MURA230T3G, MURA240T3G, SURA8240T3G

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 V Max @ 2.0 A, $T_J = 150°C$)
- SURA8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable*
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 70 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
- ESD Protection:
  - Human Body Model > 4000 V (Class 3)
  - Machine Model > 400 V (Class C)

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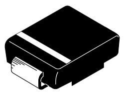
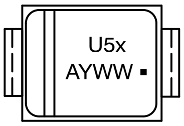
ULTRAFAST RECTIFIERS
2 AMPERES, 300−400 VOLTS



SMA
CASE 403D
STYLE 1
PLASTIC

MARKING DIAGRAM



U5Fx = Device Code
x = F for MURA230T3
G for MURA240T3
A = Assembly Location**
Y = Year
WW = Work Week
▪ = Pb−Free Package

** The Assembly Location Code (A) is front side optional. In cases where the Assembly Location is stamped in the package bottom (molding ejecter pin), the front side assembly code may be blank.

ORDERING INFORMATION

Device	Package	Shipping†
MURA230T3G	SMA (Pb−Free)	5,000/Tape & Reel
MURA240T3G	SMA (Pb−Free)	5,000/Tape & Reel
SURA8240T3G*	SMA (Pb−Free)	5,000/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	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R		V
MURA230T3G		300	
MURA240T3G/SURA8240T3G		400	
Average Rectified Forward Current	$I_{F(AV)}$		A
@ T_L = 150°C		1.0	
@ T_L = 125°C		2.0	
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	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction−to−Lead (T_L = 25°C) (Note 1)	Psi_{JL} (Note 2)	24	°C/W
Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	216	

1. Rating applies when surface mounted on the minimum pad size recommended, PC Board FR−4.
2. In compliance with JEDEC 51, these values (historically represented by $R_{\theta JL}$) are now referenced as Psi_{JL}.

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 3)	v_F		V
(i_F = 2.0 A, T_J = 25°C)		1.30	
(i_F = 2.0 A, T_J = 150°C)		1.05	
Maximum Instantaneous Reverse Current (Note 3)	i_R		μA
(Rated DC Voltage, T_J = 25°C)		5.0	
(Rated DC Voltage, T_J = 150°C)		150	
Maximum Reverse Recovery Time (i_F = 1.0 A, di/dt = 50 A/μs)	t_{rr}	65	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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

