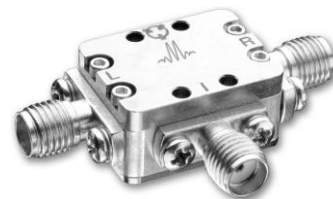


# HIGH ISOLATION DOUBLE-BALANCED MIXERS

**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	3.0-10.0 3.0-10.0	DC-1.0 1.0-3.0		6.0 6.5	9.0 9.5	
Isolation (dB) <sup>1</sup>							
LO-RF	3.0-10.0	3.0-10.0			40		
LO-IF	3.0-10.0	3.0-10.0			40		
RF-IF	3.0-10.0	3.0-10.0			25		
Input 1 dB Compression (dBm)	3.0-10.0	3.0-10.0			+2 +5 +8 +11		L (+7 to +10) M (+10 to +13) N (+13 to +16) H (+16 to +19)
Input Two-Tone Third Order Intercept Point (dBm)	3.0-10.0	3.0-10.0			+12 +15 +18 +21		L (+7 to +10) M (+10 to +13) N (+13 to +16) 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				
Connectorized	<u>P</u>		M1-0310LP				
Package Options Not Recommended for New Designs			Examples				
Microstrip <sup>1,2</sup>	<u>E</u>		<u>M1-0310</u> (Model)	<u>L</u> (Diode Option)	<u>E</u> (Package)	<u>-2</u> (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.

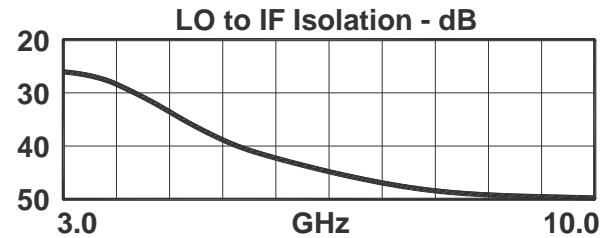
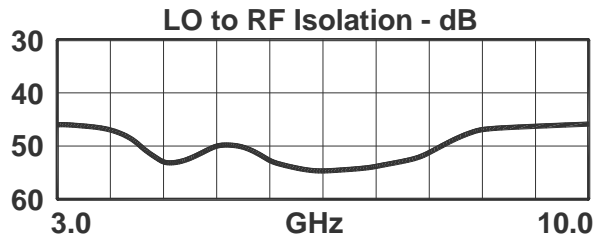
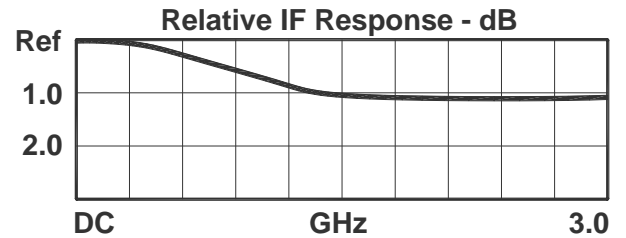
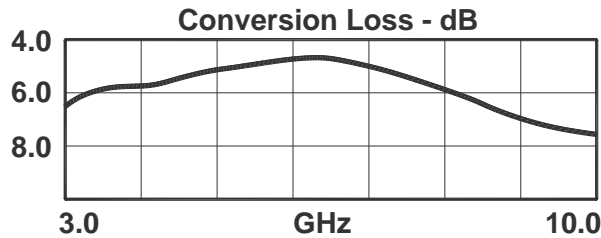
# HIGH ISOLATION DOUBLE-BALANCED MIXERS

**M1-0310**

Page 2

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.

Marki Microwave reserves the right to make changes to the product(s) or information contained herein without notice. Marki Microwave makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does Marki Microwave assume any liability whatsoever arising out of the use or application of any product.