

BC817 / BC818

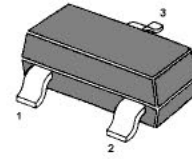
NPN Silicon Epitaxial Planar Transistors

for switching, AF driver and amplifier application, especially suited for automatic insertion in thick and thin-film circuits.

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.

SOT-23



1.BASE 2.EMITTER 3.COLLECTOR

SOT-23 Plastic Package

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

	Symbol	Value	Unit
Collector Emitter Voltage (base shorted) BC817	V_{CES}	50	V
BC818		30	
Collector Emitter Voltage (base open) BC817	V_{CEO}	35	V
BC818		25	
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	500	mA
Power Dissipation at $T_{SB}=50^\circ\text{C}$	P_{tot}	310 ⁽¹⁾	mW
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	450 ⁽¹⁾	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction to Substrate Backside	$R_{\theta SB}$	320 ⁽¹⁾	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_s	-65 to +150	$^\circ\text{C}$

Note (1) Device on fiberglass substrate.

BC817 / BC818

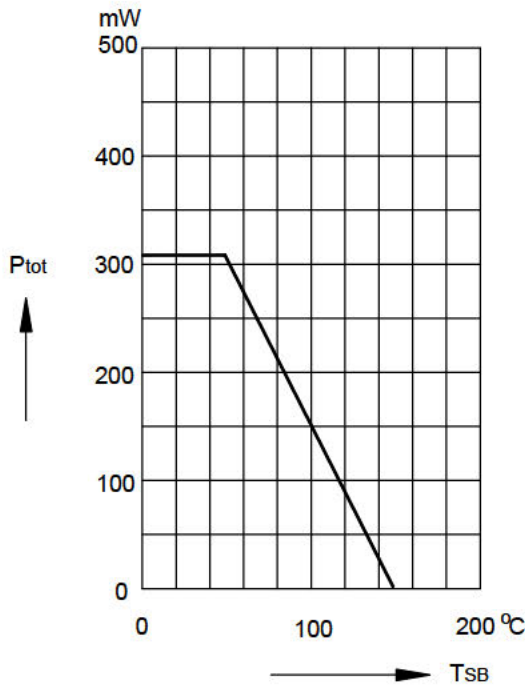
Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	TYP	Max.	Unit	
DC Current Gain at $V_{CE}=1\text{V}$, $I_C=100\text{mA}$						
	-16	h_{FE}	100	-	250	-
	-25	h_{FE}	160	-	400	-
	-40	h_{FE}	250	-	600	-
at $V_{CE}=1\text{V}$, $I_C=500\text{mA}$	h_{FE}	40	-	-	-	
Collector Emitter Saturation Voltage at $I_C=500\text{mA}$, $I_B=50\text{mA}$	V_{CEsat}	-	-	0.7	V	
Base Emitter Saturation Voltage at $I_C=500\text{mA}$, $I_B=50\text{mA}$	V_{BEsat}	-	-	1.3	V	
Base Emitter On Voltage at $I_C=500\text{mA}$, $V_{CE}=1\text{V}$	$V_{BE(on)}$	-	-	1.2	V	
Collector Cutoff Current at $V_{CB}=20\text{V}$, at $V_{CB}=20\text{V}$, $T_J=150^{\circ}\text{C}$	I_{CBO}	-	-	100	nA	
	I_{CBO}	-	-	5	μA	
Emitter Cutoff Current at $V_{EB}=4\text{V}$	I_{EBO}	-	-	100	nA	
Current Gain Bandwidth Product 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_{cbo}	-	12	-	pF	

