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
- For a list of recommended LO driver amps for all mixers and IQ mixers, see here.

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

| Parameter                           | LO (GHz) | RF (GHz) | IF (GHz) | Min  | Typ  | Max  | Diode Option
|-------------------------------------|----------|----------|----------|------|------|------|---------------
| Conversion Loss (dB)                | 2.0-12.0 | 2.0-12.0 | DC-1.0   | 6.0  | 7.5  | 8.5  | LO drive level (dBm)
| Isolation (dB)                      | 2.0-12.0 | 2.0-12.0 | 1.0-2.0  | 7.0  | 8.5  |      |               
| LO-RF                               | 2.0-12.0 | 2.0-12.0 |          |      |      |      | L (+7 to +10)  
| LO-IF                               | 2.0-12.0 | 2.0-12.0 |          |      |      |      | M (+10 to +13) 
| RF-IF                               | 2.0-12.0 | 2.0-12.0 |          |      |      |      | N (+13 to +16) 
| Input 1 dB Compression (dBm)        | 2.0-12.0 | 2.0-12.0 |          |      | +2   | +8   | L (+7 to +10)  
|                                      |          |          |          |      | +5   | +11  | M (+10 to +13) 
|                                      |          |          |          |      | +8   |      | N (+13 to +16) 
|                                      |          |          |          |      | +11  |      | H (+16 to +19) 
| Input Two-Tone Third Order Intercept Point (dBm) | 2.0-12.0 | 2.0-12.0 |          |      | +12  | +18  | L (+7 to +10)  
|                                      |          |          |          |      | +15  | +21  | M (+10 to +13) 
|                                      |          |          |          |      | +18  |      | N (+13 to +16) 
|                                      |          |          |          |      | +21  |      | H (+16 to +19) 

Part Number Options

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

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<tr>
<th>Package Options</th>
<th>Examples</th>
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<td>Connectorized</td>
<td>P M1-0212LP</td>
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<table>
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<tr>
<th>Package Options Not Recommended for New Designs</th>
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<tr>
<td>Microstrip ¹ ²</td>
<td>M1-0212</td>
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<td>E L E -2</td>
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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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DOUBLE-BALANCED MIXERS  
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

RF Frequency (GHz)
RF Frequency (GHz)
LO Frequency (GHz)
LO Frequency (GHz)
RF Frequency (GHz)
IF Frequency (MHz)
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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