Features
■ RoHS compliant*
■ Low power loss and high efficiency
■ High current capability
■ Low profile package

CD-MBL1xxS Surface Mount Bridge Rectifier Diode

Applications
■ AC operated products
■ Computer monitors
■ Set-top boxes
■ Cable modems

General Information
The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Bridge Rectifier Diodes for rectification applications in compact chip package 0.23” x 0.20” size format, which offers PCB real estate savings and are considerably smaller than standard parts. The Bridge Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltages between 200 V and 1000 V.

Absolute Maximum Ratings (@ TA = 25 °C Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>CD-MBL102S</th>
<th>CD-MBL104S</th>
<th>CD-MBL106S</th>
<th>CD-MBL108S</th>
<th>CD-MBL110S</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Repetitive Peak Reverse Voltage</td>
<td>VRRM</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>VRMS</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Average Forward Rectified Current (TA = 55 °C)</td>
<td>I_F(AV)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)</td>
<td>IFSM</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>TJ</td>
<td>-55 to +175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>TSTG</td>
<td>-55 to +175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

Electrical Characteristics (@ TA = 25 °C Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions</th>
<th>CD-MBL1xxS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instantaneous Forward Voltage</td>
<td>V_F</td>
<td>IF = 1 A</td>
<td>0.95</td>
</tr>
<tr>
<td>Repetitive Peak Reverse Current</td>
<td>I_RRM</td>
<td>VR = V_RRM, TA = +25 °C</td>
<td>5.0 µA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TA = +150 °C</td>
<td>200 µA</td>
</tr>
<tr>
<td>Junction Capacitance</td>
<td>C_J</td>
<td>VR = 4 V, f = 1.0 MHz</td>
<td>25 pF</td>
</tr>
<tr>
<td>Thermal Resistance, Junction to Air (1)</td>
<td>R_THJA</td>
<td></td>
<td>95 °C / W</td>
</tr>
<tr>
<td>Thermal Resistance, Junction to Lead (1)</td>
<td>R_THJL</td>
<td></td>
<td>20 °C / W</td>
</tr>
</tbody>
</table>

NOTE 1: Measured when mounted on PCB with 5.0 mm x 5.0 mm (0.2” x 0.2”) copper pad areas.

WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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Users should verify actual device performance in their specific applications.
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CD-MBL1xxS Surface Mount Bridge Rectifier Diode

Rating and Characteristic Curves

Forward Current Derating Curve

Maximum Non-Repetitive Peak Forward Surge Current

Forward Characteristics

Reverse Characteristics

Typical Junction Capacitance

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CD-MBL1xxS Surface Mount Bridge Rectifier Diode

Product Dimensions

This is an RoHS2 compliant product, packaged with FRP substrate and is epoxy underfilled. The terminals are pure tin plated (lead free) and are solderable per MIL-STD-750, Method 2026. The package and dimensions are shown below.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5.20 - 5.40</td>
<td>(0.205 - 0.213)</td>
</tr>
<tr>
<td>B</td>
<td>4.10 - 4.30</td>
<td>(0.161 - 0.169)</td>
</tr>
<tr>
<td>C</td>
<td>5.70 - 5.90</td>
<td>(0.224 - 0.232)</td>
</tr>
<tr>
<td>D</td>
<td>1.00 - 1.20</td>
<td>(0.039 - 0.047)</td>
</tr>
<tr>
<td>E</td>
<td>0.85 - 0.95</td>
<td>(0.033 - 0.037)</td>
</tr>
<tr>
<td>F</td>
<td>0.86 - 1.16</td>
<td>(0.0338 - 0.0457)</td>
</tr>
</tbody>
</table>

Recommended Footprint

How to Order

CD - MBL 1 02 S

Common Code
Chip Diode
Model
MBL = MBL Bridge Series
Average Forward Current
1 = 1 A
Reverse Voltage
02 = 200 V
04 = 400 V
06 = 600 V
08 = 800 V
10 = 1000 V
Forward Voltage Suffix
S = Standard Forward Voltage

Typical Part Marking

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The surface mount product is packaged in a 12 mm x 8 mm tape and reel format per EIA-481 standard.

### Packaging Information

**Item** | **Symbol** | **CD-MBL1xxS**<br>(**MM**)<br>(**INCHES**)  
--- | --- | ---  
Carrier Width | A | 5.90 ± 0.10<br>(0.232 ± 0.004)  
Carrier Length | B | 6.50 ± 0.10<br>(0.256 ± 0.004)  
Carrier Depth | C | 1.50 ± 0.10<br>(0.059 ± 0.004)  
Sprocket Hole | d | 1.55 ± 0.05<br>(0.061 ± 0.002)  
Reel Outside Diameter | D | 33.0<br>(12.992)  
Reel Inner Diameter | D1 | 50.0<br>(1.969) MIN.  
Feed Hole Diameter | D2 | 13.0 ± 0.20<br>(0.512 ± 0.008)  
Sprocket Hole Position | E | 1.75 ± 0.10<br>(0.069 ± 0.004)  
Punch Hole Position | F | 5.50 ± 0.05<br>(0.217 ± 0.002)  
Punch Hole Pitch | P | 8.00 ± 0.10<br>(0.315 ± 0.004)  
Sprocket Hole Pitch | P0 | 4.00 ± 0.10<br>(0.157 ± 0.004)  
Embossment Center | P1 | 2.00 ± 0.05<br>(0.079 ± 0.002)  
Overall Tape Thickness | T | 0.20 ± 0.10<br>(0.008 ± 0.004)  
Tape Width | W | 12.00 ± 0.20<br>(0.472 ± 0.008)  
Reel Width | W1 | 18.7<br>(0.736) MAX.  
Quantity per Reel | -- | 5,000
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