

Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 1000 V

Forward Current – 3 A

FEATURES

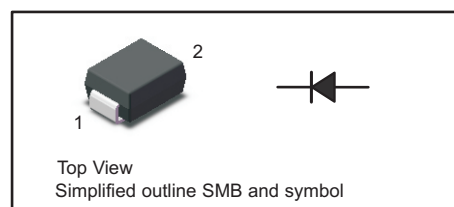
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- Case : SMB
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.1g / 0.003oz

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	ES3MB	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	1000	V
Maximum RMS voltage	V_{RMS}	700	V
Maximum DC Blocking Voltage	V_{DC}	1000	V
Maximum Average Forward Rectified Current @ Fig.1	$I_{F(AV)}$	3	A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	75	A
Peak Forward Surge Current 1.0 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	150	A
I^2t Rating for fusing (3ms≤t≤8.3ms)	I^2t	23.3	A ² S
Maximum Forward Voltage at 3 A	V_F	3.6	V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25\text{ °C}$ $T_a = 125\text{ °C}$	I_R	10 500	μA
Typical Junction Capacitance ⁽¹⁾	C_j	30	pF
Maximum Reverse Recovery Time ⁽²⁾	t_{rr}	35	ns
Typical Thermal Resistance ⁽³⁾	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	43 9 18	°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

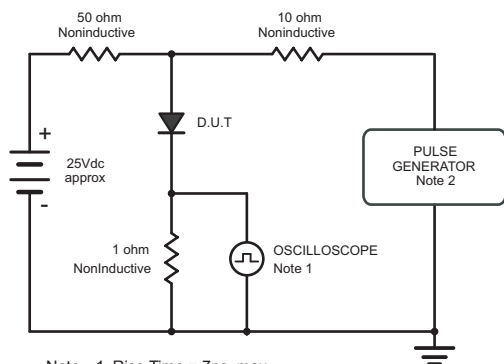
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

(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. Rise Time = 10ns, max.
Source Impedance = 50 ohms.

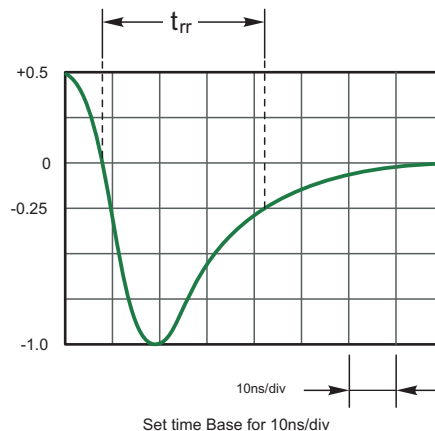


Fig.2 Maximum Average Forward Current Rating

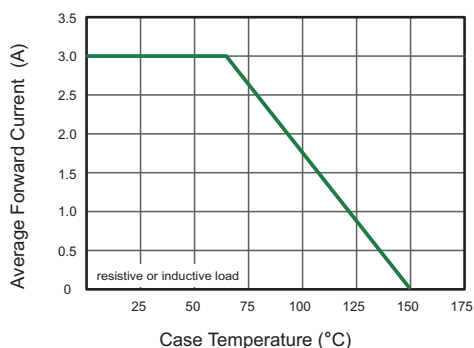


Fig.3 Typical Reverse Characteristics

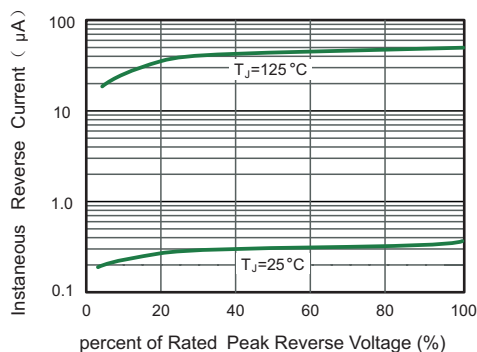


Fig.4 Typical Forward Characteristics

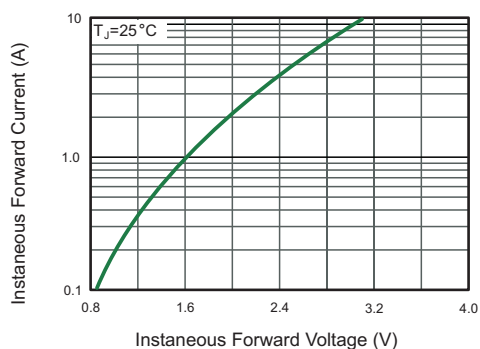


Fig.5 Typical Junction Capacitance

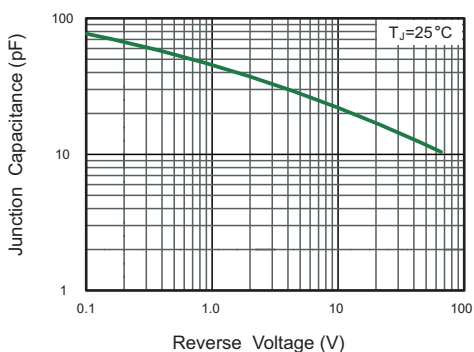
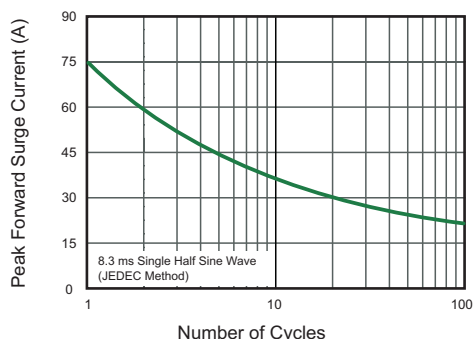


