

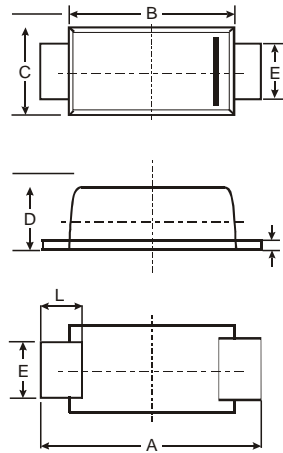
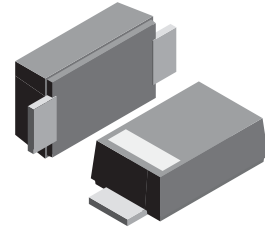
**VOLTAGE RANGE: 50 - 1000V**  
**CURRENT: 1.0A**

### Features

- Glass passivated device
- Ideal for surface mounted applications
- Low reverse leakage
- Metallurgically bonded construction
- High temperature soldering guaranteed:  
 ● 250°C/10 seconds, 0.375" (9.5mm) lead length,  
 5 lbs. (2.3kg) tension

### Mechanical Data

- Case: JEDEC SOD-123FL molded plastic body over passivated junction
- Terminals : Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity : Color band denotes cathode end
- Mounting Position : Any
- Weight: 0.0007 ounce, 0.02 grams



| SOD-123FL            |      |      |       |
|----------------------|------|------|-------|
| Dim                  | Min  | Max  | Typ   |
| A                    | 3.50 | 3.80 | 3.65  |
| B                    | 2.60 | 2.90 | 2.75  |
| C                    | 1.70 | 1.90 | 1.80  |
| D                    | 0.09 | 1.10 | 1.00  |
| E                    | 0.08 | 1.10 | 0.095 |
| H                    | 0.12 | 0.20 | 0.16  |
| L                    | 0.07 | 0.09 | 0.08  |
| All Dimensions in mm |      |      |       |

### Maximum Ratings and Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic  | Symbol          | SOD1F1       | SOD1F2 | SOD1F3 | SOD1F4 | SOD1F5 | SOD1F6 | SOD1F7 | Unit             |
|---|-----------------|--------------|--------|--------|--------|--------|--------|--------|------------------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$       | 50           | 100    | 200    | 400    | 600    | 800    | 1000   | V                |
| Maximum RMS voltage   | $V_{RMS}$       | 35           | 70     | 140    | 280    | 420    | 560    | 700    | V                |
| Maximum DC blocking voltage   | $V_{DC}$        | 50           | 100    | 200    | 400    | 600    | 800    | 1000   | V                |
| Maximum average forward rectified current at $T_A=65^\circ\text{C}$ (NOTE 1)  | $I_{(AV)}$      | 1.0          |        |        |        |        |        |        | A                |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) $T_L=25^\circ\text{C}$ | $I_{FSM}$       | 30.0         |        |        |        |        |        |        | A                |
| Maximum instantaneous forward voltage at 1.0A   | $V_F$           | 1.3          |        |        |        |        |        |        | V                |
| Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$                  | $I_R$           | 5.0<br>100.0 |        |        |        |        |        |        | $\mu\text{A}$    |
| Maximum reverse recovery time (NOTE 2)  | $t_{rr}$        | 150          |        |        | 250    |        | 500    |        | ns               |
| Typical junction capacitance (NOTE 3)   | $C_J$           | 15           |        |        |        |        |        |        | pF               |
| Typical thermal resistance (NOTE 4)   | $R_{\theta JA}$ | 180          |        |        |        |        |        |        | K/W              |
| Operating junction and storage temperature range  | $T_J, T_{STG}$  | -50 to +150  |        |        |        |        |        |        | $^\circ\text{C}$ |

- Note:**
1. Averaged over any 20ms period.
  2. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .
  3. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
  4. Thermal resistance junction to ambient, 6.0 mm<sup>2</sup> copper pads to each terminal.

