

Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 50 to 600 V Forward Current –3 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 : SMC
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.22g / 0.0077oz

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	ES3AC G	ES3BC G	ES3CC G	ES3DC G	ES3EC G	ES3GC G	ES3JC G	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 $T_c = 125^\circ\text{C}$	$I_{F(AV)}$	3							A		
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	90							A		
Maximum Forward Voltage at 3 A	V_F	1			1.25		1.68	V			
Maximum DC Reverse Current $T_a = 25^\circ\text{C}$ at Rated DC Blocking Voltage $T_a = 125^\circ\text{C}$	I_R	5 100			μA						
Typical Junction Capacitance at $V_R=4\text{V}$, $f=1\text{MHz}$	C_j	40			pF						
Maximum Reverse Recovery Time ⁽¹⁾	t_{rr}	35			ns						
Typical Thermal Resistance ⁽²⁾	$R_{\theta JA}$ $R_{\theta JC}$	40 16			$^\circ\text{C/W}$						
Operating and Storage Temperature Range	T_j , T_{stg}	-55 ~ +150			$^\circ\text{C}$						

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

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

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

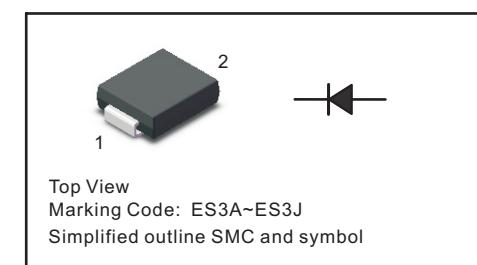


Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram

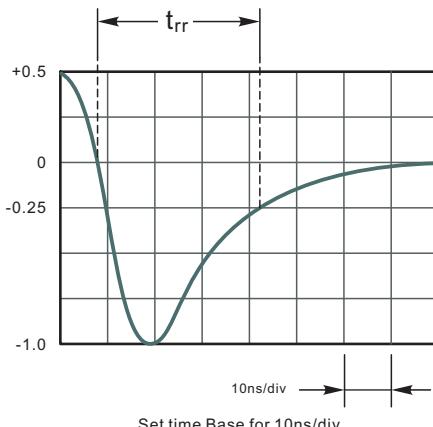
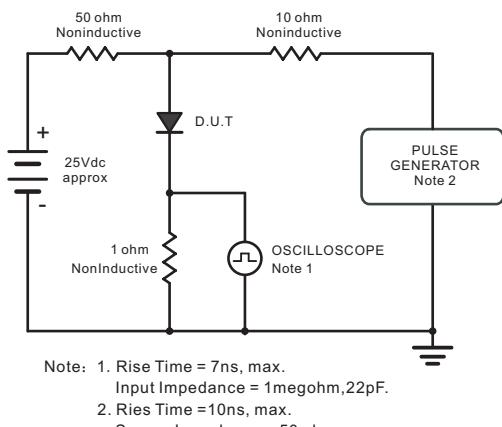


Fig.2 Maximum Average Forward Current Rating

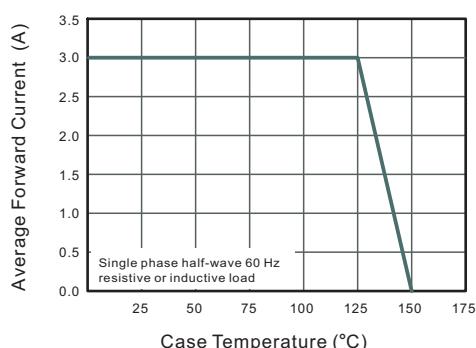


Fig.3 Typical Reverse Characteristics

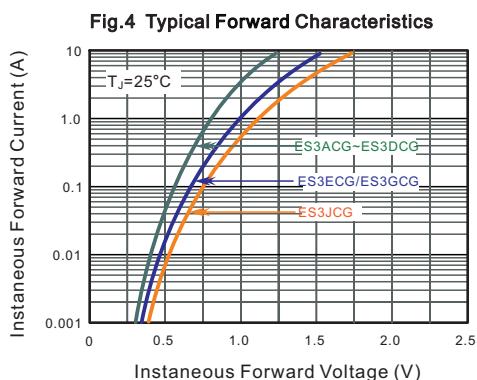
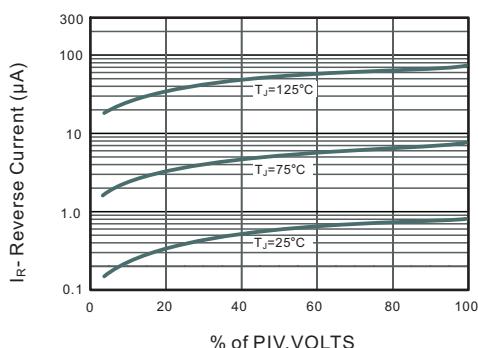


