

ON Semiconductor

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MUR240

Preferred Device

SWITCHMODE™ Power Rectifier

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	400 –	V
Average Rectified Forward Current (Note 1) (Square Wave Mounting Method #3 Per Note 3)	$I_{F(AV)}$	2.0 @ $T_A = 85^\circ\text{C}$	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 3	°C/W

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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

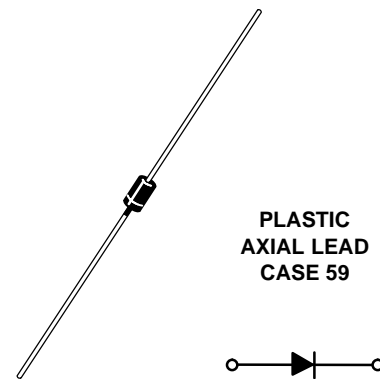
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



ON Semiconductor®

<http://onsemi.com>

ULTRAFAST RECTIFIER 2 AMPERES, 400 VOLTS



PLASTIC
AXIAL LEAD
CASE 59

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†
MUR240	Axial Lead**	1000 Units/Bag
MUR240G	Axial Lead**	1000 Units/Bag
MUR240RL	Axial Lead**	5000/Tape & Reel
MUR240RLG	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 Specifications Brochure, BRD8011/D.

**This package is inherently Pb-Free.

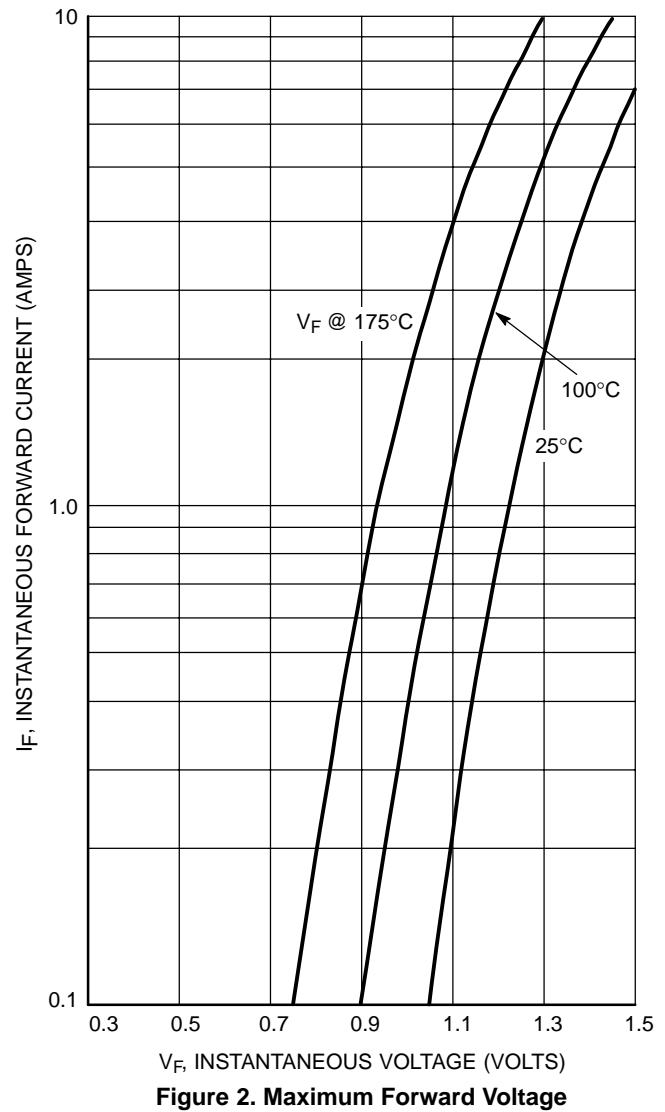
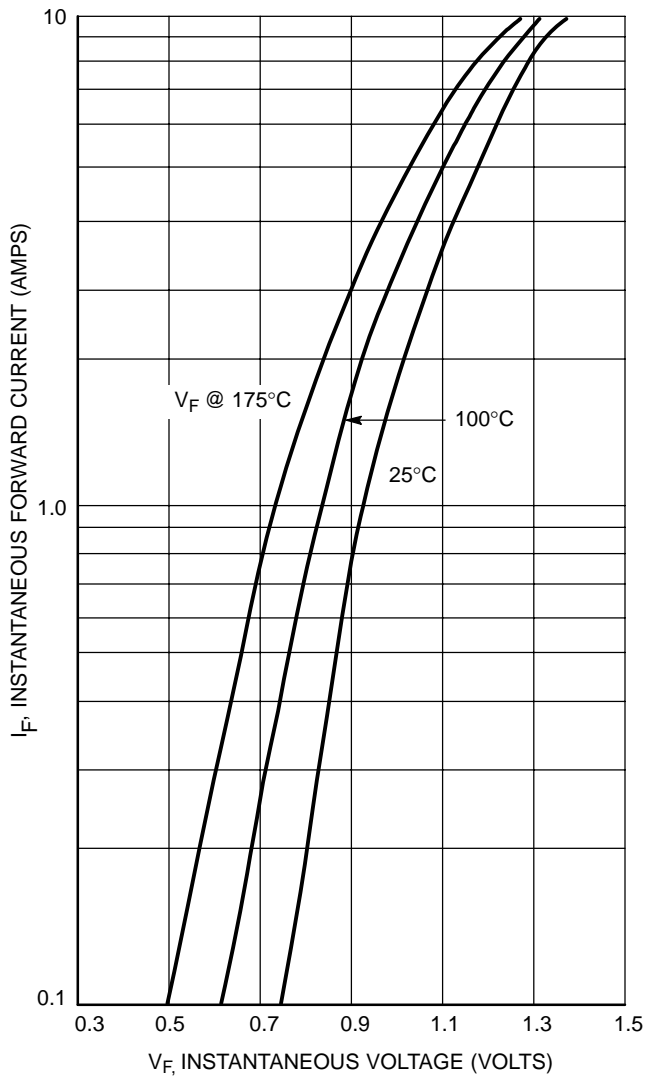
Preferred devices are recommended choices for future use and best overall value.

