MUR220

Preferred Device

SWITCHMODE™ Power Rectifier

. . . designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

- Ultrafast 25 Nanosecond Recovery Times
- 175°C Operating Junction Temperature
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction

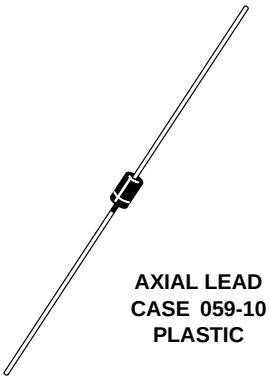
Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16″ from case
- Shipped in plastic bags, 1000 per bag
- Available Tape and Reeled, 5000 per reel, by adding a "RL" suffix to the part number
- Polarity: Cathode Indicated by Polarity Band
- Marking: MUR220

ON Semiconductor®

http://onsemi.com

ULTRAFAST RECTIFIER
2 AMPERES
200 VOLTS



AXIAL LEAD
CASE 059-10
PLASTIC

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200 —	Volts
Average Rectified Forward Current (Note 1) (Square Wave Mounting Method #3 Per Note 1)	$I_{F(AV)}$	2.0 @ T_A = 90°C	Amps
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I_{FSM}	35	Amps
Operating Junction Temperature and Storage Temperature Range	T_J, T_{stg}	- 65 to +175	°C

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

MARKING DIAGRAM

MUR220 = Device Code

ORDERING INFORMATION

Device	Package	Shipping
MUR220	Axial Lead	1000 Units/Bag
MUR220RL	Axial Lead	5000/Tape & Reel

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

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April, 2003 - Rev. 4

Publication Order Number:
MUR220/D

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	See Note 1	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 2) (I_F = 2.0 Amp, T_J = 150°C) (I_F = 2.0 Amp, T_J = 25°C)	v_F	 0.75 0.95	Volts
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, T_J = 150°C) (Rated dc Voltage, T_J = 25°C)	i_R	 50 2.0	μA
Maximum Reverse Recovery Time (I_F = 1.0 Amp, di/dt = 50 Amp/μs) (I_F = 0.5 Amp, I_R = 1.0 Amp, I_{REC} = 0.25 A)	t_{rr}	 35 25	ns
Maximum Forward Recovery Time (I_F = 1.0 A, di/dt = 100 A/μs, I_{REC} to 1.0 V)	t_{fr}	25	ns

