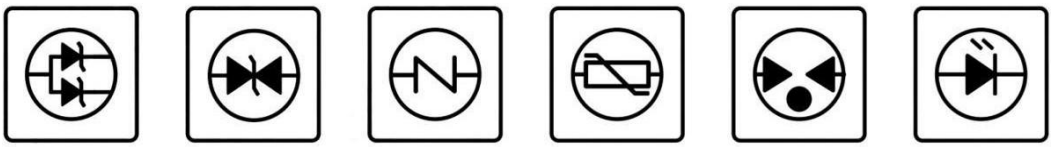
MSKSEMI 美森科
SEMICONDUCTOR



FR101WS(MS)THRU FR107WS(MS)

Product specification

FR101WS(MS)THRU FR107WS(MS)

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℃/10 seconds at terminals
- Component in accordance to
  RoHS 2011/65/EU and WEEE 2002/96/EC

PACKAGE OUTLINE	PIN CONFIGURATION
	
SOD-323	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_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
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°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							℃
Thermal resistance from junction to lead (1)	$R_{\theta JL}$	35							°C/W

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

Item	Test conditions		Symbol	FR101WS(ms) ~ FR104WS(ms)	FR105WS(ms)	FR106WS(ms) ~ FR107WS(ms)	Unit
Instantaneous forward voltage	I_F=1.0A(2)		V_F	1.3			V
Maximum reverse current	V_R=V_{DC}	T_J=25°C	I_R	5.0			μA
		T_J=125°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.Pulsetest：300μs pulse width,1% duty

Typical Characteristic Curves (T_A=25 ℃ unless otherwise noted)

