MUR2100E

Preferred Device

SWITCHMODE™ Power Rectifier

Ultrafast “E” Series with High Reverse Energy Capability

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

- 20 mjoules 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

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: MUR2100E

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	1000	Volts
Average Rectified Forward Current (Note 1.) (Square Wave Mounting Method #3 Per Note 3.)	$I_{F(AV)}$	2.0 @ T_A = 35°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%.

ON Semiconductor™

http://onsemi.com

ULTRAFAST RECTIFIER 2 AMPERES 1000 VOLTS

AXIAL LEAD CASE 059–04 PLASTIC

MARKING DIAGRAM

MUR2100E = Device Code

ORDERING INFORMATION

Device	Package	Shipping
MUR2100E	Axial Lead	1000 Units/Bag
MUR2100ERL	Axial Lead	5000/Tape & Reel

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

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	See Note 3.	°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	 1.75 2.20	Volts
Maximum Instantaneous Reverse Current (Note 2.) (Rated dc Voltage, T_J = 100°C) (Rated dc Voltage, T_J = 25°C)	i_R	 600 10	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}	 100 75	ns
Maximum Forward Recovery Time (I_F = 1.0 A, di/dt = 100 A/μs, I_{REC} to 1.0 V)	t_{fr}	75	ns
Controlled Avalanche Energy (See Test Circuit in Figure 6)	W_{AVAL}	10	mJ

