

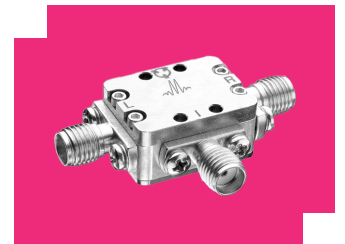
M2-0218NP

Triple-Balanced Mixers

DEVICE OVERVIEW

General Description

M2 triple balanced mixers are hybrid assemblies that have been hand-tuned to feature low conversion loss and high isolations. M2 mixers offer ultrabroadband overlapping frequency coverage on all 3 ports. Many M2 mixers have replaced with MM2 mixers with superior performance, repeatability, and availability. M2 mixers suitable for systems where an MM2 mixer is not available.



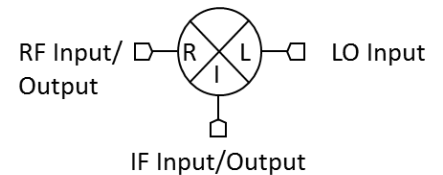
Features

- LO/RF 2.0 to 18.0 GHz
- IF .001 to 6.0 GHz
- 7.5 dB Typical Conversion Loss
- 25 dB Typical LO to RF Isolation
- Ultra-Broadband RF, LO, and IF

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification
M2-0218NP	Triple-Balanced Mixers	P	<u>Standard</u>		Not Recommended for New Design	EAR99
<u>M2-0218LP</u>	Triple-Balanced Mixers	P	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99
<u>M2-0218MP</u>	Triple-Balanced Mixers	P	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99
<u>M2-0218HP</u>	Triple-Balanced Mixers	P	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99

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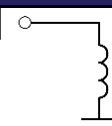
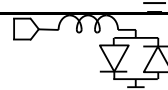
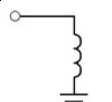
- Outline Drawing

■ Notes

NOT RECOMMENDED FOR NEW DESIGN

Port Configuration and Functions

Port Functions

Port	Function	Connector Type	Description	Equivalent Circuit for Package
Port 1	LO	SMAF	Port 1 is DC short for the P package.	P1 
Port 2	IF	SMAF	Port 2 is diode connected for the P Package.	
Port 3	RF	SMAF	Port 3 is DC short for the P Package.	P3 

