TAIWAN SEMICONDUCTOR

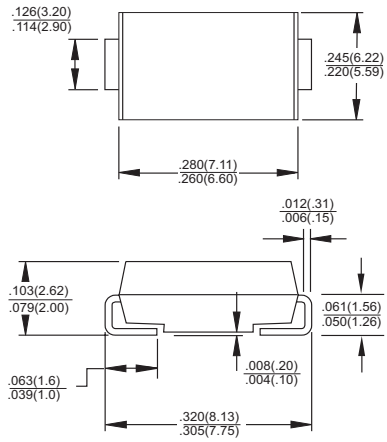
HS5A - HS5M

5.0 AMPS. High Efficient Surface Mount Rectifiers

SMC/DO-214AB

RoHS COMPLIANCE





Dimensions in inches and (millimeters)

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

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_{RRM}	50	100	200	300	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	210	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	300	400	600	800	1000	V
Maximum Average Forward Rectified Current See Fig. 1	$I_{(AV)}$	5.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	150								A
Maximum Instantaneous Forward Voltage @ 5.0A	V_F	1.0				1.3	1.7			V
Maximum DC Reverse Current @ T_A=25 °C at Rated DC Blocking Voltage @ T_A=125 °C	I_R	10 250								uA uA
Maximum Reverse Recovery Time (Note 1)	Trr	50					75			nS
Typical Junction Capacitance (Note 2)	Cj	80					50			pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JA}$	60								°C/W
Operating Temperature Range	T_J	-55 to +150								°C
Storage Temperature Range	T_{STG}	-55 to +150								°C

Notes: 1. Reverse Recovery Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A
2. Measured at 1 MHz and Applied VR=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

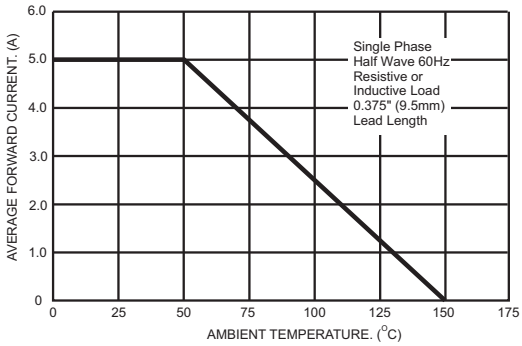


FIG.2- TYPICAL REVERSE CHARACTERISTICS

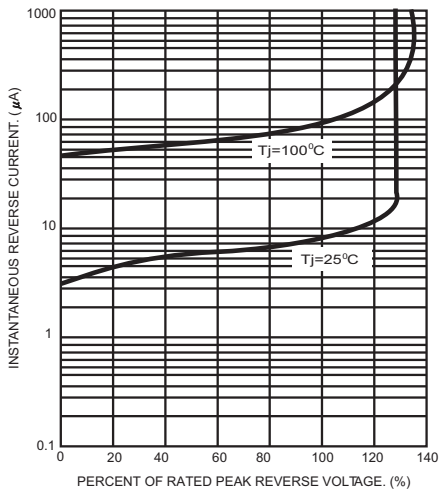


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

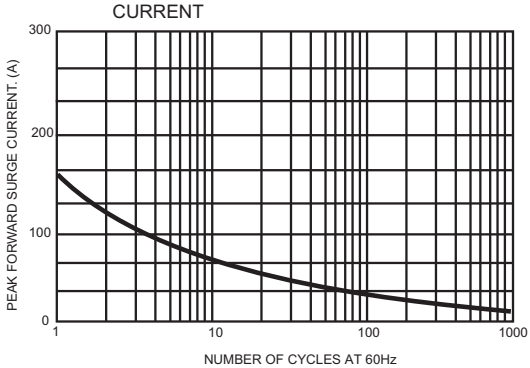


FIG.4- TYPICAL JUNCTION CAPACITANCE

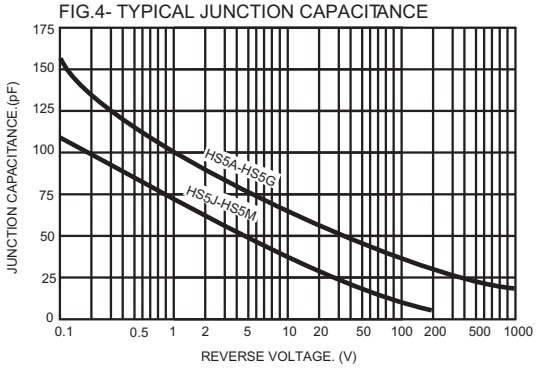


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

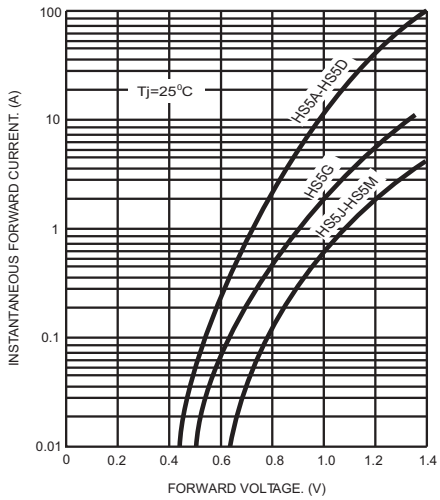


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

