

# ES3AC-AT THRU ES3JC-AT

## SURFACE MOUNT SUPERFAST RECOVERY RECTIFIERS

Forward Current-3.0A

Reverse Voltage-50V to 600V

### FEATURES

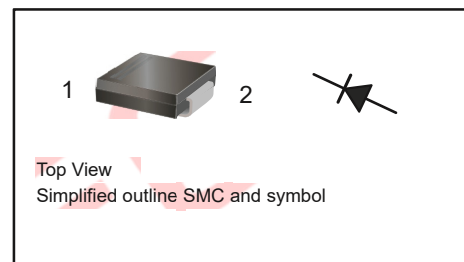
- ◆ For surface mount applications
- ◆ Glass passivated chip junction
- ◆ Low profile package
- ◆ Easy to pick and place
- ◆ Lead free in comply with EU RoHS2011/65/EU directives

### MECHANICAL DATA

- ◆ Case: SMC molded plastic body
- ◆ Terminals: Solderable per MIL-STD-750 , Method 2026
- ◆ Weight: Approximated 0.022 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 60 Hz, resistive or inductive load, for capacitive load current derating by 20 %.

PARAMETER	SYMBOL	ES3AC -AT	ES3BC -AT	ES3CC -AT	ES3DC -AT	ES3EC -AT	ES3GC -AT	ES3JC -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 $T_C=125^\circ\text{C}$	$I_{F(AV)}$	3.0							A
Peak Forward Surge Current (Note1)	$I_{FSM}$	120							A
Maximum Forward Voltage at 3.0 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			uA
						150			
Typical Junction Capacitance (Note2)	$C_J$					40			pF
Maximum Reverse Recovery Time (Note3)	$T_{rr}$					35			nS
Typical Thermal Resistance (Note4)	$R_{\theta JA}$					40			$^\circ\text{C/W}$
	$R_{\theta JC}$					16			
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 1MHz and applied reverse voltage of 4 V D.C.

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

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

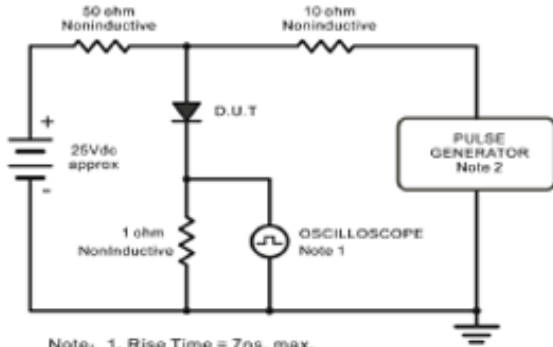
Dated: 08/2016

Rev: 1.0

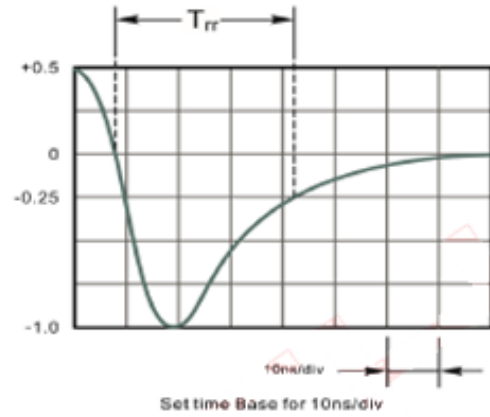
# ES3AC-AT THRU ES3JC-AT

## RATINGS AND CHARACTERISTIC CURVES

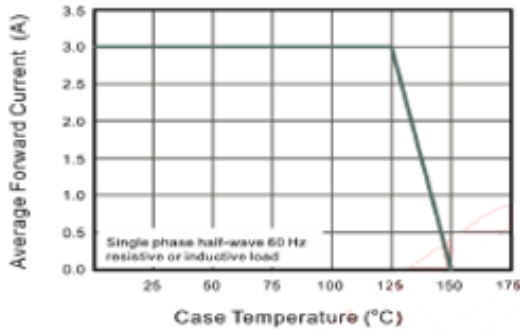
**Fig.1 Test Circuit Diagram and Reverse Recovery Time Characteristic**



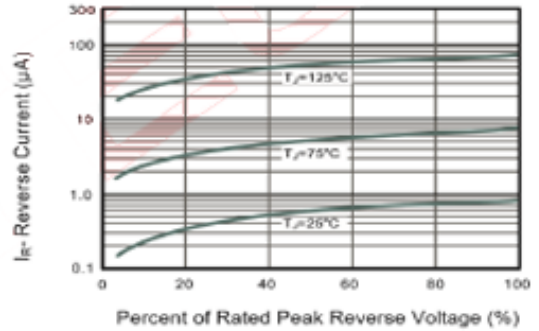
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



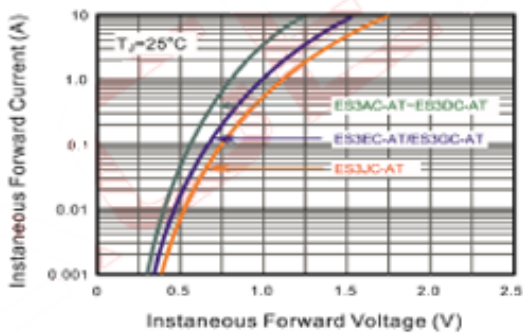
**Fig.2 Average Forward Current Derating Curve**



