

## Advance Information

# 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.

- 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: 95 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Maximum Temperature of 260°C / 10 Seconds for Soldering
- Available in 12 mm Tape, 2500 Units per 13 inch Reel, Add "T3" Suffix to Part Number
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- Marking: RGG

**MRS1504T3**

**STANDARD RECOVERY  
RECTIFIER  
1.5 AMPERES  
400 VOLTS**



**CASE 403A-03  
SMB**

### 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 $V_R$ , $T_J = 118^\circ\text{C}$ )	$I_O$	1.5	A
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz, $T_J = 118^\circ\text{C}$ )	$I_{FRM}$	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	$T_{stg}, T_C$	-55 to 150	$^\circ\text{C}$
Operating Junction Temperature	$T_J$	-55 to 150	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

Thermal Resistance – Junction-to-Lead (2)	$R_{tjl}$	18	$^\circ\text{C}/\text{W}$
Thermal Resistance – Junction-to-Ambient (on 1" sq. Cu. PCB pattern)	$R_{tja}$	79	

### ELECTRICAL CHARACTERISTICS

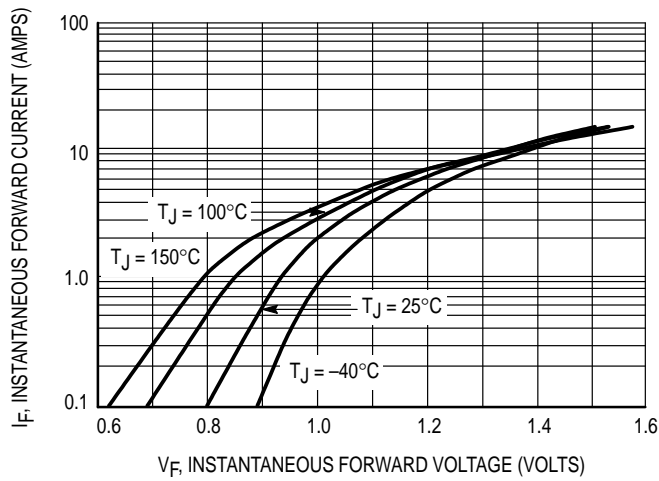
Maximum Instantaneous Forward Voltage (1), see Figure 2 ( $I_F = 1.5\text{ A}$ ) ( $I_F = 2.25\text{ A}$ )	$V_F$	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	V
		1.04 1.10	0.96 1.02	
Maximum Instantaneous Reverse Current, see Figure 4 ( $V_R = 400\text{ V}$ ) ( $V_R = 200\text{ V}$ )	$I_R$	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	$\mu\text{A}$
		1.0 0.5	340 180	

(1) Pulse Test: Pulse Width  $\leq 250\text{ }\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

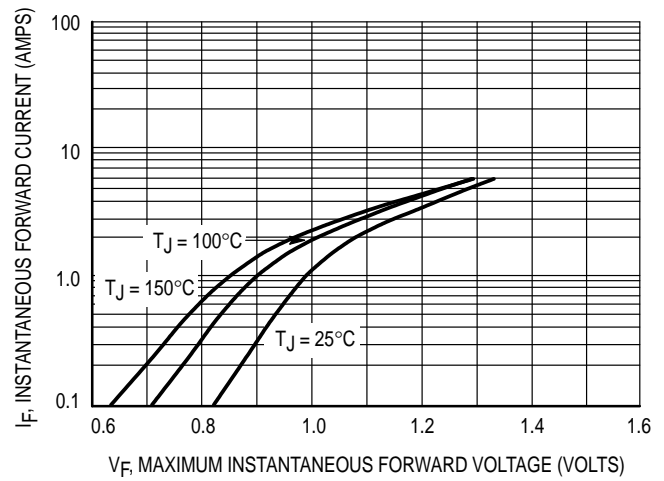
(2) Minimum pad size

This document contains information on a new product. Specifications and information herein are subject to change without notice.

