

## DOUBLE-BALANCED MIXERS

**M4-0220**

### Features

- LO/RF 2 to 20 GHz
- IF DC to 700 MHz
- 7 dB Typical Conversion Loss
- 25 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.

Parameter	LO (GHz)	RF (GHz)	IF (MHz)	Min	Typ	Max	Diode Option LO drive level (dBm)
Conversion Loss (dB)	2-20	2-20	DC-500 500-700		7.0 7.5	8.5 9.0	
Isolation (dB) LO-RF LO-IF RF-IF	2-20	2-20		20	See Plots		
Input 1 dB Compression (dBm)	2-20	2-20			+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)	2-20	2-20			+12 +15 +18 +21		L (+7 to +10) M (+10 to +13) N (+13 to +16) H (+16 to +19)

### Part Number Options

Please specify diode level and package style by adding to model number.					
Package Styles		Examples			
Connectorized	<u>A</u>	M4-0220LA, M4-0220LEZ-2			
Microstrip <sup>1,2</sup>	<u>E</u>	<u>M4-0220</u>	<u>L</u>	<u>EZ</u>	<u>-2</u>
Surface Mount <sup>1,2</sup>	<u>EZ</u>	(Model)	(Diode Option)	(Package)	(I-Port Configuration)

<sup>1</sup>Connectorized test fixtures available for most carrier and surface mount 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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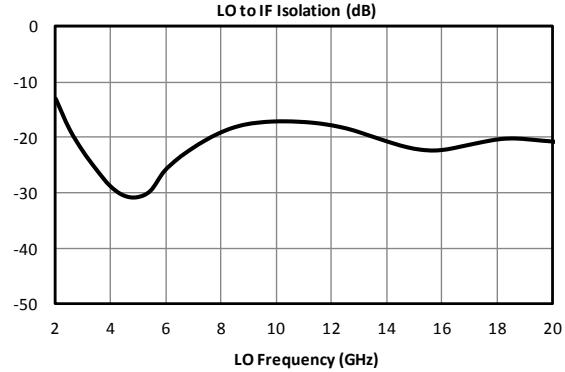
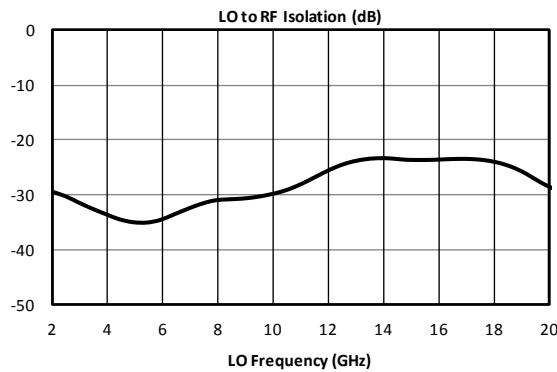
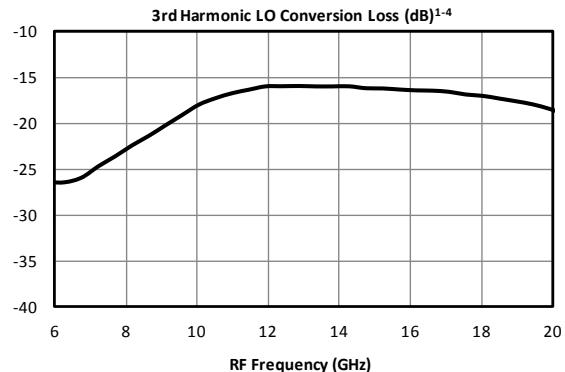
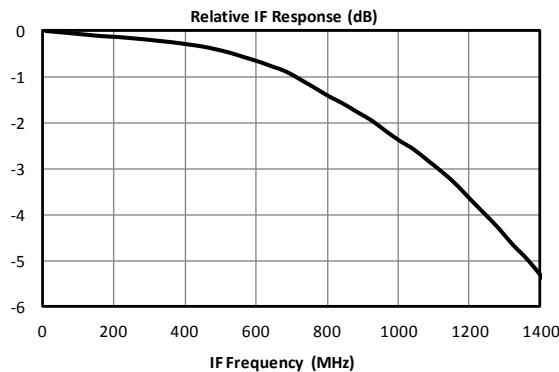
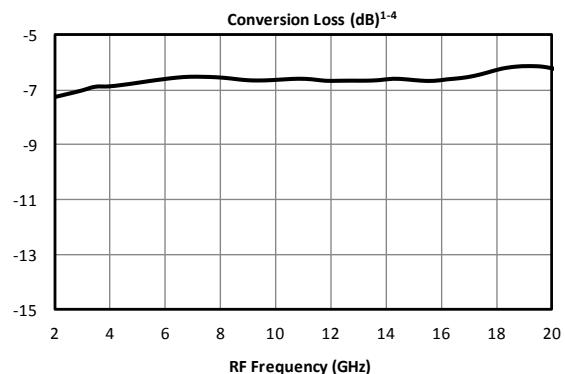
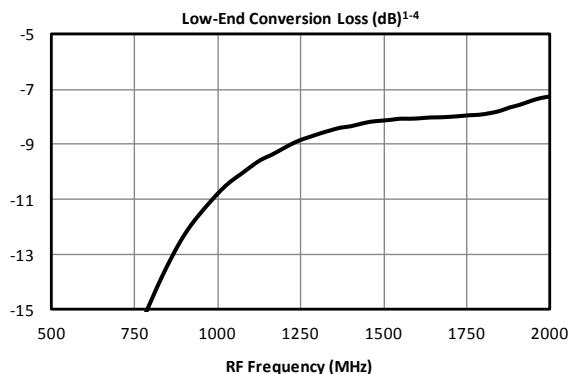
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**LO/RF 2 to 20 GHz  
IF DC to 700 MHz**

