

# MURS320T3, MURS340T3, MURS360T3

Preferred Devices

## Surface Mount Ultrafast Power Rectifiers

... employing state-of-the-art epitaxial construction with oxide passivation and metal overlay contact. 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.

- Small Compact Surface Mountable Package with J-Bend Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Low Forward Voltage Drop  
(0.71 to 1.05 Volts Max @ 3.0 A,  $T_J = 150^\circ\text{C}$ )

### Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 217 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
- Shipped in 16 mm Tape and Reel, 2500 units per reel
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- Marking: U3D, U3G, U3J

### MAXIMUM RATINGS

Please See the Table on the Following Page



ON Semiconductor™

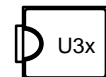
<http://onsemi.com>

**ULTRAFAST  
RECTIFIERS  
3.0 AMPERES  
200–600 VOLTS**



**SMC  
CASE 403  
PLASTIC**

### MARKING DIAGRAM



U3x = Device Code  
x = D, G, or J

### ORDERING INFORMATION

Device	Package	Shipping
MURS320T3	SMC	2500/Tape & Reel
MURS340T3	SMC	2500/Tape & Reel
MURS360T3	SMC	2500/Tape & Reel

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

# MURS320T3, MURS340T3, MURS360T3

## MAXIMUM RATINGS

Rating	Symbol	MURS320T3	MURS340T3	MURS360T3	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	400	600	Volts
Average Rectified Forward Current	$I_{F(AV)}$	3.0 @ $T_L = 140^\circ\text{C}$ 4.0 @ $T_L = 130^\circ\text{C}$	3.0 @ $T_L = 130^\circ\text{C}$ 4.0 @ $T_L = 115^\circ\text{C}$	3.0 @ $T_L = 130^\circ\text{C}$ 4.0 @ $T_L = 115^\circ\text{C}$	Amps
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	75			Amps
Operating Junction Temperature	$T_J$	-65 to +175			$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Thermal Resistance, Junction to Lead	$R_{\theta JL}$	11	$^\circ\text{C/W}$
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## ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1.) ( $i_F = 3.0\text{ A}$ , $T_J = 25^\circ\text{C}$ ) ( $i_F = 4.0\text{ A}$ , $T_J = 25^\circ\text{C}$ ) ( $i_F = 3.0\text{ A}$ , $T_J = 150^\circ\text{C}$ )	$V_F$	0.875 0.89 0.71	1.25 1.28 1.05	1.25 1.28 1.05	Volts
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 15	10 250	10 250	$\mu\text{A}$
Maximum Reverse Recovery Time ( $i_F = 1.0\text{ A}$ , $di/dt = 50\text{ A}/\mu\text{s}$ ) ( $i_F = 0.5\text{ A}$ , $i_R = 1.0\text{ A}$ , $I_{REC}$ to 0.25 A)	$t_{rr}$	35 25	75 50	75 50	ns
Maximum Forward Recovery Time ( $i_F = 1.0\text{ A}$ , $di/dt = 100\text{ A}/\mu\text{s}$ , Recovery to 1.0 V)	$t_{fr}$	25	50	50	ns

