MURS320T3G, SURS8320T3G, MURS340T3G, SURS8340T3G, SURS340T3G, MURS360T3G, SURS8360T3G, SURS360T3G

Surface Mount Ultrafast Power Rectifiers

This series employs the 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.

Features

- Small Compact Surface Mountable Package with J−Bend Leads
- Rectangular Package for Automated Handling
- High Temperature Glass Passivated Junction
- Low Forward Voltage Drop
  (0.71 to 1.05 Volts Max @ 3.0 A, T_J = 150°C)
- AEC−Q101 Qualified and PPAP Capable
- SURS8 and SURS Prefixes for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- Pb−Free Packages*

Mechanical Characteristics

- Case: Epoxy, Molded
- Epoxy Meets UL 94 V−0 @ 0.125 in
- 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°C Max. for 10 Seconds
- Shipped in 16 mm Tape and Reel, 2500 units per reel
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- Device Meets MSL1 Requirements
- ESD Ratings:
  - ♦ Machine Model, C (> 400 V)
  - ♦ Human Body Model, 3B (> 8 kV)

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

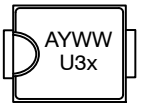
ON Semiconductor®

http://onsemi.com

ULTRAFAST RECTIFIERS 3.0 AMPERES 200−600 VOLTS

SMC
CASE 403
PLASTIC

MARKING DIAGRAM



U3 = Specific Device Code
x = D (320T3)
= G (340T3)
= J (360T3)
A = Assembly Location
Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
MURS320T3G	SMC (Pb−Free)	2,500 / Tape & Reel
SURS8320T3G	SMC (Pb−Free)	2,500 / Tape & Reel
MURS340T3G	SMC (Pb−Free)	2,500 / Tape & Reel
SURS8340T3G	SMC (Pb−Free)	2,500 / Tape & Reel
SURS340T3G	SMC (Pb−Free)	2,500 / Tape & Reel
MURS360T3G	SMC (Pb−Free)	2,500 / Tape & Reel
SURS8360T3G	SMC (Pb−Free)	2,500 / Tape & Reel
SURS360T3G	SMC (Pb−Free)	2,500 / 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.

MAXIMUM RATINGS

Rating	Symbol	MURS320T3G/ SURS8320T3G	MURS340T3G/ SURS8340T3G/ SURS340T3G	MURS360T3G/ SURS8360T3G/ SURS360T3G	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200	400	600	V
Average Rectified Forward Current	$I_{F(AV)}$	3.0 @ T_L = 140°C 4.0 @ T_L = 130°C	3.0 @ T_L = 130°C 4.0 @ T_L = 115°C	3.0 @ T_L = 130°C 4.0 @ T_L = 115°C	A
Non−Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	75			A
Operating Junction Temperature	T_J	−65 to +175			°C

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.

THERMAL CHARACTERISTICS

Thermal Resistance, Junction−to−Lead	$R_{\theta JL}$	11	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1) (i_F = 3.0 A, T_J = 25°C) (i_F = 4.0 A, T_J = 25°C) (i_F = 3.0 A, T_J = 150°C)	v_F	 0.875 0.89 0.71	 1.25 1.28 1.05	 1.25 1.28 1.05	V
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T_J = 25°C) (Rated dc Voltage, T_J = 150°C)	i_R	 5.0 150	 10 250	 10 250	μA
Maximum Reverse Recovery Time (i_F = 1.0 A, di/dt = 50 A/μs) (i_F = 0.5 A, i_R = 1.0 A, I_{REC} to 0.25 A)	t_{rr}	 35 25	 75 50	 75 50	ns
Maximum Forward Recovery Time (i_F = 1.0 A, di/dt = 100 A/μs, Recovery to 1.0 V)	t_{fr}	 25	 50	 50	ns

