



Surface Mount Superfast Recovery Rectifier
Reverse Voltage – 50 to 600 V
Forward Current –5 A

FEATURES

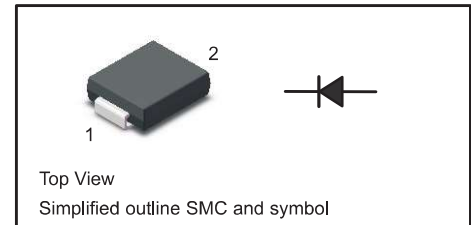
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- Case : SMC
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.22g / 0.0077oz

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



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	ES5AC	ES5BC	ES5CC	ES5DC	ES5EC	ES5GC	ES5JC	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 @ Fig.1	$I_{F(AV)}$	5							A
Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	120							A
Peak Forward Surge Current,1.0ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	240							A
I^2t Rating for fusing (3ms≤t≤8.3ms)	I^2t	59.7							A ² S
Max Instantaneous Forward Voltage at 5 A	V_F	1				1.25		1.68	V
Maximum DC Reverse Current at Rated DC Reverse Voltage $T_a = 25^\circ C$ $T_a = 125^\circ C$	I_R	5 100							μA
Typical Junction Capacitance ⁽¹⁾	C_j	128				80		50	pF
Maximum Reverse Recovery Time ⁽²⁾	t_{rr}	35							ns
Typical Thermal Resistance ⁽³⁾	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	37 10 13							$^\circ C/W$
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150							$^\circ C$

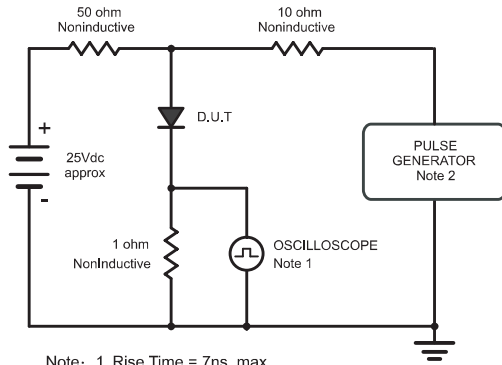
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

(3) P.C.B. mounted with 1.5" X 1.5" (3.81 X 3.81 cm) copper pad areas.



Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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

