

MURS230T3, MURS240T3

Preferred Devices

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 (0.95 Volts 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°C Max. for 10 Seconds
- Polarity: Polarity Band Indicates Cathode Lead

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 300 400 | V |
| Average Rectified Forward Current @ $T_L = 150^\circ\text{C}$ @ $T_L = 125^\circ\text{C}$ | $I_{F(AV)}$ | 1.0 2.0 | A |
| Non-Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz) | I_{FSM} | 35 | A |
| Operating Junction Temperature Range | T_J | -65 to +175 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| Rating | Symbol | Max | Unit |
|--|-----------------|-----|--------------------|
| Thermal Resistance, Junction-to-Lead ($T_L = 25^\circ\text{C}$) | $R_{\theta JL}$ | 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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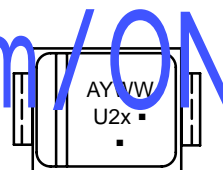
<http://onsemi.com>

ULTRAFAST RECTIFIERS 2 AMPERES, 300–400 VOLTS



SMB
CASE 403A

MARKING DIAGRAM



- A = Assembly Location
- Y = Year
- WW = Work Week
- U2x = Device Code
x = F for MURS230T3
= G for MURS240T3
- = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|------------|------------------|------------------|
| MURS230T3 | SMB | 2500 Tape & Reel |
| MURS230T3G | SMB (Pb-Free) | 2500 Tape & Reel |
| MURS240T3 | SMB | 2500 Tape & Reel |
| MURS240T3G | SMB (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.

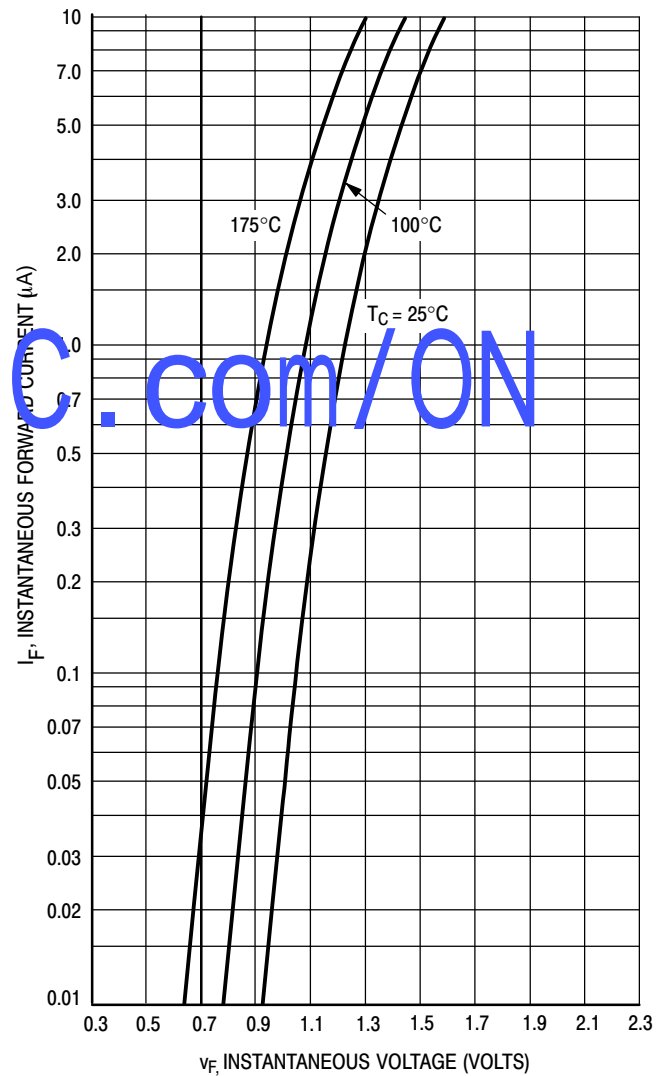
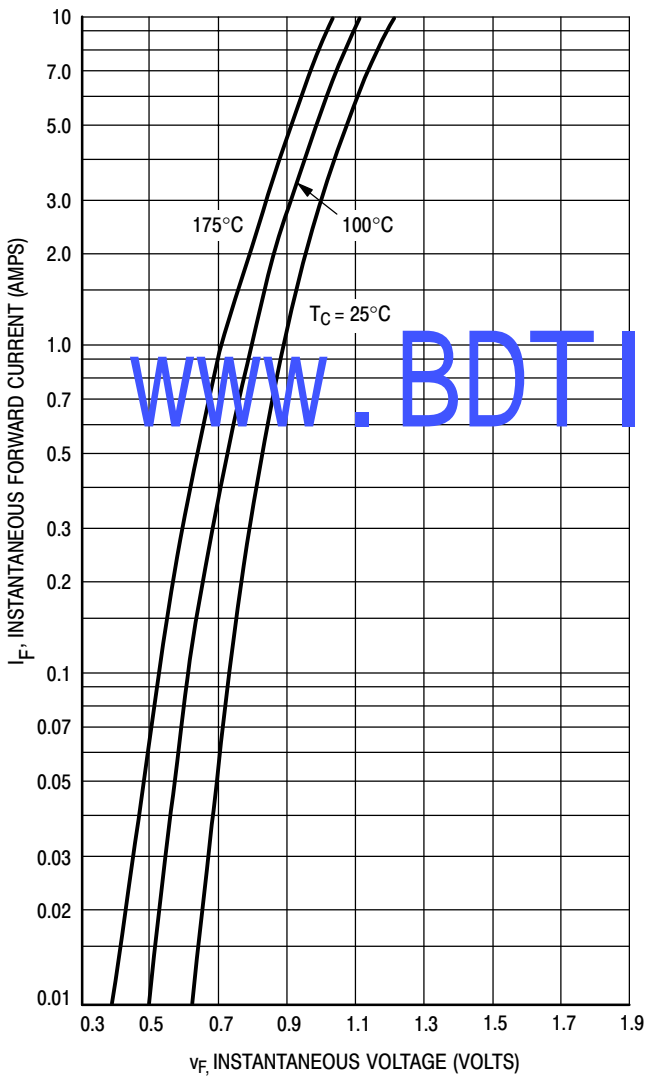
Preferred devices are recommended choices for future use and best overall value.

