

# ES1AT THRU ES1JT

## Surface Mount Superfast Rectifiers

Reverse Voltage – 50 to 600 V

Forward Current – 1 A

### FEATURES

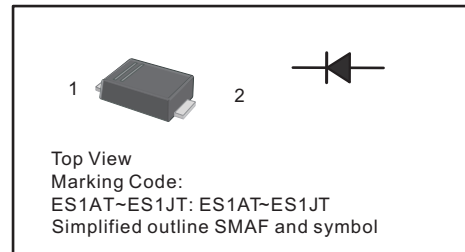
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 27mg 0.00086oz

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



### Absolute Maximum Ratings and 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%.

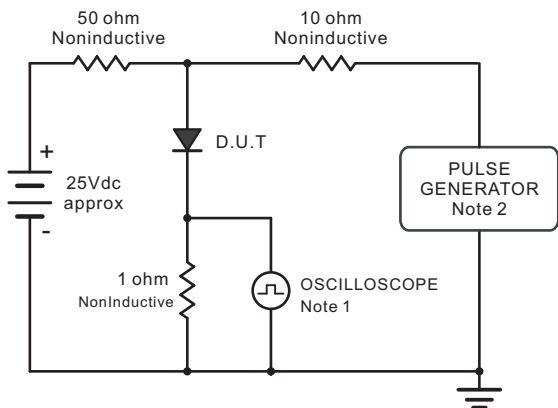
Parameter	Symbols	ES1AT	ES1BT	ES1CT	ES1DT	ES1ET	ES1GT	ES1JT	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	V
Maximum Average Forward Rectified Current at $T_L = 100\text{ °C}$	$I_{F(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	30							A
Maximum Forward Voltage at 1 A	$V_F$	1				1.25		1.7	V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25\text{ °C}$ $T_a = 125\text{ °C}$	$I_R$	5 100							$\mu\text{A}$
Typical Junction Capacitance at $V_R = 4\text{V}$ , $f = 1\text{MHz}$	$C_j$	10							pF
Maximum Reverse Recovery Time at $I_F = 0.5\text{A}$ , $I_R = 1\text{A}$ , $I_{rr} = 0.25\text{A}$	$t_{rr}$	35							ns
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150							$^{\circ}\text{C}$

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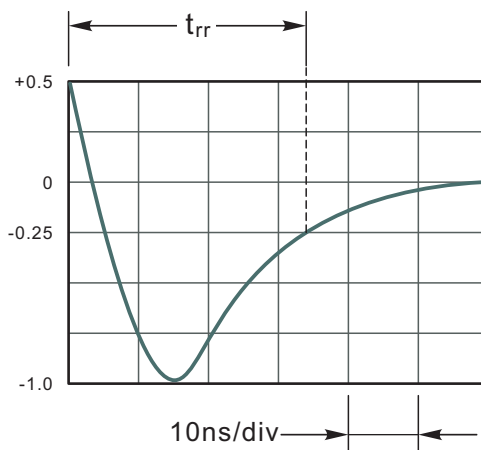
## Surface Mount Superfast Rectifiers

Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram

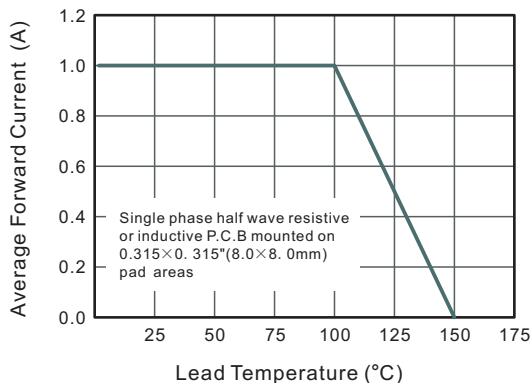


Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating



Single phase half wave resistive or inductive P.C.B mounted on 0.315×0.315" (8.0×8.0mm) pad areas

Fig.3 Typical Reverse Characteristics

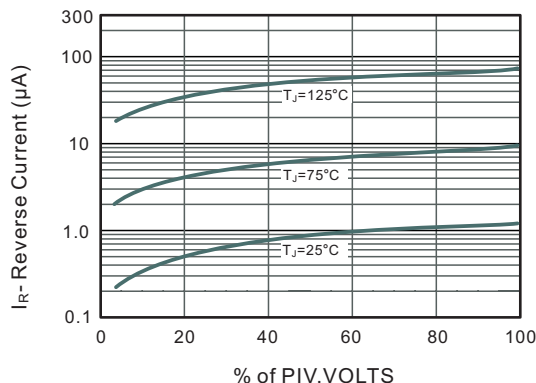


Fig.4 Typical Forward Characteristics

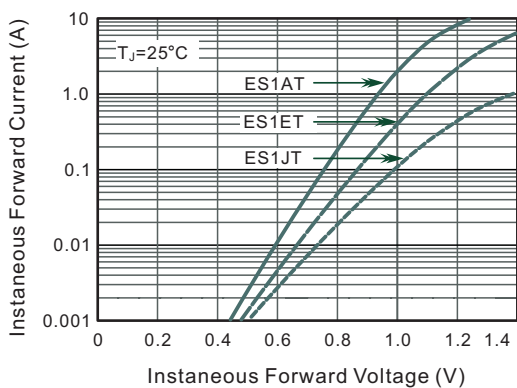
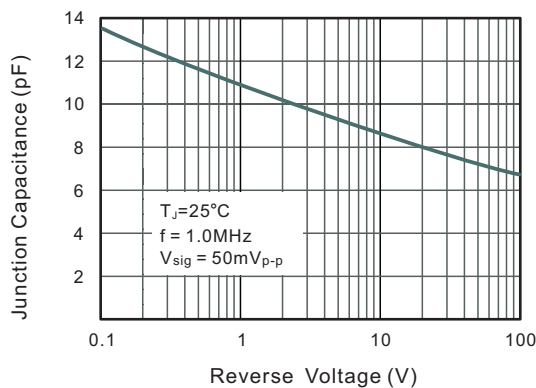


