



# BC817-16W SERIES

## NPN GENERAL PURPOSE TRANSISTORS

**VOLTAGE** 45 Volts **POWER** 300 mW

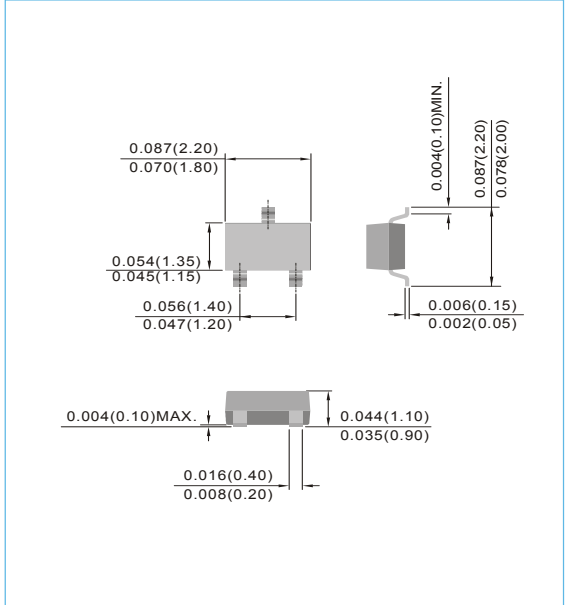
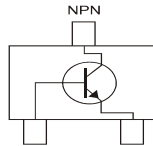
**SOT-323** Unit : inch(mm)

### FEATURES

- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- Collector current  $I_C = 500\text{mA}$
- Lead free in comply with EU RoHS 2002/95/EC directives.
- 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: 0.0002 ounces, 0.005 grams
- Device Marking : BC817-16W : 8S  
BC817-25W : 8V  
BC817-40W : 8W



### MAXIMUM RATINGS

PARAMETER	SYMBOL	Value	UNIT
Collector-Emitter Voltage	$V_{CEO}$	45	V
Collector-Base Voltage	$V_{CBO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5.0	V
Collector Current - Continuous	$I_C$	500	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.



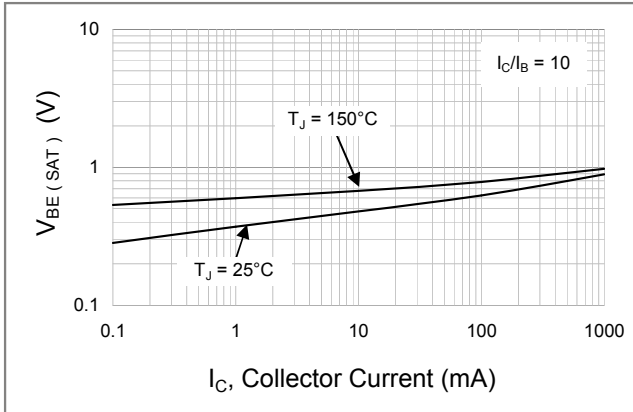
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### ELECTRICAL CHARACTERISTICS ( $T_J=25^{\circ}\text{C}$ , unless otherwise notes )

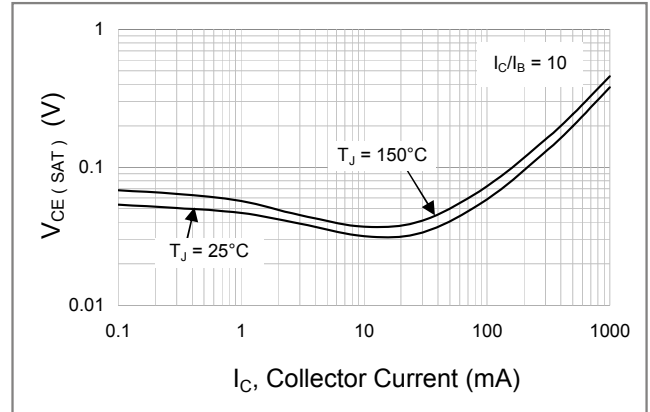
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Breakdown Voltage ( $I_C=10\text{mA}$ , $I_B=0$ )	$V_{(BR)CEO}$	45	-	-	V
Collector-Base Breakdown Voltage ( $V_{EB}=0\text{V}$ , $I_C=10\mu\text{A}$ )	$V_{(BR)CBO}$	50	-	-	V
Emitter-Base Breakdown Voltage ( $I_E=1\mu\text{A}$ , $I_C=0$ )	$V_{(BR)EBO}$	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 ( $I_C=500\text{mA}$ , $V_{CE}= \text{V}$ )	1	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