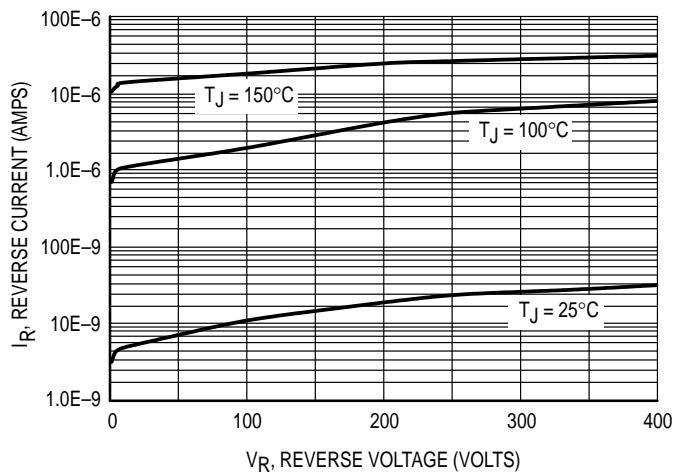




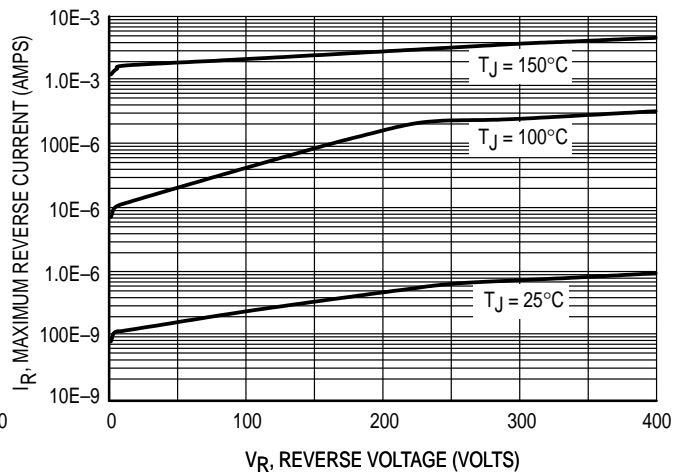
**Figure 1. Typical Forward Voltage**



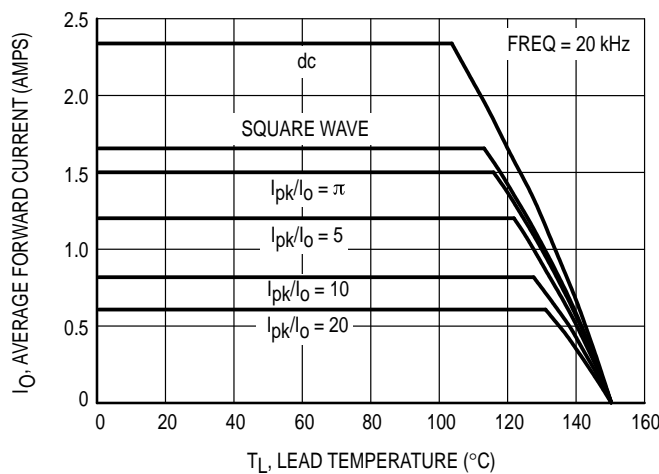
**Figure 2. Maximum Forward Voltage**



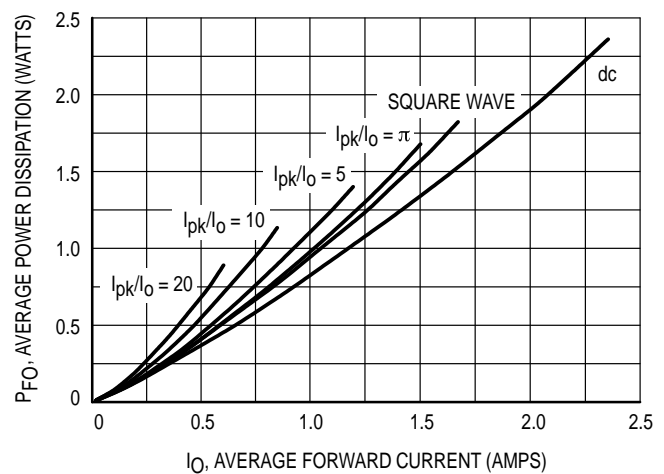
**Figure 3. Typical Reverse Current**



**Figure 4. Maximum Reverse Current**



**Figure 5. Current Derating**



**Figure 6. Forward Power Dissipation**

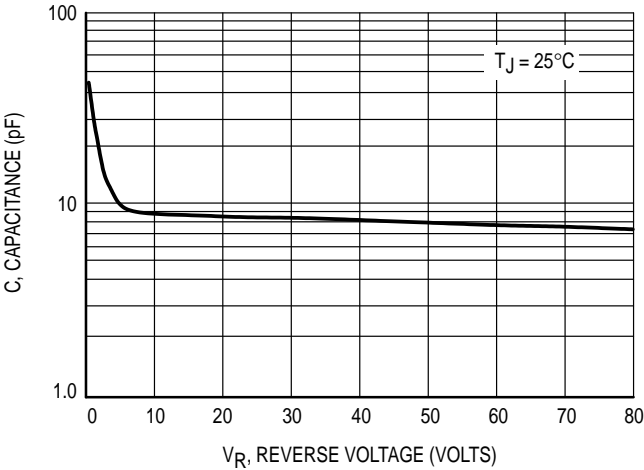