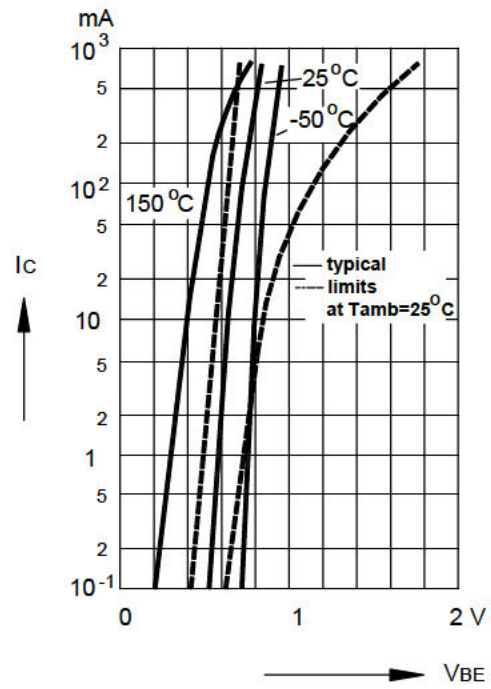
BC817 / BC818

Admissible power dissipation versus temperature of substrate backside

Device on fiberglass substrate, see layout

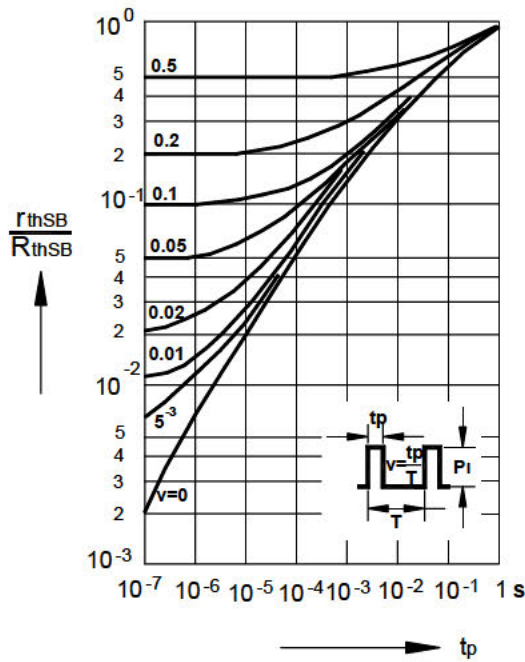


Collector current versus base emitter voltage

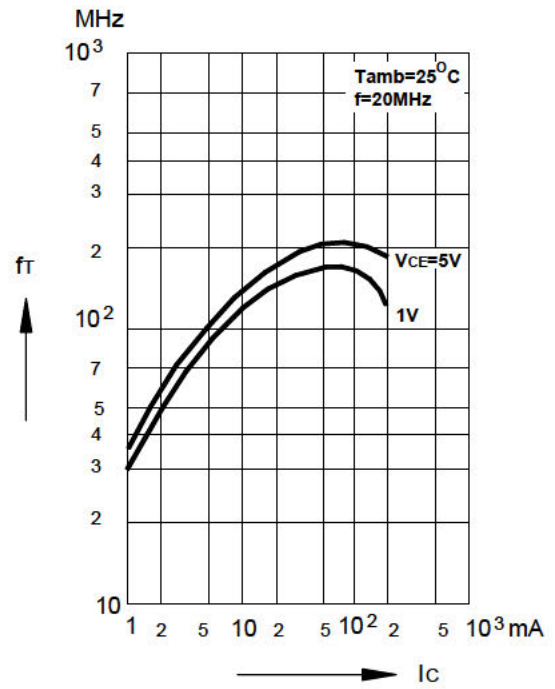


Pulse thermal resistance versus pulse duration (normalized)

