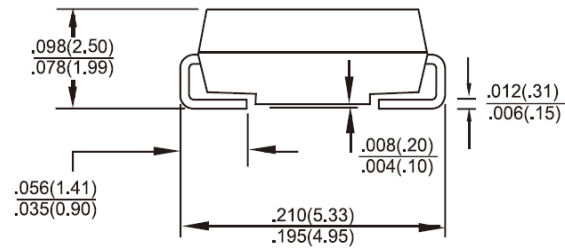
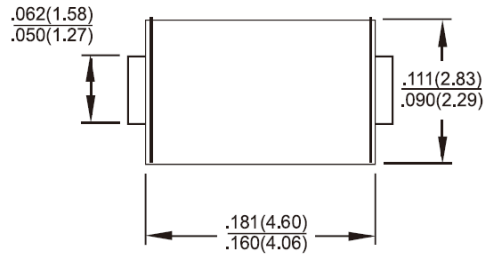




## S1A - S1M

### 1.0AMP Surface Mount Rectifiers

#### SMA/DO-214AC



#### Features

- ✧ For surface mounted application
- ✧ Glass passivated chip junction
- ✧ Low forward voltage drop
- ✧ High current capability
- ✧ Easy pick and place
- ✧ High surge current capability
- ✧ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ✧ High temperature soldering: 260°C/10 seconds at terminals
- ✧ Qualified as per AEC-Q101
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

#### Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminal: Pure tin plated, lead free solderable per J-STD-002B and JESD22-B102D
- ✧ Polarity: Indicated by cathode band
- ✧ Packing: 12mm tape per EIA STD RS-481
- ✧ Weight: 0.064 grams

#### Dimensions in inches and (millimeters)

#### Marking Diagram



- S1X = 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	S1A	S1B	S1D	S1G	S1J	S1K	S1M	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	1							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	40						30	A
Maximum Instantaneous Forward Voltage (Note 1) @ 1 A	$V_F$	1.1							V
Maximum Reverse Current @ Rated VR $T_A=25\text{ }^\circ\text{C}$ $T_A=125\text{ }^\circ\text{C}$	$I_R$	1				50			uA
Maximum Reverse Recovery Time (Note 2)	$T_{rr}$	1.5							uS
Typical Junction Capacitance (Note 3)	$C_j$	12							pF
Non-Repetitive Peak Reverse Avalanche Energy at 25°C, $I_{AS}=1\text{A}$ , $L=10\text{mH}$	$E_{RSM}$	5							mJ
Typical Thermal Resistance	$R_{\theta JA}$ $R_{\theta JL}$	75				85			°C/W
		27				30			
Operating Temperature Range	$T_J$	- 55 to + 175							°C
Storage Temperature Range	$T_{STG}$	- 55 to + 175							°C

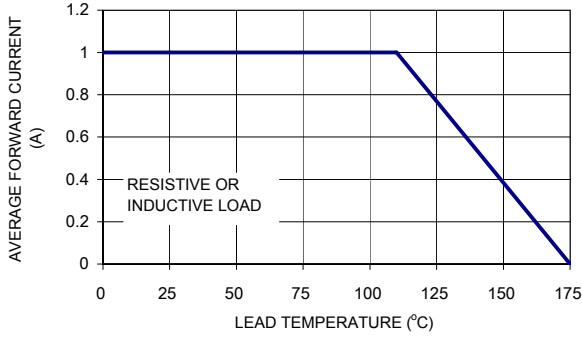
Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

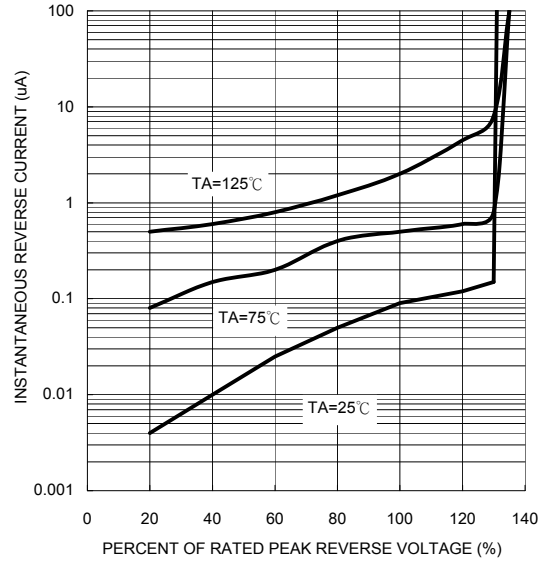
Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

**RATINGS AND CHARACTERISTIC CURVES (S1A THRU S1M)**

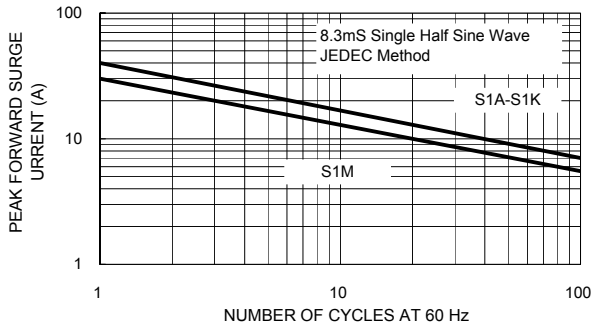
**FIG.1 FORWARD CURRENT DERATING CURVE**



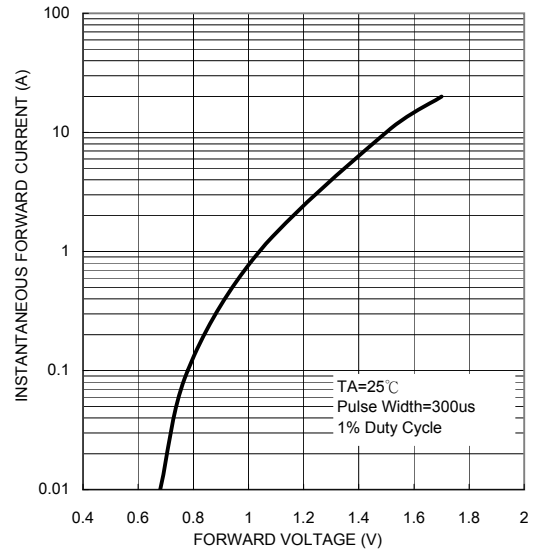
**FIG. 2 TYPICAL REVERSE CHARACTERISTICS**



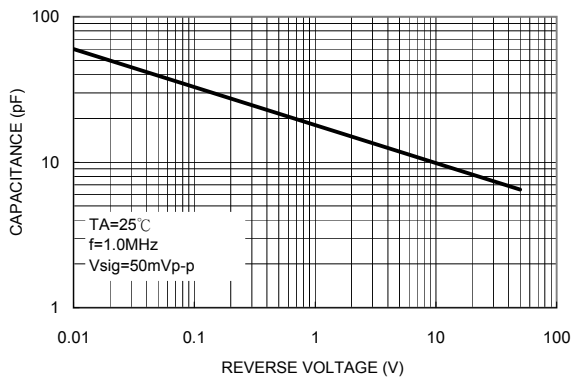
**FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG. 5 TYPICAL FORWARD CHARACTERISTICS**



**FIG. 4 TYPICAL JUNCTION CAPACITANCE**



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

