

## FEATURES

- Low Forward Voltage Drop

## APPLICATIONS

- Low Voltage Rectification
- High Efficiency DC/DC Conversion
- Switch Mode Power Supply
- Inverse Polarity Protection
- Low Power Consumption Applications

SOD-123



MARKING: SH

## ELECTRICAL CHARACTERISTICS( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                 | Symbol     | Test conditions                | Min | Typ | Max  | Unit          |
|---------------------------|------------|--------------------------------|-----|-----|------|---------------|
| Reverse breakdown voltage | $V_{(BR)}$ | $I_R=1\text{mA}$               | 20  |     |      | V             |
| Reverse current           | $I_R$      | $V_R=10\text{V}$               |     |     | 80   | $\mu\text{A}$ |
|                           |            | $V_R=20\text{V}$               |     |     | 100  |               |
| Forward voltage           | $V_F^*$    | $I_F=1\text{A}$                |     |     | 0.45 | V             |
|                           |            | $I_F=2\text{A}$                |     |     | 0.55 |               |
| Total capacitance         | $C_{tot}$  | $V_R=4\text{V}, f=1\text{MHz}$ |     |     | 120  | pF            |

\*Pulse test:  $t_p \leq 300 \mu\text{s}$ ;  $\delta \leq 0.02$ .

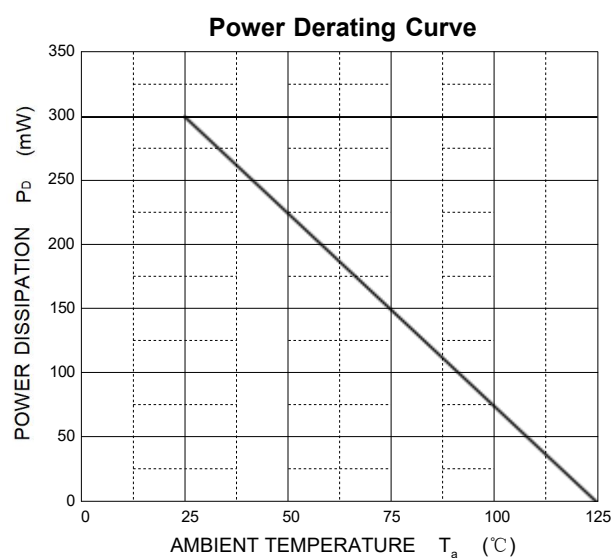
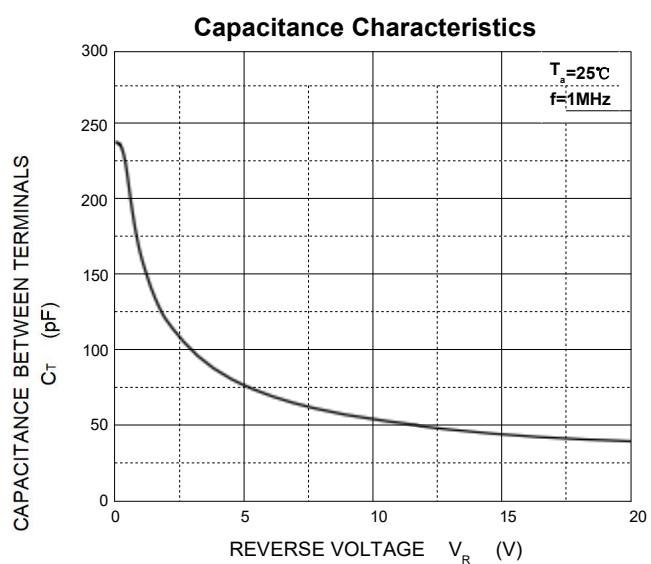
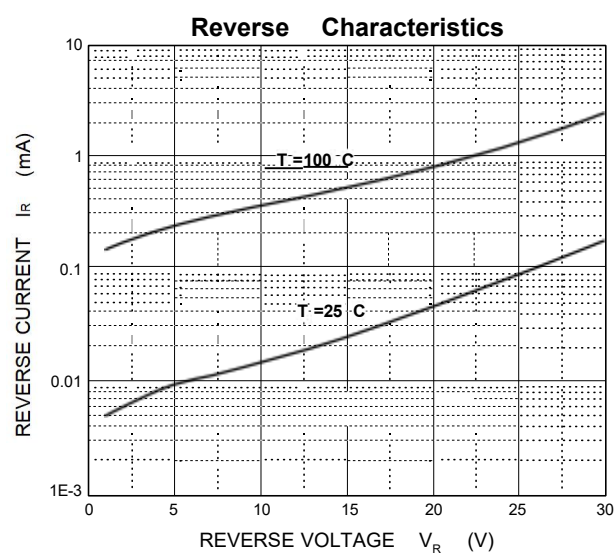
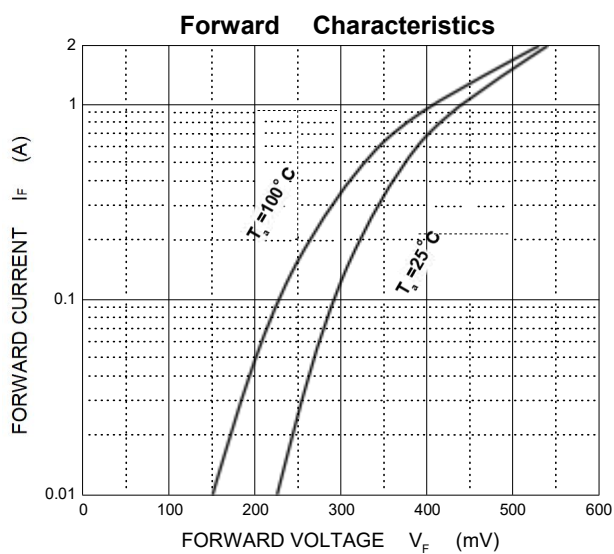
## MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol       | Parameter                                                    | Value        | Unit                 |
|--------------|--------------------------------------------------------------|--------------|----------------------|
| $V_{RRM}$    | Peak Repetitive Reverse Voltage                              | 20           | V                    |
| $V_{RWM}$    | Working Peak Reverse Voltage                                 |              |                      |
| $V_{R(RMS)}$ | RMS Reverse Voltage                                          | 14           | V                    |
| $I_F$        | Continuous Forward Current                                   | 2            | A                    |
| $I_{FSM}$    | Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$ | 9            | A                    |
| $P_D$        | Power Dissipation                                            | Note1<br>300 | mW                   |
|              |                                                              | Note2<br>670 | mW                   |
| $R_{JA}$     | Thermal Resistance from Junction to Ambient                  | Note1<br>333 | $^{\circ}\text{C/W}$ |
|              |                                                              | Note2<br>149 | $^{\circ}\text{C/W}$ |
| $T_j$        | Operating Junction Temperature Range                         | -40 ~ +125   | $^{\circ}\text{C}$   |
| $T_{stg}$    | Storage Temperature Range                                    | -55 ~ +150   | $^{\circ}\text{C}$   |

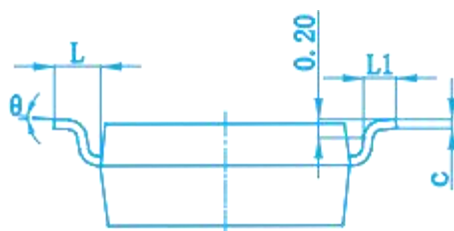
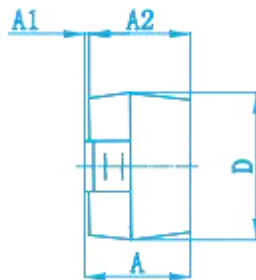
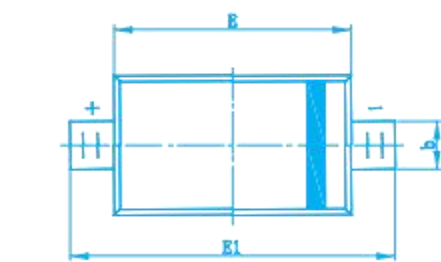
1:Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

2:Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode  $1\text{cm}^2$ .

## Typical Characteristics

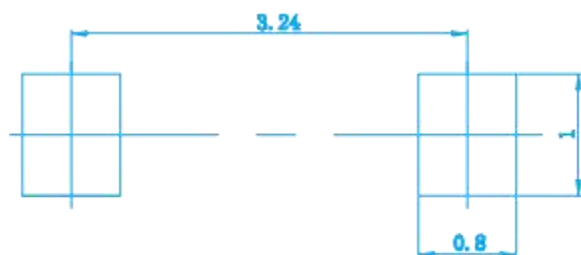


## SOD-123 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.450                     | 0.650 | 0.018                | 0.026 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E      | 2.600                     | 2.800 | 0.102                | 0.110 |
| E1     | 3.550                     | 3.850 | 0.140                | 0.152 |
| L      | 0.500 REF                 |       | 0.020 REF            |       |
| L1     | 0.250                     | 0.450 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOD-123 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.