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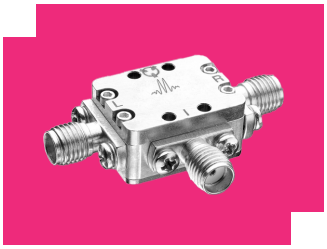
M2H-0226MP

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.



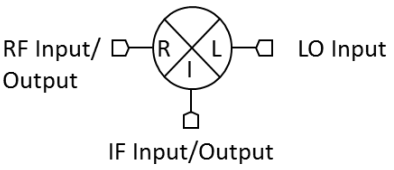
Features

- LO/RF 2.0 to 26.5 GHz
- IF 1.0 to 10.0 GHz
- 7.5 dB Typical Conversion Loss
- 30 dB Typical LO to RF Isolation
- Ultra-Broadband RF, LO, and IF

Applications

N/A

Functional Block Diagram



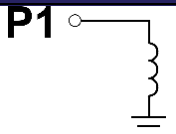
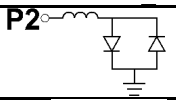
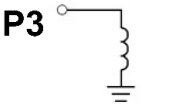
Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification	Recommended Replacement
M2H-0226MP	Triple-Balanced Mixers	P	Standard	Consult Factory	Not Recommended for New Design	EAR99	T3-20GLS
M2H-0226LP	Triple-Balanced Mixers	P	Standard	Consult Factory	End of Life	EAR99	T3-20GLS

Table Of Contents

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.	
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.	

Specifications

Package Information

Parameter	Details	Rating
Weight	Package name: P	18g
Dimensions	-	20.32 x 14.99 mm

Recommended Operating Conditions

Parameter	Min	Nominal	Max	Unit
LO Input Power	13	-	16	-

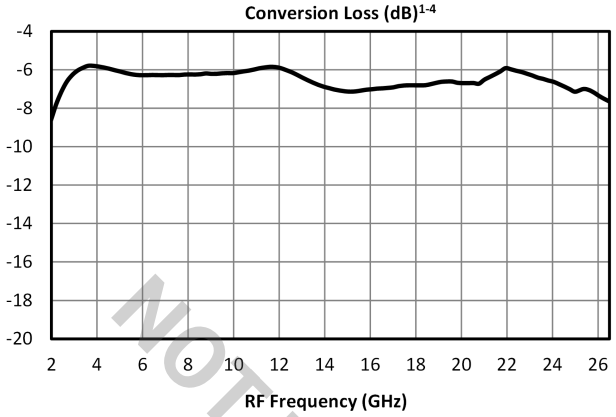
Electrical Specifications

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

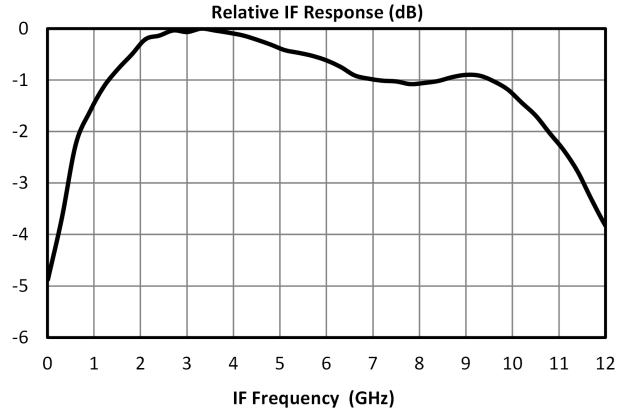
Parameter	Test Conditions	Min	Typ	Max	Unit
Conversion Loss	LO/RF=20-26.5 GHz IF=1-10 GHz	-	11	14.5	dB
Conversion Loss	LO/RF=20-26.5 GHz IF=2-6 GHz	-	9.5	13	dB
Conversion Loss	LO/RF=20-26.5 GHz IF=2-8 GHz	-	10	13.5	dB
Conversion Loss	LO/RF=2-20 GHz IF=1-10 GHz	-	9	12.5	dB
Conversion Loss	LO/RF=2-20 GHz IF=2-6 GHz	-	7.5	11	dB
Conversion Loss	LO/RF=2-20 GHz IF=2-8 GHz	-	8	11.5	dB
Input 1 dB Compression	LO/RF=2-26.5 GHz LO drive level, M Diode Option=13-16 dBm	-	8	-	dBm
Input IP3	LO/RF=2-26.5 GHz LO drive level, M Diode Option=13-16 dBm	-	18	-	dBm
Isolation, LO to IF	LO/RF=2-26.5 GHz	-	27	-	dB
Isolation, LO to RF	LO/RF=2-26.5 GHz	15	28	-	dB
Isolation, RF to IF	LO/RF=2-26.5 GHz	-	26	-	dB
IF Frequency Range	-	1	-	10	GHz
RF Frequency Range	-	2	-	26.5	GHz

