FDC2710

Open Carrier Frequency Doubler
For Microwave Telecommunications

Features
- INPUT: 3.5 TO 8.0 GHz
- OUTPUT: 7.0 TO 16.0 GHz
- INPUT DRIVE LEVEL +10 dBm (NOMINAL)
- MICROSTRIP INTERFACE

Description
The FDC2710 is a passive bridge diode frequency doubler, designed for use in the high volume commercial and test equipment applications. The design utilizes Schottky bridge quad diodes and broadband baluns to attain excellent performance. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in semi-automated and automated assembly. 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>FDC2710</td>
<td>Open Carrier</td>
</tr>
</tbody>
</table>

Electrical Specifications: $Z_0 = 50\Omega$ $P_{in} = +10$ 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>$+25^\circ C$</td>
<td>$-40^\circ$ to $+85^\circ C$</td>
</tr>
<tr>
<td>SSB Conversion Loss (max)</td>
<td>$f_i = 3.5$ to $4.5$ GHz</td>
<td>dB</td>
<td>13.0</td>
<td>14.0</td>
</tr>
<tr>
<td></td>
<td>$f_i = 4.5$ to $7.0$ GHz</td>
<td>dB</td>
<td>10.2</td>
<td>12.5</td>
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<tr>
<td></td>
<td>$f_i = 7.0$ to $8.0$ GHz</td>
<td>dB</td>
<td>11.2</td>
<td>13.5</td>
</tr>
<tr>
<td>Fundamental Suppression (min)</td>
<td>$f_i = 3.5$ to $6.5$ GHz</td>
<td>dBc</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>$f_i = 6.5$ to $8.0$ GHz</td>
<td>dBc</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Third Harmonic Suppression (min)</td>
<td>$f_i = 6.5$ to $8.0$ GHz</td>
<td>dBc</td>
<td>50</td>
<td>40</td>
</tr>
</tbody>
</table>
Typical Performance Curves

**Conversion Loss**

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

Frequency (GHz)

**Third Harmonic Suppression**

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

Frequency (GHz)

**Conversion Loss**

- PIN = +12 dBm
- PIN = +14 dBm
- PIN = +16 dBm

Frequency (GHz)

**Third Harmonic Suppression**

- PIN = +12 dBm
- PIN = +14 dBm
- PIN = +16 dBm

Frequency (GHz)

**Input VSWR**

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

Frequency (GHz)

**Input VSWR**

- PIN = +12 dBm
- PIN = +14 dBm
- PIN = +16 dBm

Frequency (GHz)
Absolute Maximum Ratings

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

Fundamental Suppression

Weight: 0.5 gram (0.018 oz.) max

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