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

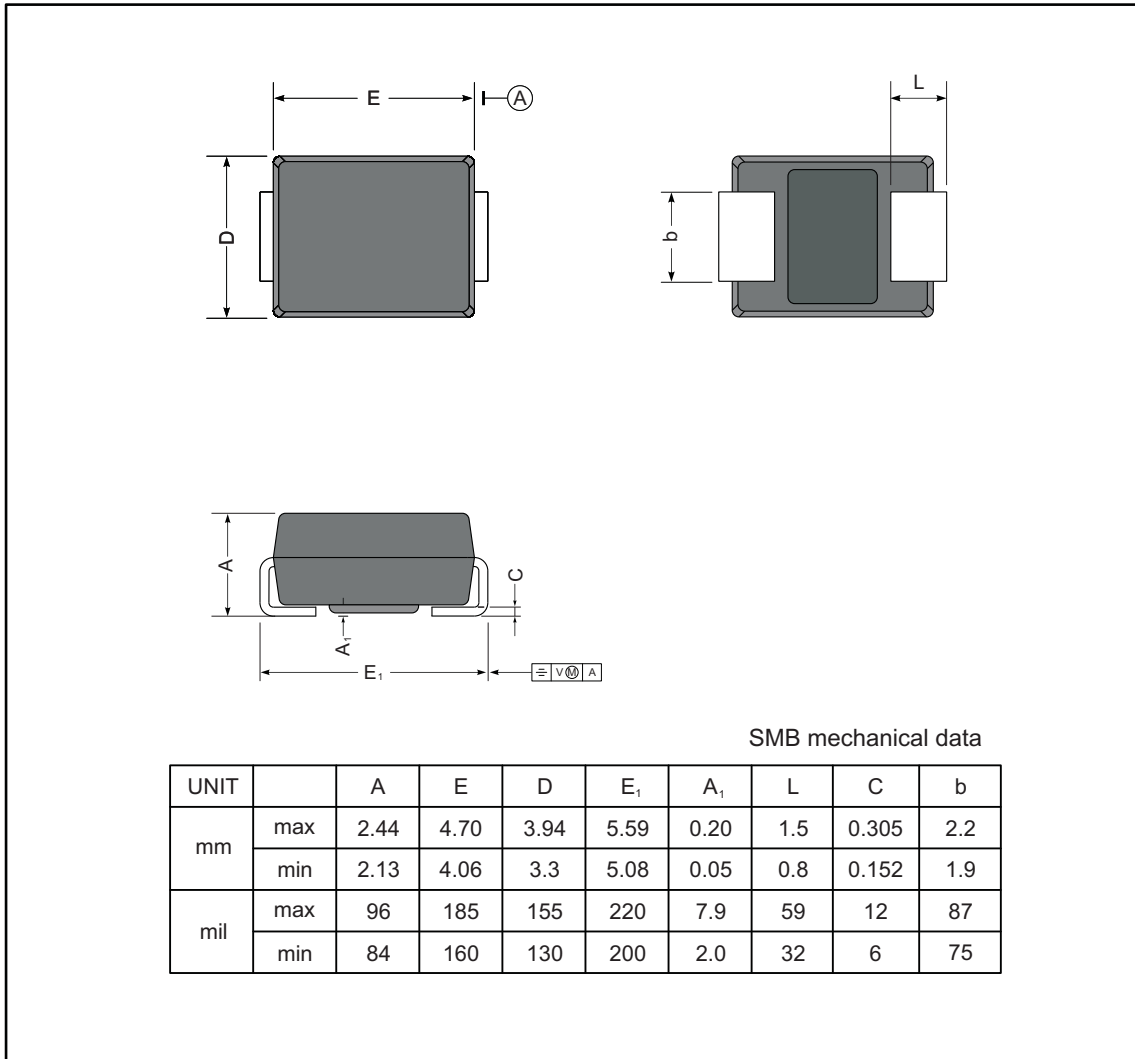




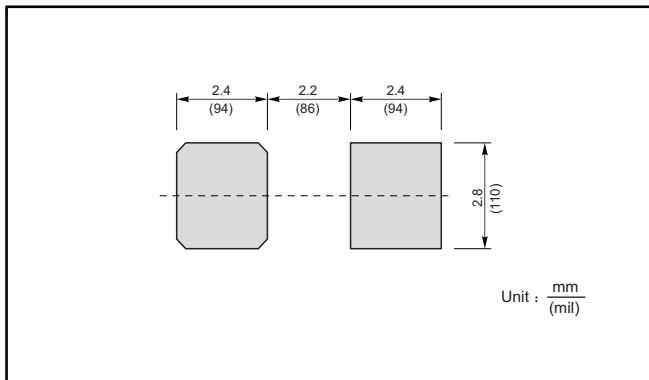
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMB



The recommended mounting pad size



Marking

Type number	Marking code
ES3MB	ES3M



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