

# BC817-16 THRU BC817-40

## NPN Small Signal Transistor 310mW

### Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Ideally Suited for Automatic Insertion
- 150 C Junction Temperature
- For Switching and AF Amplifier Applications
- Epitaxial Planar Die Construction

### Mechanical Data

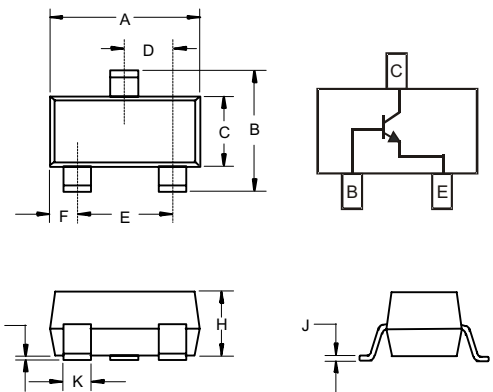
- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams ( approx.)
- Marking: BC817-16 6A  
BC817-25 6B  
BC817-40 6C

### Maximum Ratings @ 25°C Unless Otherwise Specified

Charateristic	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	800	mA
Peak Collector Current	$I_{CM}$	1000	mA
Peak Emitter Current	$I_{EM}$	1000	mA
Power Dissipation@ $T_s=50^\circ\text{C}$ (Note1)	$P_d$	310	mW
Operating & Storage Temperature	$T_j, T_{STG}$	-55~150	°C

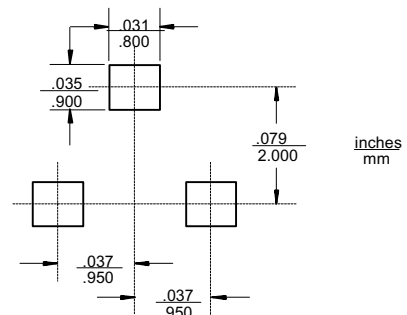
**Note:** 1. Device mounted on Ceramic Substrate 0.7mm X 2.5cm<sup>2</sup> area

### SOT-23



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout

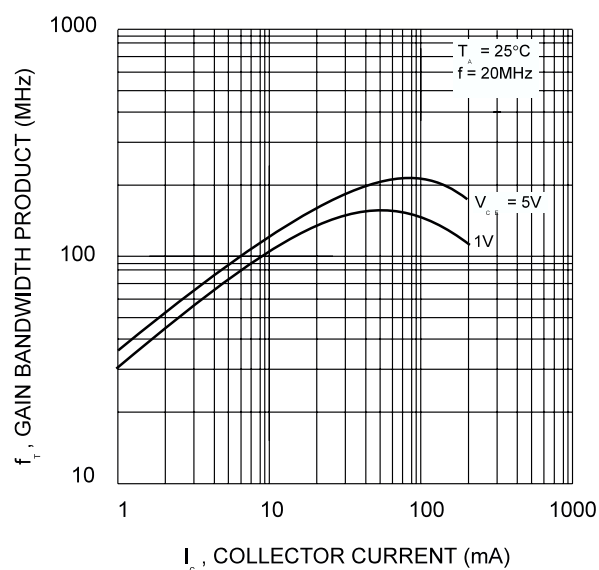
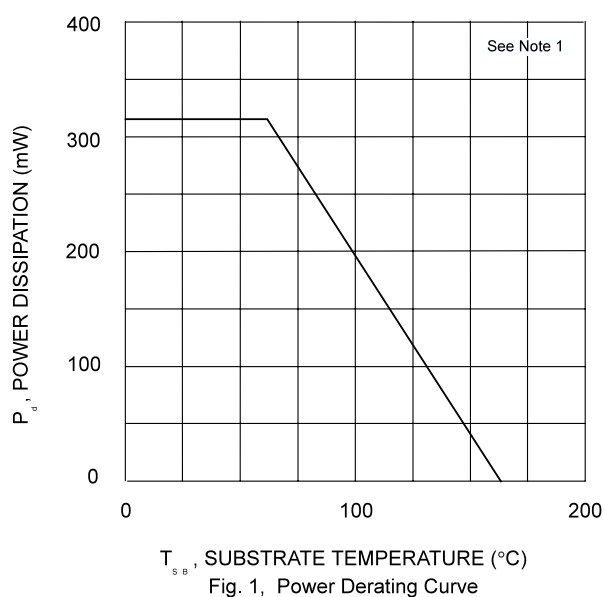


