

ES1A-AT THRU ES1J-AT

Surface Mount Superfast Recovery Rectifier

Forward Current: 1A

Reverse Voltage: 50V to 600V

FEATURES

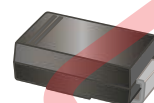
- ◆ For surface mount applications
- ◆ Glass passivated chip junction
- ◆ Low profile package
- ◆ Superfast reverse recovery time
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

MECHANICAL DATA

- ◆ Case: SMA molded plastic body
- ◆ Terminals: Solderable per MIL-STD- 750, Method 2026
- ◆ Weight: Approximated 0.055 grams



Top View
Simplified outline SMA and symbol



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	ES1A -AT	ES1B -AT	ES1C -AT	ES1D -AT	ES1E -AT	ES1G -AT	ES1J -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 $T_C=100^\circ\text{C}$	$I_{F(AV)}$	1							A
Peak Forward Surge Current (Note1)	I_{FSM}	30							A
Maximum Forward Voltage at 1.0 A	V_F	1			1.25		1.70	V	
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	I_R	5				100	uA		
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)	$R_{\theta JA}$	110				$^\circ\text{C}/\text{W}$			
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).

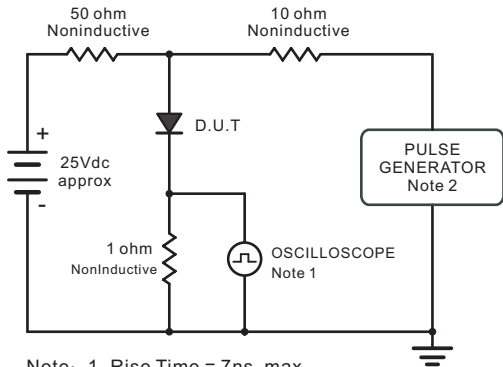
2. Measured at with $I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{rr}=0.25\text{A}$.

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 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.

