

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



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PLED

## FR101WS(MS)THRU FR107WS(MS)

Product specification



## 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

### 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

PACKAGE OUTLINE	PIN CONFIGURATION
 SOD-323	 1.Cathode 2.Anode

### 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
$T_{J,max.}$	150°C

## Maximum Ratings & Thermal Characteristics (TA = 25 °C unless otherwise noted)

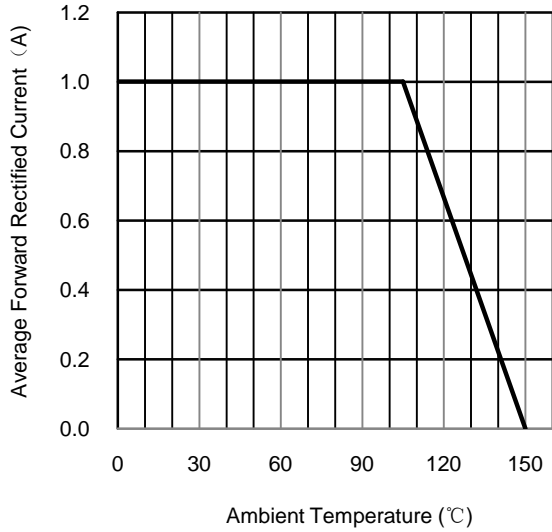
Item	Symbol	FR101WS (ms)	FR102WS (ms)	FR103WS (ms)	FR104WS (ms)	FR105WS (ms)	FR106WS (ms)	FR107WS (ms)	Unit
<b>Marking code</b>		<b>F1</b>	<b>F2</b>	<b>F3</b>	<b>F4</b>	<b>F5</b>	<b>F6</b>	<b>F7</b>	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	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 <sup>(1)</sup>	$R_{\theta JL}$	35							°C/W

Electrical Characteristics (TA = 25 °C unless otherwise noted)

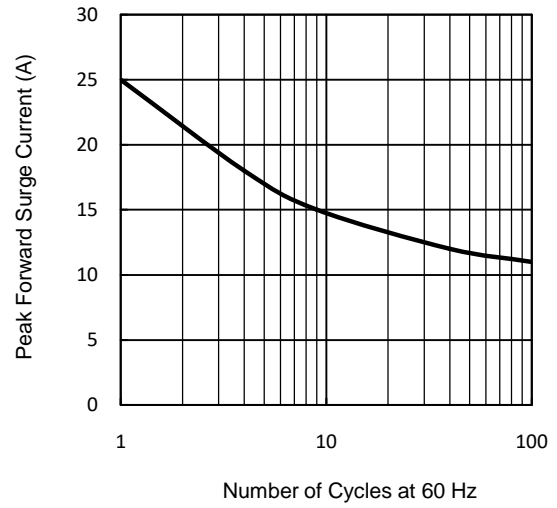
Item	Test conditions	Symbol	FR101WS(ms)	FR105WS(ms)	FR106WS(ms)	Unit
			~ FR104WS(ms)		~ FR107WS(ms)	
Instantaneous forward voltage	$I_F=1.0A^{(2)}$	$V_F$	1.3			V
Maximum reverse current	$V_R=V_{DC}$	$I_R$	5.0			$\mu A$
			50			
Reverse recovery time	$I_F=0.5A$ $I_R=1.0A, I_{rr}=0.25A$	$t_{rr}$	150	250	500	nS
Note1: Mounted on PCB with 0.2x0.2" (5.0mmx5.0mm) copper pad areas 2. Pulsetest: 300 $\mu s$ pulse width, 1% duty						

