

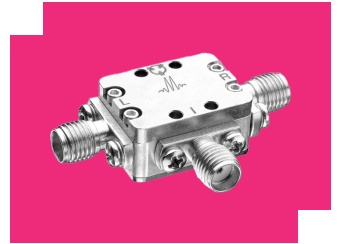
M2-0240LPV

Triple-Balanced 2 - 40 GHz 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.



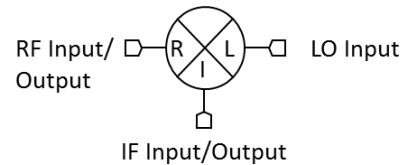
Features

- LO/RF 2.0 to 40.0 GHz
- IF .001 to 6.0 GHz
- 9.0 dB Typical Conversion Loss
- 30 dB Typical LO to RF Isolation
- Ultra-Broadband RF, LO, and IF
- Available with 2.92 or 2.40 mm Connectors

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Connectors	Green Status	Product Lifecycle	Export Classification	Recommended Replacement
M2-0240LP	Triple-Balanced 2 - 40 GHz Mixers	Standard	Non-RoHS	Not Recommended for New Design	EAR99	-
M2-0240LPV	Triple-Balanced 2 - 40 GHz Mixers	Standard	Consult Factory.	Not Recommended for New Design	EAR99	-

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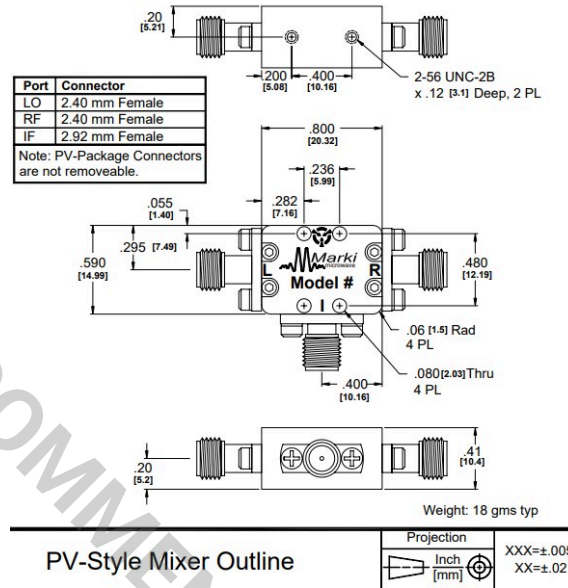
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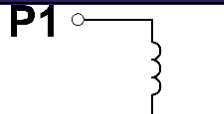
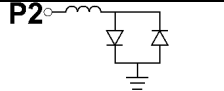
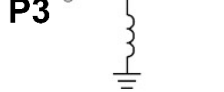
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Port Configuration and Functions

Port Diagram



Port Functions

Port	Function	Connector Type	Description	Equivalent Circuit for Package
Port 1	LO	2.4F	Port 1 is DC short for the PV package.	P1 
Port 2	IF	2.4F	Port 2 is diode connected for the PV Package.	P2 
Port 3	RF	2.92F	Port 3 is DC short for the PV Package.	P3 

