

# Fast Rectifiers

## RS1A - RS1M

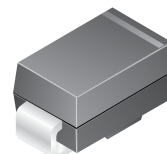
### Features

- Glass–Passivated Junction
- For Surface Mounted Applications
- Built–in Strain Relief, Ideal for Automated Placement
- UL Certified: Certificate # E326243
- These Devices are Pb–Free and are RoHS Compliant



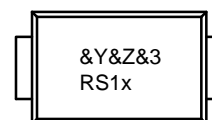
**ON Semiconductor®**

[www.onsemi.com](http://www.onsemi.com)



**SMA  
CASE 403AE**

### MARKING DIAGRAM



&Y = ON Semiconductor Logo  
&Z = Assembly Plant Code  
&3 = Date Code (Year & Week)  
RS1x = Specific Device Code  
x = A/B/D/G/J/K/M

### ORDERING INFORMATION

Part Number	Marking	Package	Shipping†
RS1A	RS1A	SMA (Pb–Free)	7500 / Tape & Reel
RS1B	RS1B		
RS1D	RS1D		
RS1G	RS1G		
RS1J	RS1J		
RS1K	RS1K		
RS1M	RS1M		

†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.

# RS1A – RS1M

## SPECIFICATIONS

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

Symbol	Parameter	Value							Units
		RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	
$V_{RRM}$	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V
$I_{F(AV)}$	Average Rectified Forward Current at $T_A = 100^\circ\text{C}$	1.0							A
$I_{FSM}$	Non–Repetitive Peak Forward Surge Current: 8.3 ms Single Half–Sine Wave	30							A
$T_J$	Operating Junction Temperature	–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.

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

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	1.19	W
$R_{\theta JA}$	Junction–to–Ambient Thermal Resistance (Note 1)	105	$^\circ\text{C/W}$
$R_{\theta JL}$	Junction–to–Lead Thermal Resistance (Note 1)	32	$^\circ\text{C/W}$

1. Device mounted on FR–4 PCB 0.013 mm.

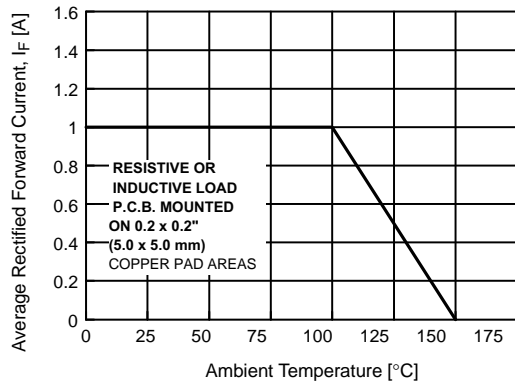
### ELECTRICAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Value							Unit
			RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 1.0 A	1.3							V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	150				250	500		ns
I <sub>R</sub>	Reverse Current at Rated V <sub>R</sub>	T <sub>A</sub> = 25°C	5.0							μA
		T <sub>A</sub> = 125°C	50							
C <sub>T</sub>	Total Capacitance	V <sub>R</sub> = 4.0 V, f = 1.0 MHz	10							pF

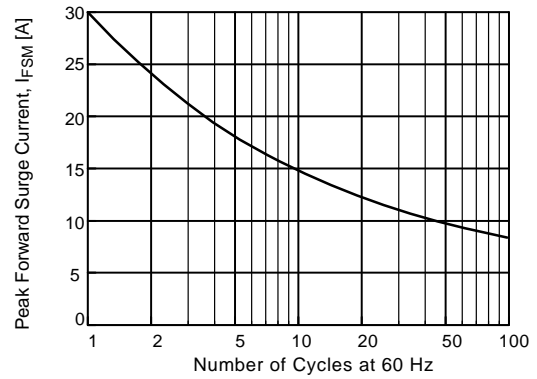
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

# RS1A – RS1M

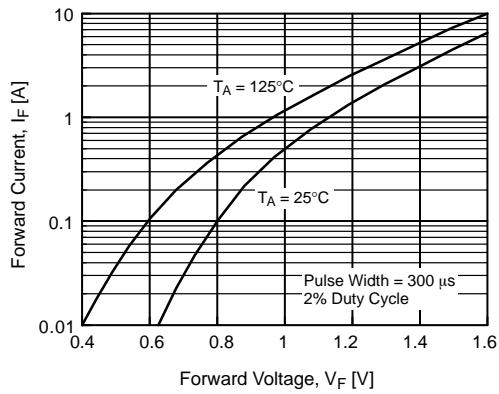
## TYPICAL PERFORMANCE CHARACTERISTICS



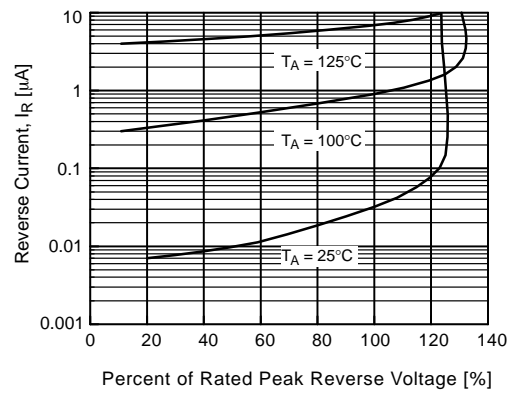
**Figure 1. Forward Current Derating Curve**



