

## HIGH ISOLATION DOUBLE-BALANCED MIXERS

**M1-0310**

### Features

- LO/RF 3.0 to 10.0 GHz
- IF DC to 3.0 GHz
- 6.0 dB Typical Conversion Loss
- 50 dB Typical LO to RF Isolation
- Carrier and Surface Mount Outlines
- Multi-Octave Band RF and LO
- 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 LO drive level (dBm)
Conversion Loss (dB)	3.0-10.0	3.0-10.0	DC-1.0		6.0	9.0	
	3.0-10.0	3.0-10.0	1.0-3.0		6.5	9.5	
Isolation (dB) <sup>1</sup>	LO-RF	3.0-10.0			40		
	LO-IF	3.0-10.0			40		
	RF-IF	3.0-10.0			25		
Input 1 dB Compression (dBm)	3.0-10.0	3.0-10.0			+2		L (+7 to +10)
					+5		M (+10 to +13)
					+8		N (+13 to +16)
					+11		H (+16 to +19)
Input Two-Tone Third Order Intercept Point (dBm)	3.0-10.0	3.0-10.0			+12		L (+7 to +10)
					+15		M (+10 to +13)
					+18		N (+13 to +16)
					+21		H (+16 to +19)

<sup>1</sup>High 2<sup>nd</sup>/3<sup>rd</sup> LO Harmonics can mix to produce a higher intermodulation output than the actual isolation output.

### Part Number Options

Please specify diode level and package style by adding to model number.					
Package Options		Examples			
Microstrip <sup>1,2</sup>	<a href="#">E</a>	<u>M1-0310</u>	<u>L</u>	<u>E</u>	<u>-2</u>
Connectorized	<a href="#">P</a>	(Model)	(Diode Option)	(Package)	(I-Port Configuration)

<sup>1</sup>Connectorized test fixtures available for most microstrip packages. Consult factory.

<sup>2</sup>For non-connectorized packages, specify I-port configuration by adding -1 or -2 suffix to model number. Default is -2 configuration when not specified.

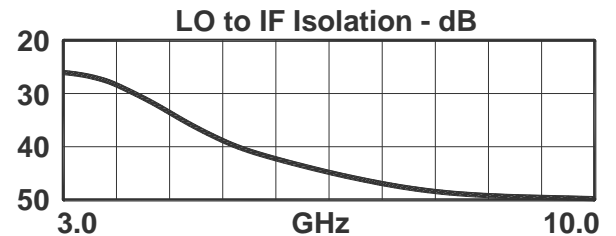
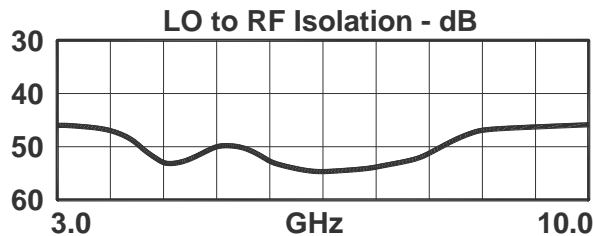
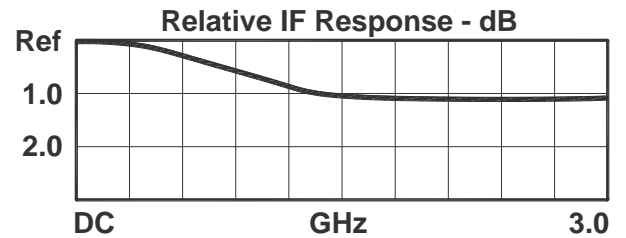
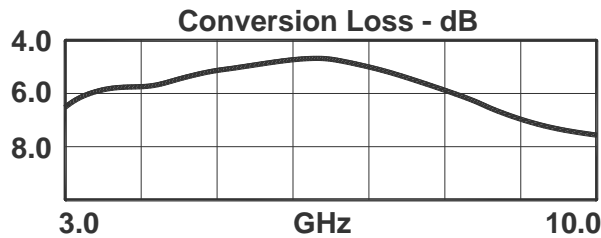
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LO/RF 3.0 to 10.0 GHz  
IF DC to 3.0 GHz

Typical Performance



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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