

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

## S1GHE, S1JHE



ON Semiconductor®

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### Features

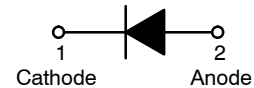
- Low Profile Package with < 0.75 mm Package Height
- High Efficiency
- Moisture Sensitivity Level 1 per J-STD-020
- Glass Passivated Chip Junction
- UL Flammability 94V-0 Classification
- Green Mold Compound
- NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change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

### Specifications

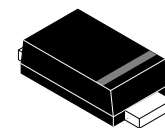
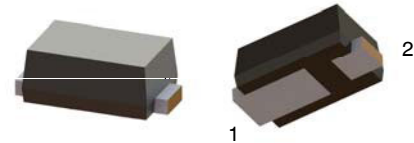
**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

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.

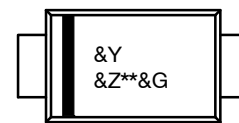


Rectifier



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

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	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		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  $PW = 300 \mu\text{s}$ , 1% duty cycle.

# S1GHE, S1JHE

## TYPICAL PERFORMANCE CHARACTERISTICS

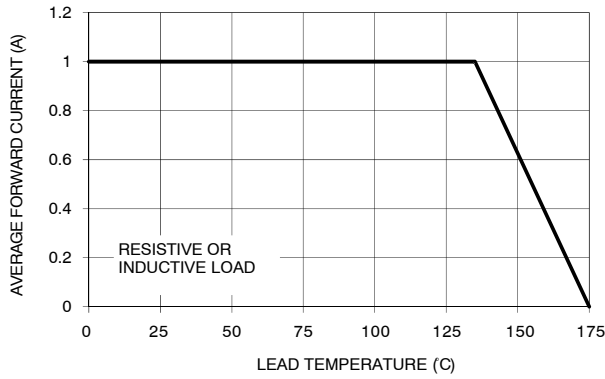


Figure 1. Forward Current Derating Curve

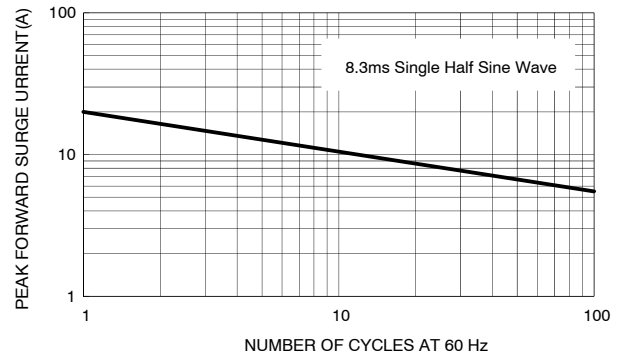


Figure 2. Maximum Non-Repetitive Forward Surge Current

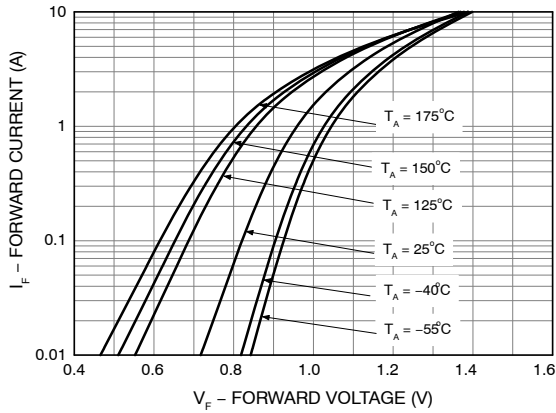


Figure 3. Typical Forward Characteristics

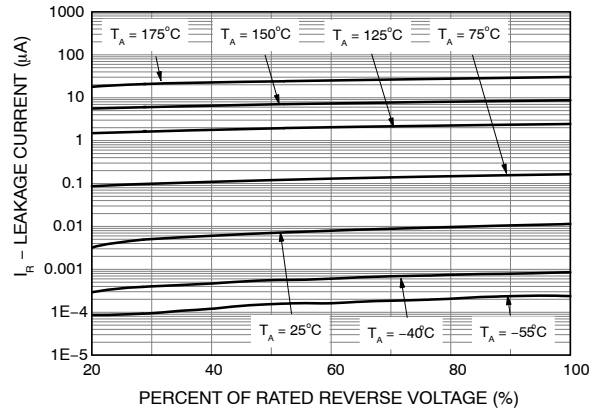


Figure 4. Typical Reverse Characteristics

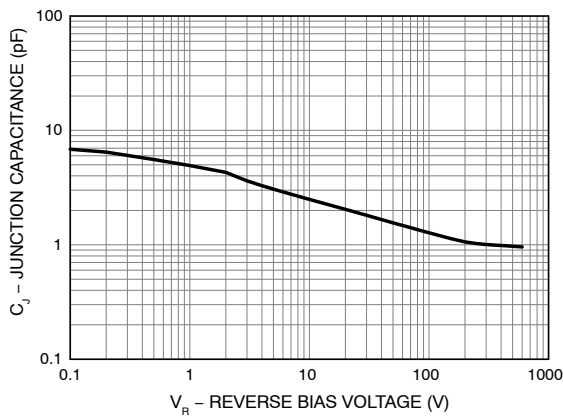


Figure 5. Typical junction Capacitance

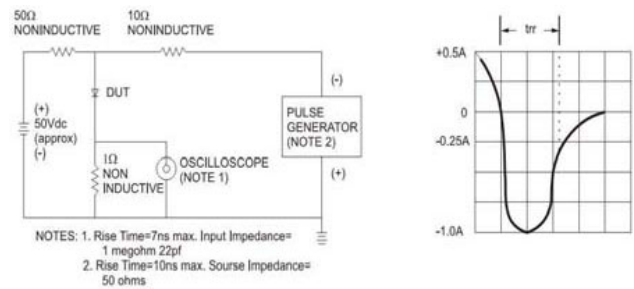


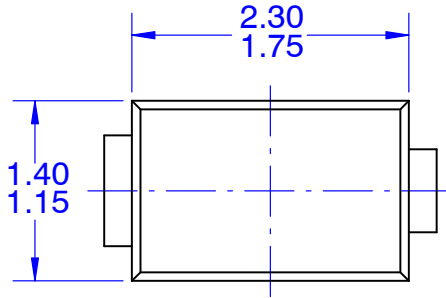
Figure 6. Reverse Recovery Time Characteristics and Test Circuit Diagram

**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

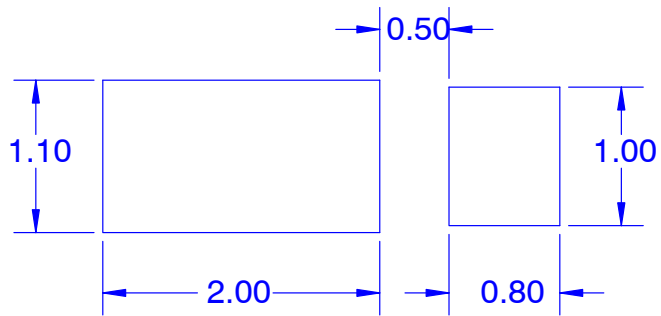


SOD-323EP  
CASE 477AD  
ISSUE O

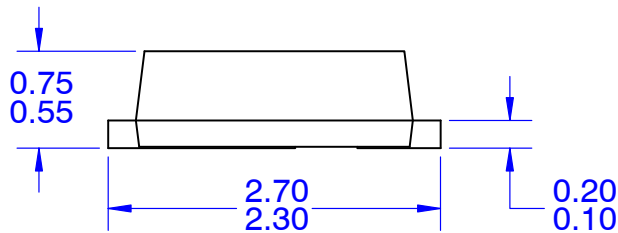
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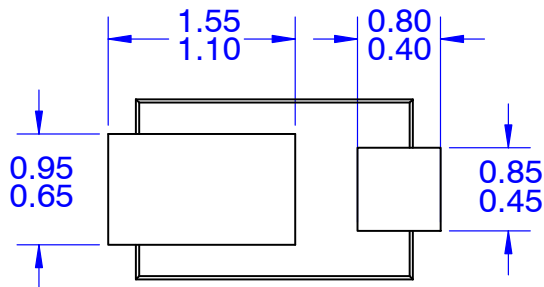
TOP VIEW



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.

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