TAIWAN SEMICONDUCTOR

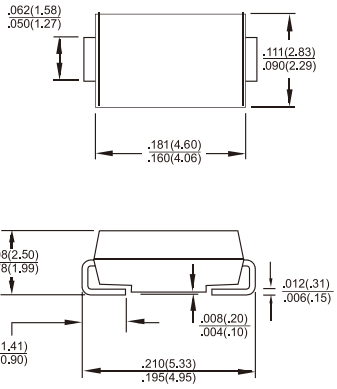
RoHS COMPLIANCE

S2AA - S2MA

1.5 AMPS. Surface Mount Rectifiers

SMA/DO-214AC





Dimensions in inches and (millimeters)

Features

- ✧ UL Recognized File # E-326243
- ✧ For surface mounted application
- ✧ Glass passivated junction chip.
- ✧ 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
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated, lead free.
- ✧ Polarity: Indicated by cathode band
- ✧ Packaging: 12mm tape per EIA STD RS-481
- ✧ Weight: 0.064 grams

Marking Diagram



S2XA = 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	S2 AA	S2 BA	S2 DA	S2 GA	S2 JA	S2 KA	S2 MA	Units
Maximum Recurrent 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 @T_L =100°C	$I_{F(AV)}$	1.5							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	50							A
Maximum Instantaneous Forward Voltage @ 1.5A	V_F	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage @T_A =25°C (Note 1) @ T_A=125°C	I_R	5.0 125							uA uA
Typical Reverse Recovery Time (Note 4)	Trr	1.5							uS
Typical Junction Capacitance (Note 2)	Cj	30							pF
Typical Thermal resistance (Note 3)	$R_{\theta JL}$ $R_{\theta JA}$	16 53							°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 0.2" x 0.2" (5.0 mm x 5.0mm) Copper Pad Areas.
4. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

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RATINGS AND CHARACTERISTIC CURVES (S2AA THRU S2MA)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

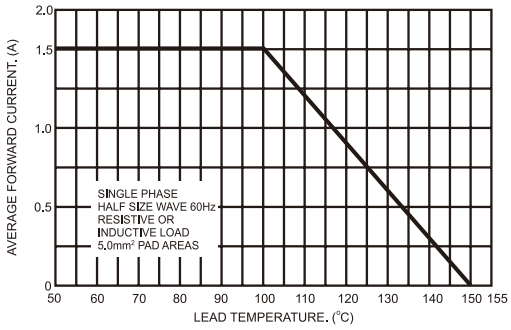


FIG.2- TYPICAL REVERSE CHARACTERISTICS

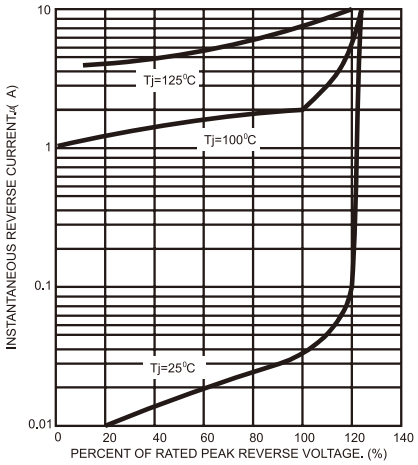


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

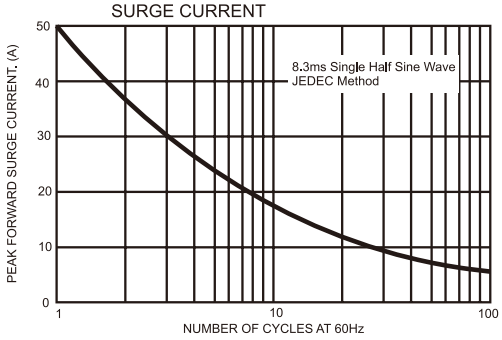


FIG.4- TYPICAL JUNCTION CAPACITANCE

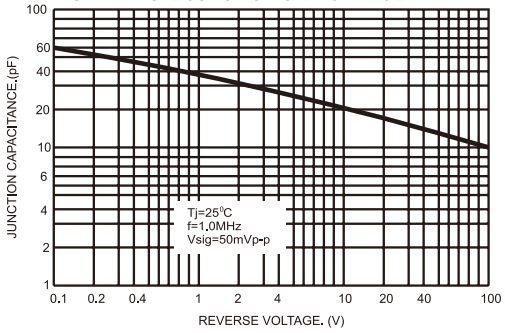


FIG.5- TYPICAL FORWARD CHARACTERISTICS

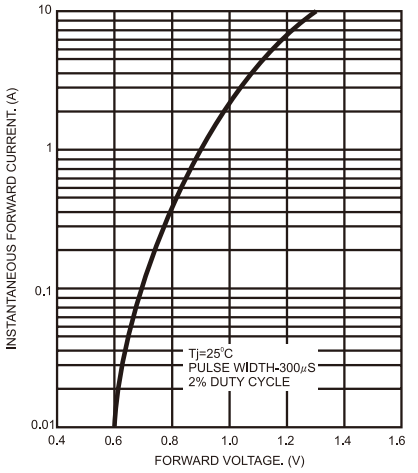
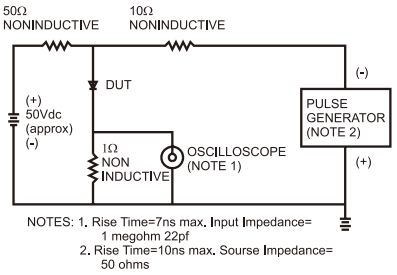
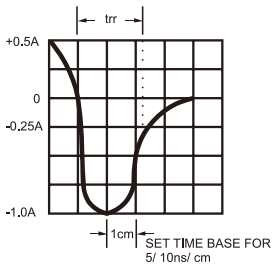


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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



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