# SM4001 THRU SM4007

## *SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER*

GROWCHILD ELECTRONICS™

***REVERSE VOLTAGE:*** **50 to 1000 VOLTS**

***FORWARD CURRENT:*** **1.0 AMPERE**

http://www.njzrg.com

### *FEATURES*

· Plastic package has Underwriters Laboratory Flammability Classification 94V-O

· For surface mounted applications

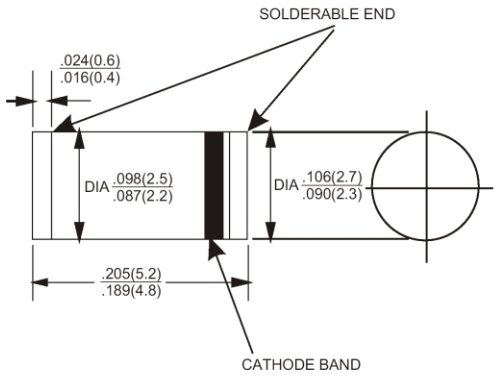
· High temperature metallurgically bonded construction

· Cavity-free glass passivated junction

· Capable of meeting environmental standards of MIL-S-19500

· High temperature soldering : 260°C /10 seconds at terminals

**MELF**




**Dimensions in inches and (millimeters)**

### *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

## *Maximum Ratings and Electrical Characteristics*

Ratings at 25℃ ambient temperature unless otherwise specified.

Single phase, half wave, 60$H_Z$, 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℃** | $I_{(AV)}$ | 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℃** | $I_R$ | 5.0 | | | | | | | **μAmp** |
| **at Rated DC Blocking Voltage $T_A$=125℃** | | 200 | | | | | | | |
| **Typical Junction Capacitance (Note 1)** | $C_J$ | 15 | | | | | | | **pF** |
| **Typical Thermal Resistance (Note 2)** | $R_{\theta JA}$ | 50 | | | | | | | **℃/W** |
| **Typical Thermal Resistance (Note 3)** | $R_{\theta JT}$ | 20 | | | | | | | **℃/W** |
| **Operating Junction Temperature Range** | $T_J$ | -55 to +175 | | | | | | | **℃** |
| **Storage Temperature Range** | Tstg | -55 to +175 | | | | | | | **℃** |

**NOTES:**

1- Measured at 1 $MH_Z$ 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

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### *RATINGS AND CHARACTERISTIC CURVES*

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

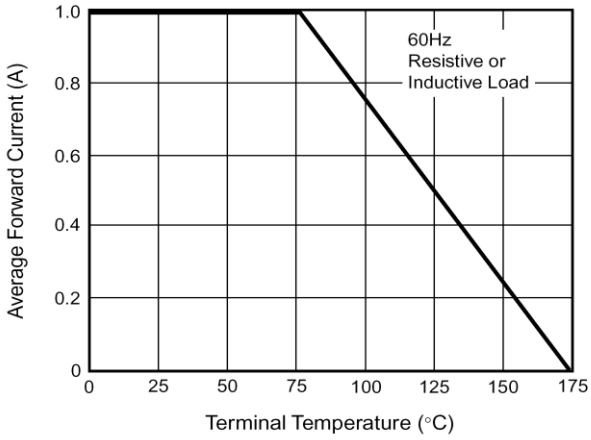


**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**

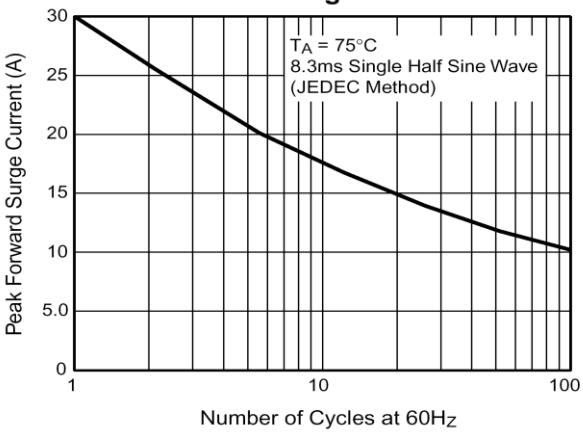


**Fig. 3 - Typical Instantaneous Forward Characteristics**

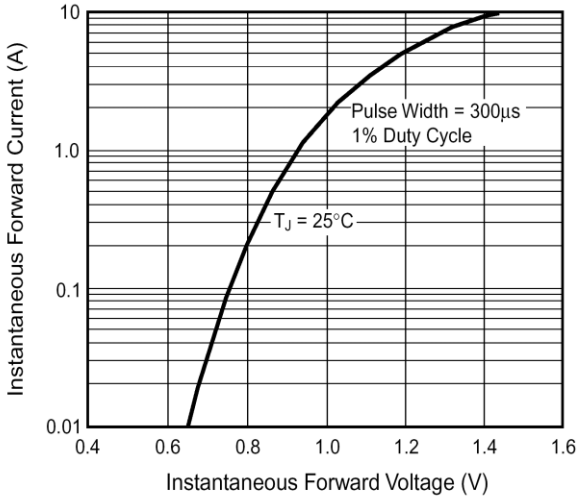


**Fig. 4 – Typical Reverse Characteristics**

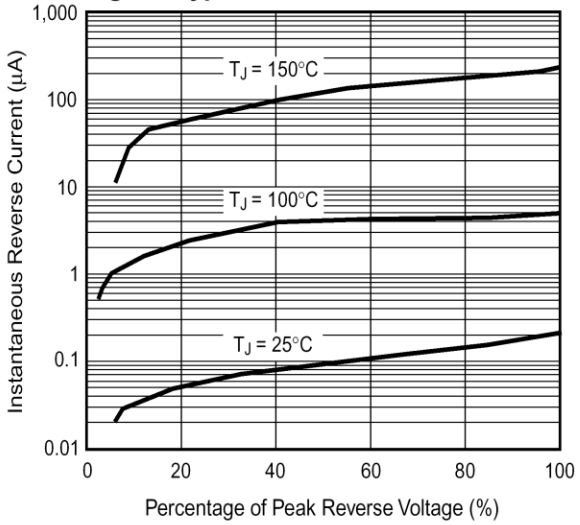


**Fig. 5 – Typical Junction Capacitance**

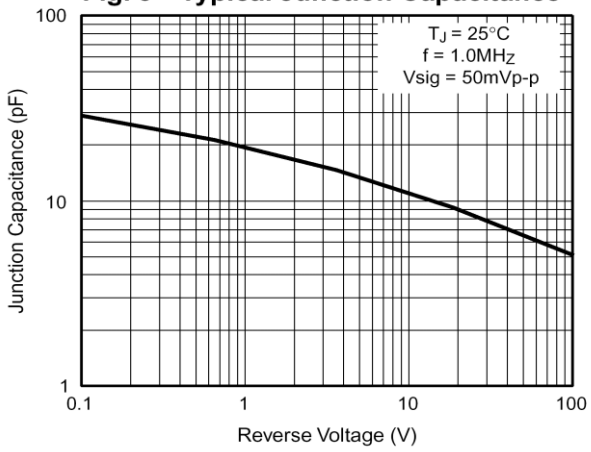


**Fig. 6 - Typical Transient Thermal Impedance**