

Surface Mount Super Fast Recovery Bridge Rectifier

Reverse Voltage – 300 to 400 V

Forward Current – 4 A

FEATURES

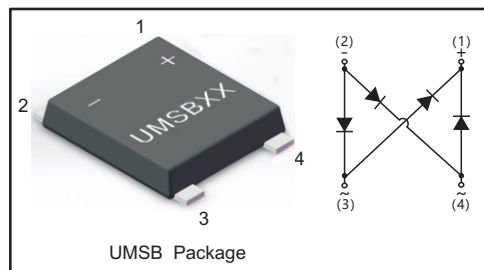
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Super fast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- Case: UMSB
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.234g / 0.00825oz

PINNING

PIN	DESCRIPTION
1	Output Anode (+)
2	Output Cathode (-)
3	Input Pin (~)
4	Input Pin (~)



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	EMS40E	EMS40G	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	300	400	V
Maximum RMS voltage	V_{RMS}	210	280	V
Maximum DC Blocking Voltage	V_{DC}	300	400	V
Maximum Average Forward Rectified Current @ Fig.1	$I_{F(AV)}$	4		A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	150		A
Peak Forward Surge Current 1.0 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	300		A
I^2t Rating for fusing (3ms≤t≤8.3ms)	I^2t	93.3		A ² S
Maximum Forward Voltage at 4 A	V_F	1.25		V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25\text{ }^\circ\text{C}$ $T_a = 125\text{ }^\circ\text{C}$	I_R	5 100		μA
Typical Junction Capacitance ⁽¹⁾	C_j	80		pF
Maximum Reverse Recovery Time ⁽²⁾	t_{rr}	35		ns
Typical Thermal Resistance ⁽³⁾	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	35 8 20		$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150		$^\circ\text{C}$

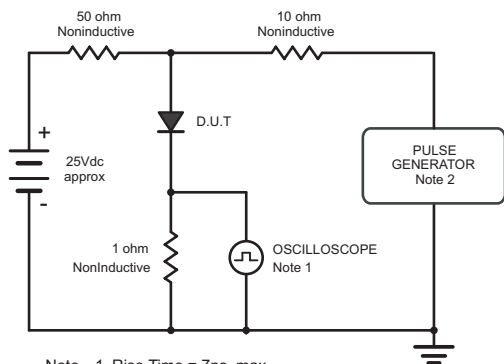
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

