

# BC817 SERIES

## NPN GENERAL PURPOSE TRANSISTORS

<b>VOLTAGE</b>	<b>45 Volt</b>	<b>POWER</b>	<b>330 mW</b>
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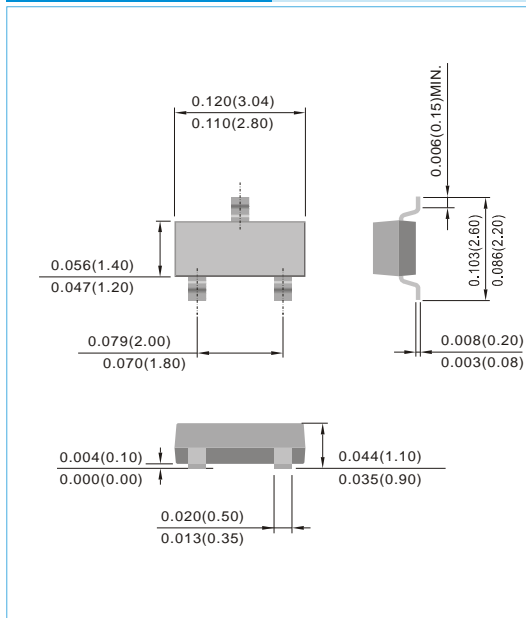
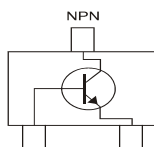
<b>SOT-23</b>	Unit : inch(mm)
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### FEATURES

- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- Collector current  $I_C = 500\text{mA}$
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounce, 0.0084 gram
- Device Marking: BC817-16 : 8A  
BC817-25 : 8B  
BC817-40 : 8C



### MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Emitter Voltage	$V_{CEO}$	45	V
Collector-Base Voltage	$V_{CBO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current - Continuous	$I_C$	500	mA
Total Power Dissipation ( NOTE )	$P_{TOT}$	330	mW
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

### THERMAL CHARACTERISTICS

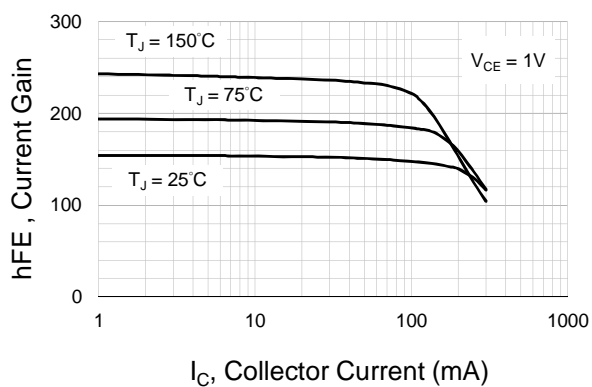
PARAMETER	SYMBOL	VALUE	UNIT
Thermal Resistance Junction to Ambient ( NOTE )	$R_{\theta JA}$	375	°C / W
Thermal Resistance Junction to Lead	$R_{\theta JL}$	220	°C / W

NOTE : Transistor mounted on FR-5 board minimum pad mounting conditions.

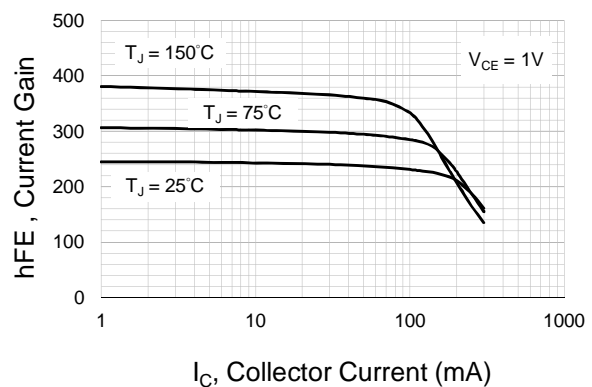
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## ELECTRICAL CHARACTERISTICS ( $T_J=25^{\circ}\text{C}$ , unless otherwise notes )

