

# MURS205T3, MURS210T3

Preferred Device

## Surface Mount Ultrafast Power Rectifiers

Ideally suited for high voltage, high frequency rectification, or as free wheeling and protection diodes in surface mount applications where compact size and weight are critical to the system.

### Features

- Small Compact Surface Mountable Package with J-Bend Leads
- Rectangular Package for Automated Handling
- High Temperature Glass Passivated Junction
- Low Forward Voltage Drop (0.74 V Max @ 2.0 A,  $T_J = 150^\circ\text{C}$ )
- Pb-Free Packages are Available

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 95 mg (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes:  $260^\circ\text{C}$  Max. for 10 Seconds
- Polarity: Polarity Band Indicates Cathode Lead

### MAXIMUM RATINGS

| Rating   | Symbol                          | Value       | Unit             |
|--|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                         | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50<br>100   | V                |
| Average Rectified Forward Current<br>@ $T_L = 150^\circ\text{C}$<br>@ $T_L = 125^\circ\text{C}$                | $I_{F(AV)}$                     | 1.0<br>2.0  | A                |
| Non-Repetitive Peak Surge Current<br>(Surge Applied at Rated Load Conditions<br>Halfwave, Single Phase, 60 Hz) | $I_{FSM}$                       | 50          | A                |
| Operating Junction Temperature   | $T_J$                           | -60 to +175 | $^\circ\text{C}$ |

### THERMAL CHARACTERISTICS

| Characteristic   | Symbol          | Max | Unit               |
|--|-----------------|-----|--------------------|
| Thermal Resistance, Junction-to-Lead<br>( $T_L = 25^\circ\text{C}$ ) | $R_{\theta JL}$ | 13  | $^\circ\text{C/W}$ |

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.



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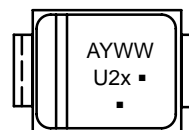
<http://onsemi.com>

## ULTRAFAST RECTIFIERS 2 AMPERES, 50–100 VOLTS



SMB  
CASE 403A

### MARKING DIAGRAM



A = Assembly Location  
Y = Year  
WW = Work Week  
U2x = Device Code  
x = A for MURS205T3  
= B for MURS210T3

■ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device     | Package          | Shipping†        |
|------------|------------------|------------------|
| MURS205T3  | SMB              | 2500 Tape & Reel |
| MURS205T3G | SMB<br>(Pb-Free) | 2500 Tape & Reel |
| MURS210T3  | SMB              | 2500 Tape & Reel |
| MURS210T3G | SMB<br>(Pb-Free) | 2500 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.

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

# MURS205T3, MURS210T3

## ELECTRICAL CHARACTERISTICS

| Characteristic  | Symbol   | Value        | Unit          |
|---|----------|--------------|---------------|
| Maximum Instantaneous Forward Voltage (Note 1)<br>( $i_F = 2.0$ A, $T_J = 25^\circ\text{C}$ )<br>( $i_F = 2.0$ A, $T_J = 150^\circ\text{C}$ )     | $V_F$    | 0.94<br>0.74 | V             |
| Maximum Instantaneous Reverse Current (Note 1)<br>(Rated dc Voltage, $T_J = 25^\circ\text{C}$ )<br>(Rated dc Voltage, $T_J = 150^\circ\text{C}$ ) | $i_R$    | 2.0<br>50    | $\mu\text{A}$ |
| Maximum Reverse Recovery Time<br>( $i_F = 1.0$ A, $di/dt = 50$ A/ $\mu\text{s}$ )<br>( $i_F = 0.5$ A, $i_R = 1.0$ A, $I_R$ to 0.25 A)             | $t_{rr}$ | 30<br>20     | ns            |
| Maximum Forward Recovery Time<br>( $i_F = 1.0$ A, $di/dt = 100$ A/ $\mu\text{s}$ , Rec. to 1.0 V)   | $t_{fr}$ | 20           | ns            |