MUR240

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 2) ($I_F = 2.0$ Amp, $T_J = 150^\circ\text{C}$) ($I_F = 2.0$ Amp, $T_J = 25^\circ\text{C}$)	V_F	1.05 1.30	V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, $T_J = 150^\circ\text{C}$) (Rated dc Voltage, $T_J = 25^\circ\text{C}$)	I_R	150 5.0	μA
Maximum Reverse Recovery Time ($I_F = 1.0$ Amp, $di/dt = 50$ Amp/ μs)	t_{rr}	65	ns
Maximum Forward Recovery Time ($I_F = 1.0$ A, $di/dt = 100$ A/ μs)	t_{rr}	50	ns

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



MUR240

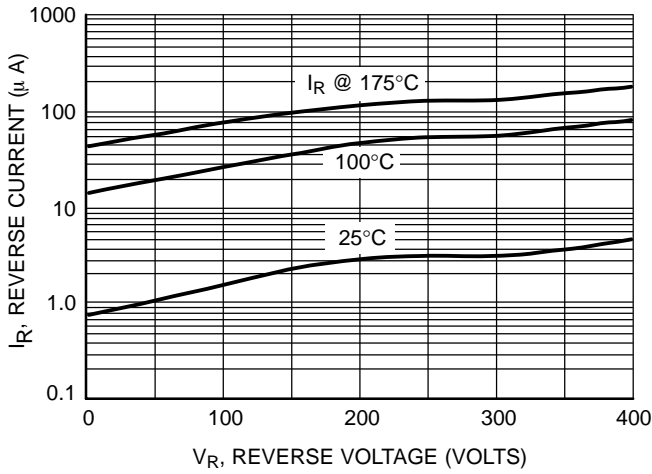


Figure 3. Maximum Reverse Current

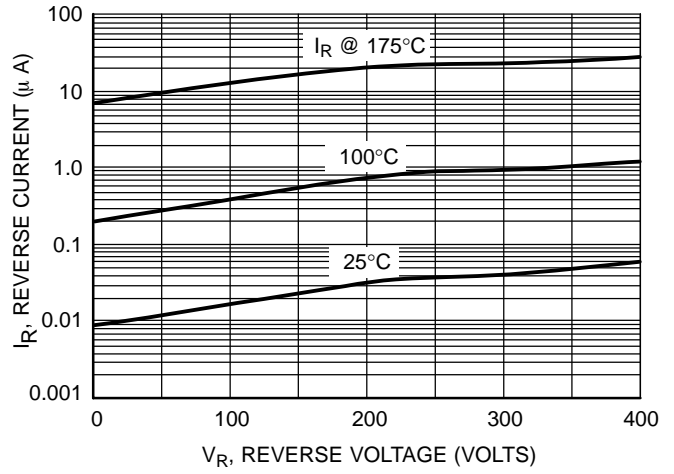


Figure 4. Typical Reverse Current

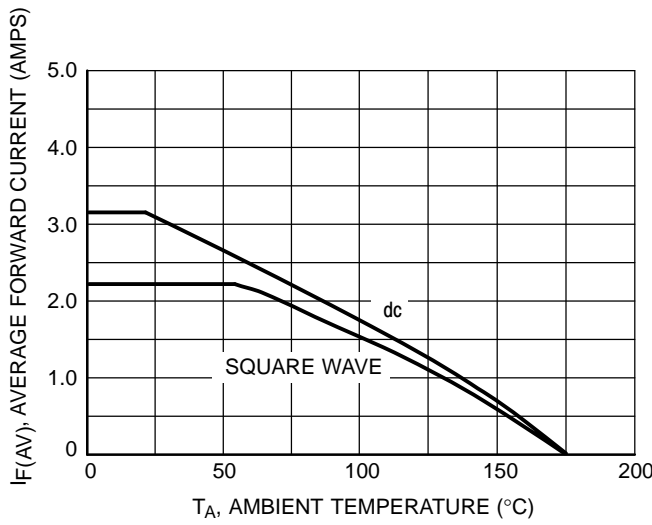


Figure 5. Current Derating

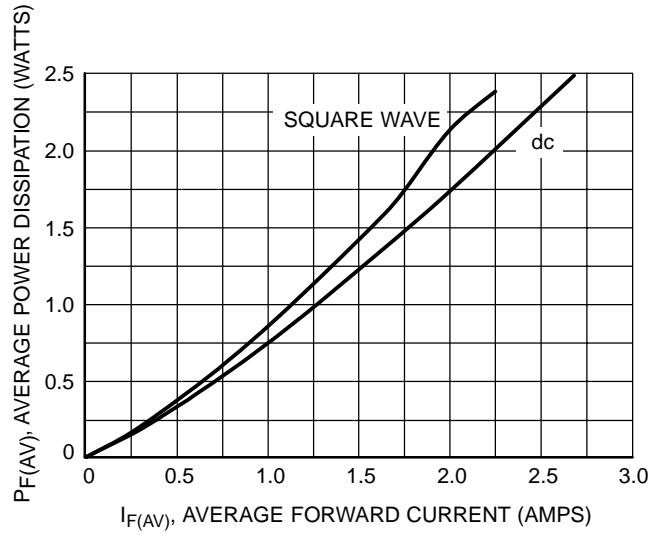


Figure 6. Power Dissipation

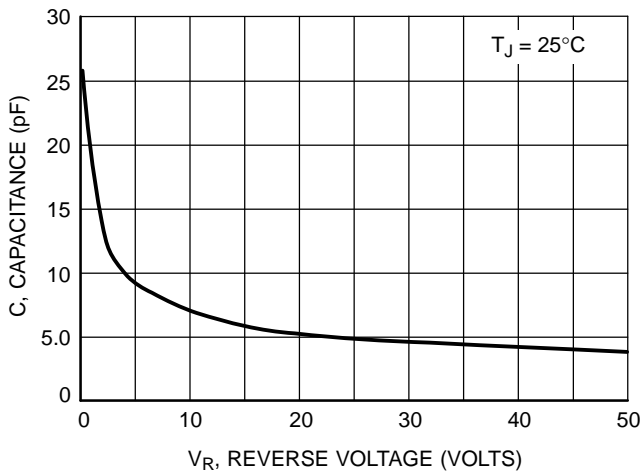


