



Micro Commercial Components



Micro Commercial Components  
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## SM4001PL thru SM4007PL

### Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Low Leakage Current
- Glass Passivated Junction
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings

- Operating Temperature( $T_J$ ): -65°C to +175°C
- Storage Temperature( $T_{STG}$ ): -65°C to +175°C
- Typical Thermal Resistance( $R_{thJA}$ ): 50°C/W

| MCC Part Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------|----------------------------------------|---------------------|-----------------------------|
| SM4001PL        | A1             | 50V                                    | 35V                 | 50V                         |
| SM4002PL        | A2             | 100V                                   | 70V                 | 100V                        |
| SM4003PL        | A3             | 200V                                   | 140V                | 200V                        |
| SM4004PL        | A4             | 400V                                   | 280V                | 400V                        |
| SM4005PL        | A5             | 600V                                   | 420V                | 600V                        |
| SM4006PL        | A6             | 800V                                   | 560V                | 800V                        |
| SM4007PL        | A7             | 1000V                                  | 700V                | 1000V                       |

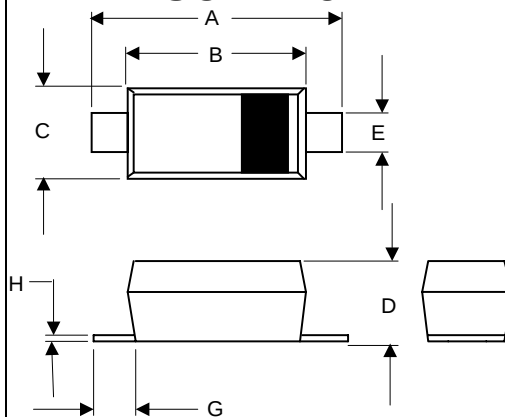
### Electrical Characteristics @ 25°C Unless Otherwise Specified

|                                                                         |             |                                       |                                                       |
|-------------------------------------------------------------------------|-------------|---------------------------------------|-------------------------------------------------------|
| Average Forward Current                                                 | $I_{F(AV)}$ | 1.0 A                                 | $T_A = 75^\circ\text{C}$                              |
| Peak Forward Surge Current                                              | $I_{FSM}$   | 25A                                   | 8.3ms, half sine                                      |
| Maximum Instantaneous Forward Voltage                                   | $V_F$       | 1.1V                                  | $T_A = 25^\circ\text{C}$<br>$I_F = 1\text{A}$         |
| Maximum DC Reverse Current At Rated DC Blocking Voltage                 | $I_R$       | 5.0 $\mu\text{A}$<br>50 $\mu\text{A}$ | $T_A = 25^\circ\text{C}$<br>$T_A = 100^\circ\text{C}$ |
| Maximum Full Load Reverse Current Average, Full Cycle 9.5mm Lead Length | $I_R$       | 30 $\mu\text{A}$                      | $T_L = 75^\circ\text{C}$                              |
| Typical Junction Capacitance                                            | $C_J$       | 15pF                                  | Measured at 1.0MHz, $V_R = 4.0\text{V}$               |

Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

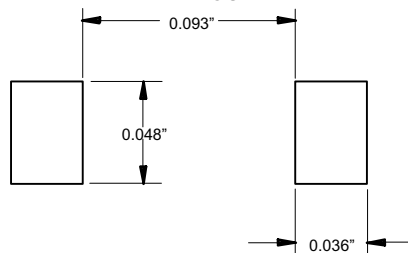
## 1.0 Ampere Silicon Rectifier 50 to 1000 Volts