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

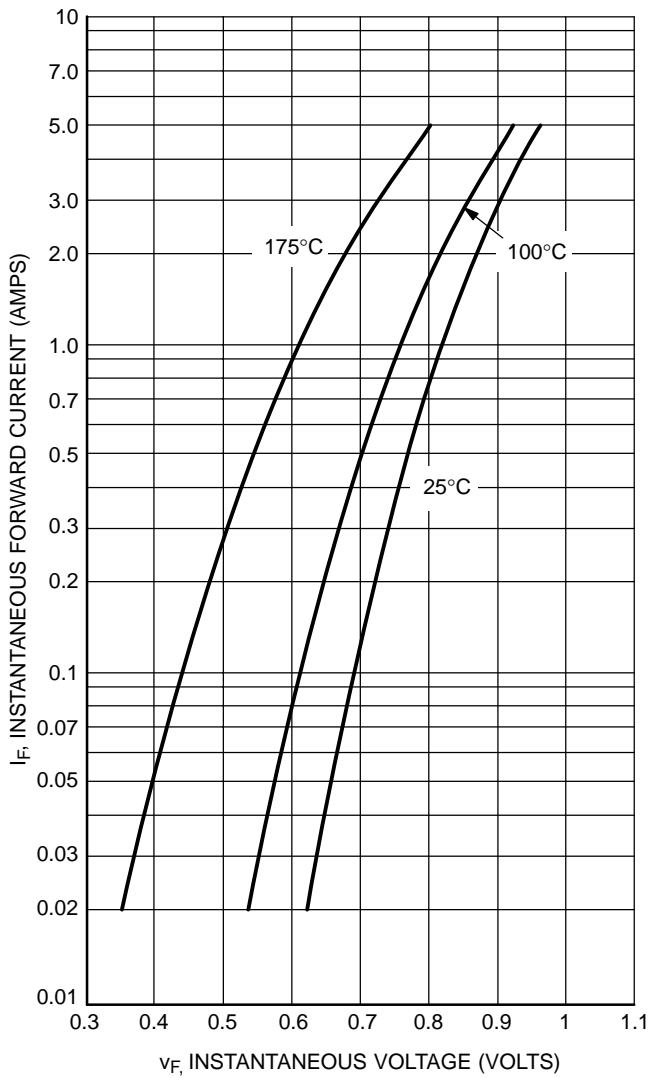


Figure 1. Typical Forward Voltage

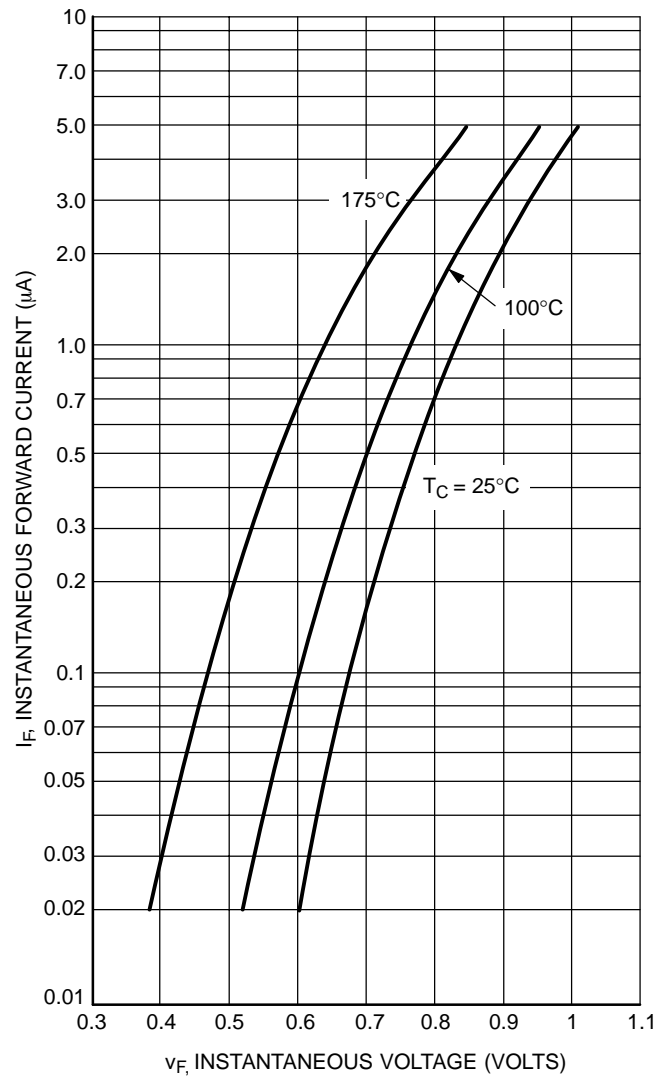


Figure 2. Maximum Forward Voltage

# MURS205T3, MURS210T3

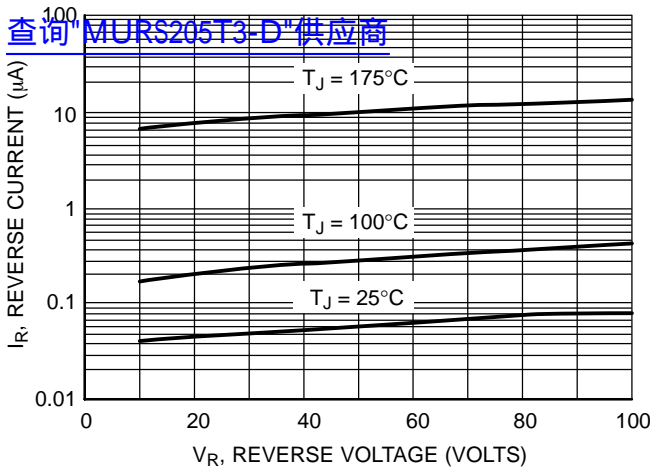


Figure 3. Typical Reverse Current\*

\* The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if applied  $V_R$  is sufficiently below rated  $V_R$ .

