

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

**FEATURES**

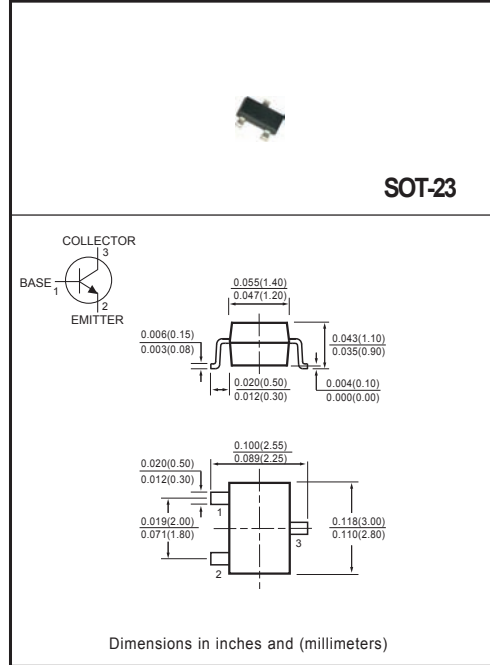
- \* Power dissipation  
 $P_{CM} : \square \quad 0.2 \square \quad W$  ( $T_{amb}=25^{\circ}C$ )
- \* Collector current  
 $I_{CM} : \square \quad 0.15 \square \quad mA$
- \* Collector-base voltage  
 $V_{(BR)CBO} : \square \quad 60 \square \quad V$
- \* Operating and storage junction temperature range  
 $T_{J, Tstg} : -55^{\circ}C$  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%.



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

CHARACTERISTICS	SYMBOL	MIN	TYP	MAX	UNITS
Collector-base breakdown voltage ( $I_C= 100\mu A, I_E=0$ )	$V_{(BR)CBO}$	60	-	-	V
Collector-emitter breakdown voltage ( $I_C= 0.1mA, I_B=0$ )	$V_{(BR)CEO}$	50	-	-	V
Collector cut-off current ( $V_{CB}= 60V, I_E=0$ )	$I_{CBO}$	-	-	0.1	$\mu A$
Collector cut-off current ( $V_{CB}= 50V, I_B=0$ )	$I_{CEO}$	-	-	0.1	$\mu A$
Emitter cut-off current ( $V_{EB}= 5V, I_C=0$ )	$I_{EBO}$	-	-	0.1	$\mu A$
DC current gain ( $V_{CE}= 6V, I_C= 2mA$ )	$h_{FE(1)}$	130	-	400	-
Collector-emitter saturation voltage ( $I_C= 100mA, I_B= 10mA$ )	$V_{CE(sat)}$	-	-	0.25	V
Base-emitter voltage ( $I_C= 100mA, I_B= 10mA$ )	$V_{BE(sat)}$	-	-	1	V
Transition frequency ( $V_{CE}= 10V, I_C= 1mA, f= 30MHz$ )	$f_T$	80	-	-	MHZ

**CLASSIFICATION OF  $h_{FE(1)}$**

RANK	L	H
Range	130 - 200	200 - 400

DEVICE MARKING	HF
----------------	----

## DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.