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

MURS320T3G/SURS8320T3G

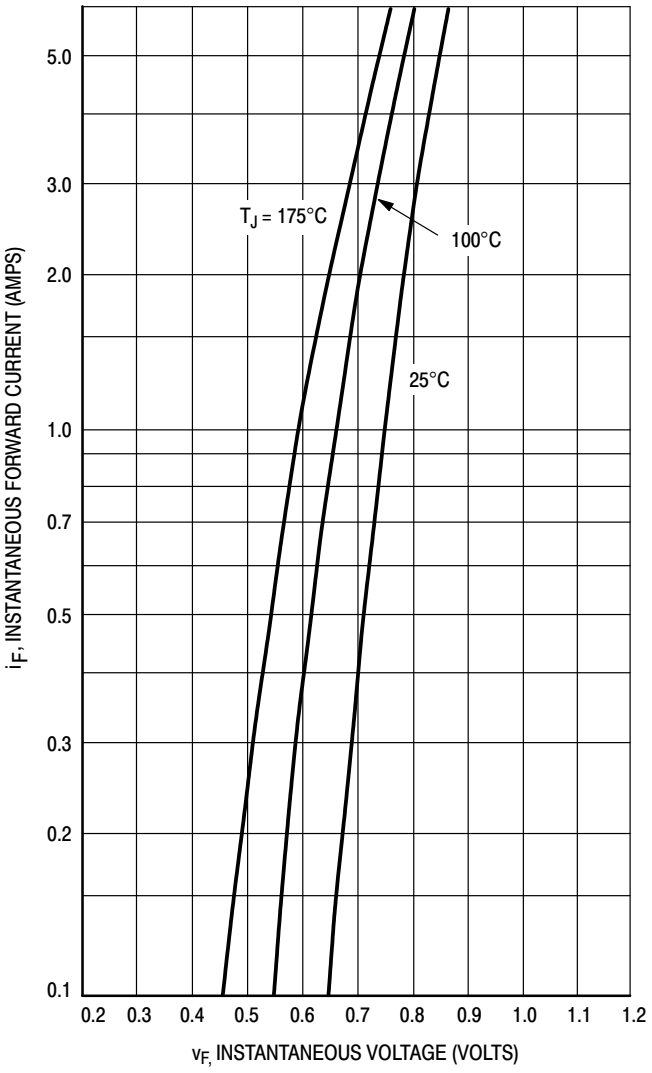


Figure 1. Typical Forward Voltage

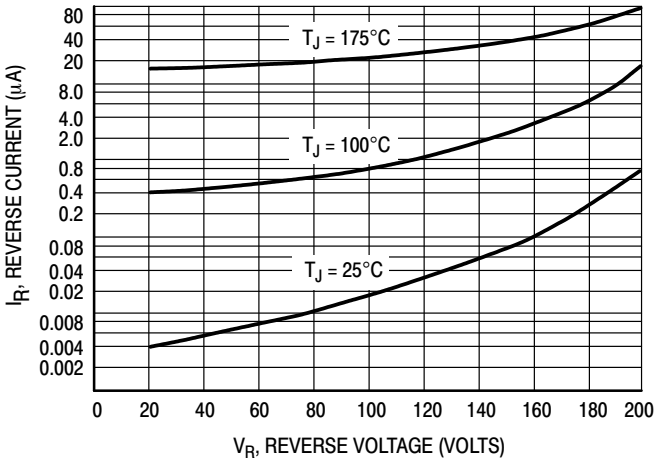


Figure 2. Typical Reverse Current*

* 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.

