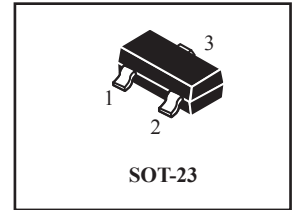
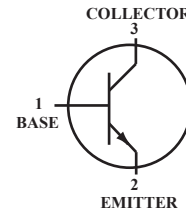


## General Purpose Transistor NPN Silicon



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 $25^{\circ}\text{C}$	$P_D$	225 1.8	mW mW/ $^{\circ}\text{C}$
Thermal Resistance, Junction to Ambient (Note 1.)	$R_{\theta JA}$	556	$^{\circ}\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (Note 2.) $T_A=25^{\circ}\text{C}$ Derate above $25^{\circ}\text{C}$	$P_D$	300 2.4	mW mW/ $^{\circ}\text{C}$
Thermal Resistance, Junction to Ambient (Note 2.)	$R_{\theta JA}$	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

**QUNHAN TECH**

**Electrical Characteristics** (TA=25°C Unless Otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
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**Off Characteristics**

Collector-Emitter Breakdown Voltage (IC= 10mA)	V(BR)CEO	45	-	-	V
Collector-Emitter Breakdown Voltage (IC=10 μA ,V <sub>EB</sub> =0)	V(BR)CES	50	-	-	V
Emitter-Base Breakdown Voltage (I <sub>E</sub> =1.0 μA)	V(BR)EBO	5.0	-	-	V
Collector Cutoff Current (V <sub>CB</sub> =20V) (V <sub>CB</sub> =20V, T <sub>A</sub> =150°C)	ICBO	-	-	100 5.0	nA mA

**On Characteristics**

DC Current Gain (IC= 100mA, V <sub>CE</sub> =1.0V)	BC817-16 BC817-25 BC817-40	hFE	100 160 250	- - -	250 400 600	-
(IC= 500mA, V <sub>CE</sub> =1.0V)			40			
Collector-Emitter Saturation Voltage (IC= 500mA, I <sub>B</sub> =50mA)		VCE(sat)	-	-	0.7	V
Base-Emitter On Voltage (IC= 500mA, V <sub>CE</sub> =1.0V)		VBE(on)	-	-	1.2	V

**Small-signal Characteristics**

Current-Gain-Bandwidth Product (IC= 10mA, V <sub>CE</sub> = 5.0Vdc, f=100MHz)		f <sub>T</sub>	100	-	-	MHz
Output Capacitance (V <sub>CB</sub> = 10V, f=1.0MHz)		C <sub>obo</sub>	-	10	-	pF

