MRS1504T3G, NRVS1504T3G

Surface Mount Standard Recovery Power Rectifier

SMB Power Surface Mount Package

Features mesa epitaxial construction with glass passivation. Ideally suited for high frequency switching power supplies; free wheeling diodes and polarity protection diodes.

Features

- Compact Package with J−Bend Leads Ideal for Automated Handling
- Stable, High Temperature, Glass Passivated Junction
- AEC−Q101 Qualified and PPAP Capable
- NRVS Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- All Packages are Pb-Free*

Mechanical Characteristics:

- Case: Molded Epoxy
- Epoxy Meets UL 94 V−0 @ 0.125 in
- Weight: 95 mg (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Maximum Temperature of 260°C / 10 Seconds for Soldering
- Polarity: Notch and/or Band in Plastic Body Indicates Cathode Lead
- ESD Ratings:
  - Machine Model = C
  - Human Body Model = 3A

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

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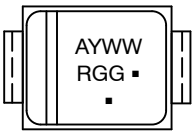
http://onsemi.com

STANDARD RECOVERY RECTIFIER 1.5 AMPERES, 400 VOLTS



SMB
CASE 403A
PLASTIC

MARKING DIAGRAM



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

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MRS1504T3G	SMB (Pb−Free)	2,500 / Tape & Reel
NRVS1504T3G	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.

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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	400	V
Average Rectified Forward Current (At Rated V_R, T_l = 118°C)	I_O	1.5	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz, T_l = 118°C)	I_{FRM}	3.0	A
Non−Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I_{FSM}	50	A
Storage/Operating Case Temperature Range	T_{stg}, T_C	−55 to 150	°C
Operating Temperature Range	T_J	−55 to 150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance, Junction−to−Lead (Note 1)	R_{tjl}	18	°C/W
Thermal Resistance, Junction−to−Ambient (on 1″ sq. Cu. PCB pattern)	R_{tja}	79	°C/W

1. Minimum pad size.

ELECTRICAL CHARACTERISTICS

Rating	Symbol	T_J = 25°C	T_J = 100°C	Unit
Maximum Instantaneous Forward Voltage (Note 2), see Figure 2 (I_F = 1.5 A) (I_F = 2.25 A)	V_F	 1.04 1.10	 0.96 1.02	V
Maximum Instantaneous Reverse Current, see Figure 4 (V_R = 400 V) (V_R = 200 V)	I_R	 1.0 0.5	 340 180	μA

