



# MSB20B THRU MSB20M

## 2A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

### PINNING

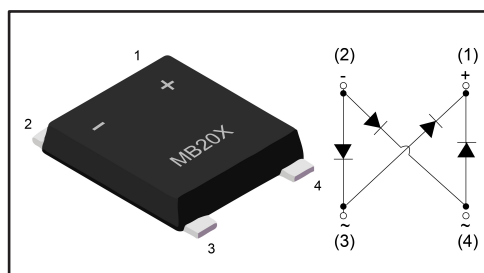
#### FEATURES:

- Glass Passivated Chip Junction
- Reverse Voltage - 100 to 1000 V
- Forward Current - 2.0 A
- High Surge Current Capability
- Designed for Surface Mount Application

#### MECHANICAL DATA

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

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



#### 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 derate by 20 %.

| Parameter                                                                                                                            | Symbols                                               | MSB20B         | MSB20D | MSB20G | MSB20J | MSB20K | MSB20M | Units                |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------|--------|--------|--------|--------|--------|----------------------|
| Maximum Repetitive Peak Reverse Voltage                                                                                              | $V_{RRM}$                                             | 100            | 200    | 400    | 600    | 800    | 1000   | V                    |
| Maximum RMS voltage                                                                                                                  | $V_{RMS}$                                             | 70             | 140    | 280    | 420    | 560    | 700    | V                    |
| Maximum DC Blocking Voltage                                                                                                          | $V_{DC}$                                              | 100            | 200    | 400    | 600    | 800    | 1000   | V                    |
| Average Rectified Output Current                                                                                                     | $I_O$                                                 | 2.0            |        |        |        |        |        | A                    |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)                                    | $I_{FSM}$                                             | 50             |        |        |        |        |        | A                    |
| Maximum Forward Voltage at 2.0 A                                                                                                     | $V_F$                                                 | 1.1            |        |        |        |        |        | V                    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage<br>@ $T_A=25\text{ }^{\circ}\text{C}$<br>@ $T_A=125\text{ }^{\circ}\text{C}$ | $I_R$                                                 | 5<br>100       |        |        |        |        |        | $\mu\text{A}$        |
| Typical Junction Capacitance ( Note1 )                                                                                               | $C_j$                                                 | 30             |        |        |        |        |        | pF                   |
| Typical Thermal Resistance ( Note2 )                                                                                                 | $R_{\theta JA}$<br>$R_{\theta JC}$<br>$R_{\theta JL}$ | 60<br>10<br>25 |        |        |        |        |        | $^{\circ}\text{C/W}$ |
| Operating and Storage Temperature Range                                                                                              | $T_j, T_{stg}$                                        | -55 ~ +150     |        |        |        |        |        | $^{\circ}\text{C}$   |

Note: 1. Measured at 1MHz and applied reverse voltage of 4 V D.C.

2. Mounted on glass epoxy PC board with 4×1.5"×1.5" ( 3.81×3.81 cm ) copper pad.



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**Fig.1 Average Rectified Output Current Derating Curve**

