**MB05F THRU MB10F**

**MINIATURE GLASS PASSIVATED SINGLE-PHASE SURFACE MOUNT BRIDGE RECTIFIER**

**REVERSE VOLTAGE:** 50 to 1000 VOLTS

**FORWARD CURRENT:** 0.5 AMPERE

**FEATURES**
- Surge overload rating: 30 amperes peak
- Ideal for printed circuit board
- Plastic material has Underwriters Laboratory Flammability Classification 94V-0
- Low leakage
- Reliable low cost construction utilizing molded

**MECHANICAL DATA**
Case: Molded plastic, MBF
Epoxy: UL 94V-0 rate flame retardant
Terminals: Leads solderable per MIL-STD-202, method 208 guaranteed
Mounting position: Any

---

**Maximum Ratings and Electrical Characteristics**

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.

<table>
<thead>
<tr>
<th></th>
<th>( \text{MB05F} )</th>
<th>( \text{MB1F} )</th>
<th>( \text{MB2F} )</th>
<th>( \text{MB4F} )</th>
<th>( \text{MB6F} )</th>
<th>( \text{MB8F} )</th>
<th>( \text{MB10F} )</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Recurrent Peak Reverse Voltage ( V_{\text{RRM}} )</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum RMS Voltage ( V_{\text{RMS}} )</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum DC Blocking Voltage ( V_{\text{DC}} )</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum Average Forward Rectified Current ( I_{\text{AV}} )</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Amp</td>
</tr>
<tr>
<td>on glass-epoxy P.C.B (Note 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>on aluminum substrate (Note 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method) ( I_{\text{FSM}} )</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Amp</td>
</tr>
<tr>
<td>Maximum Forward Voltage at 0.4A DC and 25°C ( V_F )</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum Reverse Current at ( T_A=25^\circ \text{C} ) ( I_R )</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>uAmp</td>
</tr>
<tr>
<td>at Rated DC Blocking Voltage ( T_A=125^\circ \text{C} )</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical Junction Capacitance (Note 1) ( C_J )</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Typical Thermal Resistance (Note 3) ( R_{\text{thJ}} )</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td>Typical Thermal Resistance (Note 2) ( R_{\text{thL}} )</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td>Operating and Storage Temperature Range ( T_J, \ T_{\text{stg}} )</td>
<td>-55 to +150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

**NOTES:**
1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
2- On glass epoxy P.C.B. mounted on 0.05 x 0.05” (1.3 x 1.3mm) pads
3- 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
Characteristics Curves ($T_A=25 \, ^\circ C$ unless otherwise noted)

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

- **Average Forward Rectified Current (A)**
- **Voltage (V)**
- **Temperature ($^\circ C$)**
- **Resistance or Inductive Load**
- **Aluminum Substrate**
- **Glass**
- **Epoxy**
- **P.C.B.**

**Fig. 2** Maximum Non-Repetitive Peak Forward Surge Current Per Leg

- **Peak Forward Surge Current (A)**
- **Number of Cycles**
- **Temperature ($^\circ C$)**
- **Single Half Sine-wave (JEDEC Method)**
- **f=60 Hz**
- **f=50 Hz**
- **10 cycle**
- **1 cycle**

**Fig. 3** Typical Forward Voltage Characteristics Per Leg

- **Instantaneous Forward Current (A)**
- **Instantaneous Forward Voltage (V)**
- **Pulse Width=300us**
- **1% Duty Cycle**
- **$T_J=150 \, ^\circ C$**
- **$T_J=25 \, ^\circ C$**

**Fig. 4** Typical Reverse Leakage Characteristics Per Leg

- **Instantaneous Reverse Leakage Current (µA)**
- **Percent or Rated Peak Reverse Voltage (%)**
- **$T_J=125 \, ^\circ C$**
- **$T_J=25 \, ^\circ C$**

**Fig. 5** Typical Junction Capacitance Per Leg

- **Junction Capacitance (pF)**
- **Reverse Voltage (V)**
- **$T_J=25 \, ^\circ C$**
- **$t=1.0\, \mu s$**
- **Vsig=50mVp-p**