

HS1A - HS1MA1

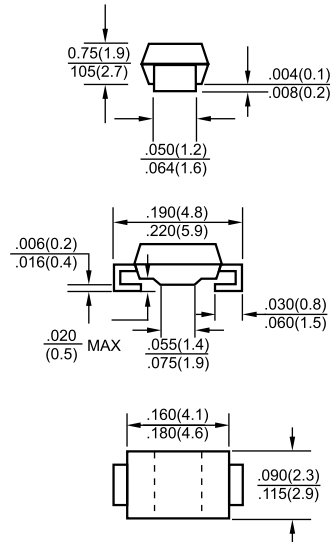
1.0 AMPS. High Efficient Surface Mount Rectifiers



SMA/DO-214AC

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



Dimensions in inches and (millimeters)

Mechanical Data

- ✦ Cases: Molded plastic
- ✦ Terminals: Pure tin plated, lead free
- ✦ Polarity: Indicated by cathode band
- ✦ Packing: 12mm tape
- ✦ Weight: 0.064 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 1A	HS 1B	HS 1D	HS 1F	HS 1G	HS 1J	HS 1K	HS 1M	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	$I_{(AV)}$	1.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	30								A
Maximum Instantaneous Forward Voltage @ 1.0A	V_F	1.0				1.3	1.7			V
Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=125^\circ\text{C}$	I_R	5.0				150				μA μA
Maximum Reverse Recovery Time (Note 1)	T_{rr}	50				75				nS
Typical Junction Capacitance (Note 2)	C_j	20				15				pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JA}$	70								$^\circ\text{C/W}$
Operating Temperature Range	T_J	-55 to +150								$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150								$^\circ\text{C}$

- Notes:
1. Reverse Recovery Test Conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $IRR=0.25\text{A}$
 2. Measured at 1 MHz and Applied $V_R=4.0$ Volts.
 3. Mounted on P.C.Board with 0.2" x 0.2" (5mm x 5mm) Copper Pad Area.

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RATINGS AND CHARACTERISTIC CURVES (HS1A THRU HS1M)

FIG.1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

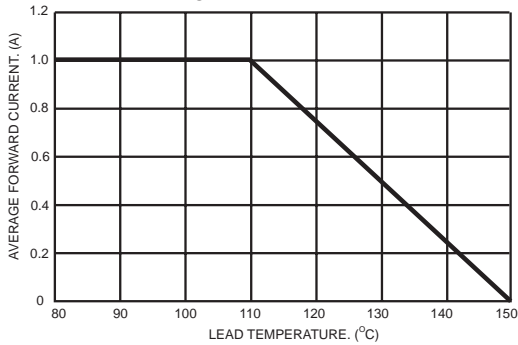


FIG.2- TYPICAL REVERSE CHARACTERISTICS

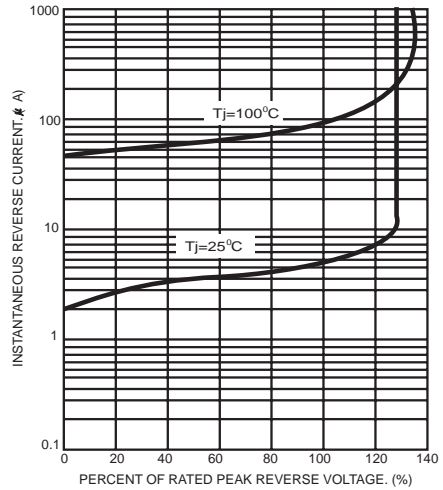


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

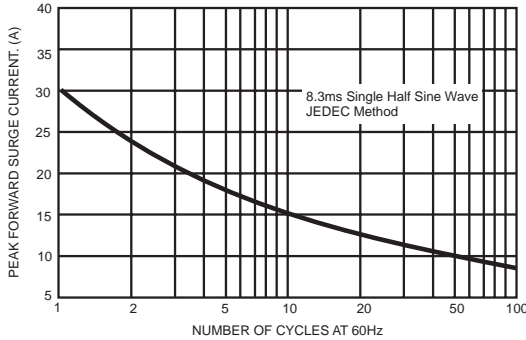


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

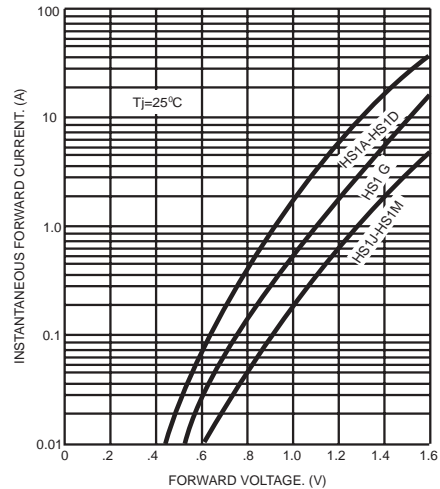


FIG.4- TYPICAL JUNCTION CAPACITANCE

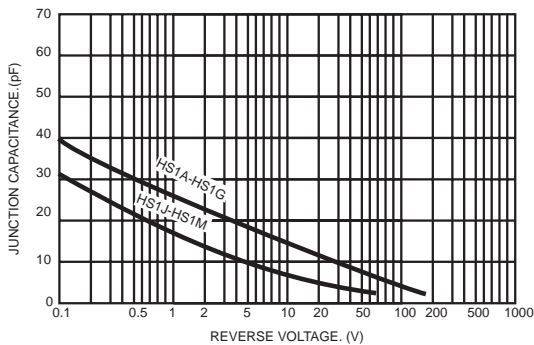
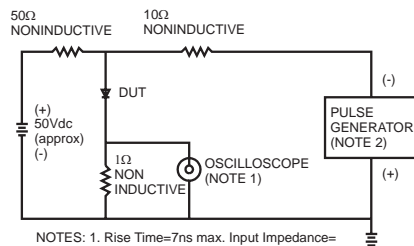


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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