Typical Performance



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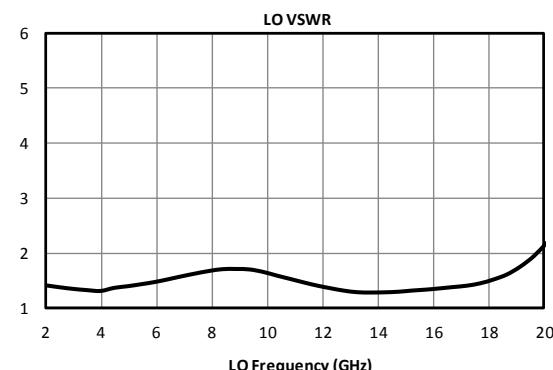
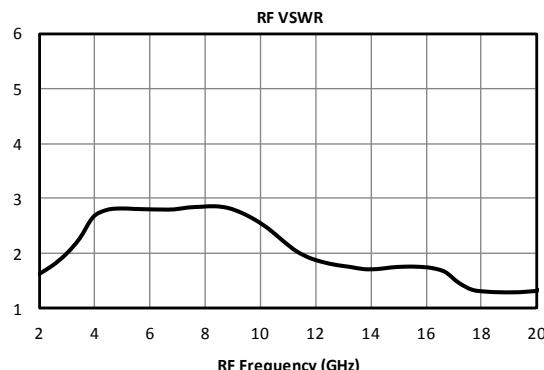
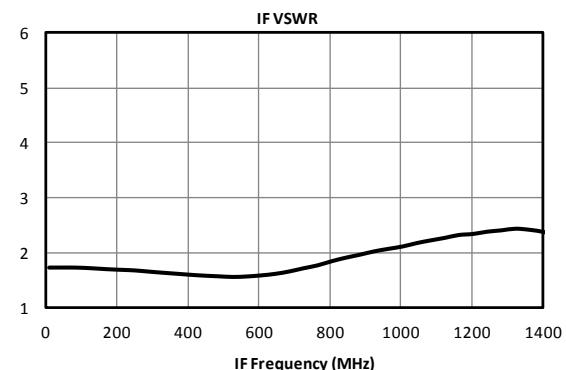
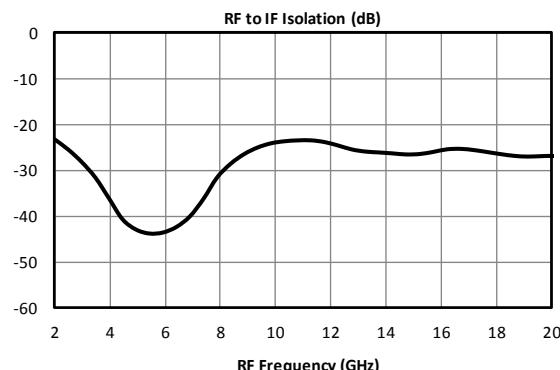
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### Typical Performance



### DATA SHEET NOTES:

1. Mixer Conversion Loss Plot is done with an IF frequency of 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. Catalog mixer circuits are continually improved. Configuration control requires custom mixer model numbers and specifications.

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