Specifications

Package Information

Parameter	Details	Rating
Weight	Package name: P	18g
Dimensions	-	20.32x14.99mm

Recommended Operating Conditions

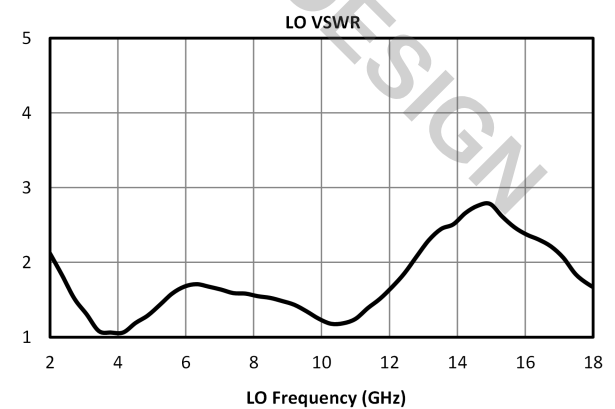
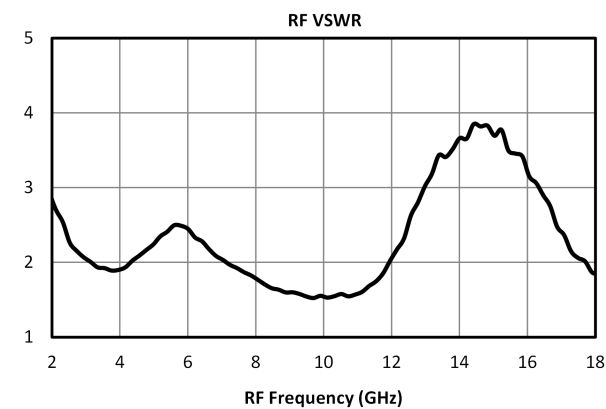
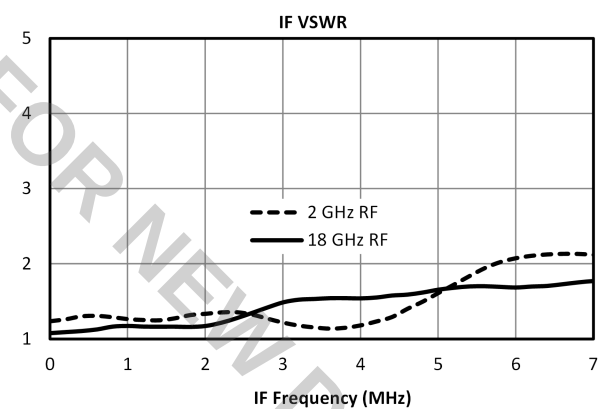
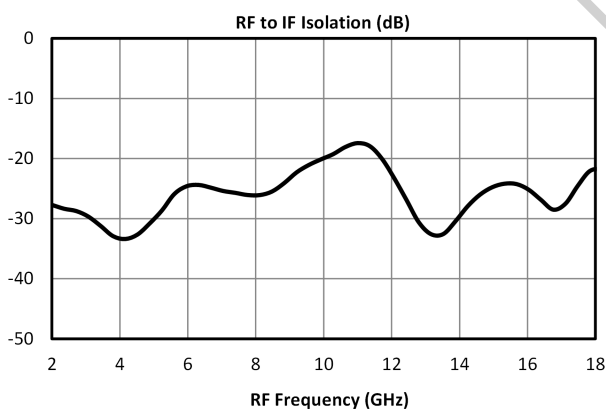
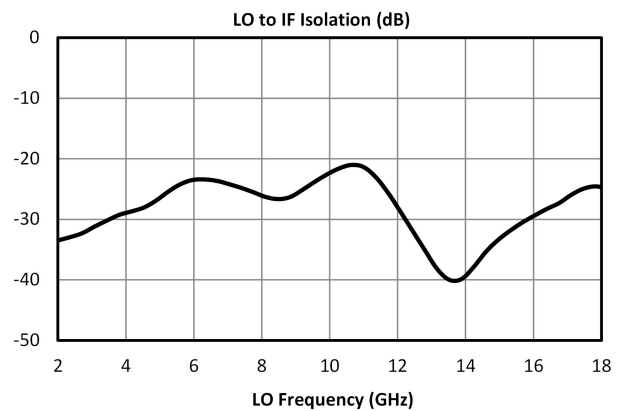
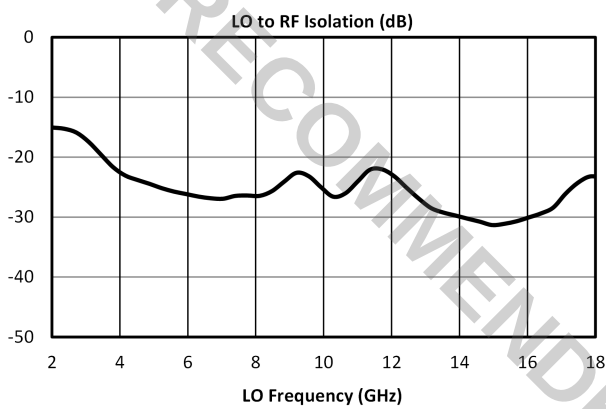
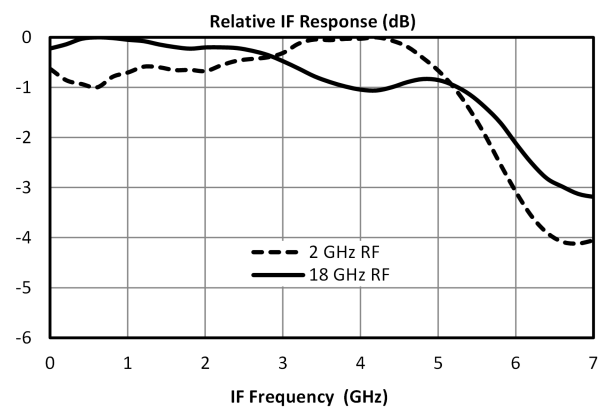
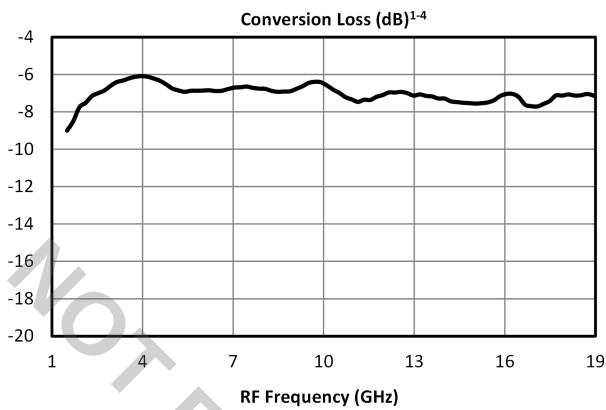
Parameter	Min	Nominal	Max	Unit
LO Input Power	16	-	19	dBm

