

## Features

- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates Compliant. See Ordering Information)
- For Surface Mount Applications
- Halogen Free. "Green" Device (Note 2)
- Extremely Low Thermal Resistance
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 30°C/W Junction to Lead

| MCC Part Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------|--|---------------------|-----------------------------|
| S1A-L           | S1A            | 50V                                    | 35V                 | 50V                         |
| S1B-L           | S1B            | 100V                                   | 70V                 | 100V                        |
| S1D-L           | S1D            | 200V                                   | 140V                | 200V                        |
| S1G-L           | S1G            | 400V                                   | 280V                | 400V                        |
| S1J-L           | S1J            | 600V                                   | 420V                | 600V                        |
| S1K-L           | S1K            | 800V                                   | 560V                | 800V                        |
| S1M-L           | S1M            | 1000V                                  | 700V                | 1000V                       |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

|   |             |                                     |   |
|---|-------------|-------------------------------------|---|
| Average Forward Current                                 | $I_{F(AV)}$ | 1.0A                                | $T_L=100^\circ\text{C}$                             |
| Peak Forward Surge Current                              | $I_{FSM}$   | 30A                                 | 8.3ms, Half Sine                                    |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | 1.1V                                | $I_{FM}=1.0A$ ;<br>$T_J=25^\circ\text{C}^*$         |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 5 $\mu\text{A}$<br>50 $\mu\text{A}$ | $T_J=25^\circ\text{C}$ ;<br>$T_J=125^\circ\text{C}$ |
| Typical Junction Capacitance                            | $C_J$       | 12pF                                | Measured at 1.0MHz<br>$V_R=4.0V$                    |
| Maximum Reverse Recovery Time                           | $t_{rr}$    | 2.0 $\mu\text{s}$                   | $I_F = 0.5A$ ; $I_R = 1.0A$ ;<br>$I_{rr} = 0.25A$ ; |

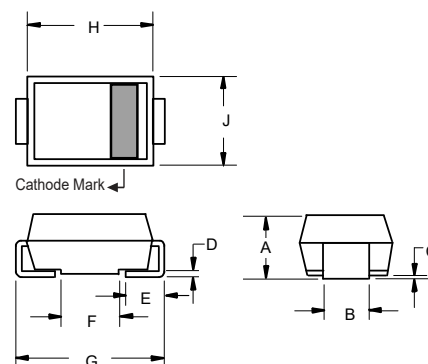
\*Pulse Test: Pulse Width 300  $\mu\text{sec}$ , Duty Cycle 2%

Note:

1. High Temperature Solder Exemptions Applied, See EU Directive Annex 7a.
2. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

# 1 Amp Silicon Rectifier 50 to 1000 Volts

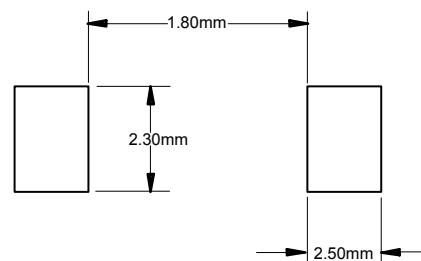
## SMB (DO-214AA)



### DIMENSIONS

| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.079  | 0.103 | 2.00 | 2.62 |      |
| B   | 0.075  | 0.087 | 1.91 | 2.21 |      |
| C   | 0.002  | 0.008 | 0.05 | 0.20 |      |
| D   | 0.006  | 0.012 | 0.15 | 0.31 |      |
| E   | 0.030  | 0.060 | 0.76 | 1.52 |      |
| F   | 0.065  | 0.091 | 1.65 | 2.32 |      |
| G   | 0.200  | 0.220 | 5.08 | 5.59 |      |
| H   | 0.160  | 0.191 | 4.06 | 4.85 |      |
| J   | 0.130  | 0.155 | 3.30 | 3.94 |      |

