

## 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 $\mu$ A
$V_F$	0.95V, 1.25V, 1.70V
$T_j$ max.	150 °C

## Maximum Ratings & Thermal Characteristics

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

Items	Symbol	DSF 1A	DSF 1B	DSF 1C	DSF 1D	DSF 1E	DSF 1G	DSF 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 <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 x 0.06" (0.9 x 1.5mm) copper pad areas.

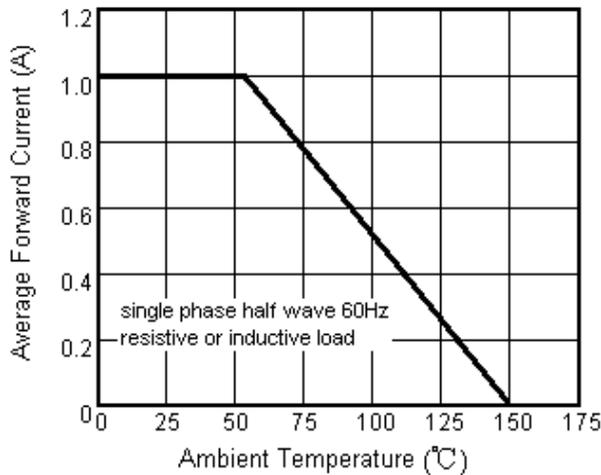
## Electrical Characteristics ( $T_A = 25\text{ °C}$ unless otherwise noted)

Items	Test conditions	Symbol	DSF1A~1D	DSF1E~1G	DSF1J	UNIT
Instantaneous forward voltage	$I_F = 1.0A^{(2)}$	$V_F$	0.95	1.25	1.70	V
Reverse current	$V_R = V_{DC}$	$I_R$	$T_j = 25\text{ °C}$			$\mu$ A
			$T_j = 125\text{ °C}$			
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

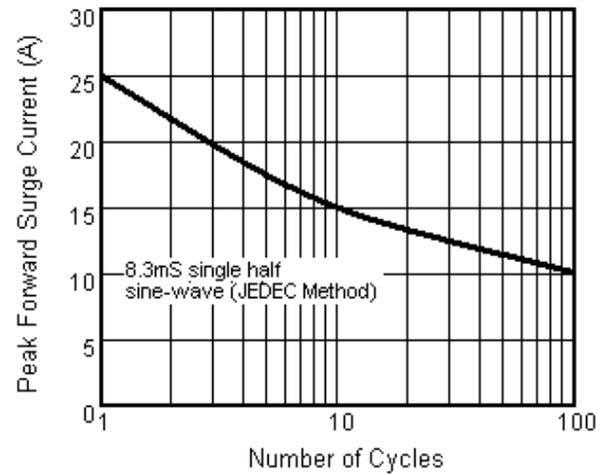
Note 2: Pulse test: 300 $\mu$ s pulse width, 1% duty cycle.

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

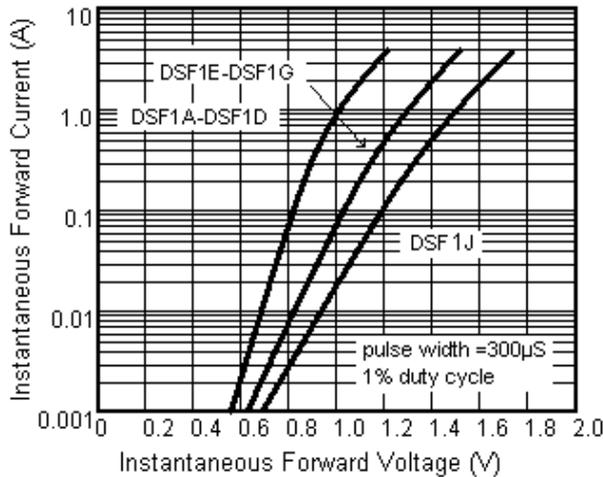
**Fig.1 Forward Current Derating Curve**



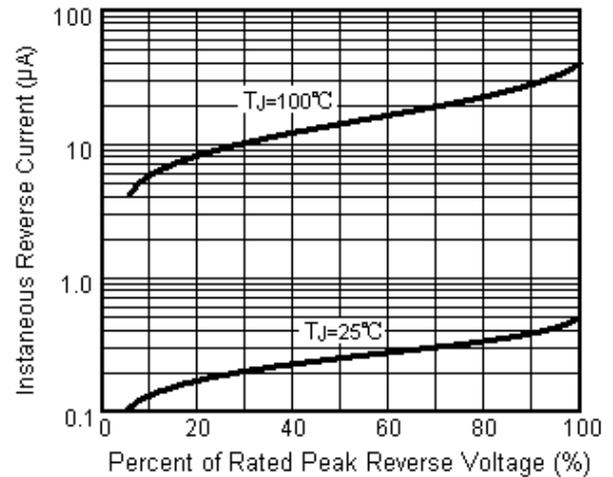
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



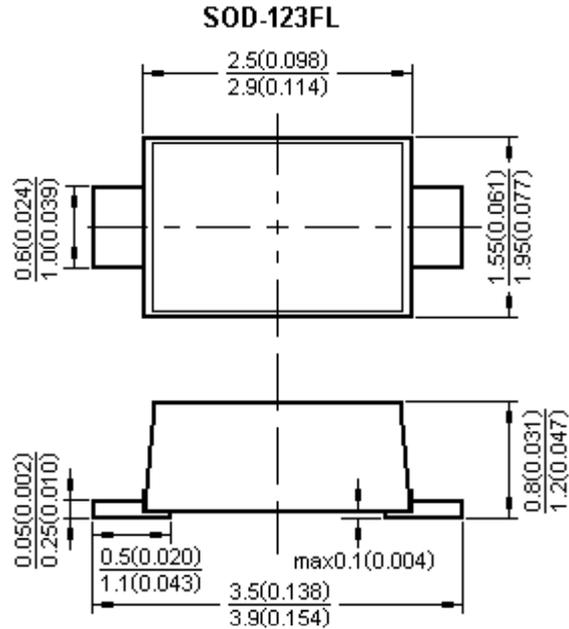
**Fig.3 Typical Instantaneous Forward Characteristics**



**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.

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