Figure 7. Typical Capacitance

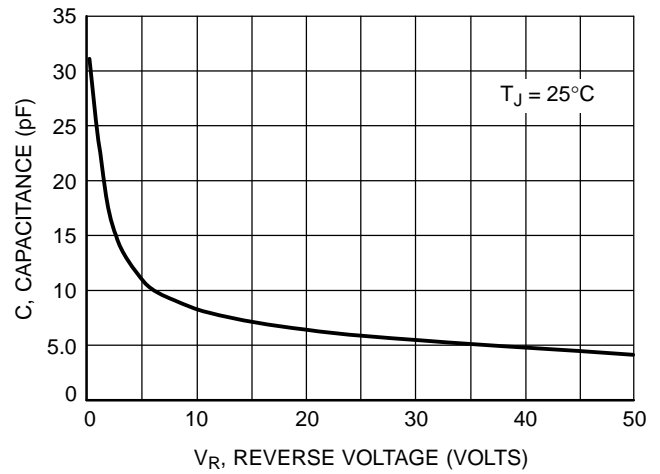


Figure 8. Maximum Capacitance

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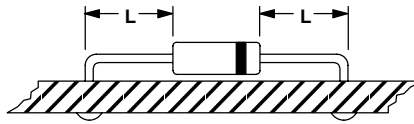
NOTE 3. – AMBIENT MOUNTING DATA

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.

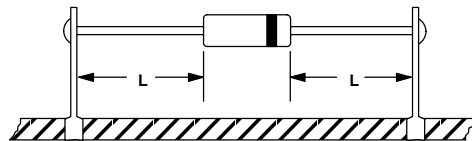
TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR

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

MOUNTING METHOD 1

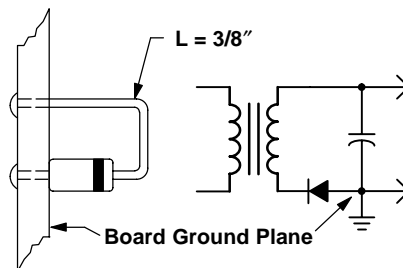


MOUNTING METHOD 2



Vector Pin Mounting

MOUNTING METHOD 3

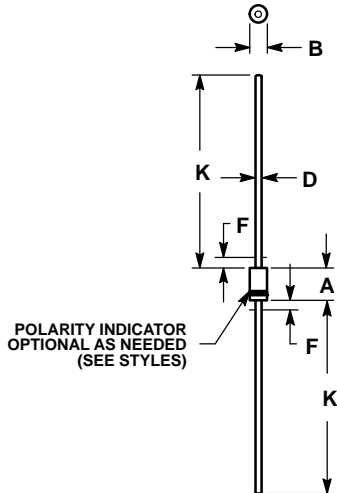


P.C. Board with 1-1/2" X 1-1/2" Copper Surface

MUR240

PACKAGE DIMENSIONS

AXIAL LEAD CASE 59-10 ISSUE U



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	----

STYLE 1:

1. CATHODE (POLARITY BAND)
2. ANODE

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