Power Rectifier, Ultra-Fast Recovery, 1 A, 100-200 V

MURA115, MURA120, NRVUA120V, SURA8120

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 V Max @ 1.0 A, T_J = 150°C)
- NRVUA and SURA8 Prefixes for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable*
- These Devices are Pb−Free and are RoHS Compliant

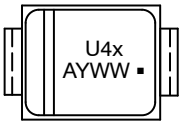
Mechanical Characteristics:

- 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)
  - Charged Device Model > 1000 V

ULTRAFAST RECTIFIERS
1 AMPERE, 100−200 VOLTS

SMA
CASE 403D

MARKING DIAGRAM



U4x = Device Code
x = C for MURA115
= D for MURA120
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping†
MURA115T3G	SMA (Pb−Free)	5,000/ Tape & Reel
MURA120T3G	SMA (Pb−Free)	5,000/ Tape & Reel
NRVUA120VT3G*	SMA (Pb−Free)	5,000/ Tape & Reel
NRVUA120VT3G−GA01*	SMA (Pb−Free)	5,000/ Tape & Reel
SURA8120T3G*	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.

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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MURA115T3G MURA120T3G/SURA8120T3G/NRVUA120VT3G/NRVUA120VT3G−GA01	V_{RRM} V_{RWM} V_R	 150 200	V
Average Rectified Forward Current @ T_L = 155°C @ T_L = 135°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}	 40	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	Max	Unit
Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	216	°C/W
Thermal Resistance, Junction−to−Lead (T_L = 25°C) (Note 1)	Ψ_{JL} (Note 2)	24	°C/W
Thermal Resistance, Junction−to−Case Top (Note 1)	Ψ_{JCT}	14	°C/W

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) (i_F = 1.0 A, T_J = 25°C) (i_F = 1.0 A, T_J = 150°C)	v_F	 0.875 0.71	V
Maximum Instantaneous Reverse Current (Note 3) (Rated DC Voltage, T_J = 25°C) (Rated DC Voltage, T_J = 150°C)	i_R	 2.0 50	μA
Maximum Reverse Recovery Time (i_F = 1.0 A, di/dt = 50 A/μs)	t_{rr}	 35	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%.

