**Product Summary (@T_A = +25°C)**

<table>
<thead>
<tr>
<th>V_RRM (V)</th>
<th>I_O (A)</th>
<th>V_F (V)</th>
<th>I_R (μA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>0.8</td>
<td>1.1</td>
<td>5</td>
</tr>
</tbody>
</table>

**Features and Benefits**

- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- Reliable Robust Construction
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. “Green” Device (Note 3)

**Description and Applications**

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

**Ordering Information** (Note 4)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Compliance</th>
<th>Case</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB10F-13</td>
<td>Commercial</td>
<td>MBF</td>
<td>5,000/Tape &amp; Reel</td>
</tr>
</tbody>
</table>

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated’s definitions of Halogen- and Antimony-free, “Green” and Lead-free.
3. Halogen- and Antimony-free “Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

**Marking Information**

MB10F = Product Type Marking Code

YMD = Date Code Marking

Y = Last Digit of Year (ex: 7 = 2017)

M = See Month/Code Table Below

D = Day 1~9 =1~9; Day 10~31 = A~V

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>O</td>
<td>N</td>
<td>D</td>
</tr>
</tbody>
</table>
Maximum Ratings (@\(T_A = +25^\circ C\), unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Repetitive Reverse Voltage</td>
<td>(V_{RRM})</td>
<td>1,000</td>
<td>V</td>
</tr>
<tr>
<td>Working Peak Reverse Voltage</td>
<td>(V_{RWM})</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>DC Blocking Voltage</td>
<td>(V_R)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>RMS Reverse Voltage</td>
<td>(V_{R_{(RMS)}})</td>
<td>700</td>
<td>V</td>
</tr>
<tr>
<td>Average Rectified Output Current (Note 5) @ (T_A = +125^\circ C)</td>
<td>(I_O)</td>
<td>0.5</td>
<td>A</td>
</tr>
<tr>
<td>@ (T_A = +110^\circ C)</td>
<td>(I_O)</td>
<td>0.8</td>
<td>A</td>
</tr>
<tr>
<td>Non-Repetitive Peak Forward Surge Current</td>
<td>(I_{FSM})</td>
<td>30</td>
<td>A</td>
</tr>
<tr>
<td>Single Half Sine-Wave Superimposed on Rated Load</td>
<td>(I^2t)</td>
<td>3.74</td>
<td>A^2S</td>
</tr>
</tbody>
</table>

Thermal Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element)</td>
<td>(R_{\theta JA})</td>
<td>63</td>
<td>°C/W</td>
</tr>
<tr>
<td>Typical Thermal Resistance, Junction to Lead (Per Element)</td>
<td>(R_{\theta JL})</td>
<td>39</td>
<td>°C/W</td>
</tr>
<tr>
<td>Operating and Storage Temperature Range</td>
<td>(T_J, T_{STG})</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

Electrical Characteristics (@\(T_A = +25^\circ C\), unless otherwise specified.)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
<th>Test Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse Breakdown Voltage (Note 7)</td>
<td>(V_{(BR)R})</td>
<td>1,000</td>
<td>—</td>
<td>—</td>
<td>V</td>
<td>(I_R = 5\mu A)</td>
</tr>
<tr>
<td>Forward Voltage (Per Element)</td>
<td>(V_F)</td>
<td>—</td>
<td>0.94</td>
<td>1.1</td>
<td>V</td>
<td>(I_F = 0.8A, T_A = +25^\circ C)</td>
</tr>
<tr>
<td>Leakage Current (Note 7) (Per Element)</td>
<td>(I_R)</td>
<td>—</td>
<td>0.2</td>
<td>5</td>
<td>μA</td>
<td>(V_R = 1,000V, T_A = +25^\circ C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14</td>
<td>500</td>
<td>μA</td>
<td>(V_R = 1,000V, T_A = +125^\circ C)</td>
</tr>
<tr>
<td>Total Capacitance (Per Element)</td>
<td>(C_T)</td>
<td>8</td>
<td>—</td>
<td>—</td>
<td>pF</td>
<td>(V_R = 4V, f = 1.0)MHz</td>
</tr>
</tbody>
</table>

Notes:
5. Device mounted on FR-4 substrate, 1"*1", 2oz, single-sided, PC boards with 0.1"*0.15" copper pad.
6. Device mounted on FR-4 substrate, 1"*1", 2oz, single-sided, PC boards with 0.56"*0.73" copper pad.
7. Short duration pulse test used to minimize self-heating effect.
Figure 1. DC Forward Current Derating

Figure 2. Typical Forward Characteristics (Per Element)

Figure 3. Typical Reverse Characteristics (Per Element)

Figure 4. Typical Total Capacitance

Figure 5. Maximum Peak Forward Surge Current (Per Leg)

Figure 6. Forward Power Dissipation
Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

<table>
<thead>
<tr>
<th>Dim</th>
<th>Min</th>
<th>Max</th>
<th>Typ</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>--</td>
<td>0.20</td>
<td>--</td>
</tr>
<tr>
<td>A2</td>
<td>1.20</td>
<td>1.60</td>
<td>--</td>
</tr>
<tr>
<td>b</td>
<td>0.50</td>
<td>0.80</td>
<td>--</td>
</tr>
<tr>
<td>c</td>
<td>0.15</td>
<td>0.35</td>
<td>--</td>
</tr>
<tr>
<td>D</td>
<td>4.50</td>
<td>4.95</td>
<td>--</td>
</tr>
<tr>
<td>E</td>
<td>6.40</td>
<td>7.00</td>
<td>--</td>
</tr>
<tr>
<td>E1</td>
<td>3.60</td>
<td>4.10</td>
<td>--</td>
</tr>
<tr>
<td>e</td>
<td>2.30</td>
<td>2.70</td>
<td>--</td>
</tr>
<tr>
<td>L</td>
<td>0.70</td>
<td>1.10</td>
<td>--</td>
</tr>
</tbody>
</table>

All Dimensions in mm

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Value (in mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>2.50</td>
</tr>
<tr>
<td>X</td>
<td>1.050</td>
</tr>
<tr>
<td>X1</td>
<td>3.55</td>
</tr>
<tr>
<td>Y</td>
<td>1.875</td>
</tr>
<tr>
<td>Y1</td>
<td>7.20</td>
</tr>
</tbody>
</table>
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   2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

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