

Surface Mount Rectifiers, 1 A, 400 V - 600 V

S1GHE, S1JHE

Features

- Low Profile Package with < 0.75 mm Package Height
- High Efficiency
- Moisture Sensitivity Level 1 per J-STD-020
- Glass Passivated Chip Junction
- UL Flammability 94V-0 Classification
- Green Mold Compound
- NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free and are RoHS Compliant

Specifications

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

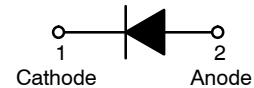
Symbol	Parameter	Value		Unit
		S1GHE	S1JHE	
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	400	600	V
$I_{F(AV)}$	Maximum Average Forward Rectified Current	1		A
I_{FSM}	Peak Forward Surge Current, 8.3 ms Single Half Sine-Wave Superimposed on Rated Load	20		A
T_J	Operating Junction Temperature Range	-55 to $+175$		$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to $+175$		$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

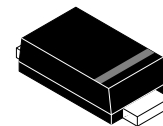
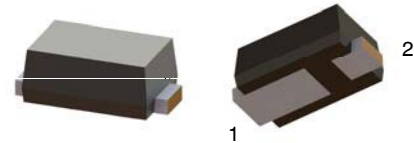


ON Semiconductor®

www.onsemi.com

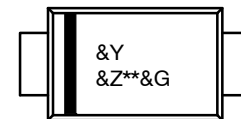


Rectifier



SOD-323EP
CASE 477AD

MARKING DIAGRAM



Band Indicates Cathode

&Y	= Binary Calendar Year Coding Scheme
&Z	= Assembly Plant Code
**	= Specific Device Code - (A5, A7)
&G	= Single Digit Weekly Data Code

ORDERING INFORMATION

Part Number	Device Code Marking	Package	Shipping†
S1GHE	A5	SOD-323EP (Pb-Free/Halogen Free)	3000 / Tape & Reel
NRVS1GHE			
S1JHE	A7	SOD-323EP (Pb-Free/Halogen Free)	3000 / Tape & Reel
NRVS1JHE			

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

S1GHE, S1JHE

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Note 1)

Symbol	Characteristic	Value	Unit
Ψ_{JL}	Junction to Lead Thermal Resistance Thermocouple Soldered to Cathode	26.5	$^\circ\text{C/W}$
$R_{\theta JA}$	Junction to Ambient Thermal Resistance	200	$^\circ\text{C/W}$

1. Per JESD51-3 Recommended Thermal Test Board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm.

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	Instantaneous Forward Voltage (Note 2)	$I_F = 1\text{ A}$		0.96	1.1	V
I_R	Reverse Current at Rated V_R	$T_J = 25^\circ\text{C}$		0.02	1	μA
		$T_J = 125^\circ\text{C}$		10.35	50	
T_{rr}	Reverse Recovery Time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$		782		ns
C_J	Junction Capacitance	$V_R = 4.0\text{ V}$, $f = 1\text{ MHz}$		3		pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse test with $PW = 300\text{ }\mu\text{s}$, 1% duty cycle.