Fig.1 Forward Current Derating Curve

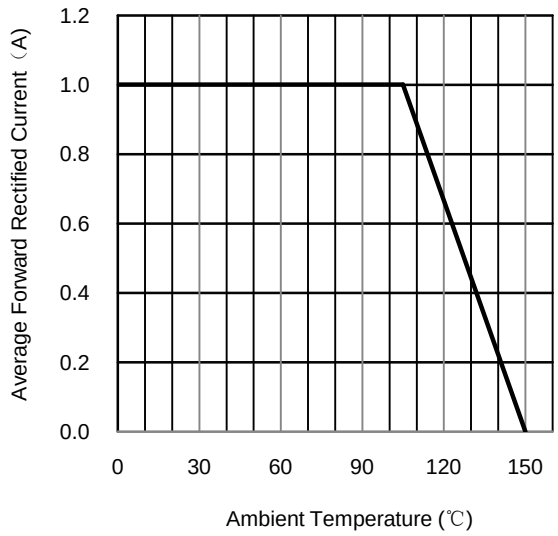


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

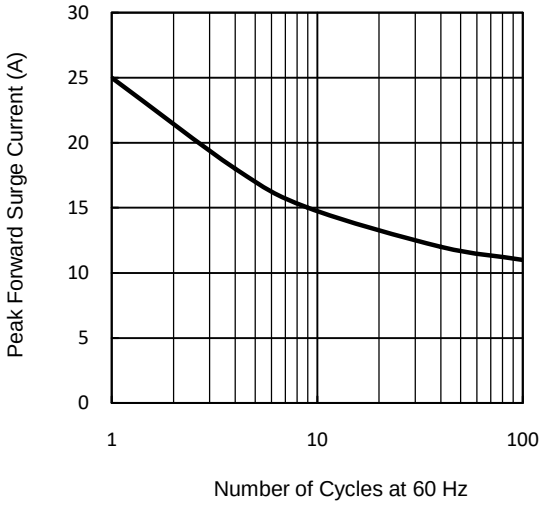


Fig.3 Typical Instantaneous Forward Characteristics

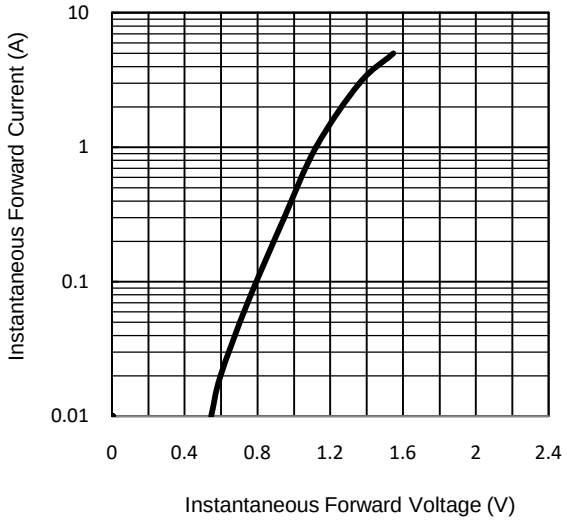
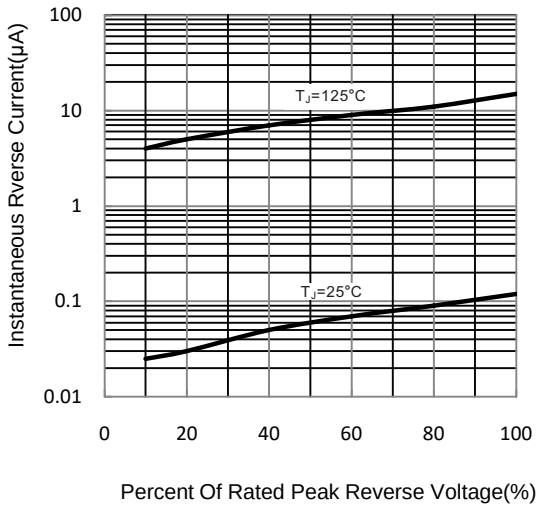
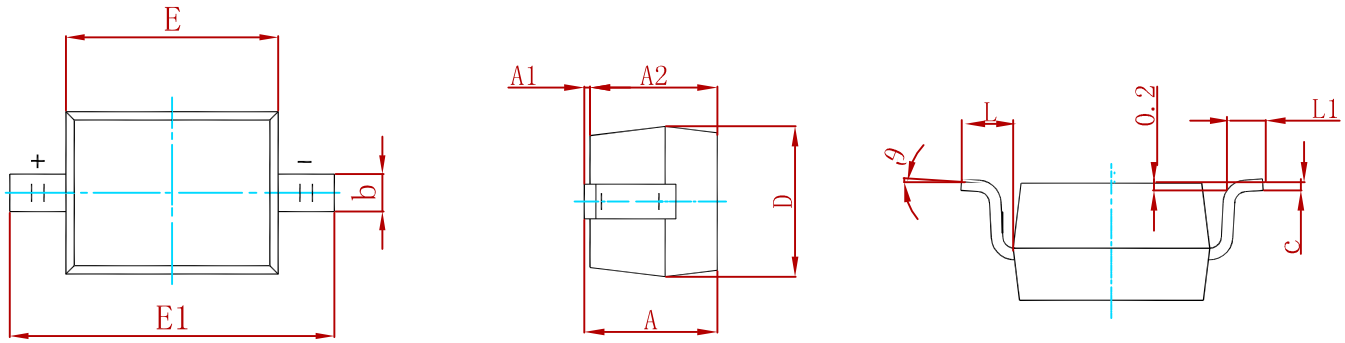


Fig.4 Typical Reverse Characteristics

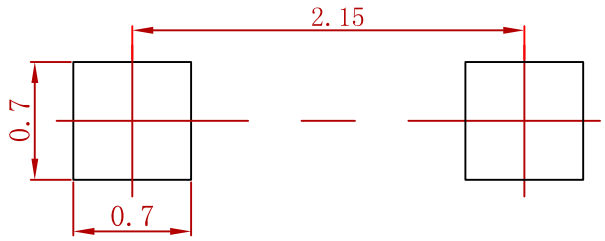


PACKAGE MECHANICAL DATA



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:± 0.05mm.
3.The pad layout is for reference purposes only.

REEL SPECIFICATION

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

Attention

■ Any and all MSKSEMI Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.

■ MSKSEMI Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specificationsof any andall MSKSEMI Semiconductor products described orcontained herein.

■ Specifications of any and all MSKSEMI Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer'sproducts orequipment.

■ MSKSEMI Semiconductor. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with someprobability. It is possiblethat these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits anderror prevention circuitsfor safedesign, redundant design, and structural design.

■ In the event that any or all MSKSEMI Semiconductor products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from theauthorities concerned in accordance with the above law.

■ No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of MSKSEMI Semiconductor.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringementsof intellectual property rights or other rightsof third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. Whendesigning equipment, referto the "Delivery Specification" for the MSKSEMI Semiconductor productthat you intend to use.