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

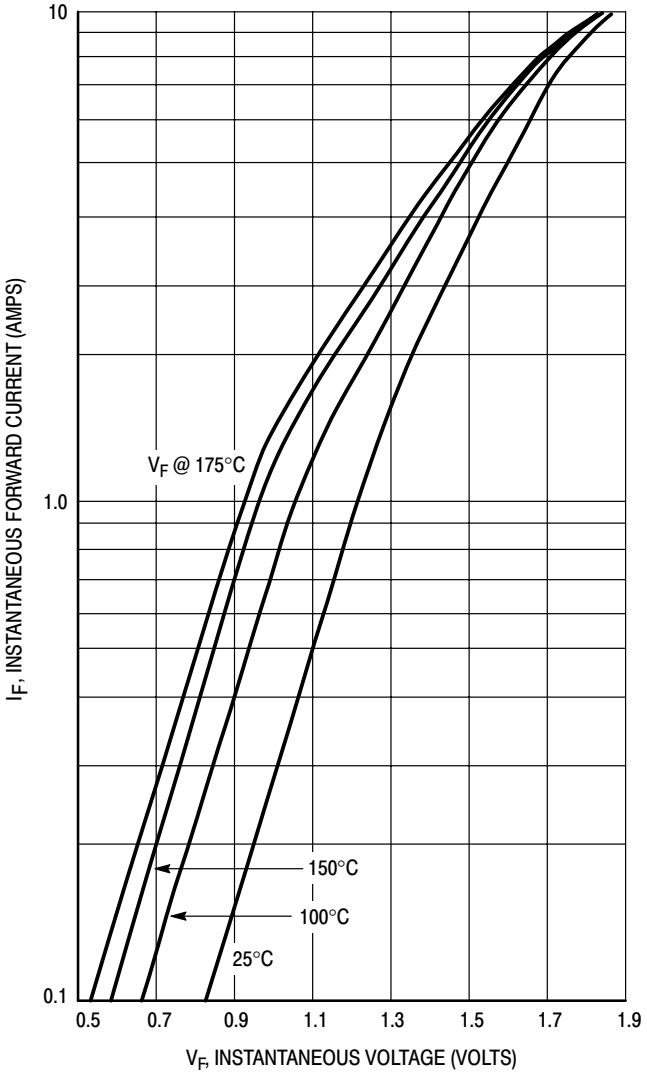


Figure 1. Maximum Forward Voltage

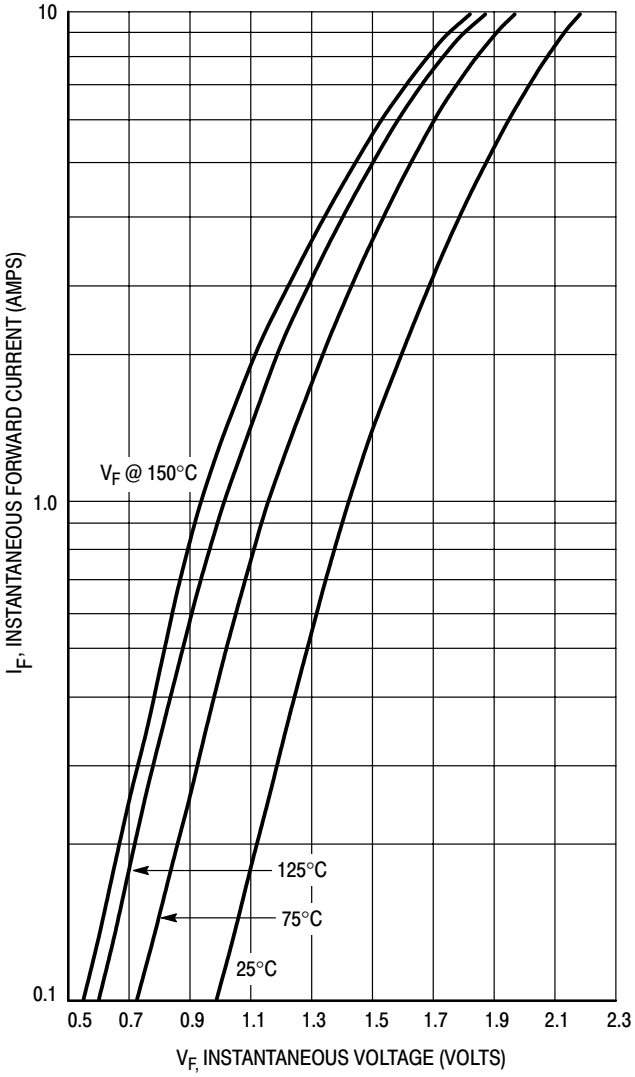


Figure 2. Typical Forward Voltage

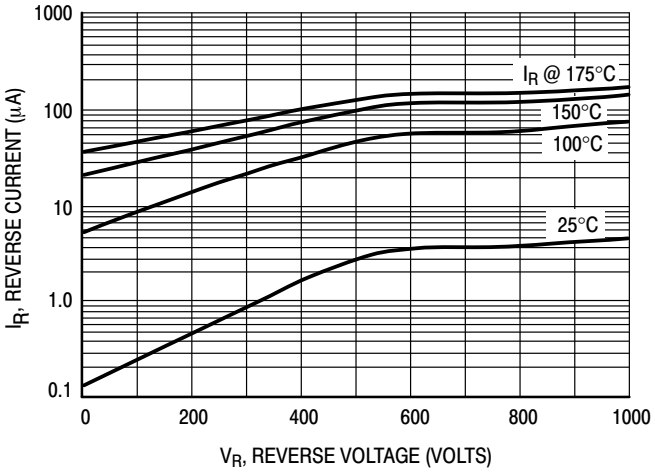


Figure 3. Maximum Reverse Current

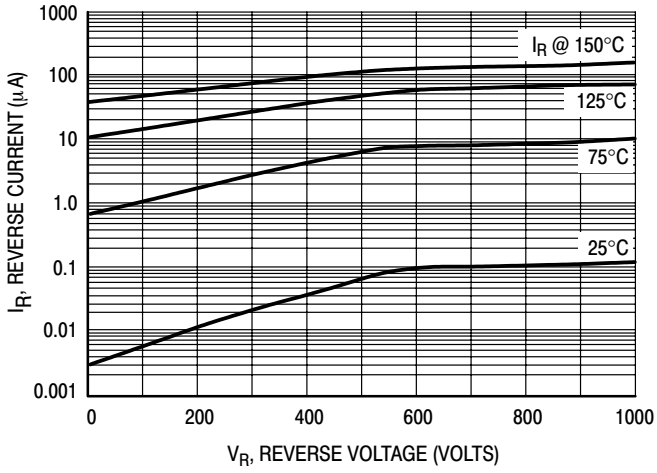


Figure 4. Typical Reverse Current

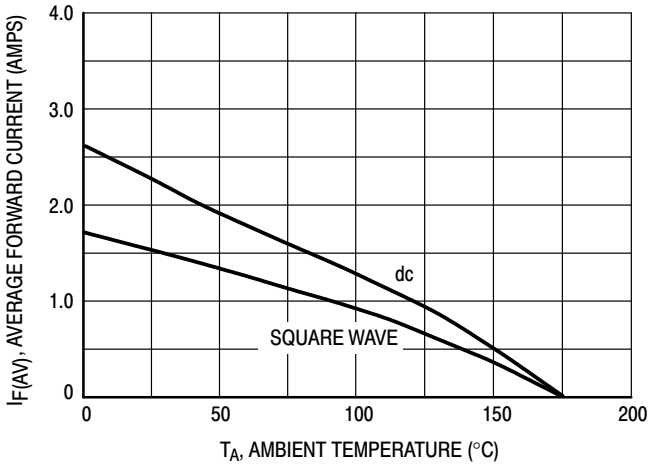


Figure 5. Current Derating

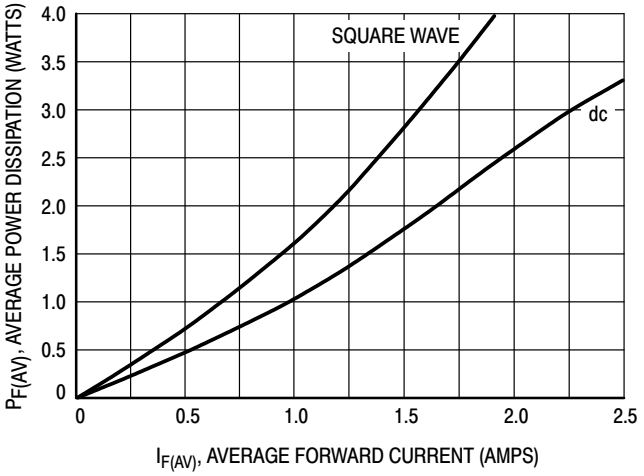


Figure 6. Power Dissipation

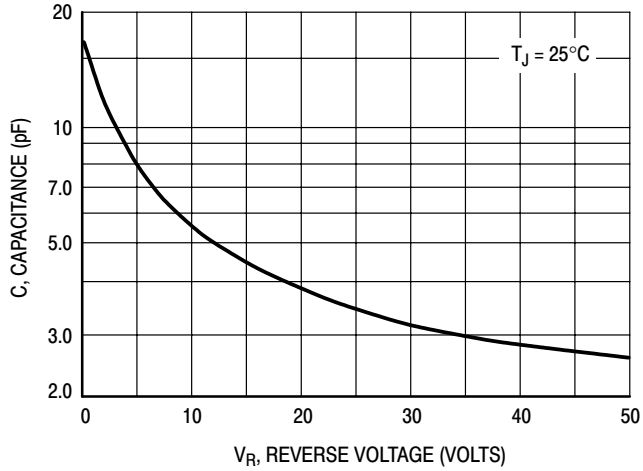


Figure 7. Typical Capacitance

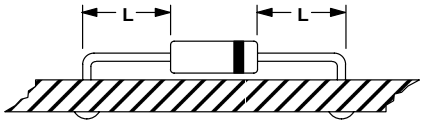
NOTE 3. — AMBIENT MOUNTING DATA

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.

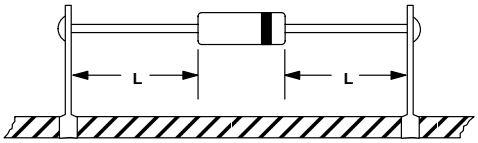
TYPICAL VALUES FOR $R_{\theta JA}$ IN STILL AIR

Mounting Method		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

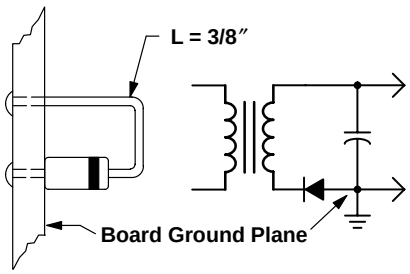


MOUNTING METHOD 2



Vector Pin Mounting

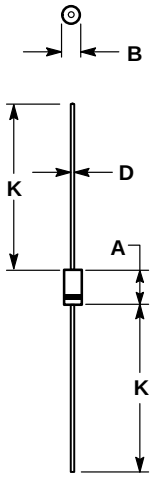
MOUNTING METHOD 3



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

PACKAGE DIMENSIONS

MINI MOSORB
CASE 59–04
ISSUE M



NOTES:
1. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO–41 OUTLINE SHALL APPLY.
2. POLARITY DENOTED BY CATHODE BAND.
3. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	5.97	6.60	0.235	0.260
B	2.79	3.05	0.110	0.120
D	0.76	0.86	0.030	0.034
K	27.94	---	1.100	---

Notes

Notes

SWITCHMODE is a trademark of Semiconductor Components Industries, LLC.

