistors are subdivided into three groups -16, -25, -40 according to their current gain.
- As complementary types, the PNP transistors
- BC807 and BC808 are recommended.
- AEC-Q101 Qualified and PPAP Capable
- 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

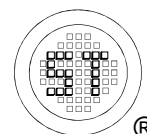
### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter		Symbol	Value	Unit
Collector Base Voltage	BC817	$V_{CBO}$	50	V
	BC818		30	
Collector Emitter Voltage	BC817	$V_{CEO}$	45	V
	BC818		25	
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 <sup>1)</sup>	$R_{\theta JA}$	417	$^\circ\text{C/W}$

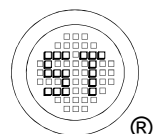
<sup>1)</sup> Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



# BC817 / BC818-AH

## 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 $I_C = 10\text{ }\mu\text{A}$	BC817	$V_{(BR)CBO}$	50	-	-	V
	BC818		30	-	-	
Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$	BC817	$V_{(BR)CEO}$	45	-	-	V
	BC818		25	-	-	
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 $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 50\text{ MHz}$	$f_T$	100	-	-	MHz	
Collector Base Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	5	-	pF	



# BC817 / BC818-AH

## Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

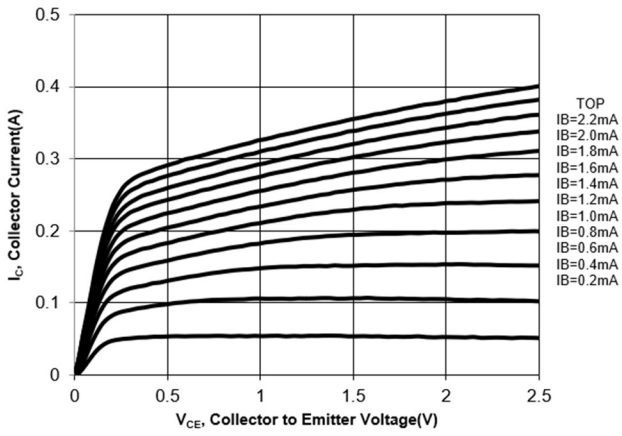


Fig. 2 Output Characteristics Curve

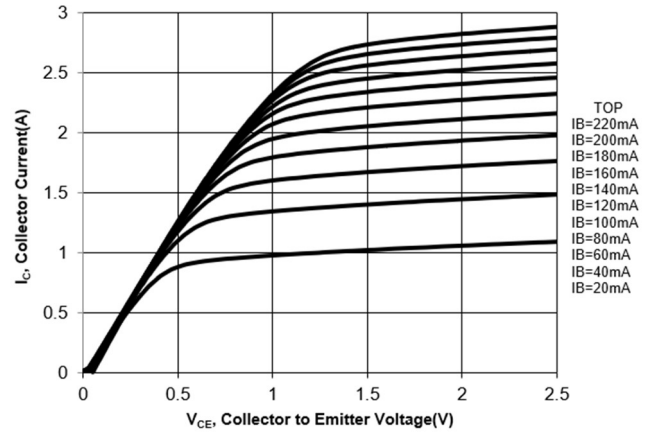


Fig. 3 Collector Current vs. Base to Emitter Voltage

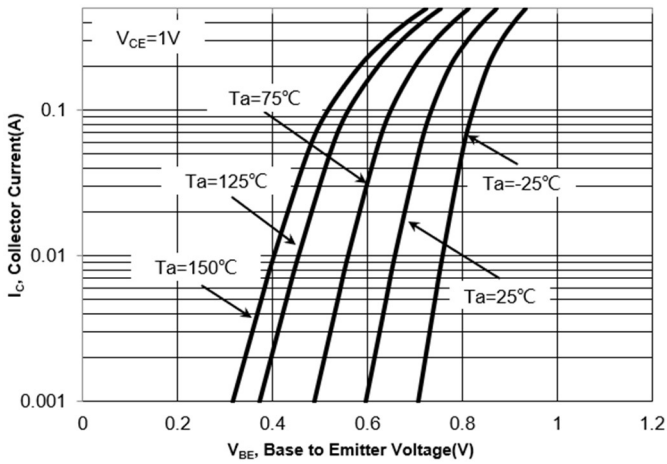


Fig. 4  $h_{FE,DC}$  Current Gain vs. Collector Current

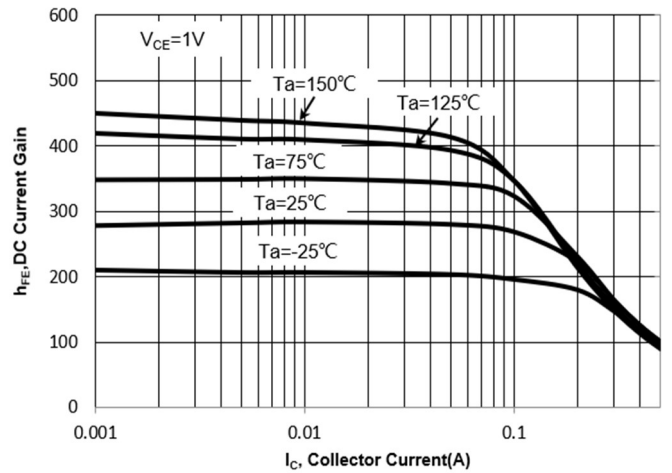


Fig. 5  $V_{BESAT}$  vs. Collector Current

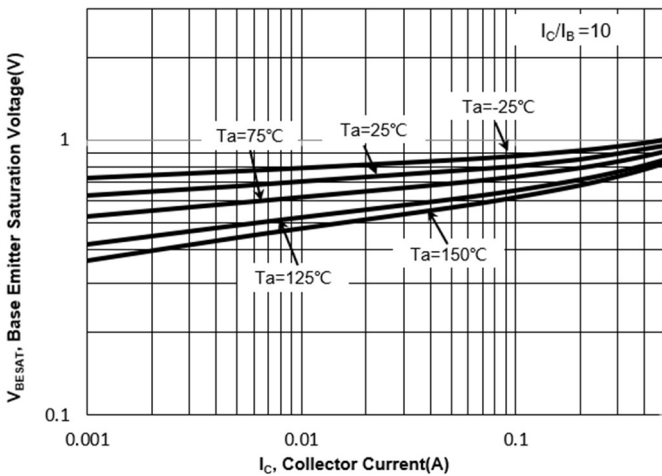
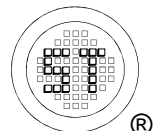
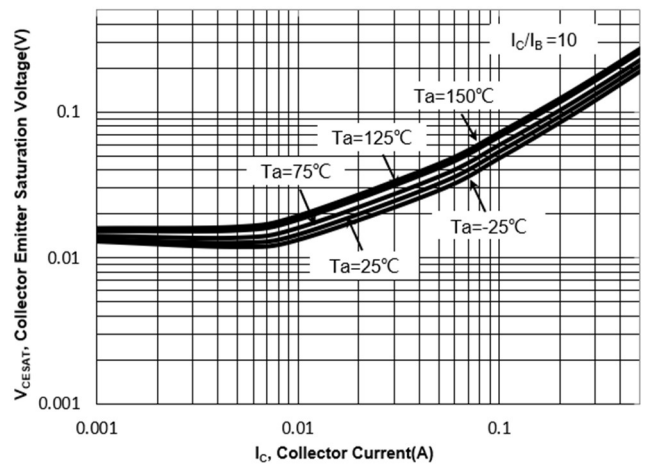