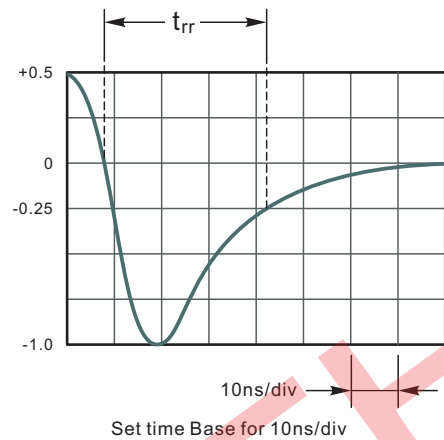


Fig.2 Maximum Average Forward Current Rating

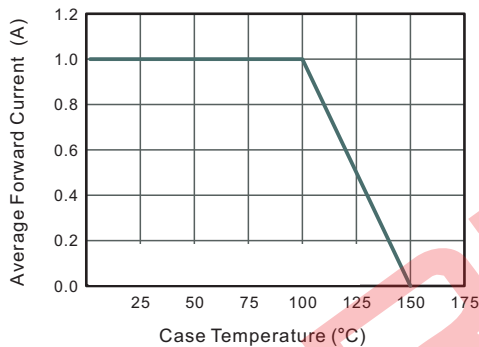


Fig.3 Typical Reverse Characteristics

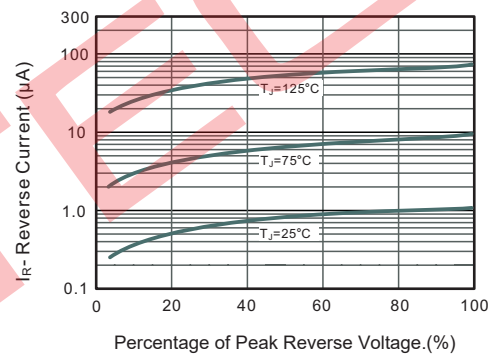


Fig.4 Typical Forward Characteristics

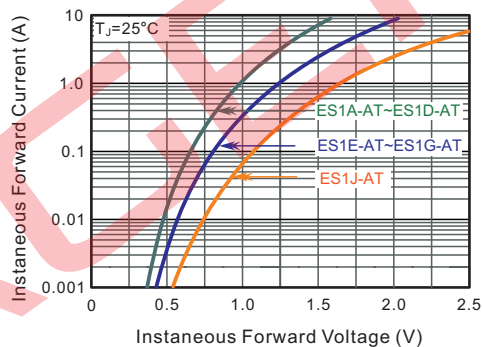


Fig.5 Typical Junction Capacitance

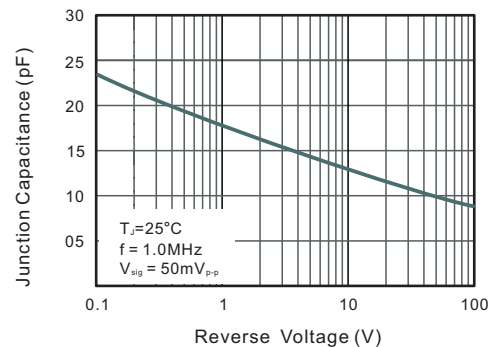
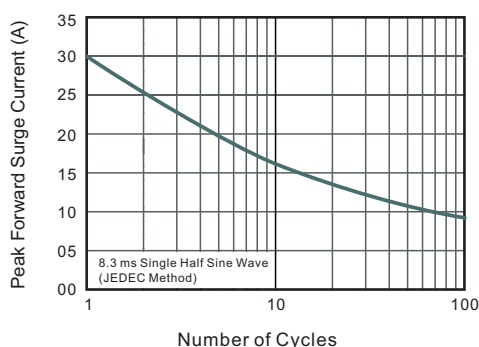


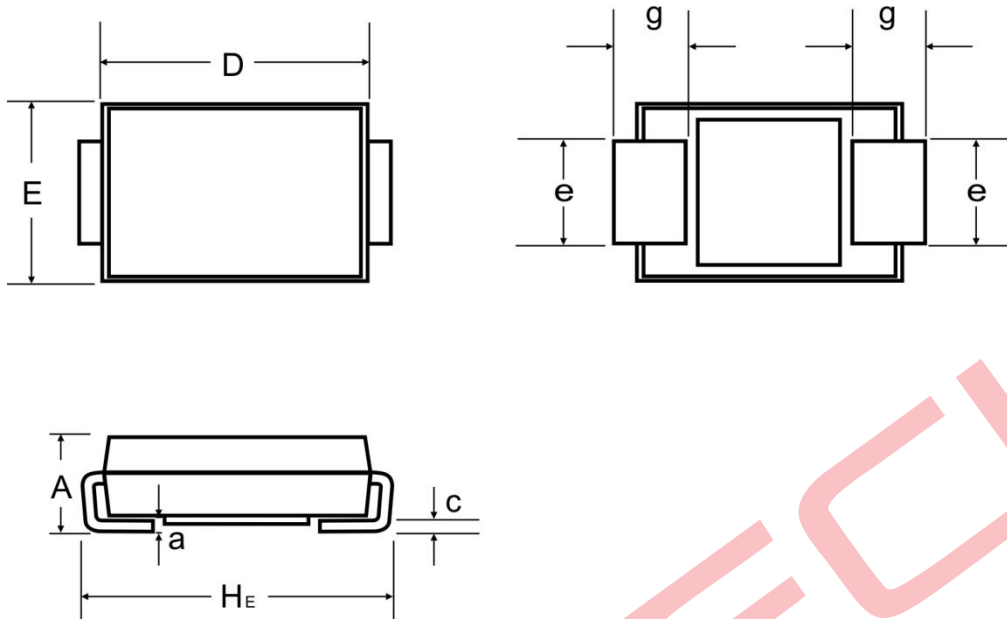
Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



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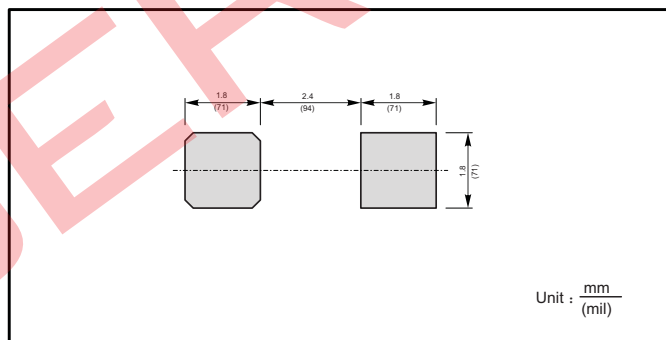
PACKAGE OUTLINE

SMA



UNIT		A	D	E	H _E	C	e	g	a
mm	max	2.2	4.5	2.7	5.2	0.31	1.6	1.5	0.3
	min	1.9	4.0	2.3	4.7	0.15	1.3	0.9	

The recommended mounting pad size



ORDER INFORMATION

Device	Package	Shipping
ES1A-AT THRU ES1J-AT	SMA	5000PCS/Reel&Tape(13inch)