

# ES1A THRU ES1J

## SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER

**REVERSE VOLTAGE:** 50 to 600 VOLTS

**FORWARD CURRENT:** 1.0 AMPERE

<http://www.njzrg.com>

### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Superfast recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals

### MECHANICAL DATA

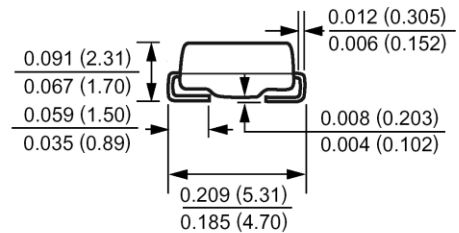
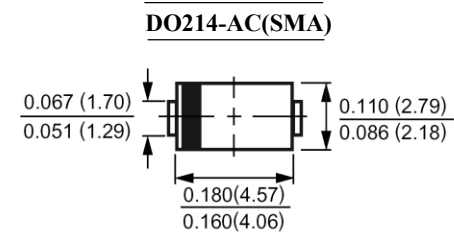
Case: Molded plastic, DO-214AC(SMA)

Terminals: Solder plated, solderable per MIL-STD-750, method 2026 guaranteed

Polarity: Color band denotes cathode end

Packaging: 12mm tape per EIA STD RS-481

Weight: 0.002 ounce, 0.064 gram



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

	Symbols	ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1J	Units
Maximum Recurrent 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 $T_L=100$	$I_{(AV)}$	1.0							Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30							Amp
Maximum Forward Voltage at 1.0A	$V_F$	0.95			1.25		1.70	Volts	
Maximum Reverse Current at $T_A=25$ at Rated DC Blocking Voltage $T_A=100$	$I_R$	5.0				100			$\mu$ Amp
Typical Junction Capacitance (Note 1)	$C_J$	10							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JL}$	35							/W
Maximum Reverse Recovery Time (Note 3)	$T_{RR}$	35						50	nS
Operating Junction Temperature Range	$T_J$	-55 to +150							
Storage Temperature Range	$T_{stg}$	-55 to +150							

### NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

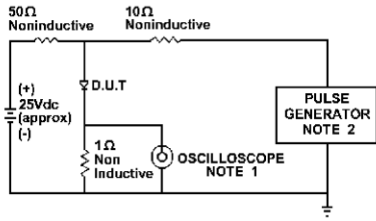
2- Thermal resistance from junction to lead mounted on P.C.B. with 0.3 x 0.3" (8.0 x 8.0mm) copper pad areas

3- Reverse Recovery Test Conditions :  $I_F=0.5A$  ,  $I_R=1A$  ,  $I_{RR}=0.25A$ .

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## SURFACE MOUNT SUPERFAST RECOVERY RECTIFIER

### RATINGS AND CHARACTERISTIC CURVES



NOTE: 1. Rise Time = 7ns max.  
Input Impedance = 1 megohm. 22pF  
2. Rise Time = 10ns max.  
Source Impedance = 50 Ohms

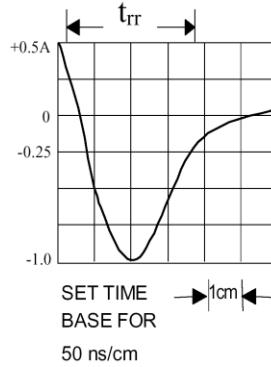


Fig. 1-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

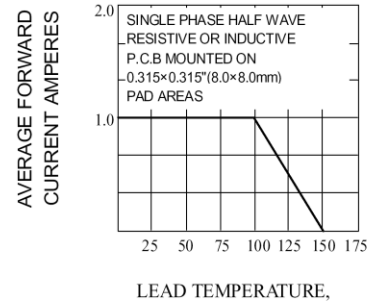


Fig. 2-MAXIMUM AVERAGE FORWARD CURRENT RATING

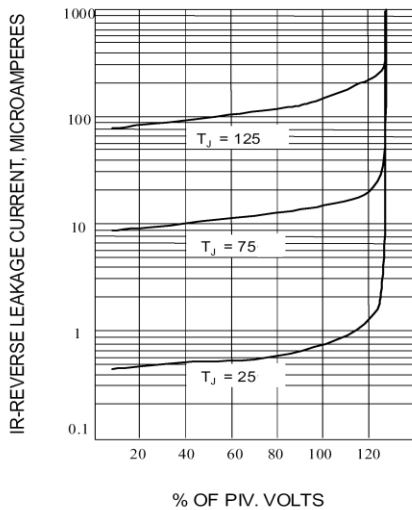


Fig. 3-TYPICAL REVERSE CHARACTERISTICS

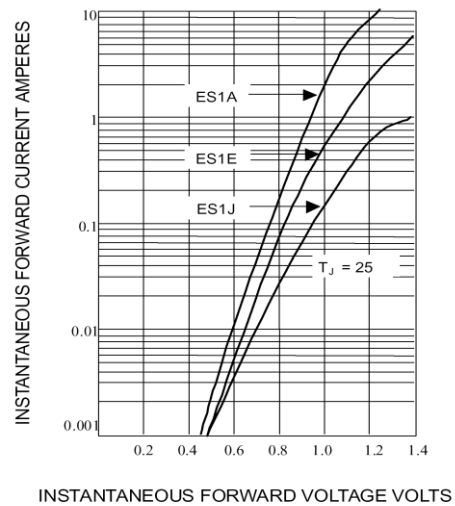


Fig. 4-TYPICAL FORWARD CHARACTERISTICS

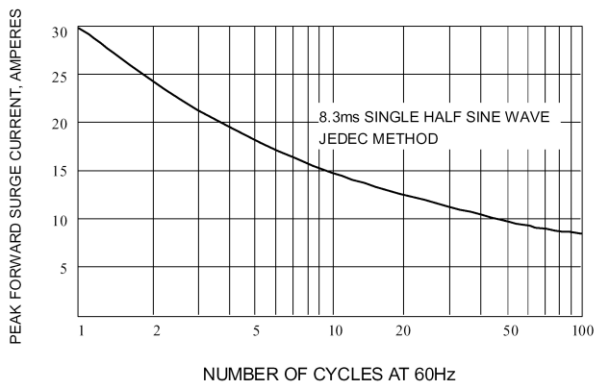


Fig. 5-MAXIMUM NON-REPETITIVE SURGE CURRENT

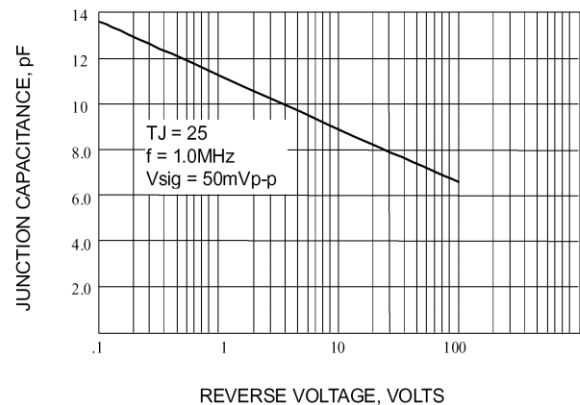


Fig. 6-TYPICAL JUNCTION CAPACITANCE