

# ES1A-ES1J

Surface Mount Rectifiers



**VOLTAGE RANGE: 50 --- 600 V**

**CURRENT: 1.0 A**

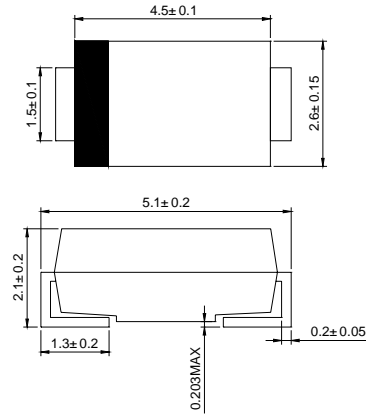
## Features

- ✧ Low cost
- ✧ Low leakage
- ✧ Low forward voltage drop
- ✧ High current capability
- ✧ Easily cleaned with Alcohol, Isopropanol and similar solvents
- ✧ The plastic material carries U/L recognition 94V-0

## Mechanical Data

- ✧ Case: JEDEC DO-214AC, molded plastic
- ✧ Terminals: Solderable per MIL-STD-202, Method 208
- ✧ Polarity: Color band denotes cathode
- ✧ Weight: 0.002 ounces, 0.064 grams
- ✧ Mounting position: Any

## DO-214AC(SMA)



Dimensions in millimeters

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

		ES1A	ES1B	ES1C	ES1D	ES1G	ES1H	ES1J	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	50	100	150	200	400	500	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	280	350	420	V
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	400	500	600	V
Maximum average forward rectified current @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ\text{C}$	$I_{FSM}$	30							A
Maximum instantaneous forward voltage at 1.0 A	$V_F$	0.98		1.25		1.70		V	
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=125^\circ\text{C}$	$I_R$	5.0 200							$\mu\text{A}$
Typical reverse recovery time (Note1)	$t_{rr}$	35							ns
Typical junction capacitance (Note2)	$C_J$	19							pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	50							$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	- 55 ---- + 150							$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 55 ---- + 150							$^\circ\text{C}$

NOTE: 1. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

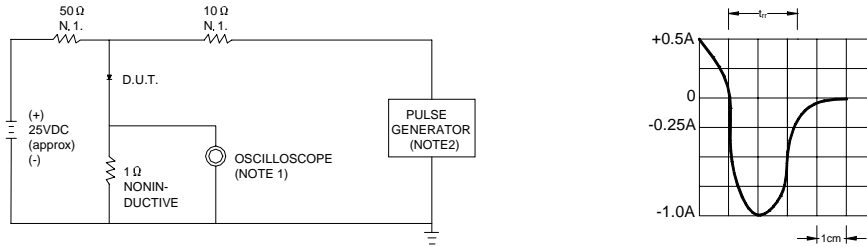
3. Thermal resistance from junction to ambient and junction to lead P.C.B. mounted on 0.27"X0.27"(7.0X7.0mm<sup>2</sup>) copper pad areas

# ES1A-ES1J

## Surface Mount Rectifiers

### Ratings And Characteristic Curves

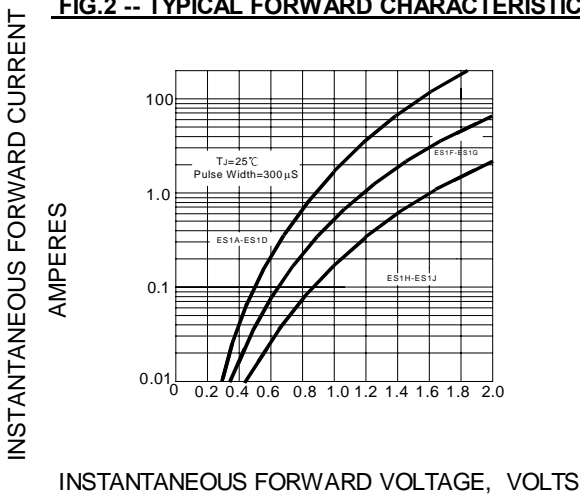
**FIG.1 -- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



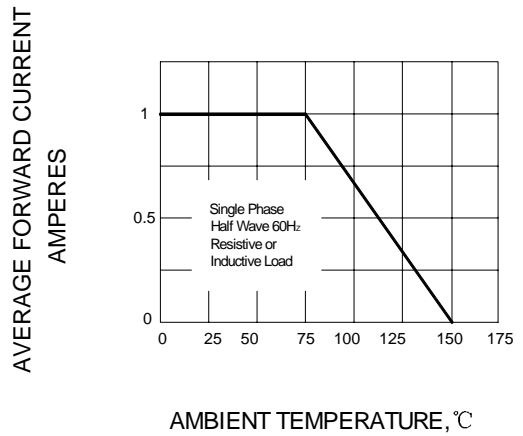
NOTES: 1. RISE TIME = 7ns MAX. INPUT IMPEDANCE = 1MΩ. 22pF.  
 2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50 Ω.

SET TIME BASE FOR 10/15 ns/cm

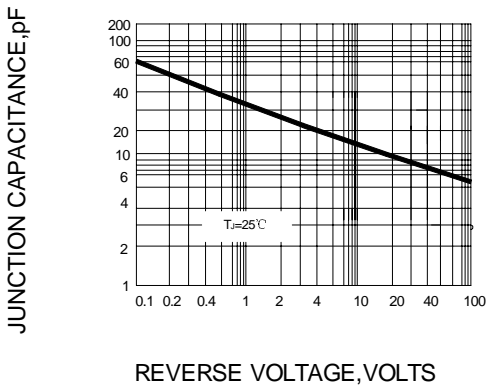
**FIG.2 -- TYPICAL FORWARD CHARACTERISTIC**



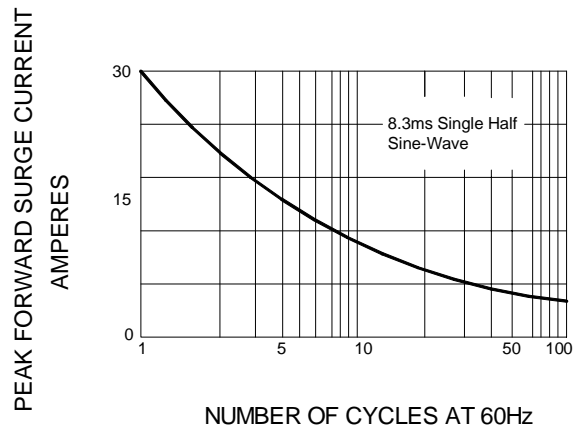
**FIG.3 -- FORWARD DERATING CURVE**



**FIG.4 -- TYPICAL JUNCTION CAPACITANCE**



**FIG.5 -- PEAK FORWARD SURGE CURRENT**



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