Device on fiberglass substrate, see layout

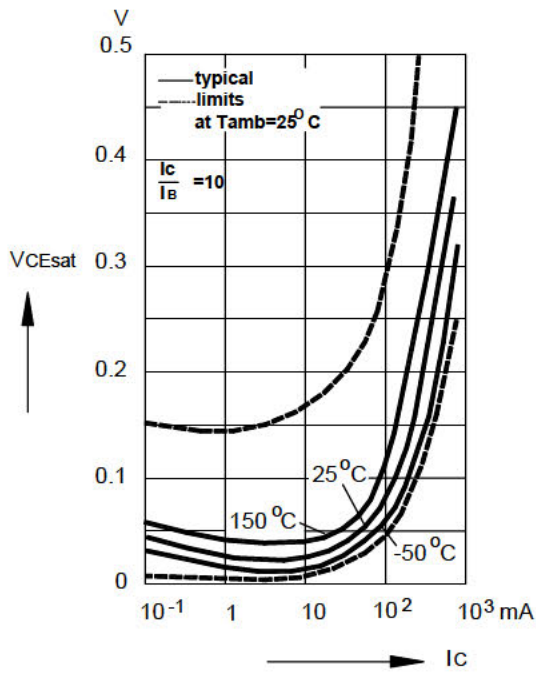


Gain bandwidth product versus collector current

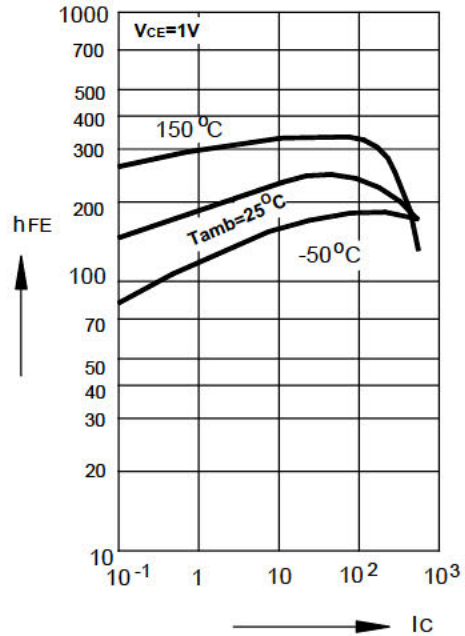


BC817 / BC818

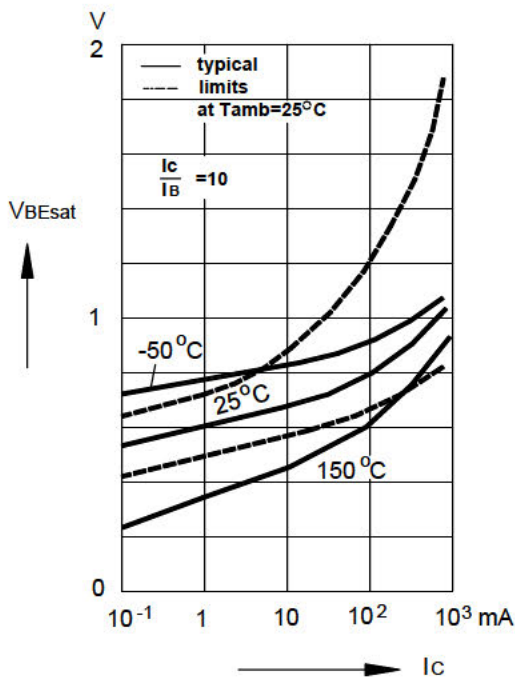
Collector saturation voltage versus collector current



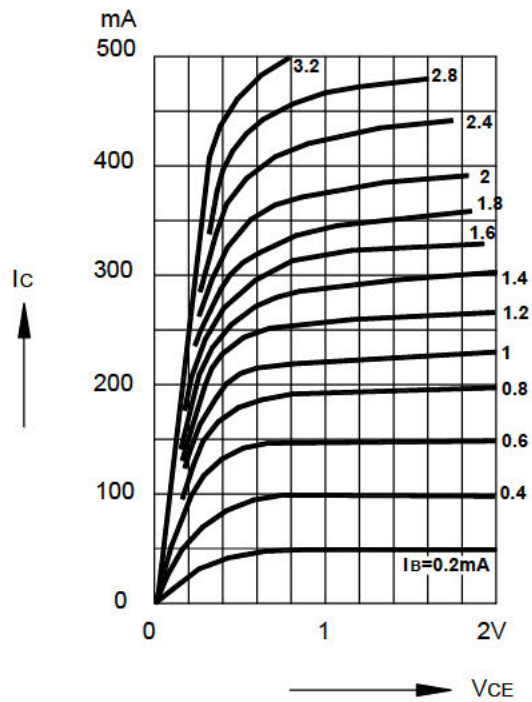
DC current gain versus collector current



