



# S1AS - S1MS

## 1.0 AMP. Surface Mount Rectifiers

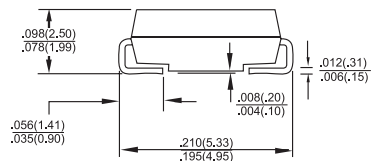
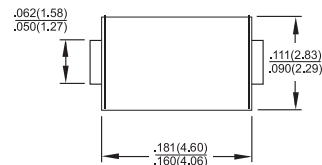
### SMA/DO-214AC

### Features

- ✧ For surface mounted application
- ✧ Glass passivated junction chip.
- ✧ Low forward voltage drop
- ✧ High current capability
- ✧ Easy pick and place
- ✧ High surge current capability
- ✧ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ✧ High temperature soldering: 260°C / 10 seconds at terminals
- ✧ These devices are not AEC Q101 qualified
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

### Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated, lead free solderable per J-STD-002B and JESD22-B102D.
- ✧ Polarity: Indicated by cathode band
- ✧ Packaging: 12mm tape per EIA STD RS-481
- ✧ Weight: 0.064 gram



Dimensions in inches and (millimeters)

Marking Diagram



S1XS = Specific Device Code  
G = Green Compound  
Y = Year  
M = Work Month

## Maximum Ratings and Electrical Characteristics

Rating 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%

| Type Number                                                                                                | Symbol                               | S1AS        | S1BS | S1DS | S1GS | S1JS | S1KS | S1MS | Units    |
|------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------|------|------|------|------|------|------|----------|
| Maximum Recurrent Peak Reverse Voltage                                                                     | V <sub>RRM</sub>                     | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V        |
| Maximum RMS Voltage                                                                                        | V <sub>RMS</sub>                     | 35          | 70   | 140  | 280  | 420  | 560  | 700  | V        |
| Maximum DC Blocking Voltage                                                                                | V <sub>DC</sub>                      | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V        |
| Maximum Average Forward Rectified Current @ T <sub>L</sub> = 110 °C                                        | I(AV)                                | 1.0         |      |      |      |      |      |      | A        |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )        | I <sub>FSM</sub>                     | 30          |      |      |      |      |      |      | A        |
| Maximum Instantaneous Forward Voltage @ 1.0A                                                               | V <sub>F</sub>                       | 1.1         |      |      |      |      |      |      | V        |
| Maximum DC Reverse Current @ T <sub>A</sub> = 25 °C at Rated DC Blocking Voltage @ T <sub>A</sub> = 125 °C | I <sub>R</sub>                       | 1.0<br>50   |      |      |      |      |      |      | uA<br>uA |
| Typical Reverse Recovery Time (Note 1)                                                                     | T <sub>rr</sub>                      | 1.5         |      |      |      |      |      |      | uS       |
| Typical Junction Capacitance ( Note 2 )                                                                    | C <sub>j</sub>                       | 12          |      |      |      |      |      |      | pF       |
| Typical Thermal Resistance (Note 3)                                                                        | R <sub>θJL</sub><br>R <sub>θJA</sub> | 30<br>85    |      |      |      |      |      |      | °C/W     |
| Operating Temperature Range                                                                                | T <sub>J</sub>                       | -55 to +150 |      |      |      |      |      |      | °C       |
| Storage Temperature Range                                                                                  | T <sub>STG</sub>                     | -55 to +150 |      |      |      |      |      |      | °C       |

- Notes:
1. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A
  2. Measured at 1 MHz and Applied V<sub>R</sub>=4.0 Volts
  3. Measured on P.C. Board with 0.2" x 0.2" (5.0mm x 5.0mm) Copper Pad Areas.

## RATINGS AND CHARACTERISTIC CURVES (S1AS THRU S1MS)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

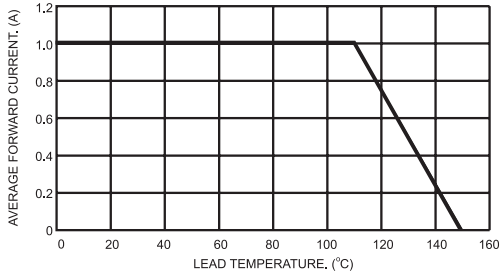


FIG.2- TYPICAL REVERSE CHARACTERISTICS

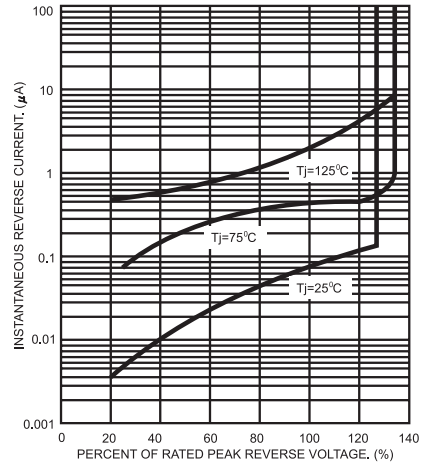


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

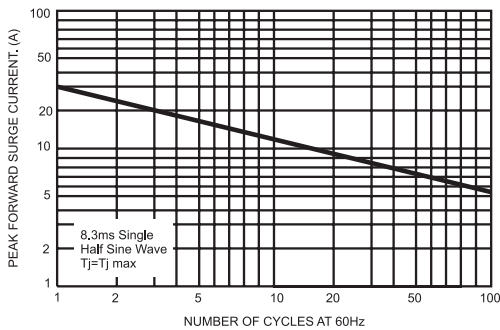


FIG.5- TYPICAL FORWARD CHARACTERISTICS

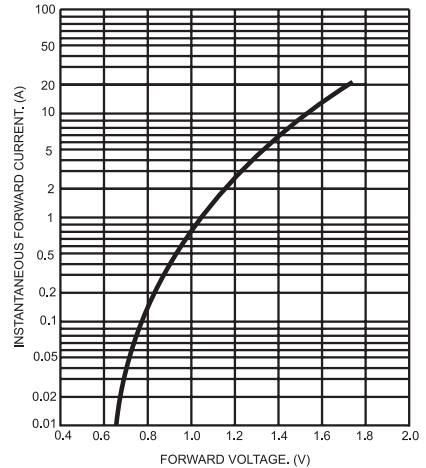


FIG.4- TYPICAL JUNCTION CAPACITANCE

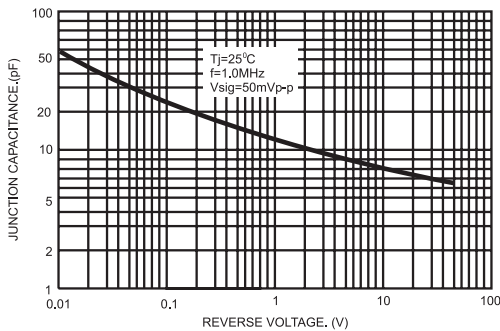


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

