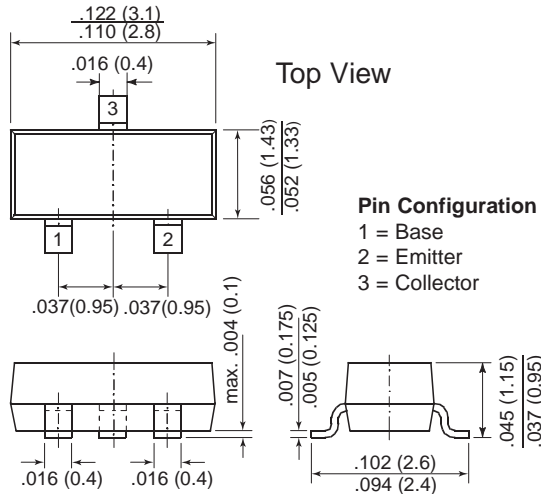


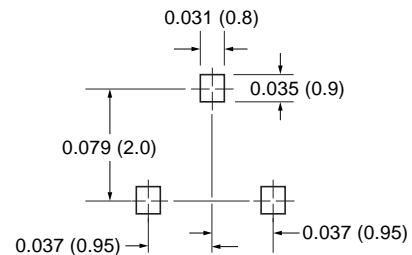


Small Signal Transistors (NPN)

TO-236AB (SOT-23)



Mounting Pad Layout



Type	Marking
BC817-16	6A
-25	6B
-40	6C
BC818-16	6E
-25	6F
-40	6G

Mechanical Data

Case: SOT-23 Plastic Package

Weight: approx. 0.008g

Packaging Codes/Options:

E8/10K per 13" reel (8mm tape), 30K/box

E9/3K per 7" reel (8mm tape), 30K/box

Features

- NPN 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 PNP transistors BC807 and BC808 are recommended.

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Emitter Voltage (base shorted)	V _{CES}	BC817 50	V
BC818		30	
Collector-Emitter Voltage (base open)	V _{CEO}	BC817 45	V
BC818		25	
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	800	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
Thermal Resistance Junction to Ambient Air	R _{θJA}	450 ⁽¹⁾	°C/W
Thermal Resistance Junction to Substrate Backside	R _{θSB}	320 ⁽¹⁾	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _s	-65 to +150	°C

Note: (1) Device on fiberglass substrate, see layout on third page.

Electrical Characteristics (T_J = 25°C unless otherwise noted)

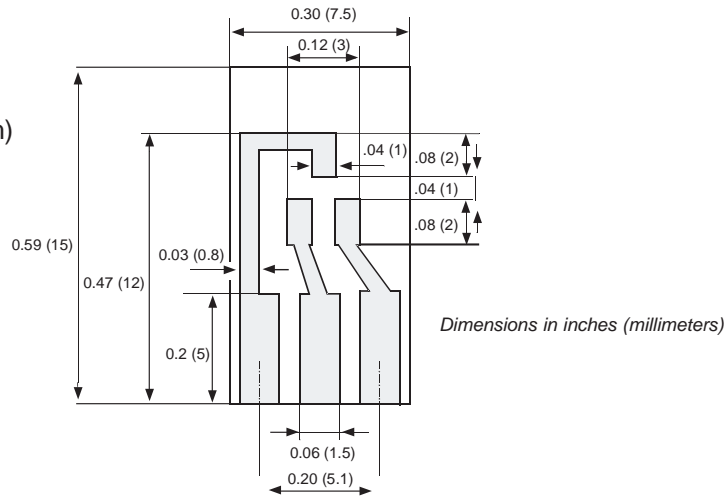
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
DC Current Gain Current Gain Group-16	h _{FE}	V _{CE} = 1V, I _C = 100mA	100	—	250	—
			160	—	400	—
			250	—	600	—
	h _{FE}	V _{CE} = 1V, I _C = 500mA	40	—	—	—
Collector Saturation Voltage	V _{CEsat}	I _C = 500mA, I _B = 50mA	—	—	0.7	V
Base Saturation Voltage	V _{BEsat}	I _C = 500mA, I _B = 50mA	—	—	1.3	V
Base-Emitter Voltage V _{BEon}	V _{CE} = 1V, I _C = 500mA	—	—	1.2	V	
Collector-Base Cutoff Current	I _{CBO}	V _{CB} = 20V V _{CB} = 20V, T _J = 150°C	—	—	100	nA
			—	—	5	μA
Emitter-Base Cutoff Current	I _{EBO}	V _{EB} = 4V	—	—	100	nA
Gain-Bandwidth Product	f _T	V _{CE} = 5V, I _C = 10mA f = 50MHz	—	100	—	MHz
Collector-Base Capacitance	C _{CB0}	V _{CB} = 10V, f = 1MHz	—	12	—	pF