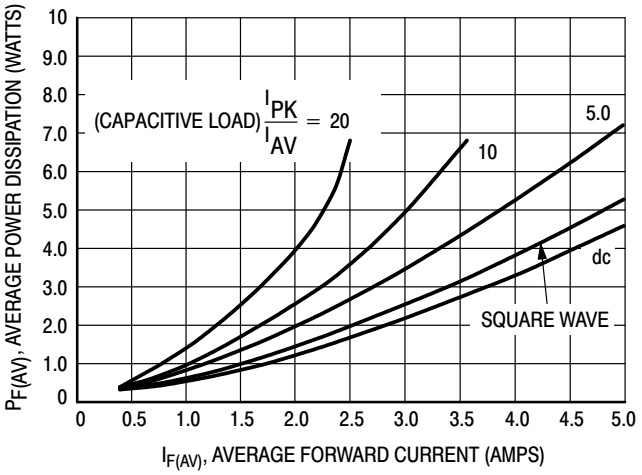


Figure 3. Power Dissipation

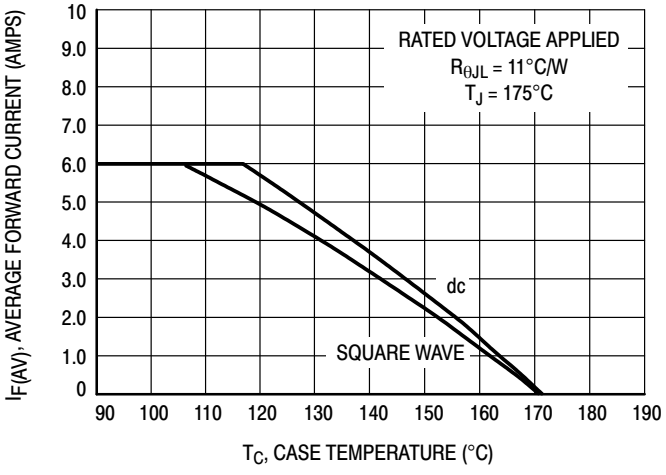


Figure 4. Current Derating, Case

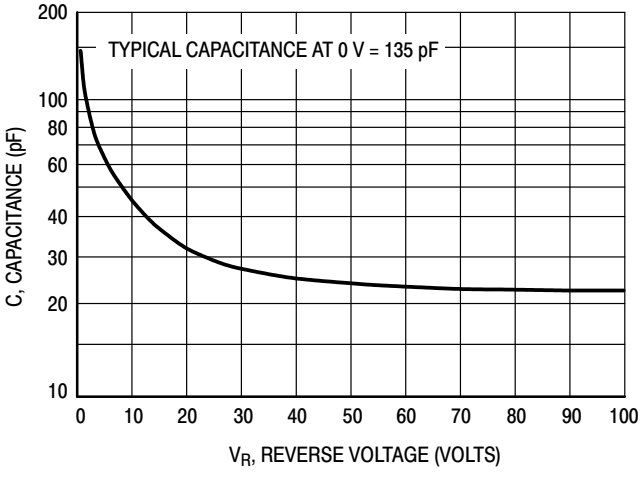


Figure 5. Typical Capacitance

