

# 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 UL94, VO at 1/8"
- 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: Notch and/or Band in Plastic Body Indicates Cathode Lead
- Available in 12 mm Tape, 5000 Units per 13 inch Reel, Add "T3" Suffix to Part Number
- Marking: MRA4003T3 — R13  
MRA4004T3 — R14  
MRA4005T3 — R15  
MRA4006T3 — R16  
MRA4007T3 — R17

#### MAXIMUM RATINGS

Please See the Table on the Following Page



**ON Semiconductor®**

<http://onsemi.com>

**STANDARD RECOVERY  
RECTIFIERS  
1.0 AMPERES  
300–1000 VOLTS**



**CASE 403B  
SMA  
PLASTIC**

#### MARKING DIAGRAM



R1x = Device Code  
x = 3, 4, 5, 6 or 7  
LL = Location Code  
## = Date Code

#### ORDERING INFORMATION

Device	Package	Shipping
MRA4003T3	SMA	5000/Tape & Reel
MRA4004T3	SMA	5000/Tape & Reel
MRA4005T3	SMA	5000/Tape & Reel
MRA4006T3	SMA	5000/Tape & Reel
MRA4007T3	SMA	5000/Tape & Reel

# MRA4003T3 Series

## MAXIMUM RATINGS

Rating	Symbol	Value					Unit
		MRA4003T3	MRA4004T3	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 $V_R$ , $T_L = 150^\circ\text{C}$ )	$I_O$	1					Amp
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz, $T_L = 150^\circ\text{C}$ )	$I_{FRM}$	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					$^\circ\text{C}$
Operating Junction Temperature	$T_J$	-55 to 175					$^\circ\text{C}$

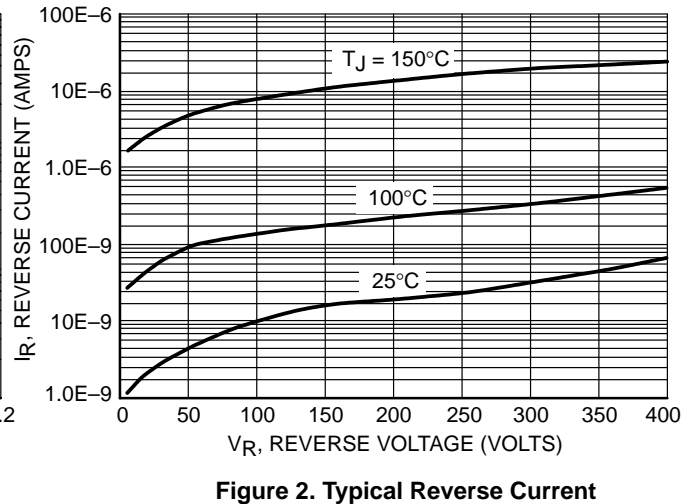
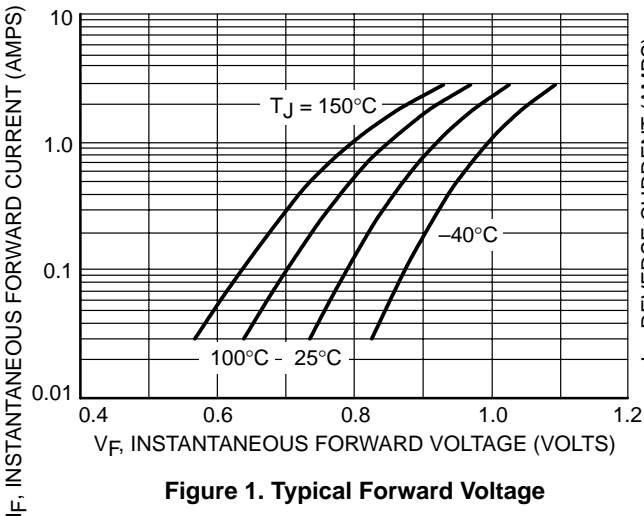
## THERMAL CHARACTERISTICS

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

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value		Unit
		$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	
Maximum Instantaneous Forward Voltage (Note 3.) ( $I_F = 1\text{ A}$ ) ( $I_F = 2\text{ A}$ )	$V_F$	1.1 1.18	1.04 1.12	Volts
Maximum Instantaneous Reverse Current (at rated DC voltage)	$I_R$	10	50	$\mu\text{A}$

