

# ***SM400X SERIES***

**SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER**

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# SM4001 THRU SM4007

## SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER

**REVERSE VOLTAGE:** 50 to 1000 VOLTS

**FORWARD CURRENT:** 1.0 AMPERE

### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- For surface mounted applications
- High temperature metallurgically bonded construction
- Cavity-free glass passivated junction
- Capable of meeting environmental standards of MIL-S-19500
- High temperature soldering : 250°C /10 seconds at terminals

### MECHANICAL DATA

Case: Molded plastic, MELF

Epoxy: UL 94V-O rate flame retardant

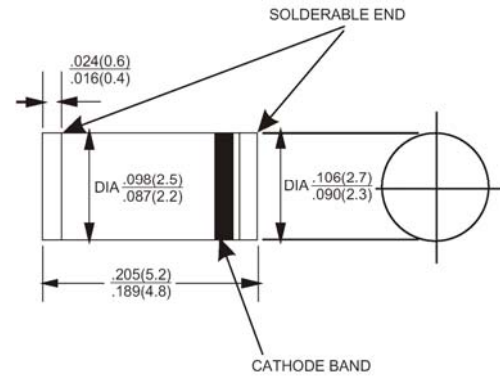
Terminals: Solder plated, solderable per MIL-STD-750, method 208 guaranteed

Polarity: Color band denotes cathode end

Mounting position: Any

Weight: 0.005 ounce, 0.12 gram

MELF



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

	Symbols	SM4001	SM4002	SM4003	SM4004	SM4005	SM4006	SM4007	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at $T_A=75^\circ\text{C}$	$I_{(AV)}$	1.0							Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30							Amp
Maximum Forward Voltage at 1.0A	$V_F$	1.1							Volts
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=125^\circ\text{C}$	$I_R$	5.0 200							$\mu\text{Amp}$
Typical Junction Capacitance (Note 1)	$C_J$	15							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	50							$^\circ\text{C/W}$
Typical Thermal Resistance (Note 3)	$R_{\theta JT}$	20							$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_J$	-55 to +175							$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +175							$^\circ\text{C}$

### NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

2- Thermal resistance from junction to ambient, 0.24 x 0.24" (6.0 x 6.0mm) copper pads to each terminal

3- Thermal resistance from junction to terminal, 0.24 x 0.24" (6.0 x 6.0mm) copper pads to each terminal

# SM4001 THRU SM4007

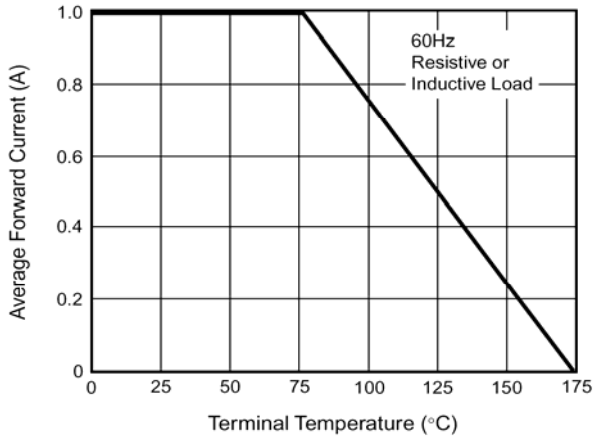
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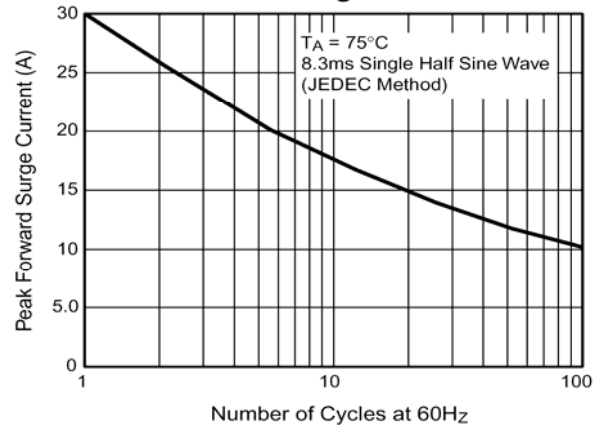
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### RATINGS AND CHARACTERISTIC CURVES

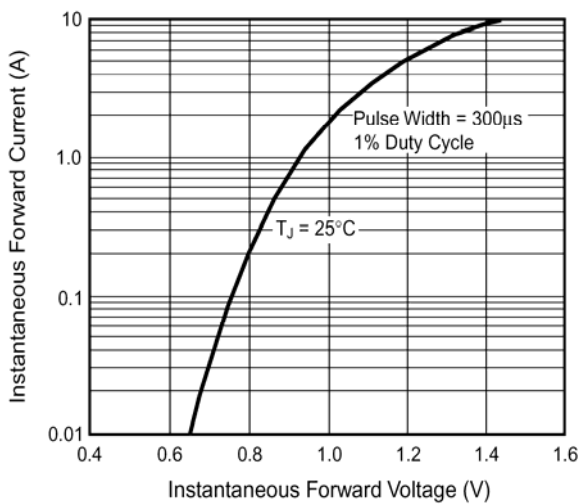
**Fig. 1 - Forward Current Derating Curve**



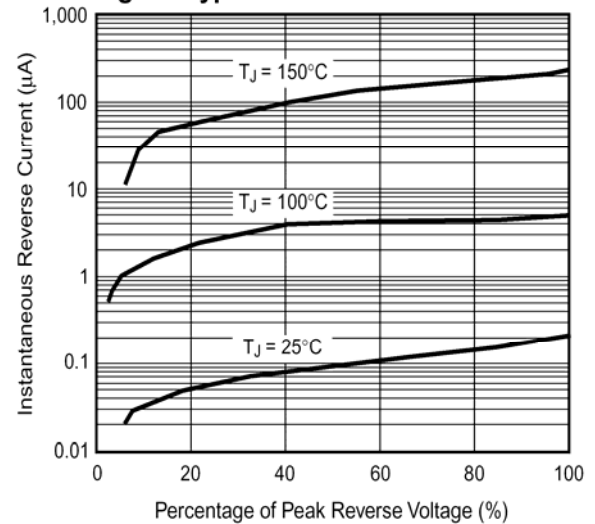
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



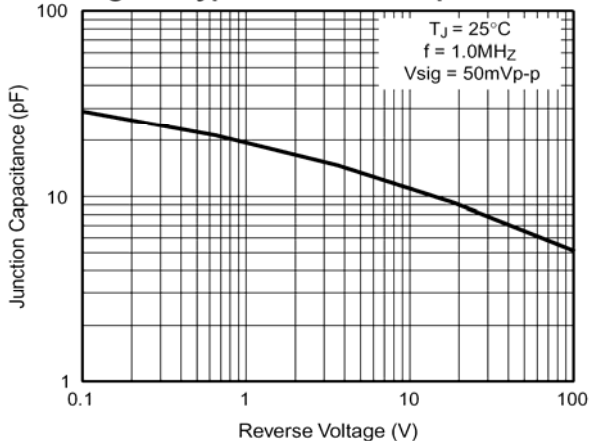
**Fig. 3 - Typical Instantaneous Forward Characteristics**



**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



**Fig. 6 - Typical Transient Thermal Impedance**

