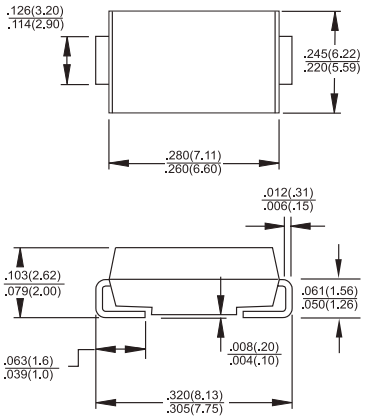
TAIWAN SEMICONDUCTOR

HS5A - HS5M

5.0 AMPS. High Efficient Surface Mount Rectifiers

RoHS COMPLIANCE

SMC/DO-214AB



Dimensions in inches and (millimeters)

Features

- ✧ UL Recognized File # E-326243
- ✧ 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
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

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 grams

Marking Diagram

HS5X = 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 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	$I_{F(AV)}$	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 at Rated DC Blocking Voltage @ T_A=25 °C (Note 1) @ T_A=125 °C	I_R	10 250								uA uA
Maximum Reverse Recovery Time (Note 4)	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. Pulse Test with PW=300 usec,1% Duty Cycle
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.
4. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Version: D10

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RATINGS AND CHARACTERISTIC CURVES (HS5A THRU HS5M)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

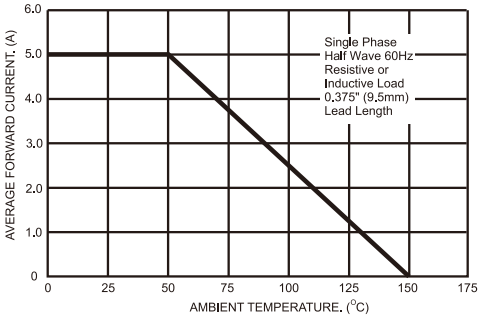


FIG.2- TYPICAL REVERSE CHARACTERISTICS

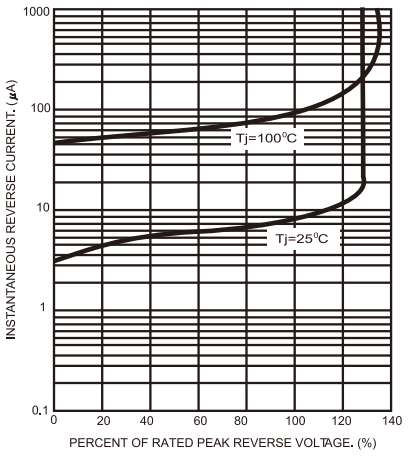


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

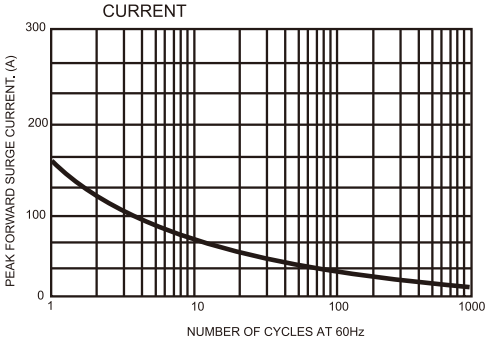


FIG.4- TYPICAL JUNCTION CAPACITANCE

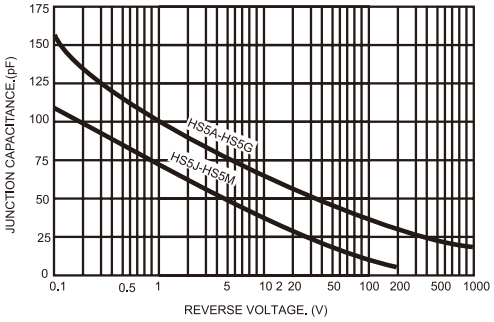


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

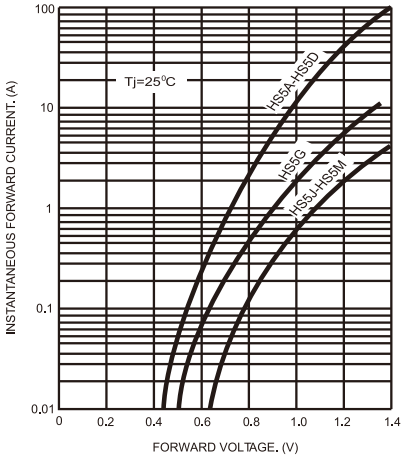
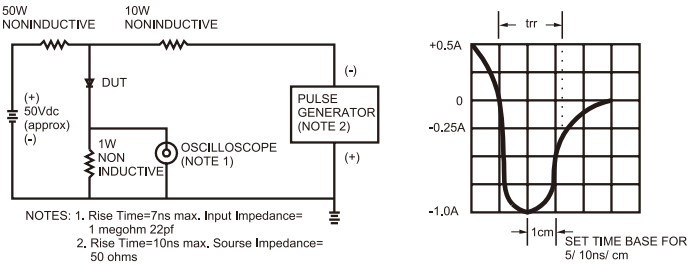


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf
2. Rise Time=10ns max. Sourse Impedance= 50 ohms

Version: D10