

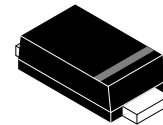
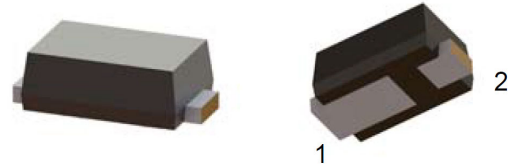
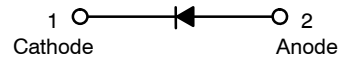
Surface Mount Schottky Barrier Rectifiers

1 A, 30 V - 60 V

SS13HE, NRVBSS13HE Series

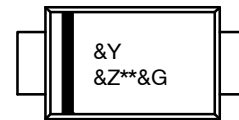
Features

- Very Low Profile – Typical Height of 0.68 mm
- Low Power Loss, High Efficiency
- Moisture Sensitivity Level 1 per J-STD-020
- UL Flammability 94V-0 Classification
- RoHS Compliant / Green Molding Compound
- NRVB Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable



SOD-323EP
CASE 477AD

MARKING DIAGRAM



Band Indicates Cathode

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

ORDERING INFORMATION

Part Number	Device Code Marking	Package	Shipping Method†
SS13HE	1A	SOD-323HE	3000 / Tape and Reel
SS14HE	1B	SOD-323HE	3000 / Tape and Reel
SASS14HE	1B	SOD-323HE	3000 / Tape and Reel
SS16HE	1C	SOD-323HE	3000 / Tape and Reel
NRVBSS13HE	1A	SOD-323HE	3000 / Tape and Reel
NRVBSS14HE	1B	SOD-323HE	3000 / Tape and Reel
NRVBSS16HE	1C	SOD-323HE	3000 / Tape and Reel

†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.

SS13HE, NRVBSS13HE Series

Table 1. ABSOLUTE MAXIMUM RATINGS Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value			Unit
		SS13HE	SS14HE, SASS14HE	SS16HE	
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	30	40	60	V
V_R	Reverse Voltage	30	40	60	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	25			A
T_J	Operating Junction Temperature Range	-55 to +150			$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to +150			$^\circ\text{C}$

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.

Table 2. THERMAL CHARACTERISTICS (Note 1) Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
Ψ_{JL}	Junction-to-Lead Thermal Resistance Thermocouple Soldered to Cathode	21	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance (Note 1)	199	$^\circ\text{C}/\text{W}$

1. Per JE5D51-3 Recommended Thermal Test Board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm

Table 3. ELECTRICAL CHARACTERISTICS Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	Instantaneous Forward Voltage (Note 2)	$I_F = 0.5 \text{ A}, T_J = 25^\circ\text{C}$	SS13HE, SS14HE, SASS14HE		0.41		V
		$I_F = 0.5 \text{ A}, T_J = 125^\circ\text{C}$			0.31		
		$I_F = 1.0 \text{ A}, T_J = 25^\circ\text{C}$			0.46	0.55	
		$I_F = 1.0 \text{ A}, T_J = 125^\circ\text{C}$			0.40	0.50	
		$I_F = 0.5 \text{ A}, T_J = 25^\circ\text{C}$	SS16HE		0.51		
		$I_F = 0.5 \text{ A}, T_J = 125^\circ\text{C}$			0.45		
		$I_F = 1.0 \text{ A}, T_J = 25^\circ\text{C}$			0.61	0.68	
		$I_F = 1.0 \text{ A}, T_J = 125^\circ\text{C}$			0.54	0.60	
I_R	Reverse Current at Rated V_R	$T_J = 25^\circ\text{C}$	SS13HE, SS14HE, SASS14HE		5.0	50	μA
		$T_J = 125^\circ\text{C}$			3.0	10	mA
		$T_J = 25^\circ\text{C}$	SS16HE		2.0	50	μA
		$T_J = 125^\circ\text{C}$			1.5	10	mA
T_{rr}	Reverse Recovery Time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A},$ $I_{rr} = 0.25 \text{ A}$	SS13HE, SS14HE, SASS14HE		5.6		ns
			SS16HE		8.3		
C_J	Junction Capacitance	$V_R = 4.0 \text{ V}, f = 1 \text{ MHz}$	SS13HE, SS14HE, SASS14HE		55		pF
			SS16HE		43		

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

SS13HE, NRVBSS13HE Series

TYPICAL PERFORMANCE CHARACTERISTICS

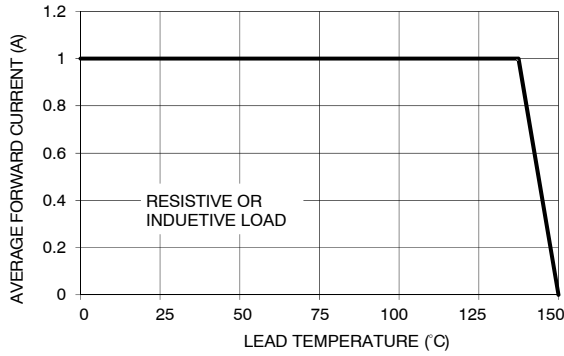


Figure 1. Forward Current Derating Curve

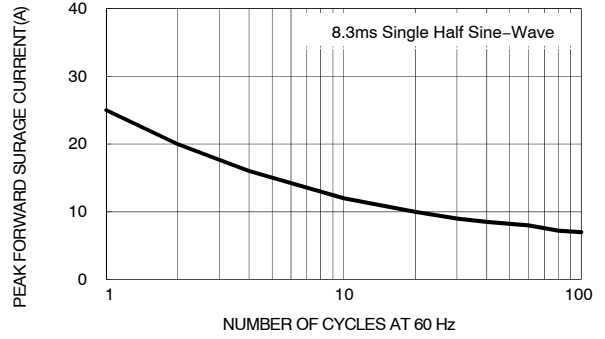


Figure 2. Maximum Non-Repetitive Forward Surge Current

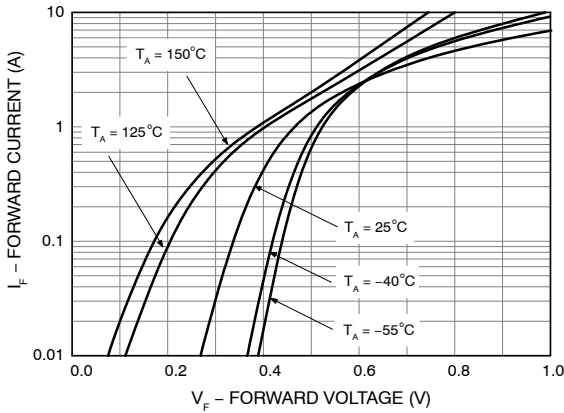


Figure 3. Typical Forward Characteristics - SS13HE / SS14HE

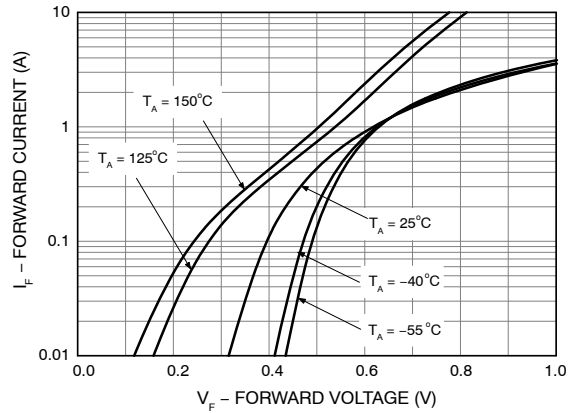


Figure 4. Typical Forward Characteristics - SS16HE

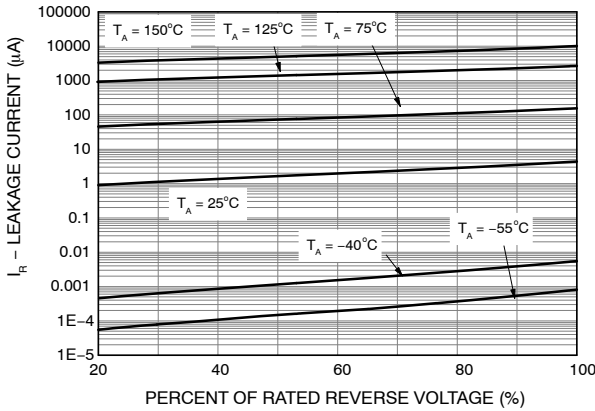


Figure 5. Typical Reverse Characteristics - SS13HE / SS14HE

