

# SWITCHMODE Power Rectifier

## MUR240

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

### Features

- Ultrafast Recovery Times
- 175 °C Operating Junction Temperature
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction
- These are Pb-Free Devices\*

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 0.4 Gram (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260 °C Max. for 10 Seconds
- Polarity: Cathode Indicated by Polarity Band
- Shipped in Plastic Bags; 1,000 per Bag
- Available Tape and Reel; 5,000 per Reel, by Adding a “RL” Suffix to the Part Number

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	400	V
Working Peak Reverse Voltage	$V_{RWM}$	–	
DC Blocking Voltage	$V_R$		
Average Rectified Forward Current (Note 2) (Square Wave Mounting Method #3 Per Note 4)	$I_{F(AV)}$	2.0 @ $T_A = 85\text{ °C}$	A
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	$I_{FSM}$	35	A
Operating Junction Temperature and Storage Temperature Range	$T_J, T_{stg}$	–65 to +175	°C

### THERMAL CHARACTERISTICS

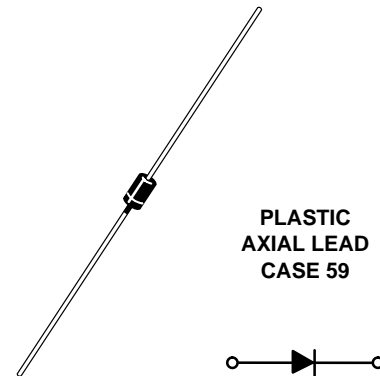
Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	See Note 4	°C/W

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.

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

\* For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, [SOLDDRRM/D](http://www.onsemi.com/SOLDDRRM).

## ULTRAFAST RECTIFIER 2 AMPERES, 400 VOLTS



### MARKING DIAGRAM



A = Assembly Location  
Y = Year  
WW = Work Week  
■ = Pb-Free Package  
(Note: Microdot may be in either location)

### ORDERING INFORMATION

Device	Package	Shipping†
MUR240RLG	Axial Lead**	5000/Tape & Reel

### DISCONTINUED (Note 1)

MUR240	Axial Lead**	1000 Units/Bag
MUR240G	Axial Lead**	1000 Units/Bag
MUR240RL	Axial Lead**	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](http://www.onsemi.com/BRD8011/D).

\*\* This package is inherently Pb-Free.