Fig.5 Typical Junction Capacitance

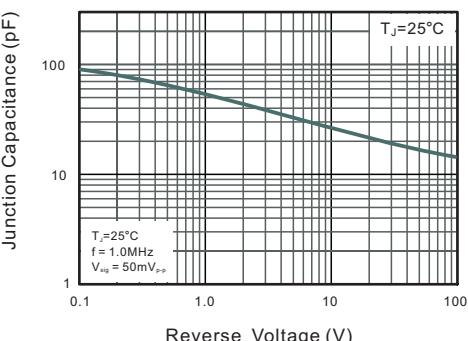
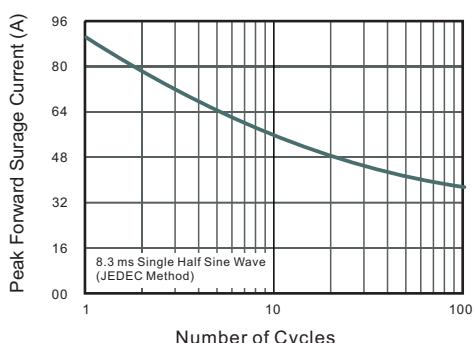


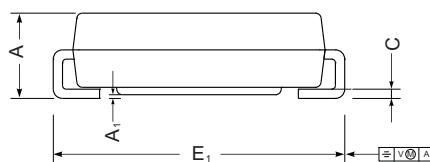
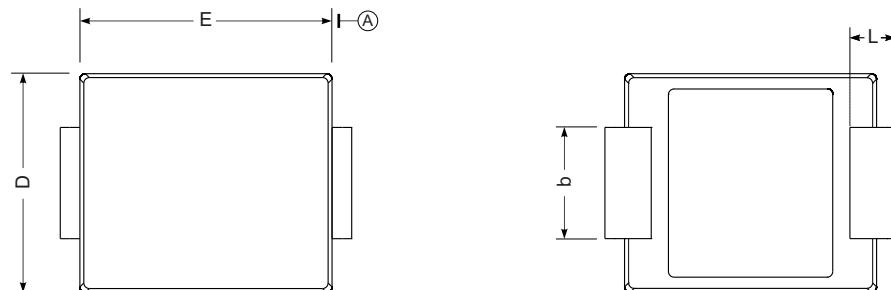
Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

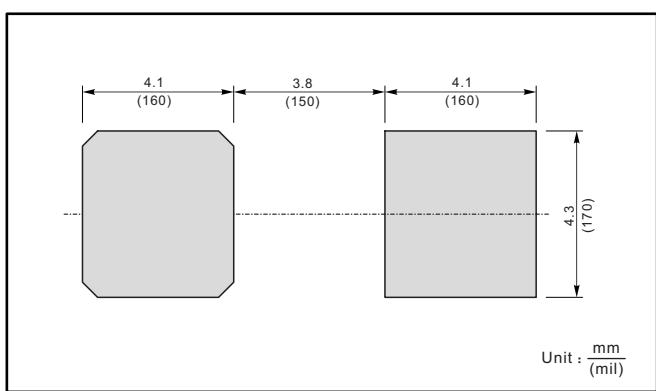
SMC



SMC mechanical data

UNIT		A	E	D	E ₁	A ₁	C	L	b
mm	max	2.62	7.0	6.2	8.0	0.21	0.31	1.6	3.25
	min	2.00	6.5	5.6	7.6	0.05	0.15	0.9	2.75
mil	max	103	276	244	315	8.3	12	63	128
	min	79	256	220	299	2.0	5.9	35	108

The recommended mounting pad size



Marking

Type number	Marking code
ES3ACG	ES3A
ES3BCG	ES3B
ES3CCG	ES3C
ES3DCG	ES3D
ES3ECG	ES3E
ES3GCG	ES3G
ES3JCG	ES3J

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