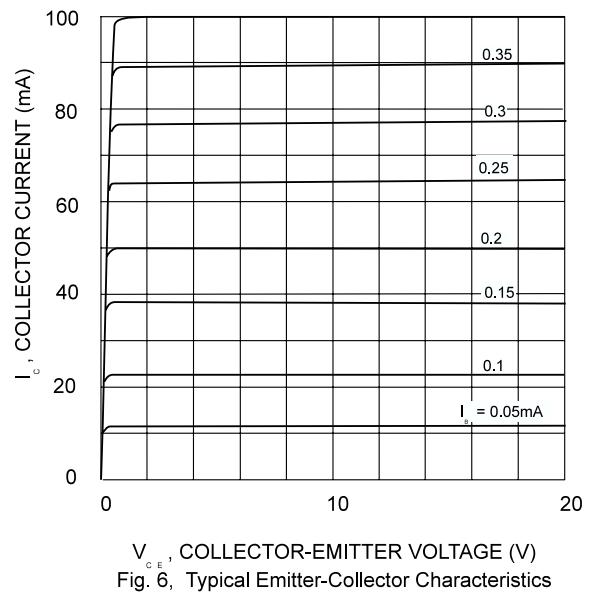
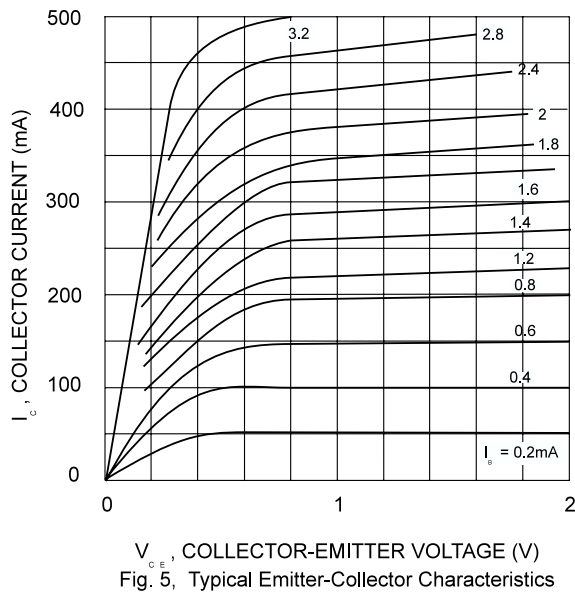
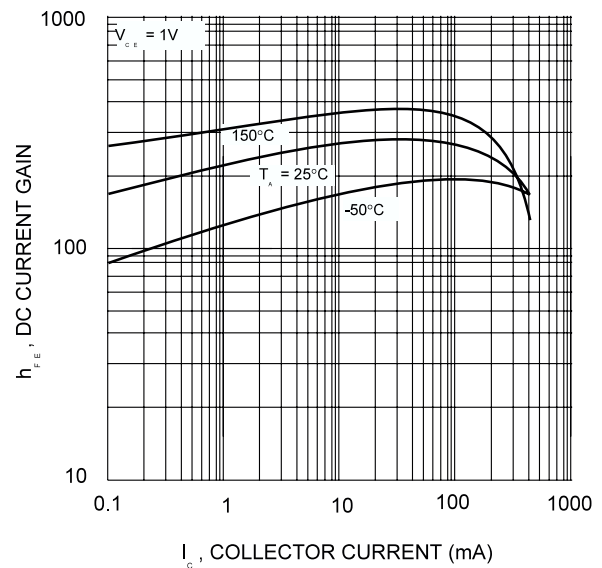
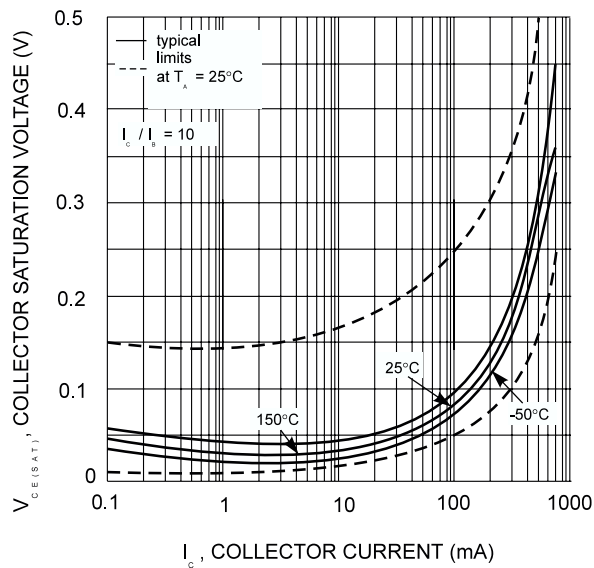
# BC817-16 thru BC817-40

## Electrical Characteristics

@25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
DC Current Gain	$h_{FE}$	100	250	—	$V_{CE} = 1.0V, I_C = 100mA$
		160	400		
		250	600		
		60	—		$V_{CE} = 1.0V, I_C = 300mA$
Thermal Resistance, Junction to Substrate Backside	$R_{\theta SB}$	—	320	K/W	
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	—	400	K/W	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	0.7	V	$I_C = 500mA, I_B = 50mA$
Base-Emitter Voltage	$V_{BE}$	—	1.2	V	$V_{CE} = 1.0V, I_C = 300mA$
Collector-Emitter Cutoff Current	$I_{CES}$	—	100 5.0	nA $\mu A$	$V_{CE} = 45V$ $V_{CE} = 25V, T_J = 150^\circ C$
Emitter-Base Cutoff Current	$I_{EBO}$	—	100	nA	$V_{EB} = 4.0V$
Gain Bandwidth Product	$f_T$	100	—	MHz	$V_{CE} = 5.0V, I_C = 10mA$ , $f = 50MHz$
Collector-Base Capacitance	$C_{CB0}$	—	12	pF	$V_{CB} = 10V, f = 1.0MHz$





## Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.