

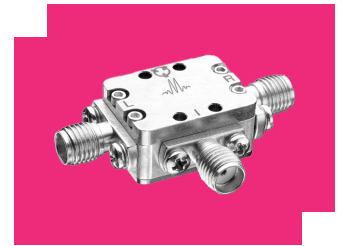
M2-0243LPV

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 43.0 GHz
- IF .4 to 43.0 GHz
- 10.0 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
M2-0243LPV	Triple-Balanced Mixers	PV	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99	-

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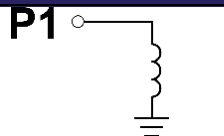
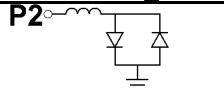
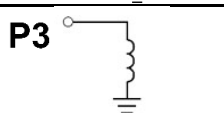
Revision History

Revision Code	Revision Date	Comment
A	2024-08-26	Revised all plots according to ECN#24065.

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Port Configuration and Functions

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.	
Port 2	IF	2.4F	Port 2 is diode connected for the PV Package.	
Port 3	RF	2.92F	Port 3 is DC short for the PV Package.	

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Specifications

Package Information

Parameter	Details	Rating
Weight	Package name: PV	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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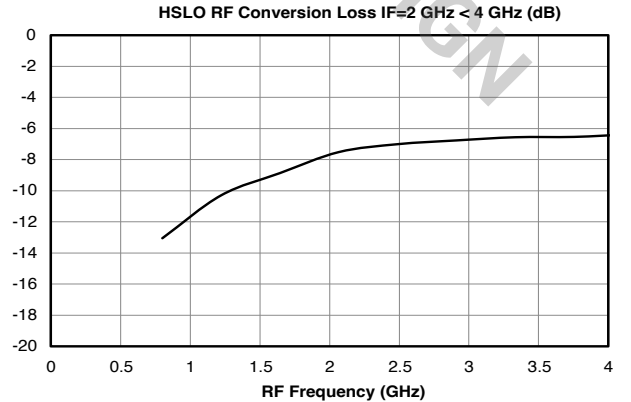
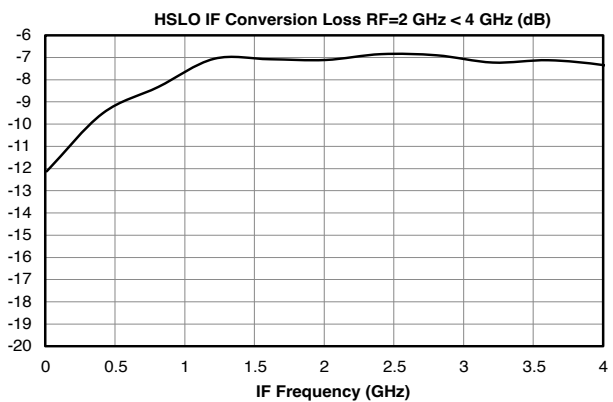
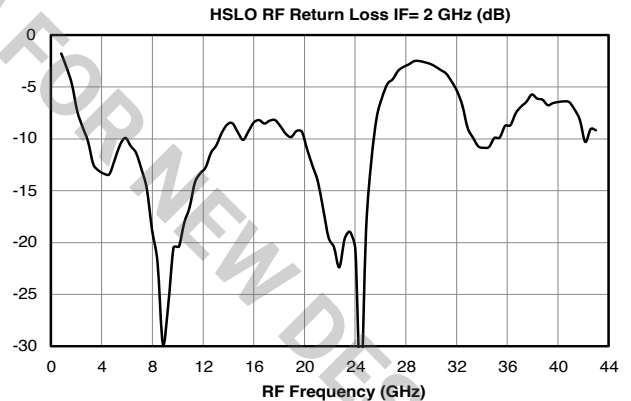
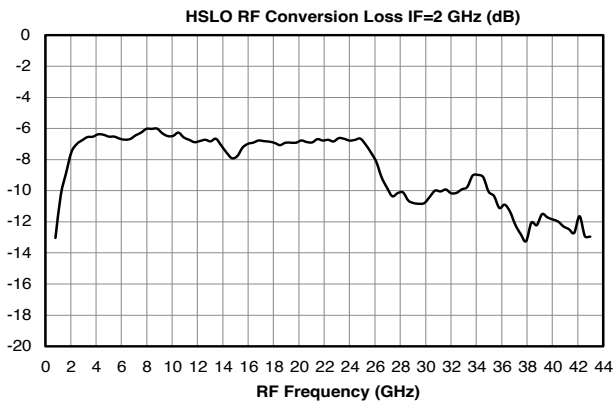
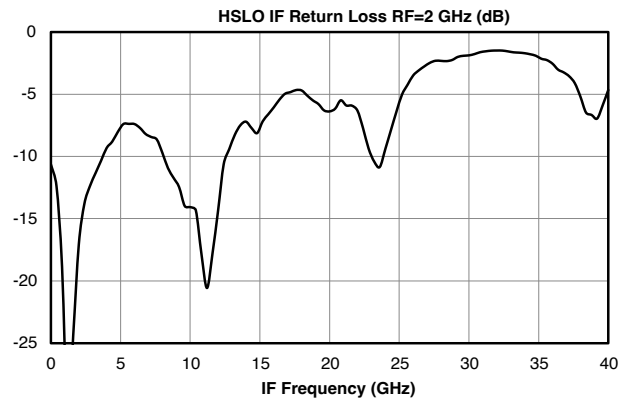
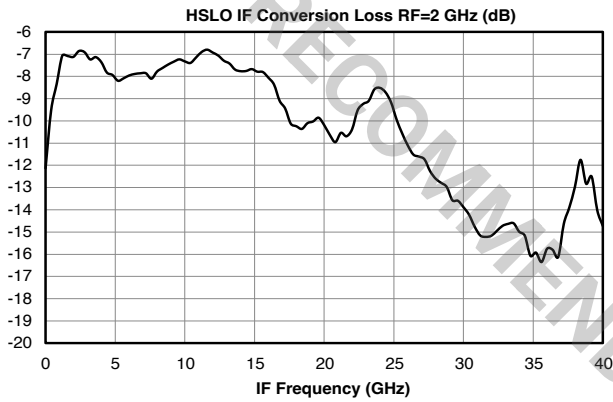
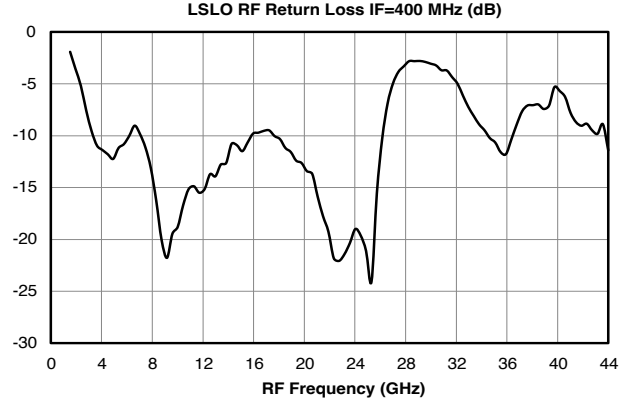
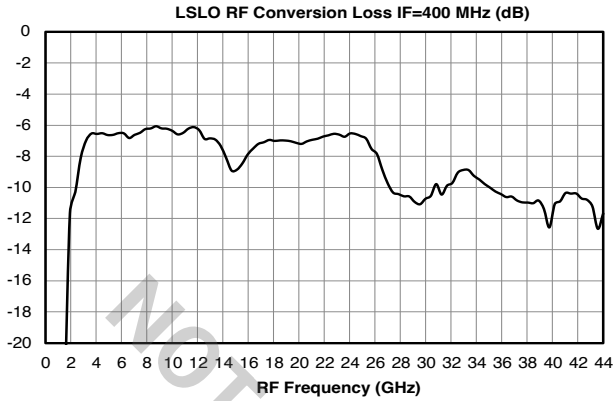
Electrical Specifications

