DOUBLE-BALANCED MIXERS

Features
- LO/RF 2.0 to 12.0 GHz
- IF DC to 2.0 GHz
- 6.0 dB Typical Conversion Loss
- 35 dB Typical LO to RF Isolation
- Ultra-Broadband LO and RF

Electrical Specifications - Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>LO (GHz)</th>
<th>RF (GHz)</th>
<th>IF (GHz)</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Diode Option LO drive level (dBm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversion Loss (dB)</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td>DC-1.0</td>
<td>6.0</td>
<td>7.0</td>
<td>7.5</td>
<td></td>
</tr>
<tr>
<td>Isolation (dB)</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td>1.0-2.0</td>
<td>25</td>
<td></td>
<td></td>
<td>See Plots</td>
</tr>
<tr>
<td>LO-RF</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LO-IF</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RF-IF</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input 1 dB Compression (dBm)</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td></td>
<td>+2</td>
<td>+5</td>
<td>+8</td>
<td>+11 (L (+7 to +10))</td>
</tr>
<tr>
<td>Input Two-Tone Third Order</td>
<td>2.0-12.0</td>
<td>2.0-12.0</td>
<td></td>
<td>+12</td>
<td>+15</td>
<td>+18</td>
<td>+21 (M (+10 to +13))</td>
</tr>
<tr>
<td>Intercept Point (dBm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H (+13 to +16)</td>
</tr>
</tbody>
</table>

Part Number Options

Please specify diode level and package style by adding to model number.

<table>
<thead>
<tr>
<th>Package Options</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectorized</td>
<td>M1-0212LP</td>
</tr>
</tbody>
</table>

Package Options Not Recommended for New Designs

<table>
<thead>
<tr>
<th>Microstrip 1,2</th>
<th>Model</th>
<th>Diode Option</th>
<th>Package</th>
<th>I-Port Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>M1-0212</td>
<td>L</td>
<td>E</td>
<td>-2</td>
</tr>
</tbody>
</table>

1Connectorized test fixtures available for most microstrip packages. Consult factory.
2For non-connectorized packages, specify I-port configuration by adding –1 or –2 suffix to model number. Default is –2 configuration when not specified.

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M1-0212

LO/RF 2.0 to 12.0 GHz
IF DC to 2.0 GHz

Typical Performance

Conversion Loss (dB)

Relative IF Response (dB)

LO to RF Isolation (dB)

LO to IF Isolation (dB)

RF to IF Isolation (dB)

IF VSWR

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DATA SHEET NOTES:

1. Mixer Conversion Loss Plot IF frequency is 100 MHz.
2. Mixer Noise Figure typically measures within +0.5 dB of conversion loss for IF frequencies greater than 5 MHz.
3. Conversion Loss typically degrades less than 0.5 dB for LO drives 2 dB below the lowest and 3 dB above highest nominal LO drive levels.
4. Conversion Loss typically degrades less than 0.5 dB at +100°C and improves less than 0.5 dB at -55°C.
5. Maximum input power is +23 dBm at +25°C, derated linearly to +20 dBm at +100°C.
6. Specifications are subject to change without notice. Contact Marki Microwave for the most recent specifications and data sheets.
7. Standard configuration for A, B, and C outlines are with connectors and bottom spacer.
8. Catalog mixer circuits are continually improved. Configuration control requires custom mixer model numbers and specifications.