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

MURS320T3

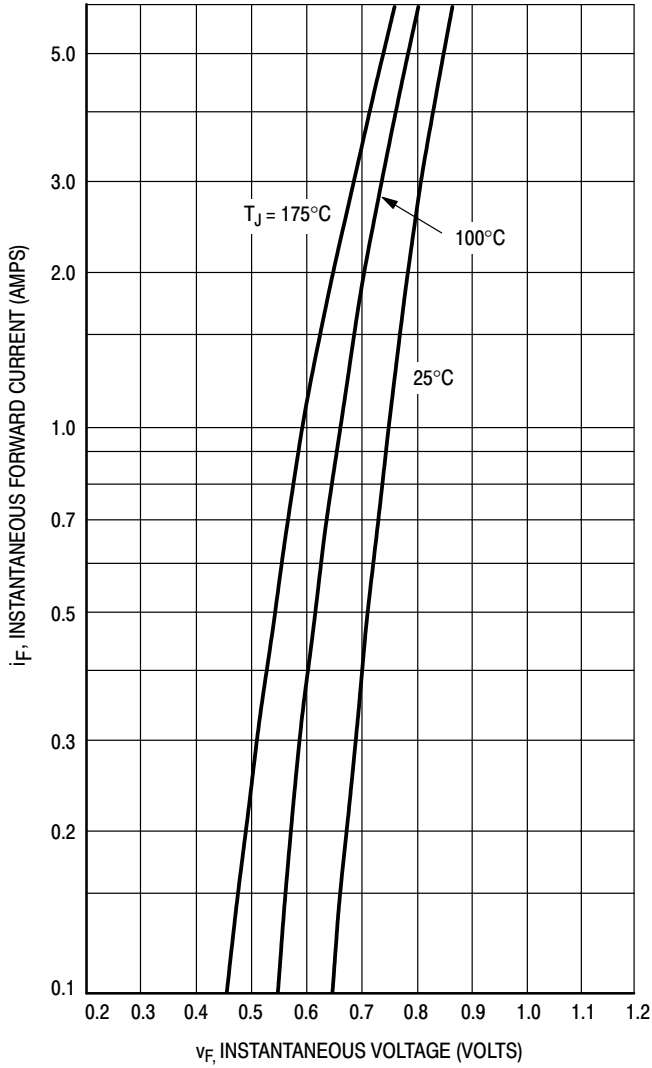


Figure 1. Typical Forward Voltage

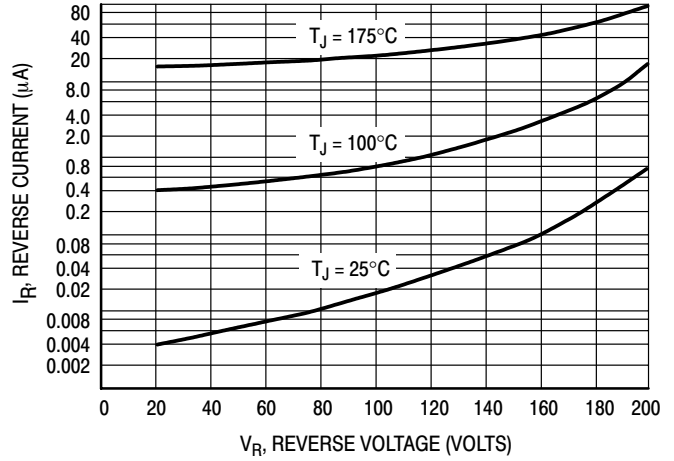


Figure 2. Typical Reverse Current\*

\* 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  $V_R$  is sufficiently below rated  $V_R$ .