MURS230T3, MURS240T3

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|----------|--------------|---------------|
| Maximum Instantaneous Forward Voltage (Note 1) ($i_F = 2.0\text{ A}$, $T_J = 25^\circ\text{C}$) ($i_F = 2.0\text{ A}$, $T_J = 150^\circ\text{C}$) | v_F | 1.30 1.05 | V |
| Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, $T_J = 25^\circ\text{C}$) (Rated DC Voltage, $T_J = 150^\circ\text{C}$) | i_R | 5.0 150 | μA |
| Maximum Reverse Recovery Time ($i_F = 1.0\text{ A}$, $di/dt = 50\text{ A}/\mu\text{s}$) ($i_F = 0.5\text{ A}$, $i_R = 1.0\text{ A}$, I_R to 0.25 A) | t_{rr} | 65 50 | ns |
| Maximum Forward Recovery Time ($i_F = 1.0\text{ A}$, $di/dt = 100\text{ A}/\mu\text{s}$, Rec. to 1.0 V) | t_{fr} | 50 | ns |

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.



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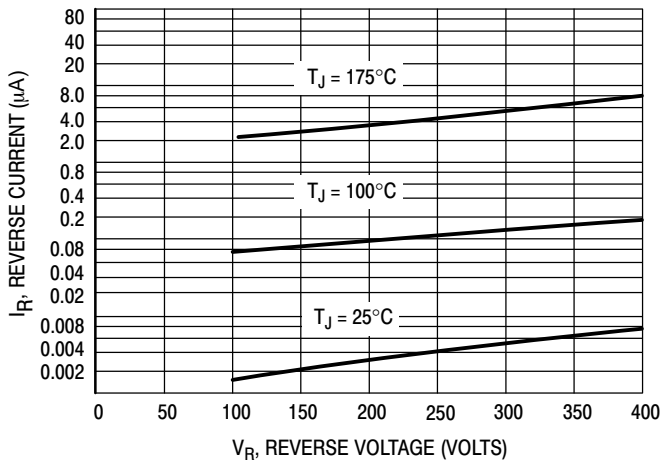


Figure 3. Typical Reverse Current*

* 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 .

