



**THE DATASHEET OF  
MURS480ET3G**



# MURS480ET3G

## SWITCHMODE Power Rectifiers

### Ultrafast “E” Series with High Reverse Energy Capability

These state-of-the-art devices are designed for use in switching power supplies, inverters and as free wheeling diodes.

#### Features

- 20 mJ Avalanche Energy Guaranteed
- Excellent Protection Against Voltage Transients in Switching Inductive Load Circuits
- Ultrafast 75 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction
- Reverse Voltage to 800 V
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

#### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 217 mg (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped in 16 mm Tape & Reel, 2500 Units per Reel
- Polarity: Polarity Band on Plastic Body Indicates Cathode Lead

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	800	V
Average Rectified Forward Current	$I_{F(AV)}$	4.0 @ $T_L=110^\circ\text{C}$	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	70	A
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-65 to +175	°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®

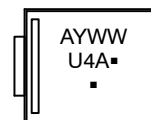
[www.onsemi.com](http://www.onsemi.com)

### ULTRAFast RECTIFIER 4.0 AMPERES, 800 VOLTS



SMC 2-LEAD  
CASE 403AC

#### MARKING DIAGRAM



U4 = Specific Device Code  
A = Assembly Location\*  
Y = Year  
WW = Work Week

\*The Assembly Location code (A) is front side optional. In cases where the Assembly Location is stamped in the package, the front side assembly code may be blank.

#### ORDERING INFORMATION

Device	Package	Shipping†
MURS480ET3G	SMC (Pb-Free)	2500/Tape & 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.

# MURS480ET3G

## THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Lead	$R_{\theta JL}$	11	$^{\circ}C/W$
Maximum Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	165	$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 1) ( $I_F = 3.0$ Amps, $T_J = 150^{\circ}C$ ) ( $I_F = 3.0$ Amps, $T_J = 25^{\circ}C$ ) ( $I_F = 4.0$ Amps, $T_J = 25^{\circ}C$ )	$V_F$	1.53 1.75 1.85	V
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, $T_J = 150^{\circ}C$ ) (Rated dc Voltage, $T_J = 25^{\circ}C$ )	$i_R$	900 25	$\mu A$
Maximum Reverse Recovery Time ( $I_F = 1.0$ A, $di/dt = 50$ A/ $\mu s$ ) ( $I_F = 0.5$ A, $i_R = 1.0$ A, $I_{REC} = 0.25$ A)	$t_{rr}$	100 75	ns
Maximum Forward Recovery Time ( $I_F = 1.0$ Amp, $di/dt = 100$ Amp/ $\mu s$ , Recovery to 1.0 V)	$t_{fr}$	75	ns
Controlled Avalanche Energy	$W_{AVAL}$	20	mJ

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.

