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: $Z_0 = 50\Omega$  $P_{in} = +10 \text{ dBm}$

<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°C to +85°C</td>
</tr>
</tbody>
</table>
| SSB Conversion Loss (max) | $f_i = 3.5$ to $4.5$ GHz  
$\quad f_i = 4.5$ to $7.0$ GHz  
$\quad f_i = 7.0$ to $8.0$ GHz | dB  
$\quad$ dB  
$\quad$ dB | 13.0  
$\quad$ 10.2  
$\quad$ 11.2 | 14.0  
$\quad$ 12.5  
$\quad$ 13.5  
$\quad$ 14.5 |
| Fundamental Suppression (min) | $f_i = 3.5$ to $6.5$ GHz  
$\quad f_i = 6.5$ to $8.0$ GHz | dBc  
$\quad$ dBc | 40  
$\quad$ 40 | 28  
$\quad$ 30  
$\quad$ 26 |
| Third Harmonic Suppression (min) | $f_i = 6.5$ to $8.0$ GHz | dBc | 50 | 40  
$\quad$ 38 |

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Typical Performance Curves

Conversion Loss

Third Harmonic Suppression

Conversion Loss

Third Harmonic Suppression

Input VSWR

Input VSWR
Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</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>
<tr>
<td>Peak Input Power</td>
<td>+23 dBm max @ +25°C</td>
</tr>
<tr>
<td></td>
<td>+20 dBm max @ +100°C</td>
</tr>
<tr>
<td>Peak Input Current</td>
<td>50 mA DC</td>
</tr>
</tbody>
</table>

Outline Drawing: Open Carrier

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