TYPICAL CHARACTERISTICS

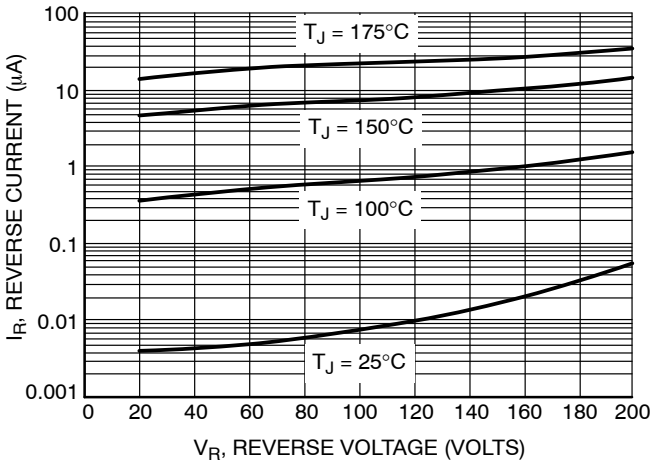

Figure 1. Typical Reverse Current

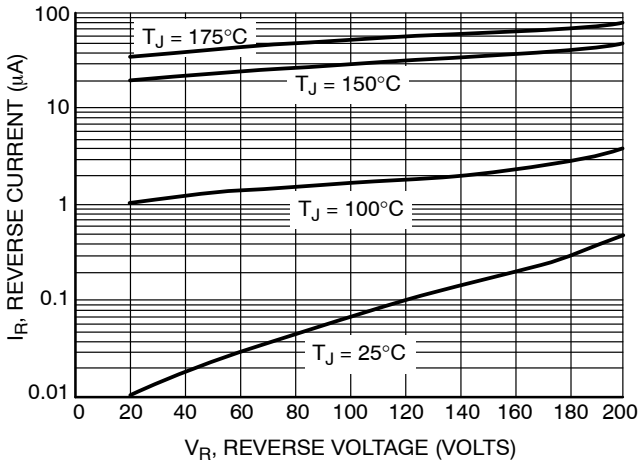

Figure 2. Maximum Reverse Current

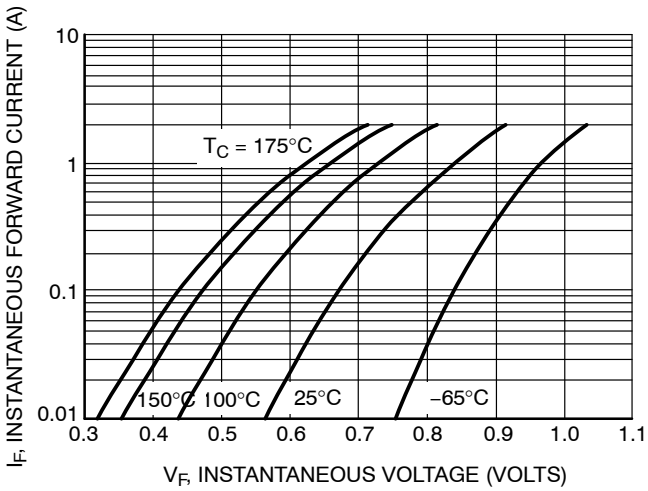

Figure 3. Typical Forward Voltage

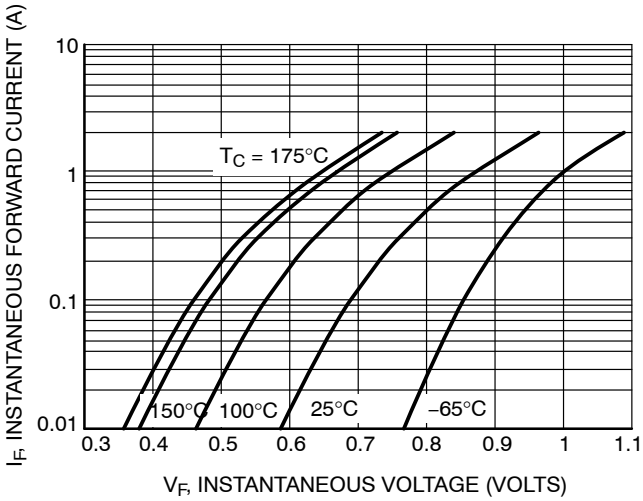

Figure 4. Maximum Forward Voltage

TYPICAL CHARACTERISTICS

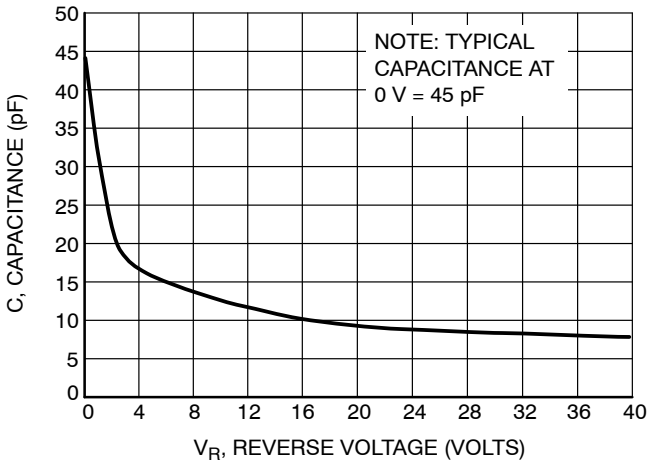

Figure 5. Typical Capacitance

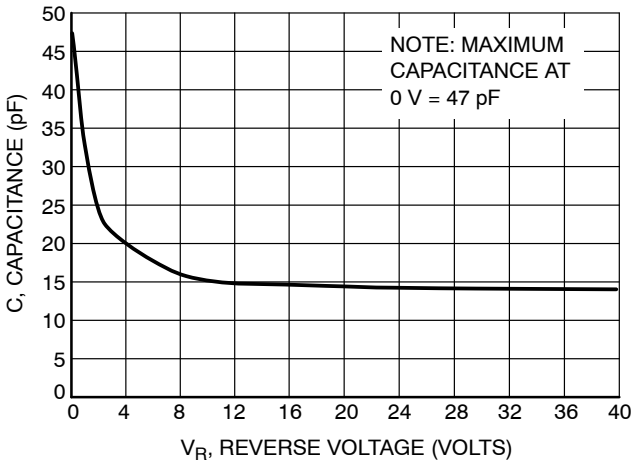

Figure 6. Maximum Capacitance

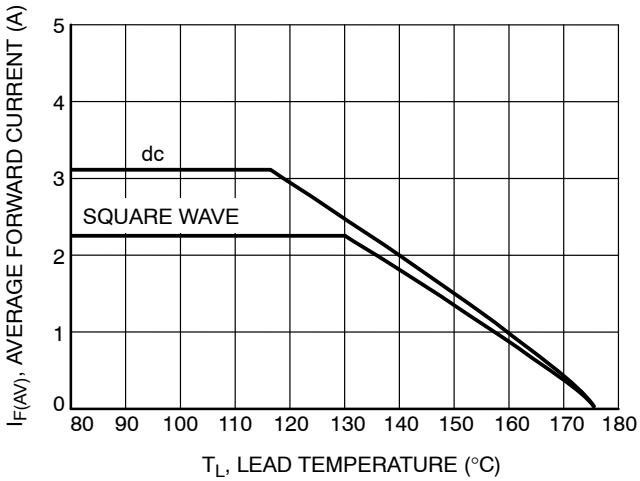

Figure 7. Current Derating, Lead

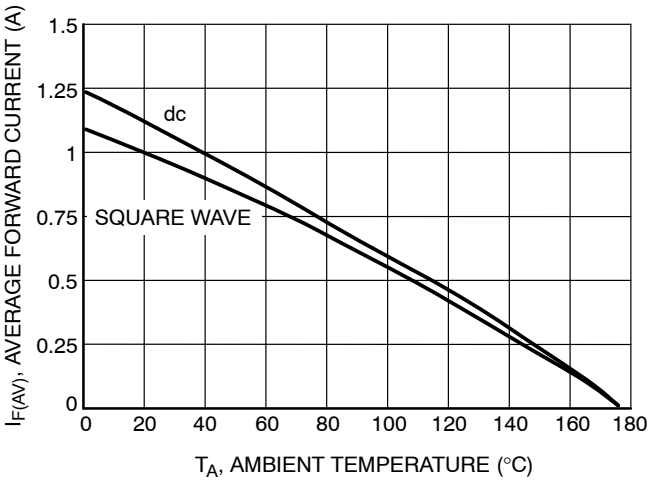

Figure 8. Current Derating, Ambient
(FR−4 Board with Minimum Pad)

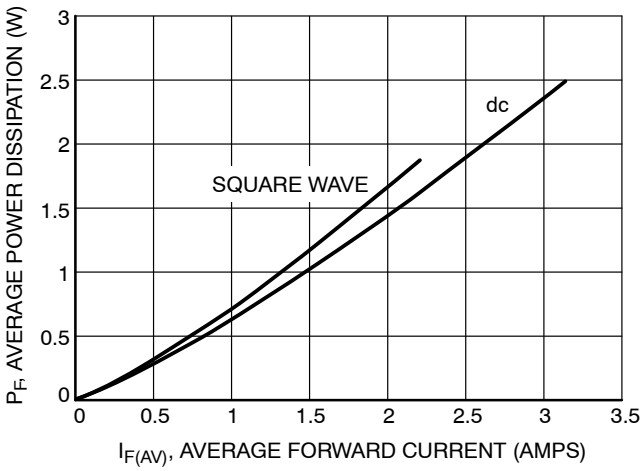

Figure 9. Power Dissipation

STYLE 1 STYLE 2

SCALE 1:1