### SOD-123FL



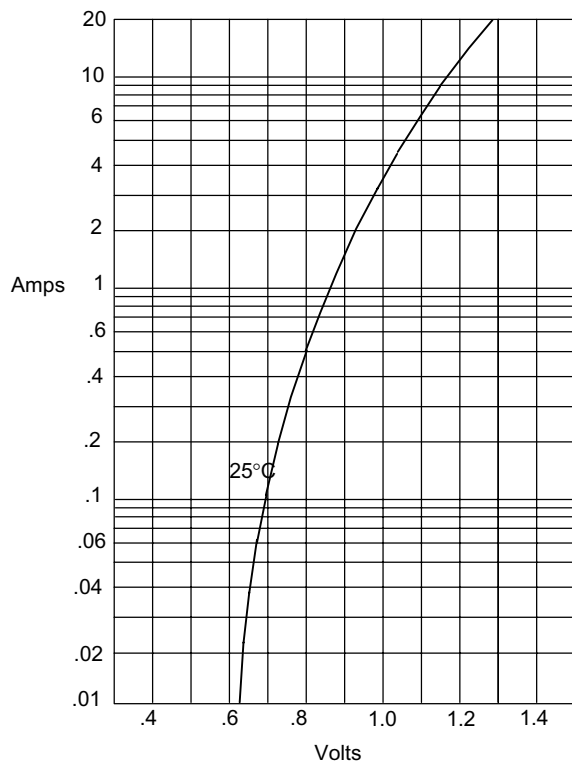
| DIM | INCHES |       | MM    |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | .140   | .152  | 3.55  | 3.85  |      |
| B   | .100   | .112  | 2.55  | 2.85  |      |
| C   | .055   | .071  | 1.40  | 1.80  |      |
| D   | .037   | .053  | 0.95  | 1.35  |      |
| E   | .020   | .039  | 0.50  | 1.00  |      |
| G   | .010   | ----- | 0.25  | ----- |      |
| H   | -----  | .008  | ----- | .20   |      |

### SUGGESTED SOLDER PAD LAYOUT



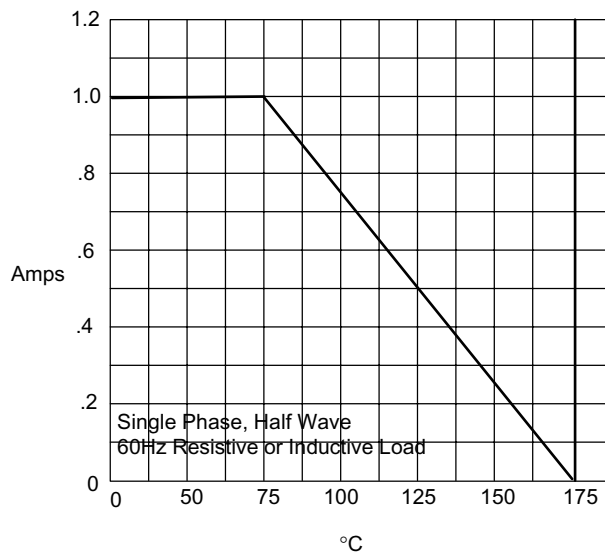
# SM4001PL thru SM4007PL

Figure 1  
Typical Forward Characteristics



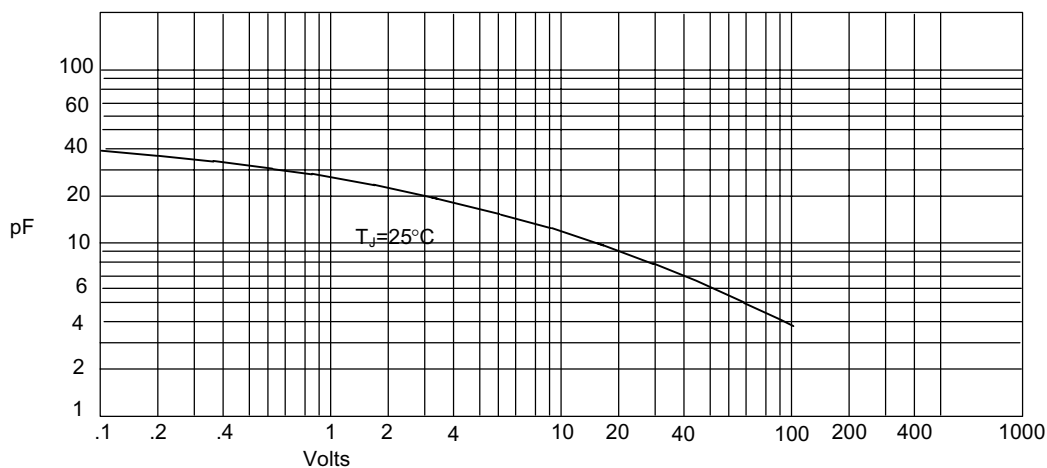
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



