DOUBLE-BALANCED MIXERS

M1-0220

Features
- LO/RF 2.0 to 20.0 GHz
- IF DC to 2.0 GHz
- 7.0 dB Typical Conversion Loss
- 35 dB Typical LO to RF Isolation
- Ultra-Broadband RF and LO

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>2.0-20.0</td>
<td>2.0-20.0</td>
<td>DC-1.0</td>
<td>7.0</td>
<td>8.0</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>Isolation (dB)</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>LO (+10 to +13)</td>
</tr>
<tr>
<td>LO-RF</td>
<td>2.0-20.0</td>
<td>2.0-20.0</td>
<td></td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>M (+13 to +16)</td>
</tr>
<tr>
<td>LO-IF</td>
<td>2.0-20.0</td>
<td>2.0-20.0</td>
<td></td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>N (+16 to +19)</td>
</tr>
<tr>
<td>RF-IF</td>
<td>2.0-20.0</td>
<td>2.0-20.0</td>
<td></td>
<td>25</td>
<td>25</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Input 1 dB Compression (dBm)</td>
<td>2.0-20.0</td>
<td>2.0-20.0</td>
<td></td>
<td>+3</td>
<td>+6</td>
<td>+9</td>
<td>L (+10 to +13)</td>
</tr>
<tr>
<td>Input Two-Tone Third Order Intercept Point (dBm)</td>
<td>2.0-20.0</td>
<td>2.0-20.0</td>
<td></td>
<td>+13</td>
<td>+16</td>
<td>+19</td>
<td>M (+13 to +16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N (+16 to +19)</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>M1-0220LP</td>
</tr>
</tbody>
</table>

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M1-0220

LO/RF 2.0 to 20.0 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**

**LO Port VSWR**

**RF Port VSWR**

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.

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