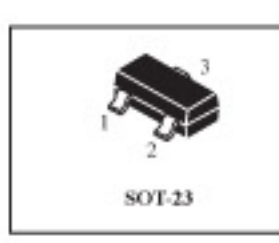


General Purpose Transistor
NPN Silicon

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

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CE0}	45	Vdc
Collector-Base Voltage	V _{CB0}	50	Vdc
Emitter-Base Voltage	V _{EB0}	5.0	Vdc
Collector Current-Continuous	I _C	500	mAdc

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1.) $T_A=25^{\circ}\text{C}$ Derate above 25°C	P _D	225	mW
		1.8	mW/ $^{\circ}\text{C}$
Thermal Resistance, Junction to Ambient (Note 1.)	R θ _{JA}	556	$^{\circ}\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (Note 2.) $T_A=25^{\circ}\text{C}$ Derate above 25°C	P _D	300	mW
		2.4	mW/ $^{\circ}\text{C}$
Thermal Resistance, Junction to Ambient (Note 2.)	R θ _{JA}	417	$^{\circ}\text{C}/\text{W}$
Junction and Storage, Temperature Range	T _J , T _{stg}	-55 to +150	$^{\circ}\text{C}$

Device Marking

BC817-16=6A, BC817-25=6B, BC817-40=6C

 1.FR-5=1.0 x 0.75 x 0.062 in.
 2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina

BC817-16/BC817-25
BC817-40

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless Otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
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Off Characteristics

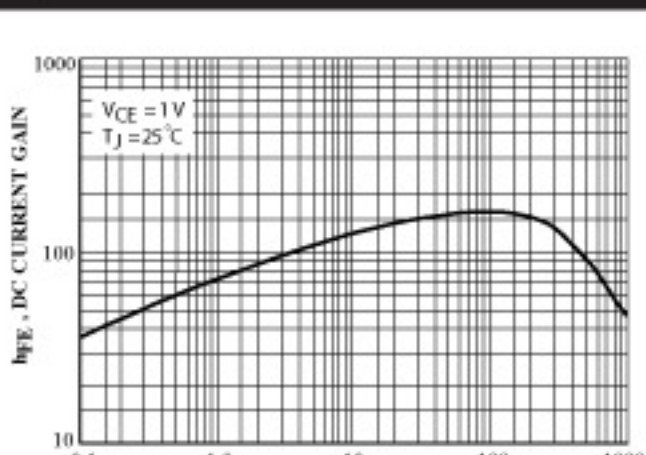
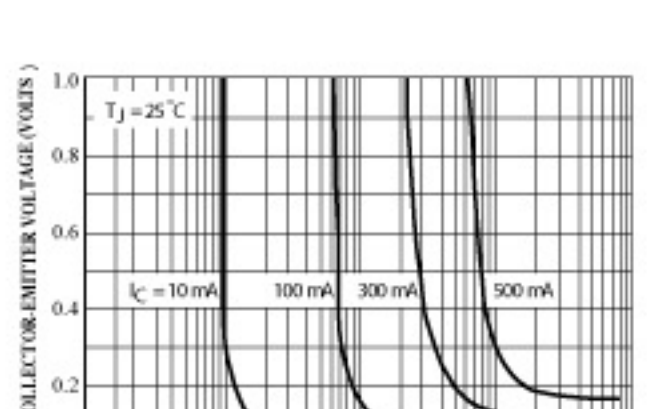
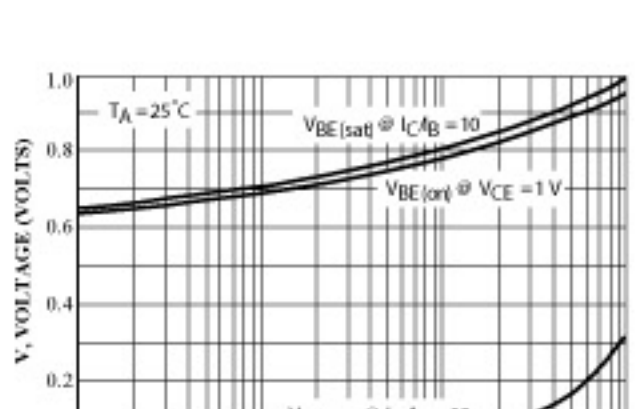
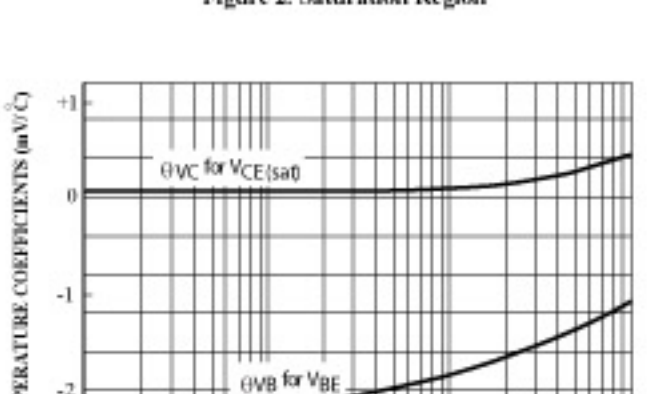
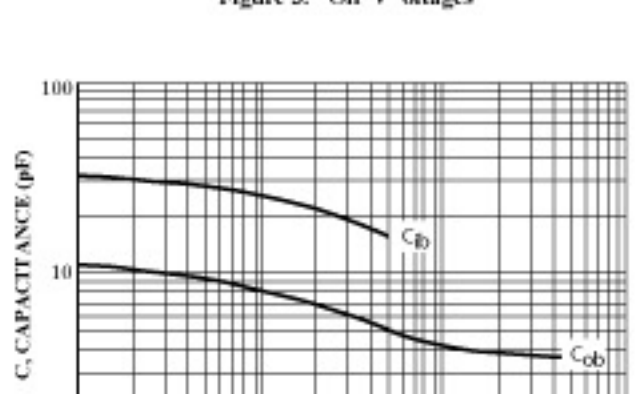
Collector-Emitter Breakdown Voltage (I _C = 10mA)	V(BR)CEO	45	-	-	V
Collector-Emitter Breakdown Voltage (I _C =10 μ A, V _{EB} =0)	V(BR)CES	50	-	-	V
Emitter-Base Breakdown Voltage (I _E =1.0 μ A)	V(BR)EBO	5.0	-	-	V
Collector Cutoff Current (V _{CB} =20V) (V _{CB} =20V, T _A =150 $^{\circ}\text{C}$)	I _{CBO}	-	-	100 5.0	nA mA

