

**SOT-23 BIPOLAR TRANSISTORS  
TRANSISTOR(NPN)**

**FEATURES**

- \* Power dissipation  
 $P_{CM} : \square \quad 0.225 \square \quad W$  ( $T_{amb}=25^{\circ}C$ ) Note1
- \* Collector current  
 $I_{CM} : \square \quad 0.1 \square \quad A$
- \* Collector-base voltage  
 $V_{CBO} : \square \quad 50 \square \quad V$
- \* Operating and storage junction temperature range  
 $T_{J}, T_{stg} : -55^{\circ}C$  to  $+150^{\circ}C$

**MECHANICAL DATA**

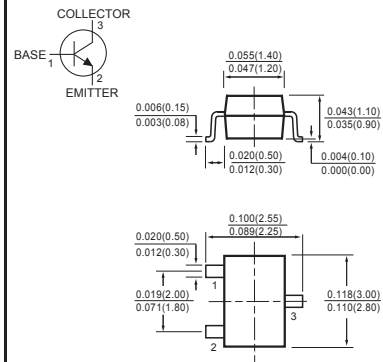
- \* Case: Molded plastic
- \* Epoxy: UL 94V-O rate flame retardant
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 0.008 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at  $25^{\circ}C$  ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.



**SOT-23**



Dimensions in inches and (millimeters)

**ELECTRICAL CHARACTERISTICS ( @  $T_A = 25^{\circ}C$  unless otherwise noted )**

CHARACTERISTICS	SYMBOL	MIN	MAX	UNITS
Collector - base breakdown voltage ( $I_C = 10\mu A, I_E = 0$ )	$V_{CBO}$	50	-	V
Collector - emitter breakdown voltage ( $I_C = 10mA, I_B = 0$ )	$V_{CEO}$	45	-	V
Emitter - base breakdown voltage ( $I_E = 10\mu A, I_C = 0$ )	$V_{EBO}$	6	-	V
Collector cut - off current ( $V_{CB} = 50V, I_E = 0$ )	$I_{CBO}$	-	0.1	$\mu A$
Collector cut - off current ( $V_{CE} = 45V, I_B = 0$ )	$I_{CEO}$	-	0.1	$\mu A$
Emitter cut - off current ( $V_{EB} = 5V, I_C = 0$ )	$I_{EBO}$	-	0.1	$\mu A$
DC current gain ( $V_{CE} = 5V, I_C = 2mA$ )	$h_{FE(1)}$	200	450	-
Collector - emitter saturation voltage ( $I_C = 100mA, I_B = 5mA$ )	$V_{CE(sat)}$	-	0.5	V
Base - emitter saturation voltage ( $I_C = 100mA, I_B = 5mA$ )	$V_{BE(sat)}$	-	1.1	V
Transition frequency ( $V_{CE} = 5V, I_C = 10mA, f = 100MHz$ )	$f_T$	100	-	MHz

**DEVICE MARKING**

BC847B	1F
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Notes: 1. Transistor mounted on an FR4 Printed-circuit board.  
2. "Fully ROHS compliant", "100% Sn plating (Pb-free)".

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