

### **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 Small Signal Transistor 300mW

# **Maximum Ratings**

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 417 °C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	500	mA
Peak Collector Current	I <sub>CM</sub>	1000	mA
Power Dissipation@Ts=50 C ( Note2)	P <sub>C</sub>	300	mW

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

2. Device mounted on Ceramic Substrate 0.7mm X 2.5cm<sup>2</sup> area

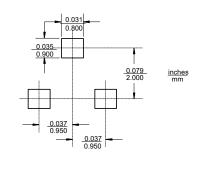
# **Internal Structure**



Marking: BC817-16: 6A BC817-25: 6B BC817-40: 6C SOT-23

DIMENSIONS					
DIM	INCHES		MM		NOTE
DIIVI	MIN	MAX	MIN	MAX	INOIL
Α	0.110	0.120	2.80	3.04	
В	0.083	0.104	2.10	2.64	
С	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
Н	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.014	0.020	0.35	0.51	
L	0.007	0.020	0.20	0.50	

### **Suggested Solder Pad Layout**





# Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Тур	Max	Units	Conditions
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	50			V	I <sub>C</sub> =10μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage <sup>(Note3)</sup>	V <sub>(BR)CEO</sub>	45			V	I <sub>C</sub> =10mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I <sub>E</sub> =1μA, I <sub>C</sub> =0
Collector Cutoff Current	I <sub>CBO</sub>			0.1	μΑ	$V_{CB}$ =45V, $I_E$ =0
Emitter-Base Cutoff Current	I <sub>EBO</sub>			0.1	μA	$V_{EB}$ =4V, $I_{C}$ =0
DC Current Gain <sup>(Note3)</sup>	h <sub>FE1</sub>	100		600		V <sub>CE</sub> =1V, I <sub>C</sub> =100mA
	h <sub>FE2</sub>	40				V <sub>CE</sub> =1V, I <sub>C</sub> =500mA
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>			0.7	V	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>			1.2	V	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA
Base-Emitter Voltage	V <sub>BE</sub>			1.2	V	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA
Collecter capactiance	C <sub>ob</sub>		10		pF	V <sub>CB</sub> =10V, f=1MHz,
Transition Frequency	f <sub>T</sub>	100			MHz	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz

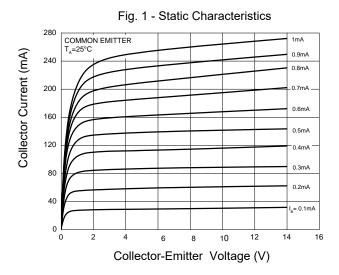
Note: 3. Pulse Width ≤ 300µs, Duty Cycle≤2.0%

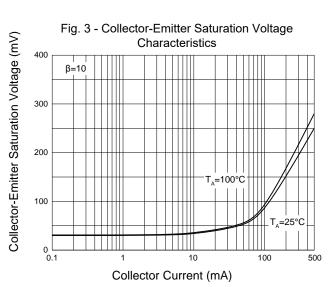
# CLASSIFICATION OF hFE (1)

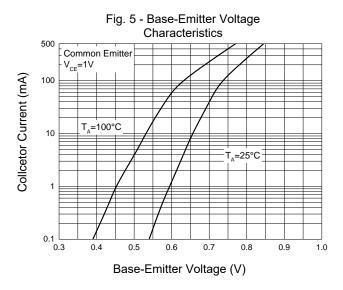
Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600

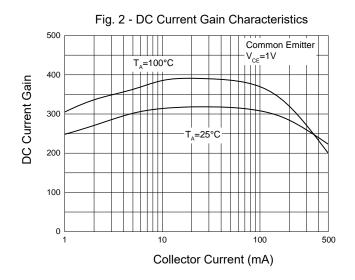


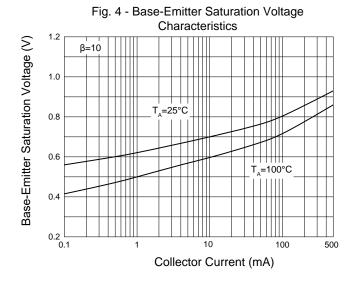
# **Curve Characteristics**

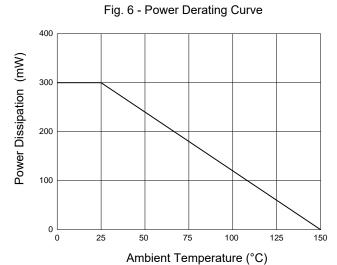














# **Ordering Information**

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

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