

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

**FEATURES**

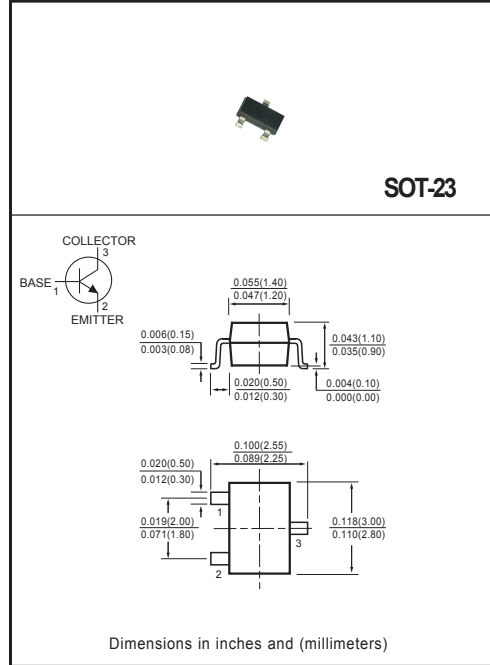
- \* Power dissipation  
P<sub>CM</sub>: □ 0.15 □ W (T<sub>amb</sub>=25°C)
- \* Collector current  
I<sub>CM</sub>: □ 0.2 □ A
- \* Collector-base voltage  
V<sub>(BR)CBO</sub>: □ 50 □ V
- \* Operating and storage junction temperature range  
T<sub>J</sub>, T<sub>stg</sub>: -55°C to +150°C

**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°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.



**ELECTRICAL CHARACTERISTICS ( @ TA = 25°C unless otherwise noted )**

CHARACTERISTICS	SYMBOL	MIN	MAX	UNITS
Collector-base breakdown voltage (I <sub>C</sub> = 100μA, I <sub>E</sub> =0)	V <sub>(BR)CBO</sub>	50	-	V
Collector-emitter breakdown voltage (I <sub>C</sub> = 100μA, I <sub>B</sub> =0)	V <sub>(BR)CEO</sub>	50	-	V
Emitter-base breakdown voltage (I <sub>E</sub> = 100μA, I <sub>C</sub> =0)	V <sub>(BR)EBO</sub>	6	-	V
Collector cut-off current (V <sub>CB</sub> = 50V, I <sub>E</sub> =0)	I <sub>CBO</sub>	-	0.1	μA
Emitter cut-off current (V <sub>EB</sub> = 6V, I <sub>C</sub> =0)	I <sub>EBO</sub>	-	0.1	μA
DC current gain (V <sub>CE</sub> = 6V, I <sub>C</sub> = 1mA)	h <sub>FE</sub>	150	800	-
DC current gain (V <sub>CE</sub> = 6V, I <sub>B</sub> = 0.1mA)		50	-	-
Collector-emitter saturation voltage (I <sub>C</sub> = 100mA, I <sub>B</sub> = 10mA)	V <sub>CE(sat)</sub>	-	0.3	V
Base - emitter saturation voltage (I <sub>C</sub> = 100mA, I <sub>B</sub> = 10mA)	V <sub>BE(sat)</sub>	-	1	V
Transition frequency (V <sub>CE</sub> = 6V, I <sub>C</sub> = 10mA)	f <sub>T</sub>	180	-	MHz
Collector output capacitance (V <sub>CE</sub> = 6V, I <sub>E</sub> = 0, f= 1MHz)	C <sub>ob</sub>	-	4	pF
Noise figure (V <sub>CE</sub> = 6V, I <sub>E</sub> = -0.1mA, f= 1KHz, R <sub>g</sub> =2KΩ)	NF	-	15	dB

**CLASSIFICATION OF h<sub>FE(1)</sub>**

RANK	E	F	G
Range	150-300	250-500	400-800
Marking	LE	LF	LG

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