

## FEATURES

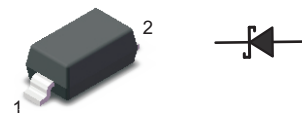
- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Also Available in Lead Free Version

## MECHANICAL DATA

- Case: SOD-123
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 16mg/0.00056oz

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



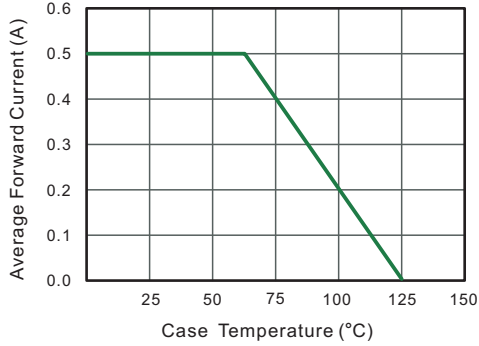
Top View  
Simplified outline SOD-123 and symbol

## Maximum Ratings and Electrical characteristics

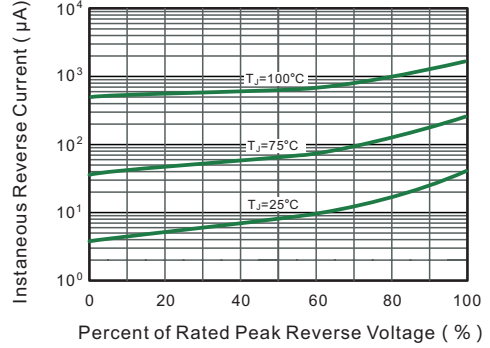
Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameter   | Symbols         | MBR0520    | MBR0530 | MBR0540 | Units |
|---|-----------------|------------|---------|---------|-------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$       | 20         | 30      | 40      | V     |
| RMS reverse voltage reverse voltage (DC)  | $V_{RMS}$       | 14         | 21      | 28      | V     |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 20         | 30      | 40      | V     |
| Maximum Average Forward Current at Ta=25°C  | $I_O$           | 0.5        |         |         | A     |
| Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$       | 25         |         |         | A     |
| Maximum Instantaneous Forward Voltage   | $I_F=0.1A$      | 0.330      | 0.375   | –       | V     |
|   | $I_F=0.5A$      | 0.390      | 0.430   | 0.510   |       |
|   | $I_F=1A$        | –          | –       | 0.620   |       |
| Reverse current   | $V_R=10V$       | 75         | –       | –       | uA    |
|   | $V_R=15V$       | –          | 20      | –       |       |
|   | $V_R=20V$       | 250        | –       | 10      |       |
|   | $V_R=30V$       | –          | 130     | –       |       |
|   | $V_R=40V$       | –          | –       | 20      |       |
| Thermal Resistance, Junction to Ambient Air   | $R_{\theta JA}$ | 200        |         |         | °C/W  |
| Junction temperature  | $T_j$           | -55 ~ +125 |         |         | °C    |
| Storage temperature   | $T_{stg}$       | -55 ~ +150 |         |         | °C    |

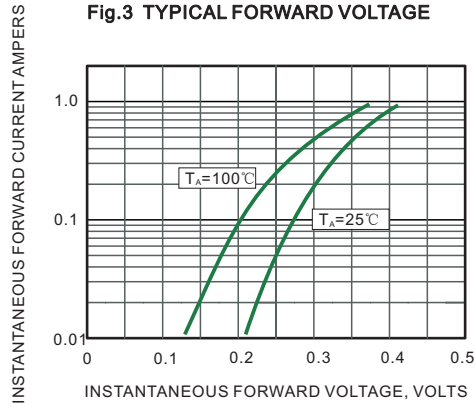
**Fig.1 Forward Current Derating Curve**



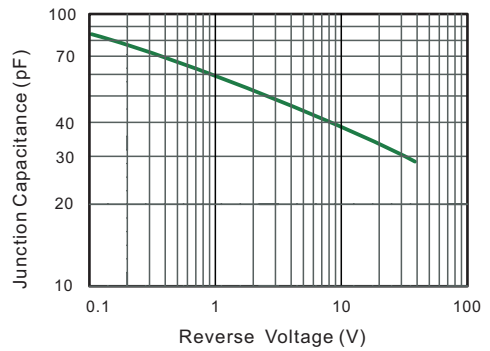
**Fig.2 Typical Reverse Characteristics**



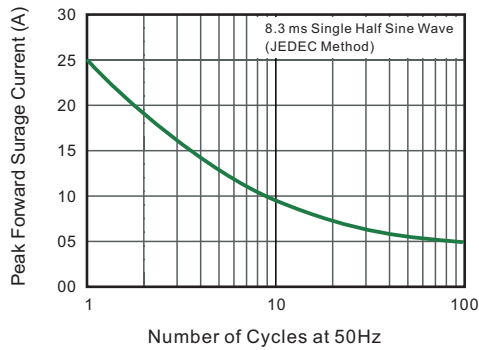
**Fig.3 TYPICAL FORWARD VOLTAGE**



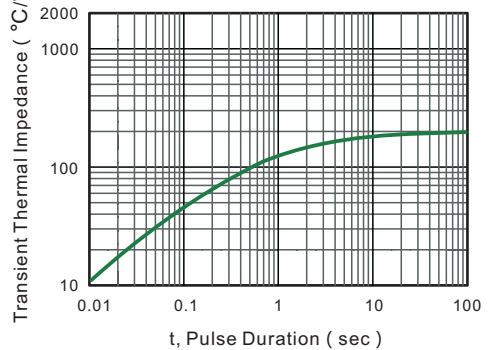
**Fig.4 Typical Junction Capacitance**



**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



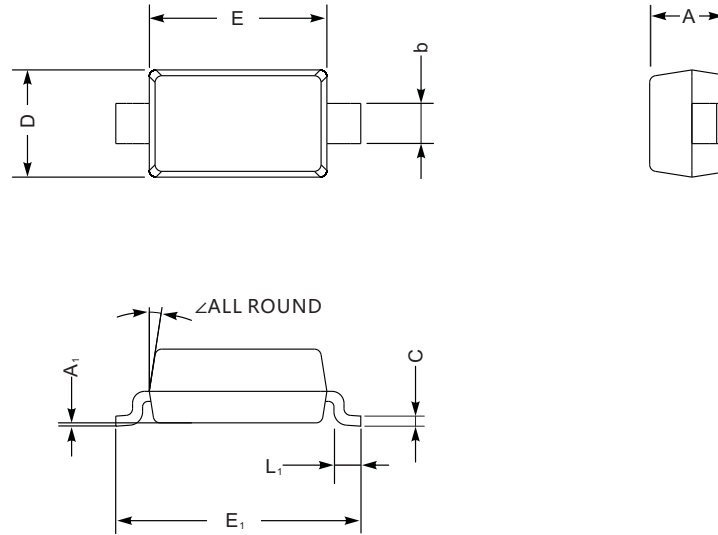
**Fig.6 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

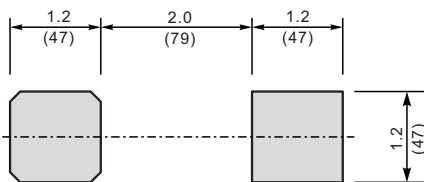
SOD-123



SOD-123 mechanical data

| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | L <sub>1</sub> | b   | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|----------------|-----|----------------|----|
| mm   | max | 1.3 | 0.22 | 1.8 | 2.8 | 3.9            | 0.45           | 0.7 | 0.2            | 9° |
|      | min | 0.9 | 0.09 | 1.5 | 2.5 | 3.6            | 0.25           | 0.5 | —              |    |
| mil  | max | 51  | 8.7  | 71  | 110 | 154            | 18             | 28  | 8              |    |
|      | min | 35  | 3.5  | 59  | 98  | 142            | 10             | 20  | —              |    |

**The recommended mounting pad size**



Unit:  $\frac{\text{mm}}{\text{mil}}$

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