CD214A-F150~F1600 Fast Response Rectifiers

Features
- RoHS compliant*
- Glass passivated chip
- Low reverse leakage current
- Low forward voltage drop
- High current capability

This series is obsolete and not recommended for new designs. Recommended replacement products are available.

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components. Bourns offers Glass Passivated Rectifiers for rectification applications, in compact chip DO-214AC (SMA) size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Glass Passivated Rectifier Diodes offer a forward current of 1.0 A with a choice of repetitive peak reverse voltage of 50 V up to 600 V.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.

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

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Repetitive Peak Reverse Voltage</td>
<td>V_{RRM}</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>V_{RMS}</td>
<td>35</td>
<td>70</td>
<td>105</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC Blocking Voltage</td>
<td>V_{DC}</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Average Forward Rectified Current</td>
<td>I_{AV}</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>DC Reverse Current @ Rated DC Blocking Voltage (@ TA = 25 °C)</td>
<td>I_{R}</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>DC Reverse Current @ Rated DC Blocking Voltage (@ TA = 125 °C)</td>
<td>I_{R}</td>
<td>50.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>Typical Junction Capacitance</td>
<td>C_{J}</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Maximum Instantaneous Forward Voltage @ 1 A</td>
<td>V_{F}</td>
<td>0.95</td>
<td>1.25</td>
<td>1.7</td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Typical Thermal Resistance</td>
<td>R_{θJA}</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td>Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)</td>
<td>I_{FSM}</td>
<td>30</td>
<td></td>
<td></td>
<td>25</td>
<td></td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Maximum Reverse Recovery Time</td>
<td>T_{rr}</td>
<td>25</td>
<td></td>
<td></td>
<td>35</td>
<td></td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Typical Reverse Recovery Time</td>
<td>T_{rr}</td>
<td>20</td>
<td></td>
<td></td>
<td>30</td>
<td></td>
<td>ns</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. See Forward Derating Curve.
2. Measured at 1 MHz and an applied reverse voltage of 4.0 V.
3. Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2 x 0.2 " (5.0 x 5.0 mm) copper pad areas.
4. Reverse recovery test condition: IF 0.5 A, IR = 3.0 A, Irr = 0.25 A.

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>CD214A-F150~F1600</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature Range</td>
<td>T_{J}</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>T_{Sta}</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

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WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov
CD214A-F150~F1600 Fast Response Rectifiers

Product Dimensions

This is an RoHS compliant product using 100% Sn termination. It is a molded plastic package. A cathode band indicates the polarity. The package weighs approximately 0.064 g. The package and dimensions are shown below.

Recommended Pad Layout

How To Order

Common Code
CD = Chip Diode
Package
214A = DO214AC
Model Series
F = Fast Response
Forward Current
1 = 1 A
Reverse Voltage
50 = 50 V
100 = 100 V
150 = 150 V
200 = 200 V
400 = 400 V
600 = 600 V

Typical Part Marking

CD214A-F150 ................................................................. F1A
CD214A-F1100 ............................................................ F1B
CD214A-F1150 ............................................................ F1C
CD214A-F1200 ............................................................ F1D
CD214A-F1400 ............................................................ F1G
CD214A-F1600 ............................................................ F1J

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Performance Graphs

Forward Current Derating Curve

Maximum Non-Repetitive Surge Current

Typical Forward Characteristics

Typical Reverse Characteristics

Typical Junction Capacitance

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# Packaging Information

The surface mount product is packaged in a 12 mm x 4 mm tape and reel format per EIA-481 standard.

### Dimensions:

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>DO-214AC (SMA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrier Width</td>
<td>A</td>
<td>3.42 ± 0.10 (1.34 ± 0.004)</td>
</tr>
<tr>
<td>Carrier Length</td>
<td>B</td>
<td>5.01 ± 0.10 (1.99 ± 0.004)</td>
</tr>
<tr>
<td>Carrier Depth</td>
<td>C</td>
<td>3.10 ± 0.10 (1.22 ± 0.004)</td>
</tr>
<tr>
<td>Sprocket Hole</td>
<td>d</td>
<td>1.55 ± 0.05 (0.061 ± 0.002)</td>
</tr>
<tr>
<td>Reel Outside Diameter</td>
<td>D</td>
<td>330 (12.992)</td>
</tr>
<tr>
<td>Reel Inner Diameter</td>
<td>D1</td>
<td>50.0 Min. (1.969)</td>
</tr>
<tr>
<td>Feed Hole Diameter</td>
<td>D2</td>
<td>13.0 ± 0.50 (0.512 ± 0.020)</td>
</tr>
<tr>
<td>Sprocket Hole Position</td>
<td>E</td>
<td>1.75 ± 0.10 (0.069 ± 0.004)</td>
</tr>
<tr>
<td>Punch Hole Position</td>
<td>F</td>
<td>5.50 ± 0.00 (0.217 ± 0.004)</td>
</tr>
<tr>
<td>Punch Hole Pitch</td>
<td>P</td>
<td>4.00 ± 0.10 (0.157 ± 0.004)</td>
</tr>
<tr>
<td>Sprocket Hole Pitch</td>
<td>P0</td>
<td>4.00 ± 0.10 (0.157 ± 0.004)</td>
</tr>
<tr>
<td>Embossment Center</td>
<td>P1</td>
<td>2.00 ± 0.05 (0.079 ± 0.002)</td>
</tr>
<tr>
<td>Overall Tape Thickness</td>
<td>T</td>
<td>0.30 ± 0.10 (0.012 ± 0.004)</td>
</tr>
<tr>
<td>Tape Width</td>
<td>W</td>
<td>12.00 ± 0.20 (0.472 ± 0.008)</td>
</tr>
<tr>
<td>Reel Width</td>
<td>W1</td>
<td>18.7 Max. (0.736)</td>
</tr>
<tr>
<td>Quantity per Reel</td>
<td></td>
<td>7,500</td>
</tr>
</tbody>
</table>

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