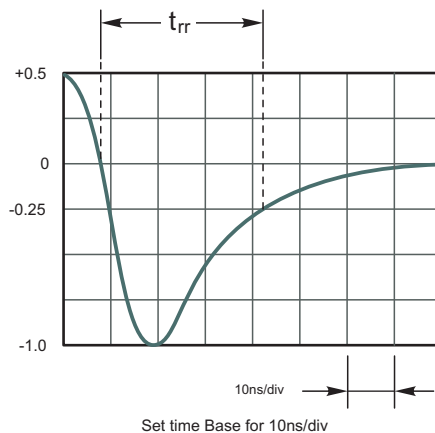


Fig.2 Maximum Average Forward Current Rating

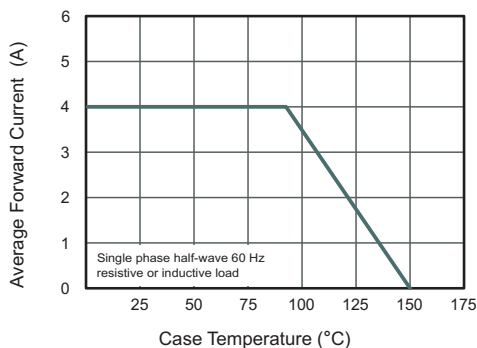


Fig.3 Typical Reverse Characteristics

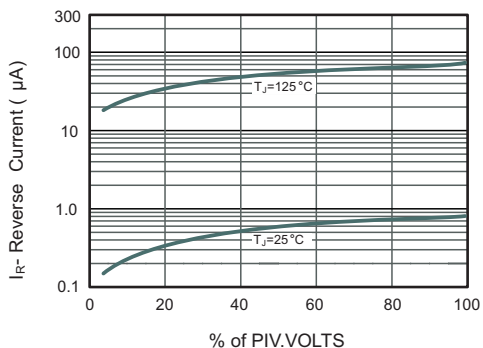


Fig.4 Typical Forward Characteristics

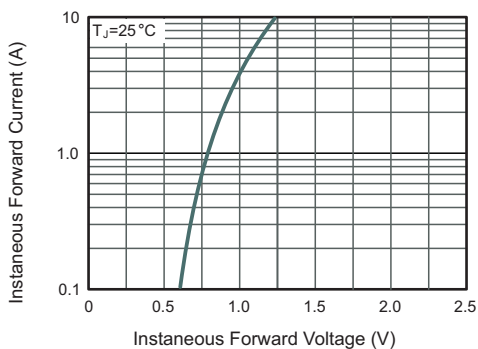


Fig.5 Typical Junction Capacitance

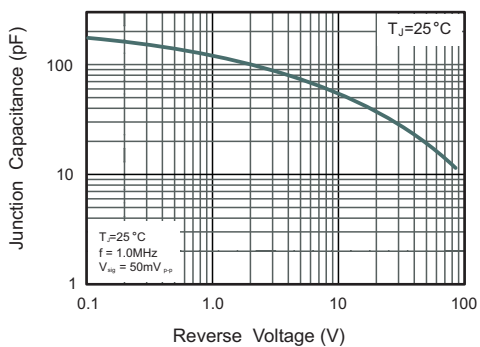
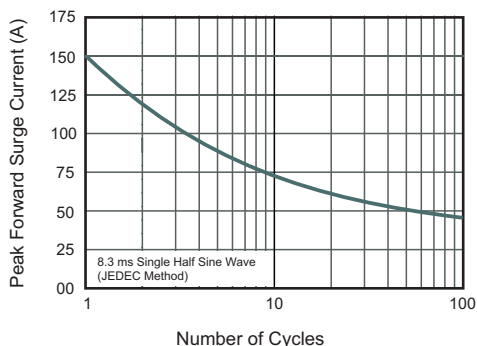


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current





PACKAGE OUTLINE

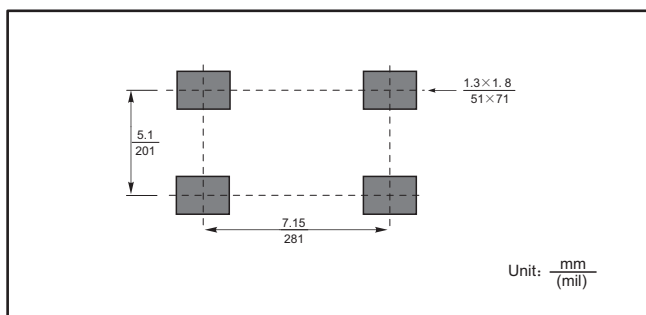
Plastic surface mounted package; 4 leads

UMSB

M2 mechanical data

UNIT		A	C	D	E	E ₁	L	e	b	∠
mm	max	1.5	0.29	7.0	7.6	8.9	1.6	5.3	1.15	10°
	min	1.3	0.17	6.2	7.1	8.4	1.0	4.9	0.95	
mil	max	59	12	276	299	350	55	209	45	
	min	51	7	244	280	331	31.5	193	37	

The recommended mounting pad size



Marking

Type number	Marking code
EMS40E	EMB40E
EMS40G	EMB40G

MARKING DIAGRAM

- XXXXXX: Marking content;
- YYYY: Four digit traceability code;
- JD: LOGO of Jingdao;
- +: Anode symbol;
- : Cathode symbol;
- ~: AC symbol;



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