

# ES1A - ES1J

1.0 AMP. Surface Mount Super Fast Rectifiers

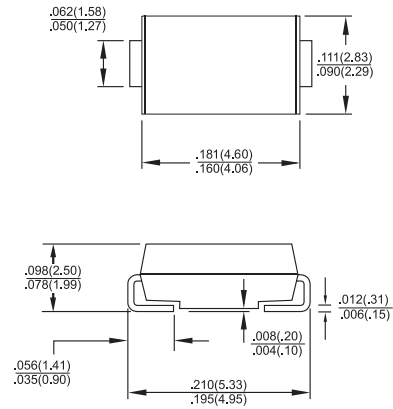
**SMA/DO-214AC**



SM Technology Co., Limited

## Features

- ✧ Glass passivated junction chip
- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Built-in strain relief,
- ✧ Ideal for automated placement
- ✧ Easy pick and place
- ✧ Super fast recovery time for high efficiency
- ✧ Glass passivated chip junction
- ✧ High temperature soldering:  
260°C/10 seconds at terminals
- ✧ Plastic material used carries Underwriters  
Laboratory Classification 94V-0



## Mechanical Data

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

Dimensions in inches and (millimeters)

## 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	ES 1A	ES 1B	ES 1C	ES 1D	ES 1F	ES 1G	ES 1H	ES 1J	Units
Maximum Recurrent 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 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	$V_F$	0.95				1.3		1.7		V
Maximum DC Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$	$I_R$	5.0				100				uA uA
Maximum Reverse Recovery Time ( Note 1 )	$T_{rr}$	35								nS
Typical Junction Capacitance ( Note 2 )	$C_j$	10				8				pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	85				35				°C /W
Operating Temperature Range	$T_J$	-55 to +150								°C
Storage Temperature Range	$T_{STG}$	-55 to +150								°C

- Notes:
1. Reverse Recovery Test Conditions:  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $I_{RR} = 0.25A$
  2. Measured at 1 MHz and Applied  $V_R = 4.0$  Volts
  3. P.C.B. Mounted on 0.2 x 0.2" (5.0 x 5.0mm) Copper Pad Area.

## RATINGS AND CHARACTERISTIC CURVES (ES1A THRU ES1J)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

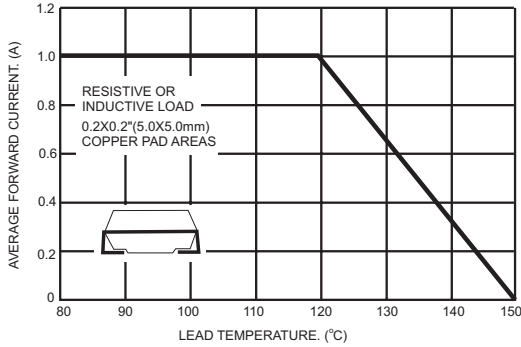


FIG.2- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

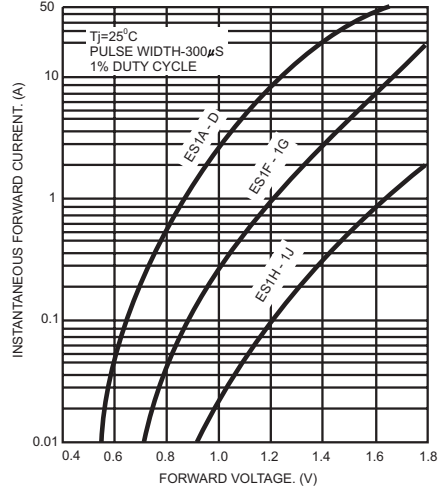


FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

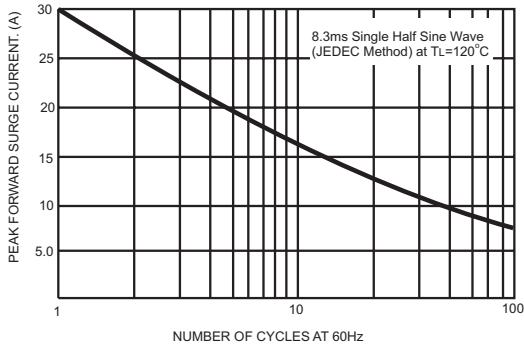


FIG.5- TYPICAL REVERSE CHARACTERISTICS

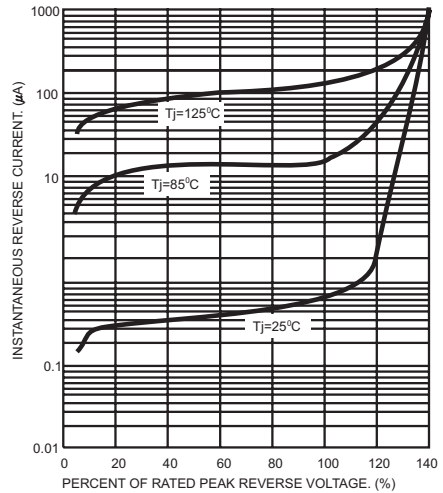


FIG.4- TYPICAL JUNCTION CAPACITANCE

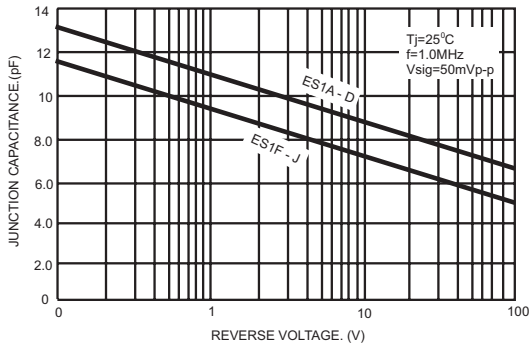


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

