

## FEATURES

- For surface mounted applications
- Ultra fast switching for high efficiency
- Low reverse leakage
- Glass passivated chip junction
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- Plastic material used carries Underwriters Laboratory Classification 94V-0



SOD-123FL

## MECHANICAL DATA

- Case: SOD-123FL Molded plastic
- Terminals: Pure tin plated, lead free
- Polarity: Indicated by cathode band
- Weight: 11.5 mg (approx.)



Cathode

## 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%.

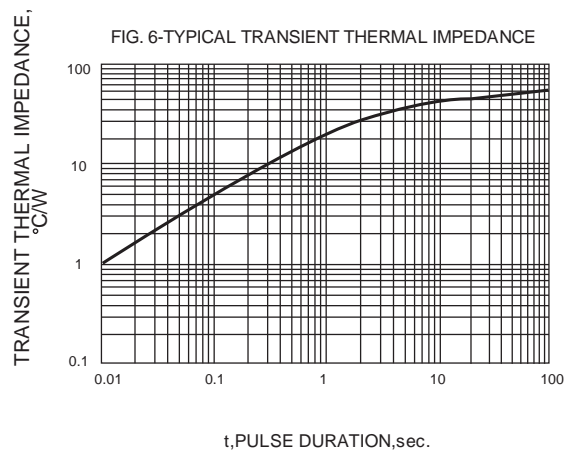
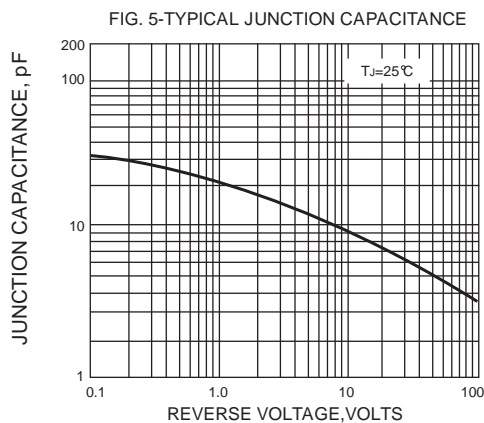
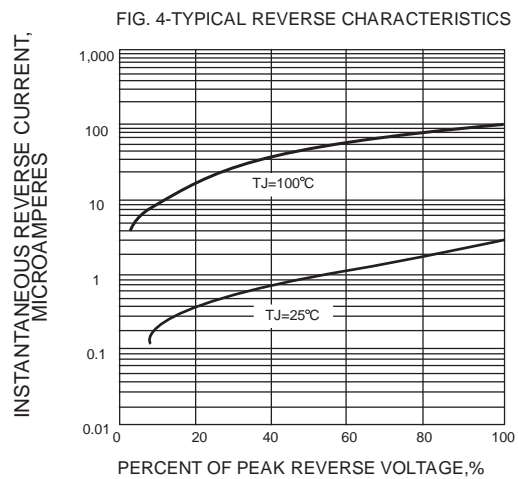
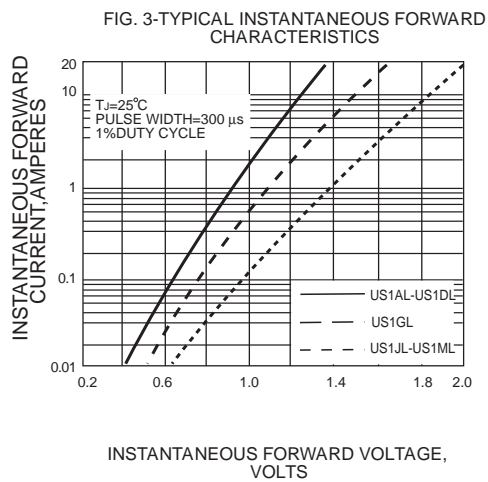
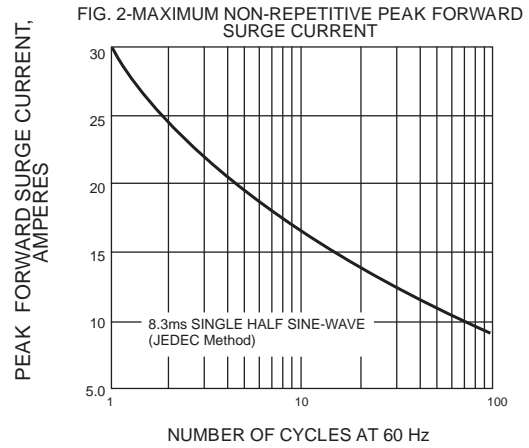
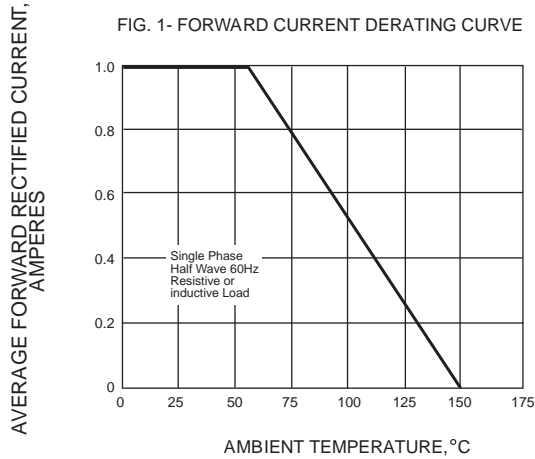
| Parameter   | Symbol   | US1AL              | US1BL         | US1DL | US1GL | US1JL | US1KL | US1ML | Unit |      |
|---|--|--------------------|---------------|-------|-------|-------|-------|-------|------|------|
| Maximum Repetitive Peak Reverse Voltage   | V <sub>RRM</sub>                                 | 50                 | 100           | 200   | 400   | 600   | 800   | 1000  | V    |      |
| Maximum RMS Voltage   | V <sub>RMS</sub>                                 | 35                 | 70            | 140   | 280   | 420   | 560   | 700   | V    |      |
| Maximum DC Blocking Voltage   | V <sub>DC</sub>                                  | 50                 | 100           | 200   | 400   | 600   | 800   | 1000  | V    |      |
| Maximum Average Forward Rectified Current at T <sub>A</sub> =75 °C                        | I <sub>F(AV)</sub>                               | 1.0                |               |       |       |       |       |       | A    |      |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC) | I <sub>FSM</sub>                                 | 25.0               |               |       |       |       |       |       | A    |      |
| Maximum Instantaneous Forward Voltage at 1 A  |  | V <sub>F</sub>     |               |       | 1.0   |       | 1.4   | 1.7   |      | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                   | T <sub>A</sub> = 25 °C<br>T <sub>A</sub> =100 °C | I <sub>R</sub>     | 5<br>100      |       |       |       |       |       |      | μA   |
| Maximum reverse recovery time (NOTE1)   |  | t <sub>rr</sub>    | 50            |       |       |       | 75    |       |      | nS   |
| Typical Junction Capacitance (NOTE2)  |  | C <sub>J</sub>     | 15            |       |       |       |       |       |      | pF   |
| Maximum Thermal Resistance (NOTE3)  |  | R <sub>θJL</sub>   | 50            |       |       |       |       |       |      | °C/W |
| Operating and Storage Temperature Range   |  | T <sub>J, TS</sub> | - 50 to + 150 |       |       |       |       |       |      | °C   |

Note: 1.Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$

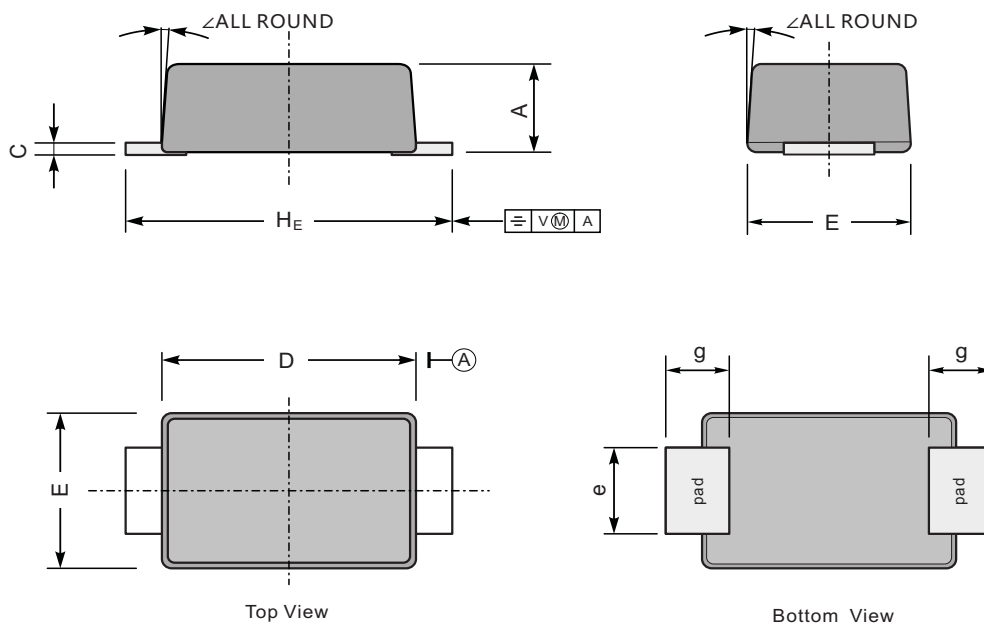
2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3.P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas

## Typical Characteristics



**SOD-123FL Package Outline Dimensions**



| UNIT |     | A   | C    | D   | E   | e   | g   | H <sub>E</sub> | ∠  |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----|
| mm   | max | 1.1 | 0.20 | 2.9 | 1.9 | 1.1 | 0.9 | 3.8            | 7° |
|      | min | 0.9 | 0.12 | 2.6 | 1.7 | 0.8 | 0.7 | 3.5            |    |
| mil  | max | 43  | 7.9  | 114 | 75  | 43  | 35  | 150            |    |
|      | min | 35  | 4.7  | 102 | 67  | 31  | 28  | 138            |    |