

HS1A - HS1MA1

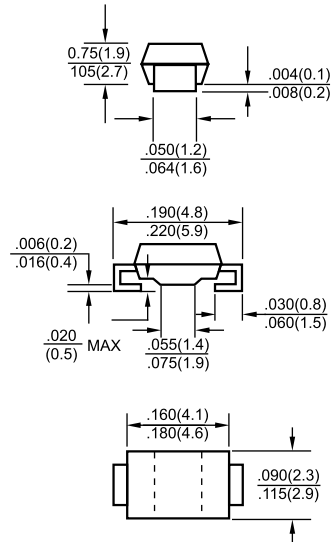
1.0 AMPS. High Efficient Surface Mount Rectifiers



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 @ $T_A=25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=125\text{ }^\circ\text{C}$	I_R	5.0				150					uA uA
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: $I_F=0.5A$, $I_R=1.0A$, $IRR=0.25A$
 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.

HS1A - HS1MA1

1.0 AMPS. High Efficient Surface Mount Rectifiers

RATINGS AND CHARACTERISTIC CURVES (HS1A THRU HS1M)

FIG.1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

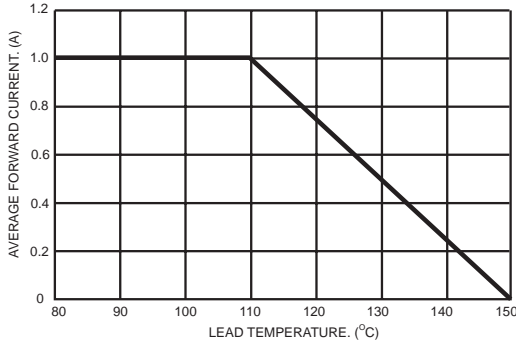


FIG.2- TYPICAL REVERSE CHARACTERISTICS

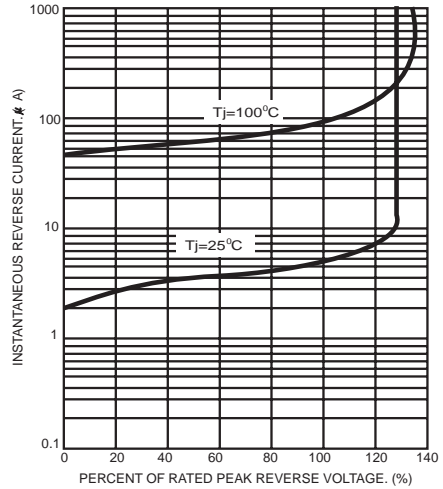


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

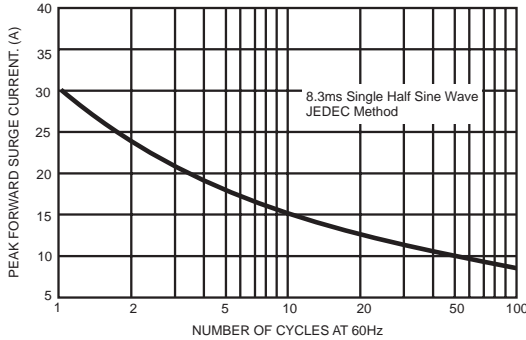


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

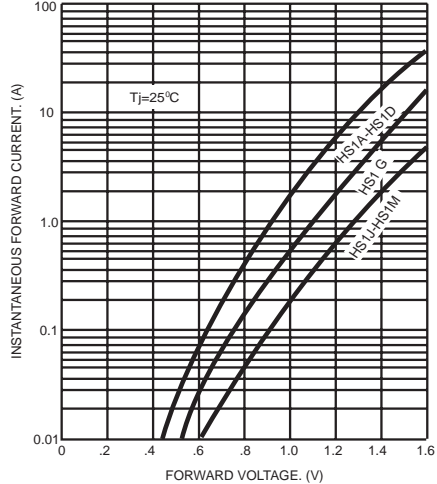


FIG.4- TYPICAL JUNCTION CAPACITANCE

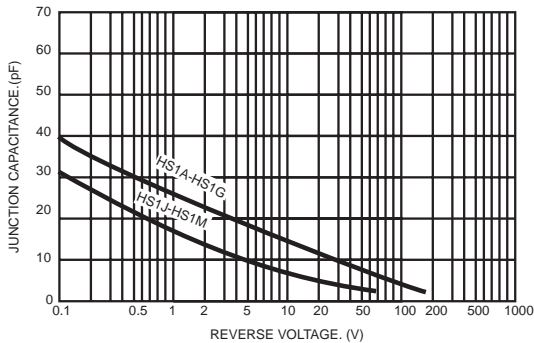
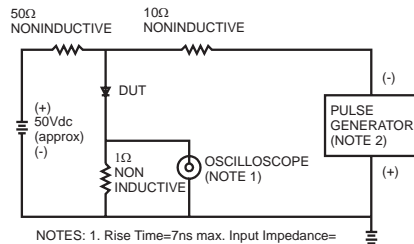


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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