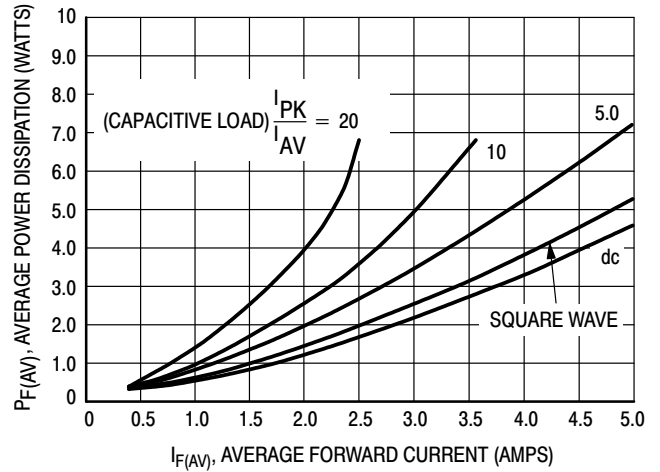


Figure 3. Power Dissipation

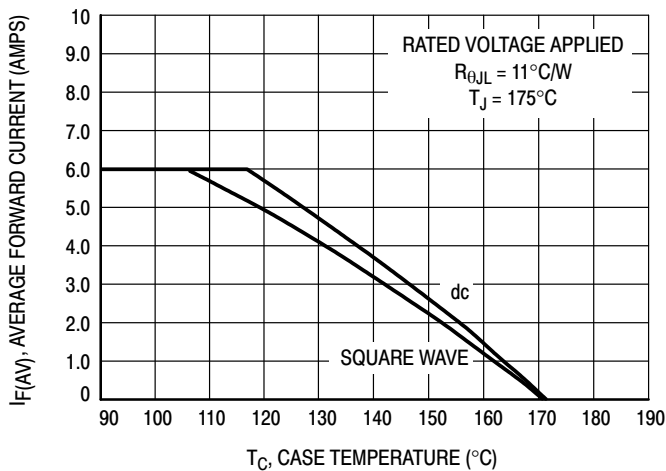


Figure 4. Current Derating, Case

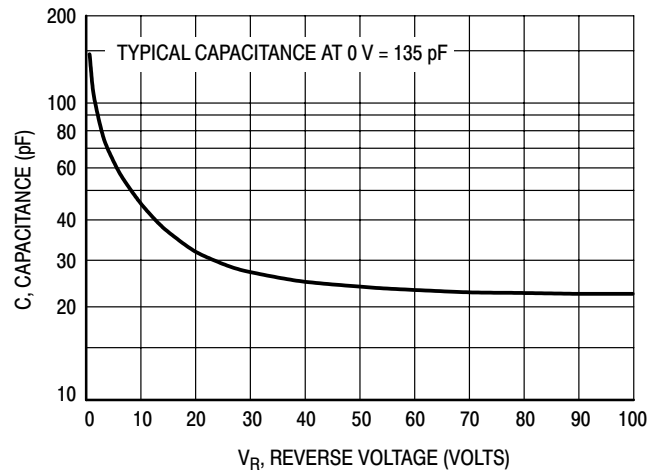


Figure 5. Typical Capacitance

# MURS320T3, MURS340T3, MURS360T3

## MURS340T3, MURS360T3

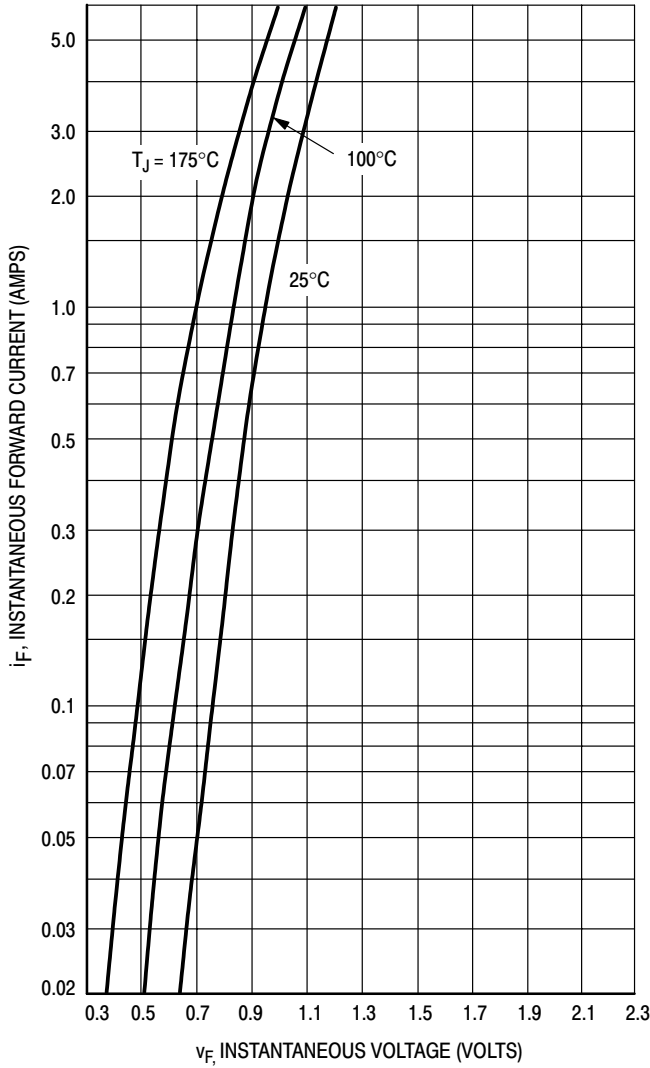


Figure 6. Typical Forward Voltage

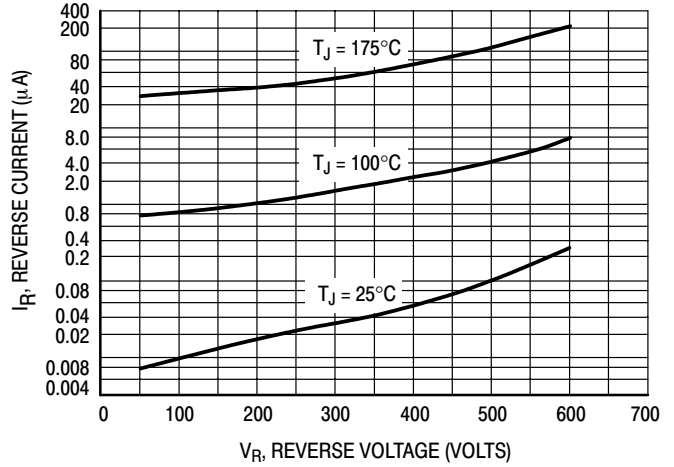


Figure 7. Typical Reverse Current\*

\* 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  $V_R$  is sufficiently below rated  $V_R$ .

