

Surface mount fast recovery rectifiers

Features

- Low profile package
- 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 2011/65/EU and WEEE 2002/96/EC



1. Cathode
2. Anode

Mechanical Data

- **Case:** SOD-323
Molding compound meets
UL 94 V-0 flammability rating
- **Terminals:** Solder plated, solderable per
MIL-STD-750, Method 2026
- **Polarity:** Laser band denotes cathode end

Major Ratings and Characteristics

$I_{F(AV)}$	1.0A
V_{RRM}	50V to 1000V
I_{FSM}	25A
t_{rr}	150nS, 250nS, 500nS
V_F	1.3V
$T_{jmax.}$	150°C

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

Item	Symbol	FR10 1WS	FR10 2WS	FR10 3WS	FR10 4WS	FR10 5WS	FR10 6WS	FR10 7WS	Unit
Marking code		F1	F2	F3	F4	F5	F6	F7	
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 $T_L=105^\circ\text{C}$	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine- wave superimposed on rated load	I_{FSM}	25							A
Operating and storage temperature range	T_J, T_{STG}	-55 to +150							°C
Thermal resistance from junction to lead ⁽¹⁾	$R_{\theta JL}$	35							°C/W

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

Item	Test conditions		Symbol	FR101WS~ FR104WS	FR105WS	FR106WS~ FR107WS	Unit
Instantaneous forward voltage	$I_F=1.0A^{(2)}$		V_F	1.3			V
Maximum reverse current	$V_R=V_{DC}$	$T_J=25^{\circ}C$	I_R	5.0			μA
		$T_J=125^{\circ}C$		50			
Reverse recovery time	$I_F=0.5A$ $I_R=1.0A, I_{rr}=0.25A$		t_{rr}	150	250	500	nS

