

**Features**

- Low profile space
- Ideal for automated placement
- Glass passivated chip junctions
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering:  
260°C/10 seconds at terminals
- Component in accordance to  
RoHS 2002/95/1 and WEEE 2002/96/EC

**Mechanical Date**

- Case: JEDEC SOD-123FL molded plastic body over glass passivated chip
- Terminals: Solder plated, solderable per J-STD-002B and JESD22-B102D
- Polarity: Laser band denotes cathode end
- Weight: 0.017gram



**Major Ratings and Characteristics**

$I_{F(AV)}$	1.0 A
$V_{RRM}$	50V to 1000V
$I_{FSM}$	25 A
$I_R$	5 $\mu$ A
$V_F$	1.3 V
$T_j$ (max.)	150 °C

■ Maximum Ratings & Thermal Characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)

Items	Symbol	DFR 1A	DFR 1B	DFR 1D	DFR 1G	DFR 1J	DFR 1K	DFR 1M	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	
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	
Maximum average forward rectified current	$I_{F(AV)}$	1							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	25							
Thermal resistance from junction to ambient <sup>(1)</sup>	$R_{\theta JA}$	150							°C/W
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150							°C

Note 1: Mounted on P.C.B. with 0.036 × 0.06" (0.9 × 1.5mm) copper pad areas.

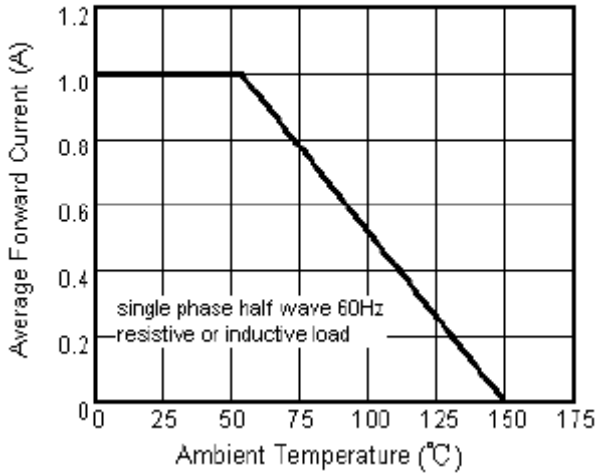
■ Electrical Characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)

Items	Test conditions	Symbol	DFR1A~1G	DFR1J	DFR1K~1M	UNIT
Instantaneous forward It	$I_F=1.0\text{ A}$ <sup>(2)</sup>	$V_F$	1.3			V
Reverse current	$V_R=V_{DC}$	$I_R$	$T_A=25^\circ\text{C}$			$\mu\text{A}$
			$T_A=100^\circ\text{C}$			
Reverse recovery time	$I_F=0.5\text{A}, I_R=1.0\text{A}$ $I_{tr}=0.25\text{A}$	$t_{rr}$	150	250	500	nS

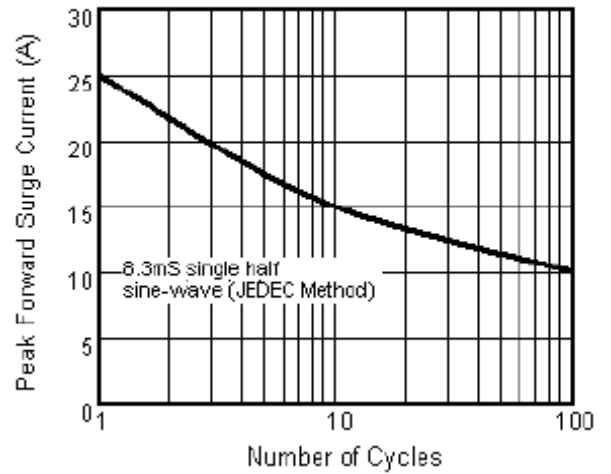
Note 2: Pulse test: 300 $\mu$ s pulse width, 1% duty cycle.

Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

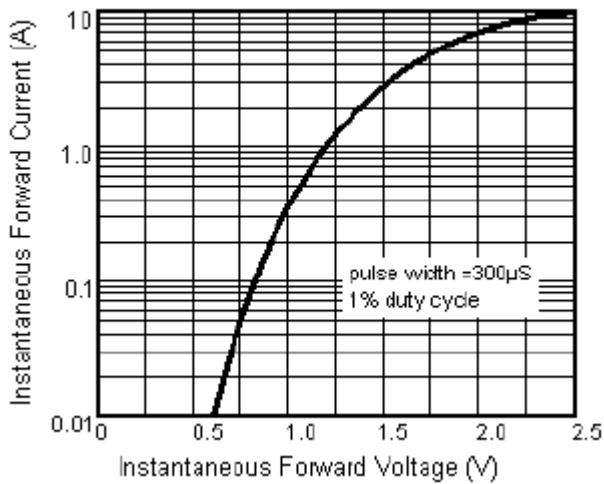
**Fig.1 Forward Current Derating Curve**



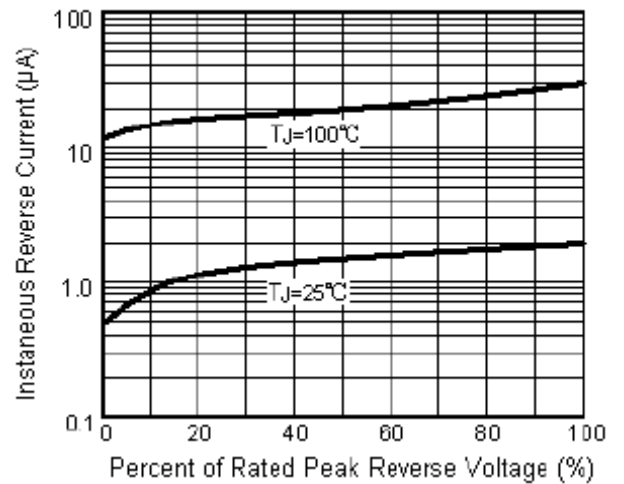
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



**Fig.3 Typical Instantaneous Forward Characteristics**

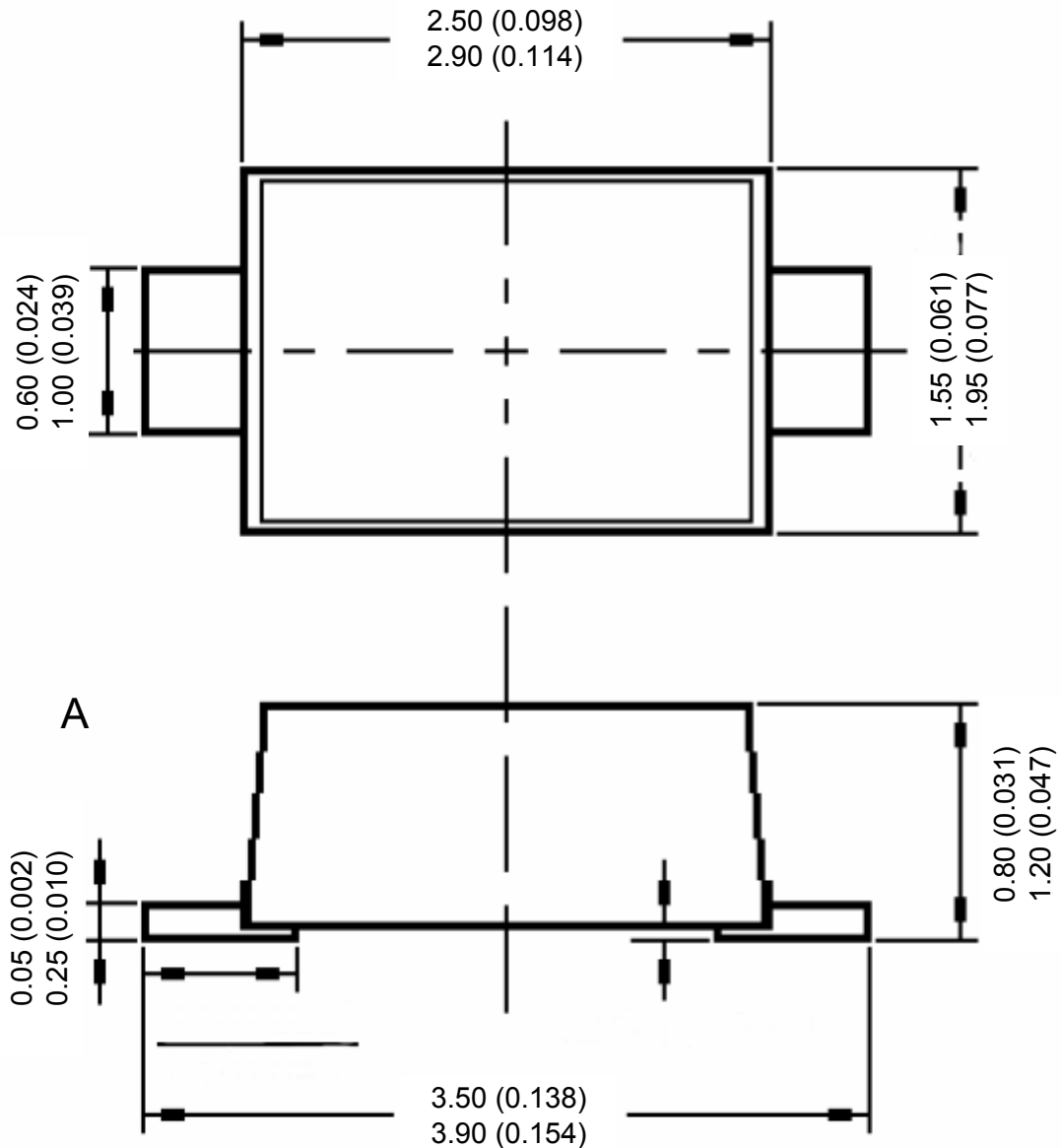


**Fig.4 Typical Reverse Characteristics**



Package Outline

SOD-123FL



Dimensions in millimeters and (inches)

Notice

- Product is intended for use in general electronics applications.
- Product should be worked less than the ratings: if exceeded, may cause permanent damage or introduce latent failure mechanisms.
- The absolute maximum ratings are rated values and must not be exceeded during operation. The following are the general derating methods you design a circuit with a device.
  - $I_{F(AV)}$ : We recommend that the worst case current be no greater than 80%.
  - $I_{FSM}$ : This rating specifies the non-repetitive peak current. This is only applied for an abnormal operation, which the general during the lifespan of the device.
  - $T_J$ : Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a  $T_J$  of below 125 °C.



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