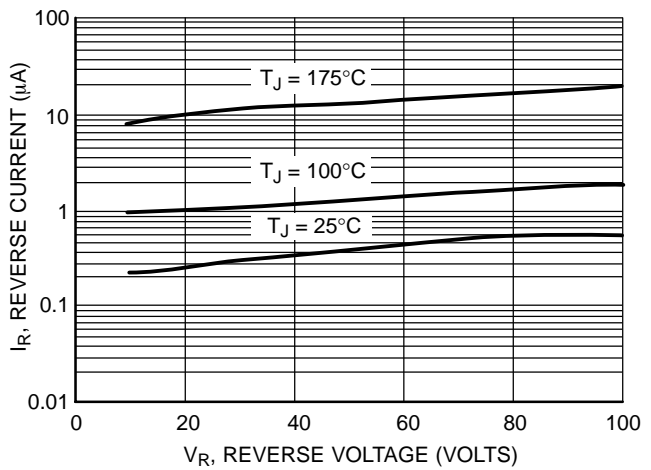


Figure 4. Maximum Reverse Current\*

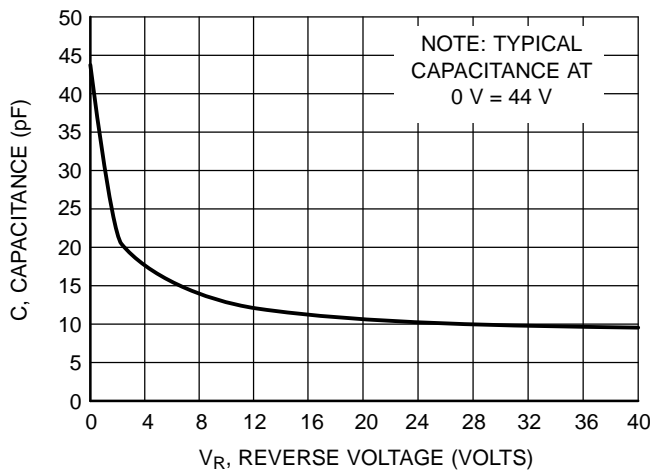


Figure 5. Typical Capacitance

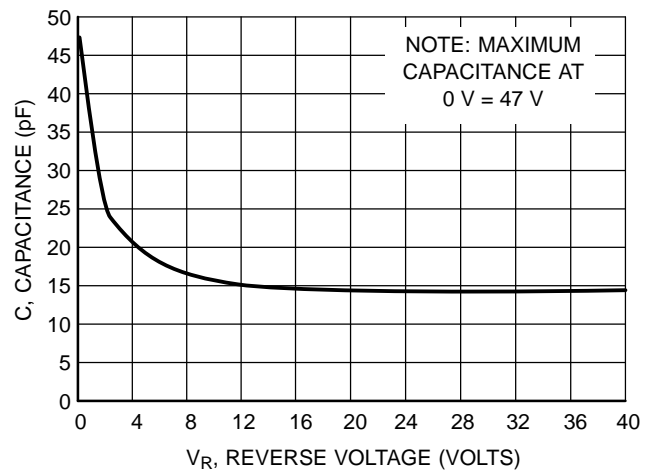


Figure 6. Maximum Capacitance

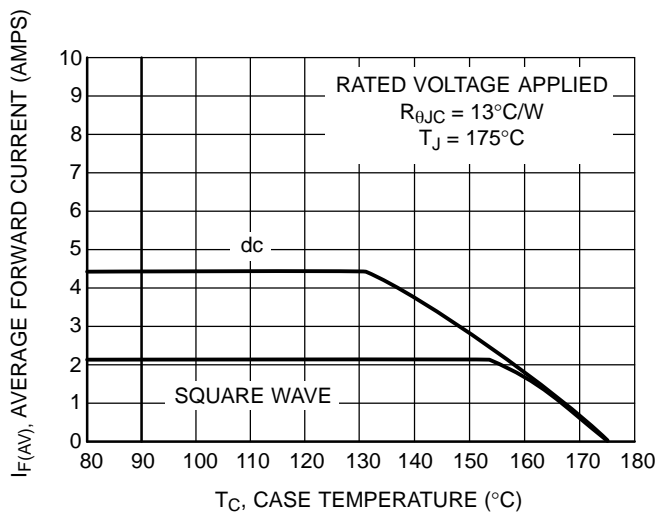


Figure 7. Current Derating, Case

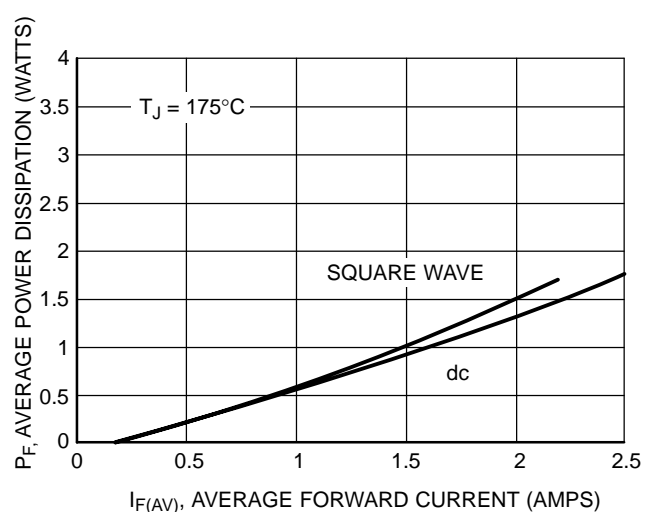


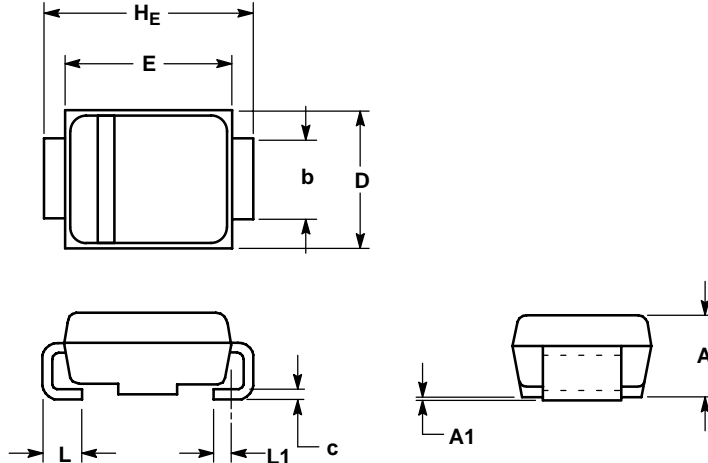
Figure 8. Power Dissipation

# MURS205T3, MURS210T3

[查询"MURS205T3-D"供应商](#)

## PACKAGE DIMENSIONS

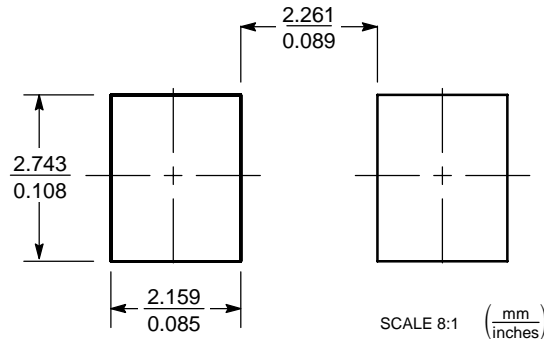
**SMB**  
CASE 403A-03  
ISSUE F



NOTES:  
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
2. CONTROLLING DIMENSION: INCH.  
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

| DIM | MILLIMETERS |      |      | INCHES    |       |       |
|-----|-------------|------|------|-----------|-------|-------|
|     | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A   | 1.90        | 2.13 | 2.45 | 0.075     | 0.084 | 0.096 |
| A1  | 0.05        | 0.10 | 0.20 | 0.002     | 0.004 | 0.008 |
| b   | 1.96        | 2.03 | 2.20 | 0.077     | 0.080 | 0.087 |
| c   | 0.15        | 0.23 | 0.31 | 0.006     | 0.009 | 0.012 |
| D   | 3.30        | 3.56 | 3.95 | 0.130     | 0.140 | 0.156 |
| E   | 4.06        | 4.32 | 4.60 | 0.160     | 0.170 | 0.181 |
| HE  | 5.21        | 5.44 | 5.60 | 0.205     | 0.214 | 0.220 |
| L   | 0.76        | 1.02 | 1.60 | 0.030     | 0.040 | 0.063 |
| L1  | 0.51 REF    |      |      | 0.020 REF |       |       |

## SOLDERING FOOTPRINT\*



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

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