MRA4003T3 Series

Surface Mount Standard Recovery Power Rectifier

SMA Power Surface Mount Package

Features construction with glass passivation. Ideally suited for surface mounted Automotive application.

- Compact Package with J−Bend Leads Ideal for Automated Handling
- Stable, High Temperature, Glass Passivated Junction

Mechanical Characteristics

- Case: Molded Epoxy
  Epoxy meets UL 94 V−0 @ 0.125 in
- Weight: 70 mg (Approximately)
- Finish: All External Surfaces are Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 seconds in Solder Bath
- Polarity: Band in Plastic Body Indicates Cathode Lead
- Marking: MRA4003T3 = R13
  MRA4004T3 = R14
  MRA4005T1 = R15
  MRA4005T3 = R15
  MRA4006T3 = R16
  MRA4007T3 = R17

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STANDARD RECOVERY RECTIFIERS 1.0 AMPERES 300−1000 VOLTS

CASE 403D SMA PLASTIC

MARKING DIAGRAM

R1x = Specific Device Code
A = Assembly Location
L = Wafer Lot
Y = Year
W = Work Week
▪ = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping†
MRA4003T3	SMA	5000/Tape & Reel
MRA4003T3G	SMA (Pb−Free)	5000/Tape & Reel
MRA4004T3	SMA	5000/Tape & Reel
MRA4004T3G	SMA (Pb−Free)	5000/Tape & Reel
MRA4005T1	SMA	1500/Tape & Reel
MRA4005T3	SMA	5000/Tape & Reel
MRA4006T3	SMA	5000/Tape & Reel
MRA4007T3	SMA	5000/Tape & Reel
MRA4007T3G	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.

MAXIMUM RATINGS

Please See the Table on the Following Page

MAXIMUM RATINGS

Rating	Symbol	Value					Unit
		MRA4003T3	MRA4004T3	MRA4005T1, MRA4005T3	MRA4006T3	MRA4007T3	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	300	400	600	800	1000	Volts
Avg. Rectified Forward Current (At Rated V_R, T_L = 150°C)	I_O	1					Amp
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz, T_L = 150°C)	I_{FRM}	2					Amps
Non−Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I_{FSM}	30					Amps
Storage/Operating Case Temperature	T_{stg}, T_C	−55 to 150					°C
Operating Junction Temperature	T_J	−55 to 175					°C

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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction−to−Lead (Note 1) Thermal Resistance, Junction−to−Ambient (Note 2)	$R_{\theta JL}$ $R_{\theta JA}$	16.2 88.3	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value		Unit
		T_J = 25°C	T_J = 100°C	
Maximum Instantaneous Forward Voltage (Note 3) (I_F = 1 A) (I_F = 2 A)	V_F	 1.1 1.18	 1.04 1.12	Volts
Maximum Instantaneous Reverse Current (at rated DC voltage)	I_R	10	50	μA