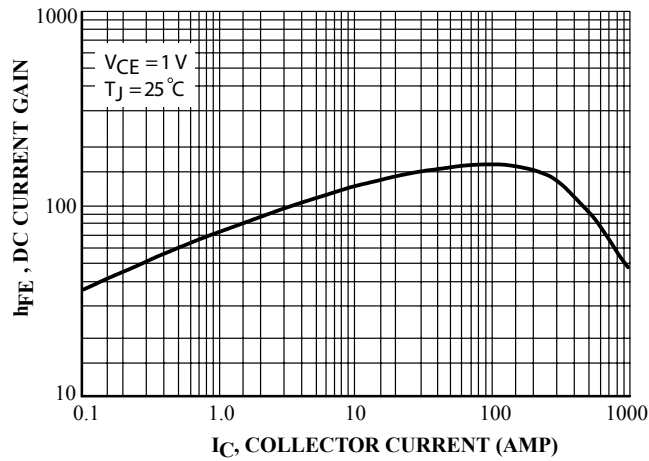


Figure 1. DC Current Gain

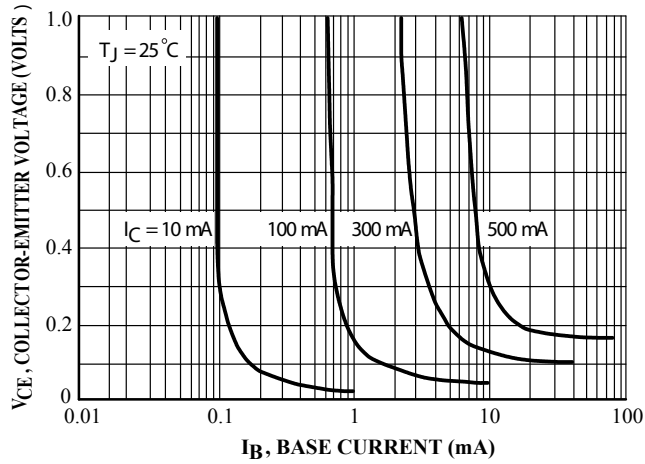


Figure 2. Saturation Region

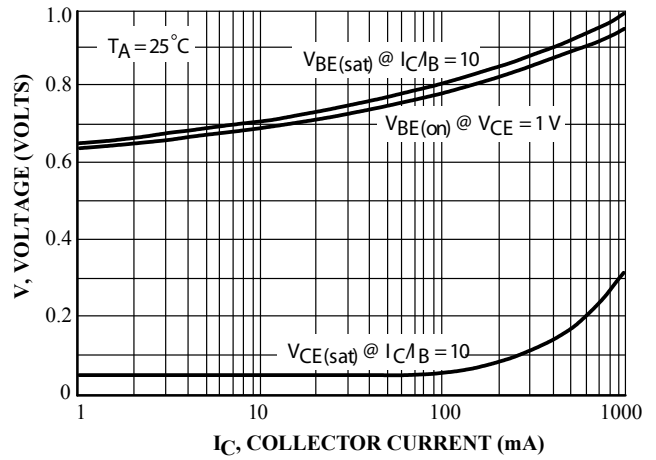


Figure 3. "On" V oltages

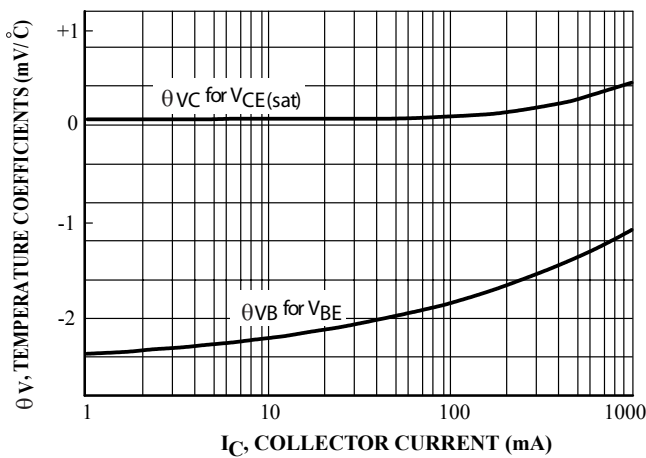


Figure 4. T emperature Coefficients

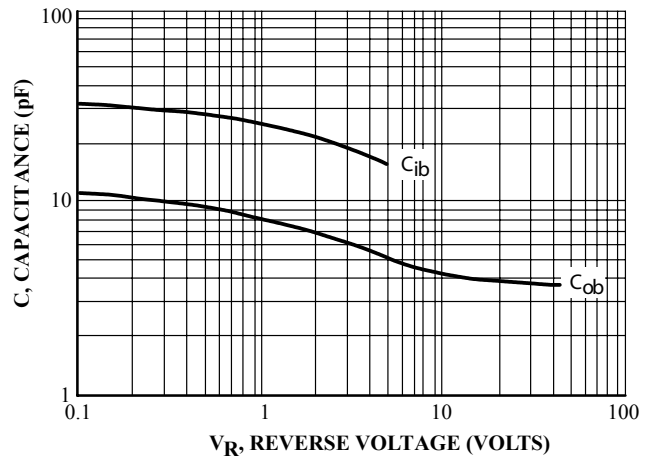
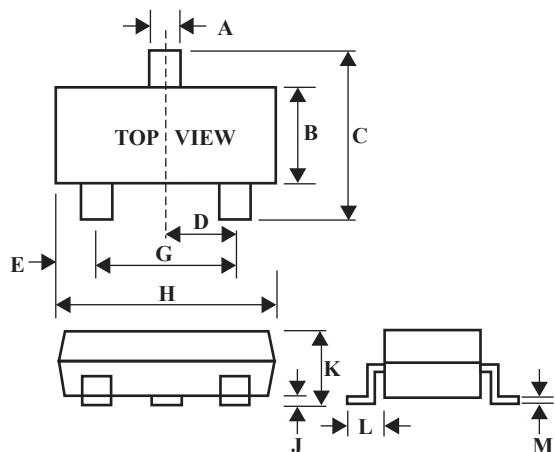


Figure 5. Capacitances

## 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