2. Pulse Test: Pulse Width ≤ 250 μs, Duty Cycle ≤ 2.0%

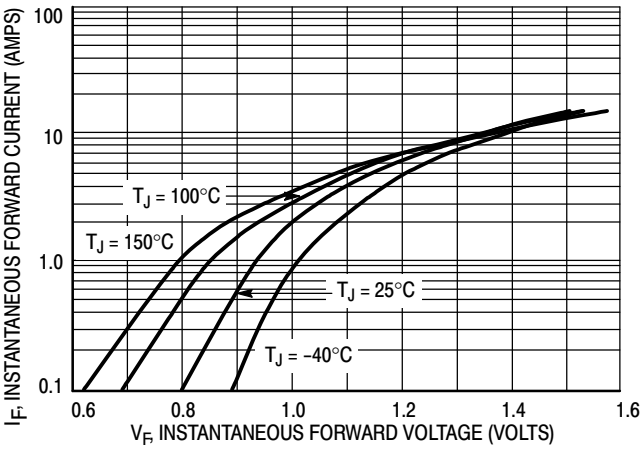


Figure 1. Typical Forward Voltage

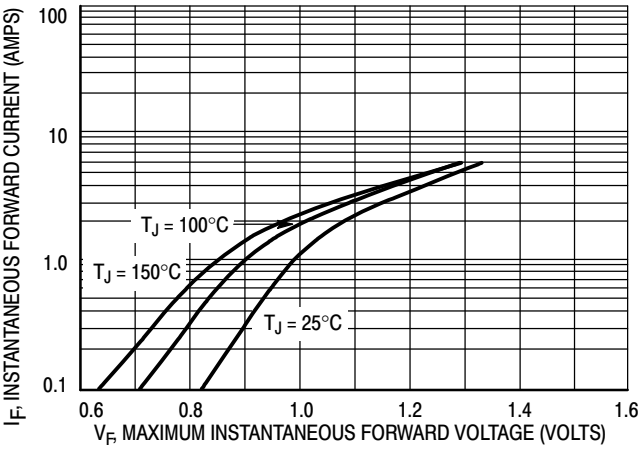


Figure 2. Maximum Forward Voltage

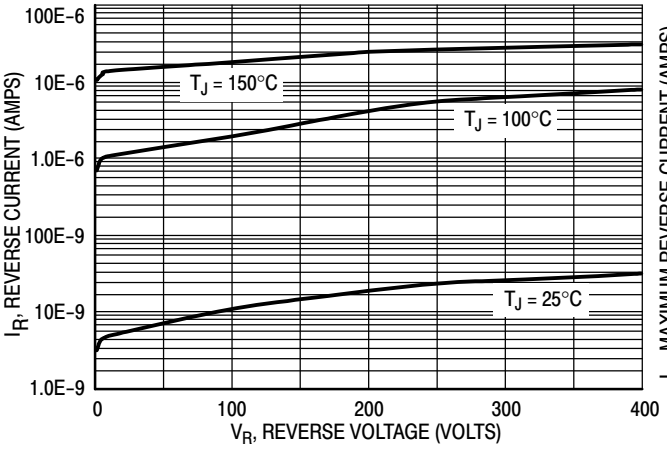


Figure 3. Typical Reverse Current

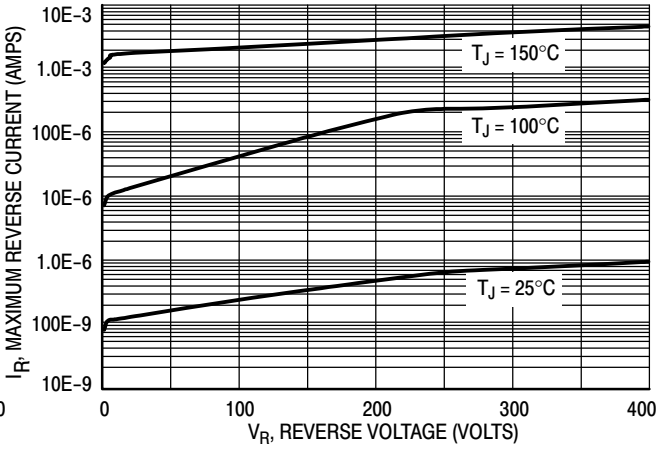


Figure 4. Maximum Reverse Current

