

**VOLTAGE RANGE: 50 --- 1000 V**

**CURRENT: 0.5 A**

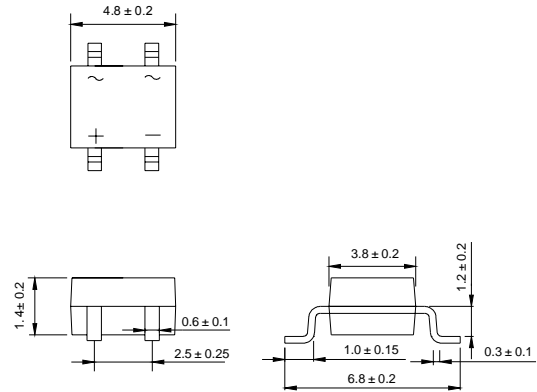
## MBF

### Features

- ✧ This series is UL recognized under Component Index, file number E239431
- ✧ Glass passivated chip junctions
- ✧ Plastic material has U/L flammability classification 94V-0
- ✧ High surge overload rating: 25A peak
- ✧ Saves space on printed circuit boards
- ✧ High temperature soldering guaranteed:
- ✧ 260°C/10 seconds at 5 lbs. (2.0kg) tension

### Mechanical Data

- ✧ Case: Molded plastic body over passivated junctions
- ✧ Terminals: Plated leads solderable per MIL-STD-750, Method 2026
- ✧ Polarity: Polarity symbols marked on body  
Dimensions in inches and (millimeters)
- ✧ Mounting Position: Any
- ✧ Weight: 0.0078 ounce, 0.22 gram



Dimensions in millimeters

### 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, derate by 20%.

|  |                      | MB05F           | MB1F | MB2F | MB4F | MB6F | MB8F | MB10F | UNITS         |
|--|----------------------|-----------------|------|------|------|------|------|-------|---------------|
| Maximum recurrent peak reverse voltage   | $V_{RRM}$            | 50              | 100  | 200  | 400  | 600  | 800  | 1000  | V             |
| Maximum RMS voltage  | $V_{RMS}$            | 35              | 70   | 140  | 280  | 420  | 560  | 700   | V             |
| Maximum DC blocking voltage  | $V_{DC}$             | 50              | 100  | 200  | 400  | 600  | 800  | 1000  | V             |
| Maximum average forward output current @ $T_A=25^\circ C$                                      | $I_{F(AV)}$          | 0.5             |      |      |      |      |      |       | A             |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load        | $I_{FSM}$            | 25              |      |      |      |      |      |       | A             |
| Maximum instantaneous forward voltage @ 0.4 A  | $V_F$                | 1.0             |      |      |      |      |      |       | V             |
| Maximum reverse current @ $T_A=25^\circ C$<br>at rated DC blocking voltage @ $T_A=100^\circ C$ | $I_R$                | 5.0<br>0.5      |      |      |      |      |      |       | $\mu A$<br>mA |
| Typical junction capacitance per leg (NOTE 3)  | $C_J$                | 13              |      |      |      |      |      |       | pF            |
| Typical thermal resistance per leg (NOTE 1)<br>(NOTE 2)  | $R_{JA}$<br>$R_{JL}$ | 85<br>20        |      |      |      |      |      |       | $^\circ C/W$  |
| Operating junction temperature range   | $T_J$                | - 55 ---- + 150 |      |      |      |      |      |       | $^\circ C$    |
| Storage temperature range  | $T_{STG}$            | - 55 ---- + 150 |      |      |      |      |      |       | $^\circ C$    |

NOTES: (1) On glass epoxy P.C.B. mounted on 0.05 x 0.05" (1.3 x 1.3mm) pads

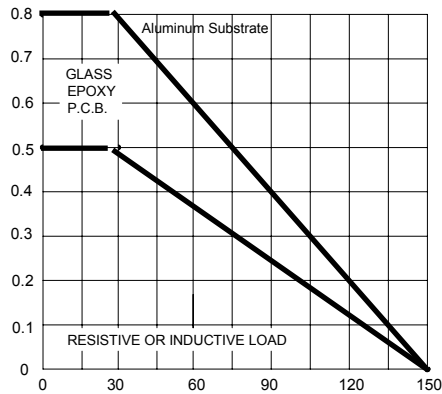
(2) On aluminum substrate P.C.B. with an area of 0.8" x 0.8" (20 x 20mm) mounted on 0.05 x 0.05" (1.3 x 1.3mm) solder pad

(3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts

## Ratings AND Characteristic Curves

AVERAGE FORWARD CURRENT, AMPERES

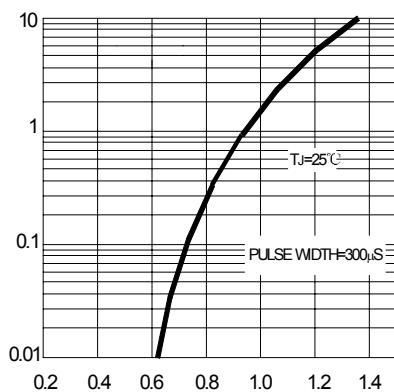
**FIG.1 – DERATING CURVE FOR OUTPUT RECTIFIED CURRENT**



AMBIENT TEMPERATURE, °C

INSTANTANEOUS FORWARD CURRENT, AMPERES

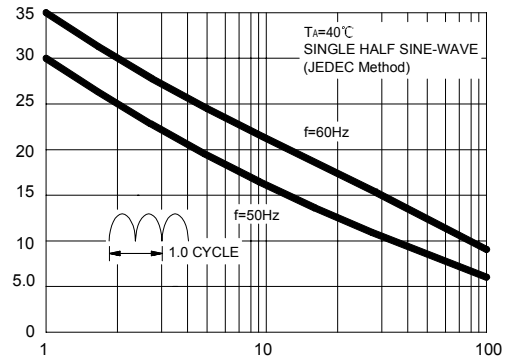
**FIG.3 – TYPICAL FORWARD VOLTAGE CHARACTERISTICS PER LEG**



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

**FIG.2 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG**

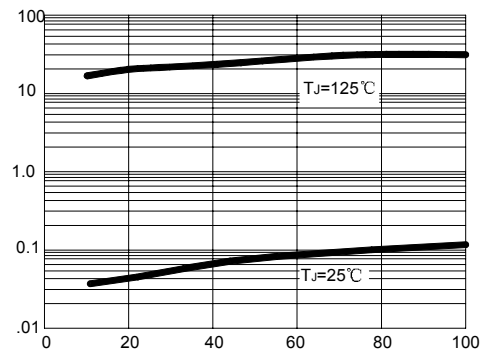
PEAK FORWARD SURGE CURRENT, AMPERES



NUMBER OF CYCLES AT 50/60Hz

**FIG.4 – TYPICAL REVERSE CHARACTERISTIC**

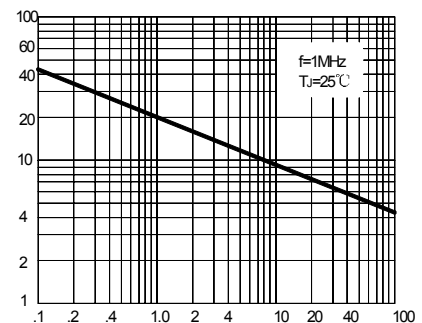
INSTANTANEOUS REVERSE CURRENT, MICRO AMPERES



PERCENT OF RATED PEAK REVERSE VOLTAGE, %

**FIG.5 – TYPICAL JUNCTION CAPACITANCE PER ELEMENT**

CAPACITANCE, pF



REVERSE VOLTAGE, VOLTS