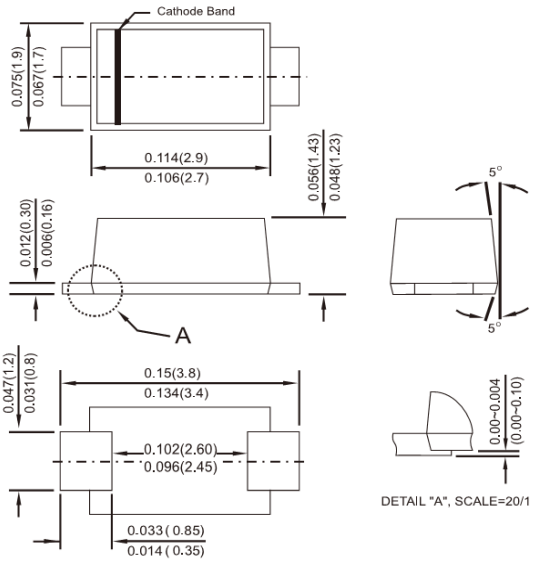
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

S1AL - S1ML

1.0AMP Surface Mount Rectifiers

Sub SMA



Features

- ✧ UL Recognized File # E-326243
- ✧ For surface mounted application
- ✧ Glass passivated junction chip
- ✧ Low-Profile Package
- ✧ Ideal for automated placement
- ✧ Low power loss, high efficiency
- ✧ High temperature soldering: 260℃/10 seconds at terminals
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode
- ✧ Qualified as per AEC-Q101

Mechanical Data

- ✧ Case: Sub SMA plastic case
- ✧ Terminal: Pure tin plated, lead free
- ✧ Polarity: Color band denotes cathode
- ✧ Packaging: 8mm / 12mm tape per EIA STD RS-481
- ✧ Weight: 0.0196 grams
- ✧ Marking code refer to below specified

Dimensions in inches and (millimeters)

Marking Diagram

1XL	= Specific Device Code
G	= Green Compound
Y	= Year
M	= Work Month

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ 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	S1AL	S1BL	S1DL	S1GL	S1JL	S1KL	S1ML	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=110℃ @Ttp=75℃ 20ms Square pulse	$I_{F(AV)}$	1.0 1.5							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 (Note 1) @ 1 A	V_F	1.1							V
Maximum DC Reverse Current at @ T_A=25 ℃ Rated DC Blocking Voltage @ T_A=125 ℃	I_R	5 50							uA uA
Typical Junction Capacitance (Note 2)	Cj	9							pF
Typical Reverse Recovery Time (Note 3)	Trr	1.8							uS
Typical Thermal Resistance (Note 4)	$R_{\theta JL}$ $R_{\theta JA}$	25 85					30 85		^{O}C/W
Operating Temperature Range	T_J	- 55 to + 175							^{O}C
Storage Temperature Range	T_{STG}	- 55 to + 175							^{O}C

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

Note 2: Measured at 1 MHz and Applied VR=4.0 Volts.

Note 3: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 4: Measured on P.C. Board with 0.2" x 0.2" (5.0mm x 5.0mm) Copper Pad Areas.

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RATINGS AND CHARACTERISTIC CURVES (S1AL THRU S1ML)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

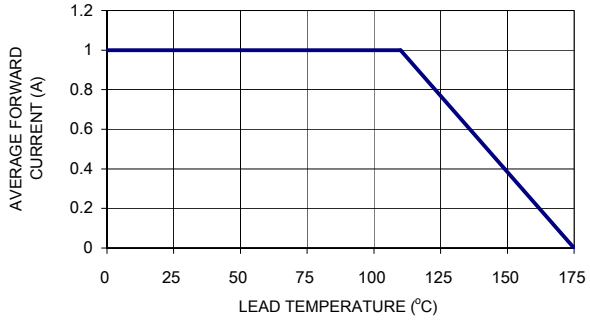


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

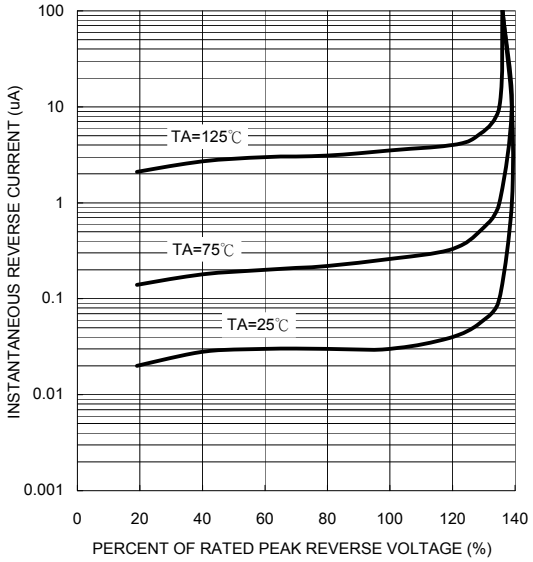


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

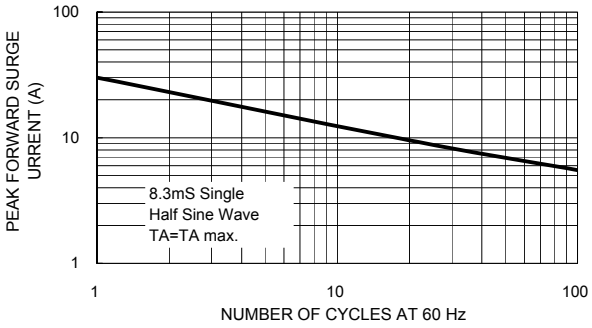


FIG. 5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISRICS PER LEG

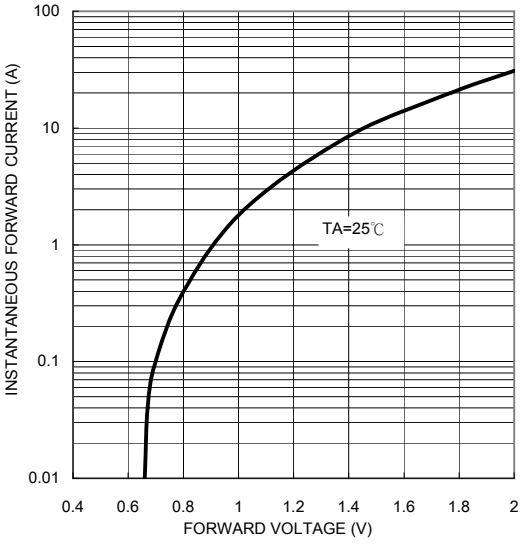
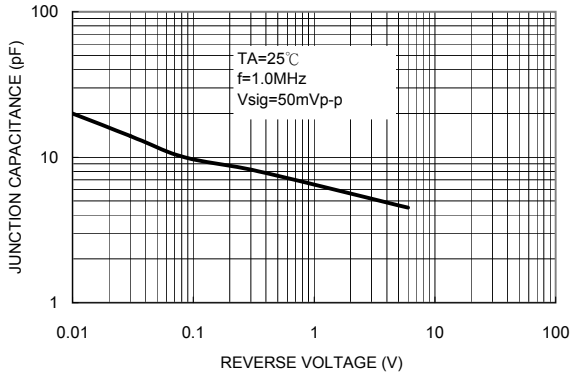


FIG. 4- TYPICAL JUNCTION CAPACITANCE



Version:I11