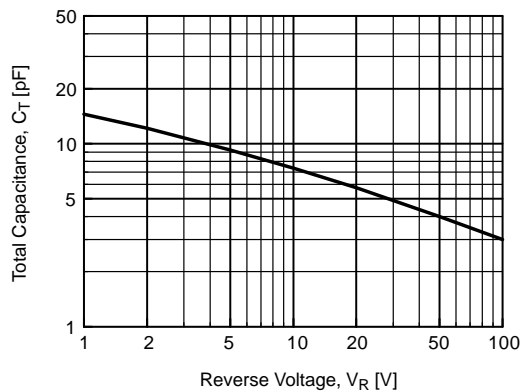
**Figure 2. Non-Repetitive Surge Current**



**Figure 3. Forward Voltage Characteristics**



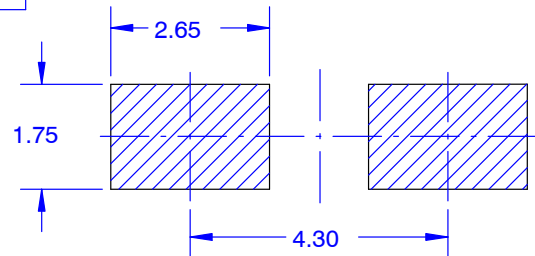
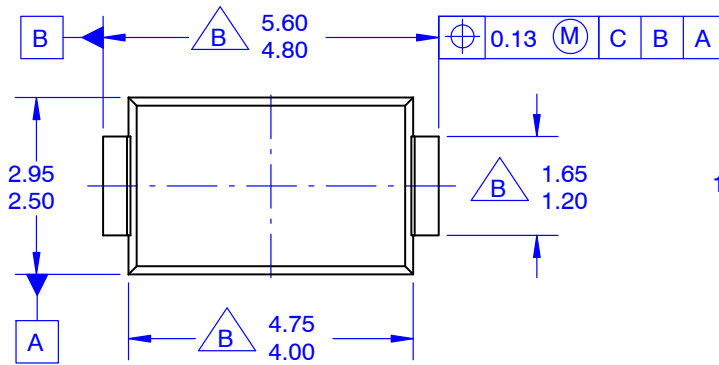
**Figure 4. Reverse Current vs. Reverse Voltage**



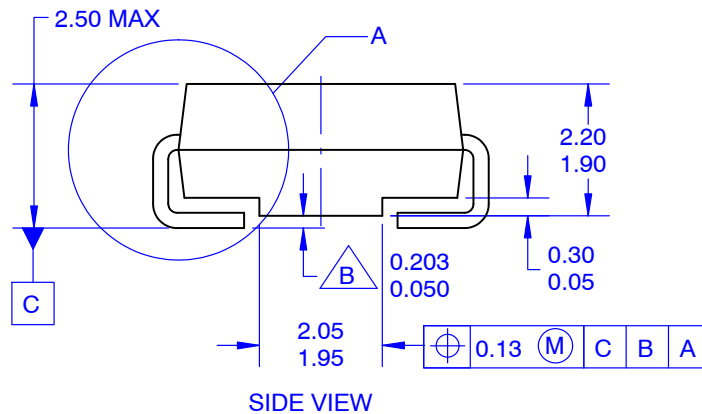
**Figure 5. Total Capacitance**

**SMA**  
**CASE 403AE**  
**ISSUE O**

DATE 31 AUG 2016

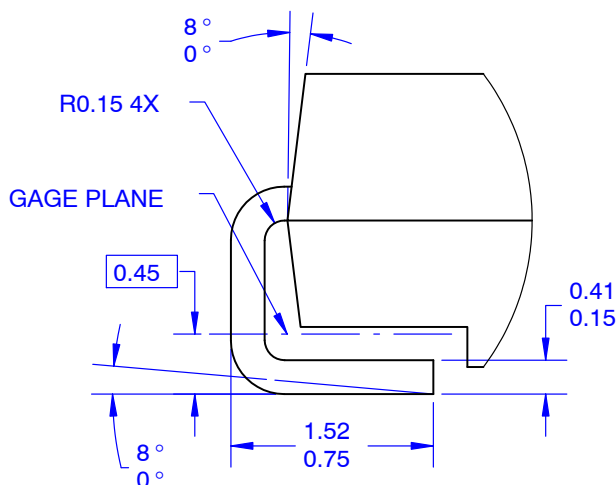


LAND PATTERN RECOMMENDATION



**NOTES:**


- A. EXCEPT WHERE NOTED, CONFORMS TO JEDEC DO214 VARIATION AC.
- B. DOES NOT COMPLY JEDEC STANDARD VALUE.
- C. ALL DIMENSIONS ARE IN MILLIMETERS.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSIONS AND TOLERANCE AS PER ASME Y14.5-2009.
- E. LAND PATTERN STD. DIOM5025X231M



DETAIL A  
 SCALE 20 : 1

<b>DOCUMENT NUMBER:</b>	<b>98AON13440G</b>	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
<b>DESCRIPTION:</b>	<b>SMA</b>	<b>PAGE 1 OF 1</b>

ON Semiconductor and **ON** 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.

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 owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). 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. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor 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. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor 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 ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor 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 ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Email Requests to: [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

ON Semiconductor Website: [www.onsemi.com](http://www.onsemi.com)

### TECHNICAL SUPPORT

North American Technical Support:

Voice Mail: 1 800-282-9855 Toll Free USA/Canada

Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:

Phone: 00421 33 790 2910

For additional information, please contact your local Sales Representative