1. Pulse Test: Pulse Width = 300  $\mu s$ , Duty Cycle  $\leq 2.0\%$ .

TYPICAL ELECTRICAL CHARACTERISTICS

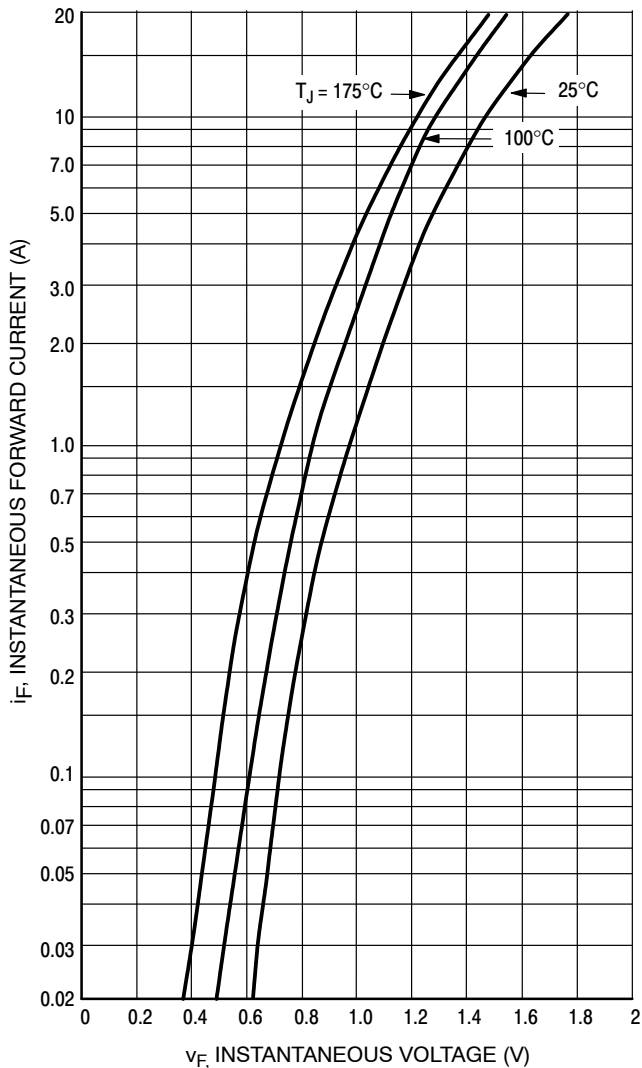


Figure 1. Typical Forward Voltage

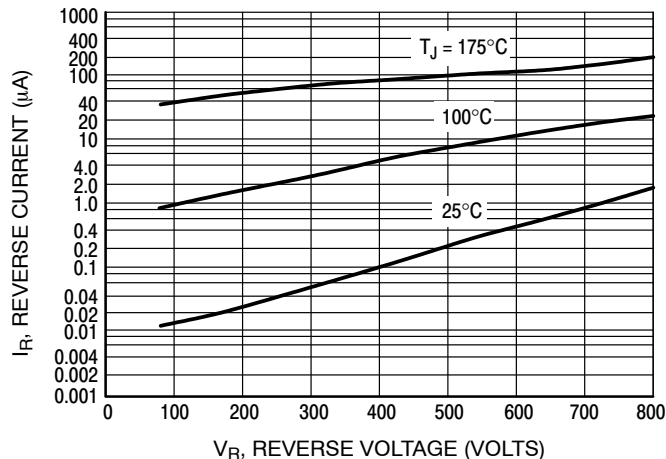


Figure 2. Typical Reverse Current

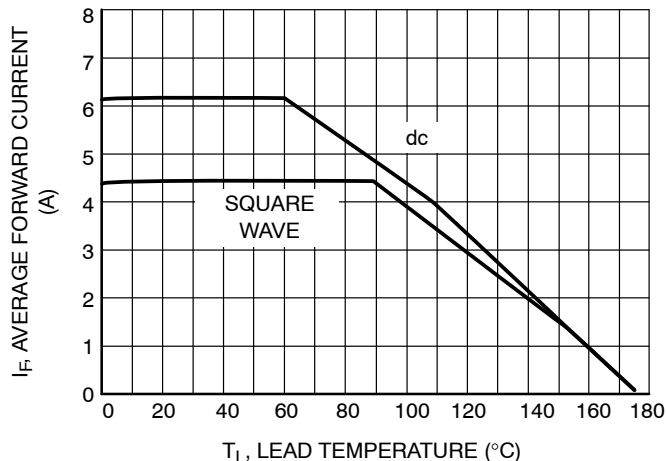


Figure 3. Current Derating Lead

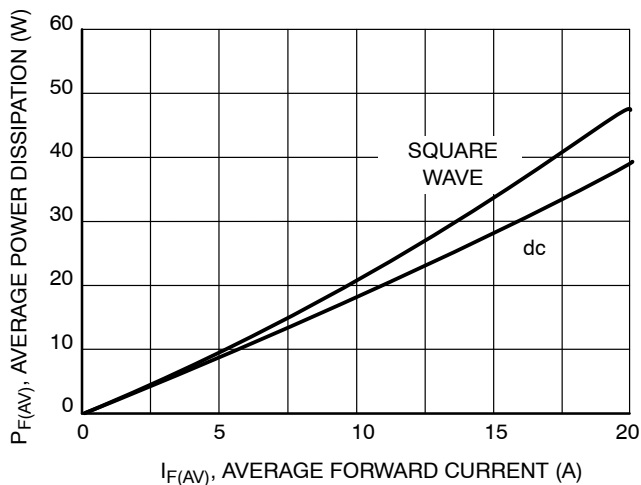


Figure 4. Power Dissipation

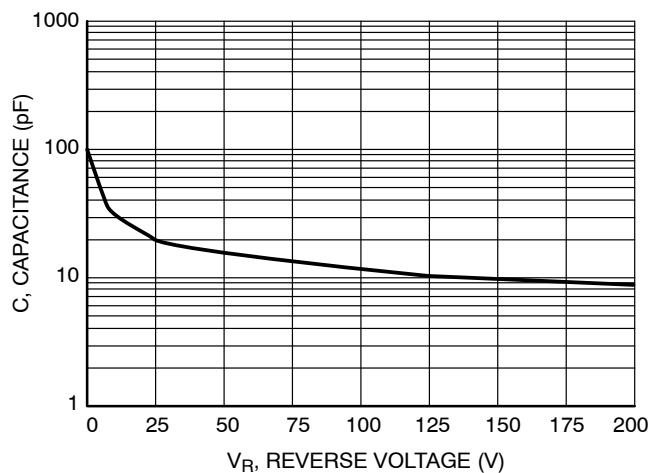
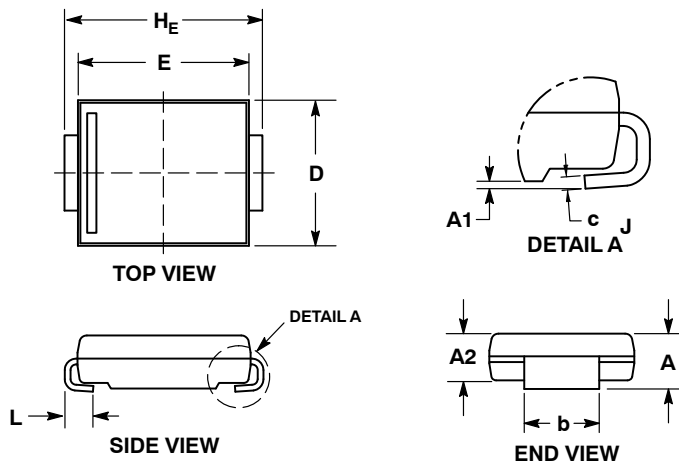


Figure 5. Typical Capacitance

# MURS480ET3G

## PACKAGE DIMENSIONS

### SMC 2-LEAD CASE 403AC ISSUE B

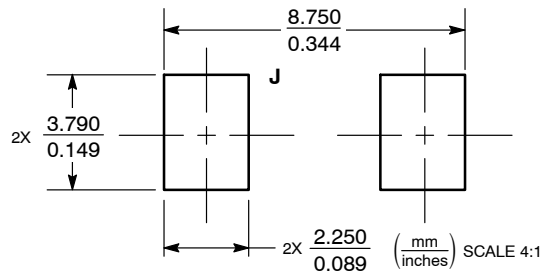


#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANNE Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.254mm PER SIDE.
4. DIMENSIONS D AND E TO BE DETERMINED AT DATUM H.
5. DIMENSION b SHALL BE MEASURED WITHIN THE AREA DETERMINED BY DIMENSION L.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.95	2.61	0.077	0.103
A1	0.05	0.20	0.002	0.008
A2	1.90	2.41	0.075	0.095
b	2.90	3.20	0.114	0.126
c	0.15	0.41	0.006	0.016
D	5.55	6.25	0.219	0.246
E	6.60	7.15	0.260	0.281
HE	7.75	8.15	0.305	0.321
L	0.75	1.60	0.030	0.063

### RECOMMENDED SOLDERING FOOTPRINT\*



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

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:

Literature Distribution Center for ON Semiconductor  
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA  
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada  
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada  
Email: [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

N. American Technical Support: 800-282-9855 Toll Free  
USA/Canada  
Europe, Middle East and Africa Technical Support:  
Phone: 421 33 790 2910  
Japan Customer Focus Center  
Phone: 81-3-5817-1050

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

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View MURS480ET3G on WIN SOURCE](#)

 [ON Semiconductor](#) Information

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management