

# ES2AF-AT thru ES2JF-AT

## SURFACE MOUNT SUPERFAST RECOVERY RECTIFIERS

Reverse Voltage:50 to 600 V Forward Current:2.0A

### FEATURES

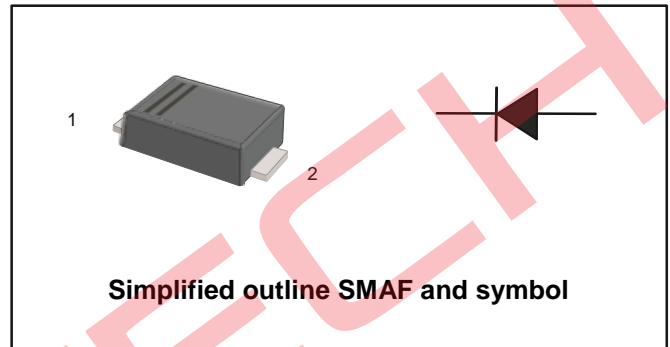
- ◆ For surface mount applications
- ◆ Glass passivated chip junction
- ◆ Low profile package
- ◆ Superfast reverse recovery time
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- ◆ Case: SMAF mold plastic body
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Weight: Approximated 0.027 grams

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



### 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, derated by 20 %.

PARAMETER	SYMBOLS	ES2AF	ES2BF	ES2CF	ES2DF	ES2EF	ES2GF	ES2JF	UNITS
		-AT	-AT	-AT	-AT	-AT	-AT	-AT	
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 $T_C=125^{\circ}C$	$I_{F(AV)}$	2.0							A
Peak Forward Surge Current <sup>Note 1</sup>	$I_{FSM}$	50							A
Max Instantaneous Forward Voltage at 2 A	$V_F$	1				1.25		1.68	V
Maximum DC Reverse Current $T_A = 25^{\circ}C$ at Rated DC Reverse Voltage $T_A = 125^{\circ}C$	$I_R$	5 100							$\mu A$
Typical Junction Capacitance <sup>Note 2</sup>	$C_J$	30							pF
Maximum Reverse Recovery Time <sup>Note 3</sup>	$T_{rr}$	35							ns
Typical Thermal Resistance <sup>Note 4</sup>	$R_{\theta JA}$	65							$^{\circ}C/W$
	$R_{\theta JC}$	20							
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 ~ +150							$^{\circ}C$

Note: 1. 8.3ms Single half sine-wave superimposed on rated load (JEDEC method).

2. Measured at 1MHz and applied reverse voltage of 4 V D.C.

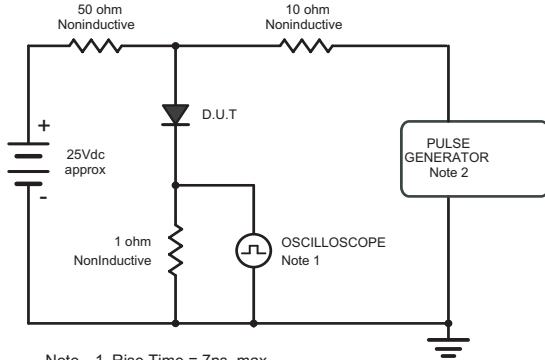
3. Measured at with  $I_F=0.5A$ ,  $I_R=1A$ ,  $I_{rr}=0.25A$

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

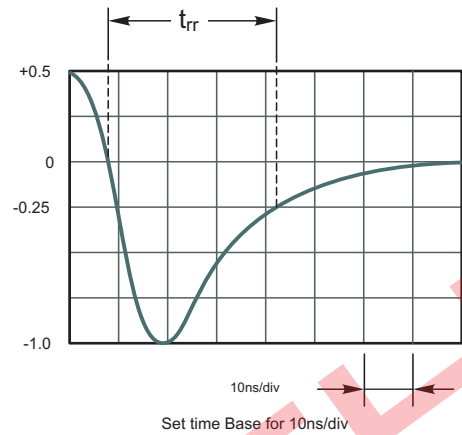
# ES2AF-AT thru ES2JF-AT

## RATING AND CHARACTERISTIC CURVES

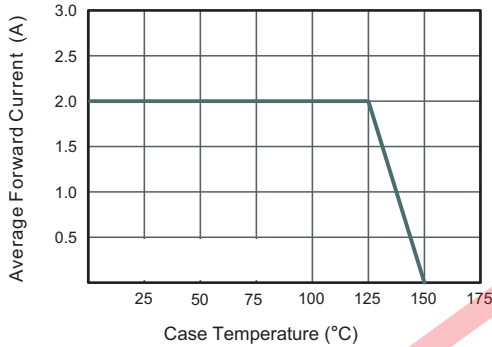
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



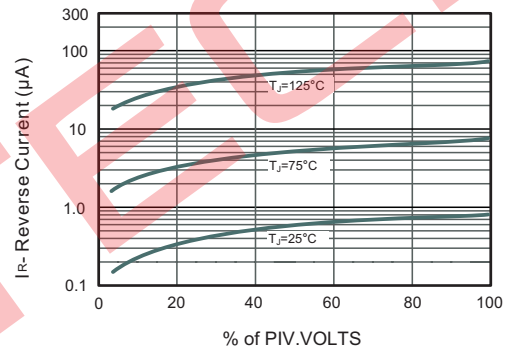
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



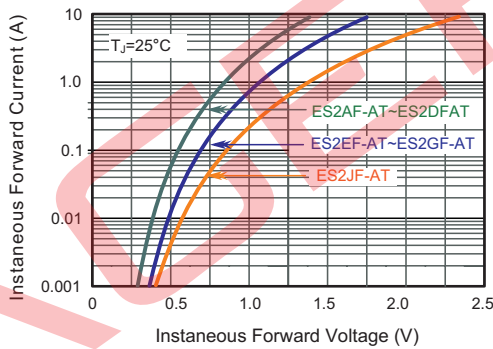
**Fig.2 Maximum Average Forward Current Rating**



