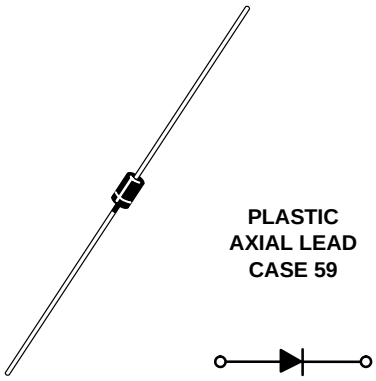
# SWITCHMODE Power Rectifier

# MUR240

## ULTRAFAST RECTIFIER 2 AMPERES, 400 VOLTS



PLASTIC
AXIAL LEAD
CASE 59

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

### MARKING DIAGRAM


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

### MAXIMUM RATINGS

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

### THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Maximum Thermal Resistance,<br>Junction-to-Ambient | $R_{\theta JA}$ | See<br>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 μs, Duty Cycle ≤ 2.0%.

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

### 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.
** 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.

## ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Maximum Instantaneous Forward Voltage (Note 3)<br>($I_F$ = 2.0 Amp, $T_J$ = 150 °C)<br>($I_F$ = 2.0 Amp, $T_J$ = 25 °C) | $V_F$ | <br>1.05<br>1.30 | V |
| Maximum Instantaneous Reverse Current (Note 3)<br>(Rated dc Voltage, $T_J$ = 150 °C)<br>(Rated dc Voltage, $T_J$ = 25 °C) | $I_R$ | <br>150<br>5.0 | μA |
| Maximum Reverse Recovery Time<br>($I_F$ = 1.0 Amp, di/dt = 50 Amp/μs) | $t_{rr}$ | <br>65 | ns |
| Maximum Forward Recovery Time<br>($I_F$ = 1.0 A, di/dt = 100 A/μs) | $t_{rr}$ | <br>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 μs, Duty Cycle ≤ 2.0%.