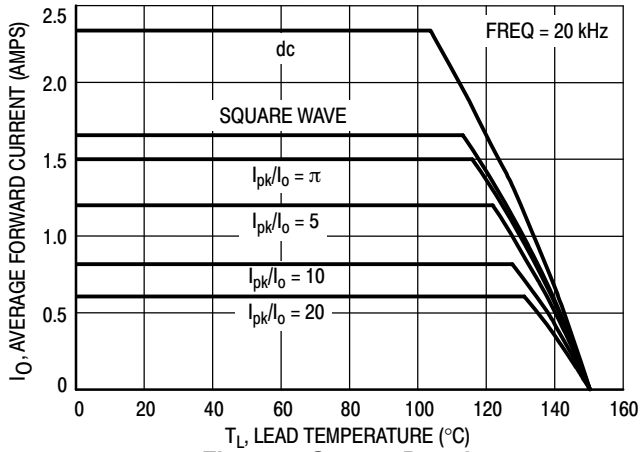


Figure 5. Current Derating

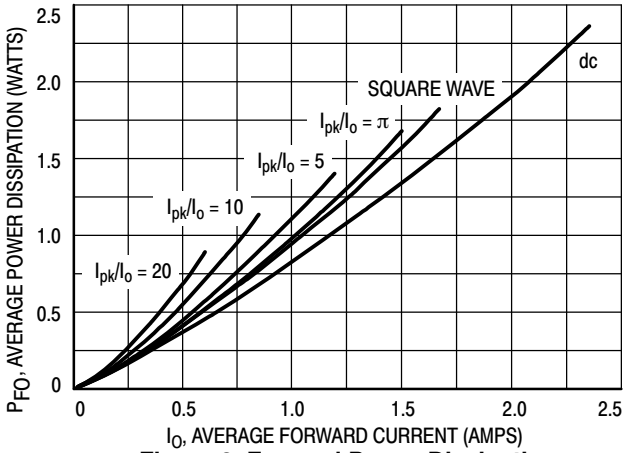


Figure 6. Forward Power Dissipation

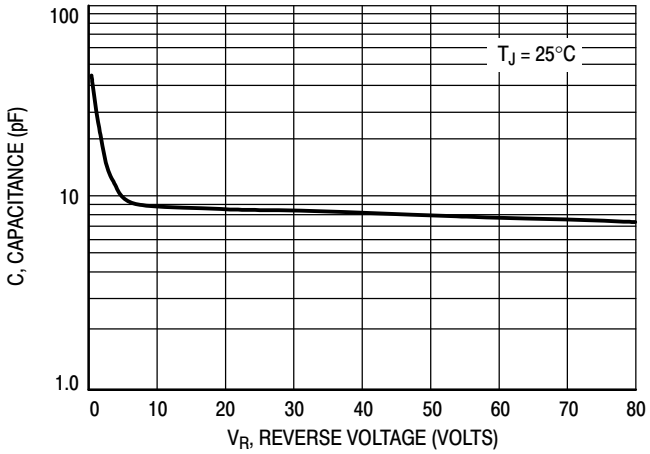


Figure 7. Capacitance

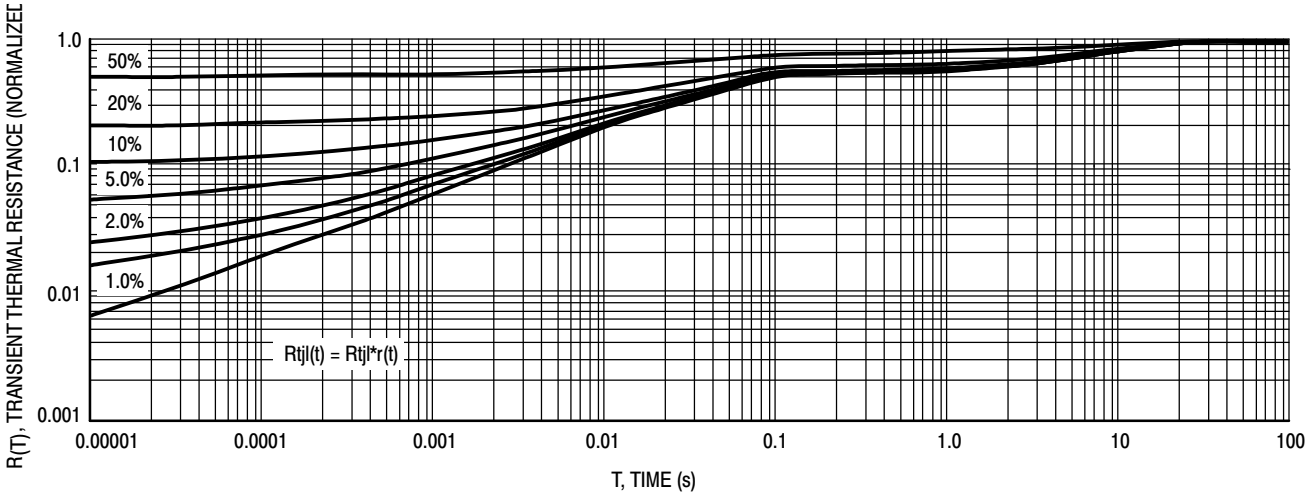


Figure 8. Thermal Response, Junction−to−Lead

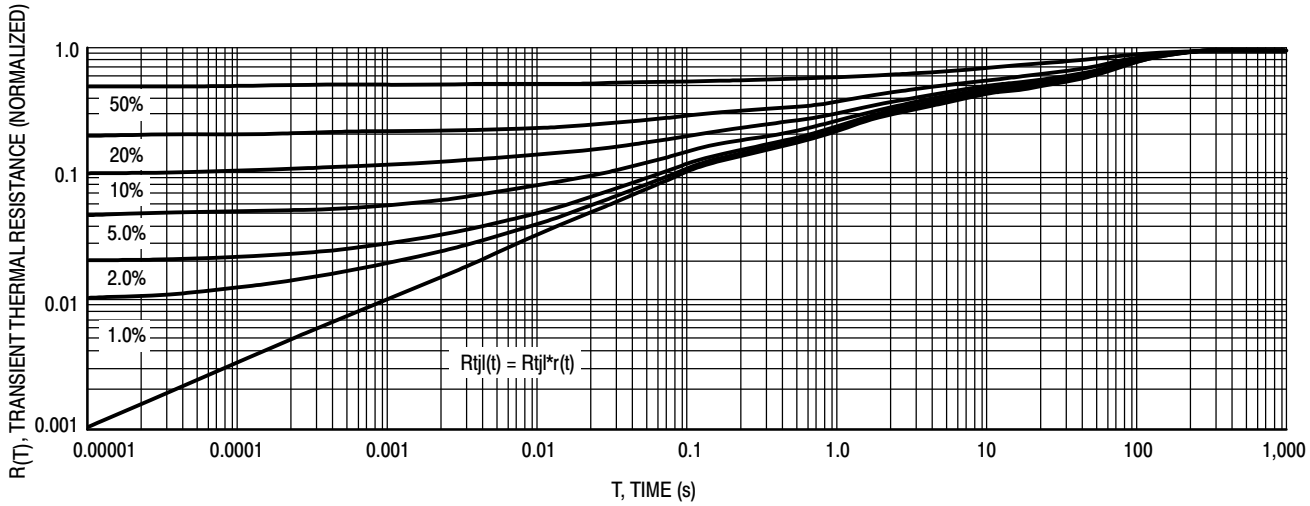
