onsemi

Power Rectifier, Ultra-Fast Recovery, 1 A, 600 V

MURA160, NRVUA160V, SURA8160

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 (1.05 V Max @ 1.0 A, $T_J = 150^{\circ}C$)
- 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, Halogen Free/BFR Free and are RoHS Compliant

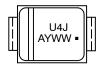
Mechanical Characteristics:

- 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)
 - Charged Device Model > 1000 V



SMA CASE 403D

MARKING DIAGRAM



U4J = Device Code A = Assembly Loca

- A = Assembly Location
- Y = Year WW = Work We
- WW = Work Week = Pb-Free Package

ORDERING INFORMATION

Device	Package	Shipping [†]
MURA160T3G	SMA	5,000/
NRVUA160VT3G*	(Pb-Free)	Tape & Reel
NRVUA160VT3G-GA01*	e.	
SURA8160T3G*		

+For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, <u>BRD8011/D</u>.

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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	600	V
Average Rectified Forward Current @ $T_L = 145^{\circ}C$ @ $T_L = 110^{\circ}C$	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}	30	A
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-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–Lead ($T_L = 25^{\circ}C$) (Note 1)	Psi _{JL} (Note 2)	24	°C/W
Thermal Resistance, Junction-to-Ambient (Note 1)	R _{0JA}	216	
Thermal Resistance, Junction-to-Case Top (Note 1)	Ψ_{JCT}	16	°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} .

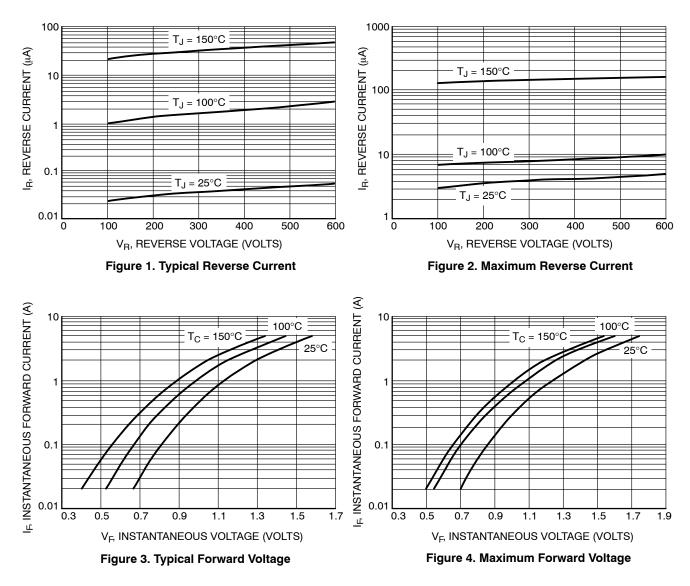
ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 3) ($i_F = 1.0 \text{ A}, T_J = 25^{\circ}\text{C}$) ($i_F = 1.0 \text{ A}, T_J = 150^{\circ}\text{C}$)	v _F	1.25 1.05	V
Maximum Instantaneous Reverse Current (Note 3) (Rated dc Voltage, $T_J = 25^{\circ}C$) (Rated dc Voltage, $T_J = 150^{\circ}C$)	İR	5.0 150	μΑ
Maximum Reverse Recovery Time (i _F = 1.0 A, di/dt = 50 A/μs)	t _{rr}	75	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 μ s, Duty Cycle \leq 2.0%.

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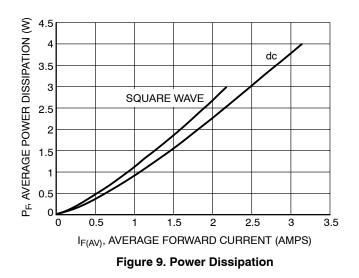


NOTE: MAXIMUM NOTE: TYPICAL CAPACITANCE AT CAPACITANCE AT C, CAPACITANCE (pF) C, CAPACITANCE (pF) 0 V = 27 pF 0 V = 24 pF V_R, REVERSE VOLTAGE (VOLTS) V_R, REVERSE VOLTAGE (VOLTS) Figure 5. Typical Capacitance Figure 6. Maximum Capacitance I_{F(AV)}, AVERAGE FORWARD CURRENT (A) I_{F(AV)}, AVERAGE FORWARD CURRENT (A) dc 0.9 0.8 0.7 dc SQUARE 0.6 З WAVE 0.5 SQUARE WAVE 0.4 0.3 0.2 0.1 T_L, LEAD TEMPERATURE (°C) T_A, AMBIENT TEMPERATURE (°C)

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Figure 7. Current Derating, Lead

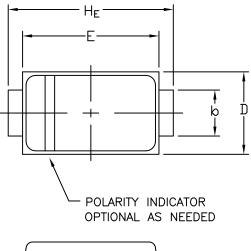


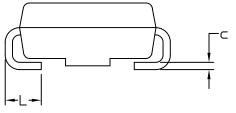


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STYLE 1 STYLE 2 SCALE 1:1

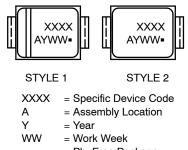






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GENERIC MARKING DIAGRAM*



= 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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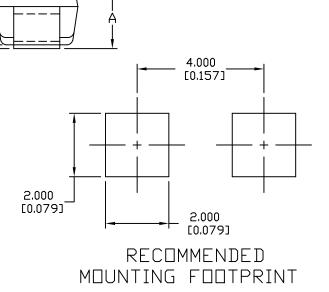
SMA CASE 403D ISSUE J

DATE 22 OCT 2021

NDTES:

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

	MILLIMETERS		INCHES			
DIM	MIN.	NDM.	MAX.	MIN.	NDM.	MAX.
Α	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
с	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



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