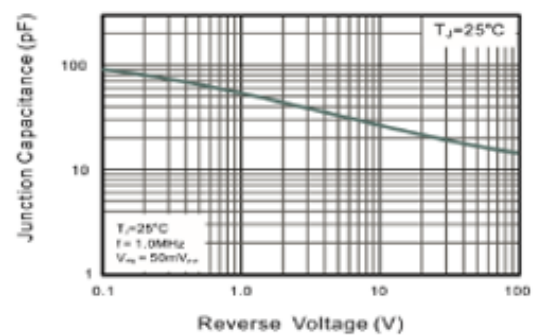
**Fig.3 Typical Reverse Characteristics**



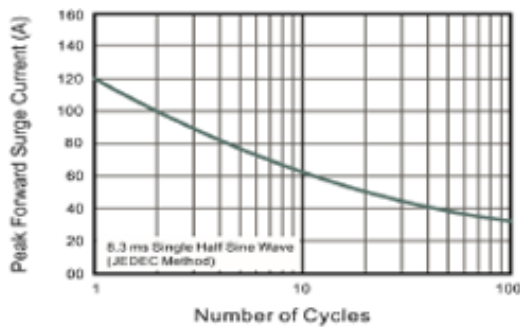
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**



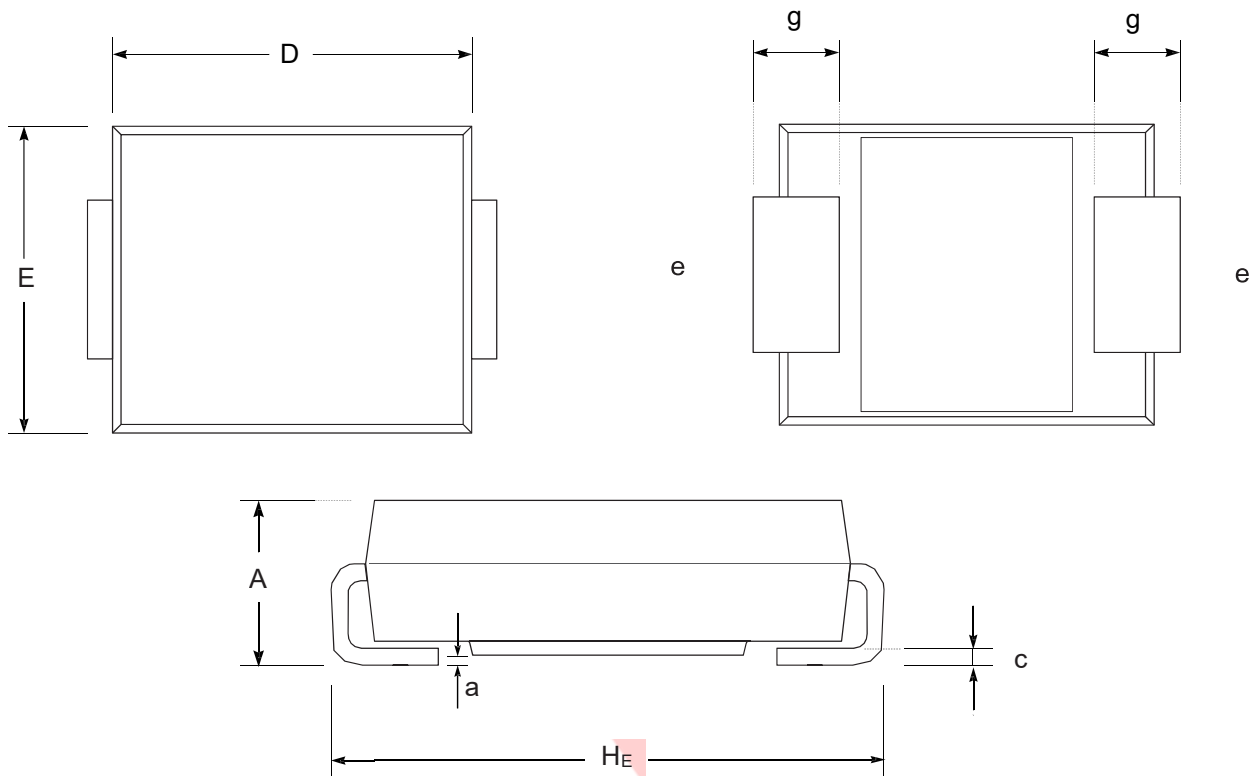
**Fig.6 Maximum Non-Repetitive Peak Forward Surge Current**



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## PACKAGE OUTLINE

SMC



UNIT		A	D	E	$H_E$	a	c	e	g
mm	max	2.5	7.0	6.0	8.1	0.21	0.35	3.1	1.5
	min	2.1	6.7	5.7	7.7	0.05	0.25	2.9	0.9
mil	max	98	276	236	319	8.3	14	122	59
	min	82	264	224	303	2.0	10	114	35

### ORDERING INFORMATION

Device	Package	Shipping
ES3AC-AT thru ES3JC-AT	SMC	3,000/ Tape & Reel (13 inches)

Dated: 08/2016  
Rev: 1.0