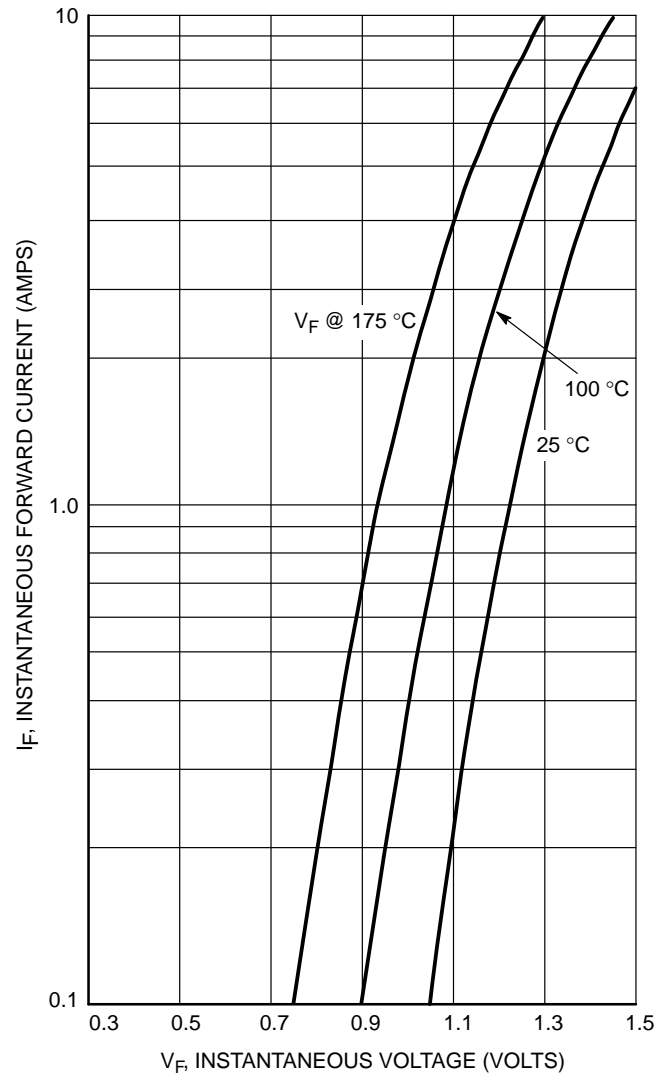
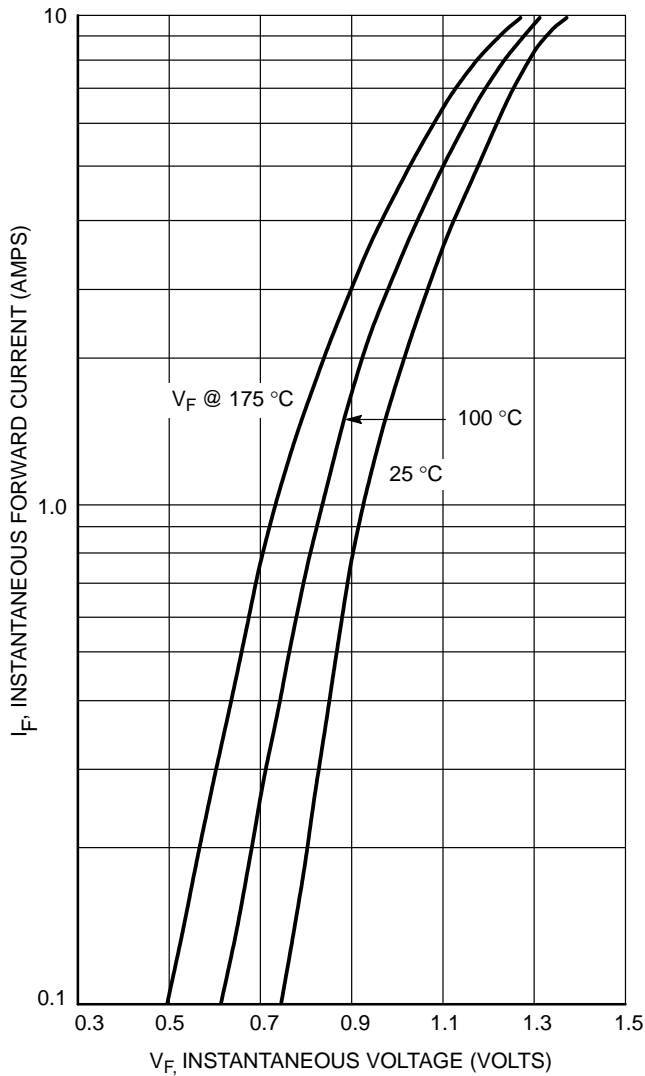
1. **DISCONTINUED:** These devices are not recommended for new design. Please contact your **onsemi** representative for information. The most current information on these devices may be available on [www.onsemi.com](http://www.onsemi.com).