1. Minimum Pad Size
2. 1 inch Pad Size
3. Pulse Test: Pulse Width ≤ 250 μs, Duty Cycle ≤ 2%.

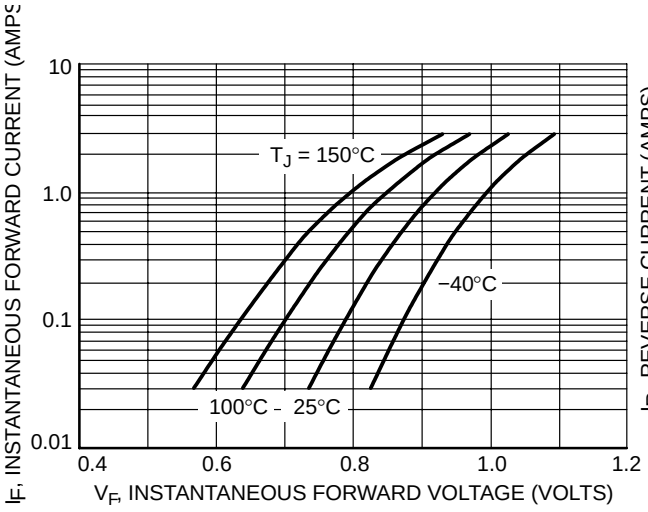


Figure 1. Typical Forward Voltage

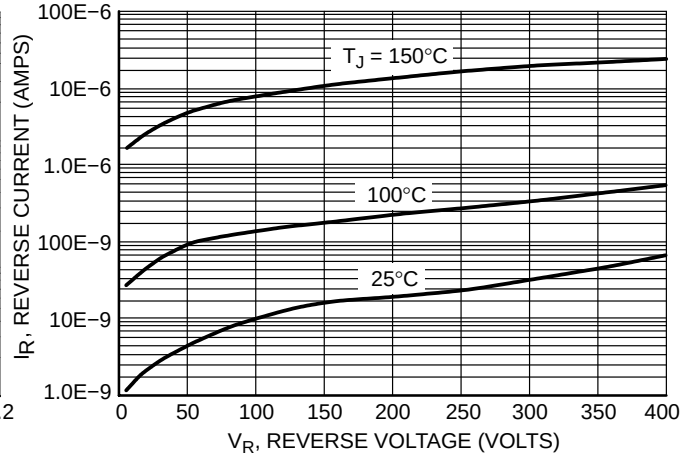


Figure 2. Typical Reverse Current

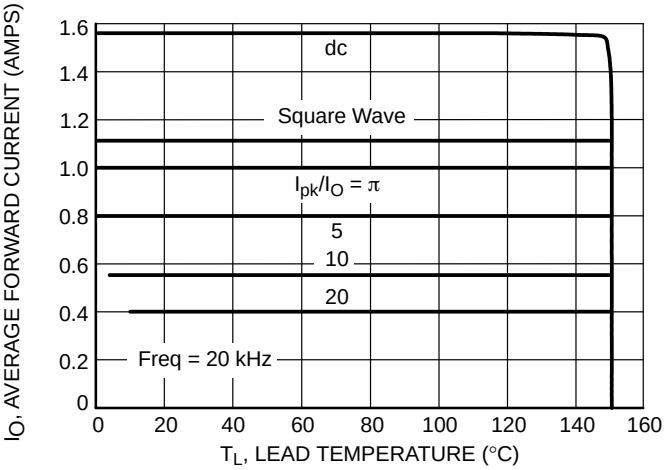


Figure 3. Current Derating per Leg

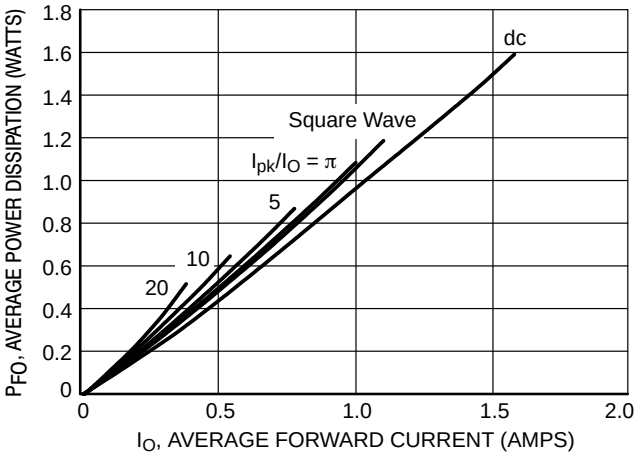


Figure 4. Forward Power Dissipation per Leg

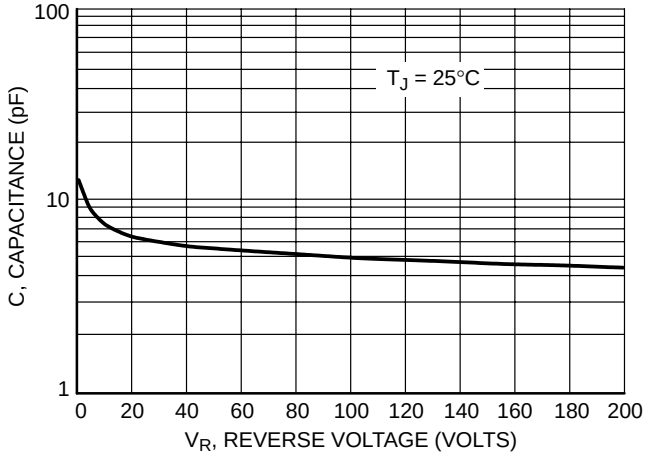


Figure 5. Capacitance

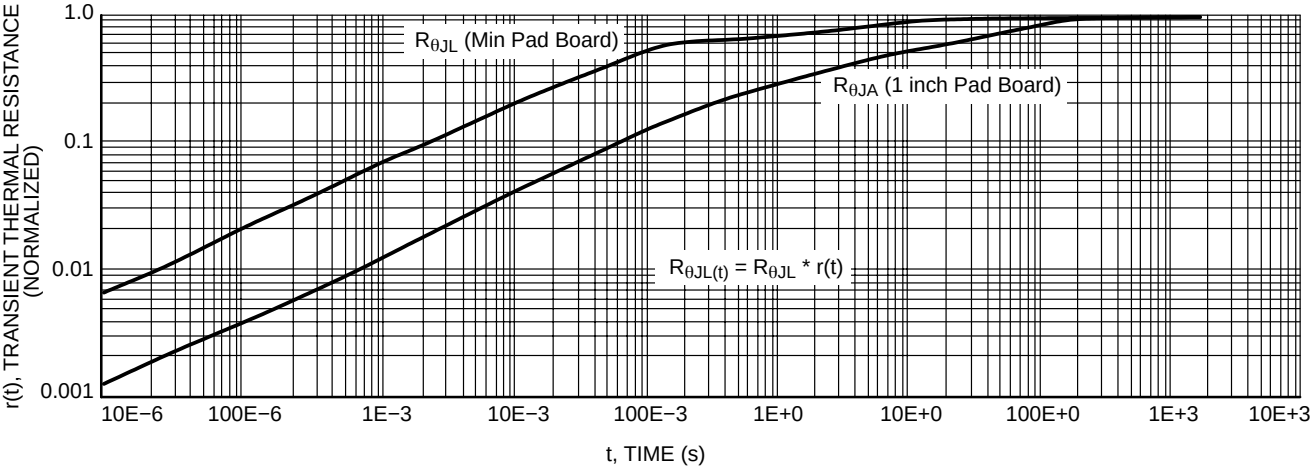
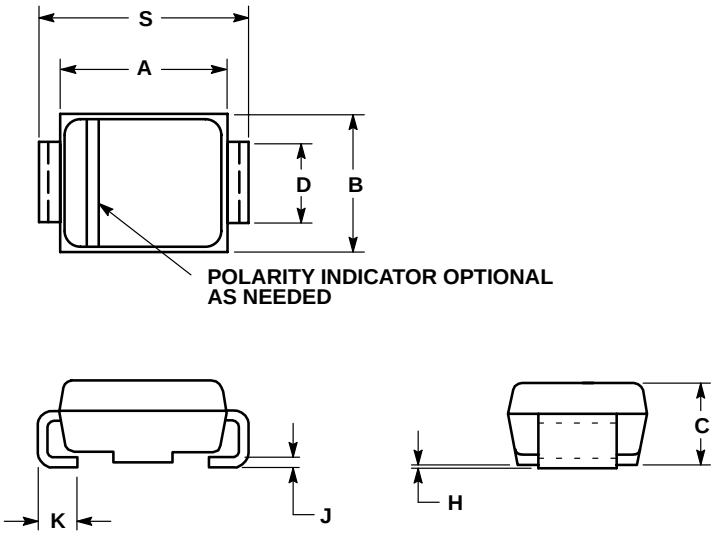


Figure 6. Thermal Response

MRA4003T3 Series

PACKAGE DIMENSIONS

SMA
PLASTIC PACKAGE
CASE 403D−02
ISSUE A



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 403D−01 OBSOLETE, NEW STANDARD IS 403D−02.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.160	0.180	4.06	4.57
B	0.090	0.115	2.29	2.92
C	0.075	0.095	1.91	2.41
D	0.050	0.064	1.27	1.63
H	0.002	0.006	0.05	0.15
J	0.006	0.016	0.15	0.41
K	0.030	0.060	0.76	1.52
S	0.190	0.220	4.83	5.59

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
Phone: 480−829−7710 or 800−344−3860 Toll Free USA/Canada
Fax: 480−829−7709 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

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Japan: ON Semiconductor, Japan Customer Focus Center
2−9−1 Kamimeguro, Meguro−ku, Tokyo, Japan 153−0051
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ON Semiconductor Website: http://onsemi.com

Order Literature: http://www.onsemi.com/litorder

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