PUBLICATION ORDERING INFORMATION

NORTH AMERICA Literature Fulfillment:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 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: ONlit@hibbertco.com
Fax Response Line: 303–675–2167 or 800–344–3810 Toll Free USA/Canada

N. American Technical Support: 800–282–9855 Toll Free USA/Canada

EUROPE: LDC for ON Semiconductor – European Support
German Phone: (+1) 303–308–7140 (Mon–Fri 2:30pm to 7:00pm CET)
Email: ONlit–german@hibbertco.com
French Phone: (+1) 303–308–7141 (Mon–Fri 2:00pm to 7:00pm CET)
Email: ONlit–french@hibbertco.com
English Phone: (+1) 303–308–7142 (Mon–Fri 12:00pm to 5:00pm GMT)
Email: ONlit@hibbertco.com

EUROPEAN TOLL–FREE ACCESS*: 00–800–4422–3781
*Available from Germany, France, Italy, UK, Ireland

CENTRAL/SOUTH AMERICA:
Spanish Phone: 303–308–7143 (Mon–Fri 8:00am to 5:00pm MST)
Email: ONlit–spanish@hibbertco.com
Toll–Free from Mexico: Dial 01–800–288–2872 for Access – then Dial 866–297–9322

ASIA/PACIFIC: LDC for ON Semiconductor – Asia Support
Phone: 303–675–2121 (Tue–Fri 9:00am to 1:00pm, Hong Kong Time)
Toll Free from Hong Kong & Singapore:
001–800–4422–3781
Email: ONlit–asia@hibbertco.com

JAPAN: ON Semiconductor, Japan Customer Focus Center
4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–0031
Phone: 81–3–5740–2700
Email: r14525@onsemi.com

ON Semiconductor Website: http://onsemi.com

For additional information, please contact your local Sales Representative.