

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



SOD-123FL

Mechanical Data

- **Case:** SOD-123FL molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per JESD22-B102
- **Polarity:** Laser band denotes cathode end
- **Weight:** 0.017gram

Major Ratings and Characteristics

$I_{F(AV)}$	1.0A
V_{RRM}	50 V to 600 V
I_{FSM}	25A
I_R	5 μ A
V_F	0.95V, 1.25V, 1.70V
T_j max.	150 °C

Maximum Ratings & Thermal Characteristics

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

Items	Symbol	ES 1A	DSK 1B	ES 1C	ES 1D	ES 1E	ES 1G	ES 1J	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	25							A
Thermal resistance from junction to ambient ⁽¹⁾	$R_{\theta JA}$	150							$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							$^\circ\text{C}$

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

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

Items	Test conditions	Symbol	ES1A~1D	ES1E~1G	ES1J	UNIT
Instantaneous forward voltage	$I_F = 1.0A^{(2)}$	V_F	0.95	1.25	1.70	V
Reverse current	$V_R = V_{DC}$	I_R	$T_j = 25\text{ }^\circ\text{C}$			μA
			$T_j = 125\text{ }^\circ\text{C}$			
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$	t_{rr}	35.0			nS

Note 2: Pulse test: 300 μ s pulse width, 1% duty cycle.

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

Fig.1 Forward Current Derating Curve

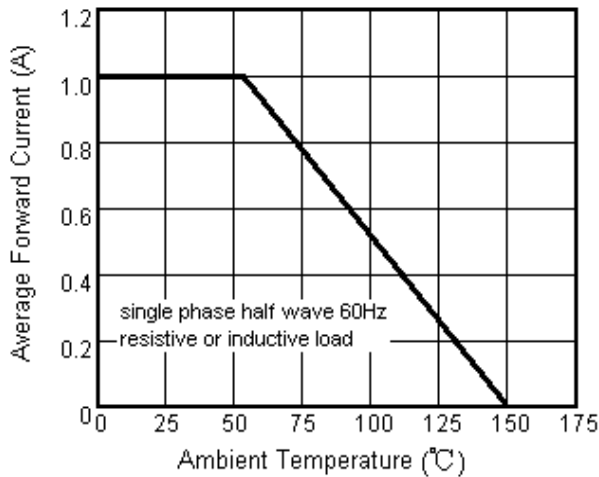


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

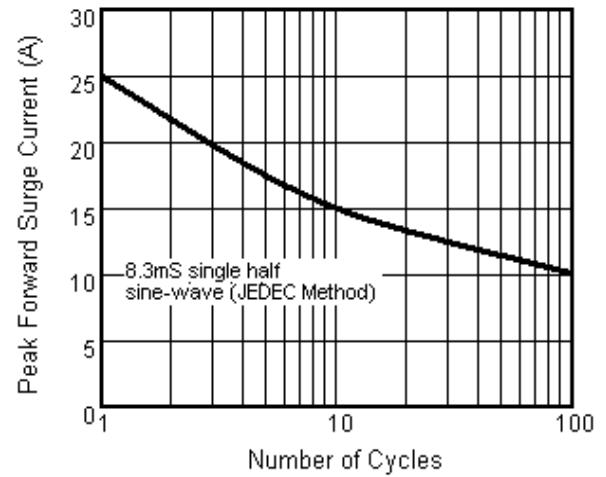


Fig.3 Typical Instantaneous Forward Characteristics

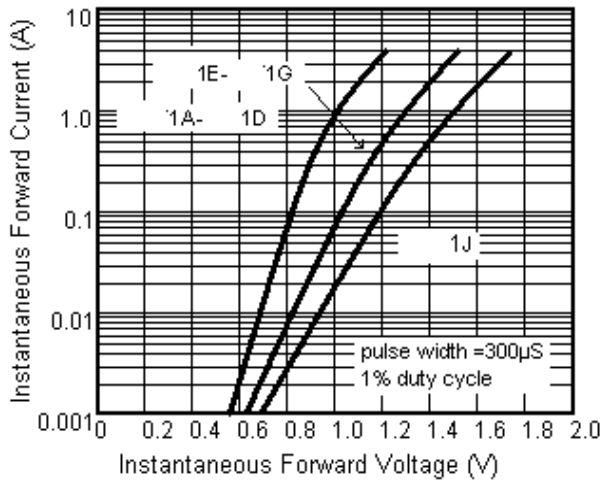
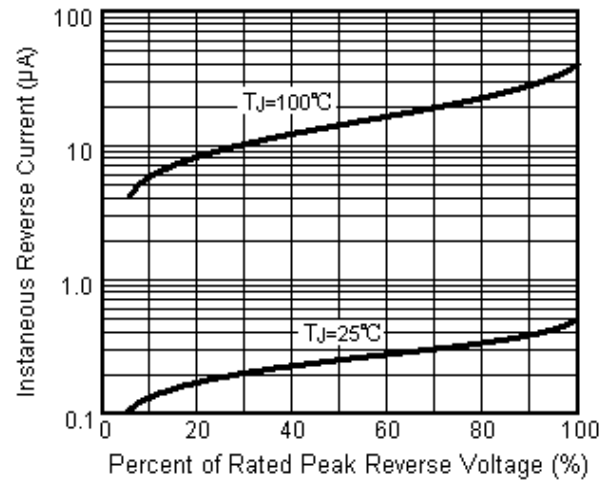
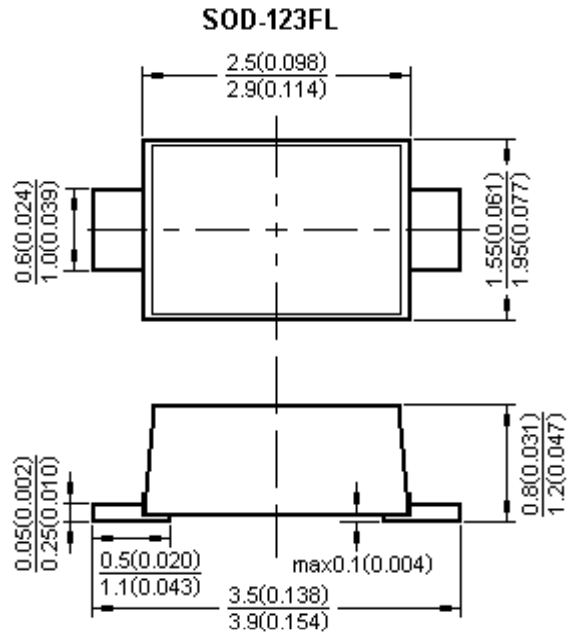


Fig.4 Typical Reverse Characteristics



Package Outline



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% .

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.