



# BC817-16W SERIES

## NPN GENERAL PURPOSE TRANSISTORS

**VOLTAGE** 45 Volt **POWER** 300 mW

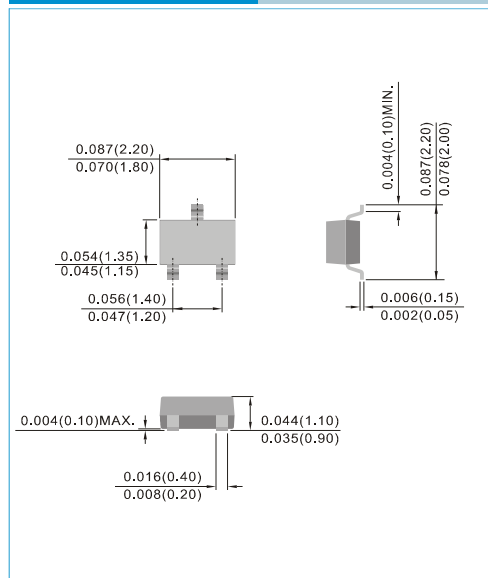
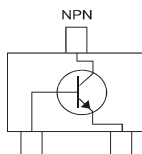
**SOT-323** Unit : inch(mm)

### 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-323, Plastic
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0001 ounce, 0.005 gram
- Device Marking : BC817-16W : 8S  
BC817-25W : 8V  
BC817-40W : 8W



### MAXIMUM RATINGS

PARAMETER	SYMBOL	Value	UNIT
Collector-Emitter Voltage	$V_{CE0}$	45	V
Collector-Base Voltage	$V_{CB0}$	50	V
Emitter-Base Voltage	$V_{EB0}$	5	V
Collector Current - Continuous	$I_C$	500	mA
Peak Collector Current	$I_{CM}$	1000	mA
Base Current - Peak	$I_{BM}$	200	mA
Total Power Dissipation ( NOTE )	$P_{TOT}$	300	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 )	$R_{\theta JA}$	420	°C / W

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



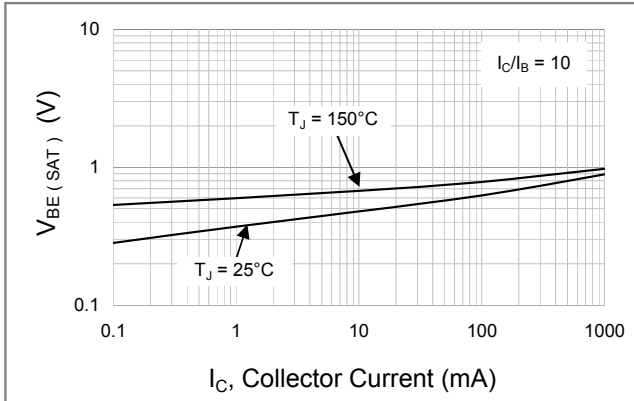
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## ELECTRICAL CHARACTERISTICS ( $T_J=25^{\circ}\text{C}$ , unless otherwise notes )

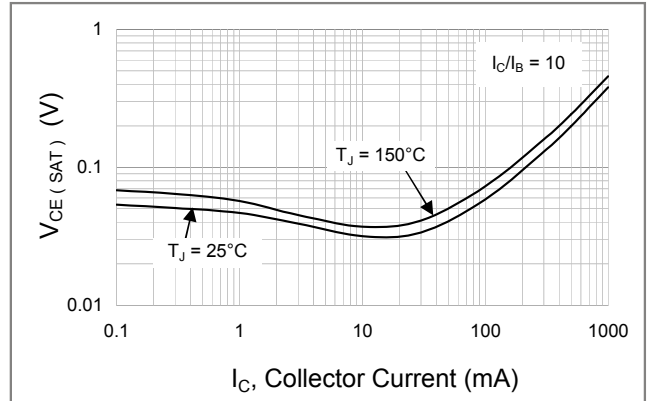
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage ( $I_C=10\text{mA}$ , $I_B=0$ )	$V_{(BR)CEO}$	45	-	-	V
Collector-Base Breakdown Voltage ( $V_{EB}=0\text{V}$ , $I_C=10\mu\text{A}$ )	$V_{(BR)CBO}$	50	-	-	V
Emitter-Base Breakdown Voltage ( $I_E=1\mu\text{A}$ , $I_C=0$ )	$V_{(BR)EBO}$	5.0	-	-	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 5.0	nA $\mu\text{A}$
DC Current Gain ( $I_C=100\text{mA}$ , $V_{CE}=1\text{V}$ )	$h_{FE}$	100	-	250	-
		160	-	400	-
		250	-	600	-
DC Current Gain ( $I_C=500\text{mA}$ , $V_{CE}=1\text{V}$ )		40	-	-	-
Collector-Emitter Saturation Voltage ( $I_C=500\text{mA}$ , $I_B=50\text{mA}$ )	$V_{CE(SAT)}$	-	-	0.7	V
Base-Emitter Voltage ( $I_C=500\text{mA}$ , $V_{CE}=1.0\text{V}$ )	$V_{BE(ON)}$	-	-	1.2	V
Collector-Base Capacitance ( $V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ )	$C_{CBO}$	-	7.0	-	pF
Current Gain-Bandwidth Product ( $I_C=10\text{mA}$ , $V_{CE}=5\text{V}$ , $f=100\text{MHz}$ )	$f_T$	100	-	-	MHz



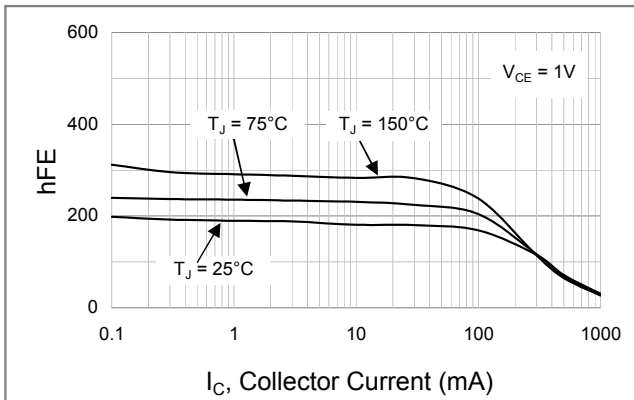
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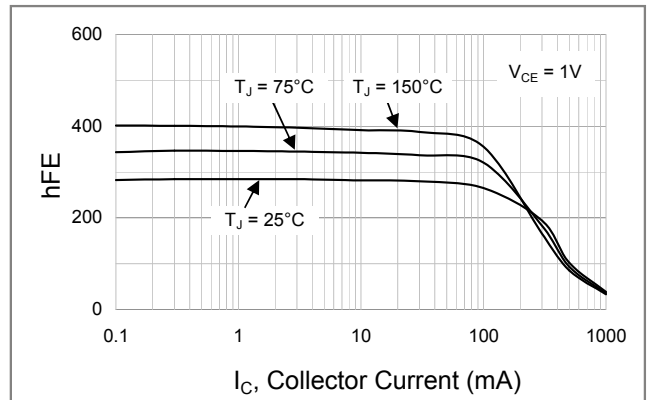
**Fig.1 Base-Emitter Saturation Voltage**



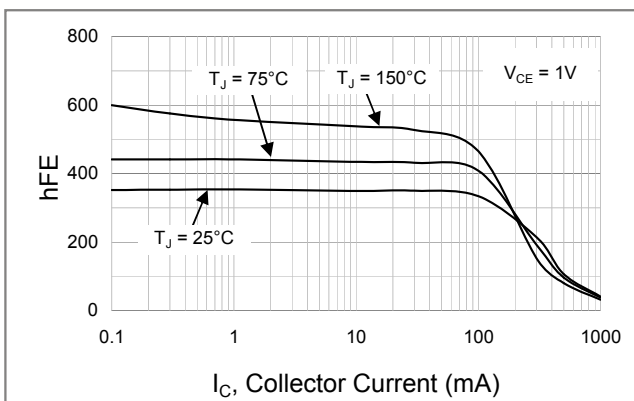
**Fig.2 Collector-Emitter Saturation Voltage**



