

# HS1A - HS1MA1

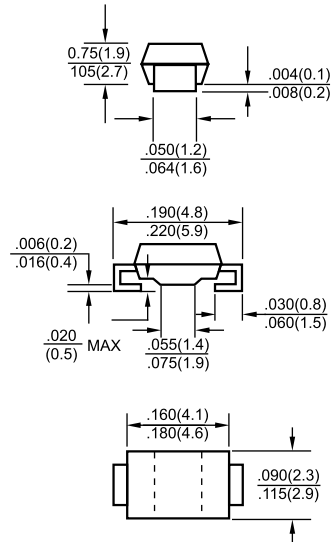
1.0 AMPS. High Efficient Surface Mount Rectifiers



## 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				$\mu\text{A}$ $\mu\text{A}$
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								$^\circ\text{C}/\text{W}$
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

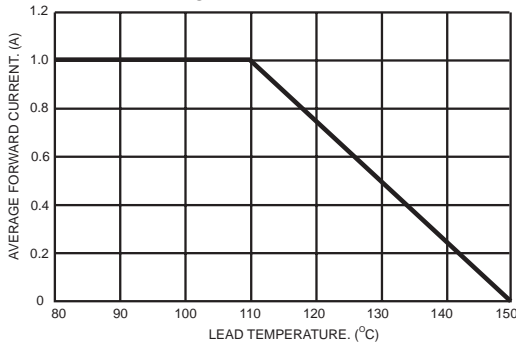


FIG.2- TYPICAL REVERSE CHARACTERISTICS

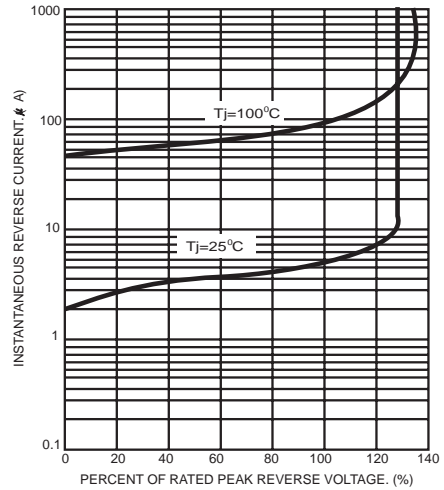


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

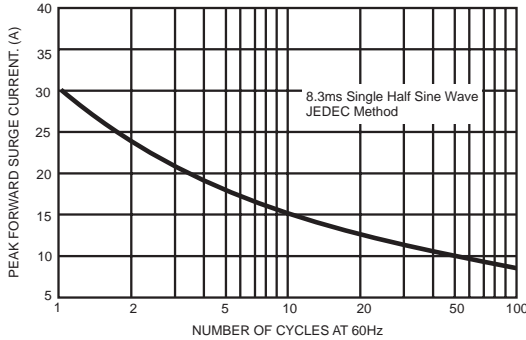


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

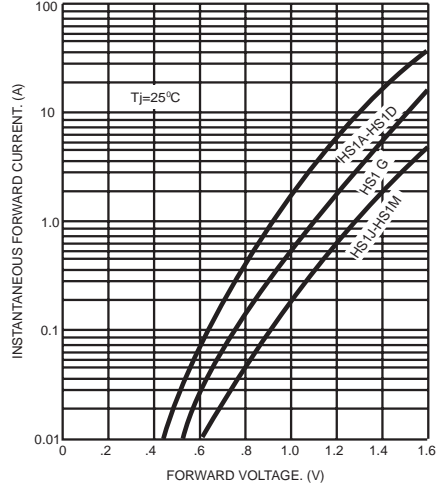


FIG.4- TYPICAL JUNCTION CAPACITANCE

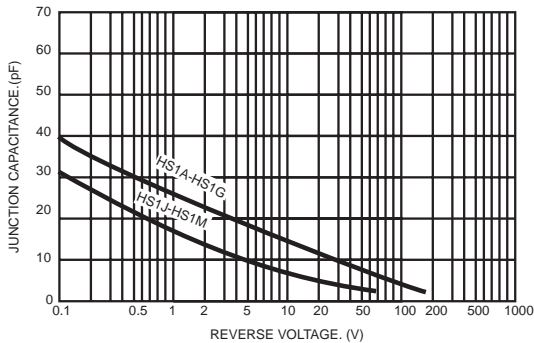
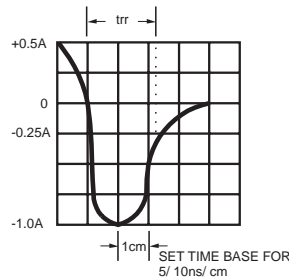
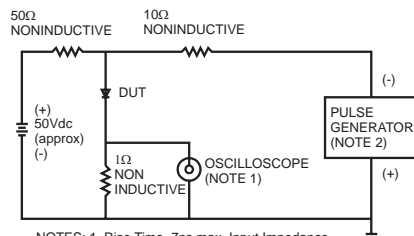


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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