

# MBR130W

## SURFACE MOUNT SCHOTTKY POWER RECTIFIER

### Features:

- Guardring for Stress Protection
- Low Forward Voltage
- 125°C Operating Junction Temperature
- Package Designed for Optimal Automated Board Assembly
- ESD Ratings: Machine Model, C;  
Human Body Model, 3

### Mechanical Data:

Case: SOD-123, Plastic

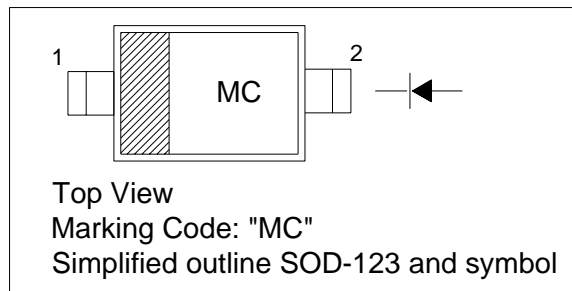
Finish : All External Surfaces Corrosion Resistant and Terminal  
Leads are Readily Solderable

Polarity : Cathode Band

Weight : 0.01 grams (approx.)

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



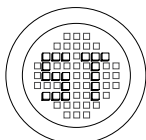
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	30	V
Working Peak Reverse Voltage	$V_{RWM}$	30	V
DC Blocking Voltage	$V_R$	30	V
Average Rectified Forward Current (Rated $V_R$ ) $T_L=65^\circ\text{C}$	$I_{F(AV)}$	1.0	A
Non-Repetitive Peak Forward Surge Current (Surge Applied at Rated Load Conditions, Halfwave, Single Phase, 60Hz)	$I_{FSM}$	5.5	A
Operating Junction Temperature	$T_j$	-65 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_S$	-65 to +125	$^\circ\text{C}$
Voltage Rated of Change (Rated $V_R$ )	Dv/dt	1000	V/ $\mu\text{S}$

### Thermal Characteristics

	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	230 <sup>1)</sup>	$^\circ\text{C/W}$
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	108 <sup>1)</sup>	$^\circ\text{C/W}$

<sup>1)</sup>FR-4 or FR-5=3.5 X 1.5 inches using a 1 inch Cu pad.



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## Characteristics

	Symbol	Min.	Typ.	Max.	Unit
Forward Voltage <sup>1)</sup> at $I_F = 0.1A, T_J = 25^\circ C$ at $I_F = 0.7A, T_J = 25^\circ C$ at $I_F = 1.0A, T_J = 25^\circ C$	$V_F$	-	-	0.35 0.45 -	V
Reverse Leakage Current <sup>1)</sup> Rated dc Blocking Voltage, $T_C = 25^\circ C$ at $V_R = 5V, T_C = 25^\circ C$	$I_R$	-	-	60 10	$\mu A$

<sup>1)</sup> Pulse Test: Pulse width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