Note:

(1) Device on fiberglass substrate, see layout below.

Layout for R_{θJA} test

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

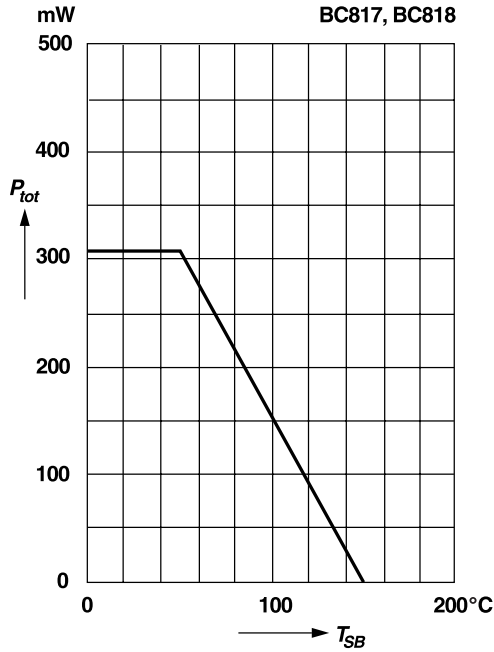


Dimensions in inches (millimeters)

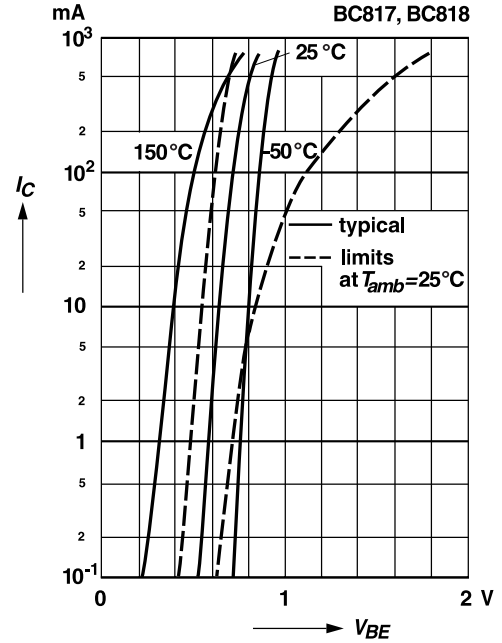
Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Admissible power dissipation versus temperature of substrate backside

