

## SM4001 THRU SM4007

# SURFACE MOUNT GLASS PASSIVATED SILICON RECTIFIER VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere

#### **FEATURES**

- \* Glass passivated device
- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Metallurgically bonded construction
- \* Mounting position: Any
- \* Weight: 0.015 gram

#### **MECHANICAL DATA**

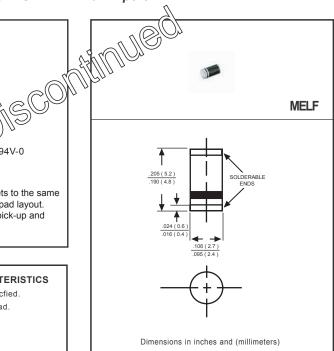
\* Epoxy : Device has UL flammability classification 94V-0

#### **DISCONTINUED-**

"This series is replaced by the FM400X series that meets to the same fit and function parameters and share the same solder pad layout. The FM400X series is preferred for error-free vacuum pick-up and PCB assembly."

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at  $25^{\circ}$ C ambient temperature unless otherwise specfied. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.



#### MAXIMUM RATINGS (@ TA=25 °C unless otherwise noted)

| RATINGS  | SYMBOL           | SM4001       | SM4002 | SM4003 | SM4004 | SM4005 | SM4006 | SM4007 | UNITS |
|--|------------------|--------------|--------|--------|--------|--------|--------|--------|-------|
| Maximum Recurrent Peak Reverse Voltage   | V <sub>RRM</sub> | 50           | 100    | 200    | 400    | 600    | 800    | 1000   | Volts |
| Maximum RMS Voltage  | V <sub>RMS</sub> | 35           | 70     | 140    | 280    | 420    | 560    | 700    | Volts |
| Maximum DC Blocking Voltage  | V <sub>DC</sub>  | 50           | 100    | 200    | 400    | 600    | 800    | 1000   | Volts |
| Maximum Average Forward Rectified Current<br>at Ambient Temperature                                  | Io               | 1.0          |        |        |        |        |        |        | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave<br>superimposed on rated load (JEDEC method) | I <sub>FSM</sub> | 30           |        |        |        |        |        |        | Amps  |
| Typical Thermal Resistance (Note 1)  | R <sub>θJA</sub> | 50           |        |        |        |        |        |        | °C/W  |
| Typical Thermal Resistance (Note 1)  | RθJC             | 20           |        |        |        |        |        |        | °C/W  |
| Typical Junction Capacitance (Note 2)  | CJ               | 15           |        |        |        |        |        |        | pF    |
| Operating Temperature Range  | TJ               | 150          |        |        |        |        |        |        | ٥C    |
| Storage Temperature Range  | T <sub>STG</sub> | -55 to + 150 |        |        |        |        |        |        | ٥C    |

#### ELECTRICAL CHARACTERISTICS(@TA=25 °C unless otherwise noted)

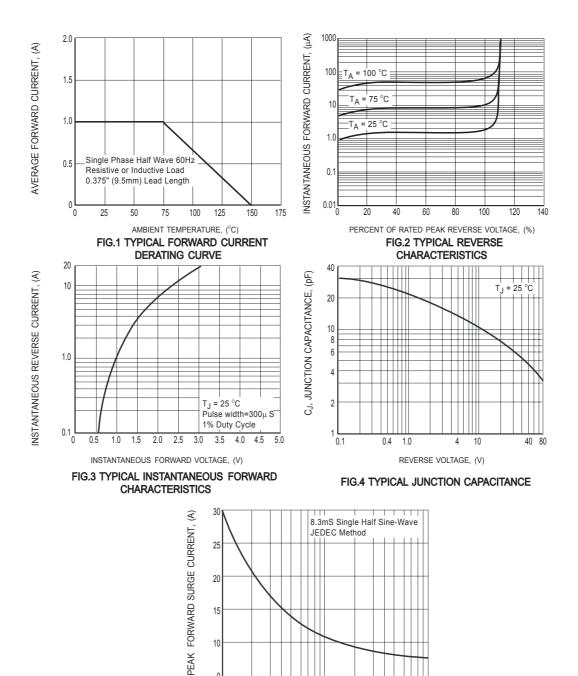
| CHARACTERISTICS                                  |                         | SYMBOL         | SM4001 | SM4002 | SM4003 | SM4004 | SM4005 | SM4006 | SM4007 | UNITS |
|--|-------------------------|----------------|--------|--------|--------|--------|--------|--------|--------|-------|
| Maximum Instantaneous Forward Voltage at 1.0A DC |                         | V <sub>F</sub> | 1.1    |        |        |        |        |        |        | Volts |
| Maximum Average Reverse Current                  | @T <sub>A</sub> = 25°C  | I <sub>R</sub> |        |        |        | 5.0    |        |        |        | uA    |
| at Rated DC Blocking Voltage                     | @T <sub>A</sub> = 100°C |                |        |        |        | 100    |        |        |        | uA    |

NOTES: 1. Thermal Resistance: Mounted on PCB.

- 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
- 3. "Fully ROHS compliant","100% Sn plating (Pb-free)".

2007-3

### RATING AND CHARACTERISTICS CURVES (SM4001 THRU SM4007)



NUMBER OF CYCLES AT 60Hz
FIG.5 MAXIMUM NON-REPETITIVE FORWARD
SURGE CURRENT

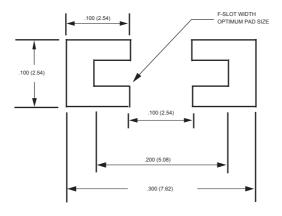
6 8 10

4



80 100

## **Mounting Pad Layout**



Dimensions in inches and (millimeters)



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