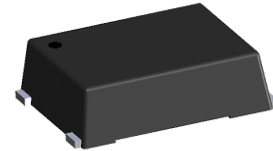


**GLASS PASSIVATED  
SURFACE MOUNT BRIDGE RECTIFIER**

**REVERSE VOLTAGE – 1000 Volts  
FORWARD CURRENT – 0.8 Amperes**

**GENERAL DESCRIPTION**

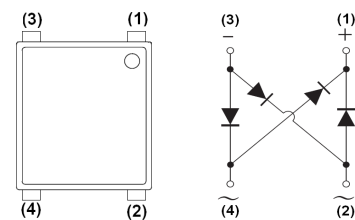
Suitable for AC-to-DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.



**FEATURES**

- Rated at 1000V PRV.
- Compact, thin profile package design
- Ideal for SMT manufacturing
- Reliable robust construction
- UL recognized filed# E364304

**Pin Assignment**



**MECHANICAL DATA**

- Case Material: "Green" molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl.)
- Polarity indicator : As marked on body
- Marking code: MB08M
- Weight : 67mg ( Approximate )

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

**ABSOLUTE RATINGS**

| PARAMETER  | SYMBOL         | VALUE   | UNIT             |
|--|----------------|---|------------------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 1000  | V                |
| Maximum DC blocking voltage  | $V_{DC}$       | 1000  | V                |
| Maximum average forward rectified current @ $T_C=120^\circ C$                      | $I_{(AV)}$     | 0.8   | A                |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load. | $I_{FSM}$      | $T_J=25^\circ C$ : 30<br>$T_J=125^\circ C$ : 25 | A                |
| Peak forward surge current 1ms single half sine-wave superimposed on rated load.   | $I_{FSM}$      | $T_J=25^\circ C$ : 60<br>$T_J=125^\circ C$ : 50 | A                |
| $I^2 t$ rating for fusing (t = 8.3ms)  | $I^2 t$        | 3.7   | A <sup>2</sup> S |
| Operating and storage temperature range  | $T_J, T_{STG}$ | -55 to +150                                     | °C               |

**STATIC ELECTRICAL CHARACTERISTICS**

| PARAMETER                             | TEST CONDITIONS  | SYMBOL | TYP.       | MAX        | UNIT |
|---------------------------------------|--|--------|------------|------------|------|
| Forward voltage                       | $I_F = 0.4A$<br>$T_J = 25^\circ C$<br>$T_J = 125^\circ C$  | $V_F$  | --<br>0.77 | 1.02<br>-- | V    |
|                                       | $I_F = 0.8A$<br>$T_J = 25^\circ C$<br>$T_J = 125^\circ C$  |        | --<br>0.85 | 1.05<br>-- |      |
| Leakage current                       | $V_R = 1000V$<br>$T_J = 25^\circ C$<br>$T_J = 125^\circ C$ | $I_R$  | --<br>--   | 5.0<br>500 | uA   |
| Typical junction capacitance (Note 1) |  | $C_J$  |            | 12         | pF   |

**THERMAL CHARACTERISTICS**

| PARAMETER                   | SYMBOL     | TYP. | UNIT |
|-----------------------------|------------|------|------|
| Thermal resistance (Note 2) | $R_{thJC}$ | 12   | °C/W |
|                             | $R_{thJL}$ | 40   |      |
|                             | $R_{thJA}$ | 80   |      |