Specifications

Package Information

Parameter	Details	Rating
Weight	-	18g
Dimensions	-	20.32 x 14.99 mm

Recommended Operating Conditions

Parameter	Min	Nominal	Max	Unit
LO Input Power	15	-	20	-

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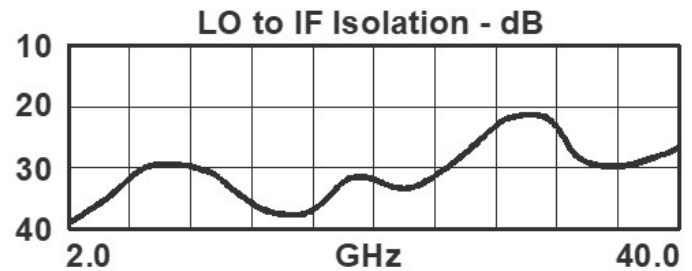
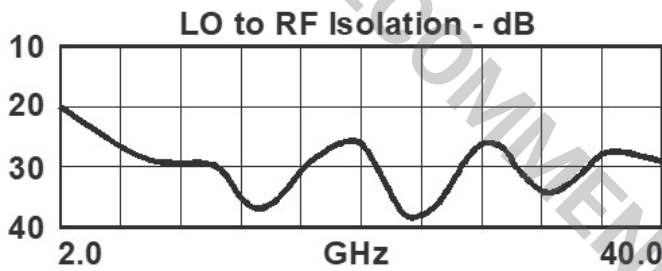
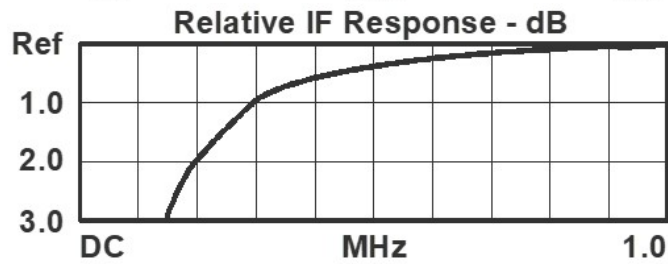
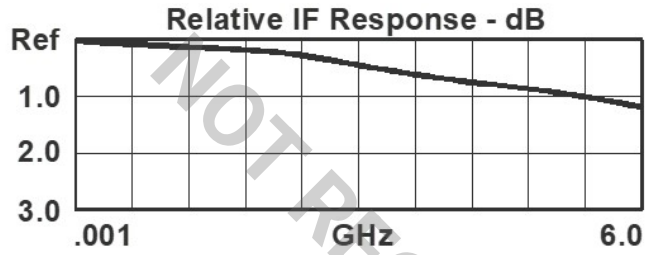
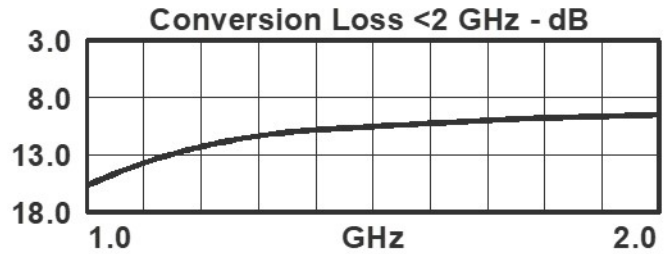
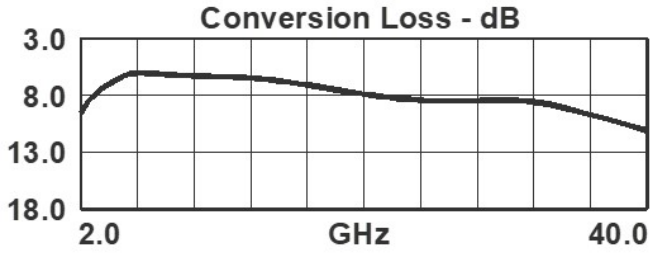
Electrical Specifications

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

Parameter	Test Conditions	Min	Typ	Max	Unit
Conversion Loss	LO/RF=2-40 GHz IF=.001-4 GHz	-	9	14	dB
Conversion Loss	LO/RF=2-40 GHz IF=4-6 GHz	-	10	15	dB
Input 1 dB Compression	LO/RF=2-40 GHz L diode level 15-20 dBm	-	5	-	dBm
Input IP3	LO/RF=2-40 GHz L diode level 15-20 dBm	-	15	-	dBm
Isolation, LO to IF	LO/RF=2-40 GHz	-	30	-	dB
Isolation, LO to RF	LO/RF=2-40 GHz	-	30	-	dB
Isolation, RF to IF	LO/RF=2-40 GHz	-	20	-	dB
IF Frequency Range	-	0.001	-	6	GHz
RF Frequency Range	-	2	-	40	GHz