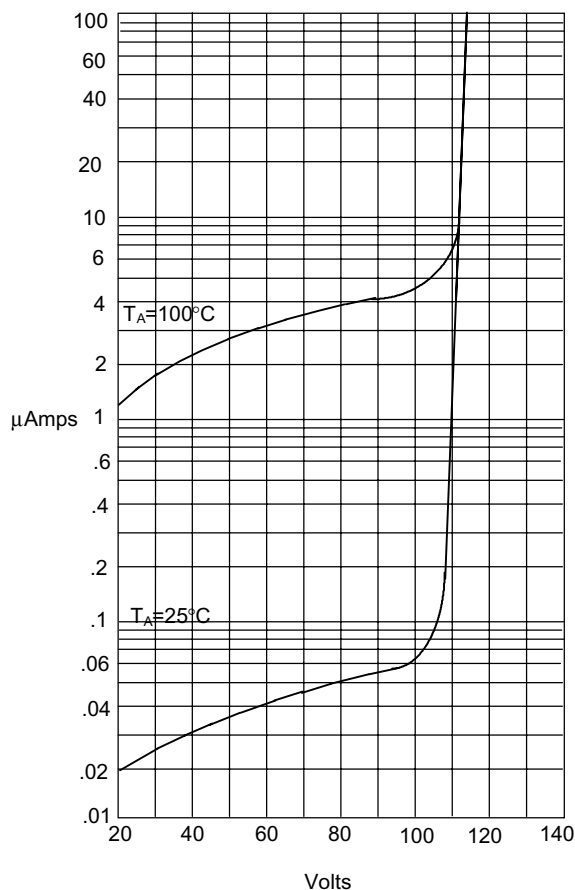
Average Forward Rectified Current - Amperes *versus*  
Ambient Temperature - °C

Figure 3  
Junction Capacitance



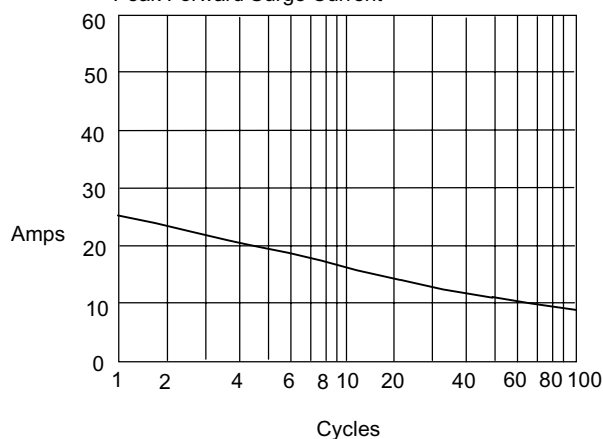
Junction Capacitance - pF *versus*  
Reverse Voltage - Volts

Figure 4  
Typical Reverse Characteristics



Instantaneous Reverse Leakage Current - MicroAmperes *versus*  
Percent Of Rated Peak Reverse Voltage - Volts

Figure 5  
Peak Forward Surge Current



Peak Forward Surge Current - Amperes *versus*  
Number Of Cycles At 60Hz - Cycles

## Ordering Information :

| Device         | Packing                 |
|----------------|-------------------------|
| Part Number-TP | Tape&Reel: 2.5Kpcs/Reel |

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