

# ES1A THRU ES1J

SURFACE MOUNT SUPER FAST RECTIFIER  
 VOLTAGE RANGE 50 to 600 Volts    CURRENT 1.0 Ampere

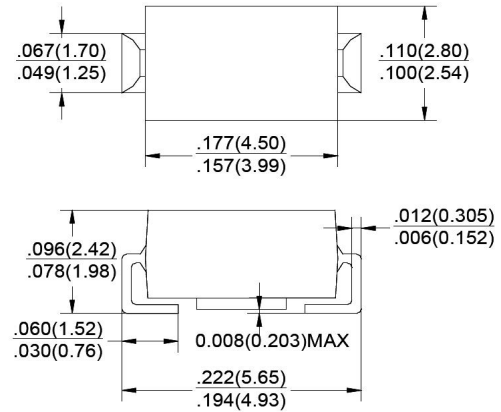
## FEATURES

- ◆ Plastic package has underwrites laboratory flammability
- ◆ Classification 94V-0
- ◆ Built-in strain relief
- ◆ Super Fast switching speed for high efficiency
- ◆ High temperature soldering guaranteed 250°C/10 seconds

## Mechanical Data

- ◆ Case: Transfer molded plastic
- ◆ Terminals: Solder plated, solderable per
- ◆ MIL-STD-750, Method 2026
- ◆ Polarity: Color band denotes cathode end
- ◆ Weight: 0.002ounce, 0.064 gram

## SMA - J (DO-214AC)



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

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

PARAMETER	SYMBOL	ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1J	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	420	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	Volts
Maximum Average Forward Rectified Current At $T_A = 55^\circ\text{C}$ (NOTE 1)	$I_{(AV)}$	1.0							Amps
Peak Forward Surge Current 8.3ms single half sine wave superimposed on	$I_{FSM}$	30							Amps
Maximum Instantaneous Forward Voltage at 1.0A	$V_F$	0.95			1.25		1.7		Volts
Maximum DC Reverse Current at rated DC blocking voltage at	$T_A = 25^\circ\text{C}$	5.0							$\mu\text{A}$
	$T_A = 125^\circ\text{C}$	100							
Maximum Reverse Recovery Time Test conditions $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{RR} = 0.25\text{A}$	$t_{rr}$	35							nS
Typical Junction Capacitance	$C_J$	10			8				pF
Typical Thermal Resistance (NOTE 1)	$R_{\theta JA}$	88							$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$	28							
Operating Junction Temperature	$T_J$	-55 to +150							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150							$^\circ\text{C}$

Note: Thermal resistance from Junction to ambient and from junction to lead mounted on PCB.  
 with 0.2x0.2"(5.0 x 5.0mm) copper pad areas.

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## SUPER FAST RECTIFIER

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### RATING AND CHARACTERISTIC CURVES ES1A THRU ES1J

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

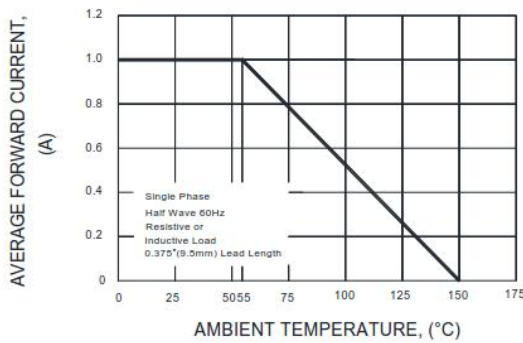


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

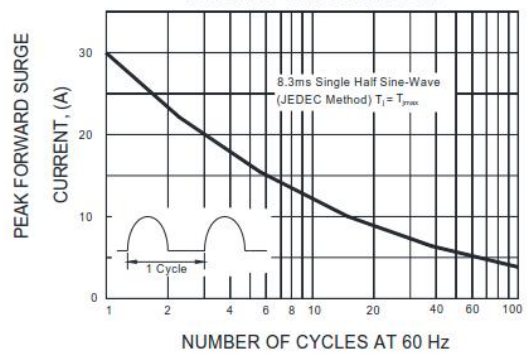


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

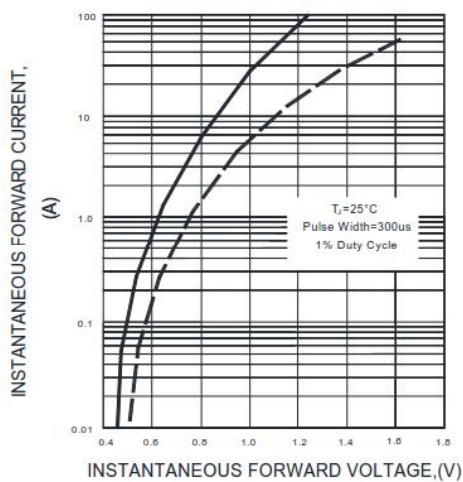


FIG.4-TYPICAL REVERSE CHARACTERISTICS

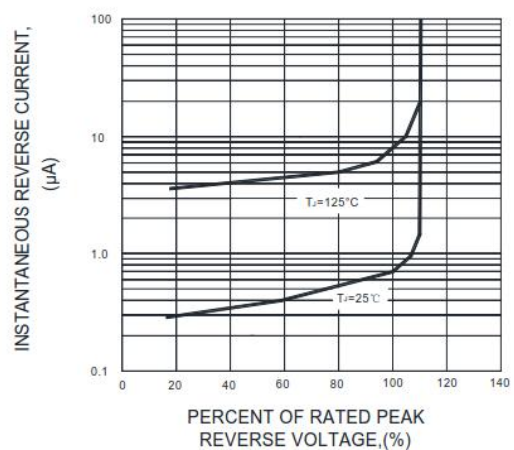


FIG.5-TYPICAL JUNCTION CAPACITANCE

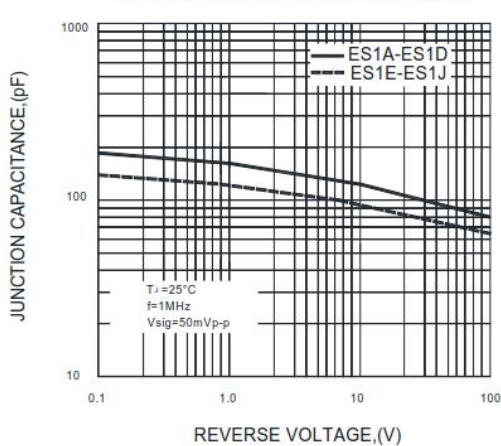
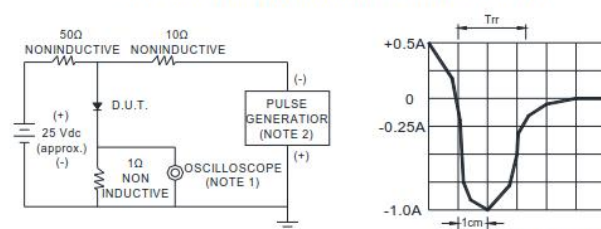


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES : 1.Rise Time=7ns max. Input Impedance= 1 magohm. 22pF  
2.Rise time=10ns max. Source Impedance= 50 ohms

SET TIME BASE FOR 50/100ns/cm

Note: Specifications are subject to change without notice. For more detail and update, please visit our website.