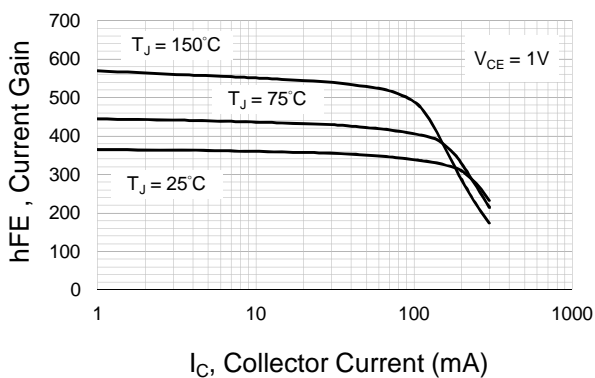
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage ( $I_C=10\text{mA}$ , $I_B=0$ )	$V_{(BR)CEO}$	45	-	-	V
Collector-Base Breakdown Voltage ( $V_{EB}=0\text{V}$ , $I_C=10\mu\text{A}$ )	$V_{(BR)CBO}$	50	-	-	V
Emitter-Base Breakdown Voltage ( $I_E=1\mu\text{A}$ , $I_C=0$ )	$V_{(BR)EBO}$	5	-	-	V
Emitter-Base Cutoff Current ( $V_{EB}=5\text{V}$ )	$I_{EBO}$	-	-	100	nA
Collector-Base Cutoff Current ( $V_{CB}=20\text{V}$ , $I_E=0$ )	$I_{CBO}$	-	-	100 5	nA $\mu\text{A}$
DC Current Gain ( $I_C=100\text{mA}$ , $V_{CE}=1\text{V}$ )	$h_{FE}$	100	-	250	-
DC Current Gain ( $I_C=500\text{mA}$ , $V_{CE}=1\text{V}$ )		160 250 40	- - -	400 600 -	
Collector-Emitter Saturation Voltage ( $I_C=500\text{mA}$ , $I_B=50\text{mA}$ )	$V_{CE(SAT)}$	-	-	0.7	V
Base-Emitter Voltage ( $I_C=500\text{mA}$ , $V_{CE}=1\text{V}$ )	$V_{BE(ON)}$	-	-	1.2	V
Collector-Base Capacitance ( $V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ )	$C_{CBO}$	-	7	-	pF
Current Gain-Bandwidth Product ( $I_C=10\text{mA}$ , $V_{CE}=5\text{V}$ , $f=100\text{MHz}$ )	$f_T$	100	-	-	MHz



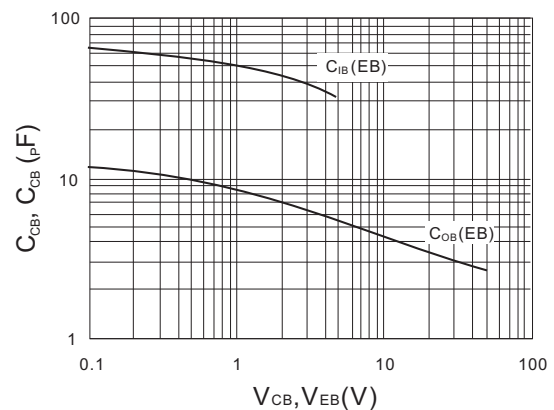
**Fig.1 BC817-16 Typical hfe vs. Ic**



**Fig.2 BC817-25 Typical hfe vs. Ic**



**Fig.3 BC817-40 Typical hfe vs. Ic**



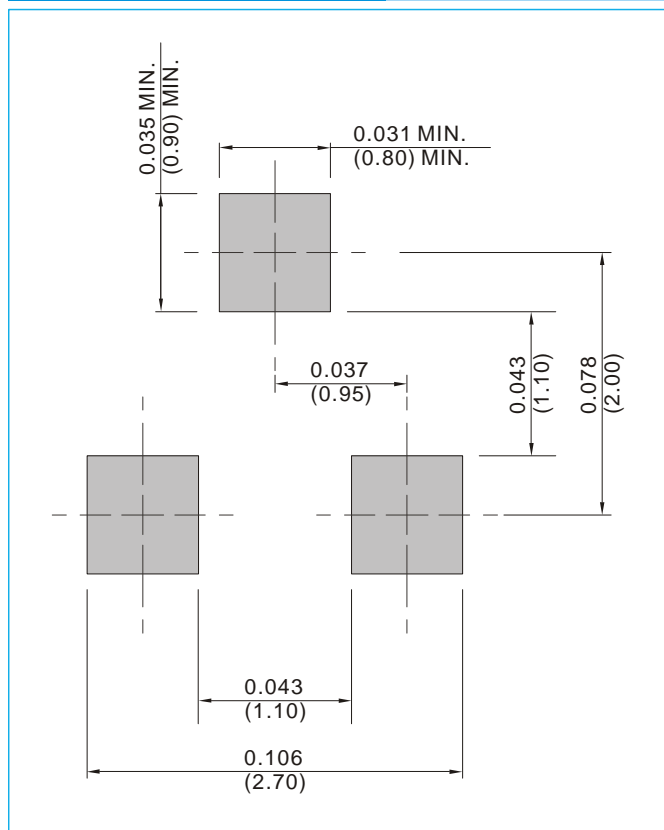
**Fig.4 Typical Capacitances**

## BC817 SERIES

### MOUNTING PAD LAYOUT

#### SOT-23

Unit : inch(mm)



### ORDER INFORMATION

- Packing information
  - T/R - 12K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel

## BC817 SERIES

### Part No\_packing code\_Version

BC817-16\_R1\_00001

BC817-16\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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