

**SMC/DO-214AB**

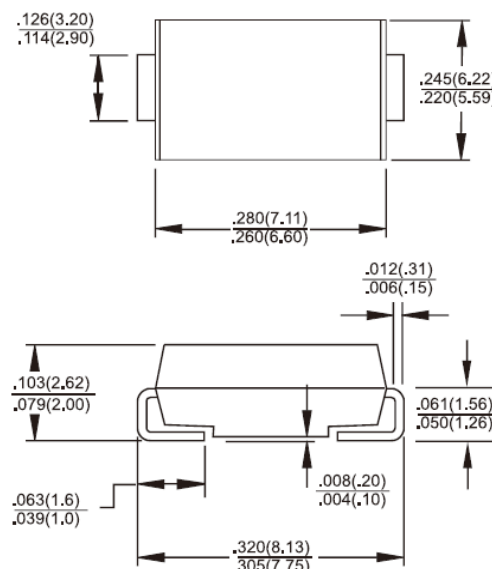
**RoHS**  
COMPLIANCE

**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
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

**Mechanical Data**

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated, lead free.
- ✧ Polarity: Indicated by cathode band
- ✧ Packaging: 16mm tape per EIA STD RS-481
- ✧ Weight: 0.21 grams


**Dimensions in inches and (millimeters)**

**Marking Diagram**

- S4X = 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                             | S4A           | S4B | S4D | S4G | S4J | S4K | S4M  | Units              |
|---------------------------------------------------------------------------------------------------------------|------------------------------------|---------------|-----|-----|-----|-----|-----|------|--------------------|
| Maximum Recurrent Peak Reverse Voltage                                                                        | $V_{RRM}$                          | 50            | 100 | 200 | 400 | 600 | 800 | 1000 | V                  |
| Maximum RMS Voltage                                                                                           | $V_{RMS}$                          | 35            | 70  | 140 | 280 | 420 | 560 | 700  | V                  |
| Maximum DC Blocking Voltage                                                                                   | $V_{DC}$                           | 50            | 100 | 200 | 400 | 600 | 800 | 1000 | V                  |
| Maximum Average Forward Rectified Current<br>@ $T_L=75^\circ\text{C}$                                         | $I_{F(AV)}$                        | 4             |     |     |     |     |     |      | A                  |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)            | $I_{FSM}$                          | 100           |     |     |     |     |     |      | A                  |
| Maximum Instantaneous Forward Voltage (Note 1)<br>@ 4 A                                                       | $V_F$                              | 1.15          |     |     |     |     |     |      | V                  |
| Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$<br>at Rated DC Blocking Voltage @ $T_A=125^\circ\text{C}$ | $I_R$                              | 10<br>250     |     |     |     |     |     |      | uA<br>uA           |
| Typical Reverse Recovery Time (Note 2)                                                                        | $T_{rr}$                           | 1.5           |     |     |     |     |     |      | uS                 |
| Typical Junction Capacitance (Note 3)                                                                         | $C_j$                              | 60            |     |     |     |     |     |      | pF                 |
| Typical Thermal Resistance                                                                                    | $R_{\theta JL}$<br>$R_{\theta JA}$ | 13<br>47      |     |     |     |     |     |      | $^\circ\text{C/W}$ |
| Operating Temperature Range                                                                                   | $T_J$                              | - 55 to + 150 |     |     |     |     |     |      | $^\circ\text{C}$   |
| Storage Temperature Range                                                                                     | $T_{STG}$                          | - 55 to + 150 |     |     |     |     |     |      | $^\circ\text{C}$   |

Notes: 1. Pulse Test with PW=300 usec, 1% Duty Cycle

2. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$ 

3. Measured at 1 MHz and Applied  $V_R=4.0$  Volts

## RATINGS AND CHARACTERISTIC CURVES (S4A THRU S4M)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

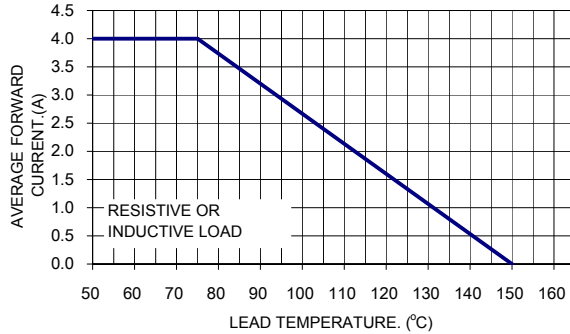


FIG.2- TYPICAL REVERSE CHARACTERISTICS

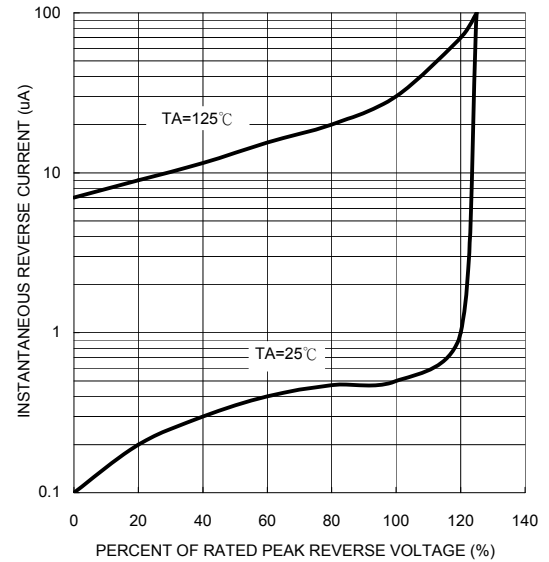


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

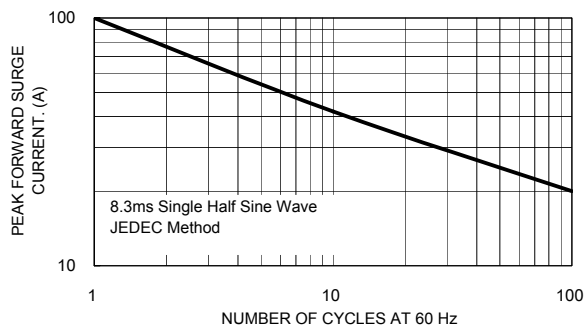


FIG.5- TYPICAL FORWARD CHARACTERISTICS

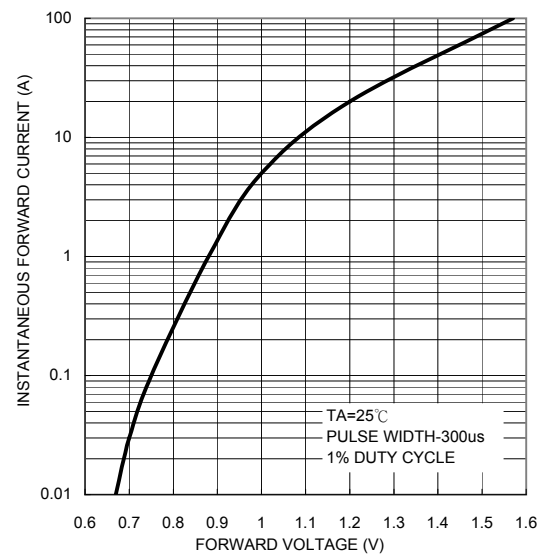


FIG.4- TYPICAL JUNCTION CAPACITANCE

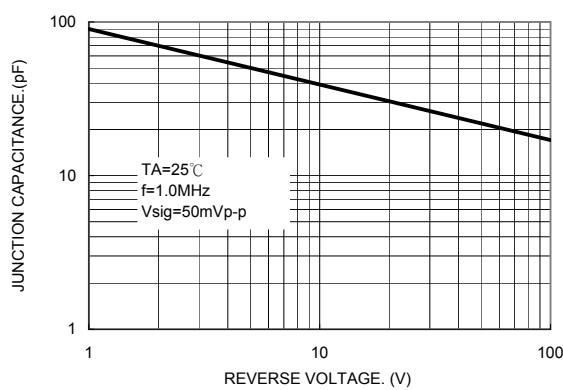


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