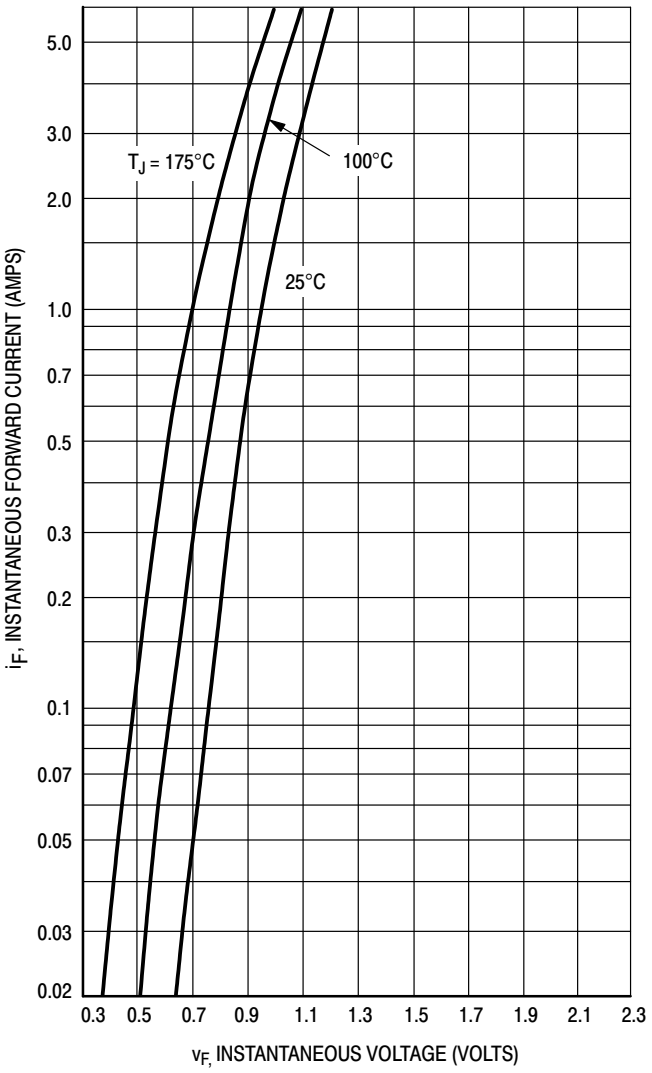


Figure 6. Typical Forward Voltage

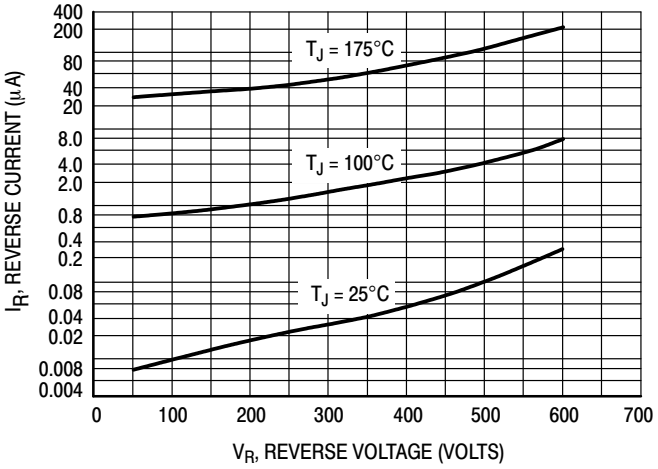


Figure 7. Typical Reverse Current*

* 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.

