



## SURFACE MOUNT SUPER FAST RECTIFIER

**ES1A THRU ES1J**

**VOLTAGE RANGE**      **50 to 600 Volts**  
**CURRENT**              **1.0 Ampere**

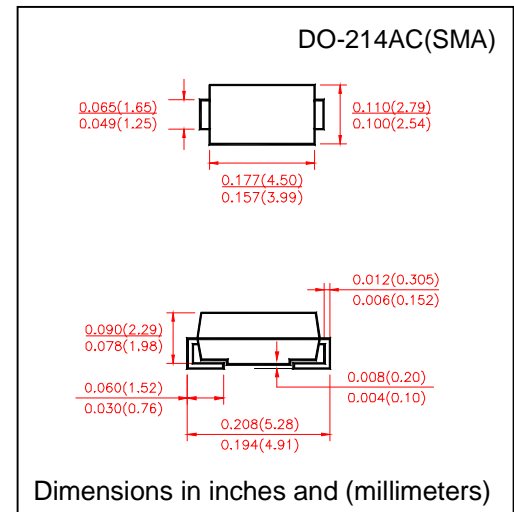
### FEATURES

- Plastic package has underwrites laboratory flammability Classification 94V-0
- Glass passivated chip junction
- 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



### 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	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 rated load (JEDEC Method)	$I_{FSM}$	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 (Measured at 1.0MHz and applied reverse voltage of 4.0V)	$C_J$	10				8			pF
Typical Thermal Resistance (NOTE 1)	$R_{\theta JA}$	88							$^\circ\text{C/W}$
	$R_{\theta JL}$	28							
Operating Junction Temperature	$T_J$	(-55 to +150)							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	(-55 to +150)							$^\circ\text{C}$

#### Notes:

1. Thermal resistance from Junction to ambient and from junction to lead mounted on PCB. with 0.2×0.2" (5.0 × 5.0mm) copper pad areas.



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## RATING AND CHARACTERISTIC CURVES ES1A THRU ES1J

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

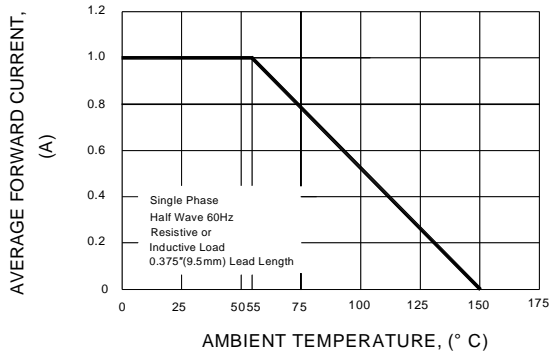


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

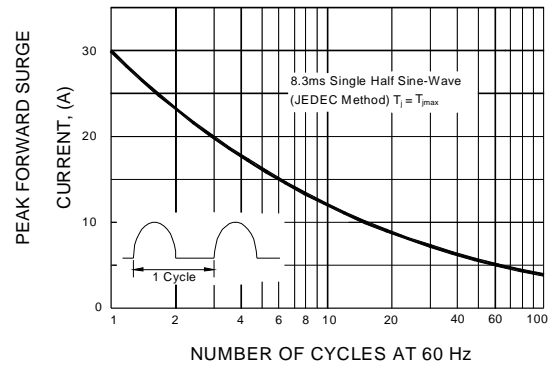


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

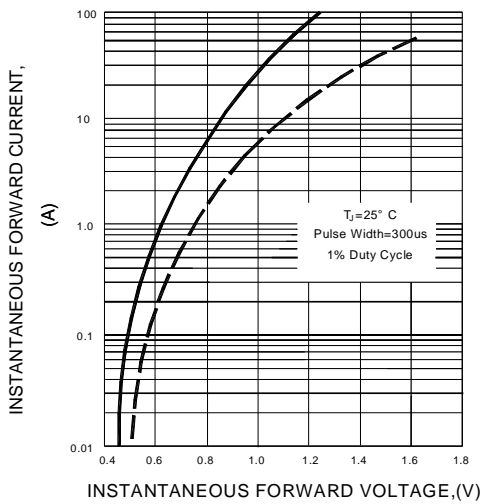


FIG.4-TYPICAL REVERSE CHARACTERISTICS

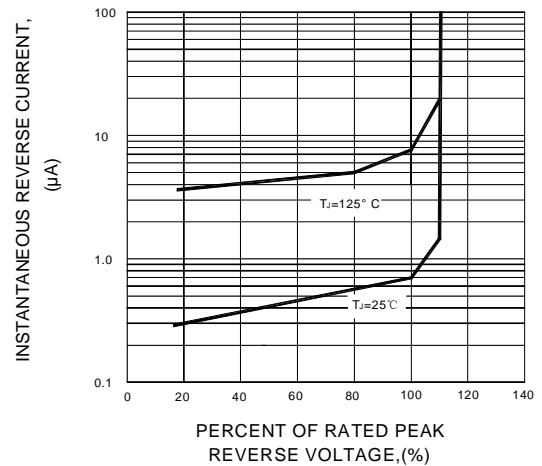


FIG.5-TYPICAL JUNCTION CAPACITANCE

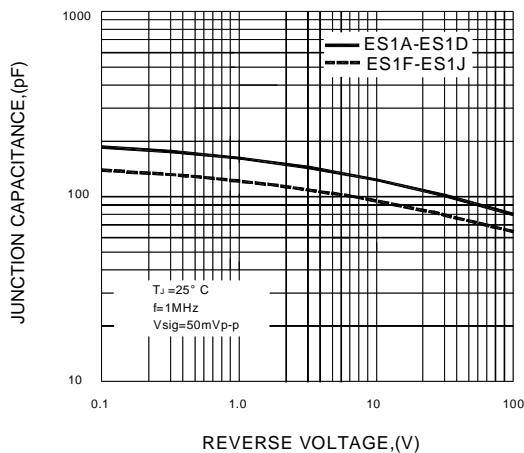
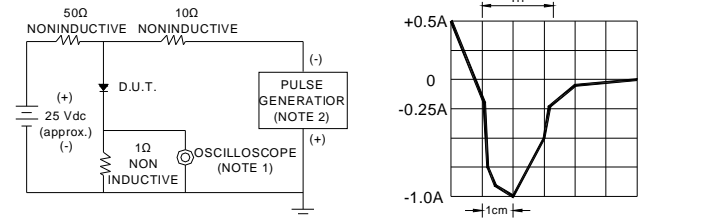


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

SET TIME BASE 1 50/100ns/cm