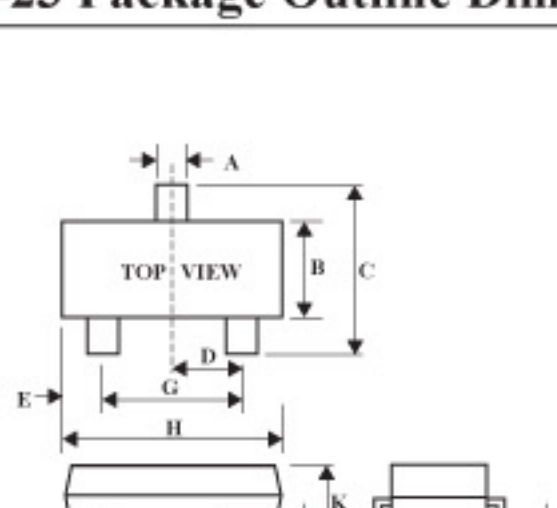
On Characteristics

DC Current Gain (I _C = 100mA, V _{CE} =1.0V)	BC817-16 BC817-25 BC817-40	hFE	100	-	250	-
			160	-	400	-
			250	-	600	-
(I _C = 500mA, V _{CE} =1.0V)			40			
Collector-Emitter Saturation Voltage (I _C = 500mA, I _B =50mA)		V _{CE(sat)}	-	-	0.7	V
Base-Emitter On Voltage (I _C = 500mA, V _{CE} =1.0V)		V _{BE(on)}	-	-	1.2	V

Small-signal Characteristics

Current-Gain-Bandwidth Product (I _C = 10mA, V _{CE} = 5.0Vdc, f=100MHz)	f _T	100	-	-	MHz
Output Capacitance (V _{CB} = 10V, f=1.0MHz)	C _{obo}	-	10	-	pF

BC817-16/BC817-25
BC817-40

Figure 1. DC Current Gain

Figure 2. Saturation Region

Figure 3. "On" V voltages

Figure 4. Temperature Coefficients

Figure 5. Capacitances
BC817-16/BC817-25
BC817-40

SOT-23 Package Outline Dimension


SOT-23		
Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25