

# HS5A - HS5M

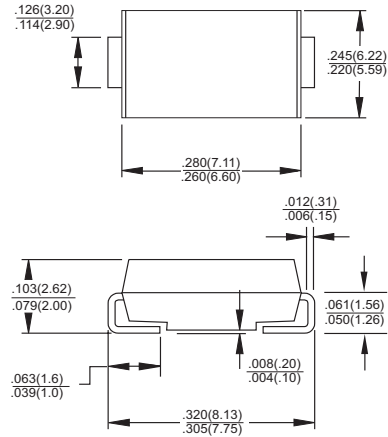
## 5.0 AMPS. High Efficient Surface Mount Rectifiers

### SMC/DO-214AB



## 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 94V0



## Mechanical Data

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

Dimensions in inches and (millimeters)

## 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 5A       | HS 5B | HS 5D | HS 5F | HS 5G | HS 5J | HS 5K | HS 5M | 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<br>See Fig. 1                                                        | I <sub>(AV)</sub> | 5.0         |       |       |       |       |       |       |       | A        |
| Peak Forward Surge Current, 8.3 ms Single<br>Half Sine-wave Superimposed on Rated<br>Load ( JEDEC method )     | I <sub>FSM</sub>  | 150         |       |       |       |       |       |       |       | A        |
| Maximum Instantaneous Forward Voltage<br>@ 5.0A                                                                | V <sub>F</sub>    | 1.0         |       |       |       | 1.3   | 1.7   |       |       | V        |
| Maximum DC Reverse Current<br>@ T <sub>A</sub> =25 °C at Rated DC Blocking Voltage<br>@ T <sub>A</sub> =125 °C | I <sub>R</sub>    | 10<br>250   |       |       |       |       |       |       |       | uA<br>uA |
| Maximum Reverse Recovery Time ( Note 1 )                                                                       | T <sub>rr</sub>   | 50          |       |       |       |       | 75    |       |       | nS       |
| Typical Junction Capacitance ( Note 2 )                                                                        | C <sub>j</sub>    | 80          |       |       |       |       | 50    |       |       | pF       |
| Maximum Thermal Resistance (Note 3)                                                                            | 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       |

- Notes:
1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  2. Measured at 1 MHz and Applied  $V_R=4.0$  Volts.
  3. Measured on P.C.Board with 0.6" x 0.6" (16mm x 16mm) Copper Pad Area.

## RATINGS AND CHARACTERISTIC CURVES (HS5A THRU HS5M)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

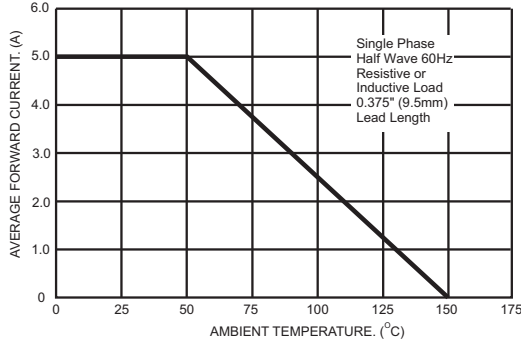


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

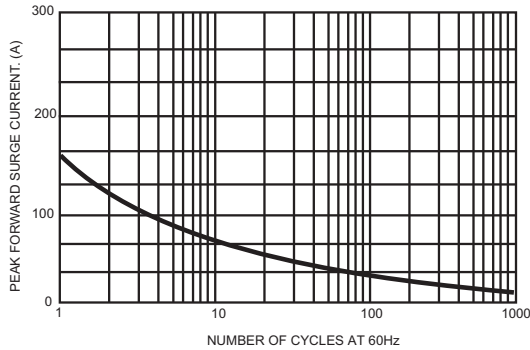


FIG.4- TYPICAL JUNCTION CAPACITANCE

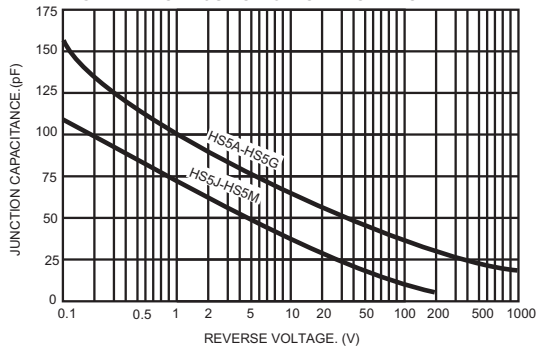


FIG.2- TYPICAL REVERSE CHARACTERISTICS

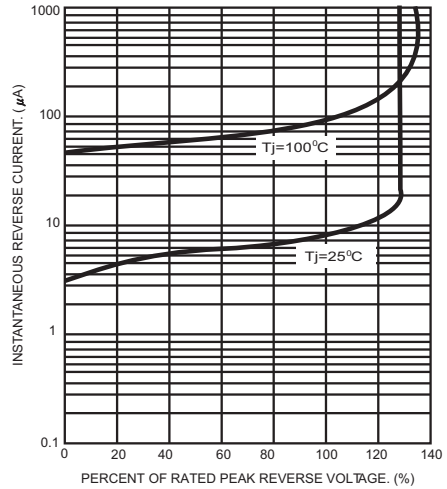


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

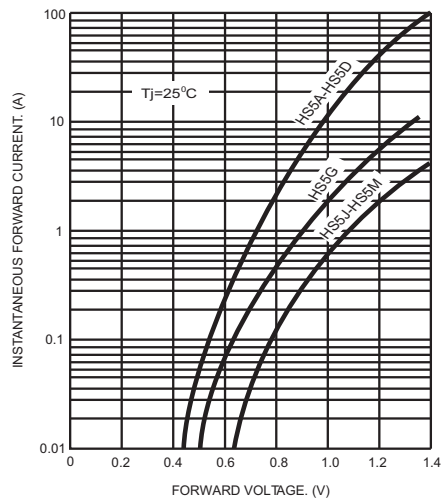


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

