

## DOUBLE-BALANCED MIXERS

## M1-0420

### Features

- LO/RF 4.0 to 20.0 GHz
- IF DC to 4.0 GHz
- 6.0 dB Typical Conversion Loss
- 35 dB Typical LO to RF Isolation
- Very-Broadband 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)	4.0-20.0 4.0-20.0	4.0-20.0 4.0-20.0	DC-2.0 2.0-4.0		6.0 7.5	8.0 9.0	
Isolation (dB)				20			
LO-RF	4.0-20.0	4.0-20.0			35		
LO-IF	4.0-20.0	4.0-20.0			30		
RF-IF	4.0-20.0	4.0-20.0			25		
Input 1 dB Compression (dBm)	4.0-20.0	4.0-20.0			+2 +5 +8 +11 +14		L (+7 to +10) M (+10 to +13) N (+13 to +16) H (+16 to +19) S (+19 to +22)
Input Two-Tone Third Order Intercept Point (dBm)	4.0-20.0	4.0-20.0			+12 +15 +18 +21 +24		L (+7 to +10) M (+10 to +13) N (+13 to +16) H (+16 to +19) S (+19 to +22)

### Part Number Options

<i>Please specify diode level and package style by adding to model number.</i>						
Package Options		Examples				
Microstrip <sup>1,2</sup>	<u>E</u>	<u>M1-0420</u>	<u>L</u>	<u>E</u>	<u>-2</u>	
Connectorized	<u>P</u>	(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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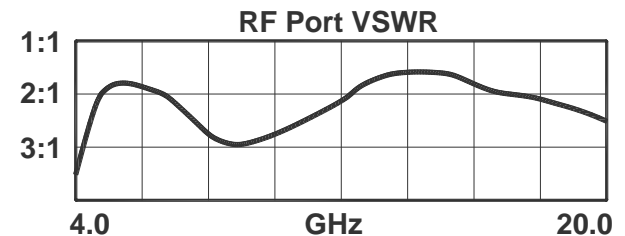
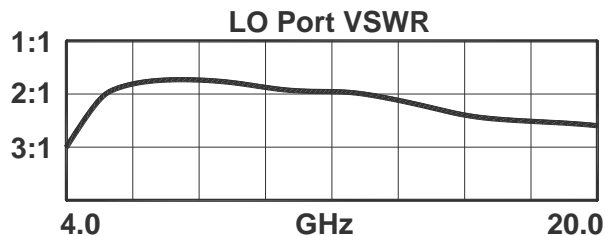
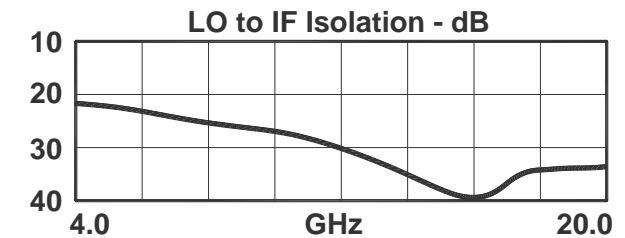
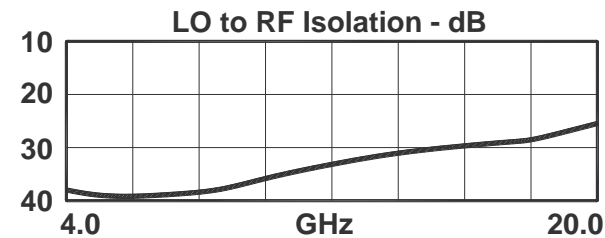
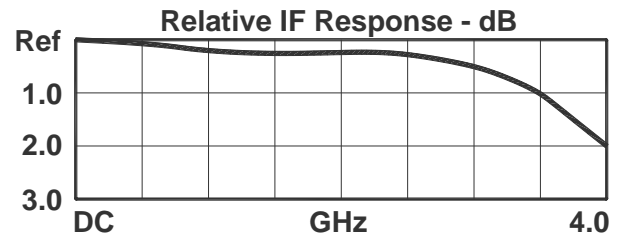
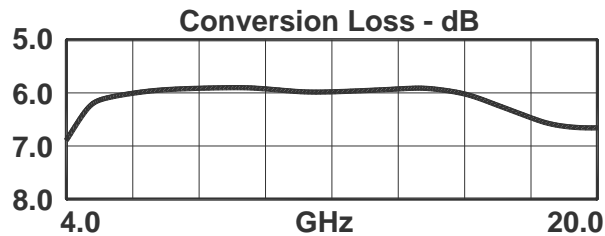
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LO/RF 4.0 to 20.0 GHz  
IF DC to 4.0 GHz

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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