Fig. 6  $V_{CESAT}$  vs. Collector Current



## Electrical Characteristics Curves

Fig. 7 Power Derating Curve

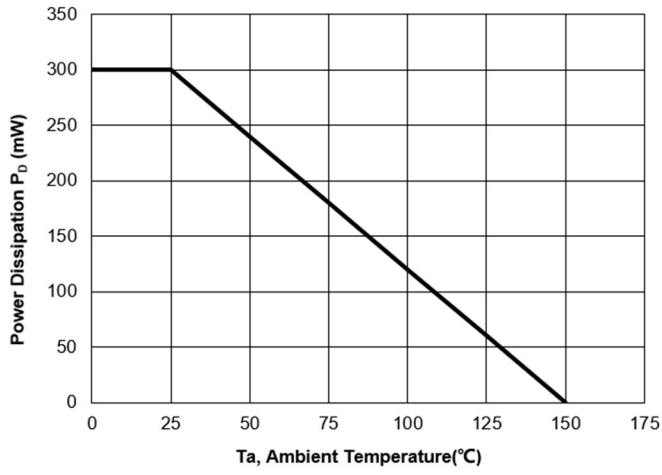
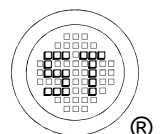
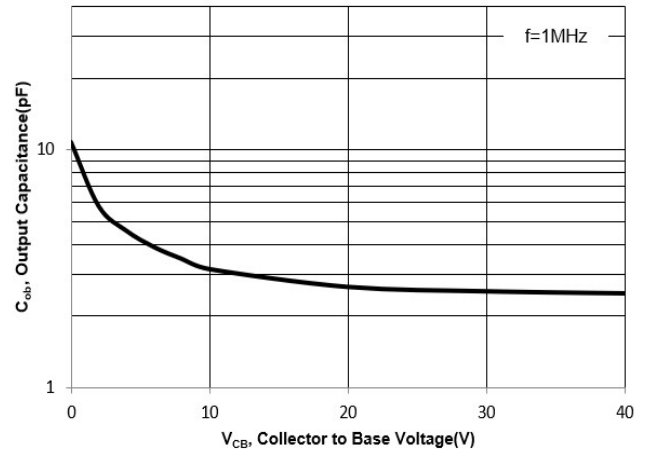


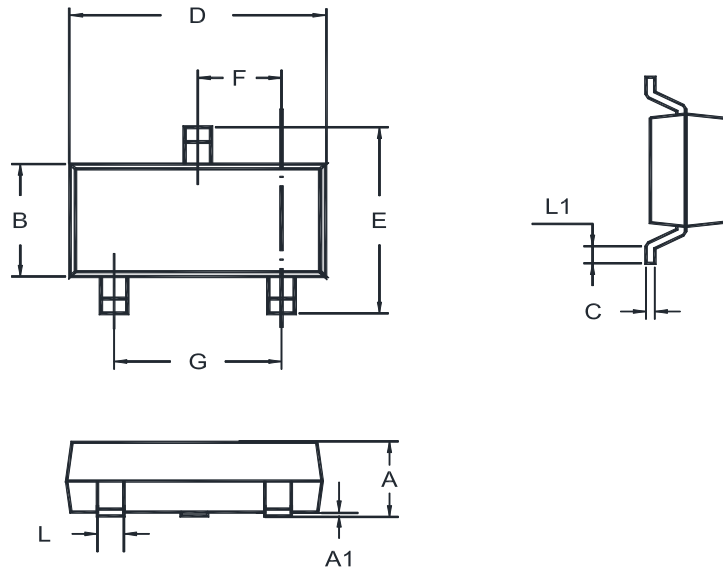
Fig. 8 Output Capacitance



# BC817 / BC818-AH

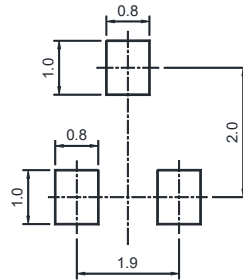
## Package Outline (Dimensions in mm)

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

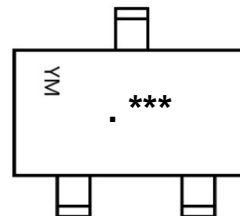


## Packing information

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
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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