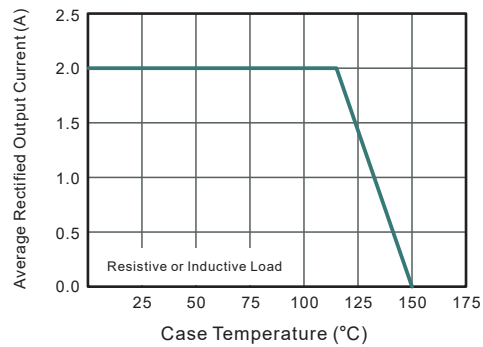


**Fig.2 Typical Reverse Characteristics**

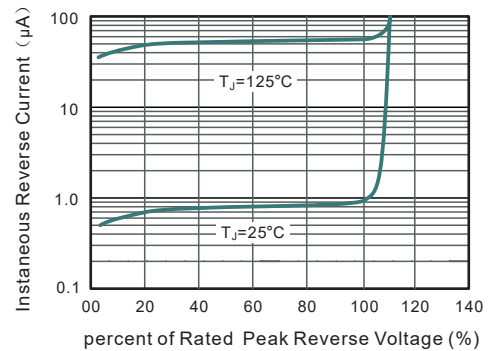


**Fig.3 Typical Instantaneous Forward Characteristics**

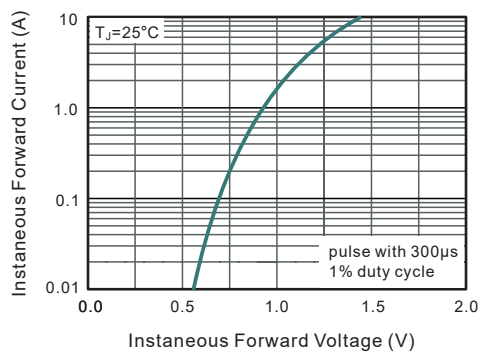


**Fig.4 Typical Junction Capacitance**

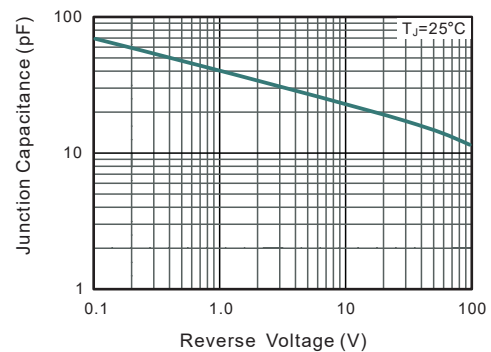


**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**

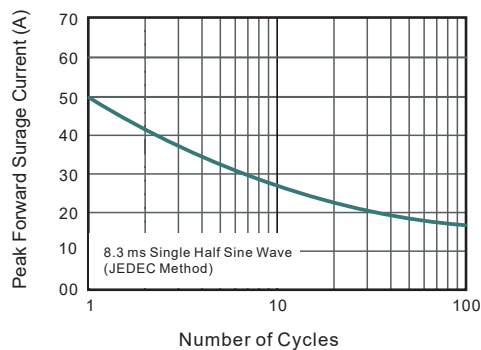
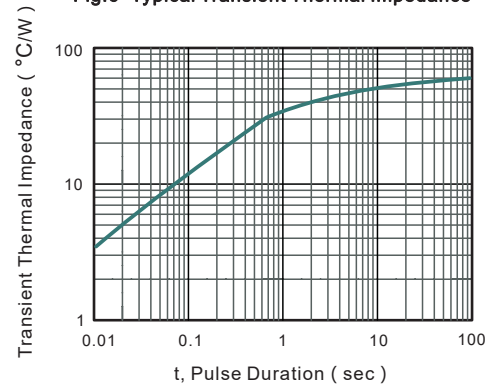


**Fig.6- Typical Transient Thermal Impedance**



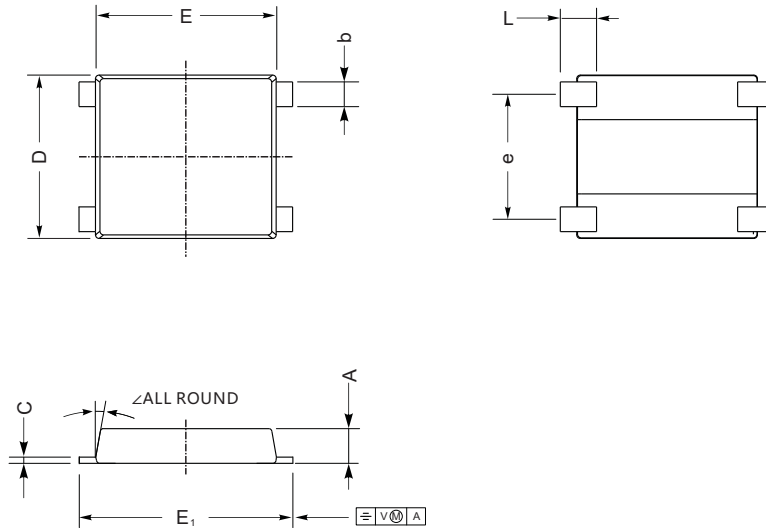


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## PACKAGE OUTLINE

Plastic surface mounted package; 4 leads

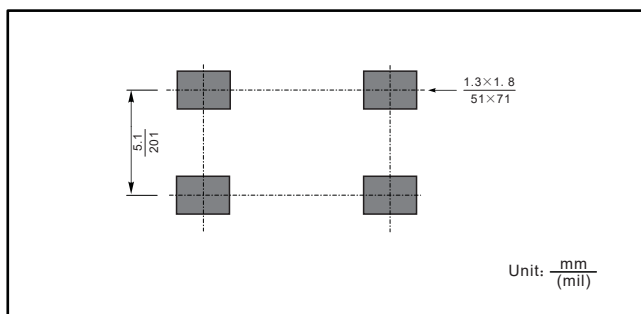
UMSB



UMSB mechanical data

| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | 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 |
|-------------|--------------|
| MSB20B      | MB20B        |
| MSB20D      | MB20D        |
| MSB20G      | MB20G        |
| MSB20J      | MB20J        |
| MSB20K      | MB20K        |
| MSB20M      | MB20M        |