### Suggested Solder Pad Layout



## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

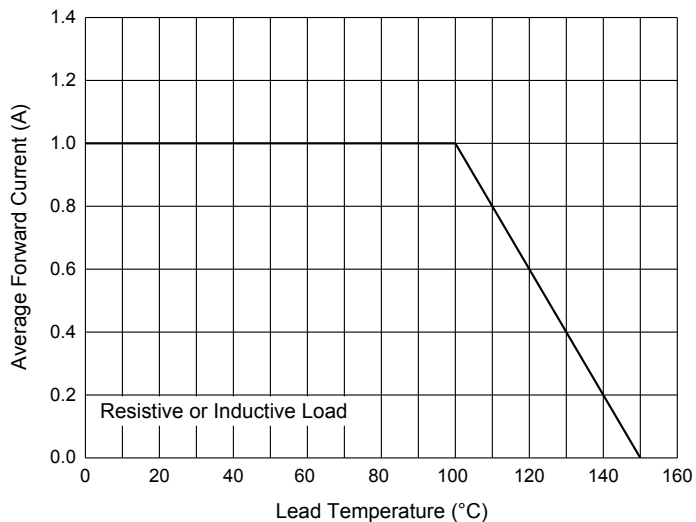


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

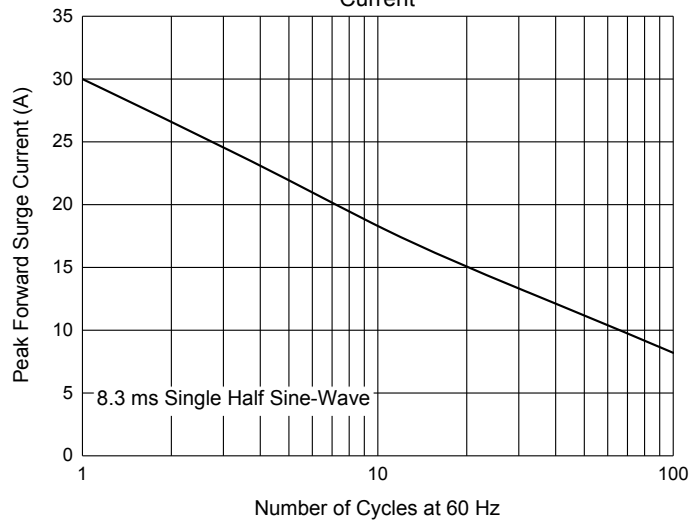


Fig. 3 - Typical Reverse Leakage Characteristics

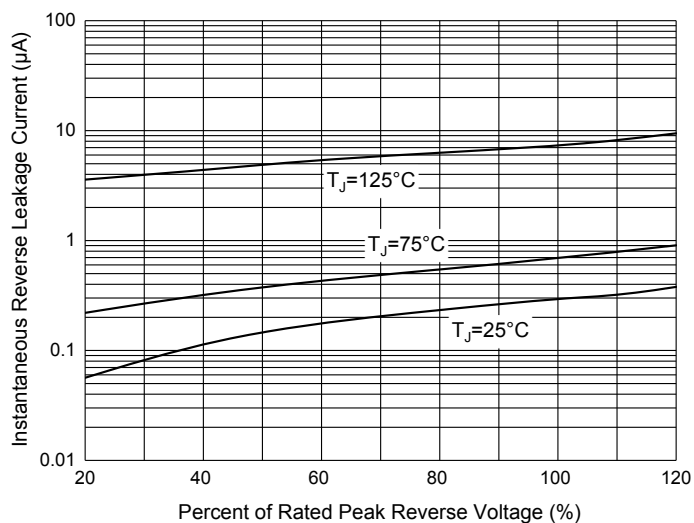
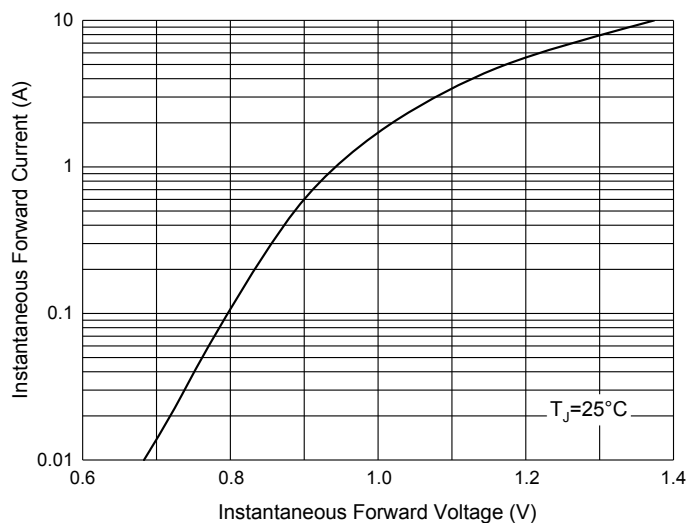


Fig. 4 - Typical Instantaneous Forward Characteristics



## Ordering Information

| Device          | Packing               |
|-----------------|-----------------------|
| S1A-LTP~S1M-LTP | Tape&Reel: 3Kpcs/Reel |

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