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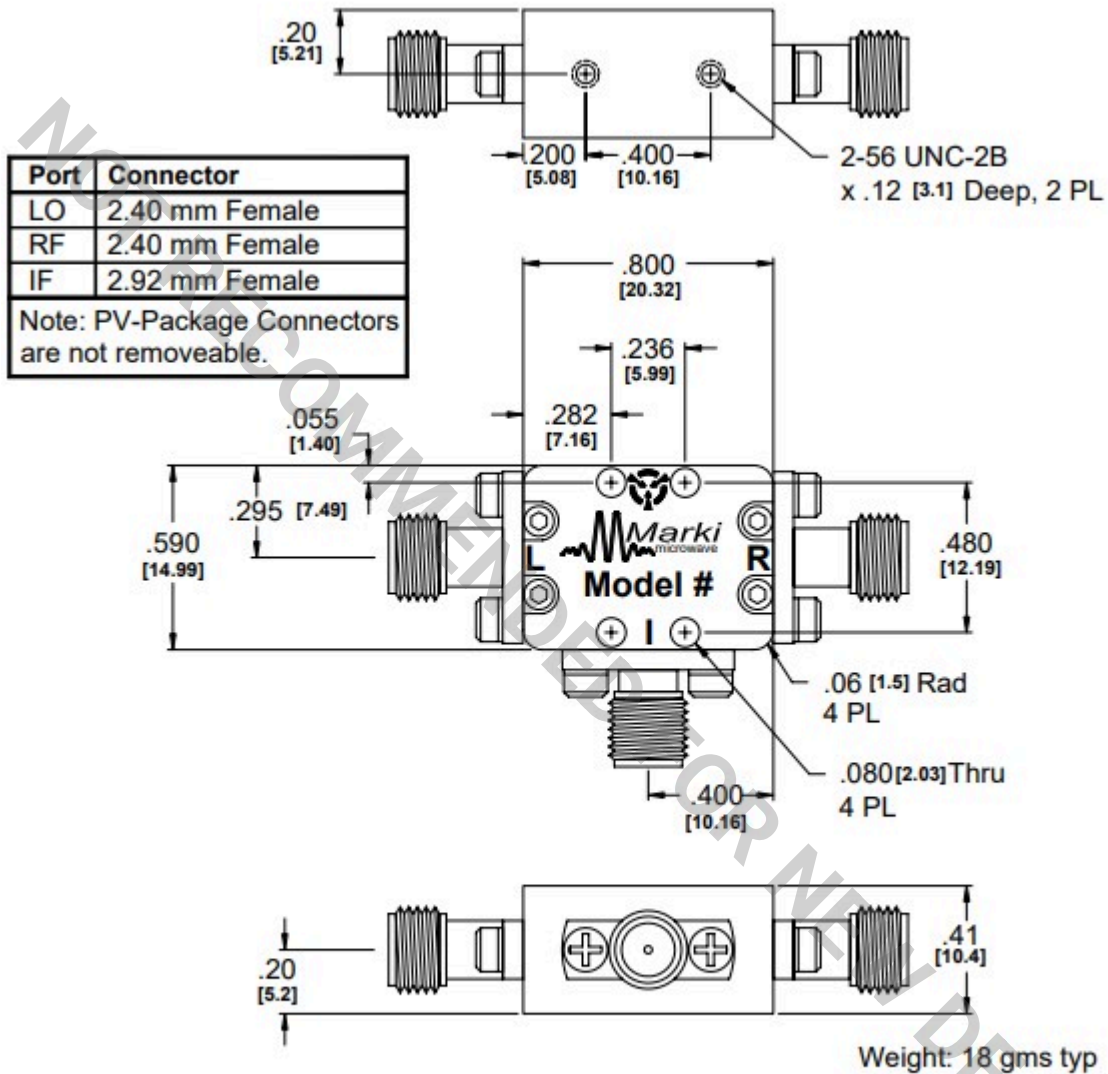
Typical Performance Plots




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Mechanical Data

Outline Drawing



PV-Style Mixer Outline

Projection		XXX=±.005 XX=±.02
	Inch [mm]	

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. Catalog mixer circuits are continually improved. Configuration control requires custom mixer model numbers and specifications.

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