Fig.5 Typical Junction Capacitance



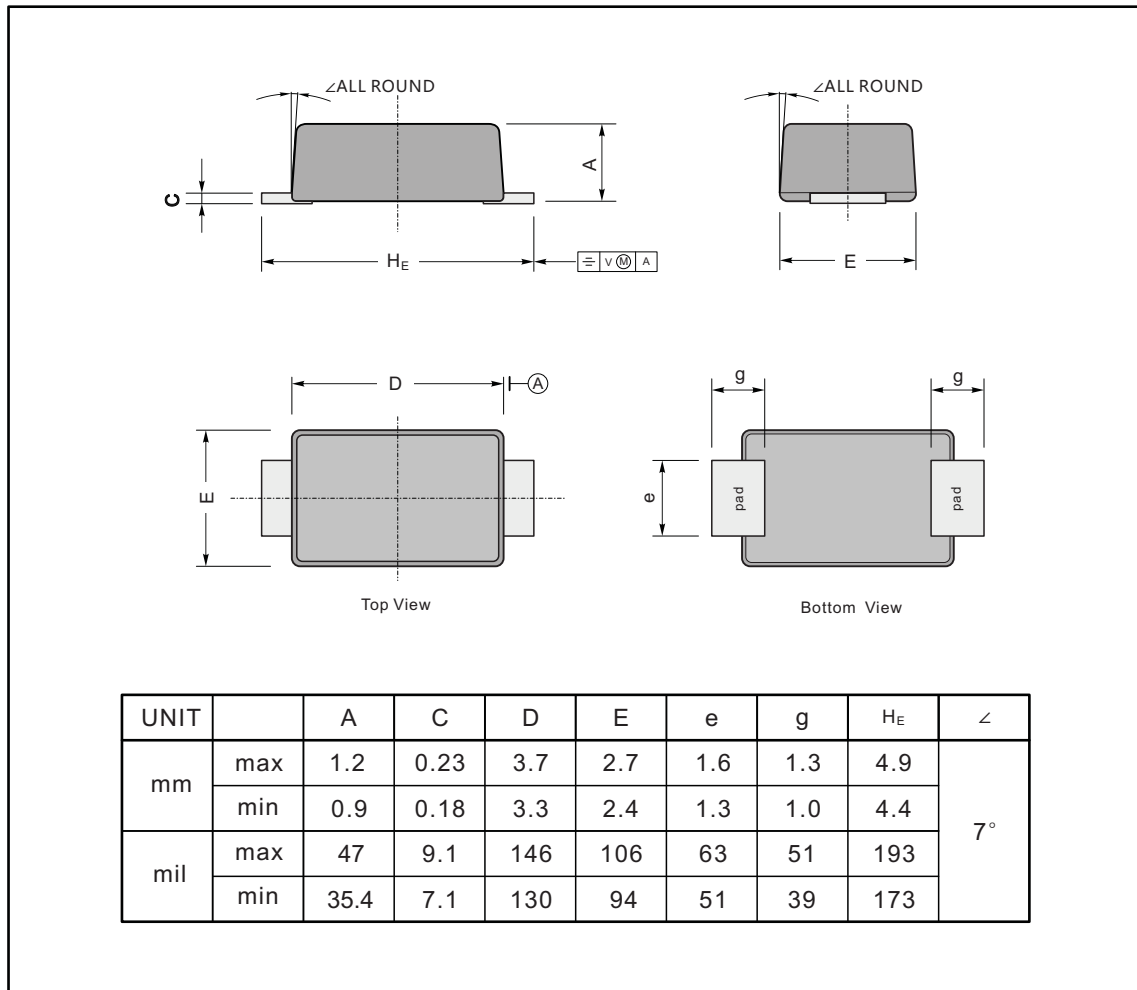
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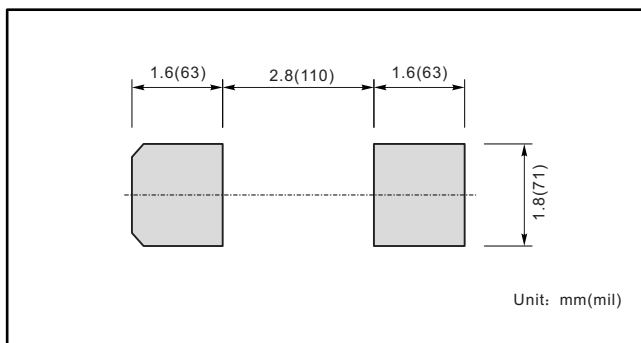
### PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMAFL



### The recommended mounting pad size



### Marking

Type number	Marking code
ES1AT	ES1AT
ES1BT	ES1BT
ES1CT	ES1CT
ES1DT	ES1DT
ES1ET	ES1ET
ES1GT	ES1GT
ES1JT	ES1JT