Device on fiberglass substrate, see layout

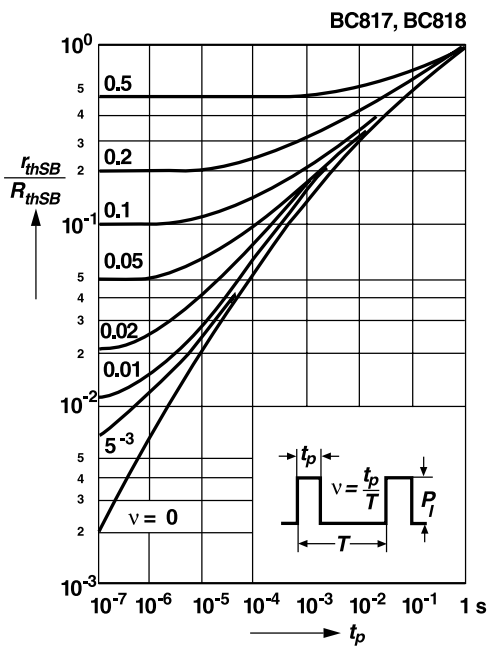


Collector current versus base-emitter voltage

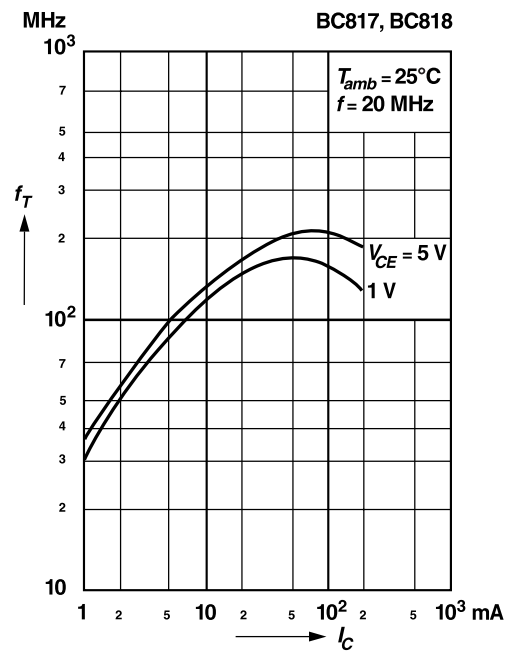


Pulse thermal resistance versus pulse duration (normalized)

Device on fiberglass substrate, see layout



Gain-bandwidth product versus collector current



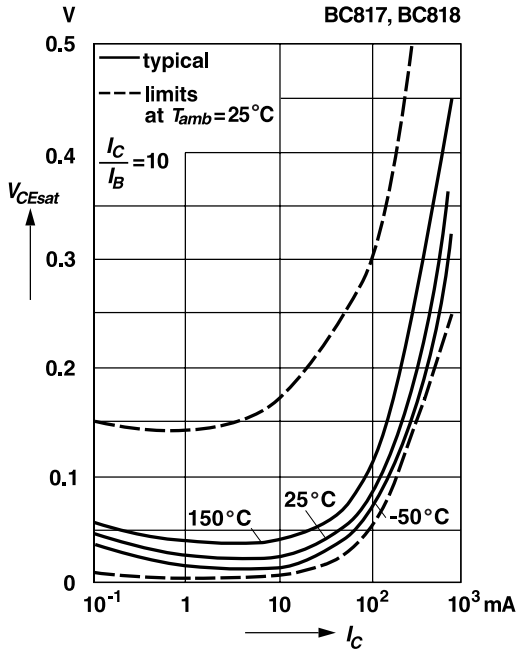
BC817, BC818



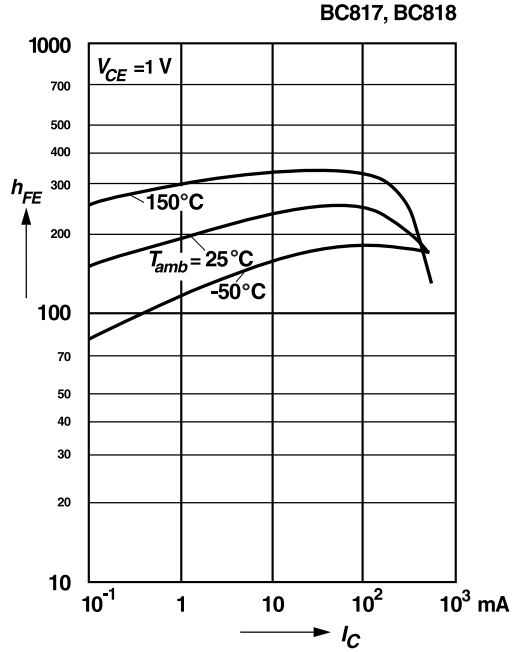
Vishay Semiconductors
formerly General Semiconductor

