CSM2-10

Low Cost High IP3 Mixer for PCS/WLL Applications

Features
- LO & RF 10 TO 2800 MHz
- IF 10 TO 2000 MHz
- LO DRIVE +10 dBm (NOMINAL)
- SURFACE MOUNT
- HIGH INTERCEPT +20 dBm (TYP.)
- +260°C REFLOW COMPATIBLE

Description
The CSM2-10 is a double balanced mixer, designed for use in the high volume wireless applications. The design utilizes Schottky ring quad diodes and broadband baluns to attain excellent performance.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSM2-10</td>
<td>Surface Mount</td>
</tr>
</tbody>
</table>

Electrical Specifications: $Z_0 = 50\Omega$ Lo = +10 dBm (Downconverter application only)

<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>
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<td>+25°C</td>
<td>-40° to +85°C</td>
</tr>
</tbody>
</table>
| SSB Conversion Loss(max)       | $f_R = 10$ to $1200$ MHz, $f_L = 10$ to $1200$ MHz, $f_I = 10$ to $1000$ MHz  
$f_R = 1200$ to $2800$ MHz, $f_L = 1200$ to $2800$ MHz, $f_I = 10$ to $2000$ MHz | dB    | 8.0     | 8.5       | 9.0       |
| SSB Noise Figure               |                                         | dB    | 9.0     | 10.0      | 10.5      |
| L - R Isolation (min)          | $f_L = 10$ to $1200$ MHz  
$f_L = 1200$ to $2800$ MHz | dB    | 35      | 32        | 30        |
| L - I Isolation (min)          | $f_L = 10$ to $2800$ MHz | dB    | 30      | 28        | 26        |
| R - I Isolation (min)          | $f_R = 10$ to $2800$ MHz | dB    | 27      | 23        | 21        |
| 1 dB Conversion Comp.          | $f_L = +10$ dBm | dBm   | +7      |           |           |
| Input IP3                      | $f_L = 10$ to $2800$ MHz  
$f_L = 10$ to $1000$ MHz, $f_R = 10$ to $2800$ MHz  
$f_L = 2000$ to $2800$ MHz, $f_I = 10$ to $2000$ MHz, $f_R = 2000$ to $2800$ MHz | dBm   | +20     |           | +17       |
| R-Port VSWR                    | $f_R = 10$ to $2800$ MHz | 1.80:1|
| L-Port VSWR                    | $f_L = 10$ to $2000$ MHz  
$f_L = 2000$ to $2800$ MHz | 1.90:1| 2.50:1  |
| I-Port VSWR                    | $f_I = 10$ to $2200$ MHz | 1.80:1|         |           |
Typical Performance Curves

- Isolation vs. Frequency
  - L - R
  - L - I
  - R - I

- IF-Port VSWR vs. Frequency
  - VSWR vs. Frequency (MHz)

- Conversion Loss vs. RF Frequency
  - IF=45MHz (L-R)
  - IF=45MHz (L-I)
  - LO=1.2GHz (L-R)

- LO-Port VSWR vs. Frequency
  - VSWR vs. Frequency (MHz)

- Conversion Loss vs. RF Frequency
  - IF=140MHz (L-R)
  - IF=140MHz (L-I)
  - RF=2GHz (L-R)

- RF-Port VSWR vs. Frequency
  - VSWR vs. Frequency (MHz)
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Outline Drawing: Surface Mount

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

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-54ºC to +85ºC</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65ºC to +100ºC</td>
</tr>
<tr>
<td>Peak Input Power</td>
<td>+20 dBm max @ -25ºC</td>
</tr>
<tr>
<td></td>
<td>+17 dBm max @ +85ºC</td>
</tr>
<tr>
<td>Peak Input Current</td>
<td>50 mA DC</td>
</tr>
</tbody>
</table>

Weight: 2 grams (0.07 oz.) max