Power Rectifier, Ultra-Fast Recovery, 2 A, 300-400 V

MURS230, NRVUS230, NRVUS230V, MURS240, NRVUS240, NRVUS240V

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 Volts Max @ 2.0 A, T_J = 150°C)
- NRVUS and SURS8 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:

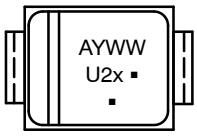
- Case: Epoxy, Molded
- Weight: 95 mg (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Polarity: Polarity Band Indicates Cathode Lead
- ESD Rating:
  - Human Body Model = 3 A (> 4 kV)
  - Charged Device Model > 1000 V

ULTRAFAST RECTIFIERS
2 AMPERES, 300−400 VOLTS



SMB
CASE 403A

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
U2x = Device Code
x = F for MURS230T3
= G for MURS240T3
▪ = Pb−Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
NRVUS230VT3G−GA01*	SMB (Pb−Free)	2,500 / Tape & Reel
MURS240T3G	SMB (Pb−Free)	2,500 / Tape & Reel
NRVUS240VT3G*, NRVUS240VT3G−GA01*	SMB (Pb−Free)	2,500 / Tape & Reel

DISCONTINUED (Note 1)

Device	Package	Shipping†
MURS230T3G	SMB (Pb−Free)	2,500 / Tape & Reel
NRVUS230T3G*, NRVUS230VT3G*	SMB (Pb−Free)	2,500 / Tape & Reel
NRVUS240T3G*	SMB (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.

1. **DISCONTINUED:** These devices are not recommended for new design. Please contact your **onsemi** representative for information. The most current information on these devices may be available on www.onsemi.com.

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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MURS230T3G/NRVUS230T3G/NRVUS230VT3G−GA01 MURS240T3G/NRVUS240T3G/NRVUS240VT3G−GA01	V_{RRM} V_{RWM} V_R	 300 400	V
Average Rectified Forward Current @ T_L = 150°C @ T_L = 125°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}	 35	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

Rating	Symbol	Max	Unit
Thermal Resistance, Junction−to−Lead (T_L = 25°C)	$R_{\theta JL}$	13	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1) (i_F = 2.0 A, T_J = 25°C) (i_F = 2.0 A, T_J = 150°C)	v_F	 1.30 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	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_R to 0.25 A)	t_{rr}	 65 50	ns
Maximum Forward Recovery Time (i_F = 1.0 A, di/dt = 100 A/μs, Rec. to 1.0 V)	t_{fr}	 50	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.

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

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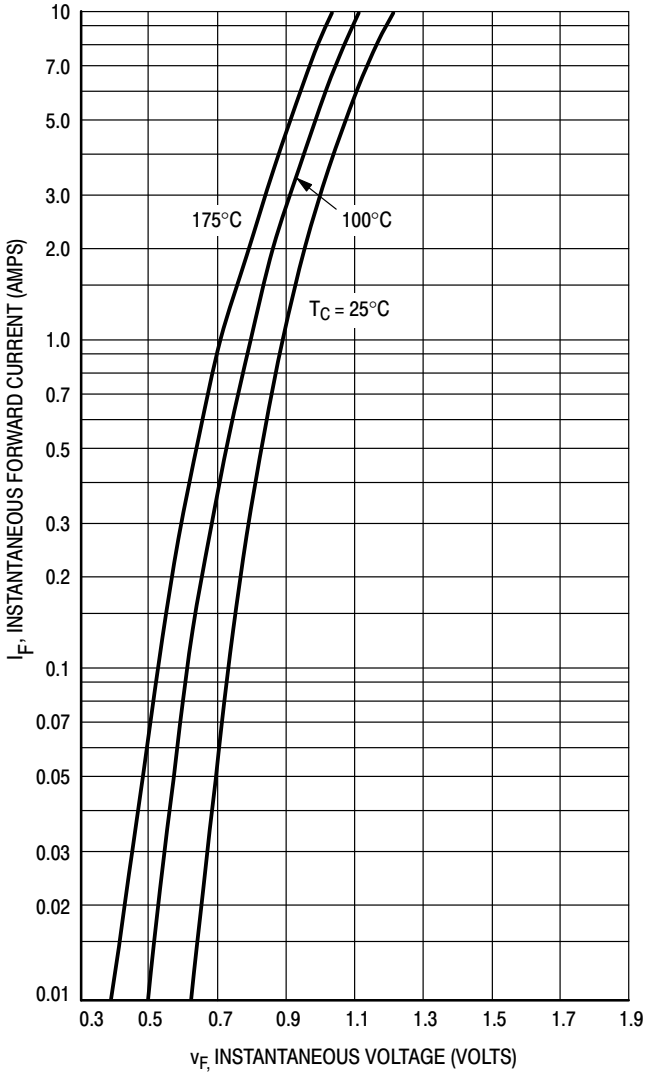


Figure 1. Typical Forward Voltage

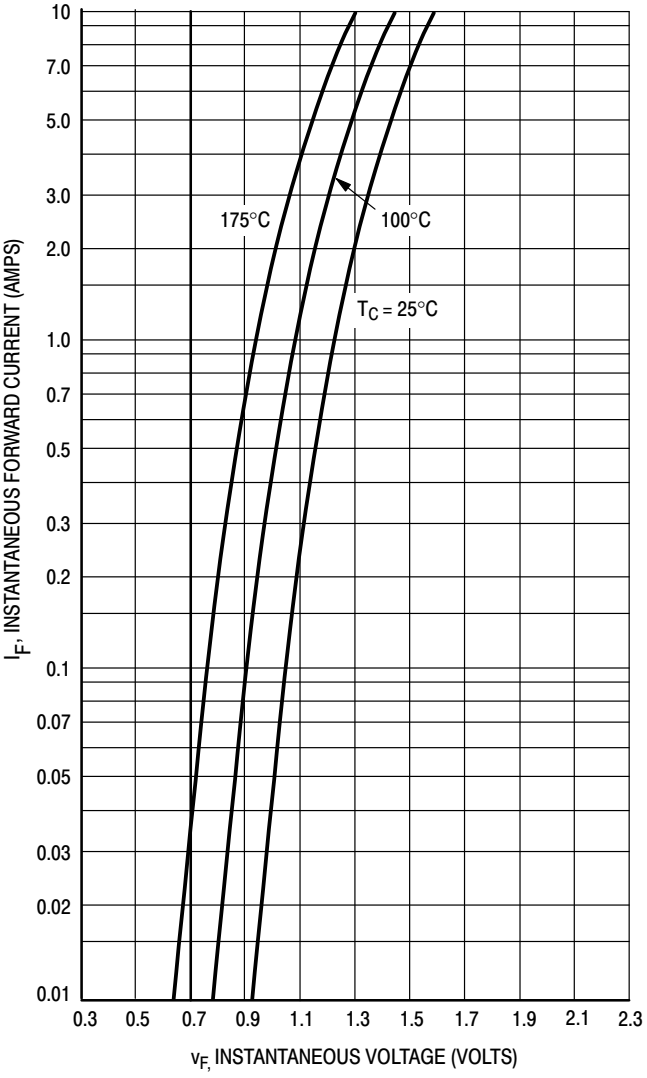


Figure 2. Maximum Forward Voltage

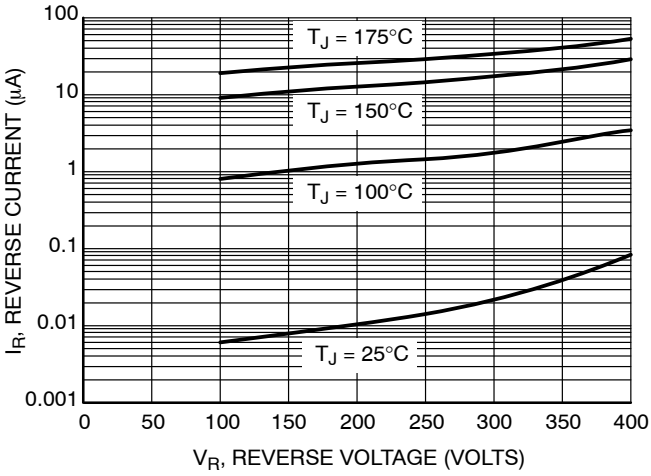


Figure 3. Typical Reverse Current*

* 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 applied V_R is sufficiently below rated V_R.