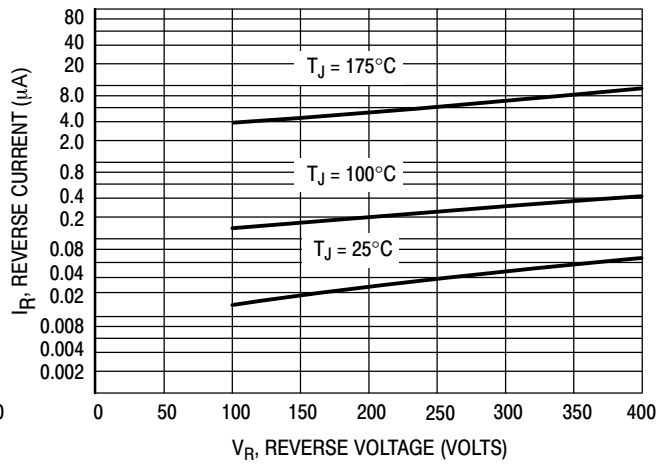


Figure 4. Maximum Reverse Current*

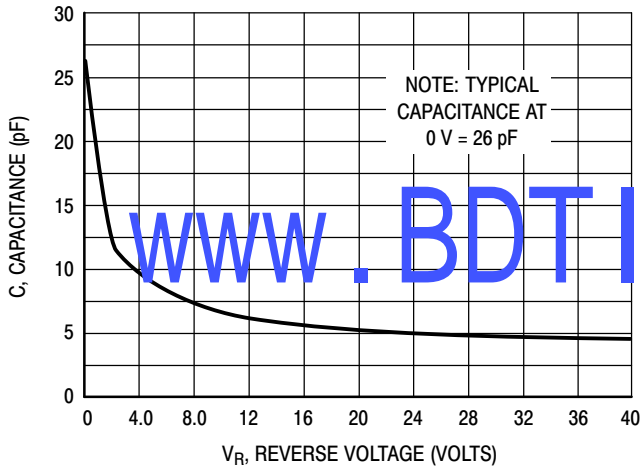


Figure 5. Typical Capacitance

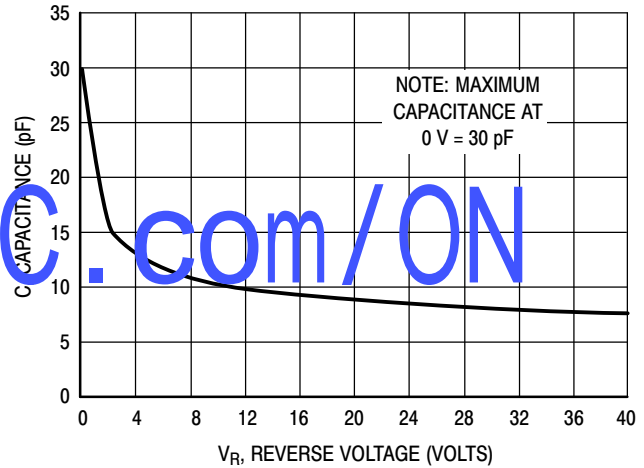


Figure 6. Maximum Capacitance

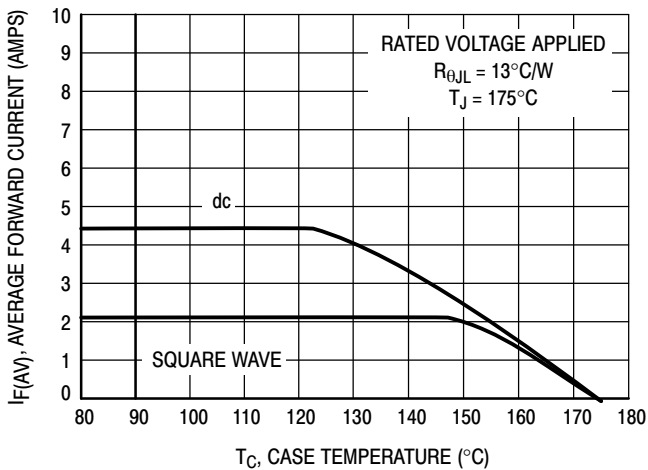


Figure 7. Current Derating, Case

