

## MUR180E, MUR1100E

### SWITCHMODE Power Rectifiers

#### Ultrafast "E" Series with High Reverse Energy Capability

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

#### Features

- 10 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
- Reverse Voltage to 1000 V
- These are Pb-Free Devices\*

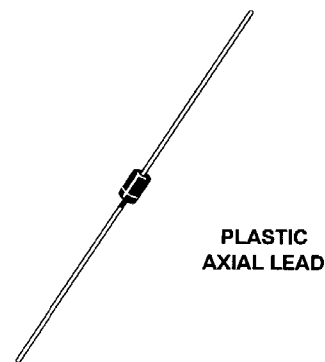
#### Mechanical Characteristics:

- 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
- 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
- Polarity: Cathode Indicated by Polarity Band

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	800 1000	V
Average Rectified Forward Current (Note 1) (Square Wave Mounting Method #3 Per Note 3)	$I_{F(AV)}$	1.0 @ $T_A = 95^\circ\text{C}$	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

#### ULTRAFAST RECTIFIERS 1.0 AMPERES, 800-1000 VOLTS

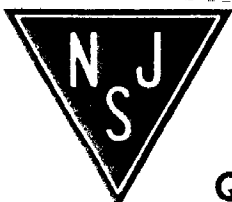


#### MARKING DIAGRAM



A = Assembly Location  
MUR1x0E = Device Code  
x 8 or 10  
Y = Year  
WW = Work Week

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



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### THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	See Note 3	$^{\circ}\text{C/W}$

### ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 2) ( $I_F = 1.0 \text{ A}$ , $T_J = 150^{\circ}\text{C}$ ) ( $I_F = 1.0 \text{ A}$ , $T_J = 25^{\circ}\text{C}$ )	$V_F$	1.50 1.75	V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, $T_J = 100^{\circ}\text{C}$ ) (Rated dc Voltage, $T_J = 25^{\circ}\text{C}$ )	$I_R$	600 10	$\mu\text{A}$
Maximum Reverse Recovery Time ( $I_F = 1.0 \text{ A}$ , $di/dt = 50 \text{ Amp}/\mu\text{s}$ ) ( $I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ Amp}$ , $I_{REC} = 0.25 \text{ A}$ )	$t_{rr}$	100 75	ns
Maximum Forward Recovery Time ( $I_F = 1.0 \text{ A}$ , $di/dt = 100 \text{ Amp}/\mu\text{s}$ , Recovery to 1.0 V)	$t_{fr}$	75	ns
Controlled Avalanche Energy (See Test Circuit in Figure 6)	$W_{\text{AVAL}}$	10	mJ
Typical Peak Reverse Recovery Current ( $I_F = 1.0 \text{ A}$ , $di/dt = 50 \text{ A}/\mu\text{s}$ )	$I_{RM}$	1.7	A

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