Typical Performance Plots

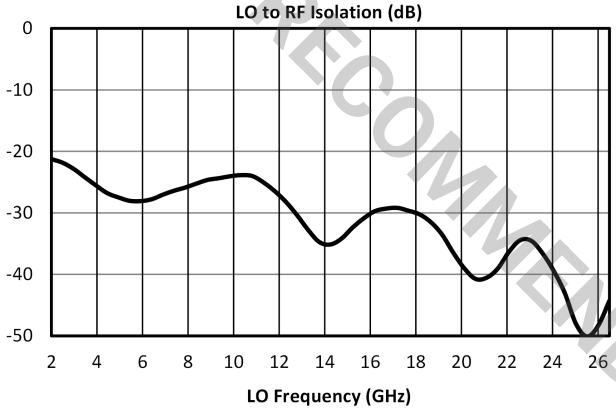
Conversion Loss (dB)[1-4]



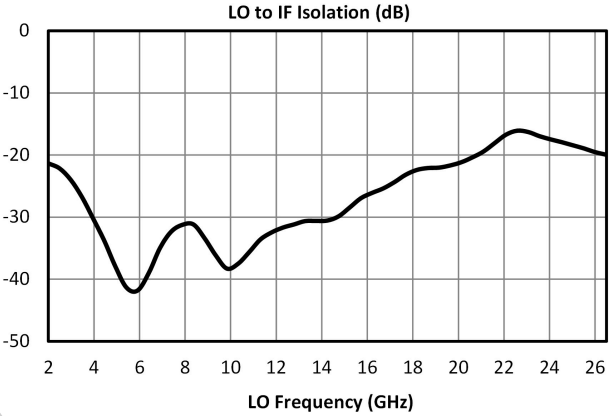
Relative IF Response (dB)



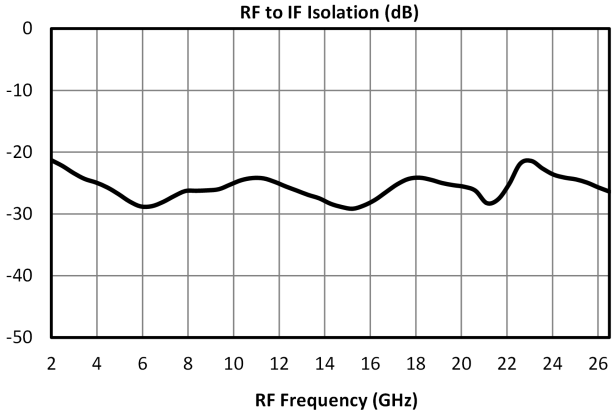
LO to RF Isolation (dB)



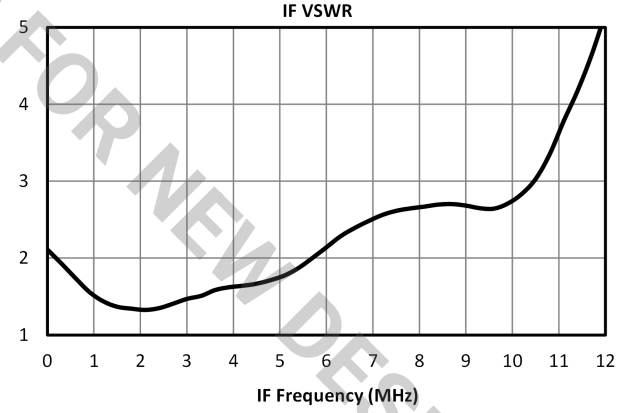
LO to IF Isolation (dB)



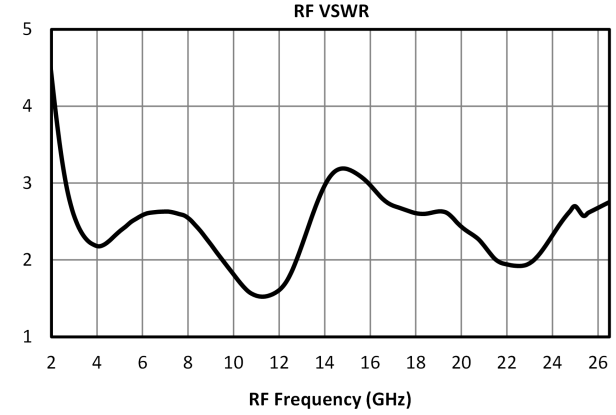
RF to IF Isolation (dB)



