

# ES1AFL-AT THRU ES1JFL-AT

## SURFACE MOUNT SUPERFAST RECOVERY RECTIFIERS

Forward Current-1.0A

Reverse Voltage-50V to 600V

### FEATURES

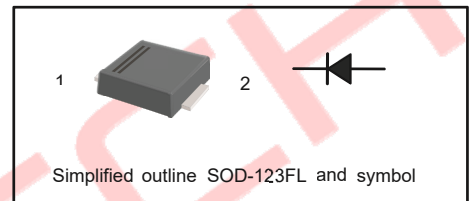
- ◆ For surface mount applications
- ◆ Glass passivated chip junction
- ◆ Low profile package
- ◆ Superfast reverse recovery time
- ◆ Lead free in comply with EU RoHS2011/65/EU directives

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

### MECHANICAL DATA

- ◆ Case: SOD-123FL molded plastic body
- ◆ Terminals: Solderable per MIL-STD-750 , Method2026
- ◆ Weight: Approximated 0.015 grams



### 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 current derating by 20 %.

PARAMETER	SYMBOL	ES1AFL -AT	ES1BFL -AT	ES1CFL -AT	ES1DFL -AT	ES1EFL -AT	ES1GFL -AT	ES1JFL -AT	UNIT
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 $T_C=125^\circ\text{C}$	$I_{F(AV)}$	1							A
Peak Forward Surge Current (Note1)	$I_{FSM}$	30							A
Maximum Forward Voltage at 1.0 A	$V_F$	1				1.25		1.68	V
Maximum DC Reverse Current at Rated DC Blocking Voltage at $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	$I_R$	5 100							$\mu\text{A}$
Typical Junction Capacitance at $V_R=4\text{V}, f=1\text{MHz}$	$C_J$	15							pF
Maximum Reverse Recovery Time (Note2)	$T_{rr}$	35							nS
Typical Thermal Resistance (Note3)	$R_{\theta JA}$	85							$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150							$^\circ\text{C}$

Notes: 1. Measured at 8.3 ms single half sine wave superimposed on rated load (JEDEC Method).

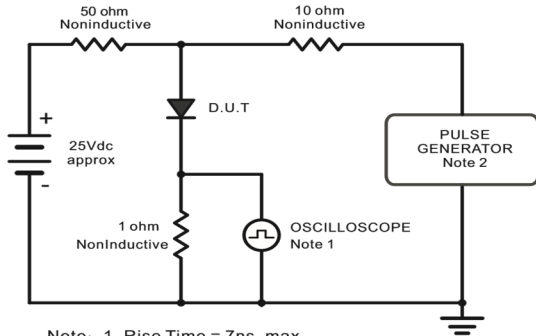
2. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

3. P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

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## RATINGS AND CHARACTERISTIC CURVES