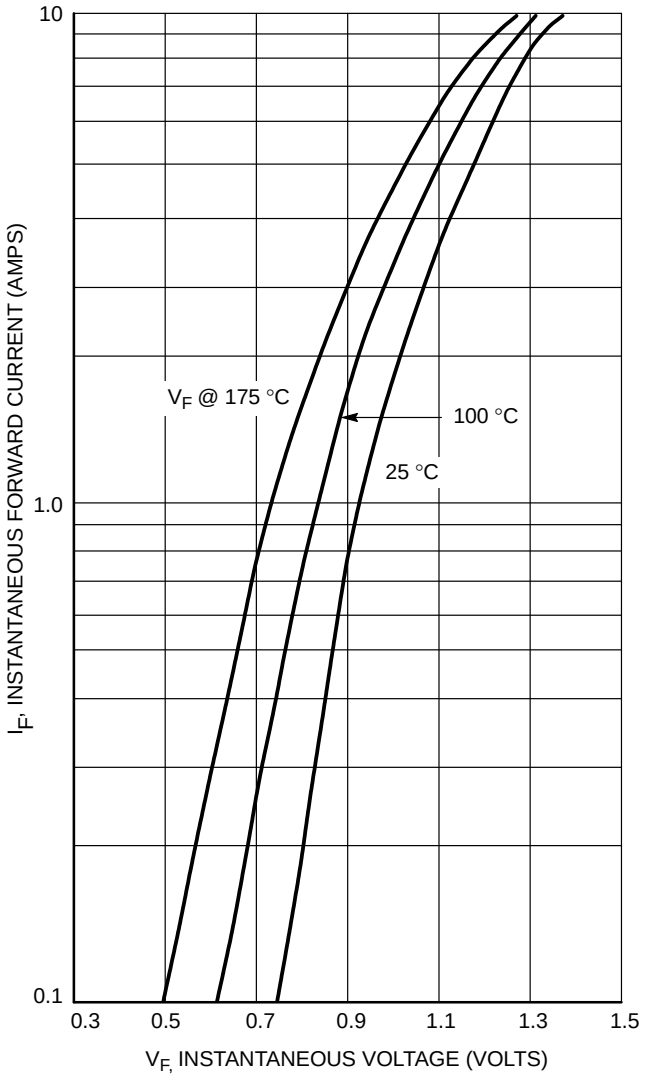



**Figure 1. Typical Forward Voltage**

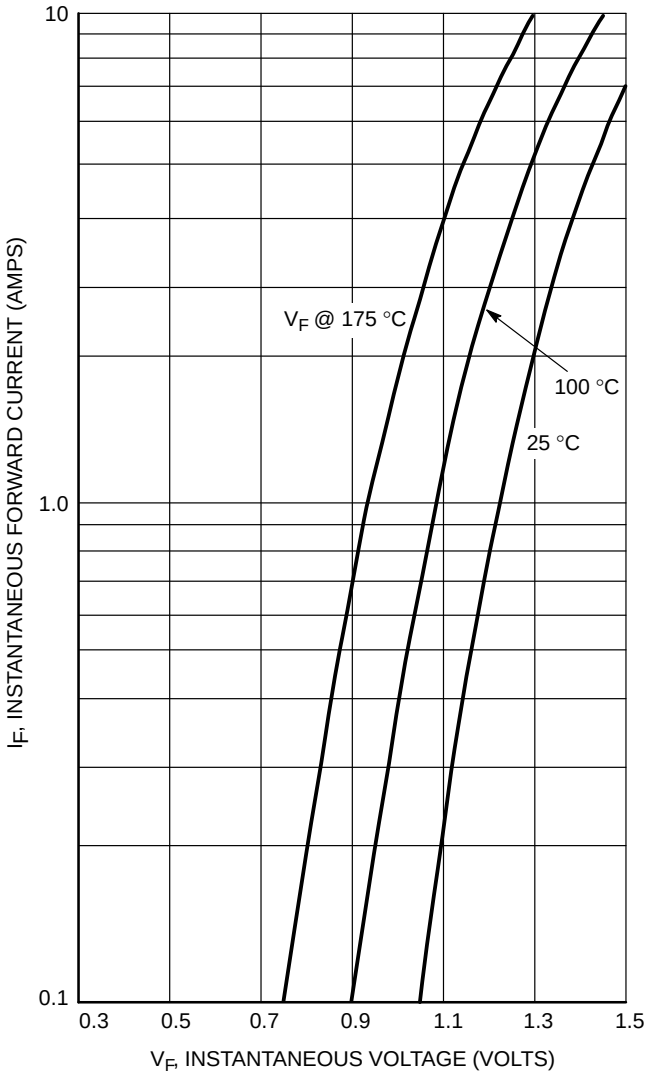



**Figure 2. Maximum Forward Voltage**

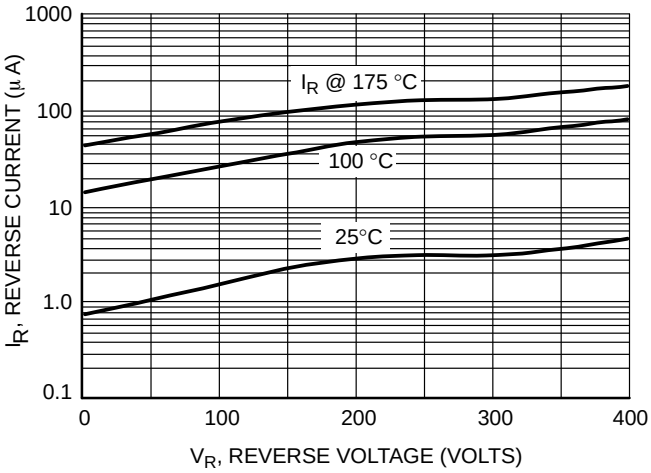



**Figure 3. Maximum Reverse Current**

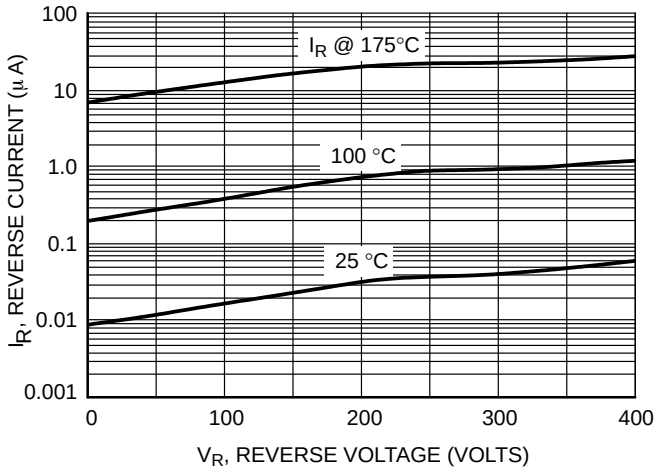



**Figure 4. Typical Reverse Current**

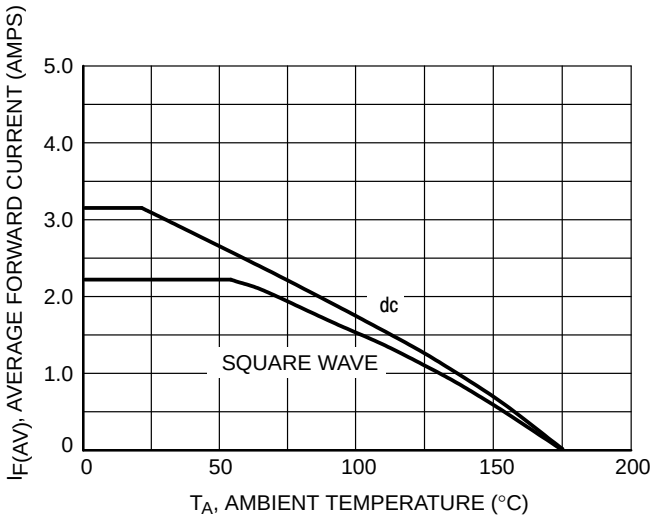



**Figure 5. Current Derating**

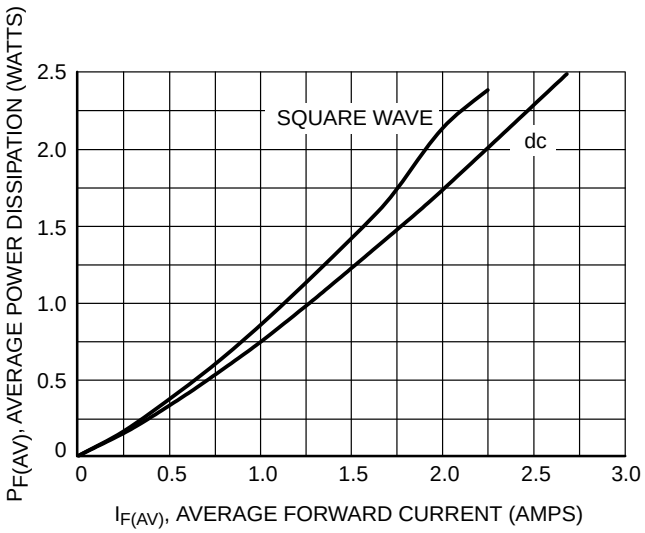



**Figure 6. Power Dissipation**

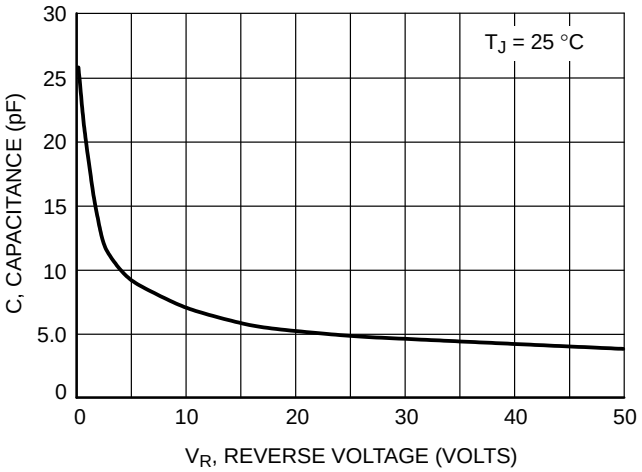



**Figure 7. Typical Capacitance**

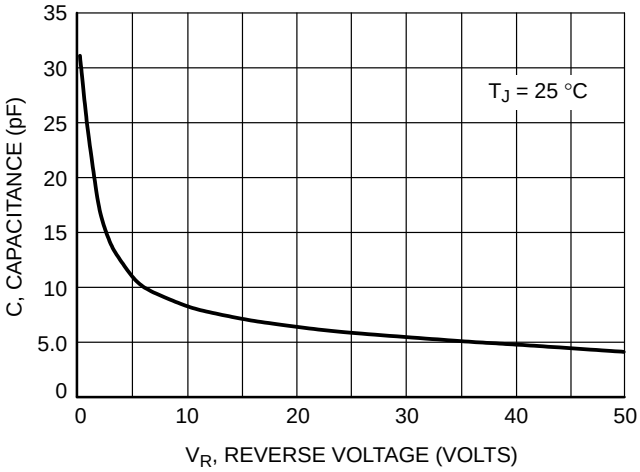



**Figure 8. Maximum Capacitance**

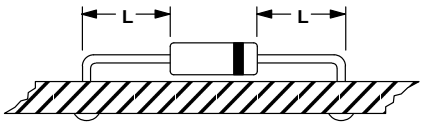