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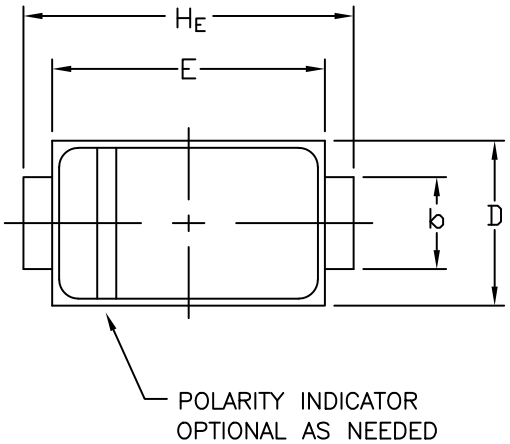
CASE 403D
ISSUE J

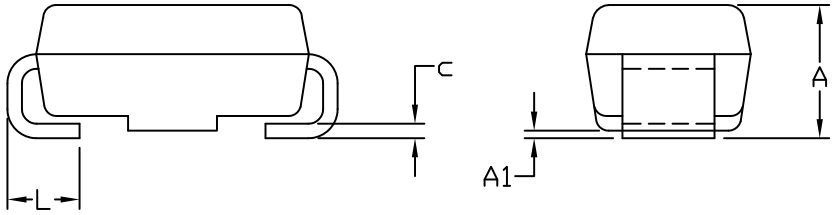
DATE 22 OCT 2021



NOTES:

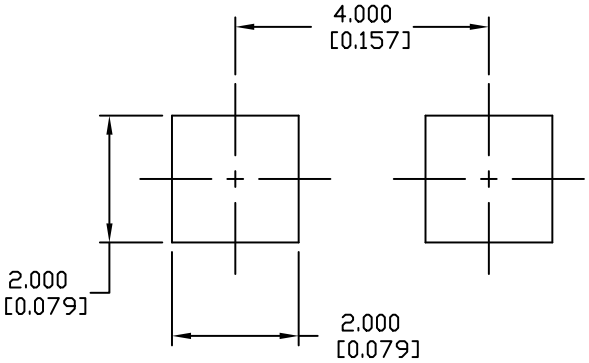
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCHES
3. DIMENSION b SHALL BE MEASURED WITHIN DIMENSION L.

DIM	MILLIMETERS			INCHES		
	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
HE	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



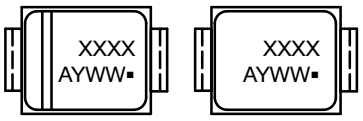
STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
2. ANODE

STYLE 2:
NO POLARITY



RECOMMENDED
MOUNTING FOOTPRINT

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. Some products may not follow the Generic Marking.

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