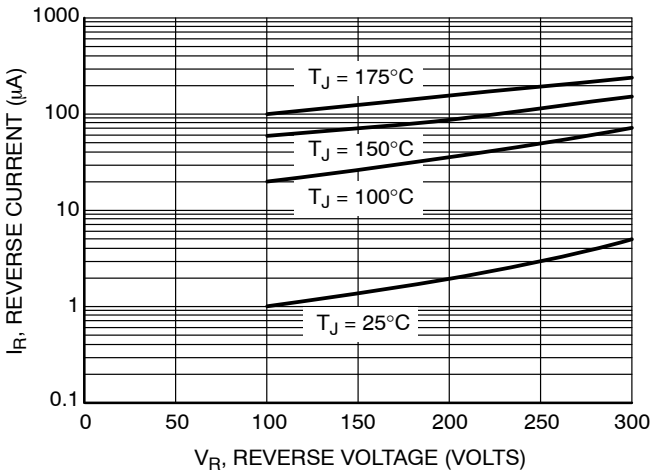


Figure 4. Maximum Reverse Current for MURS230T3G, NRVUS230T3G

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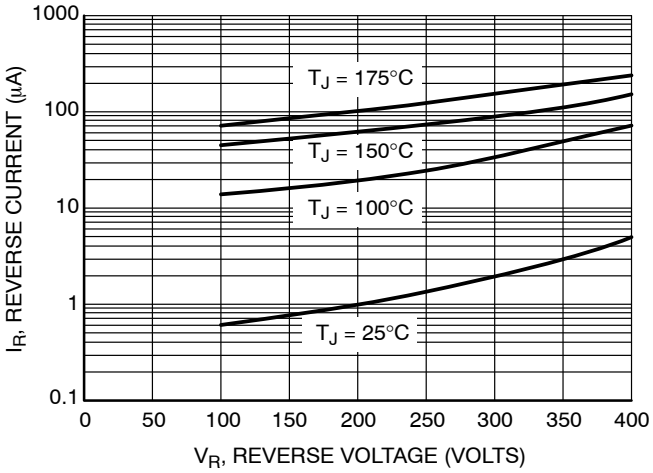


Figure 5. Maximum Reverse Current for MURS240T3G, NRVUS240T3G

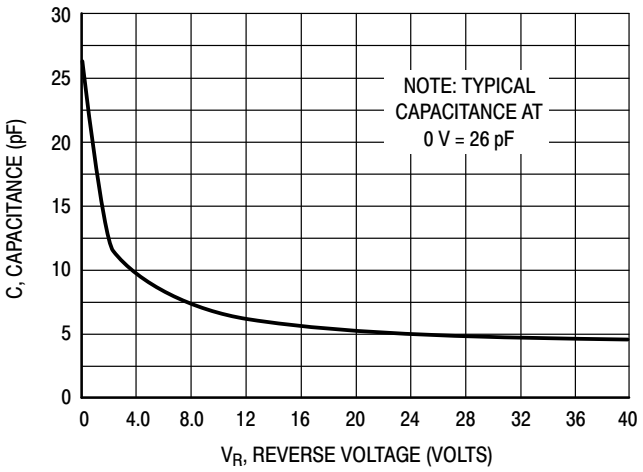


Figure 6. Typical Capacitance

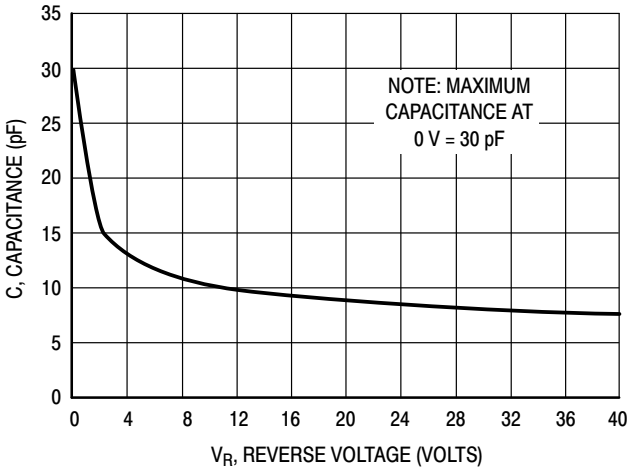


Figure 7. Maximum Capacitance

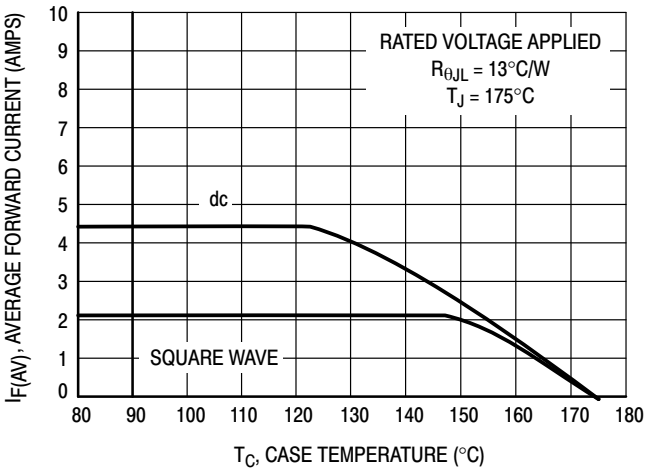


Figure 8. Current Derating, Case

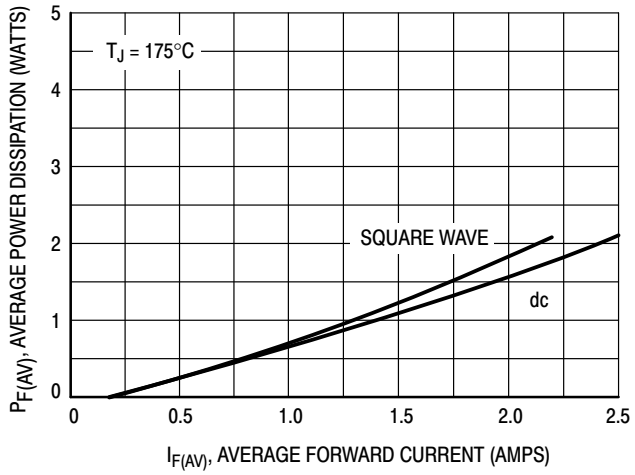


Figure 9. Power Dissipation

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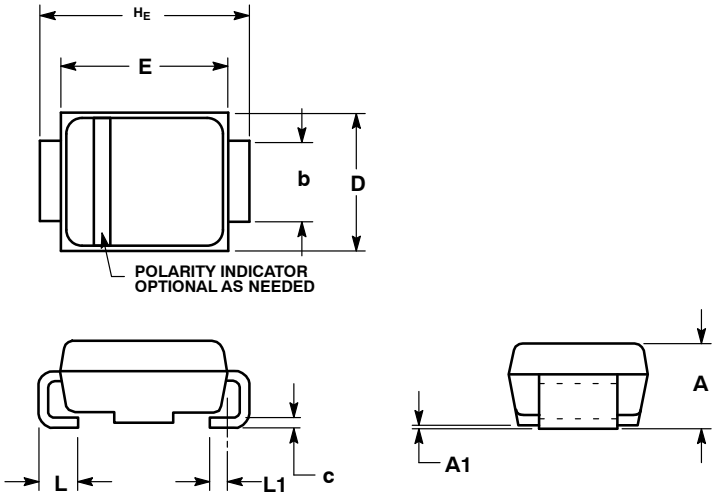
DATE 19 JUL 2012



SCALE 1:1
Polarity Band



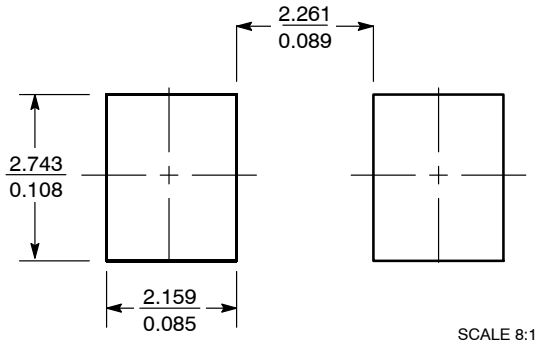
SCALE 1:1
Non−Polarity Band



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION b SHALL BE MEASURED WITHIN DIMENSION L1.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	1.95	2.30	2.47	0.077	0.091	0.097
A1	0.05	0.10	0.20	0.002	0.004	0.008
b	1.96	2.03	2.20	0.077	0.080	0.087
c	0.15	0.23	0.31	0.006	0.009	0.012
D	3.30	3.56	3.95	0.130	0.140	0.156
E	4.06	4.32	4.60	0.160	0.170	0.181
H_E	5.21	5.44	5.60	0.205	0.214	0.220
L	0.76	1.02	1.60	0.030	0.040	0.063
L1	0.51 REF			0.020 REF		

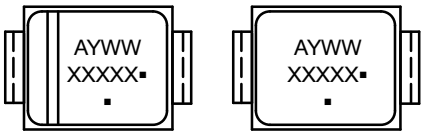
SOLDERING FOOTPRINT*



SCALE 8:1 (mm / inches)

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

GENERIC MARKING DIAGRAM*



Polarity Band **Non−Polarity Band**

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

(Note: Microdot may be in either location)

*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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