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

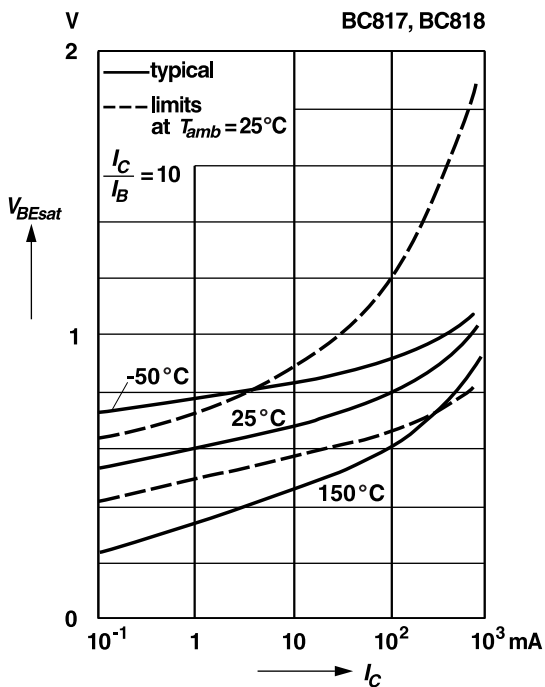
Collector saturation voltage versus collector current



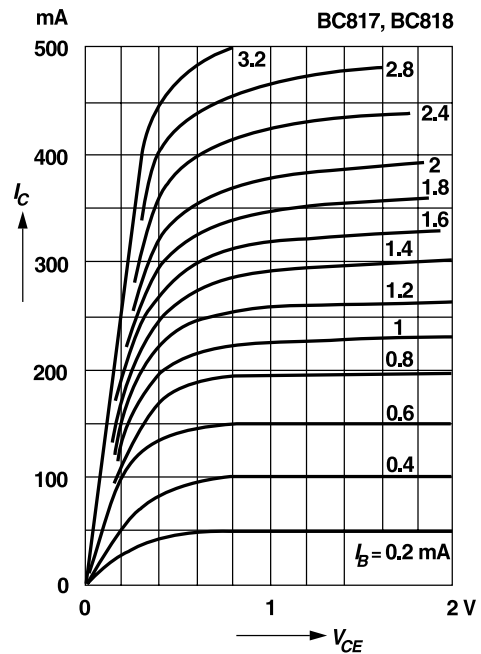
DC current gain versus collector current



Base saturation voltage versus collector current



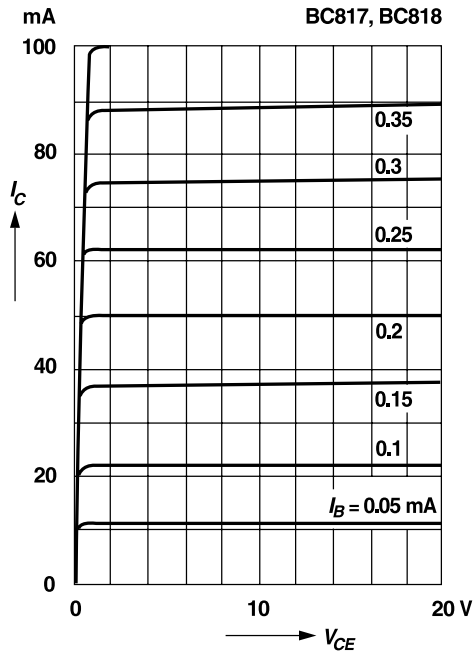
Common emitter collector characteristics





Ratings and
Characteristic Curves (T_A = 25°C unless otherwise noted)

Common emitter
collector characteristics



Common emitter
collector characteristics