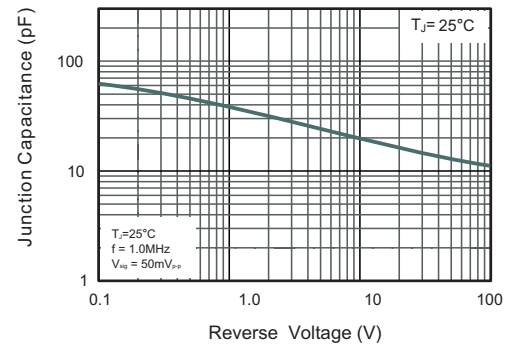
**Fig.3 Typical Reverse Characteristics**



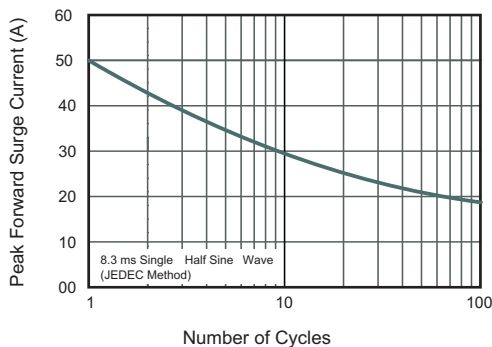
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**



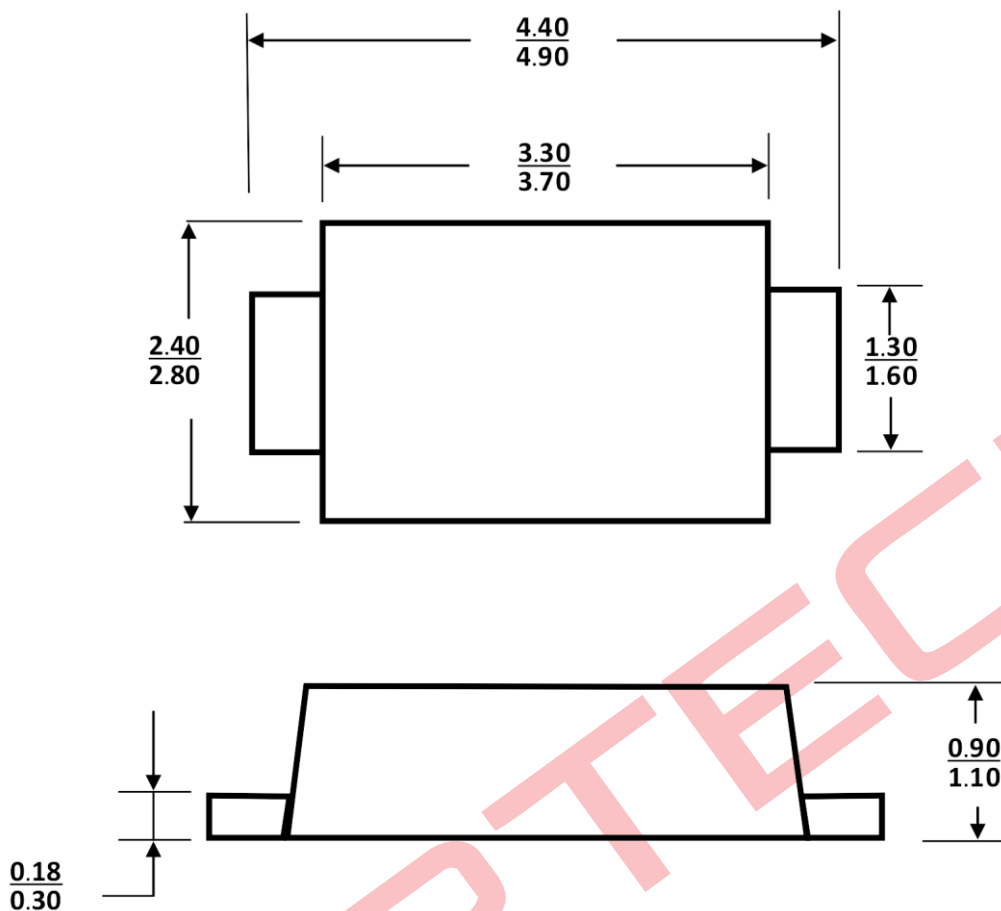
**Fig.6 Maximum Non-Repetitive Peak Forward Surge Current**



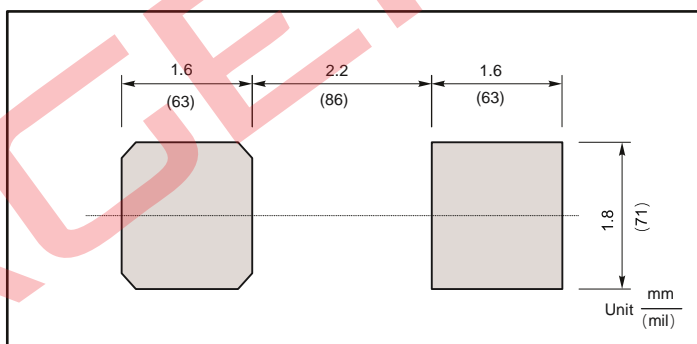
# ES2AF-AT thru ES2JF-AT

## PACKAGE OUTLINE

SMAF



## RECOMMEND MOUNTING PAD SIZE



## ORDERING INFORMATION

Device	Package	Shipping
ES2AF-AT thru ES2JF-AT	SMAF	3,000/ Tape & Reel (7 inches)
		10,000/ Tape & Reel (13 inches)