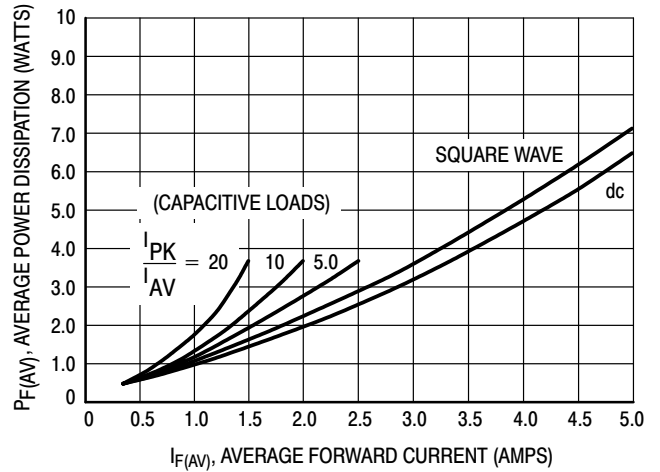


Figure 8. Power Dissipation

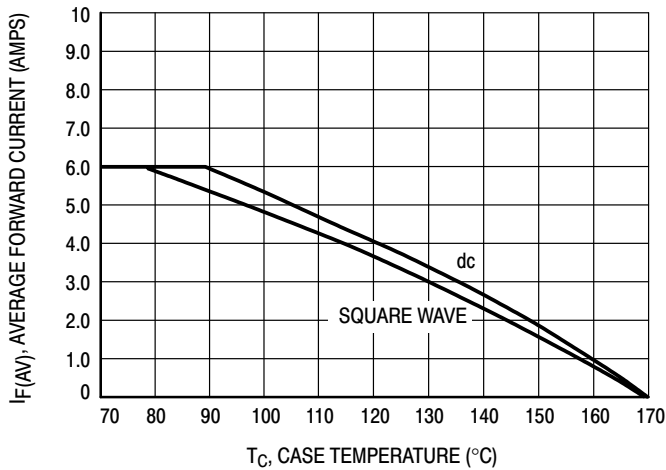


Figure 9. Current Derating, Case

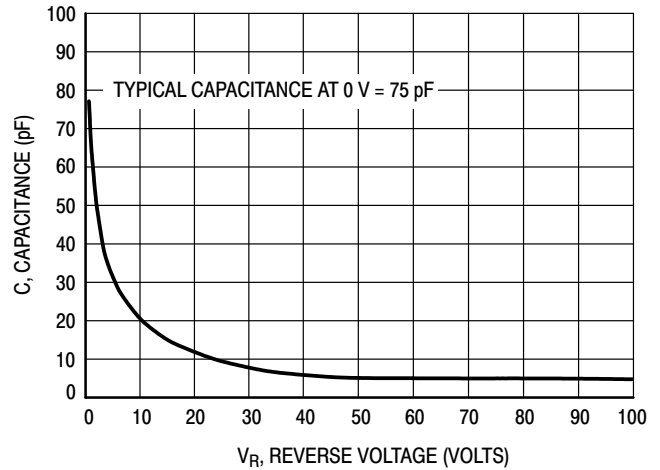
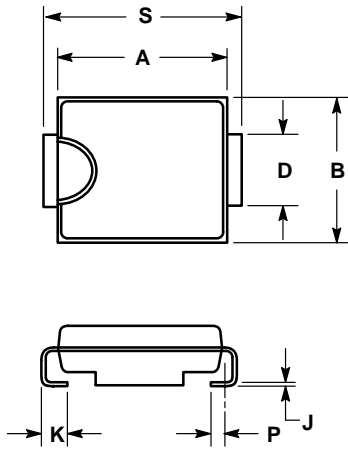


Figure 10. Typical Capacitance

# MURS320T3, MURS340T3, MURS360T3

## PACKAGE DIMENSIONS

SMC  
CASE 403-03  
ISSUE B




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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.260	0.280	6.60	7.11
B	0.220	0.240	5.59	6.10
C	0.075	0.095	1.90	2.41
D	0.115	0.121	2.92	3.07
H	0.0020	0.0060	0.051	0.152
J	0.006	0.012	0.15	0.30
K	0.030	0.050	0.76	1.27
P	0.020 REF		0.51 REF	
S	0.305	0.320	7.75	8.13

**Notes**

**Notes**

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