Base saturation voltage versus collector current

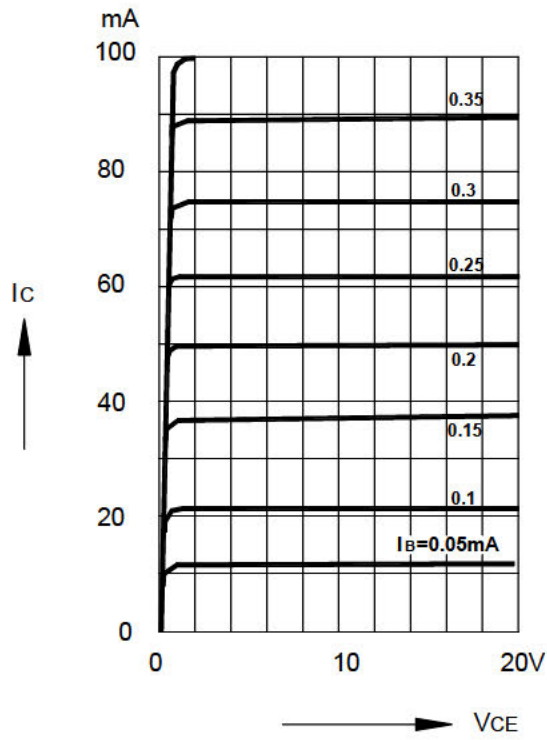


Common emitter collector characteristics

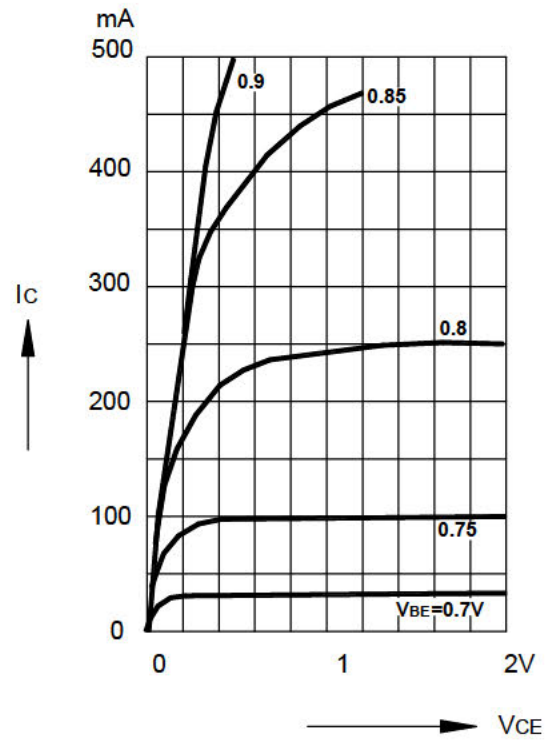


BC817 / BC818

Common emitter
collector characteristics



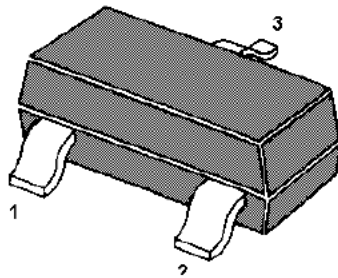
Common emitter
collector characteristics



SOT-23 PACKAGE OUTLINE

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

SOT-23 (TO-236)



NOTES :

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

1.BASE 2.EMITTER 3.COLLECTOR