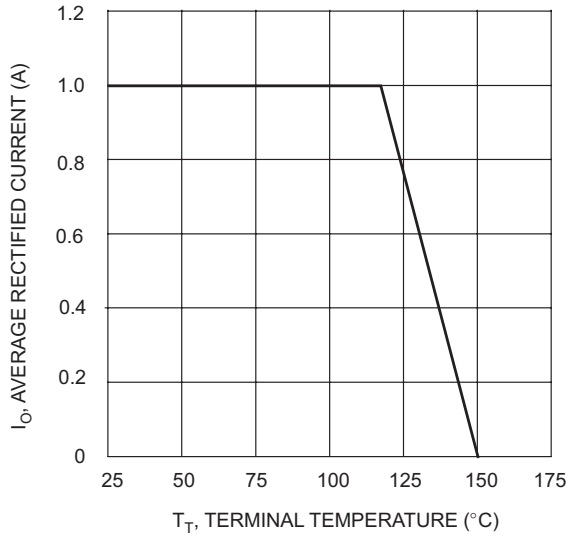


Fig. 1 Forward Current Derating Curve

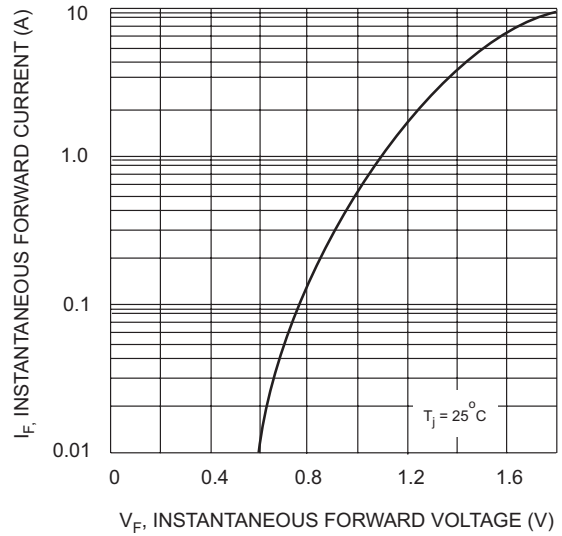


Fig. 2 Typical Forward Characteristics

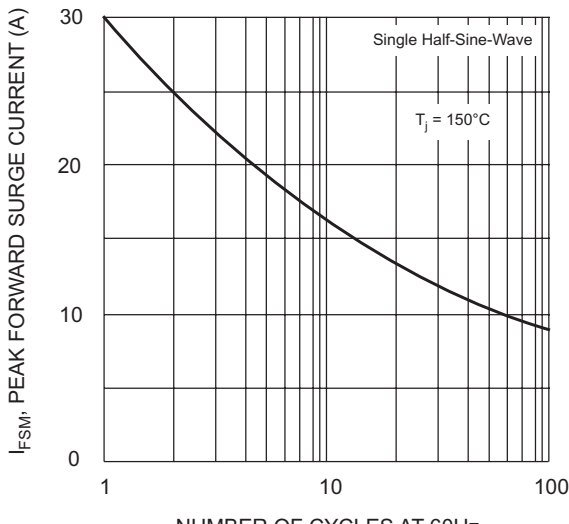


Fig. 3 Forward Surge Current Derating Curve

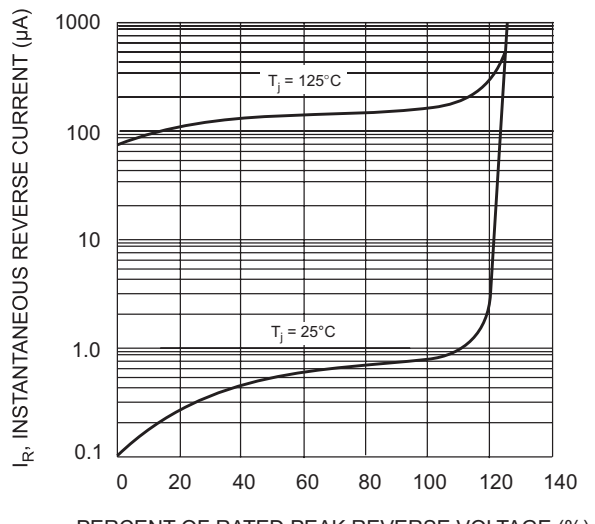
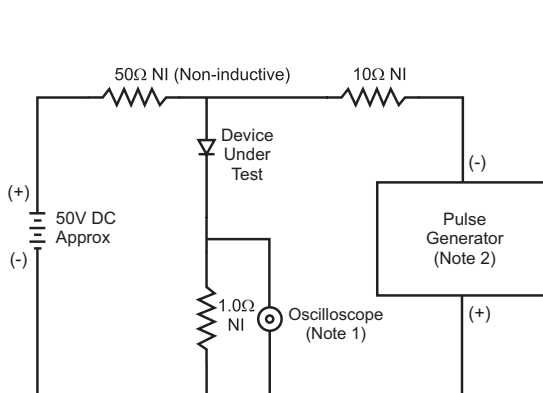


Fig. 4 Typical Reverse Characteristics



Notes:  
 1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.  
 2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .

Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit