

# MUR820 - MUR860

## 8.0 AMPS. Glass Passivated Super Fast Rectifiers

### TO-220AC

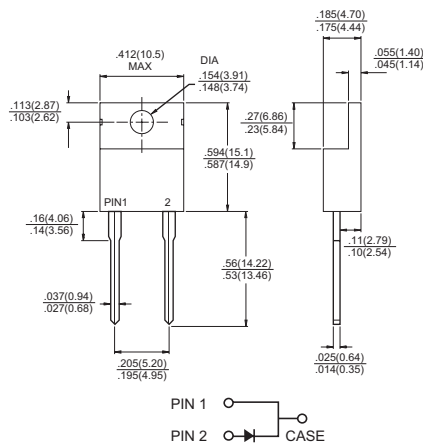


## Features

- ✧ High efficiency, Low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ For use in low voltage, high frequency inverter, free wheeling, and polarity protection application.

## Mechanical Data

- ✧ Cases: TO-220AC molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.25", (6.35mm) from case.
- ✧ Weight: 2.24 grams



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number   | Symbol          | MUR820      | MUR840 | MUR860 | Units                          |
|---|-----------------|-------------|--------|--------|--------------------------------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$       | 200         | 400    | 600    | V                              |
| Maximum RMS Voltage   | $V_{RMS}$       | 140         | 280    | 420    | V                              |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 200         | 400    | 600    | V                              |
| Maximum Average Forward Rectified Current<br>.375"(9.5mm) Lead Length (See Fig. 1)  | $I_{(AV)}$      | 8.0         |        |        | A                              |
| Peak Forward Surge Current, 8.3 ms Single<br>Half Sine-wave Superimposed on Rated Load<br>(JEDEC method )                 | $I_{FSM}$       | 100         |        |        | A                              |
| Maximum Instantaneous Forward Voltage<br>@ 8.0A   | $V_F$           | 0.975       | 1.30   | 1.7    | V                              |
| Maximum DC Reverse Current @ $T_C=25^\circ\text{C}$<br>at Rated DC Blocking Voltage @ $T_C=125^\circ\text{C}$<br>(Note 4) | $I_R$           | 5.0<br>250  |        |        | $\mu\text{A}$<br>$\mu\text{A}$ |
| Maximum Reverse Recovery Time ( Note 2 )  | $T_{rr}$        | 25          | 50     |        | nS                             |
| Maximum Forward Recovery Time TFR<br>( $I_F=1.0\text{A}$ , $di/dt = 50\text{A}/\mu\text{S}$ ),                            | $T_{fr}$        | 35          | 50     |        | nS                             |
| Typical Thermal Resistance (Note 3)   | $R_{\theta JC}$ | 3.0         | 2.0    |        | $^\circ\text{C}/\text{W}$      |
| Operating Temperature Range   | $T_J$           | -65 to +175 |        |        | $^\circ\text{C}$               |
| Storage Temperature Range   | $T_{STG}$       | -65 to +175 |        |        | $^\circ\text{C}$               |

- Notes:
1. Measured at 1 MHz and Applied Reverse Voltage of 4.0 Volts D.C.
  2. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  3. Thermal Resistance from Junction to Case, Mounted on Heatsink Size of 2" x 3" x 0.25" Al-Plate.
  4. Pulse lest:  $t_p = 300 \mu\text{s}$ , Duty Cycle < 2%.

## RATINGS AND CHARACTERISTIC CURVES (MUR820 THRU MUR860)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

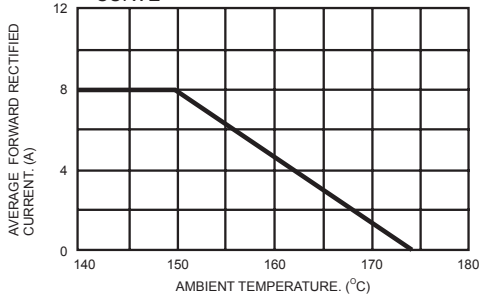


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

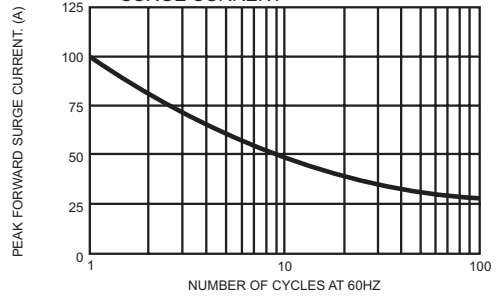


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

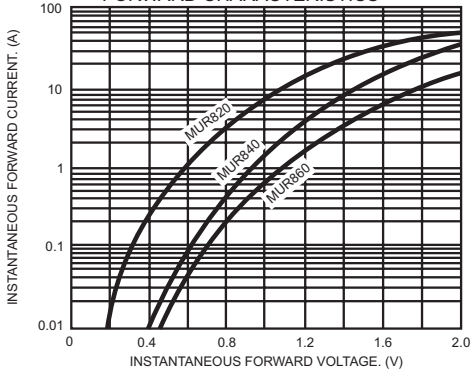


FIG.4- TYPICAL REVERSE CHARACTERISTICS

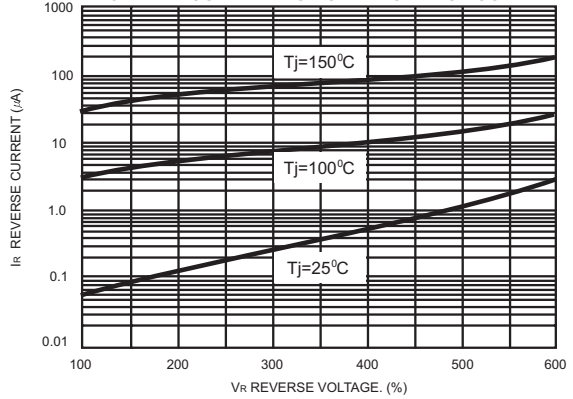


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

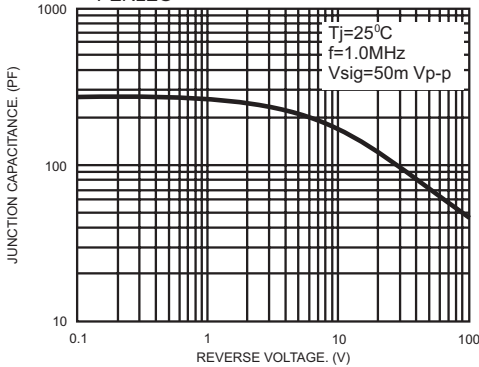
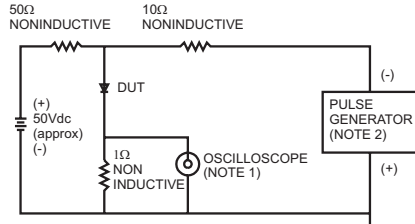


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance= 50 ohms