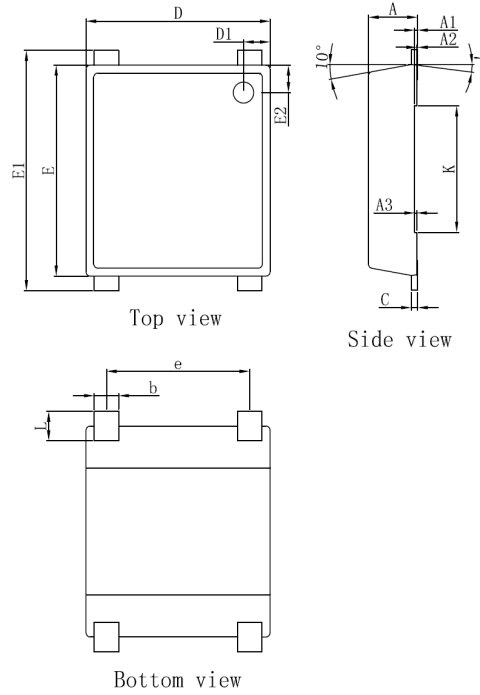
**Note :**

- (1) Measured at 1.0MHz and applied voltage of 4.0VDC.
- (2) Thermal resistance test performed in accordance with JESD-51. Unit mounted on glass-epoxy substrate with 1oz/ft<sup>2</sup> 10 mm \* 10 mm copper pad per pin

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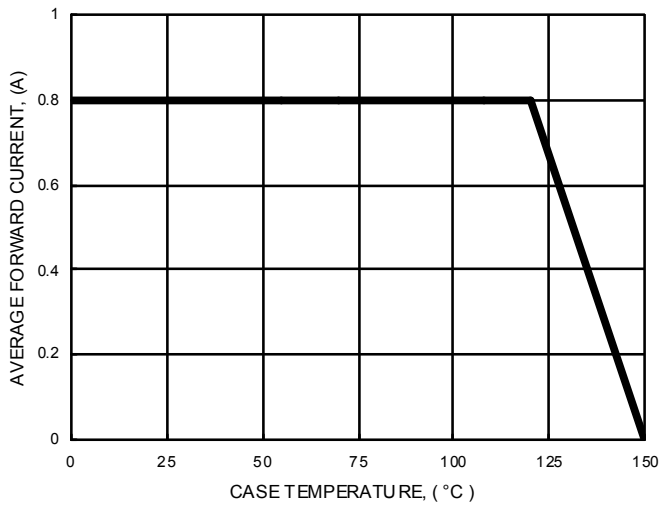
Package Dimension :

**MSB**

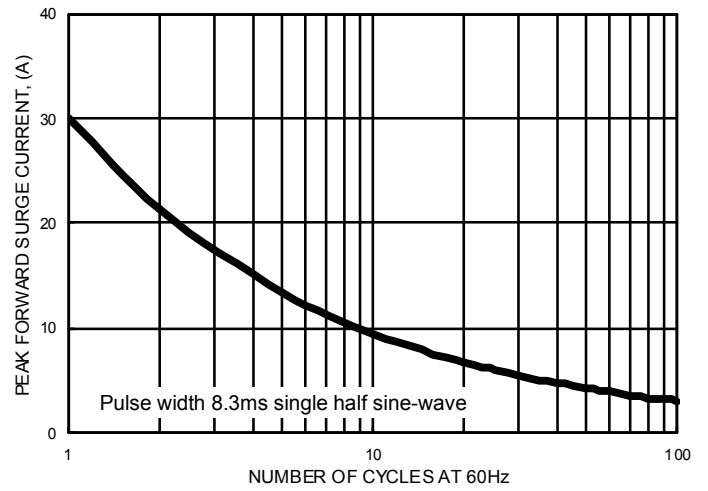


| MSB                          |      |      |      |
|------------------------------|------|------|------|
| Dim.                         | Min. | Typ. | Max. |
| A                            | 1.10 | 1.20 | 1.30 |
| A1                           | 0.05 | ---  | 0.08 |
| A2                           | 0.00 | 0.02 | 0.05 |
| A3                           | 0.03 | 0.05 | 0.08 |
| C                            | 0.12 | 0.15 | 0.18 |
| D                            | 4.40 | 4.5  | 4.60 |
| D1                           | 0.60 | 0.65 | 0.70 |
| E                            | 4.90 | 5.00 | 5.10 |
| E1                           | 5.80 | 5.90 | 6.10 |
| E2                           | 0.60 | 0.65 | 0.70 |
| L                            | 0.70 | 0.80 | 1.00 |
| b                            | 0.55 | 0.60 | 0.70 |
| e                            | 3.45 | 3.50 | 3.55 |
| K                            | 2.95 | 3.00 | 3.05 |
| All dimensions in millimeter |      |      |      |