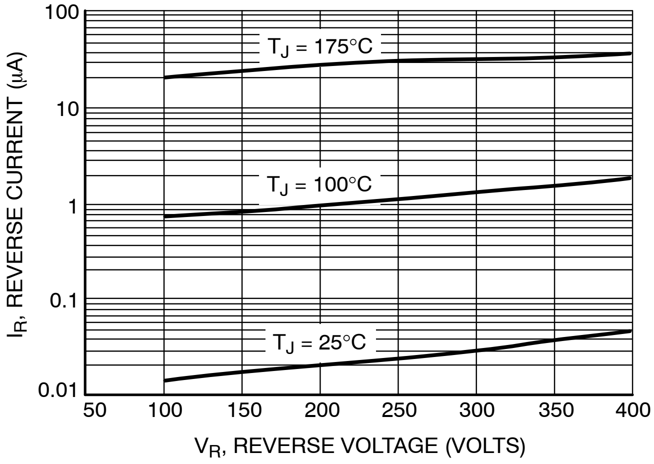


Figure 1. Typical Reverse Current

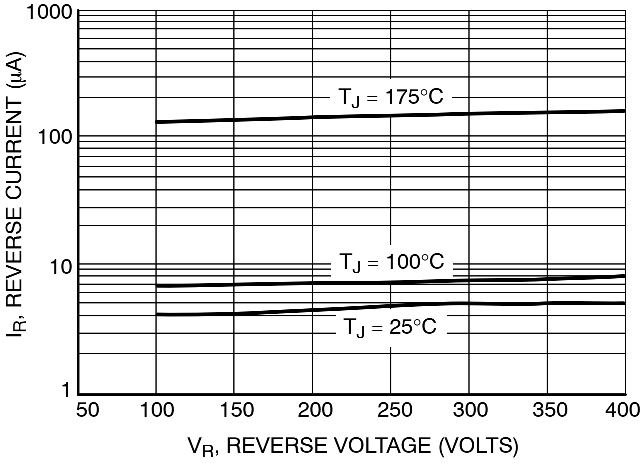


Figure 2. Maximum Reverse Current

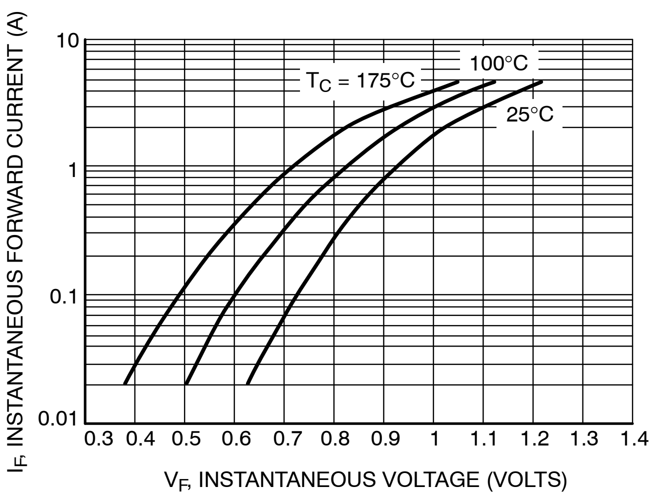


Figure 3. Typical Forward Voltage

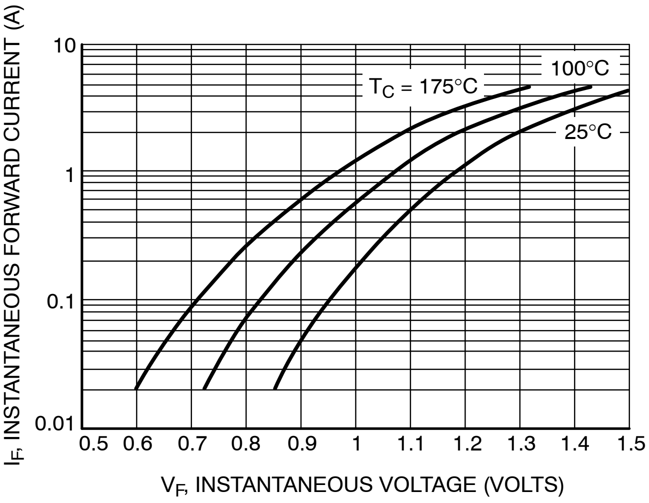


Figure 4. Maximum Forward Voltage

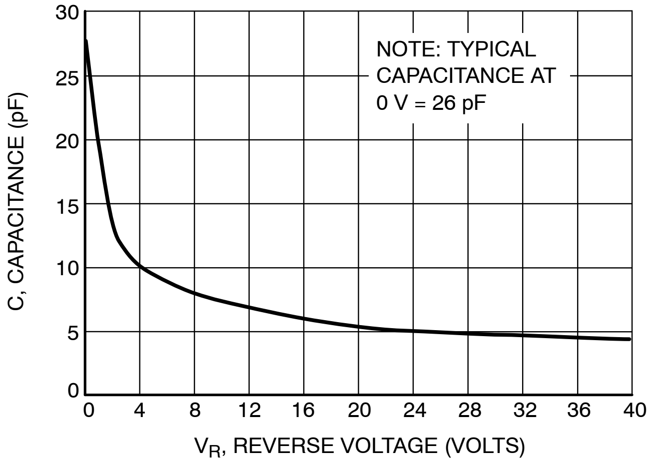


Figure 5. Typical Capacitance

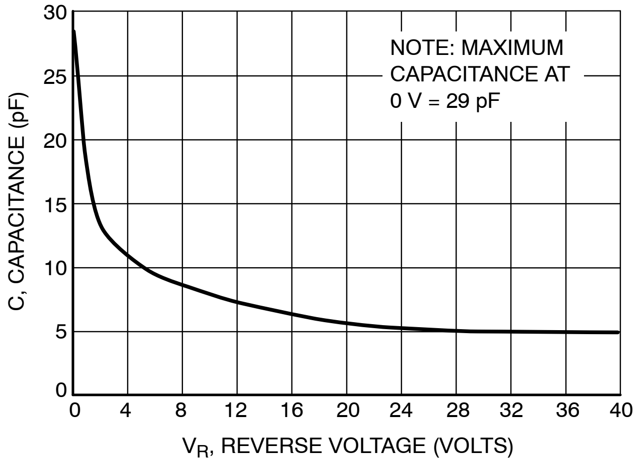


Figure 6. Maximum Capacitance

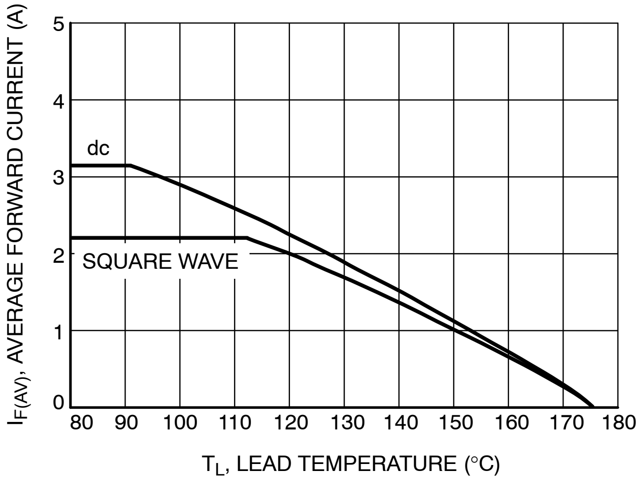


Figure 7. Current Derating, Lead

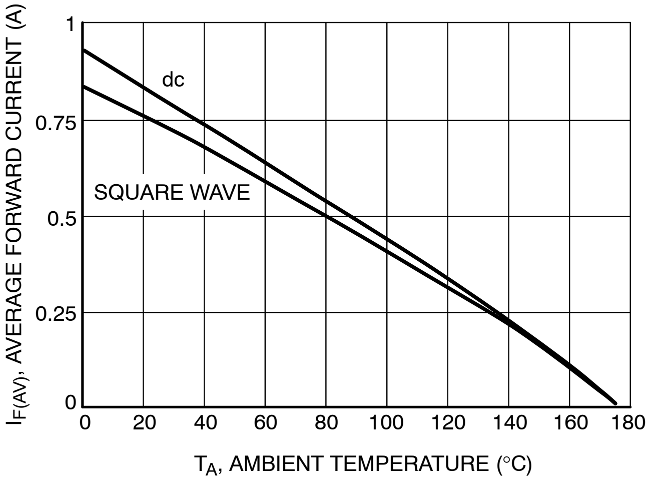


Figure 8. Current Derating, Ambient
(FR−4 Board with Minimum Pad)

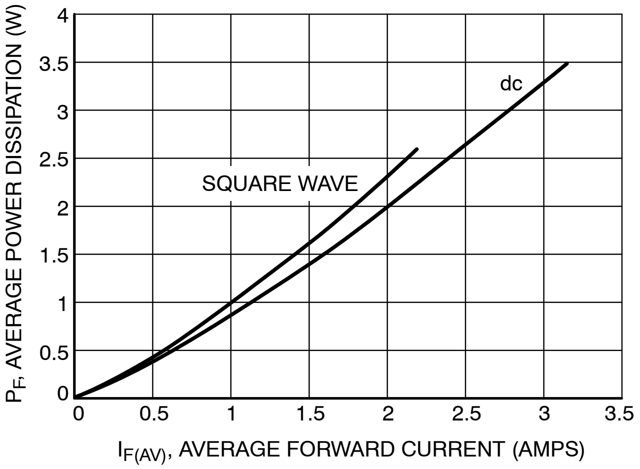


Figure 9. Power Dissipation

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

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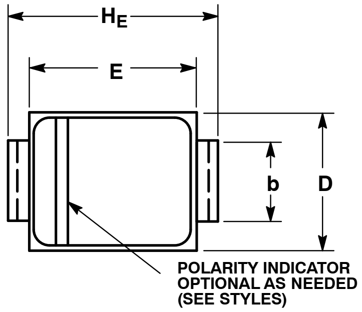
STYLE 1


STYLE 2

SCALE 1:1

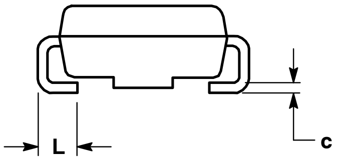
SMA
CASE 403D
ISSUE H

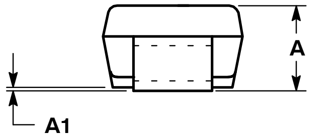
DATE 23 SEP 2015



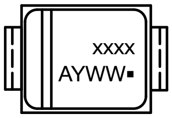
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION b SHALL BE MEASURED WITHIN DIMENSION L.

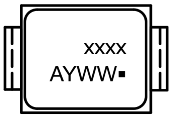
	MILLIMETERS			INCHES		
DIM	**MIN**	**NOM**	**MAX**	**MIN**	**NOM**	**MAX**
A	1.97	2.10	2.20	0.078	0.083	0.087
A1	0.05	0.10	0.20	0.002	0.004	0.008
b	1.27	1.45	1.63	0.050	0.057	0.064
c	0.15	0.28	0.41	0.006	0.011	0.016
D	2.29	2.60	2.92	0.090	0.103	0.115
E	4.06	4.32	4.57	0.160	0.170	0.180
H_E	4.83	5.21	5.59	0.190	0.205	0.220
L	0.76	1.14	1.52	0.030	0.045	0.060





GENERIC MARKING DIAGRAM*



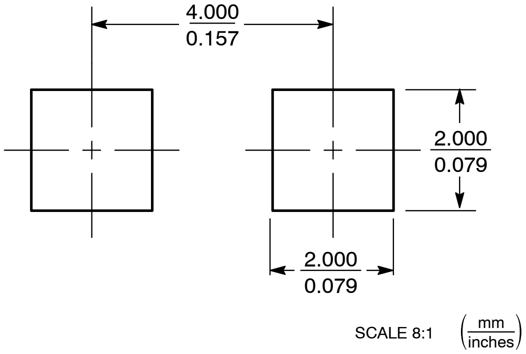


STYLE 1 STYLE 2

XXXX = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “ ▪”, may or may not be present.

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.

STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
2. ANODE

STYLE 2:
NO POLARITY

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