

**S1A THRU S1M**

**TECHNICAL SPECIFICATIONS OF SURFACE MOUNT SILICON RECTIFIER**

**VOLTAGE RANGE - 50 to 1000 Volts**

**CURRENT - 1.0 Ampere**

**FEATURES**

- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Glass passivated junction

**MECHANICAL DATA**

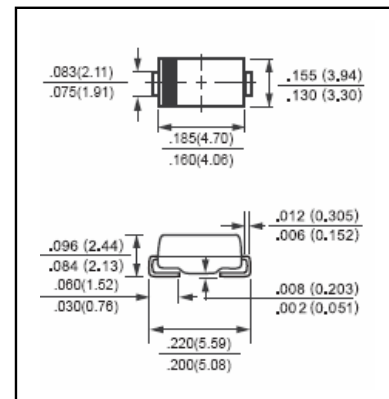
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- \* Polarity: As marked
- \* Mounting position: Any
- \* Weight: 0.093 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.



**SMB (DO-214AA)**



Dimensions in inches and (millimeters)

|   | SYMBOL                            | S1A          | S1B | S1D | S1G | S1J | S1K | S1M  | 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 at TA = 75 °C   | I <sub>O</sub>                    | 1.0          |     |     |     |     |     |      | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                  | 30           |     |     |     |     |     |      | Amps  |
| Maximum Instantaneous Forward Voltage at 1.0A DC  | V <sub>F</sub>                    | 1.1          |     |     |     |     |     |      | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage   | @ TA = 25 °C                      | 5.0          |     |     |     |     |     |      | uAmps |
|   | @ TA = 100 °C                     | 100          |     |     |     |     |     |      |       |
| Maximum Reverse Recovery Time (Note 3)  | t <sub>rr</sub>                   | 2.5          |     |     |     |     |     |      | uSec  |
| Typical Thermal Resistance (Note 2)   | R <sub>θJL</sub>                  | 12           |     |     |     |     |     |      | °C/W  |
| Typical Junction Capacitance (Note 1)   | C <sub>J</sub>                    | 30           |     |     |     |     |     |      | pF    |
| Operating and Storage Temperature Range   | T <sub>J</sub> , T <sub>STG</sub> | -65 to + 175 |     |     |     |     |     |      | °C    |

NOTES : 1. Measured at 1 MHz and applied reverse voltage of 4.0 volts.  
2. Thermal Resistance (Junction to Ambient), 0.2x0.2in<sup>2</sup> (5X5mm<sup>2</sup>) copper pads to each terminal.  
3. Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.

# RATING AND CHARACTERISTIC CURVES (S1A THRU S1M)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

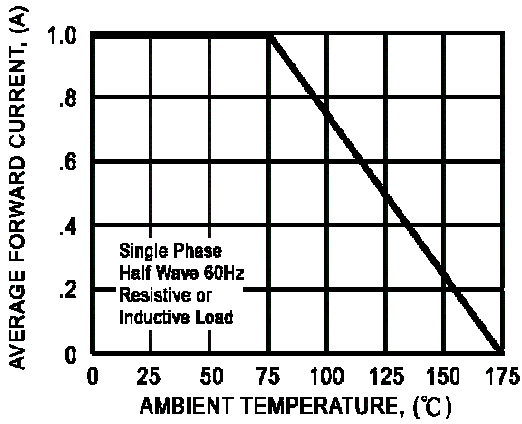


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

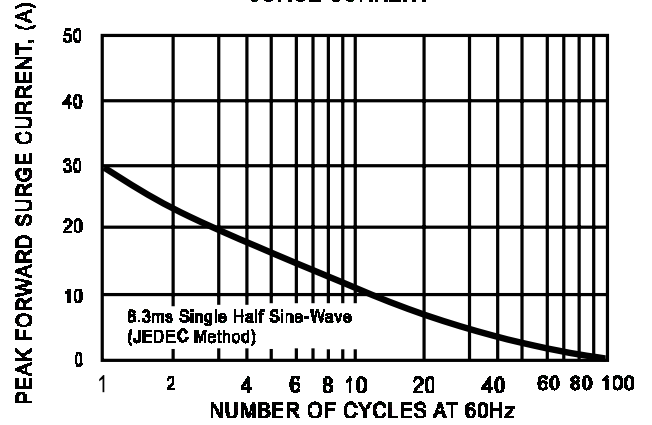


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

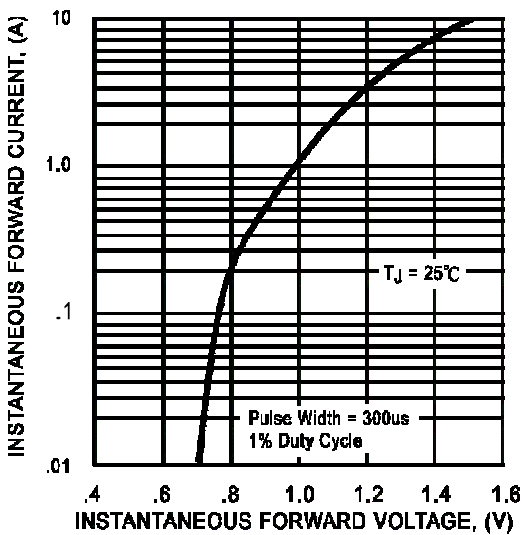


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

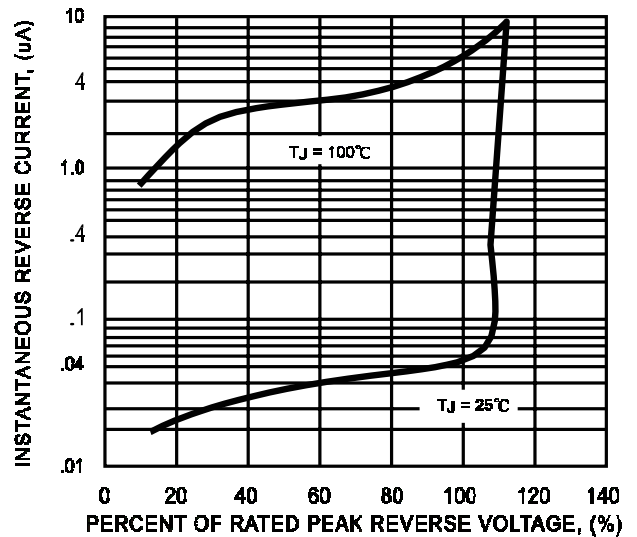


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