Figure 7. Capacitance

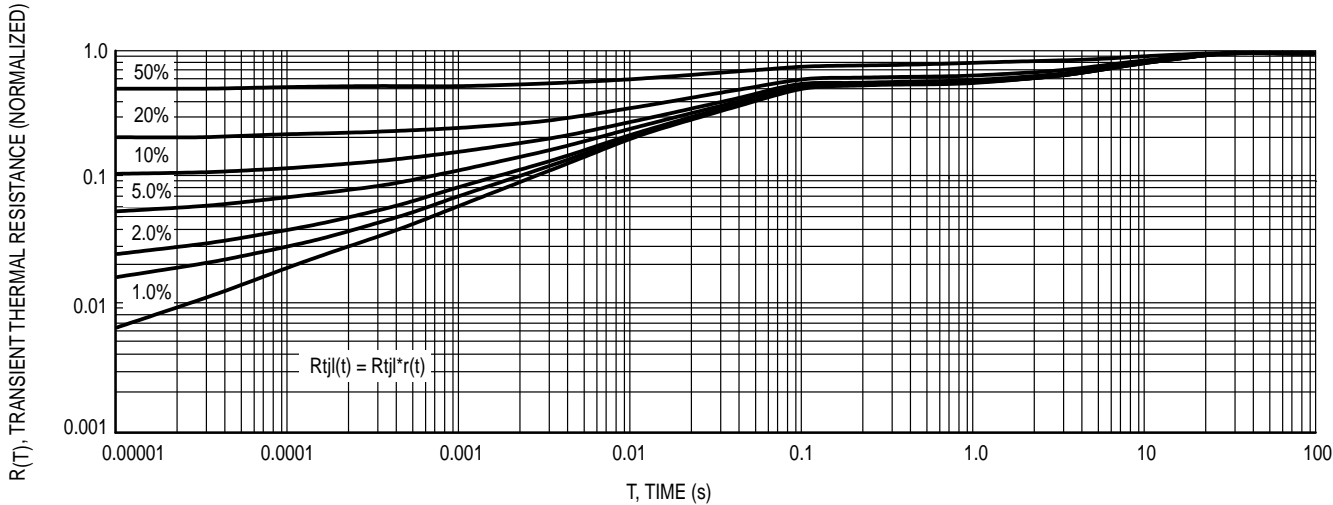


Figure 8. Thermal Response Junction to Lead

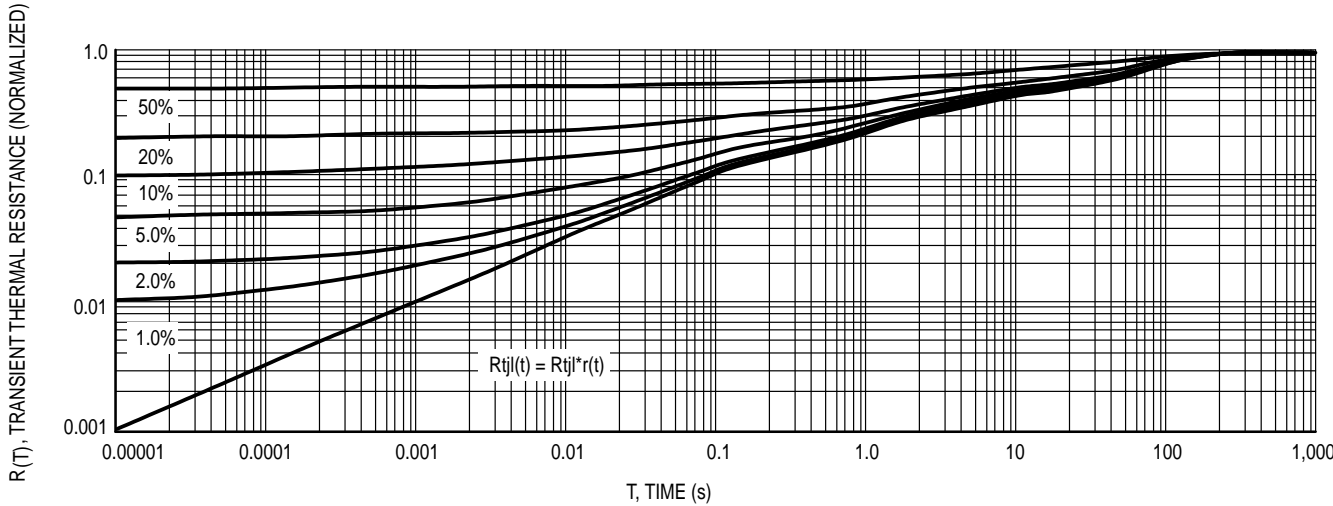
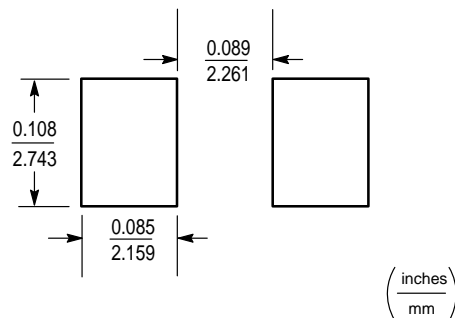
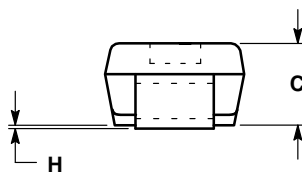
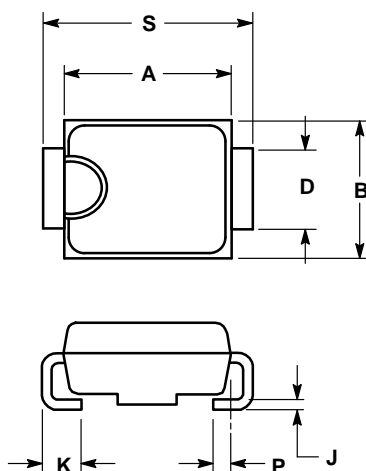


Figure 9. Thermal Response Junction to Ambient



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## PACKAGE DIMENSIONS

CASE 403A-03  
ISSUE B

## NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.160	0.180	4.06	4.57
B	0.130	0.150	3.30	3.81
C	0.075	0.095	1.90	2.41
D	0.077	0.083	1.96	2.11
H	0.0020	0.0060	0.051	0.152
J	0.006	0.012	0.15	0.30
K	0.030	0.050	0.76	1.27
P	0.020	REF	0.51	REF
S	0.205	0.220	5.21	5.59

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