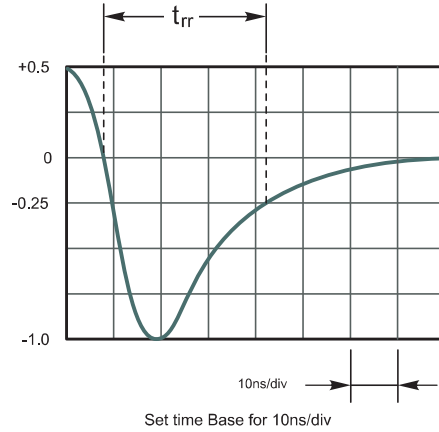


Fig.1 Forward Current Derating Curve

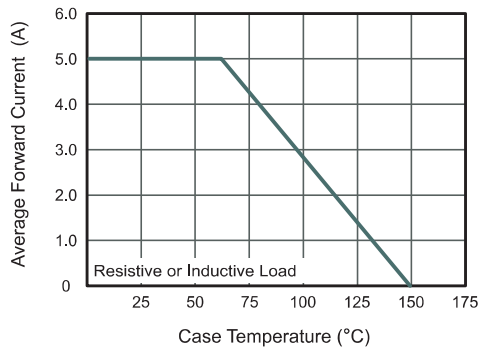


Fig.3 Typical Forward Characteristics

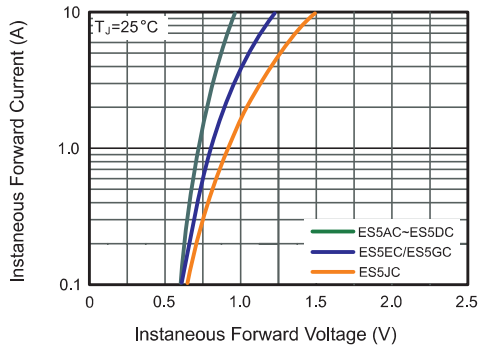


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

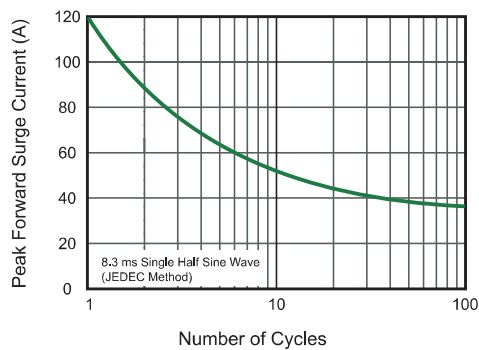


Fig.2 Typical Reverse Characteristics

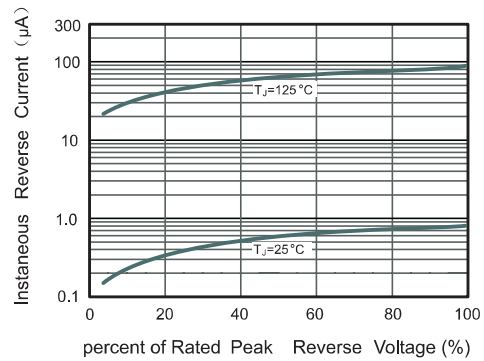
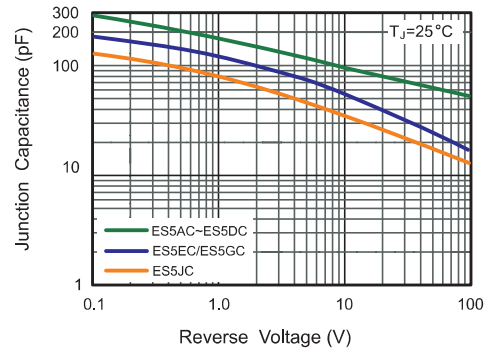


Fig.4 Typical Junction Capacitance

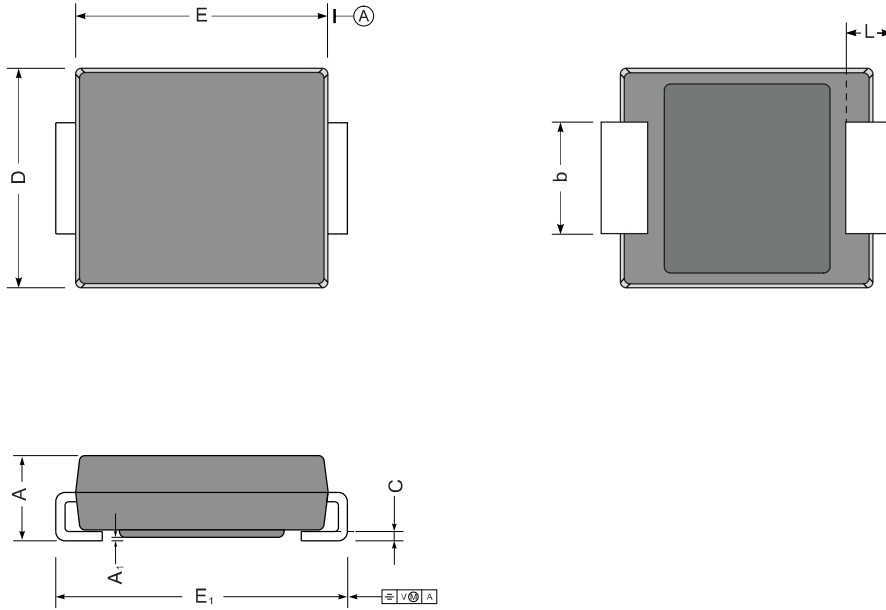




PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

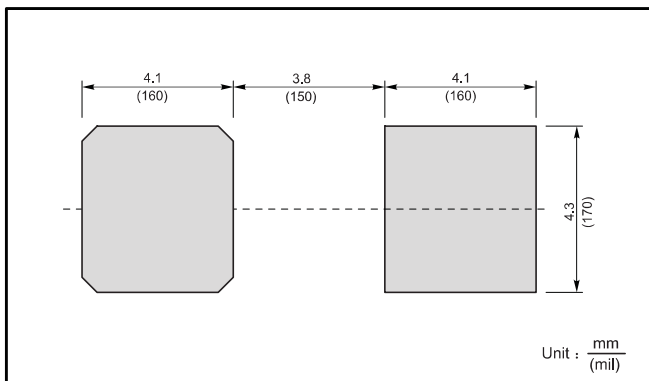
SMC



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



Unit : $\frac{\text{mm}}{\text{mil}}$

Marking

Type number	Marking code
ES5AC	ES5A
ES5BC	ES5B
ES5CC	ES5C
ES5DC	ES5D
ES5EC	ES5E
ES5GC	ES5G
ES5JC	ES5J



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