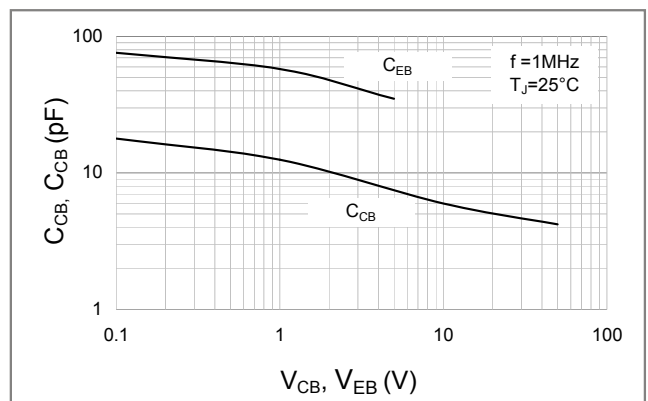
**Fig.3 BC817-16W : Typical DC Current Gain**



**Fig.4 BC817-25W : Typical DC Current Gain**



**Fig.5 BC817-40W : DC Current Gain**



**Fig.6 Typical Capacitance**

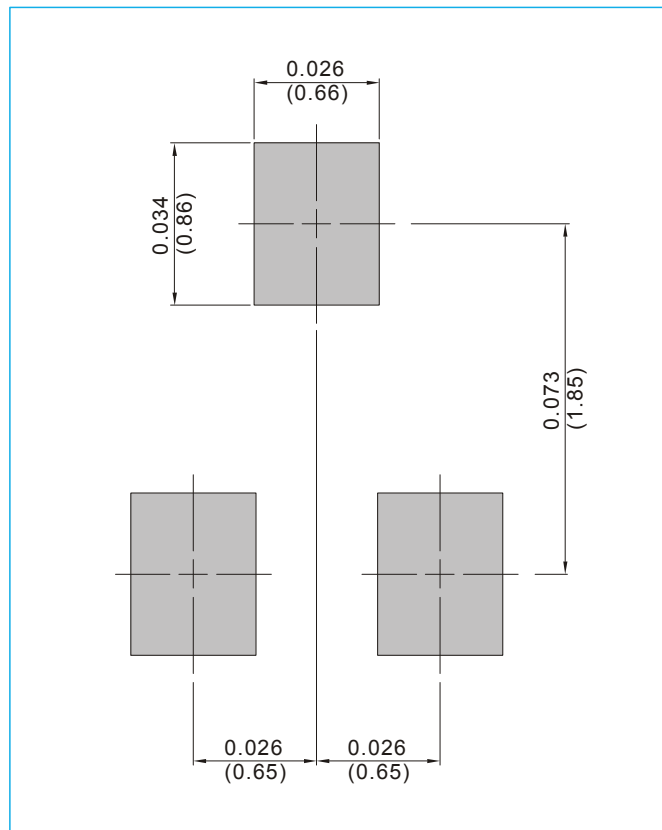


# BC817-16W SERIES

## MOUNTING PAD LAYOUT

SOT-323

Unit : inch(mm)



## ORDER INFORMATION

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



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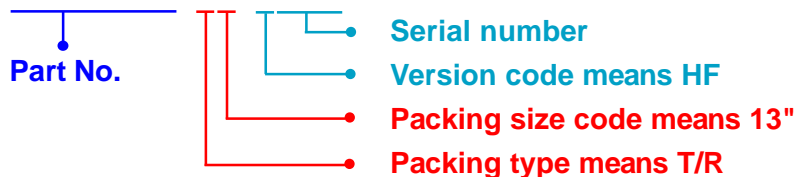
## Part No\_packing code\_Version

BC817-16W\_R1\_00001

BC817-16W\_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)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



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