# ELECTRICAL CHARACTERISTICS

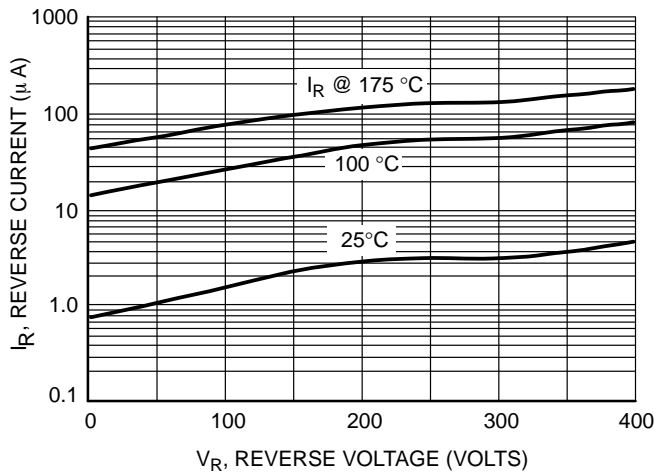
Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 3) ( $I_F = 2.0$ Amp, $T_J = 150$ °C) ( $I_F = 2.0$ Amp, $T_J = 25$ °C)	$V_F$	1.05 1.30	V
Maximum Instantaneous Reverse Current (Note 3) (Rated dc Voltage, $T_J = 150$ °C) (Rated dc Voltage, $T_J = 25$ °C)	$I_R$	150 5.0	$\mu$ A
Maximum Reverse Recovery Time ( $I_F = 1.0$ Amp, $di/dt = 50$ Amp/ $\mu$ s)	$t_{rr}$	65	ns
Maximum Forward Recovery Time ( $I_F = 1.0$ A, $di/dt = 100$ A/ $\mu$ s)	$t_{fr}$	50	ns

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.

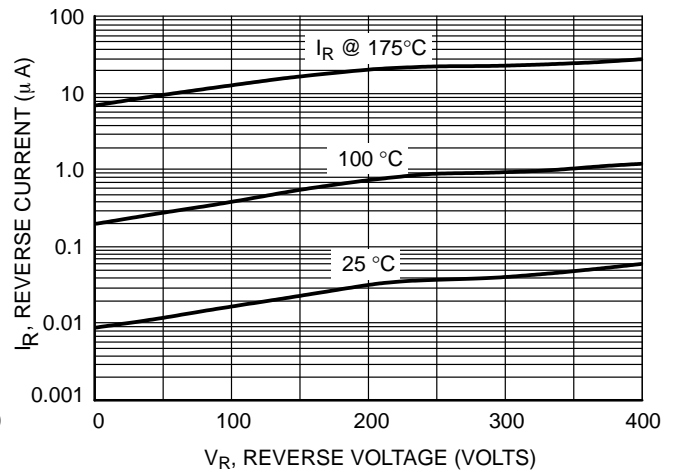
3. Pulse Test: Pulse Width = 300  $\mu$ s, Duty Cycle  $\leq$  2.0%.



