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

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



ON Semiconductor®

http://onsemi.com

STANDARD RECOVERY RECTIFIERS 1.0 AMPERES 300-1000 VOLTS



CASE 403D SMA PLASTIC

MARKING DIAGRAM



R1x = Specific Device Code

= Assembly Location

= Wafer Lot
Y = Year

W = Work Week

= Pb–Free Package

MAXIMUM RATINGS

		Value					
Rating	Symbol	MRA4003T3	MRA4004T3	MRA4005T1, MRA4005T3	MRA4006T3	MRA4007T3	Unit
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)	Io	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	TJ	–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)	$R_{ hetaJL} \ R_{ hetaJA}$	16.2 88.3	°C/W	

ELECTRICAL CHARACTERISTICS

		Value		
Characteristic	Symbol	T _J = 25°C	T _J = 100°C	Unit
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	μΑ

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

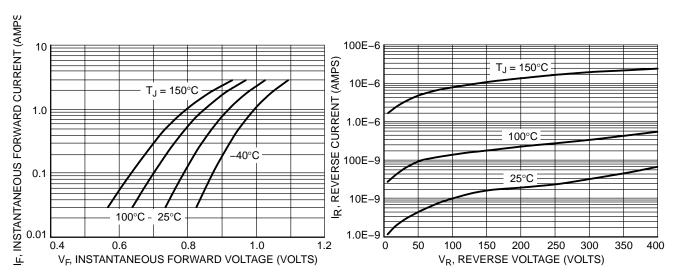


Figure 1. Typical Forward Voltage

Figure 2. Typical Reverse Current

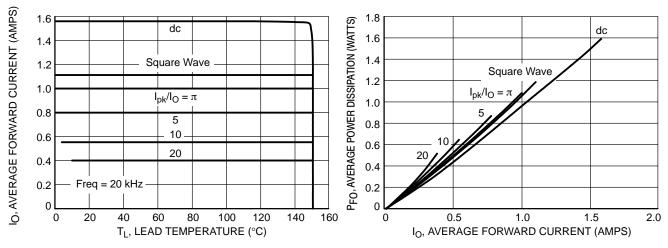


Figure 3. Current Derating per Leg

Figure 4. Forward Power Dissipation per Leg

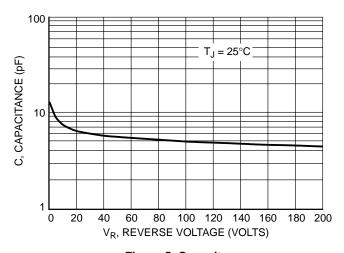


Figure 5. Capacitance

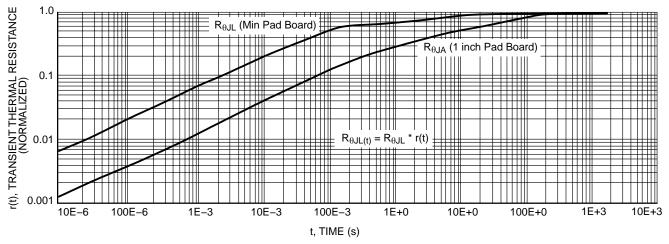
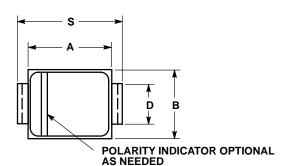


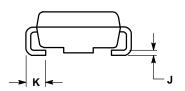
Figure 6. Thermal Response

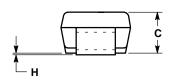
PACKAGE DIMENSIONS

SMA PLASTIC PACKAGE CASE 403D-02

ISSUE A







NOTES:

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

	INC	HES	MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.160	0.180	4.06	4.57	
В	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	
Н	0.002	0.006	0.05	0.15	
_	0.006	0.016	0.15	0.41	
Κ	0.030	0.060	0.76	1.52	
S	0.190	0.220	4.83	5.59	

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