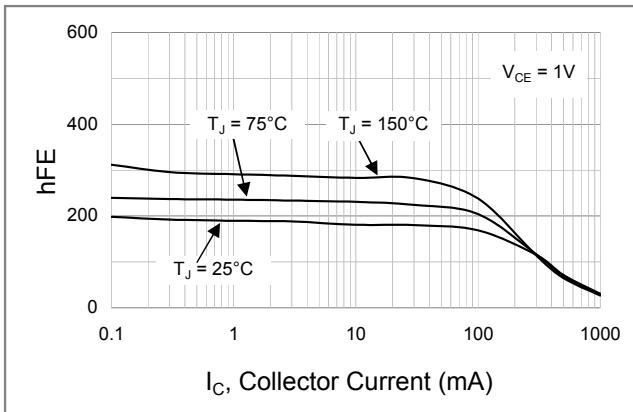
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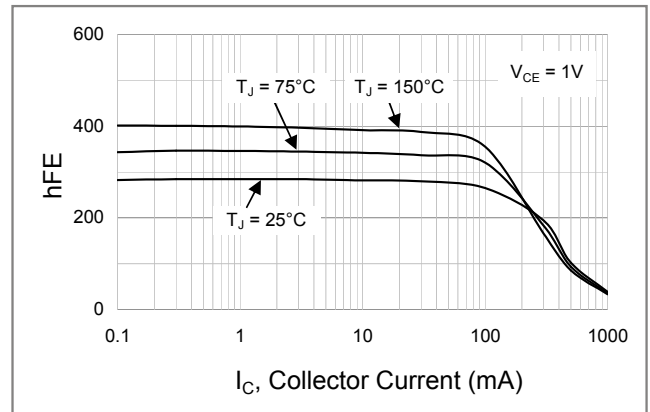
**Fig.1 Base-Emitter Saturation Voltage**



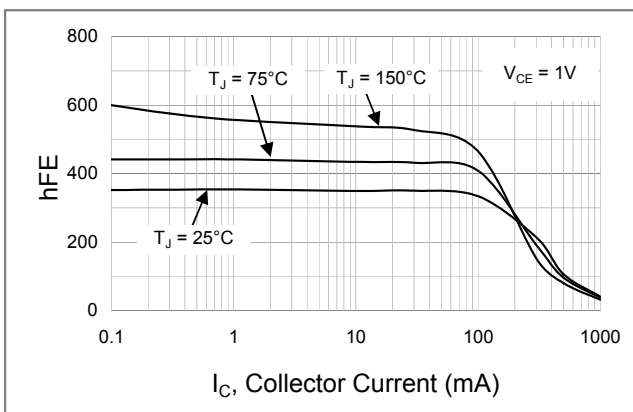
**Fig.2 Collector-Emitter Saturation Voltage**



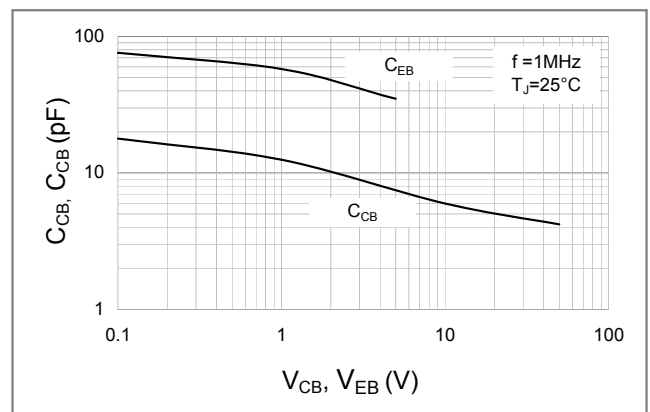
**Fig.3 BC817-16W : Typical DC Current Gain**



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



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



**Fig.6 Typical Capacitance**