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

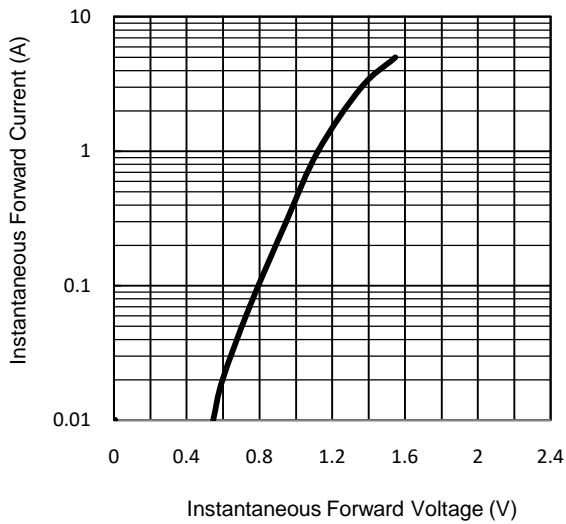
**Fig.1 Forward Current Derating Curve**



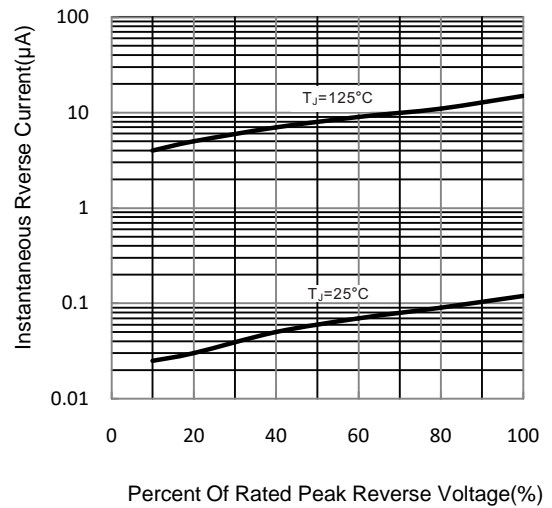
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



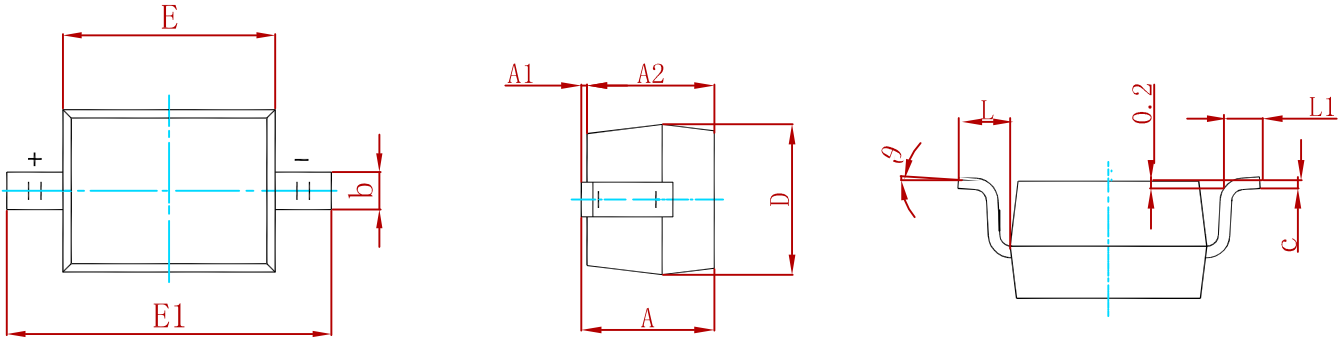
**Fig.3 Typical Instantaneous Forward Characteristics**



**Fig.4 Typical Reverse Characteristics**

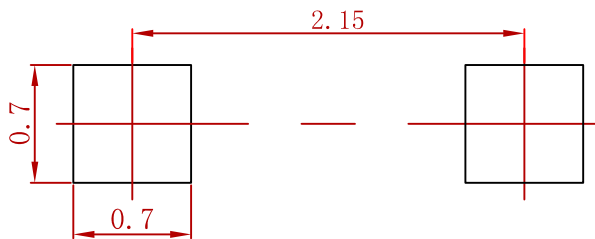


**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.550	2.750	0.100	0.108
L	0.475 REF.		0.019 REF.	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

**Suggested Pad Layout**



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
FR101WS(MS)THRU FR107WS(MS)	SOD-323	3000

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