## NOTE 4. − AMBIENT MOUNTING DATA

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.

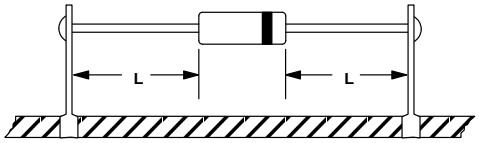
**TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR**

| 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**

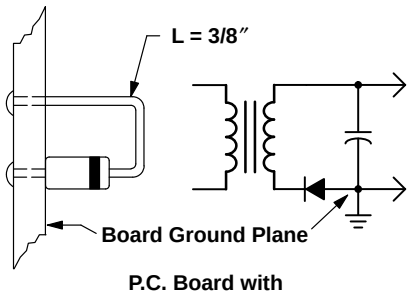



**MOUNTING METHOD 2**




**Vector Pin Mounting**

**MOUNTING METHOD 3**




**P.C. Board with**
**1−1/2″ X 1−1/2″ Copper Surface**

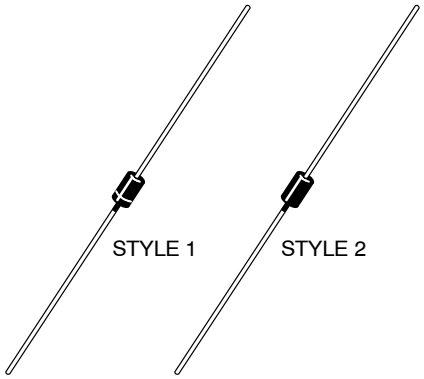
## REVISION HISTORY

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

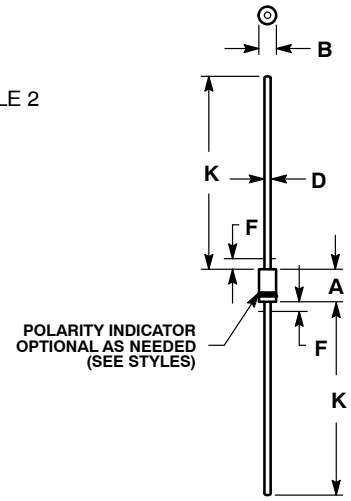
This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.

**AXIAL LEAD**
CASE 59–10
ISSUE U

DATE 15 FEB 2005




**SCALE 1:1**



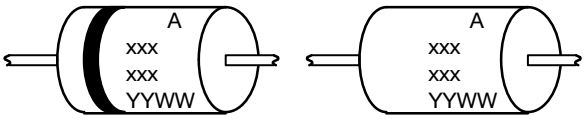

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO–41 OUTLINE SHALL APPLY
4. POLARITY DENOTED BY CATHODE BAND.
5. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | 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 | --- |

STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
2. ANODE

STYLE 2:
NO POLARITY

## GENERIC MARKING DIAGRAM*




STYLE 1 STYLE 2

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.

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|---|---|---|
| DESCRIPTION: | AXIAL LEAD | PAGE 1 OF 1 |

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