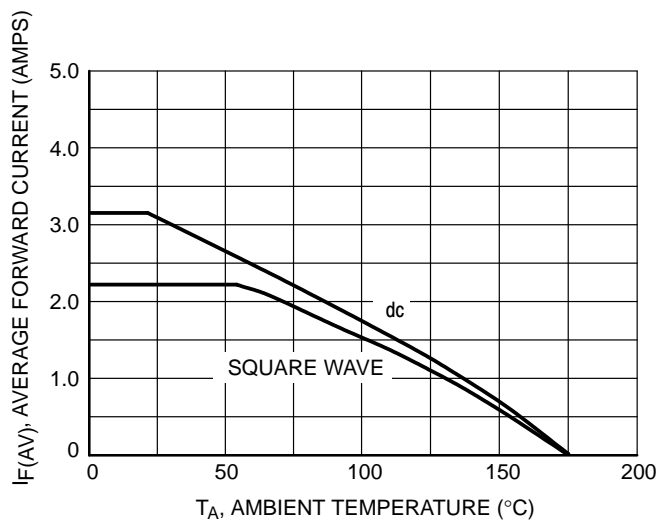
# MUR240



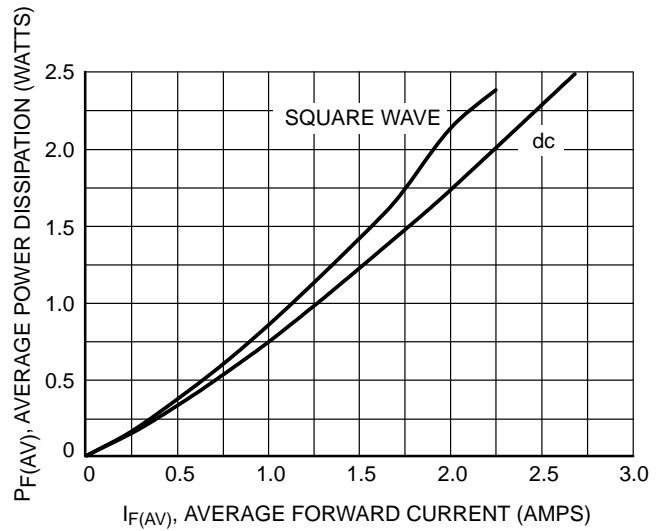
**Figure 3. Maximum Reverse Current**



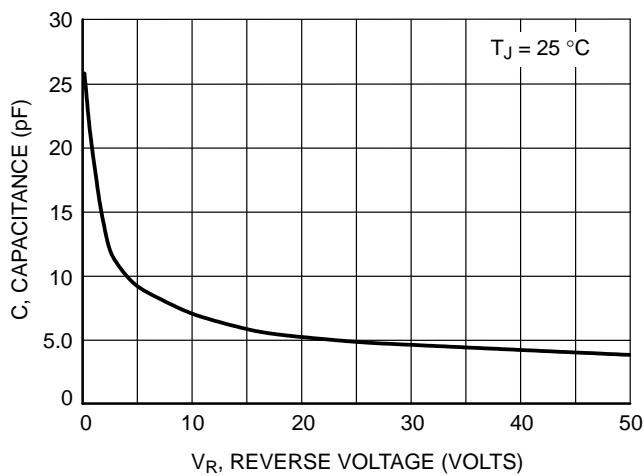
**Figure 4. Typical Reverse Current**



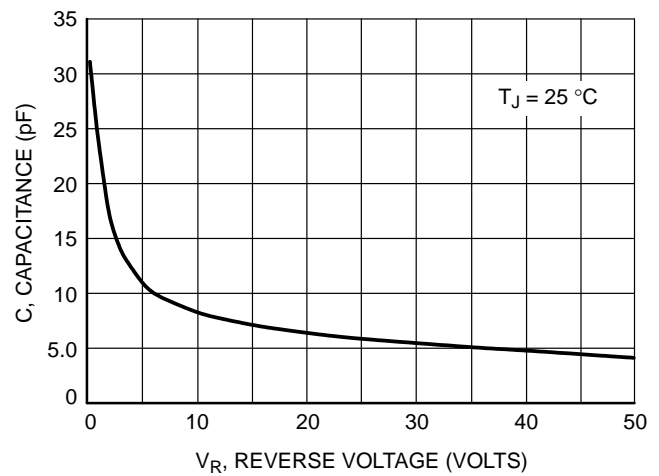
**Figure 5. Current Derating**



**Figure 6. Power Dissipation**



**Figure 7. Typical Capacitance**



**Figure 8. Maximum Capacitance**

# MUR240

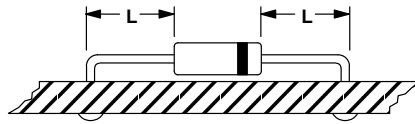
## NOTE 4. – AMBIENT MOUNTING DATA

Data shown for thermal resistance, junction-to-ambient ( $R_{\theta JA}$ ) for the mountings shown is to be used as typical guideline values for preliminary engineering or in case the tie point temperature cannot be measured.