1. Minimum Pad Size
2. 1 inch Pad Size
3. Pulse Test: Pulse Width  $\leq 250\ \mu\text{s}$ , Duty Cycle  $\leq 2\%$ .



# MRA4003T3 Series

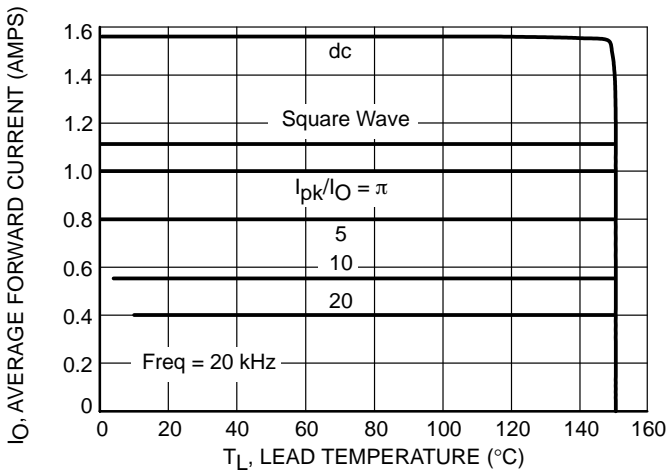


Figure 3. Current Derating per Leg

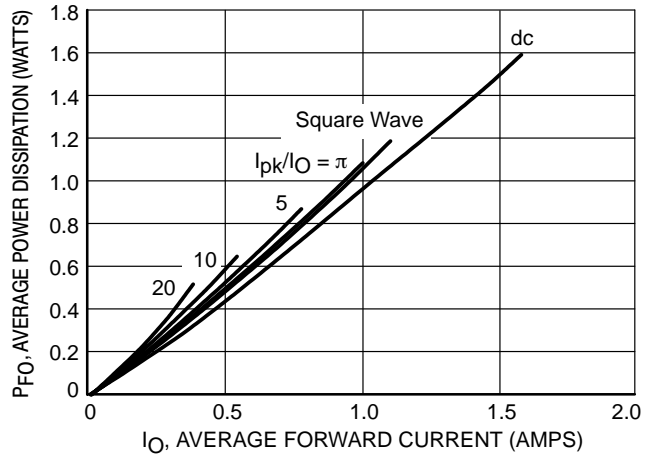


Figure 4. Forward Power Dissipation per Leg

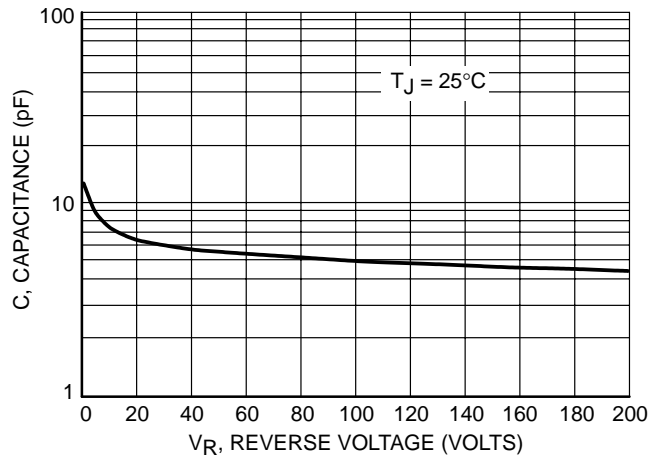


Figure 5. Capacitance

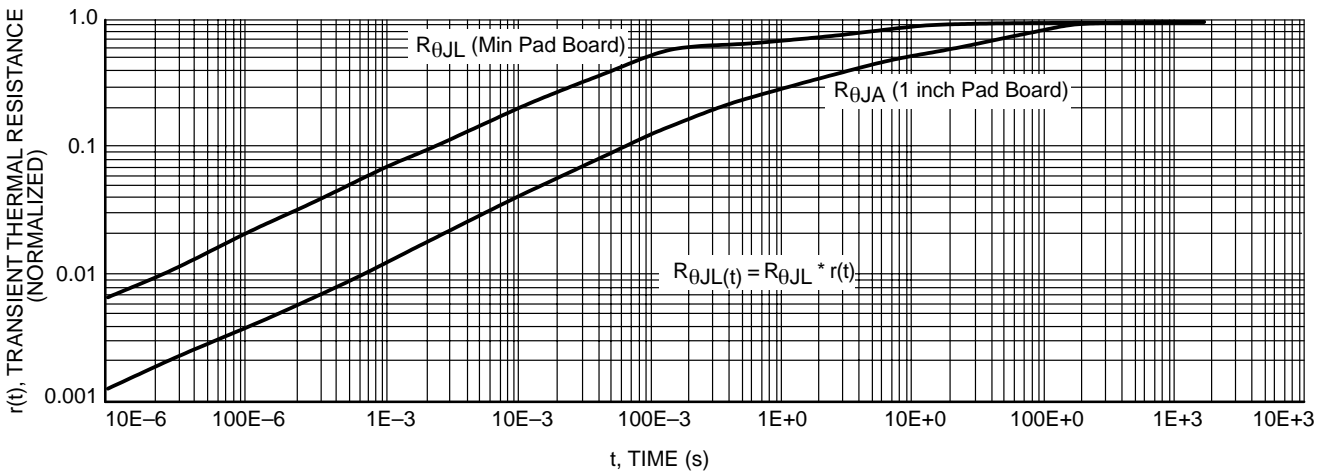
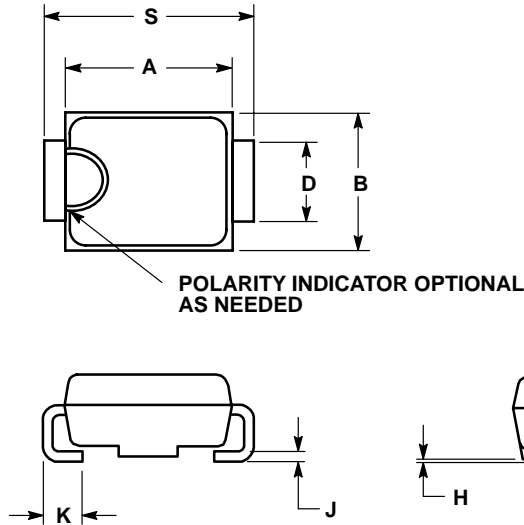


Figure 6. Thermal Response

# MRA4003T3 Series

## PACKAGE DIMENSIONS

### SMA PLASTIC PACKAGE CASE 403B-02 ISSUE C

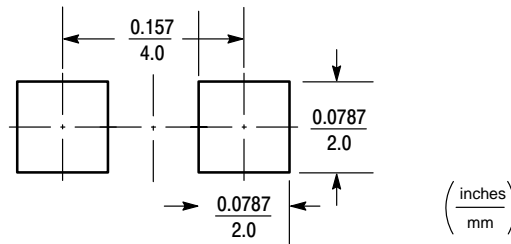



NOTES:

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

DIM	INCHES		MILLIMETERS	
	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

### SMA Footprint



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