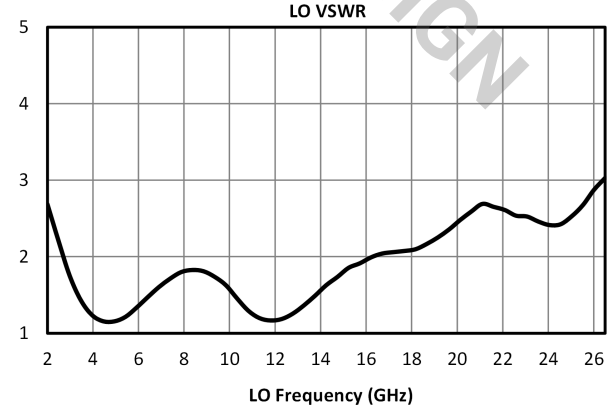
IF VSWR



RF VSWR



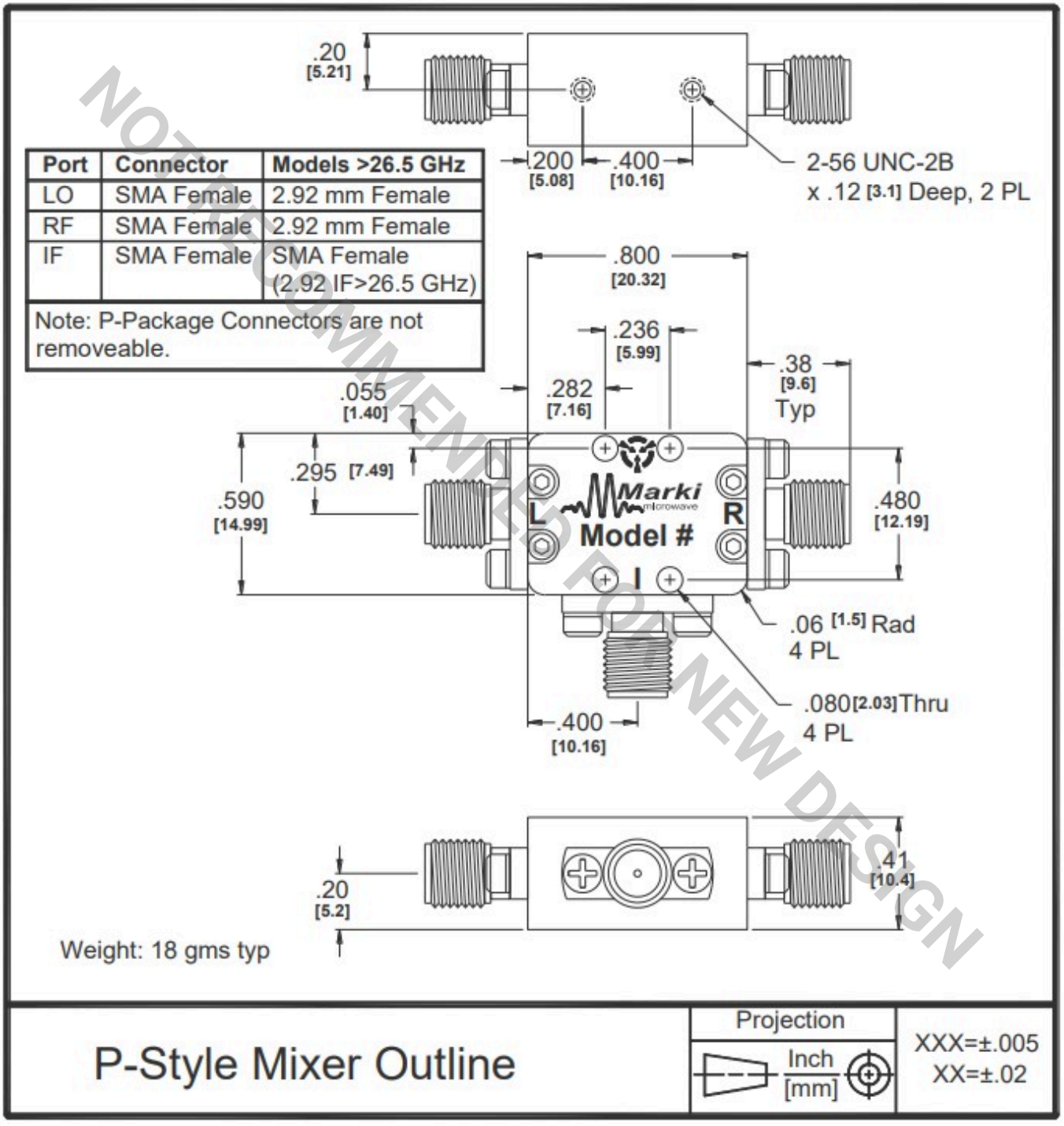
LO VSWR



Mechanical Data

Outline Drawing

Download : Outline 3D Drawing | Outline 3D STP



Port	Connector	Models >26.5 GHz
LO	SMA Female	2.92 mm Female
RF	SMA Female	2.92 mm Female
IF	SMA Female	SMA Female (2.92 IF>26.5 GHz)

Note: P-Package Connectors are not removeable.

Notes

DATA SHEET NOTES:

1. Mixer Conversion Loss Plot IF frequency is 2.0 GHz.
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 and B Outlines are with connectors and bottom spacer.
8. Catalog mixer circuits are continually improved. Configuration control requires custom mixer model numbers and specifications.

DISCLAIMER