# Trench-based Schottky Rectifier

## Features

- Fine Lithography Trench–based Schottky Technology for Very Low Forward Voltage and Low Leakage
- Fast Switching with Exceptional Temperature Stability
- Low Power Loss and Lower Operating Temperature
- Higher Efficiency for Achieving Regulatory Compliance
- High Surge Capability
- 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, Halogen Free/BFR Free and are RoHS Compliant

#### **Typical Applications**

- Switching Power Supplies including Tablet Adapters, and Flat Panel Display
- High Frequency and DC–DC Converters
- Freewheeling and OR-ing diodes
- Reverse Battery Protection
- Instrumentation

# Mechanical Characteristics:

- Case: Epoxy, Molded
- Epoxy Meets Flammability Rating UL 94–0 @ 0.125 in.
- Lead Finish: 100% Matte Sn (Tin)
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Device Meets MSL 1 Requirements
- Weight: 95 mg (Approximately)



# **ON Semiconductor®**

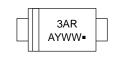
www.onsemi.com





SMA-FL CASE 403AA STYLE 6

#### MARKING DIAGRAM



3AR	= Specific Device Code
А	= Assembly Location
Y	= Year
WW	= Work Week

= Pb-Free Package

#### **ORDERING INFORMATION**

Device	Package	Shipping <sup>†</sup>
NTSAF345T3G	SMA-FL (Pb-Free)	5000 / Tape & Reel
NRVTSAF345T3G	SMA-FL (Pb-Free)	5000 / Tape & Reel

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

#### **MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	45	V
Average Rectified Forward Current $(T_L = 112^{\circ}C)$	Ι <sub>Ο</sub>	3.0	A
Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20 kHz) T <sub>L</sub> = 103°C	I <sub>FRM</sub>	6.0	А
Non–Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I <sub>FSM</sub>	100	А
Storage Temperature Range	T <sub>stg</sub>	-65 to +150	°C
Operating Junction Temperature (Note 1)	TJ	-65 to +150	°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. 1. The heat generated must be less than the thermal conductivity from Junction–to–Ambient:  $dP_D/dT_J < 1/R_{\theta JA}$ .

#### THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Lead (Note 2)	$\Psi_{JCL}$	25	°C/W
Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{ hetaJA}$	90	°C/W

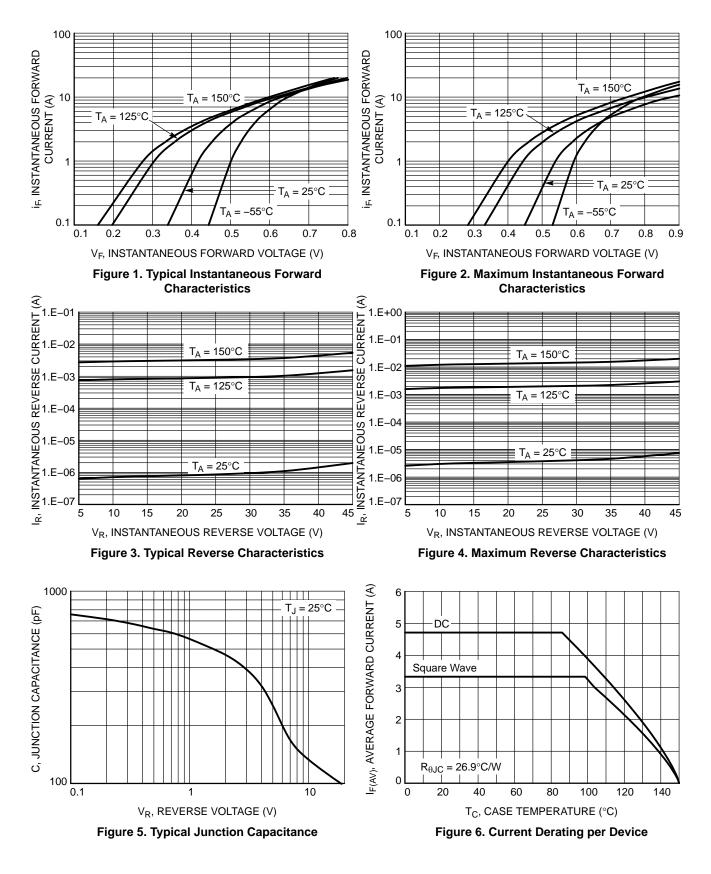
2. 1 inch square pad size  $(1 \times 0.5 \text{ inch})$  for each lead on FR4 board.

