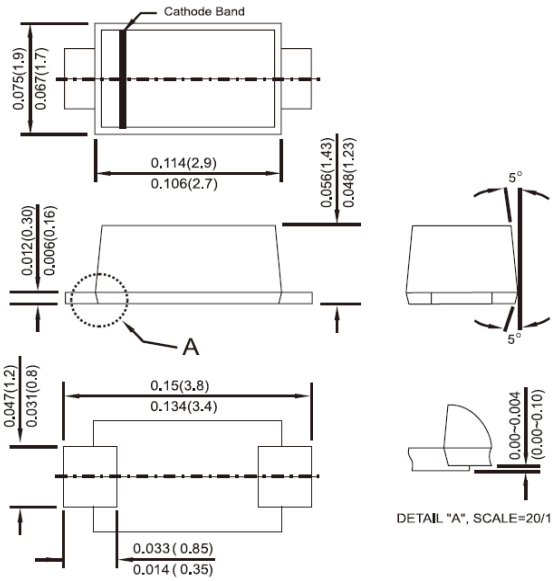
TAIWAN SEMICONDUCTOR

ES1AL - ES1JL

1.0AMP. Surface Mount Super Fast Rectifiers

Sub SMA

RoHS COMPLIANCE



Features

- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Low power loss, high efficiency
- ✧ Ideal for automated placement
- ✧ Glass passivated chip junction
- ✧ High temperature soldering: 260℃/10 seconds at terminals
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case: Sub SMA plastic case
- ✧ Terminal: Pure tin plated, lead free
- ✧ Polarity: Color band cathode end
- ✧ Packing: 8mm/12mm tape per EIA STD RS-481
- ✧ Weight: 0.0196 grams

Dimensions in inches and (millimeters)

Marking Diagram

EXL	= 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	ES 1AL	ES 1BL	ES 1CL	ES 1DL	ES 1FL	ES 1GL	ES 1HL	ES 1JL	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	500	600	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}	30								A
Maximum Instantaneous Forward Voltage (Note 1) @ 1 A	V_F	0.95				1.3		1.7		V
Maximum Reverse Current @ Rated VR T_A=25 ℃ T_A=125 ℃	I_R	5 100								uA
Maximum Reverse Recovery Time (Note 2)	Trr	35								nS
Typical Junction Capacitance (Note 3)	Cj	10				8				pF
Typical Thermal Resistance	$R_{\theta jA}$ $R_{\theta jL}$	85 35								°C/W
Operating Temperature Range	T_J	- 55 to + 150								°C
Storage Temperature Range	T_{STG}	- 55 to + 150								°C

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

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

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

RATINGS AND CHARACTERISTIC CURVES (ES1AL THRU ES1JL)

FIG.1 FORWARD CURRENT DERATING CURVE

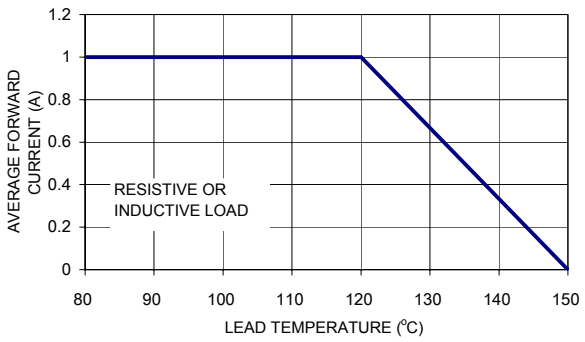


FIG. 2 TYPICAL FORWARD CHARACTERISRICS

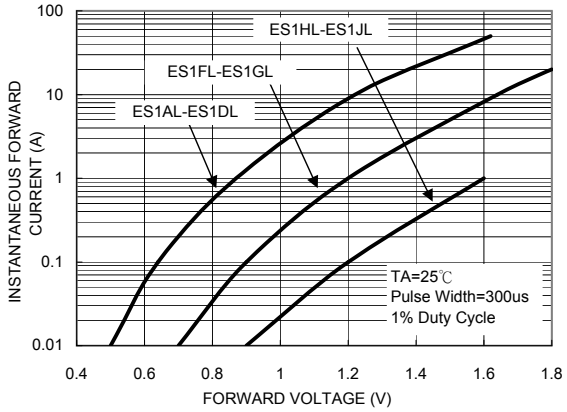


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

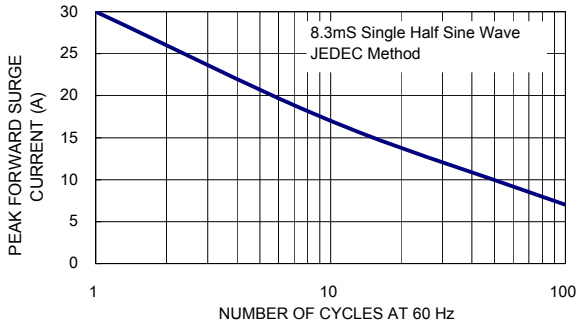


FIG. 4 TYPICAL JUNCTION CAPACITANCE

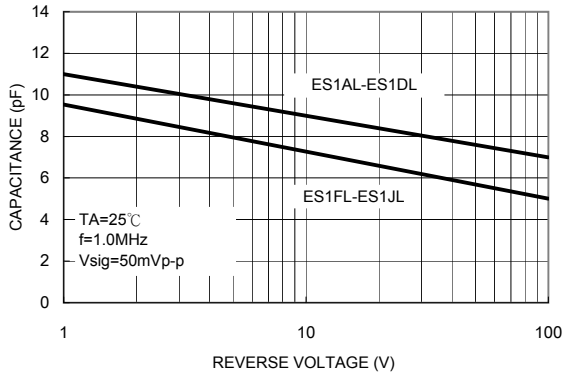


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

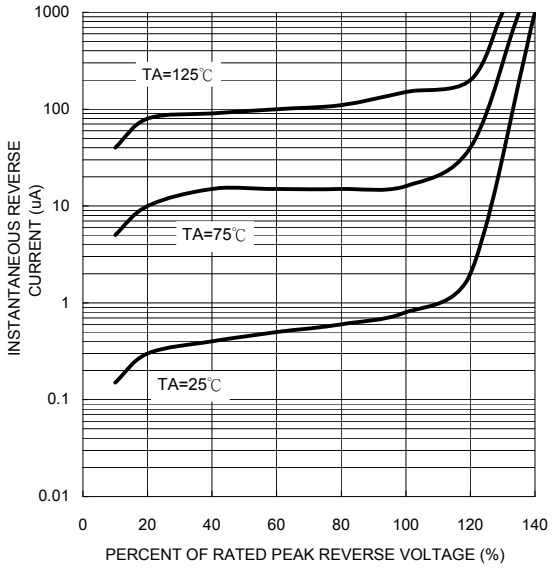


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM