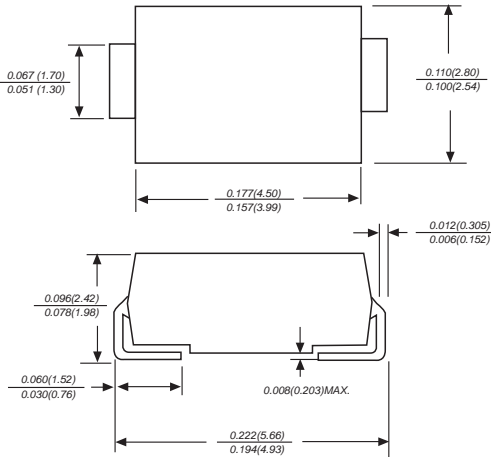


# S1A THRU S1M

## SURFACE MOUNT GENERAL RECTIFIER

Reverse Voltage - 50 to 1000 Volts Forward Current - 1.0 Ampere

### DO-214AC/SMA



Dimensions in inches and (millimeters)

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals

### MECHANICAL DATA

**Case:** JEDEC DO-214AC molded plastic body  
**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.002 ounce, 0.07 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

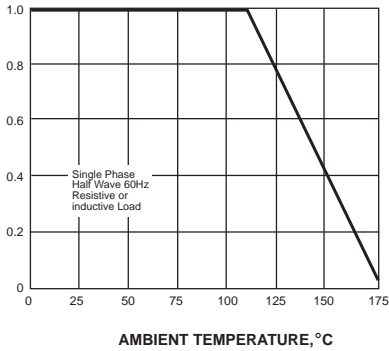
| MDD Catalog Number                                                                                        | SYMBOLS         | S1A         | S1B | S1D | S1G | S1J | S1K | S1M  | UNITS              |
|-----------------------------------------------------------------------------------------------------------|-----------------|-------------|-----|-----|-----|-----|-----|------|--------------------|
| Maximum repetitive peak reverse voltage                                                                   | $V_{RRM}$       | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | VOLTS              |
| Maximum RMS voltage                                                                                       | $V_{RMS}$       | 35          | 70  | 140 | 280 | 420 | 560 | 700  | VOLTS              |
| Maximum DC blocking voltage                                                                               | $V_{DC}$        | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | VOLTS              |
| Maximum average forward rectified current at $T_L=110^\circ\text{C}$                                      | $I_{(AV)}$      | 1.0         |     |     |     |     |     |      | Amp                |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method)       | $I_{FSM}$       | 30.0        |     |     |     |     |     |      | Amps               |
| Maximum instantaneous forward voltage at 1.0A                                                             | $V_F$           | 1.1         |     |     |     |     |     |      | Volts              |
| Maximum DC reverse current $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage $T_A=100^\circ\text{C}$ | $I_R$           | 5.0<br>50.0 |     |     |     |     |     |      | $\mu\text{A}$      |
| Typical junction capacitance (NOTE 1)                                                                     | $C_J$           | 15.0        |     |     |     |     |     |      | pF                 |
| Typical thermal resistance (NOTE 2)                                                                       | $R_{\theta JA}$ | 75.0        |     |     |     |     |     |      | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range                                                          | $T_J, T_{STG}$  | -50 to +150 |     |     |     |     |     |      | $^\circ\text{C}$   |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 2. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

# RATINGS AND CHARACTERISTIC CURVES S1A THRU S1M

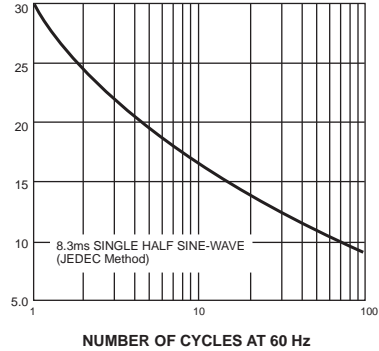
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



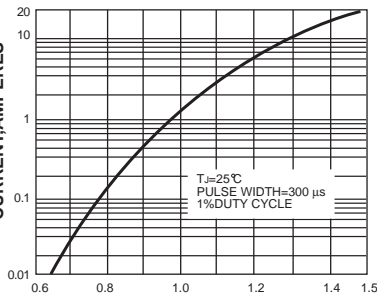
PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



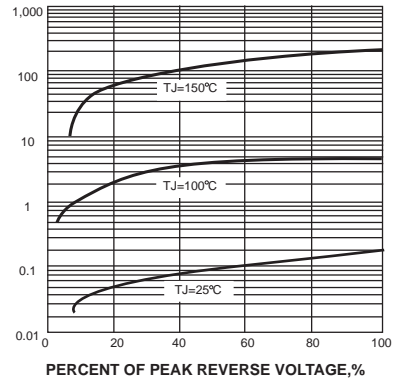
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



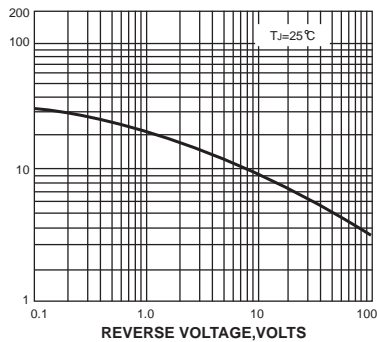
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