TYPICAL PERFORMANCE CHARACTERISTICS

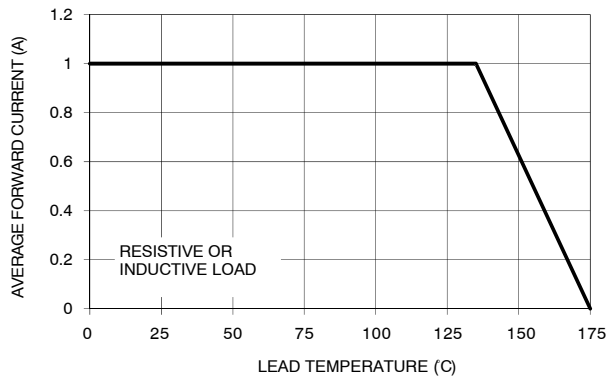


Figure 1. Forward Current Derating Curve



Figure 2. Maximum Non-Repetitive Forward Surge Current

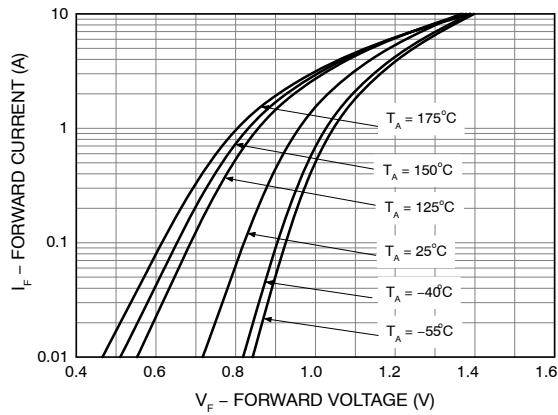


Figure 3. Typical Forward Characteristics

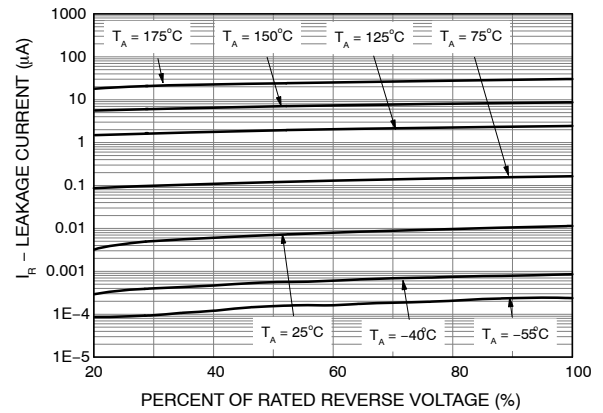


Figure 4. Typical Reverse Characteristics

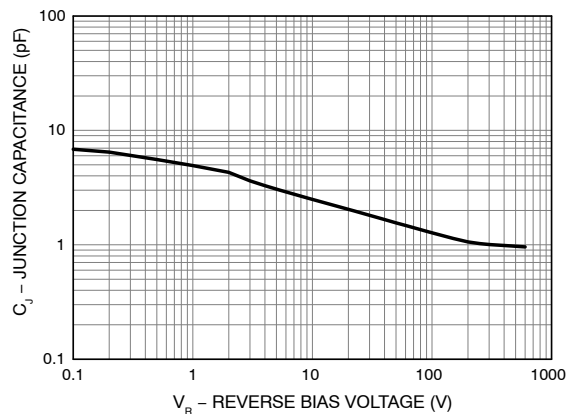


Figure 5. Typical junction Capacitance

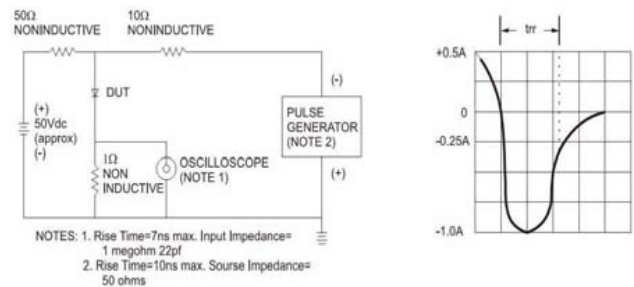
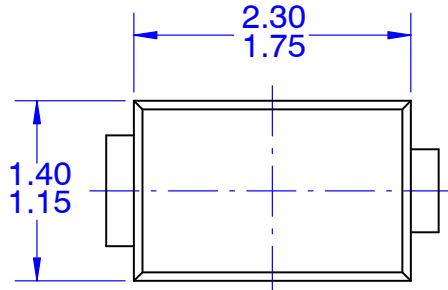


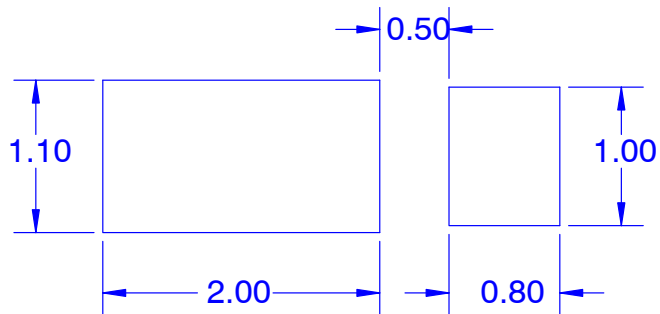
Figure 6. Reverse Recovery Time Characteristics and Test Circuit Diagram

SOD-323EP
CASE 477AD
ISSUE O

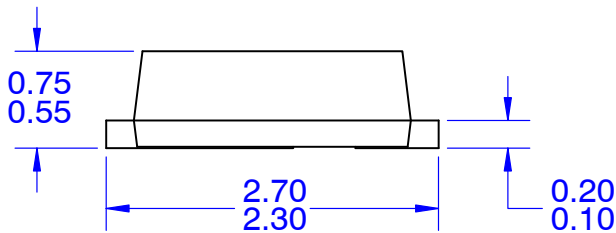
DATE 31 AUG 2016



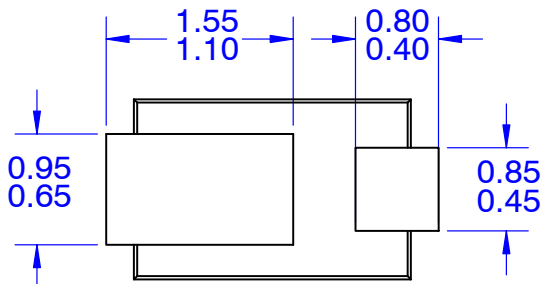
TOP VIEW



LAND PATTERN RECOMMENDATION



FRONT VIEW



BOTTOM VIEW

NOTES:

- A. THIS PACKAGE DOES NOT CONFORM TO ANY STANDARDS.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.

DOCUMENT NUMBER:	98AON13727G	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	SOD-323EP	PAGE 1 OF 1

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

onsemi, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales