

**SMC/DO-214AB**

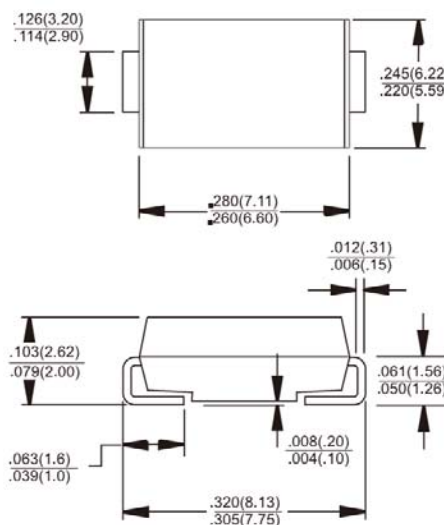
**RoHS**  
COMPLIANCE

**Features**

- ✧ Glass passivated junction chip.
- ✧ For surface mounted application
- ✧ Low forward voltage drop
- ✧ Low profile package
- ✧ Built-in stain relief, ideal for automatic placement
- ✧ Fast switching for high efficiency
- ✧ High temperature soldering:  
260°C/10 seconds at terminals
- ✧ Plastic material used carries Underwriters  
Laboratory Classification 94V-0
- ✧ Green compound with suffix "G" on packing  
code & prefix "G" on datecode

**Mechanical Data**

- ✧ Cases: Molded plastic
- ✧ Terminal: Pure tin plated, lead free
- ✧ Polarity: Indicated by cathode band
- ✧ Packing: 16mm tape per EIA STD RS-481
- ✧ Weight: 0.21 grams


**Dimensions in inches and (millimeters)**
**Marking Diagram**


- HS3X = 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             | HS 3A         | HS 3B | HS 3D | HS 3F | HS 3G | HS 3J | HS 3K | HS 3M | Units    |
|-------------------------------------------------------------------------------------------------------------|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|----------|
| Maximum Recurrent Peak Reverse Voltage                                                                      | V <sub>RRM</sub>   | 50            | 100   | 200   | 300   | 400   | 600   | 800   | 1000  | V        |
| Maximum RMS Voltage                                                                                         | V <sub>RMS</sub>   | 35            | 70    | 140   | 210   | 280   | 420   | 560   | 700   | V        |
| Maximum DC Blocking Voltage                                                                                 | V <sub>DC</sub>    | 50            | 100   | 200   | 300   | 400   | 600   | 800   | 1000  | V        |
| Maximum Average Forward Rectified Current                                                                   | I <sub>F(AV)</sub> | 3             |       |       |       |       |       |       |       | A        |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)          | I <sub>FSM</sub>   | 150           |       |       |       |       |       |       |       | A        |
| Maximum Instantaneous Forward Voltage (Note 1) @ 3A                                                         | V <sub>F</sub>     | 1.0           |       |       |       | 1.3   | 1.7   |       |       | V        |
| Maximum DC Reverse Current at @ T <sub>A</sub> =25 °C<br>Rated DC Blocking Voltage @ T <sub>A</sub> =125 °C | I <sub>R</sub>     | 10<br>250     |       |       |       |       |       |       |       | uA<br>uA |
| Maximum Reverse Recovery Time (Note 2)                                                                      | T <sub>rr</sub>    | 50            |       |       |       |       | 75    |       |       | nS       |
| Typical Junction Capacitance (Note 3)                                                                       | C <sub>j</sub>     | 80            |       |       |       |       | 50    |       |       | pF       |
| Maximum Thermal Resistance                                                                                  | R <sub>θJA</sub>   | 60            |       |       |       |       |       |       |       | °C/W     |
| Operating Temperature Range                                                                                 | T <sub>J</sub>     | - 55 to + 150 |       |       |       |       |       |       |       | °C       |
| Storage Temperature Range                                                                                   | T <sub>STG</sub>   | - 55 to + 150 |       |       |       |       |       |       |       | °C       |

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

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

Note 3: Measured at 1 MHz and Applied  $V_R=4.0\text{ Volts}$

## RATINGS AND CHARACTERISTIC CURVES (HS3A THRU HS3M)

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

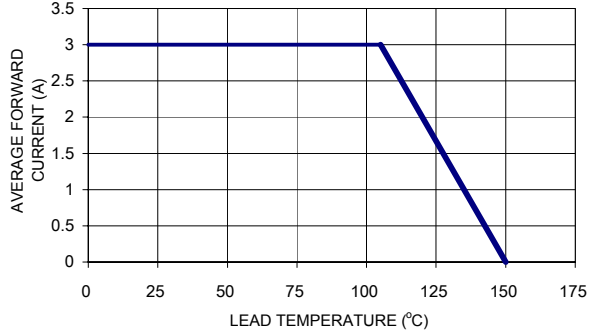


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

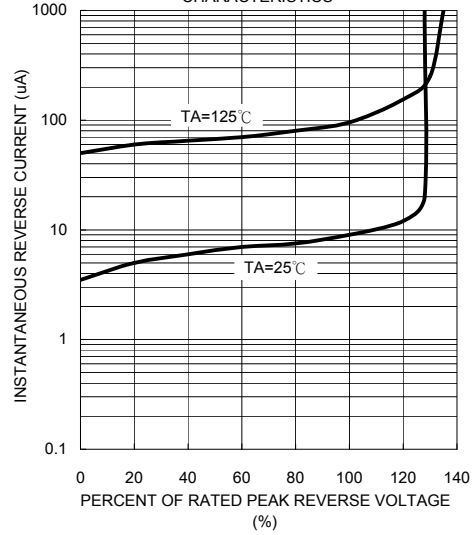


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

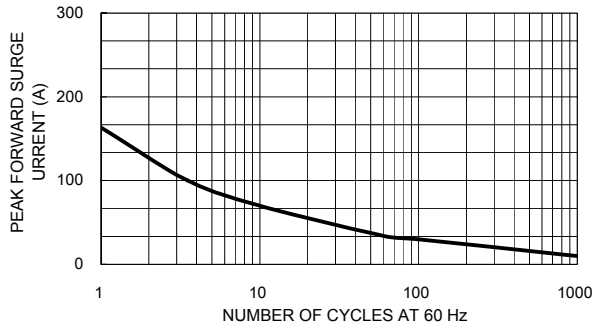


FIG. 4- TYPICAL JUNCTION CAPACITANCE

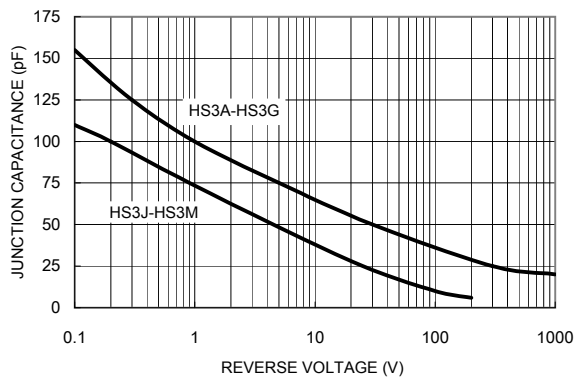


FIG. 5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

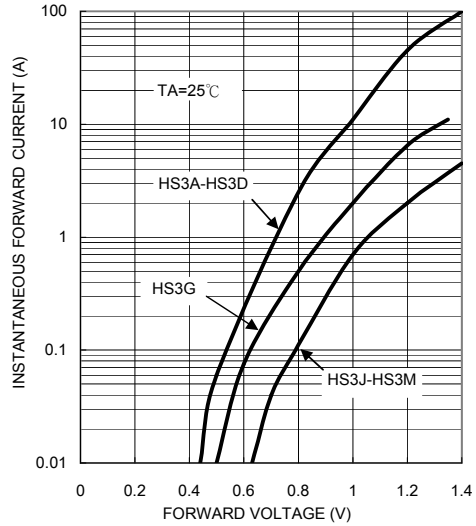


FIG. 6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