#### **ELECTRICAL CHARACTERISTICS**

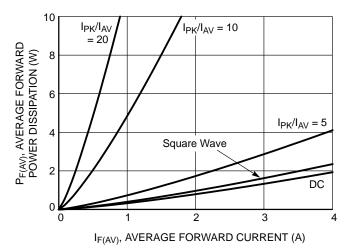
Rating	Symbol	Тур	Max	Unit
Instantaneous Forward Voltage (Note 3) ( $I_F = 3 A, T_J = 25^{\circ}C$ ) ( $I_F = 3 A, T_J = 125^{\circ}C$ )	VF	0.482 0.4	0.63 0.55	V
Instantaneous Reverse Current (Note 3) (Rated dc Voltage, $T_J = 25^{\circ}C$ ) (Rated dc Voltage, $T_J = 125^{\circ}C$ )	I <sub>R</sub>	1.75 1.45	7.5 3	μA mA

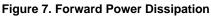
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions. 3. Pulse Test: Pulse Width  $\leq$  380 µs, Duty Cycle  $\leq$  2.0%.

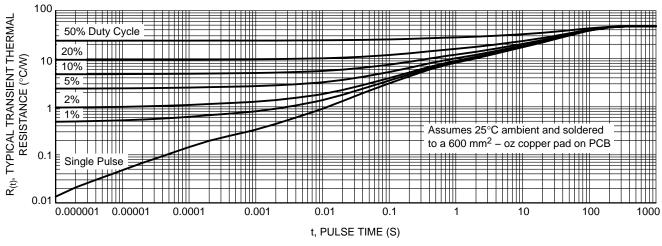
## **TYPICAL CHARACTERISTICS**



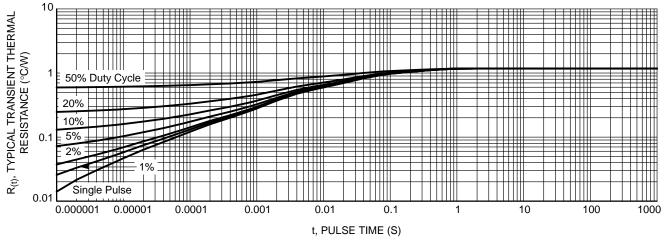
## **TYPICAL CHARACTERISTICS**











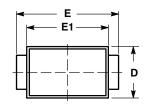


# onsemi

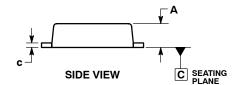
DATE 02 MAR 2011

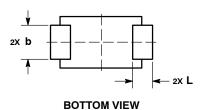


SCALE 2:1









DIMENSIONS: MILLIMETERS

\*For additional information on our Pb–Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

DOCUMENT NUMBER:	98AON55210E	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.		
DESCRIPTION:	SMA-FL		PAGE 1 OF 1	
onsemi and ONSEMi are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the 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. onsemi does not convey any license under its pattent rights nor the rights of others.				

SMA-FL CASE 403AA ISSUE O

© Semiconductor Components Industries, LLC, 2019

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 <u>www.onsemi.com/site/pdf/Patent-Marking.pdf</u>. 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 indental 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. Buyer shall indemnify and hold onsemi and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs,

#### ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation onsemi Website: www.onsemi.com ONLINE SUPPORT: <u>www.onsemi.com/support</u> For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales