Preferred Devices

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 (0.74 V Max @ 2.0 A, $T_J = 150^{\circ}C$)
- Pb–Free Packages are Available

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)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MURA205T3 MURA210T3	V _{RRM} V _{RWM} V _R	50 100	V
Average Rectified Forward Current @ $T_L = 155^{\circ}C$ @ $T_L = 135^{\circ}C$	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}	50	A
Operating Junction Temperature Range	Τ _J	-65 to +175	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Lead $(T_L = 25^{\circ}C)$ (Note 1) Thermal Resistance, Junction-to-Ambient (Note 1)	Psi _{JL} (Note 2) R _{θJA}	24 216	°C/W

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.

- 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 $\text{Psi}_{JL}.$



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ULTRAFAST RECTIFIERS 2 AMPERES, 50–100 VOLTS



SMA CASE 403D PLASTIC

MARKING DIAGRAM



U5x = Device Code x = A for MURA205T3 = B for MURA210T3

= Assembly Location

- = Year
- WW = Work Week
- = Pb–Free Package

ORDERING INFORMATION

Device	Package	Shipping [†]
MURA205T3	SMA	5000/Tape & Reel
MURA205T3G	SMA (Pb–Free)	5000/Tape & Reel
MURA210T3	SMA	5000/Tape & Reel
MURA210T3G	SMA (Pb–Free)	5000/Tape & Reel

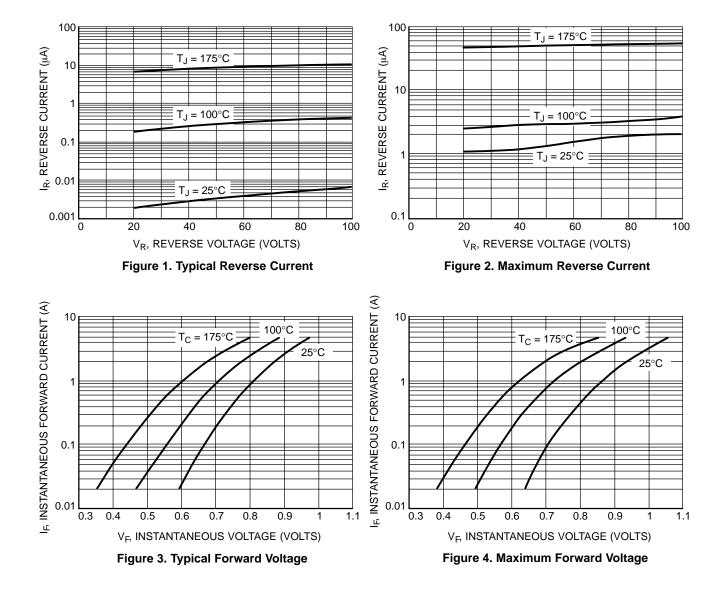
+For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

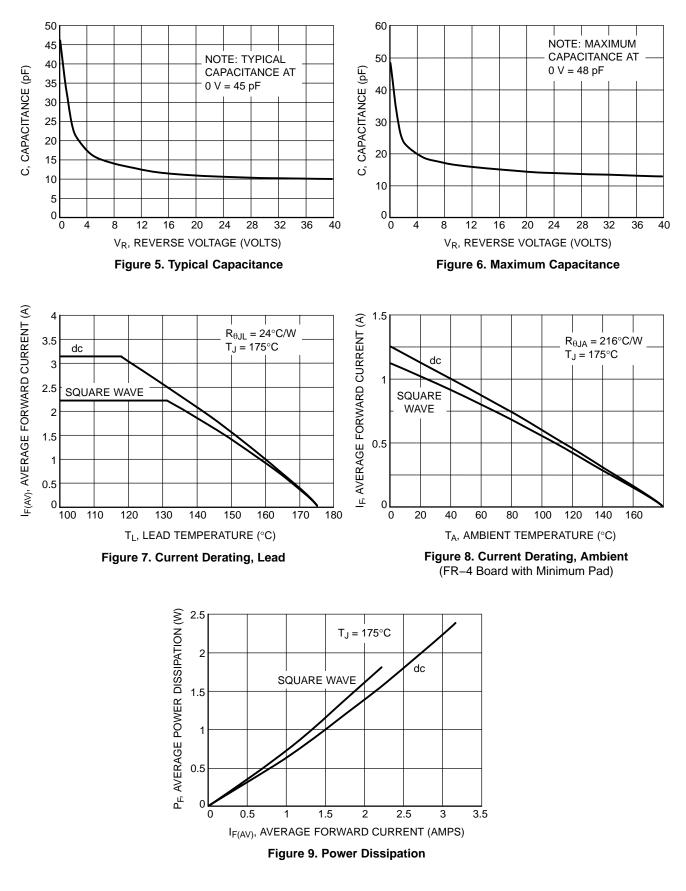
Preferred devices are recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 3) ($i_F = 2.0 \text{ A}, T_J = 25^{\circ}\text{C}$) ($i_F = 2.0 \text{ A}, T_J = 150^{\circ}\text{C}$)	VF	0.94 0.74	V
Maximum Instantaneous Reverse Current (Note 3) (Rated DC Voltage, $T_J = 25^{\circ}C$) (Rated DC Voltage, $T_J = 150^{\circ}C$)	İR	2.0 50	μΑ
Maximum Reverse Recovery Time (i _F = 1.0 A, di/dt = 50 A/μs)	t _{rr}	30	ns

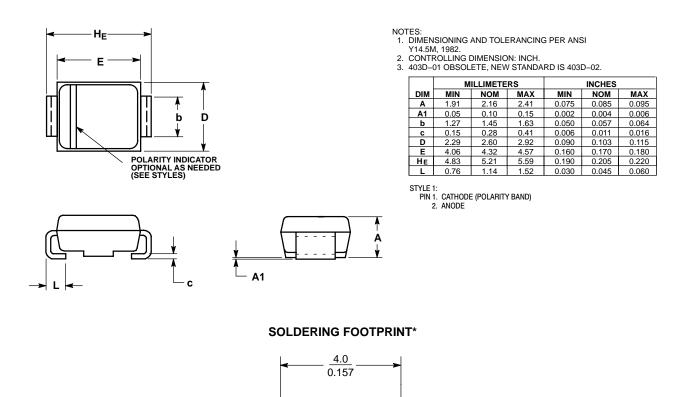
3. Pulse Test: Pulse Width = 300 $\mu s,$ Duty Cycle \leq 2.0%.





PACKAGE DIMENSIONS

SMA CASE 403D-02 ISSUE C



SCALE 8:1 (mm/inches)
*For additional information on our Pb–Free strategy and soldering
details, please download the ON Semiconductor Soldering and
Mounting Techniques Reference Manual, SOLDERRM/D.

<u>2.0</u> 0.0787 <u>2.0</u> 0.0787

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