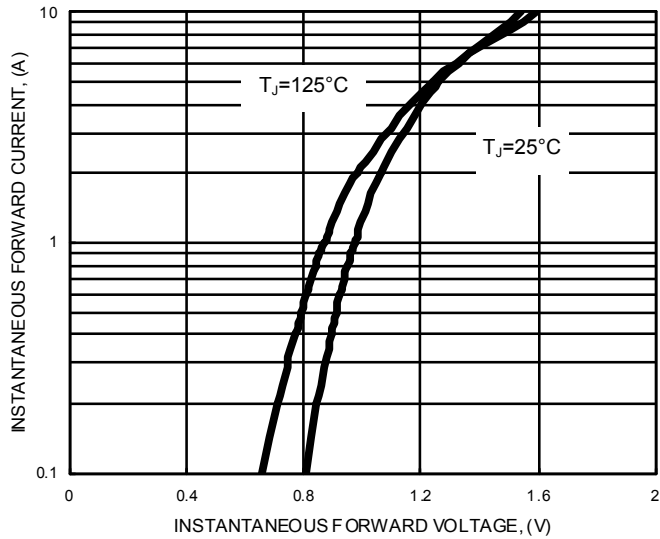
**FIG.1-FORWARD CURRENT DERATING CURVE**



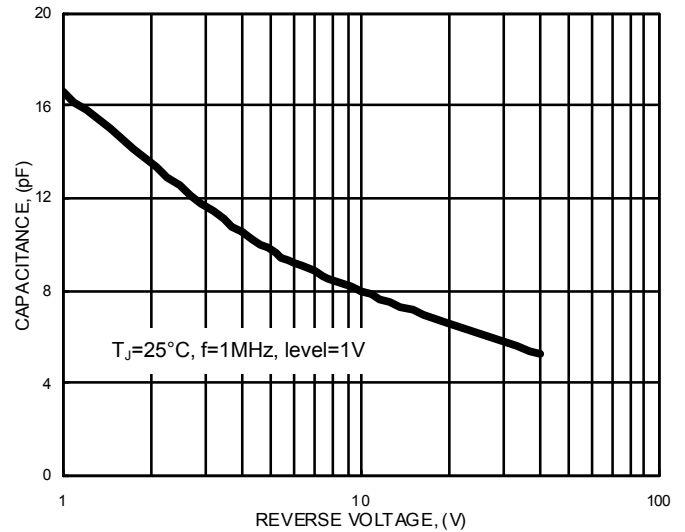
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



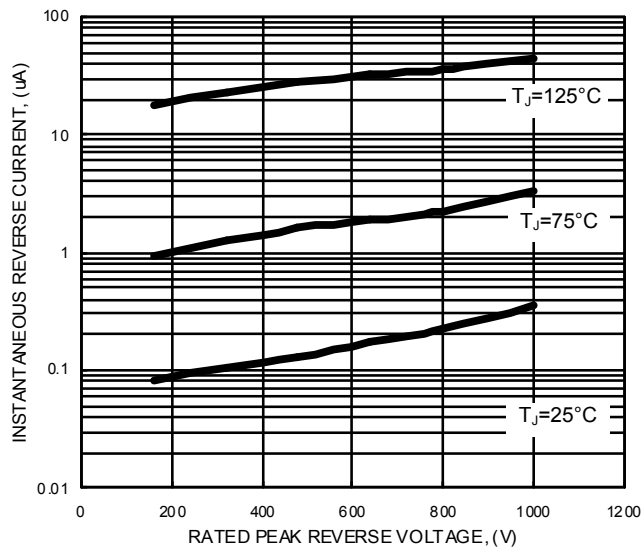
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



**FIG.4-TYPICAL JUNCTION CAPACITANCE**

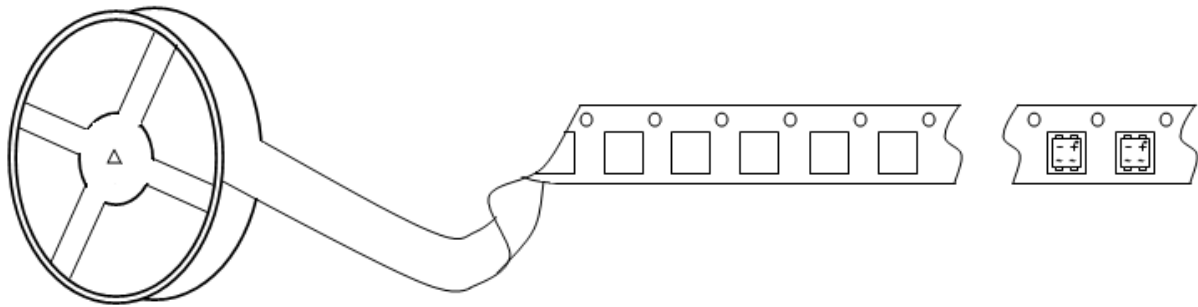


**FIG.5- TYPICAL REVERSE CHARACTERISTICS**

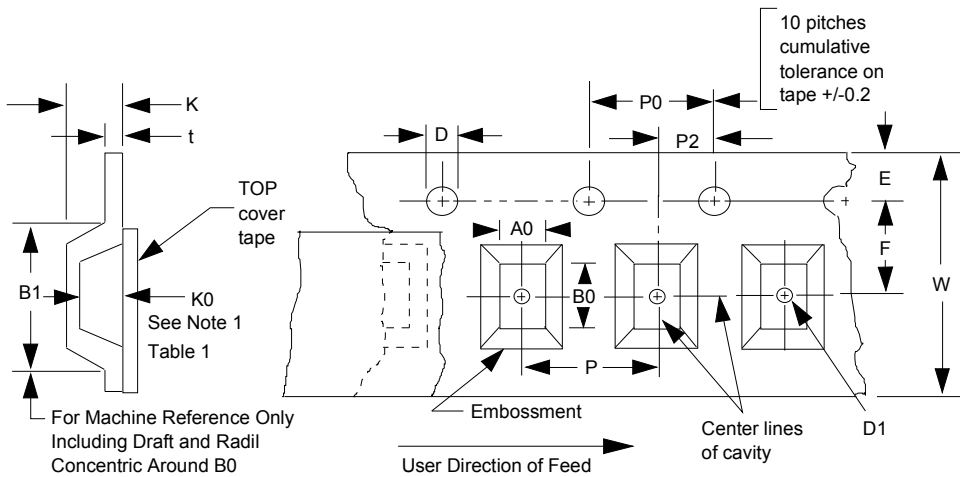


**Packaging Information :**

| DEVICE | Q'TY/REEL (PCS) | REEL DIA. (mm) | BOX SIZE (mm) | Q'TY/BOX (PCS) | CARTON SIZE (mm) | Q'TY/CARTON (PCS) | MOQ |
|--------|-----------------|----------------|---------------|----------------|------------------|-------------------|-----|
| MSB08M | 3000            | 330            | 334x334x21    | 3000           | 365x365x355      | 36K               | 36K |



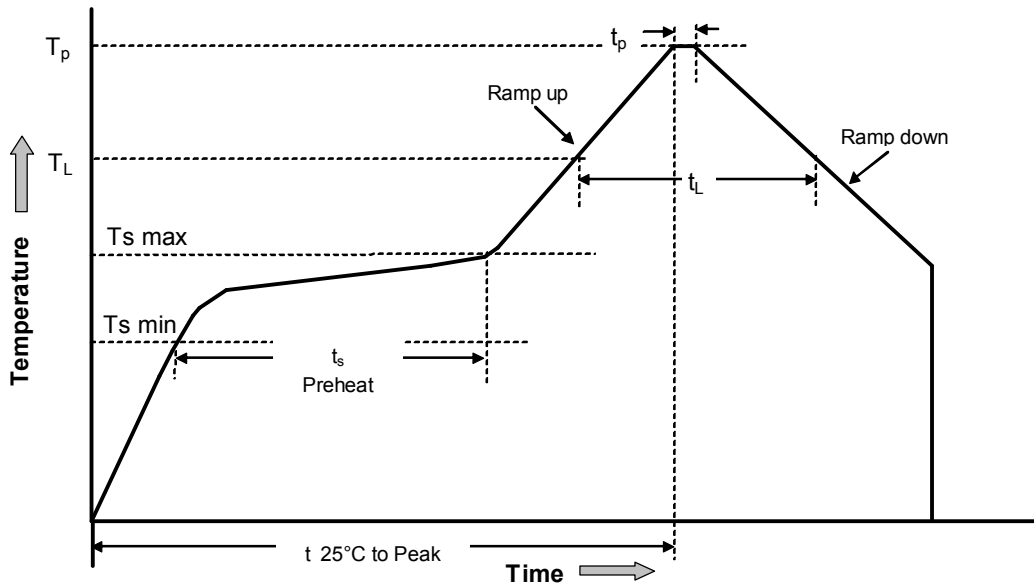
**Embossed Carrier Dimension :**



UNIT: mm

| TAPE SIZE | D              | E           | PO         | t (MAX) | A0         | B0          | K0        |
|-----------|----------------|-------------|------------|---------|------------|-------------|-----------|
| 12mm      | 1.55+0.10/-0.0 | 1.75+/-0.10 | 4.0+/-0.10 | 0.4     | 4.8+/-0.1  | 6.0+/-0.1   | 1.5+/-0.1 |
|           | B1 (MAX)       | D1 (MIN)    | F          | K (MAX) | P2         | W           | P         |
|           | 8.2            | 1.5         | 5.5+/-0.1  | 2.2     | 2.0+/-0.05 | 12.0+/-0.30 | 8.0+/-0.1 |

**Typical IR Reflow Soldering Thermal Profile :**



**Table 1- Reflow profile**

| Reflow condition   | Sn-Pb assembly   | Pb-free assembly |
|--|------------------|------------------|
| Average ramp-up rate (Liquidus Temperature (TL) to Peak) | 3 °C/second max. | 3 °C/second max. |
| Preheat  |                  |                  |
| --Temperature Min, Ts (Min)                              | 100 °C           | 150 °C           |
| --Temperature Max, Ts (Max)                              | 150 °C           | 200 °C           |
| --Time (min to max, ts)                                  | 60-120 seconds   | 60-180 seconds   |
| Ts(max) to TL  |                  | 3 °C/second max. |
| - Ramp-up Rate   |                  |                  |
| Time maintained above:                                   |                  |                  |
| --Temperature(TL)  | 183 °C           | 217 °C           |
| --Time(tL)   | 60-150 seconds   | 60-150 seconds   |
| Peak Temperature (Tp)                                    | 240 +0/-5 °C     | 260 +0/-5 °C     |
| Time within 5 °C of actual Peak Temperature(tp)          | 10-30 seconds    | 20-40 seconds    |
| Ramp-down Rate   | 6 °C/second max. | 6 °C/second max. |
| Time 25 °C to Peak Temperature.                          | 6 minutes max.   | 8 minutes max.   |

**Note: All temperatures refer to topside of the package, measured on the package body surface**

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