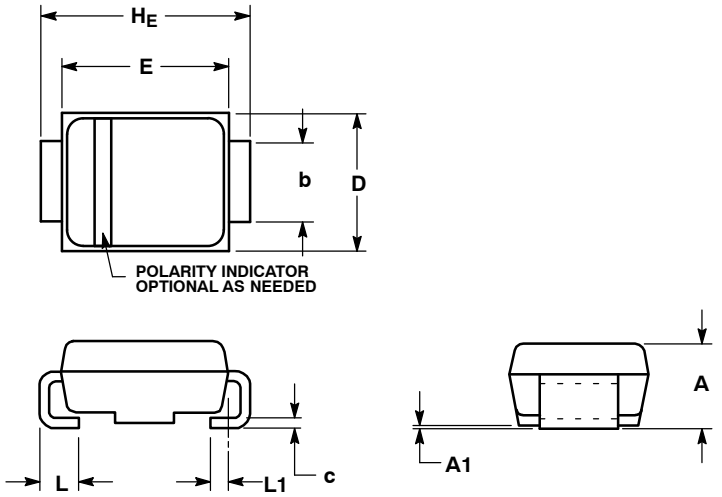


Figure 9. Thermal Response, Junction−to−Ambient

PACKAGE DIMENSIONS

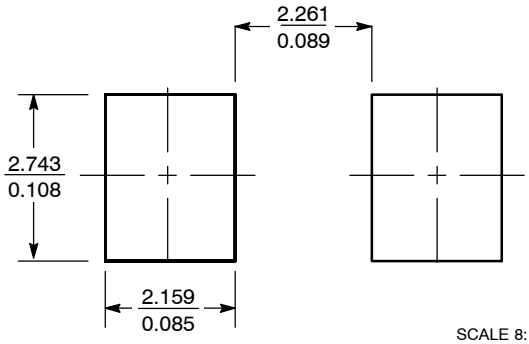
SMB
CASE 403A−03
ISSUE J



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 $\left(\frac{mm}{inches}\right)$

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

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