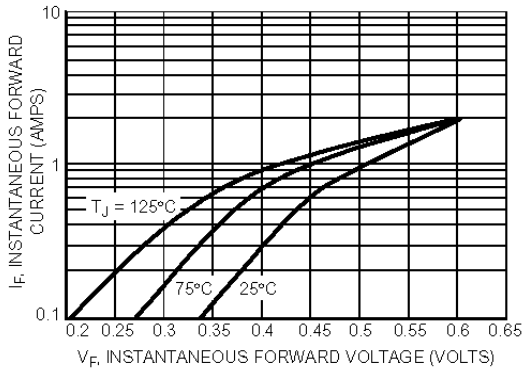


Figure 1. Maximum Forward Voltage

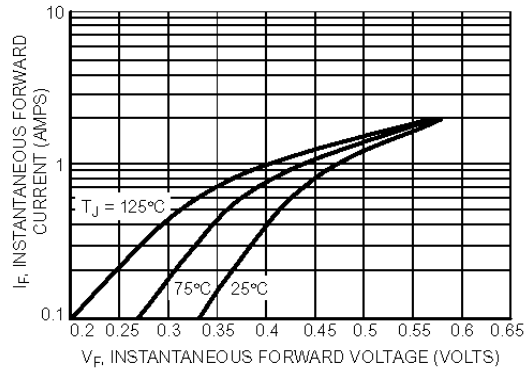


Figure 2. Typical Forward Voltage

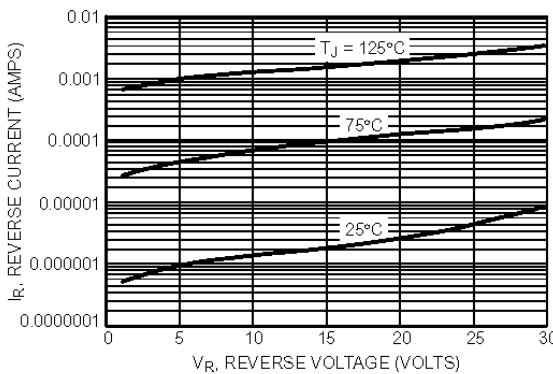


Figure 3. Typical Reverse Current

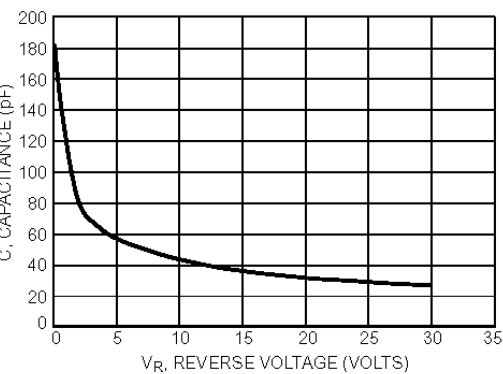


Figure 4. Typical Capacitance

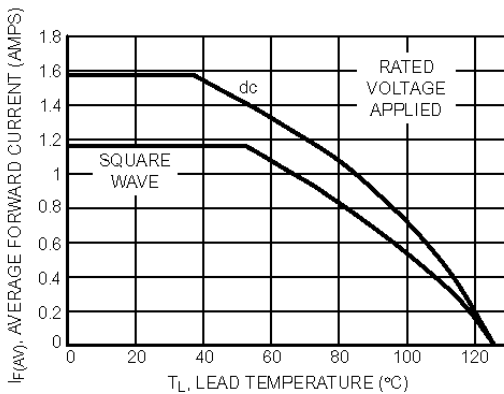


Figure 5. Current Derating, Lead,  $R_{\theta JL} = 108^\circ C/W$

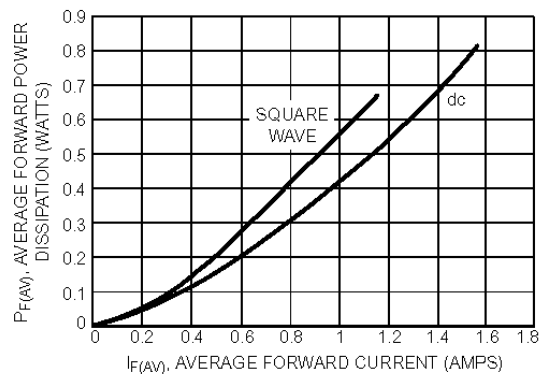
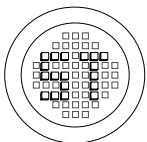
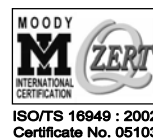