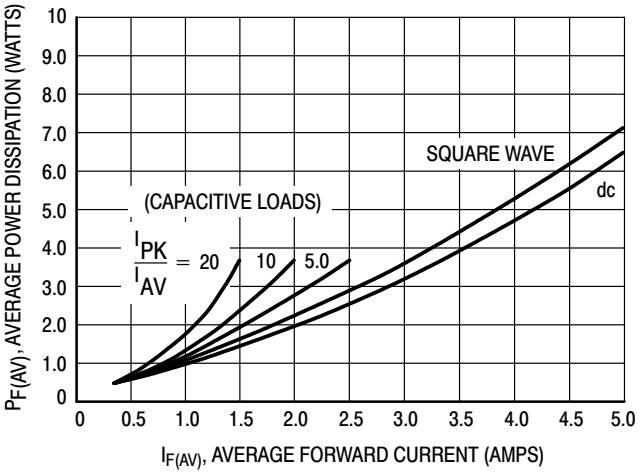


Figure 8. Power Dissipation

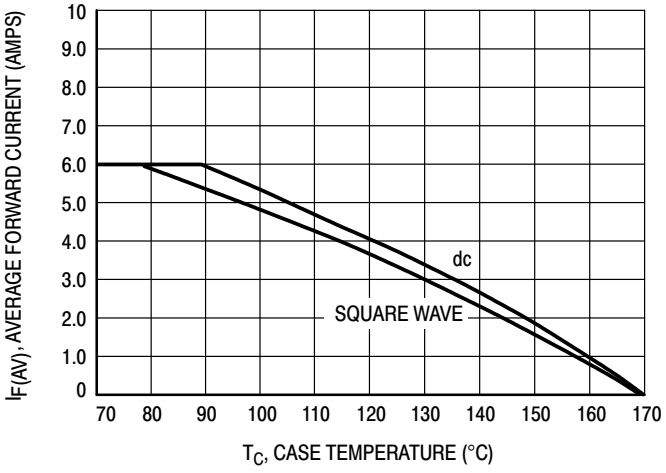


Figure 9. Current Derating, Case

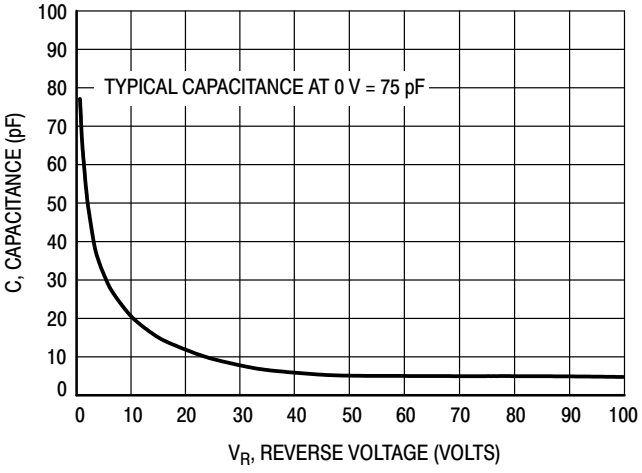
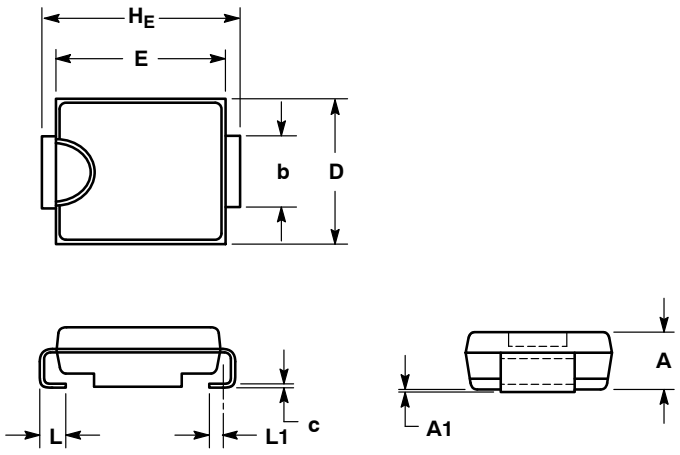


Figure 10. Typical Capacitance

MURS320T3G, SURS8320T3G, MURS340T3G, SURS8340T3G, SURS340T3G, MURS360T3G, SURS8360T3G, SURS360T3G

PACKAGE DIMENSIONS

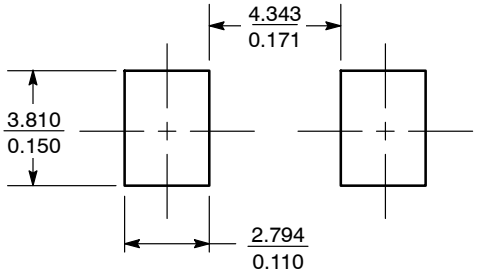
SMC
PLASTIC PACKAGE
CASE 403−03
ISSUE E



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.
4. 403−01 THRU −02 OBSOLETE, NEW STANDARD 403−03.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	1.90	2.13	2.41	0.075	0.084	0.095
A1	0.05	0.10	0.15	0.002	0.004	0.006
b	2.92	3.00	3.07	0.115	0.118	0.121
c	0.15	0.23	0.30	0.006	0.009	0.012
D	5.59	5.84	6.10	0.220	0.230	0.240
E	6.60	6.86	7.11	0.260	0.270	0.280
H_E	7.75	7.94	8.13	0.305	0.313	0.320
L	0.76	1.02	1.27	0.030	0.040	0.050
L1	0.51 REF			0.020 REF		

SOLDERING FOOTPRINT*



SCALE 4:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

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

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
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MURS320T3/D