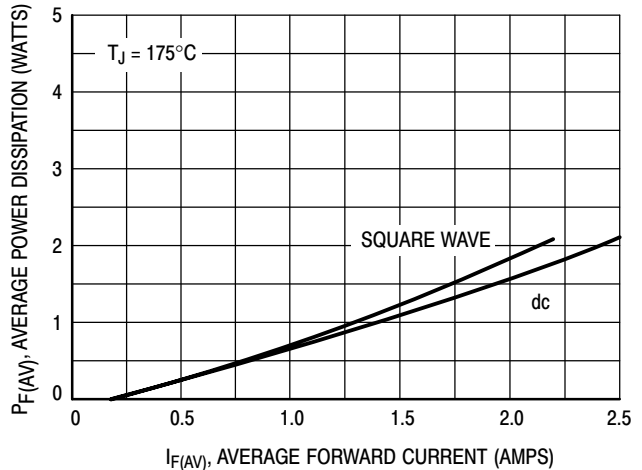
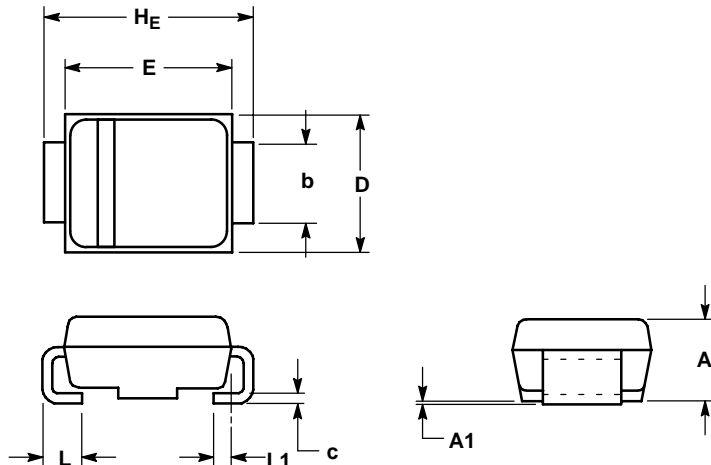


Figure 8. Power Dissipation

MURS230T3, MURS240T3

PACKAGE DIMENSIONS

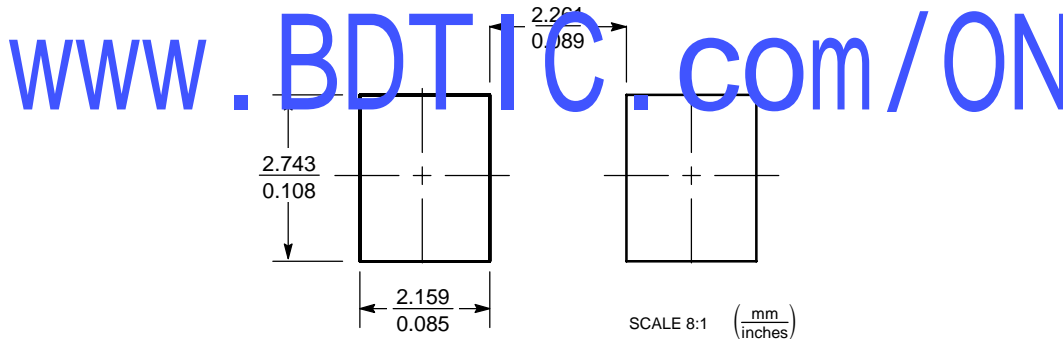
SMB
CASE 403A-03
ISSUE F



- 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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