2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

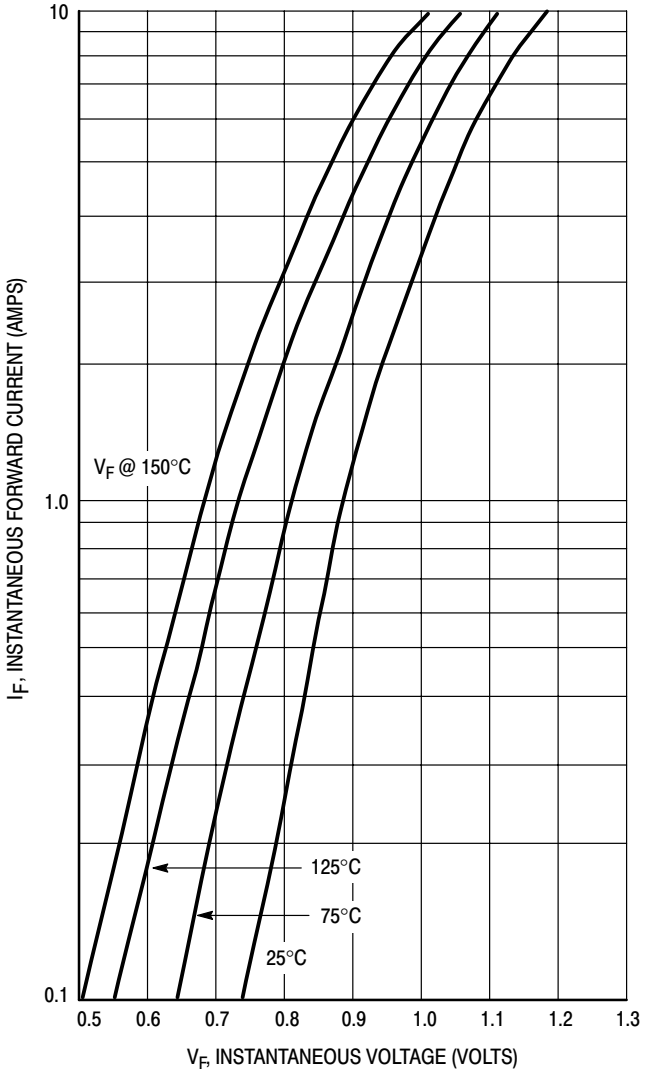


Figure 1. Maximum Forward Voltage

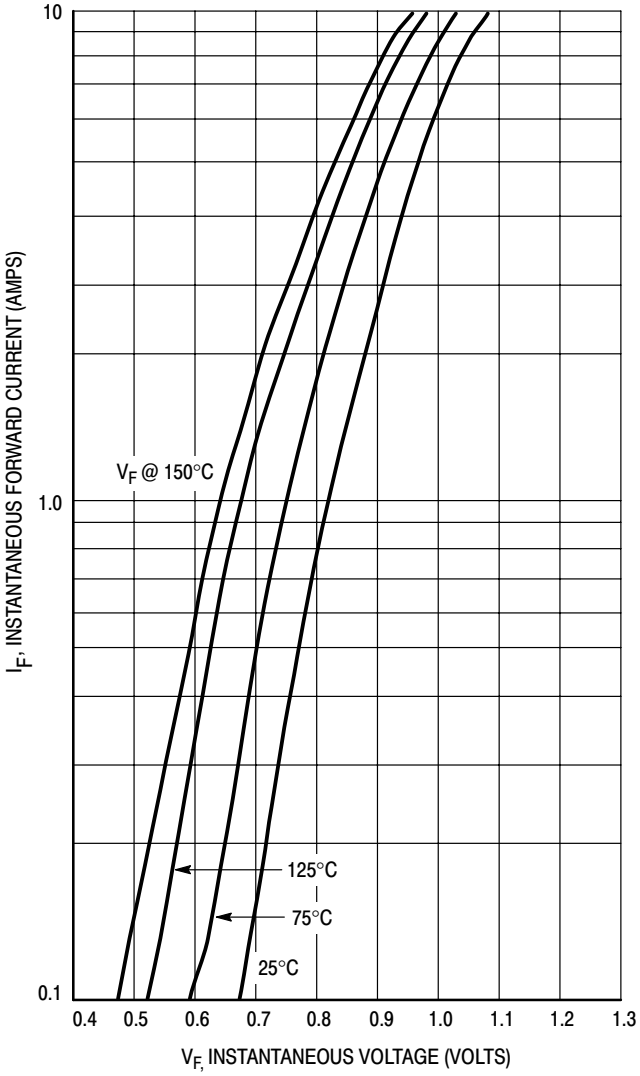


Figure 2. Typical Forward Voltage

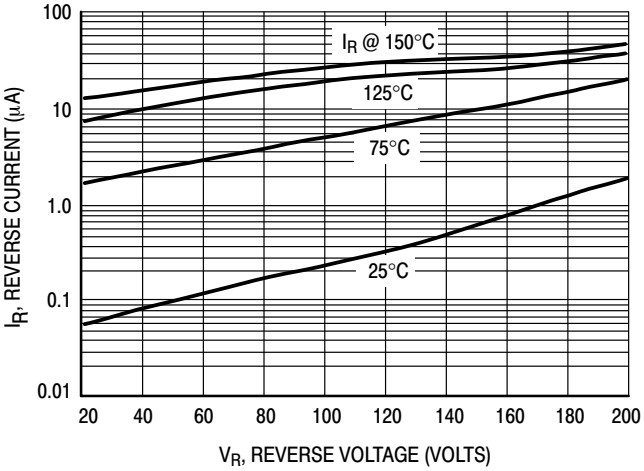


Figure 3. Maximum Reverse Current

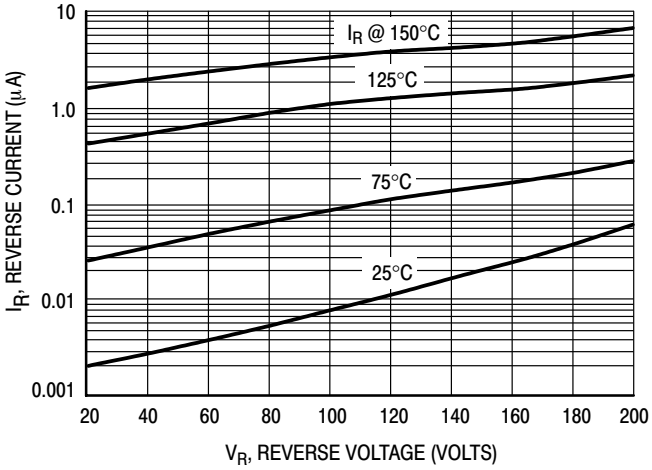


Figure 4. Typical Reverse Current

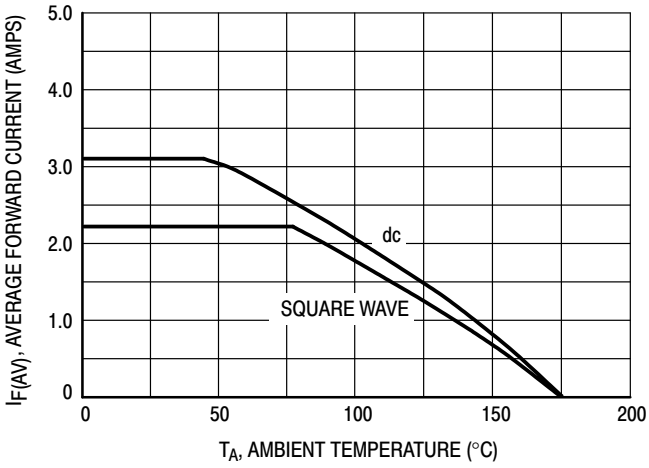


Figure 5. Current Derating

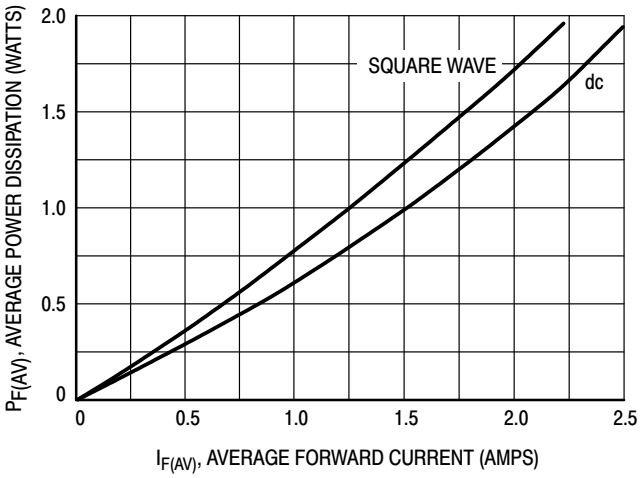


Figure 6. Power Dissipation

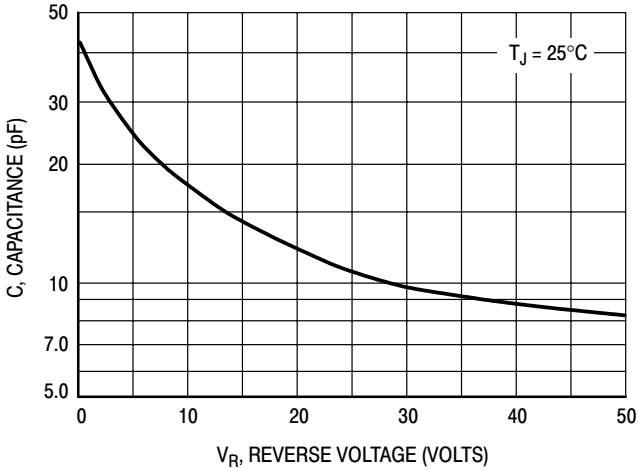


Figure 7. Typical Capacitance

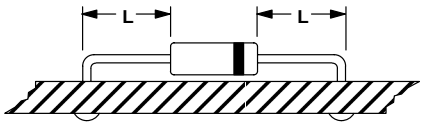
NOTE 1. - AMBIENT MOUNTING DATA

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.

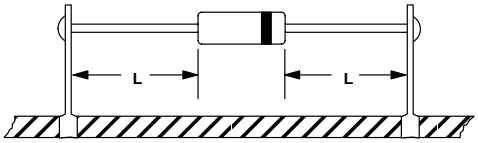
TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR

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

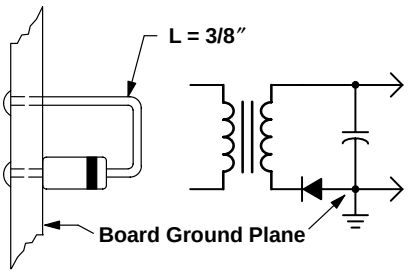


MOUNTING METHOD 2



Vector Pin Mounting

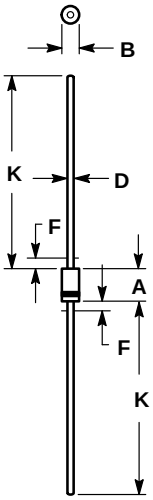
MOUNTING METHOD 3



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

PACKAGE DIMENSIONS

MINI MOSORB
CASE 59-10
ISSUE S



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 59–04 OBSOLETE, NEW STANDARD 59–09.
4. 59–03 OBSOLETE, NEW STANDARD 59–10.
5. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO–41 OUTLINE SHALL APPLY
6. POLARITY DENOTED BY CATHODE BAND.
7. 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	---

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