

**NOT RECOMMENDED FOR NEW DESIGNS  
USE S1A-LTP~S1M-LTP SERIES**



Micro Commercial Components



Micro Commercial Components  
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**S1A  
THRU  
S1M**

**1 Amp  
Silicon Rectifier  
50 to 1000 Volts**

**Features**

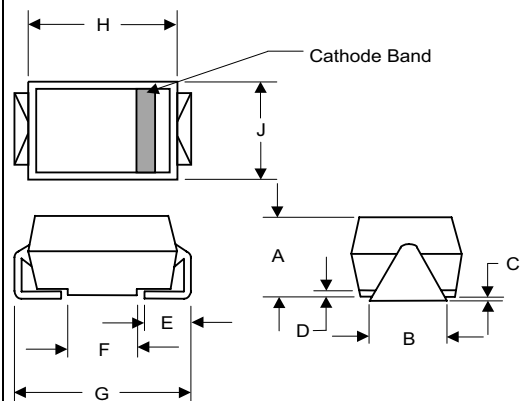
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- For Surface Mount Applications
- Extremely Low Thermal Resistance
- Easy Pick And Place
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

**Maximum Ratings**

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

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

**DO-214AA  
(SMB) (Round Lead)**



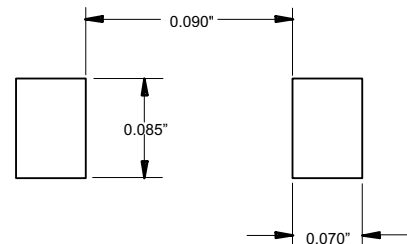
| DIM | INCHES |      | MM   |      | NOTE |
|-----|--------|------|------|------|------|
|     | MIN    | MAX  | MIN  | MAX  |      |
| A   | .078   | .116 | 1.98 | 2.95 |      |
| B   | .075   | .089 | 1.90 | 2.25 |      |
| C   | .002   | .008 | .05  | .20  |      |
| D   | ----   | .02  | ---- | .51  |      |
| E   | .035   | .055 | .90  | 1.40 |      |
| F   | .065   | .091 | 1.65 | 2.32 |      |
| G   | .205   | .224 | 5.21 | 5.69 |      |
| H   | .160   | .180 | 4.06 | 4.57 |      |
| J   | .130   | .155 | 3.30 | 3.94 |      |

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

|   |             |                                     |   |
|---|-------------|-------------------------------------|---|
| Average Forward current                                 | $I_{F(AV)}$ | 1.0A                                | $T_J = 100^\circ\text{C}$                             |
| 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<br>1.0MHz, $V_R=4.0V$                     |
| 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 7.

**SUGGESTED SOLDER  
PAD LAYOUT**



# S1A thru S1M

Figure 1  
Typical Forward Characteristics

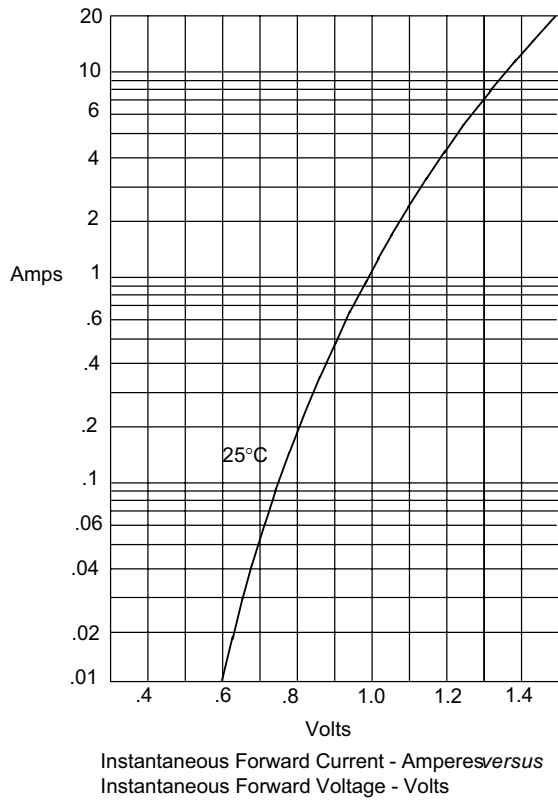
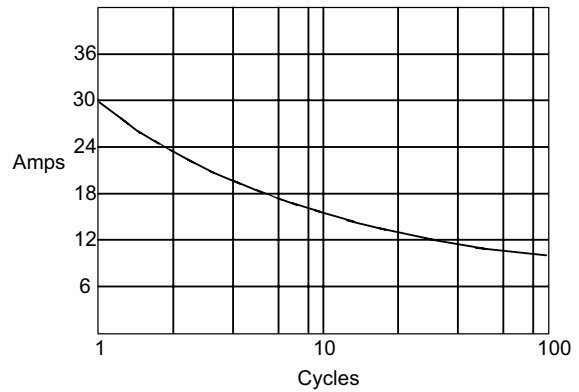
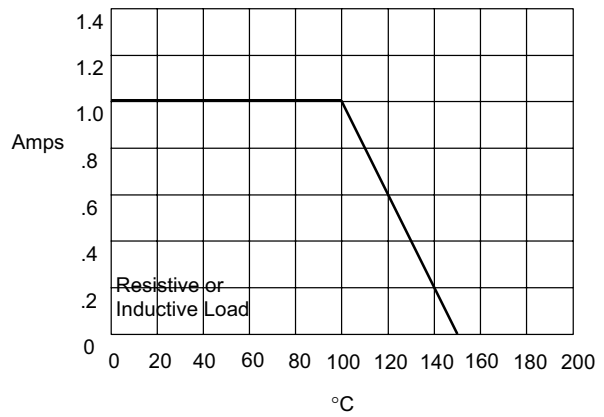