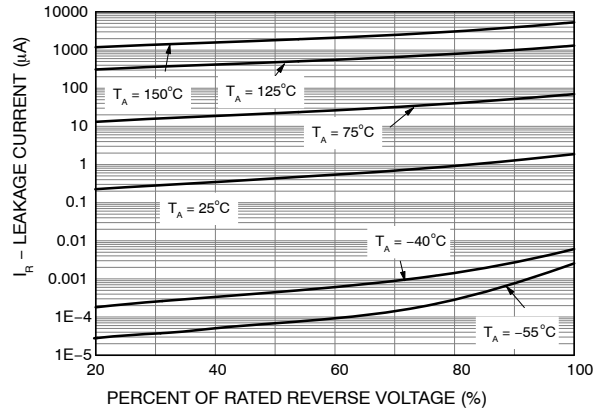


Figure 6. Typical Reverse Characteristics - SS16HE

SS13HE, NRVBSS13HE Series

TYPICAL PERFORMANCE CHARACTERISTICS

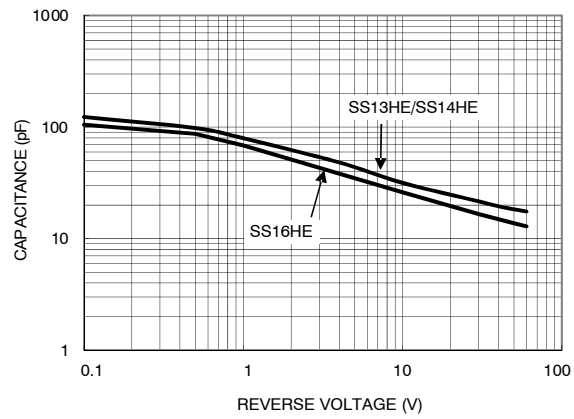


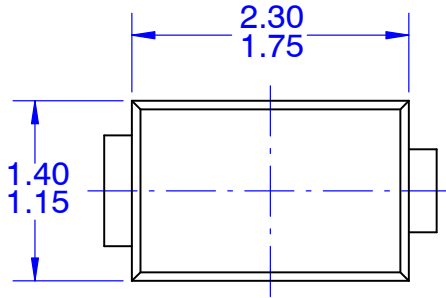
Figure 7. Typical Junction Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

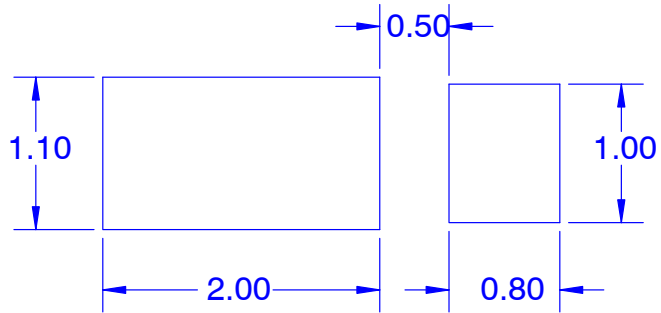


SOD-323EP
CASE 477AD
ISSUE O

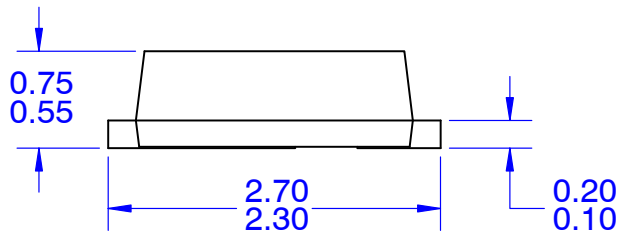
DATE 31 AUG 2016



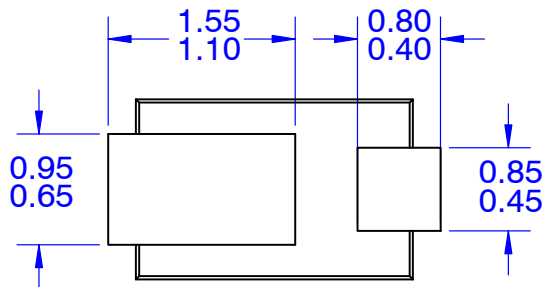
TOP VIEW



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