Note1: Mounted on PCB with 0.2x0.2" (5.0mmx5.0mm) copper pad areas

2. Pulse test: 300 μs pulse width, 1% duty

Fig.1 Forward Current Derating Curve

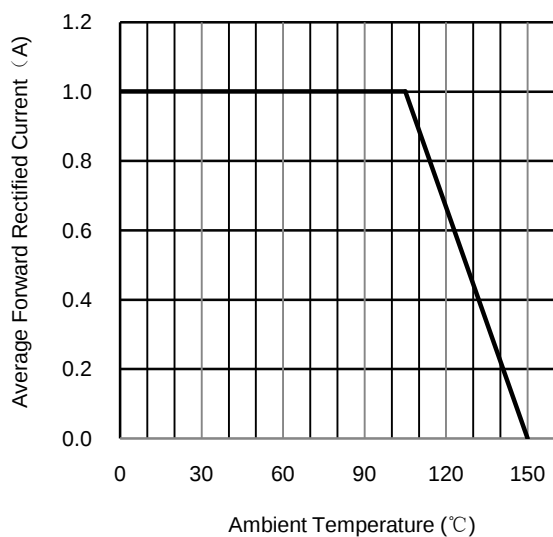


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

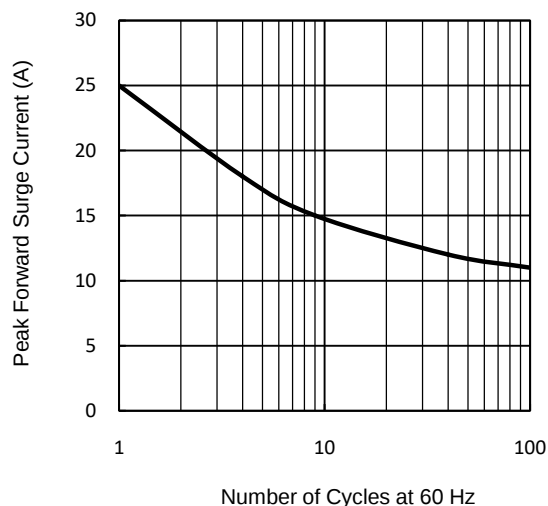


Fig.3 Typical Instantaneous Forward Characteristics

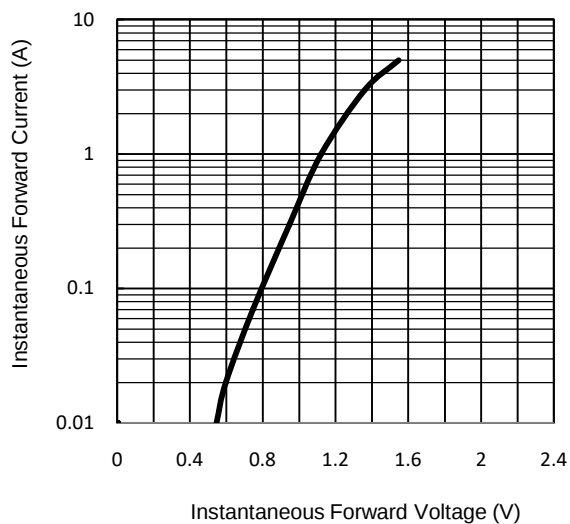
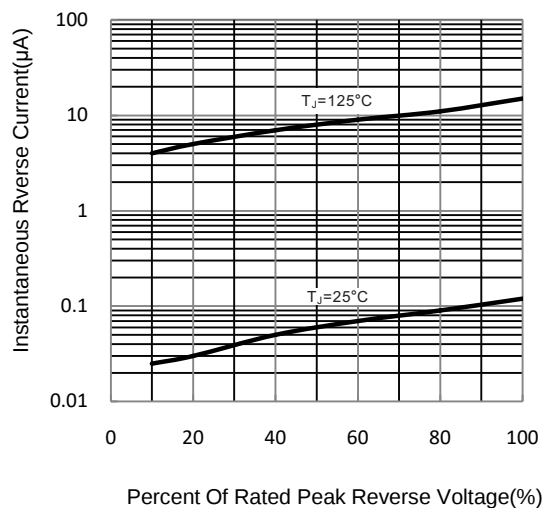
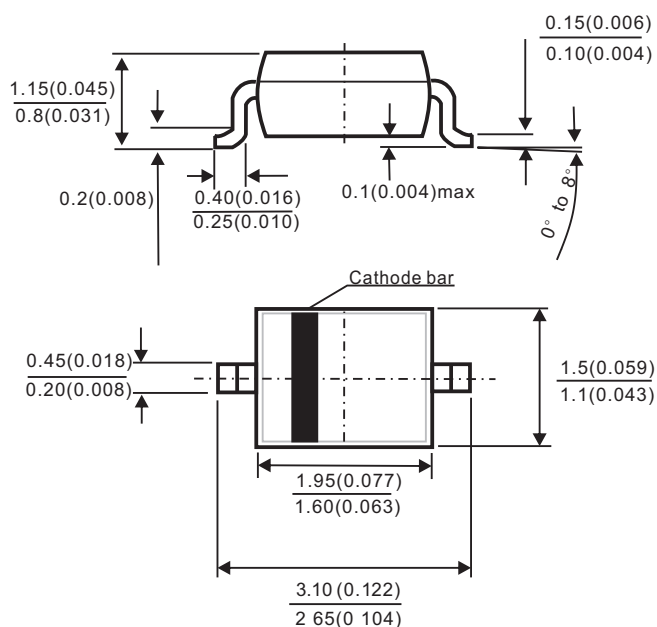


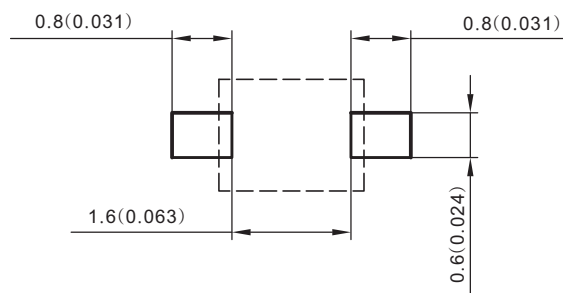
Fig.4 Typical Reverse Characteristics



SOD-323



Footprint recommendation:



Package dimensions in millimeters (inches)