**MMP18441**

**4.0 TO 18.0 GHz**

**COUGAR MIXERPAK**

**DOUBLE-BALANCED MIXER**

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### Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Port</th>
<th>Frequency (GHz)</th>
<th>Typ. (dB)</th>
<th>Max. (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSB Conversion Loss</td>
<td>f_R</td>
<td>5.0 to 17.0</td>
<td>5.5</td>
<td>6.5</td>
</tr>
<tr>
<td>SSB Noise Figure</td>
<td>f_L</td>
<td>5.0 to 17.0</td>
<td>5.5</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>f_L</td>
<td>DC to 2.0</td>
<td>5.5</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>f_R</td>
<td>4.0 to 18.0</td>
<td>7.0</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>f_R</td>
<td>DC to 2.0</td>
<td>7.0</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>f_L</td>
<td>2.0 to 4.0</td>
<td>8.5</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Conversion Comp. Level = +2 dBm
Desenitization Level = 0 dBm

<table>
<thead>
<tr>
<th>Isolation</th>
<th>Port</th>
<th>Frequency (GHz)</th>
<th>Typ. (dB)</th>
<th>Min. (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>f_L at R</td>
<td>f_L</td>
<td>4.0 to 10.0</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>f_L at I</td>
<td>f_L</td>
<td>4.0 to 10.0</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>f_R at I</td>
<td>f_R</td>
<td>4.0 to 10.0</td>
<td>30</td>
<td>12</td>
</tr>
<tr>
<td>f_L at R</td>
<td>f_L</td>
<td>10.0 to 18.0</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>f_L at I</td>
<td>f_L</td>
<td>10.0 to 18.0</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>f_R at I</td>
<td>f_R</td>
<td>10.0 to 18.0</td>
<td>45</td>
<td>30</td>
</tr>
</tbody>
</table>

Third Order Intercept
LO = -10 dBm
+12 dBm —

* Measured in a 50-ohm system with nominal LO drive of +10 dBm as a downconverter.

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### Absolute Maximum Ratings

- **Storage Temperature**: -65 to +150 °C
- **Peak RF Input Power All Ports**: +22 dBm @ 25 °C derate to +17 dBm @ 100 °C

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**Harmonic Intermodulation Products (single tone)**

<table>
<thead>
<tr>
<th>Harmonics of f_R</th>
<th>Harmonics of f_L</th>
<th>f_R = 4000 MHz @ -10 dBm</th>
<th>f_L = 4030 MHz @ +13 dBm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>94</td>
<td>96</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
</tbody>
</table>

**Harmonic Intermodulation Products (single tone)**

<table>
<thead>
<tr>
<th>Harmonics of f_L</th>
<th>Harmonics of f_R</th>
<th>f_R = 6000 MHz @ -10 dBm</th>
<th>f_L = 6030 MHz @ +13 dBm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>86</td>
<td>85</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
</tbody>
</table>

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**DIMENSIONS ARE IN INCHES [MILLIMETERS]**
Some variation in the R-port VSWR will occur at the L-port.

Conversion Loss vs LO Drive Level

Conversion Loss vs RF Frequency

Power Input at 1 dB Compression

Relative IF Response

 Intercept Point

Isolation (L to I) vs Frequency

Isolation (L to R) vs Frequency

Isolation (R to I) vs Frequency

L-Port VSWR vs Frequency

R-Port VSWR vs Frequency

I-Port VSWR vs Frequency

1 Level of the fL signal fed through to the R- and I-ports with respect to the level of the fL signal at the L-port.

2 VSWR of the I- and R-ports in a 50-ohm system. Some variation in the R-port VSWR will occur as a function of the L-port frequency as shown above.

Conversion loss of the mixer when used in an SSB system. The frequency ordinate refers to the R-port (fR) with fI at 30 MHz.

The maximum recommended drive level is +18 dBm.

The minimum recommended drive level is +5 dBm.

Conversion Loss vs LO Drive Level

Conversion Loss vs RF Frequency

Power Input at 1 dB Compression

Relative IF Response

Intercept Point

FL = 12.0 GHz, Low-Side LO
FI = 30 MHz

FL = 12.0 GHz, Low-Side LO
FI = 30 MHz

FL = 12.0 GHz, Low-Side LO
RF = -10 dBm
Low-Side LO

Approximate performance at +25 °C, +85 °C, and -55 °C.

Copyright 2015. All rights reserved. Specifications subject to change without notice. FL = 12.0 GHz at +10 dBm

FL = 12.03 GHz, Low-Side LO
FI = 30 MHz

FL = 12.0 GHz, Low-Side LO
RF = -10 dBm
Low-Side LO

The maximum recommended drive level is +18 dBm.

The minimum recommended drive level is +5 dBm.

Conversion Loss vs LO Drive Level

Conversion Loss vs RF Frequency

Power Input at 1 dB Compression

Relative IF Response

Intercept Point

FL = 12.0 GHz, Low-Side LO
FI = 30 MHz

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FI = 30 MHz

FL = 12.0 GHz, Low-Side LO
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RF = -10 dBm
Low-Side LO

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