

# ES1A thru ES1J

## SURFACE MOUNT SUPERFAST RECTIFIER



**CHENG-YI  
ELECTRONIC**



### FEATURES

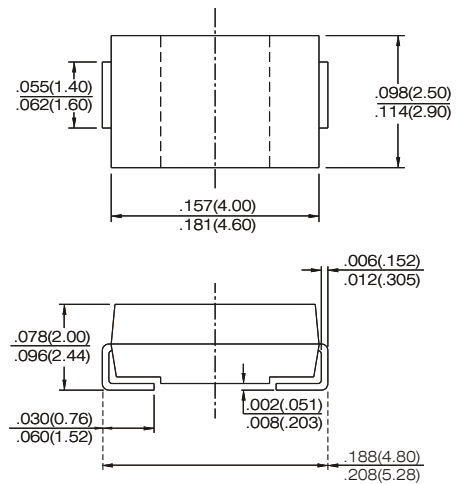
- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Superfast recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction
- High temperature soldering:  
260°C/10 seconds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

### MECHANICAL DATA

- Case: JEDEC DO-214AC molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.002 ounces, 0.064 gram

VOLTAGE RANGE  
-50 TO -600 VOLTS  
CURRENT  
-1.0 Amperes

### SMA/DO-214AC



Dimensions in inches and (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 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	V
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	V
Maximum Average Forward Rectified Current, at $T_L=120^\circ\text{C}$	$I_{(AV)}$	1.0							A
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30.0							A
Maximum Instantaneous Forward Voltage at 1.0A	$V_F$	0.95				1.25	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			$\mu\text{A}$
Maximum Reverse Recovery Time (Note 1)	$T_{RR}$	35.0							nS
Typical Junction Capacitance (Note 2)	$C_J$	10.0							pF
Maximum Thermal Resistance (Note 3)	$R\theta_{JL}$	35							$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-50 to +150							$^\circ\text{C}$

Notes : 1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$   
 2. Measured at 1.0 MHz and Applied  $V_r=4.0$  volts.  
 3.  $8.0\text{mm}^2$  (.013mm thick) land areas.

# ES1A thru ES1J

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### RATING AND CHARACTERISTICS CURVES ES1A THRU ES1J

Fig. 1 - REVERSE RECOVERY TIME CHARACTERISTIC  
AND TEST CIRCUIT DIAGRAM ES1A THRU ES1J

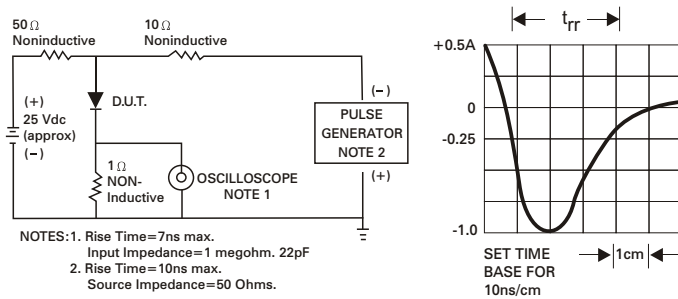


Fig. 2 - MAXIMUM AVERAGE  
FORWARD CURRENT RATING

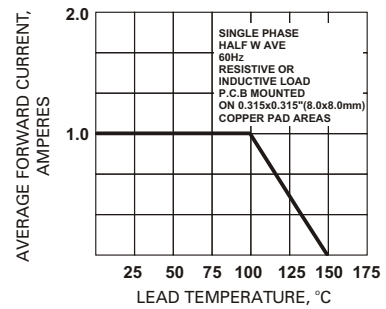


Fig. 3 - TYPICAL REVERSE CHARACTERISTICS

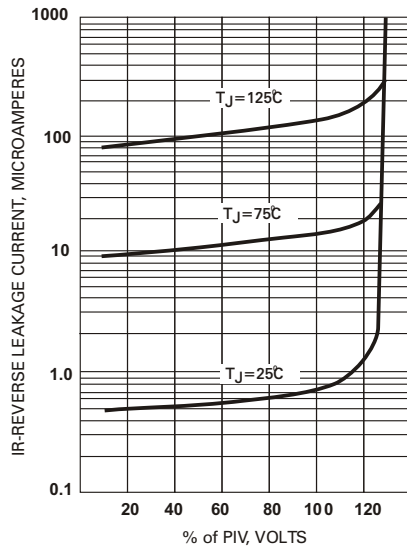


Fig. 4 - TYPICAL FORWARD CHARACTERISTICS

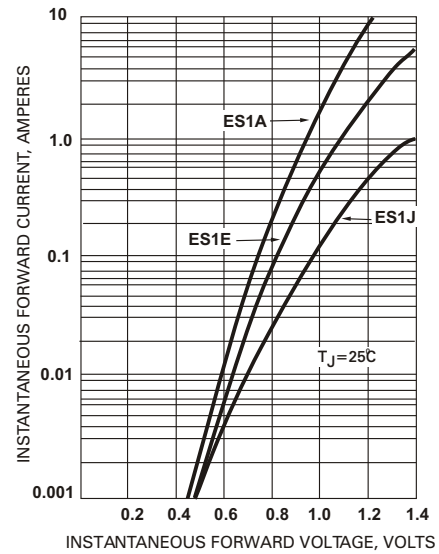


Fig. 5 - MAXIMUM NON-REPETITIVE SURGE CURRENT

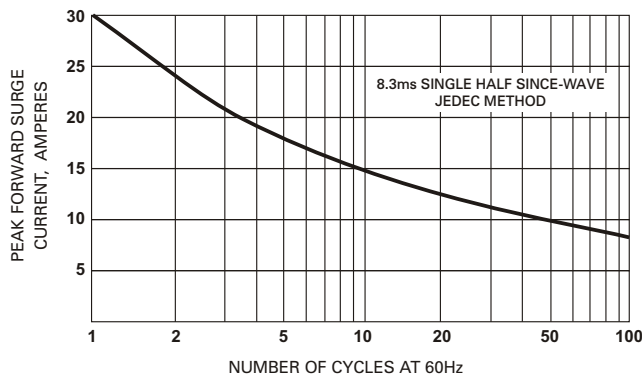


Fig. 6 - TYPICAL JUNCTION CAPACITANCE