Electrical Specifications

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

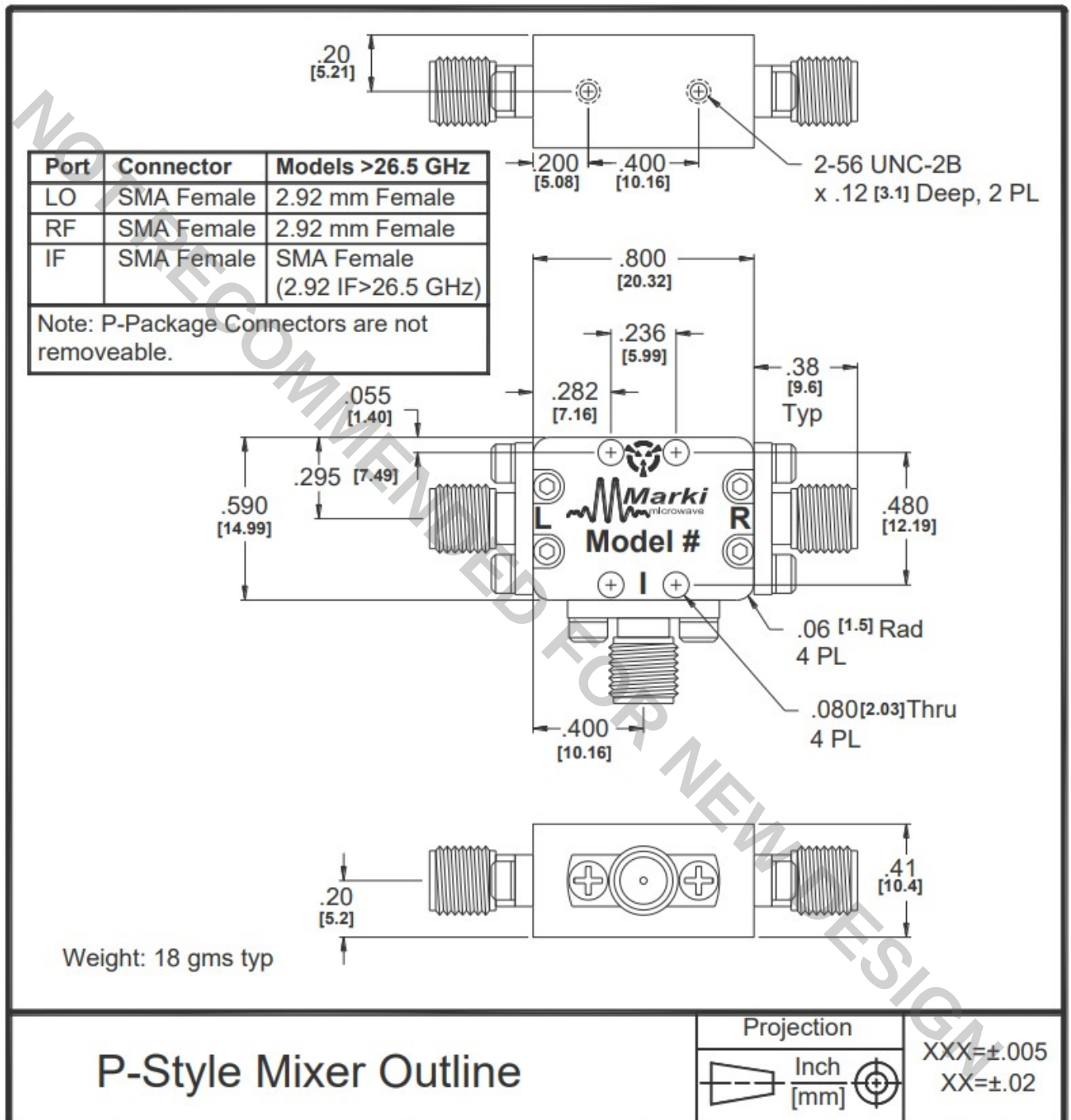
Parameter	Test Conditions	Min	Typ	Max	Unit
RF Frequency Range	-	2	-	18	GHz
RF Frequency Range	-	2	-	18	GHz
Conversion Loss	LO/RF=2-18 GHz IF=0.001-2 GHz	-	7.5	9.5	dB
Conversion Loss	LO/RF=2-18 GHz IF=2-4 GHz	-	8	10	dB
Conversion Loss	LO/RF=2-18 GHz IF=4-6 GHz	-	8.5	11	dB
Isolation, LO to RF	LO/RF=2-18 GHz	12	25	-	dB
Isolation, LO to RF	LO/RF=4-18 GHz	-	27	-	dB
Isolation, LO to IF	LO/RF=2-18 GHz	-	27	-	dB
Isolation, RF to IF	LO/RF=2-18 GHz	-	25	-	dB
Input IP3	LO/RF=2-18 GHz LO drive level, N Diode Option=16-19 dBm	-	21	-	dB
IF Frequency Range	-	0	-	2	GHz
IF Frequency Range	-	0.001	-	6	GHz
Input 1 dB Compression	LO/RF=2-18 GHz LO drive level, N Diode Option=16-19 dBm	-	11	-	dBm

Typical Performance Plots



Mechanical Data

Outline Drawing



Notes

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 +26 dBm at +25°C, derated linearly to +23 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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