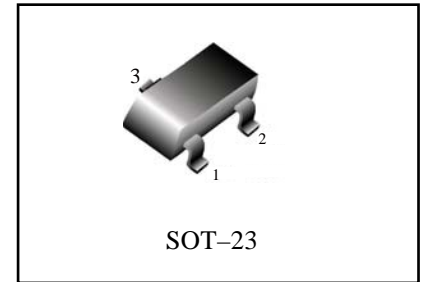


## General Purpose Transistors

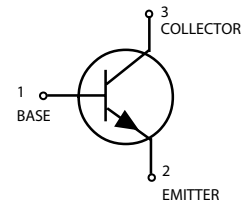
### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	45	V
Collector–Base Voltage	$V_{CBO}$	50	V
Emitter–Base Voltage	$V_{EBO}$	5.0	V
Collector Current — Continuous	$I_C$	500	mAdc



### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR– 5 Board, (1) $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above $25^\circ\text{C}$		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$	$P_D$	300	mW
Derate above $25^\circ\text{C}$		2.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Junction and Storage Temperature	$T_J, T_{stg}$	–55 to +150	$^\circ\text{C}$



### DEVICE MARKING

BC817S–A = 6A , BC817S–B =6B , BC817S–C = 6C

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
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### OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ( $I_C = -10\text{ mA}$ )	$V_{(BR)CEO}$	45	—	—	V
Collector–Emitter Breakdown Voltage ( $V_{EB} = 0, I_C = -10\ \mu\text{A}$ )	$V_{(BR)CES}$	50	—	—	V
Emitter–Base Breakdown Voltage ( $I_E = -1.0\ \mu\text{A}$ )	$V_{(BR)EBO}$	5.0	—	—	V
Collector Cutoff Current ( $V_{CB} = 20\text{ V}$ )	$I_{CBO}$	—	—	100	nA
( $V_{CB} = 20\text{ V}, T_A = 150^\circ\text{C}$ )		—	—	5.0	$\mu\text{A}$

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.



# BC817S

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
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### ON CHARACTERISTICS

DC Current Gain ( $I_C = 100\text{ mA}$ , $V_{CE} = 1.0\text{ V}$ )	$h_{FE}$	100	—	250	
	BC817-A	160	—	400	
	BC817-B	250	—	600	
	BC817-C	40	—	—	
( $I_C = 500\text{ mA}$ , $V_{CE} = 1.0\text{ V}$ )					
Collector-Emitter Saturation Voltage ( $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$ )	$V_{CE(sat)}$	—	—	0.7	V
Base-Emitter On Voltage ( $I_C = 500\text{ mA}$ , $V_{CE} = 1.0\text{ V}$ )	$V_{BE(on)}$	—	—	1.2	V

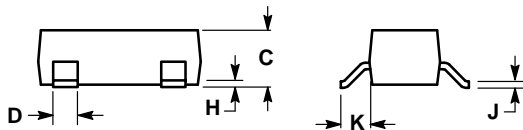
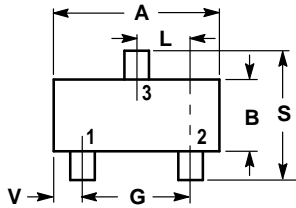
### SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product ( $I_C = 10\text{ mA}$ , $V_{CE} = 5.0\text{ V}_{dc}$ , $f = 100\text{ MHz}$ )	$f_T$	100	—	—	MHz
Output Capacitance ( $V_{CB} = 10\text{ V}$ , $f = 1.0\text{ MHz}$ )	$C_{obo}$	—	10	—	pF

### ORDERING INFORMATION

Device	Marking	Shipping
BC817-ALT1G	6A	3000/Tape&Reel
BC817-ALT3G	6A	10000/Tape&Reel
BC817-BLT1G	6B	3000/Tape&Reel
BC817-BLT3G	6B	10000/Tape&Reel
BC817-CLT1G	6C	3000/Tape&Reel
BC817-CLT3G	6C	10000/Tape&Reel

## SOT-23



### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- P N 1. BASE  
 2. EMITTER  
 3. COLLECTOR