Figure 3  
Maximum Overload Surge Current



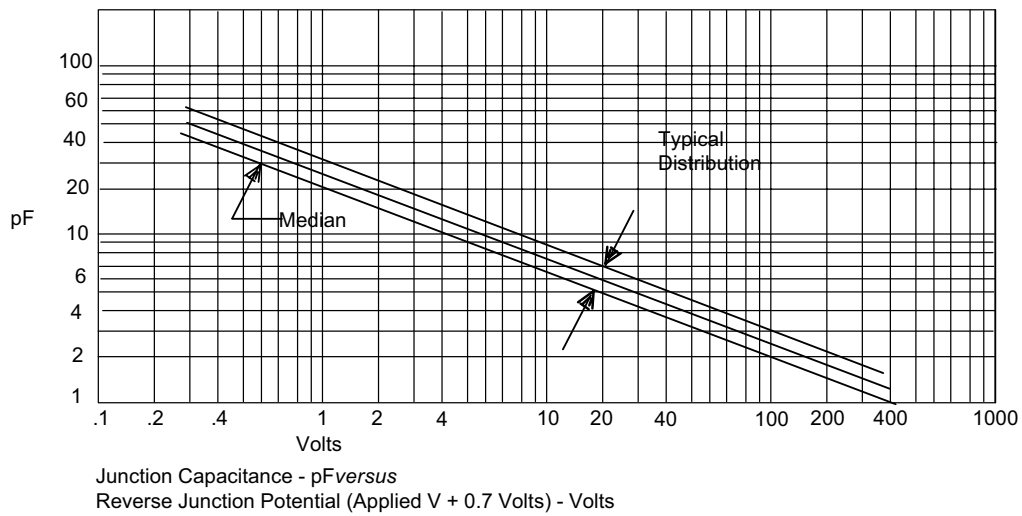
Peak Forward Current - Amperes versus Number of Cycles at 60Hz

Figure 4  
Forward Derating Curve



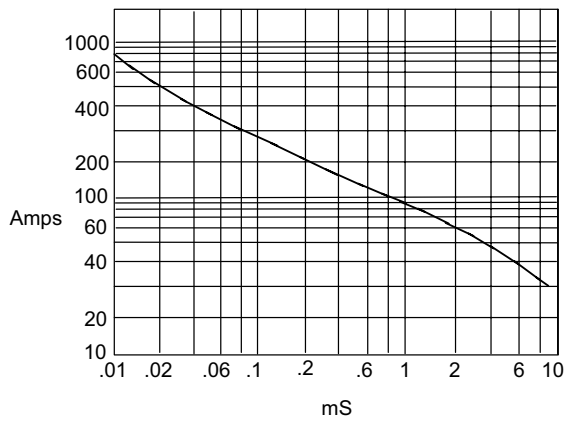
Average Forward Rectified Current - Amperes versus Ambient Temperature - °C

Figure 2  
Junction Capacitance



# S1A thru S1M

Figure 5  
Peak Forward Surge Current

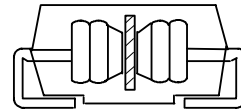


Peak Forward Surge Current - Amperes *versus*  
Pulse Duration - Milliseconds (mS)



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Figure 6  
New SMB Assembly



Round Lead  
Process



TM

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### Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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