Features

- Input Frequency 1.5 to 8.0 GHz
- Output Frequency 3.0 to 16.0 GHz
- Input Drive Level +10 dBm (nominal)
- Microstrip Interface

Description

The FDC2310 is a passive bridge diode frequency doubler, designed for use in military, commercial and test equipment applications. The design utilizes Schottky bridge quad diodes and broadband soft dielectric baluns to attain excellent performance. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDC2310</td>
<td>Open Carrier</td>
</tr>
</tbody>
</table>

Electrical Specifications:  \( Z_0 = 50\Omega \)  \( P_{in} = +10 \text{ dBm} \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Typical</th>
<th>Guaranteed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>+25°C</td>
<td>-40° to +85°C</td>
</tr>
<tr>
<td>SSB Conversion Loss (max)</td>
<td>( f_i = 1.5 \text{ to } 8.0 \text{ GHz} )</td>
<td>dB</td>
<td>11</td>
<td>14.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14.5</td>
</tr>
<tr>
<td>Fundamental Suppression (min)</td>
<td>( f_i = 1.5 \text{ to } 8.0 \text{ GHz} )</td>
<td>dBC</td>
<td>35</td>
<td>19.5</td>
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<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Third Harmonic Suppression (min)</td>
<td>( f_i = 1.5 \text{ to } 8.0 \text{ GHz} )</td>
<td>dBC</td>
<td>40</td>
<td>20</td>
</tr>
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<td></td>
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<td></td>
<td>18</td>
</tr>
<tr>
<td>Input VSWR</td>
<td>( f_i = 1.5 \text{ to } 8.0 \text{ GHz} )</td>
<td></td>
<td></td>
<td>2.0:1</td>
</tr>
</tbody>
</table>
Typical Performance Curves

**Conversion Loss**

- **Frequency (GHz):** 2, 3, 4, 5, 6, 7, 8
- **Conversion Loss (dB):** 9, 10, 11, 12, 13, 14

- **PIN = +6 dBm**
- **PIN = +8 dBm**
- **PIN = +10 dBm**

**Input VSWR**

- **Frequency (GHz):** 2, 3, 4, 5, 6, 7, 8
- **Input VSWR:** 1.0, 2.0, 3.0, 4.0

- **PIN = +6 dBm**
- **PIN = +8 dBm**
- **PIN = +10 dBm**

**Fundamental Suppression**

- **Frequency (GHz):** 2, 3, 4, 5, 6, 7, 8
- **Fundamental Suppression (dBc):** 20, 30, 40, 50

- **PIN = +6 dBm**
- **PIN = +8 dBm**
- **PIN = +10 dBm**

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For further information and support please visit:
[https://www.macom.com/support](https://www.macom.com/support)
Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
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</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-54°C to +100°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65°C to +100°C</td>
</tr>
</tbody>
</table>
| Peak Input Power    | +23 dBm max @ +25°C  
|                    | +20 dBm max @ +100°C                 |
| Peak Input Current  | 50 mA DC                              |

Third Harmonic Suppression

- **Frequency (GHz)**
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8

- **Third Harmonic Suppression (dBc)**
  - PIN = +6 dBm
  - PIN = +8 dBm
  - PIN = +10 dBm

- **Third Harmonic Suppression (dBc)**
  - PIN = +12 dBm
  - PIN = +14 dBm
  - PIN = +16 dBm

Outline Drawing: Open Carrier

- Weight: 0.5 gram (0.018 oz.) max

* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.