Figure 6. Forward Power Dissipation



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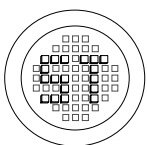
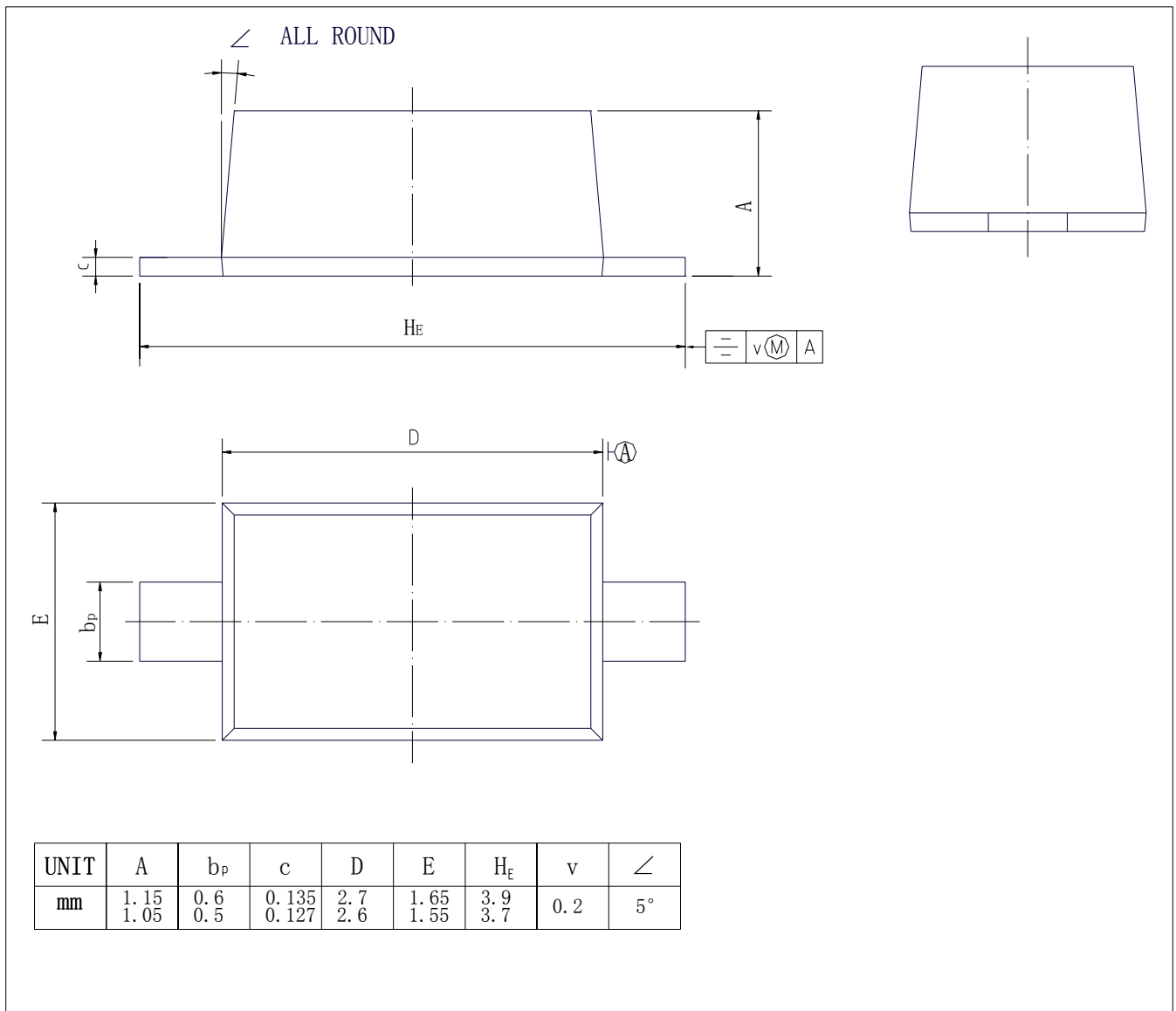


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## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

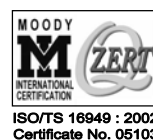
SOD-123



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