Fig.1 Test Circuit Diagram And Reverse Recovery Time Curve



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

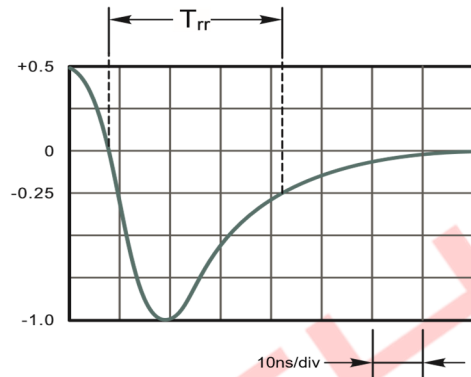


Fig.2 Maximum Average Forward Current Rating

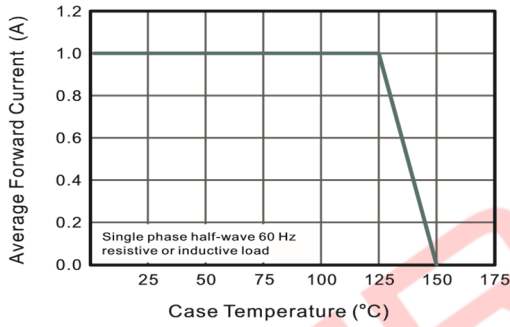


Fig.3 Typical Reverse Characteristics

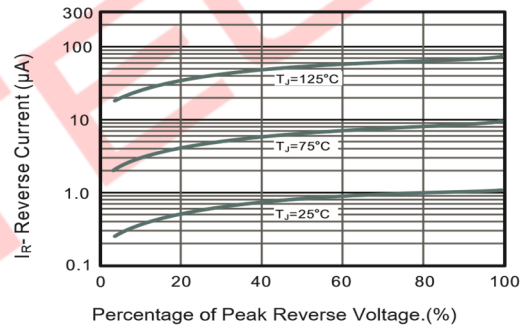


Fig.4 Typical Forward Characteristics

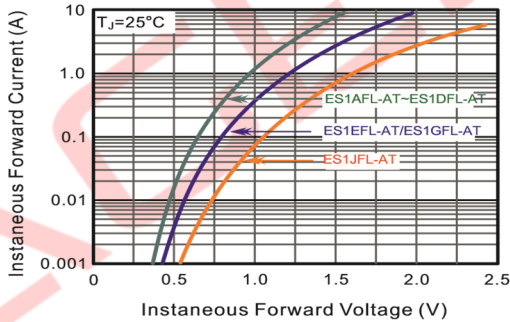


Fig.5 Typical Junction Capacitance

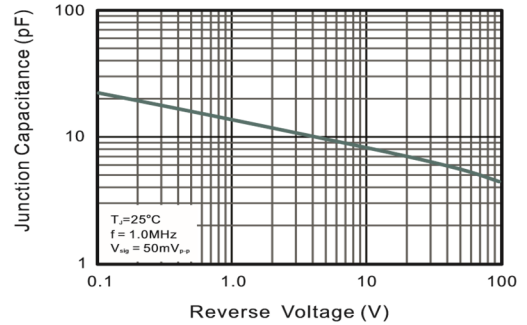
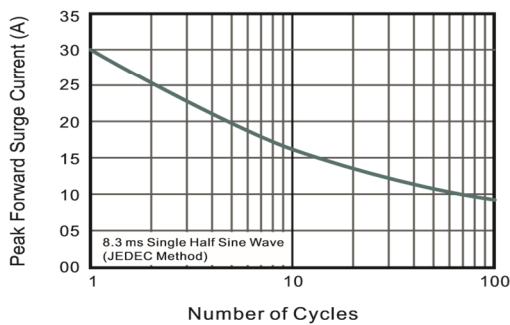


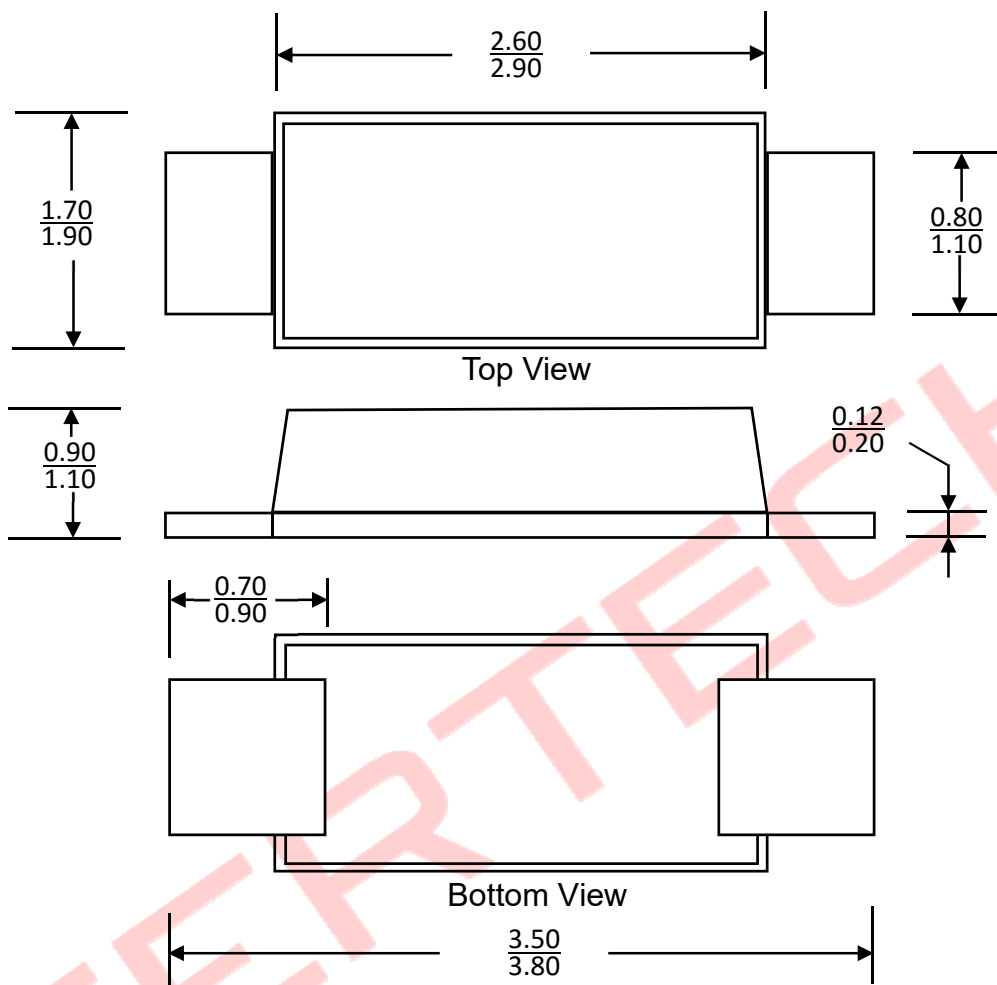
Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



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## PACKAGE OUTLINE

SOD-123FL



Dimensions in millimeters

### ORDERING INFORMATION

Device	Package	Shipping
ES1AFL-AT thru ES1JFL-AT	SOD-123FL	3,000/Tape & Reel (7 inches)