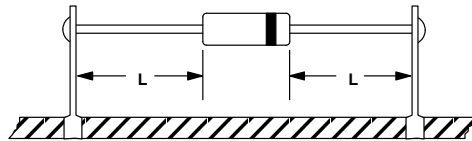
**TYPICAL VALUES FOR  $R_{\theta JA}$  IN STILL AIR**

Mounting Method		Lead Length, L			Units
		1/8	1/4	1/2	
1	$R_{\theta JA}$	52	65	72	°C/W
2		67	80	87	°C/W
3		50			°C/W

**MOUNTING METHOD 1**

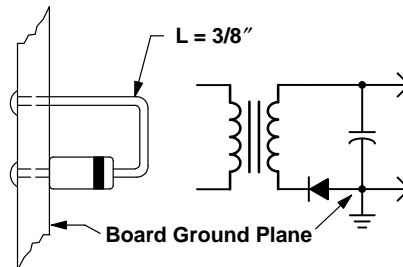


**MOUNTING METHOD 2**



**Vector Pin Mounting**

**MOUNTING METHOD 3**



**P.C. Board with  
1-1/2" X 1-1/2" Copper Surface**

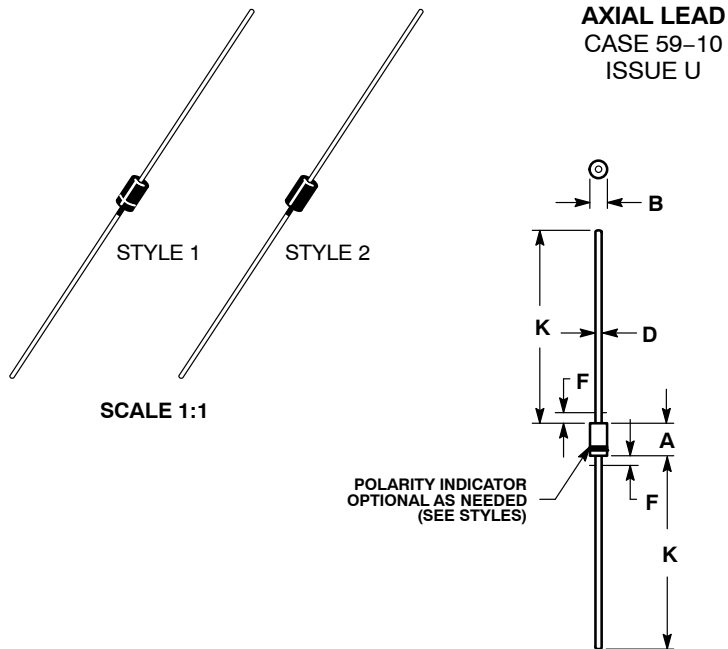
# MUR240

## REVISION HISTORY

Revision	Description of Changes	Date
7	Rebranded the Data Sheet to <b>onsemi</b> format. MUR240, MUR240G, MUR240RL OPNs marked as Discontinued.	10/13/2025

This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.

DATE 15 FEB 2005

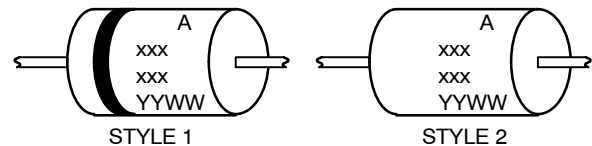


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO-41 OUTLINE SHALL APPLY.
4. POLARITY DENOTED BY CATHODE BAND.
5. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.161	0.205	4.10	5.20
B	0.079	0.106	2.00	2.70
D	0.028	0.034	0.71	0.86
F	---	0.050	---	1.27
K	1.000	---	25.40	---

**GENERIC  
MARKING DIAGRAM\***



xxx = Specific Device Code  
A = Assembly Location  
YY = Year  
WW = Work Week

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

<b>DOCUMENT NUMBER:</b>	<b>98ASB42045B</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>AXIAL LEAD</b>	<b>PAGE 1 OF 1</b>

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 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](http://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](http://www.onsemi.com/design/resources/technical-documentation)  
onsemi Website: [www.onsemi.com](http://www.onsemi.com)

### ONLINE SUPPORT: [www.onsemi.com/support](http://www.onsemi.com/support)

For additional information, please contact your local Sales Representative at  
[www.onsemi.com/support/sales](http://www.onsemi.com/support/sales)