Features

- Halogen Free. “Green” Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

NPN Silicon General Purpose Transistors

Maximum Ratings @ 25°C Unless Otherwise Specified

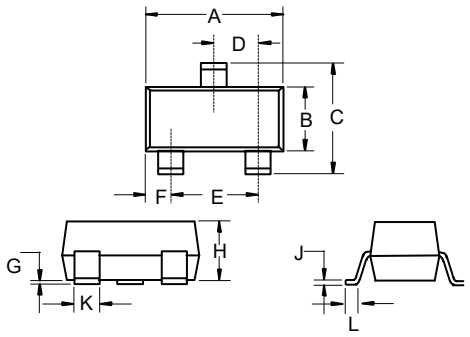
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	500	mA
Power Dissipation	P_D	200	mW

Thermal characteristics

Parameter	Symbol	Rating	Unit
Operating Junction Temperature Range	T_J	-55~+150	°C
Storage Temperature Range	T_{stg}	-55~+150	°C
Thermal Resistance from Junction to Ambient	$Rth_{(J-A)}$	625	°C/W

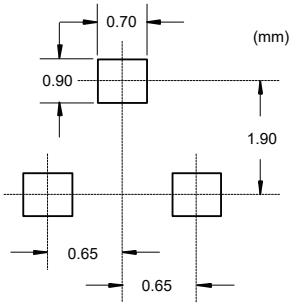
Note:
1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

SOT-323

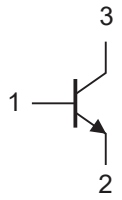


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

Suggested Solder Pad Layout

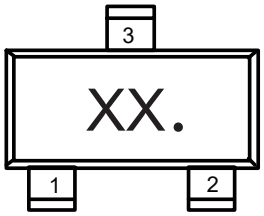


Internal Structure



1.BASE
2.EMITTER
3.COLLECTOR

Marking Code



Part NO.	Marking code
BC817-16W	6A
BC817-25W	6B
BC817-40W	6C

Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I_E=1μA, I_C=0
Collector Cutoff Current	I_{CBO}			0.1	μA	V_{CB}=20V, I_E=0
Emitter Cutoff Current	I_{EBO}			0.1	μA	V_{EB}=5V, I_C=0
DC Current Gain	$h_{FE(1)}$	100		600		V_{CE}=1V, I_C=100mA
	$h_{FE(2)}$	40				V_{CE}=1V, I_C=500mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.7	V	I_C=500mA, I_B=50mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.2	V	I_C=500mA, I_B=50mA
Base-Emitter Voltage	V_{BE}			1.2	V	V_{CE}=1V, I_C=500mA
Transition Frequency	f_T	100			MHz	V_{CE}=5V, I_C=10mA, f=100MHz
Collector Capacitance	C_C			5	pF	V_{CB}=10V, I_E=0, f=1MHz

Classification of $h_{FE(1)}$

Rank	BC817-16W	BC817-25W	BC817-40W
Range	100-250	160-400	250-600

Curve Characteristics

Fig. 1 - Static Characteristics

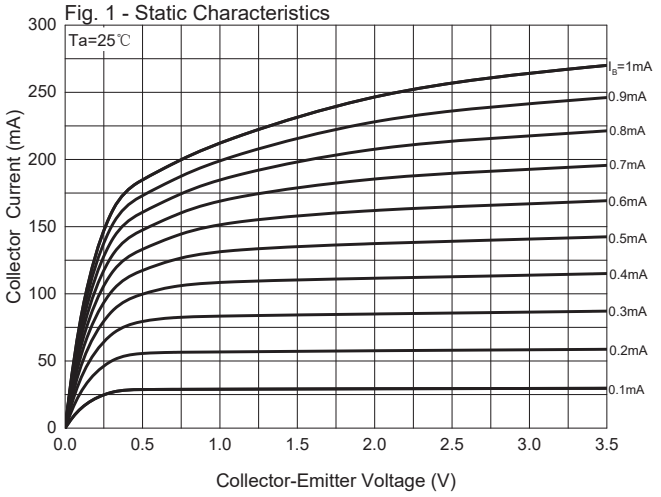


Fig. 2 - DC Current Gain Characteristics

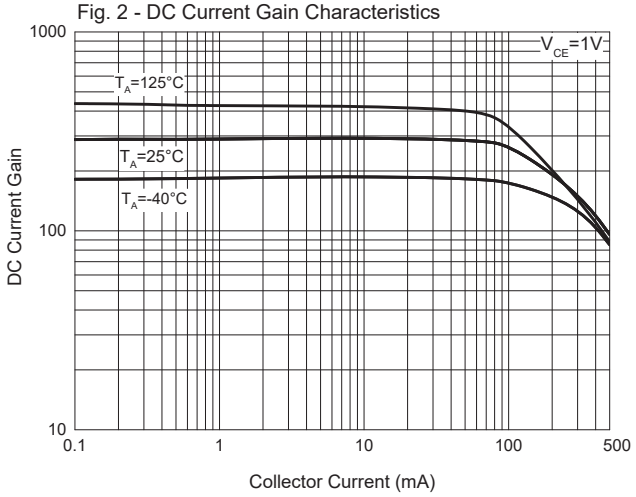


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

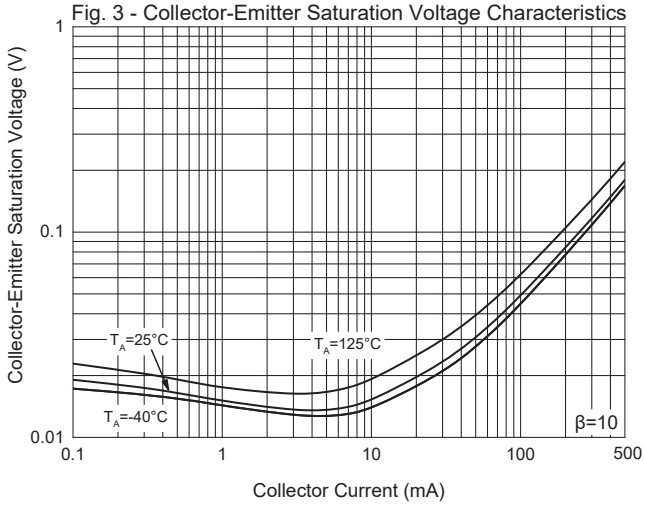


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

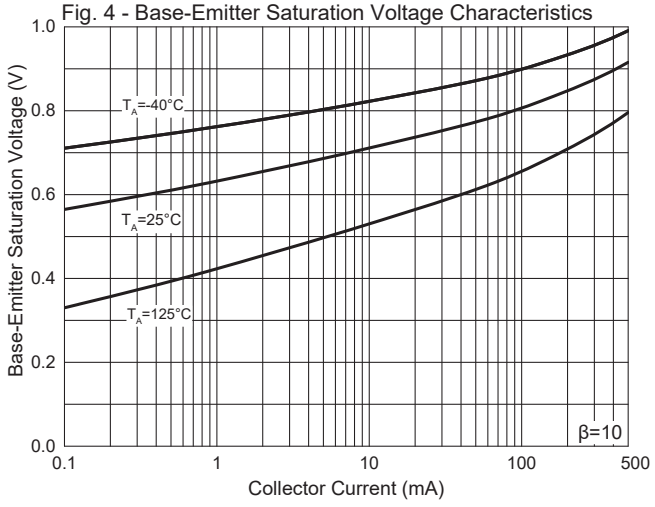


Fig. 5 - Base-Emitter Voltage Characteristics

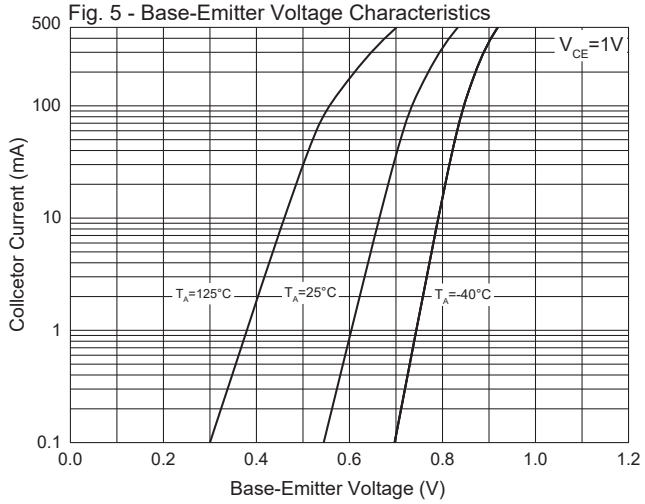
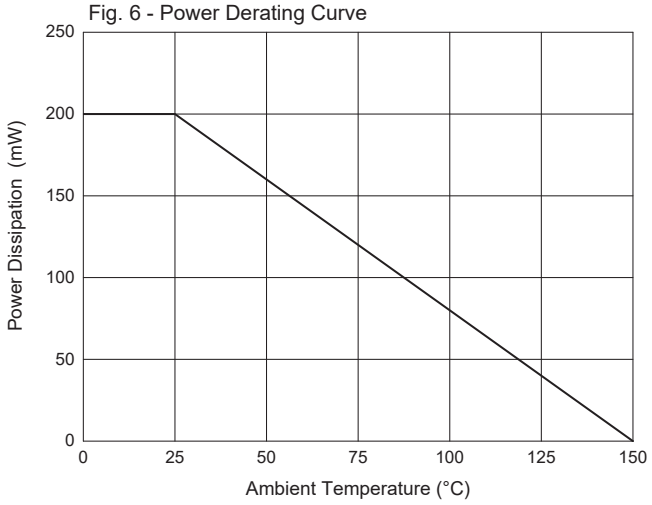


Fig. 6 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel
Part Number-13P	Tape&Reel:10Kpcs/Reel