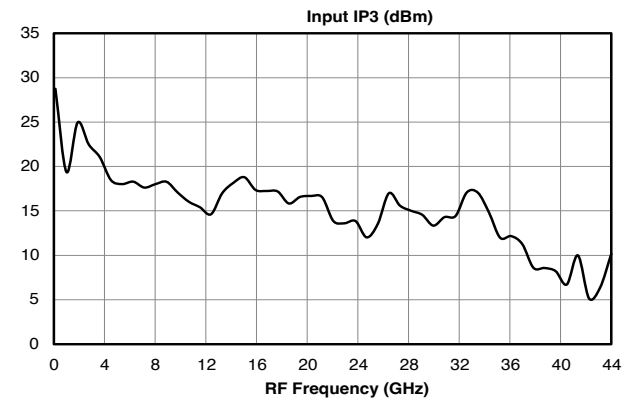
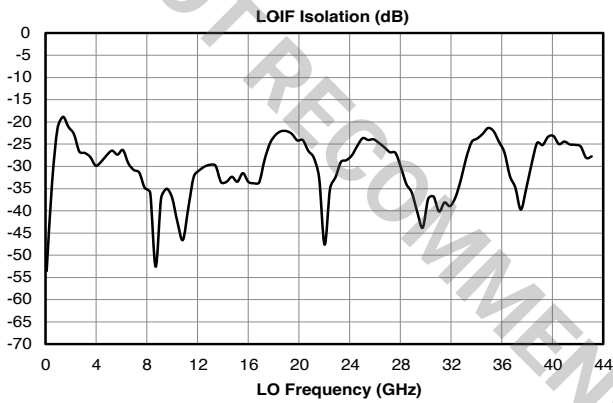
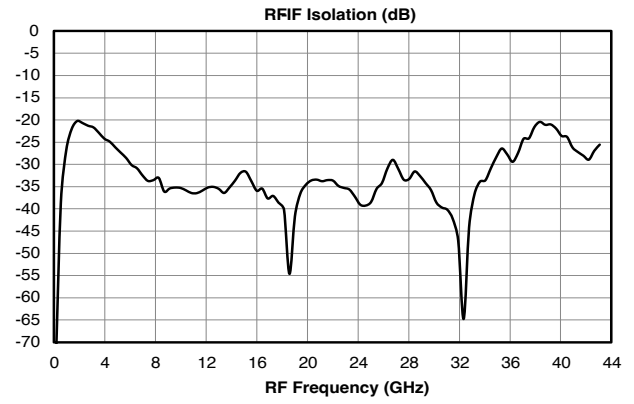
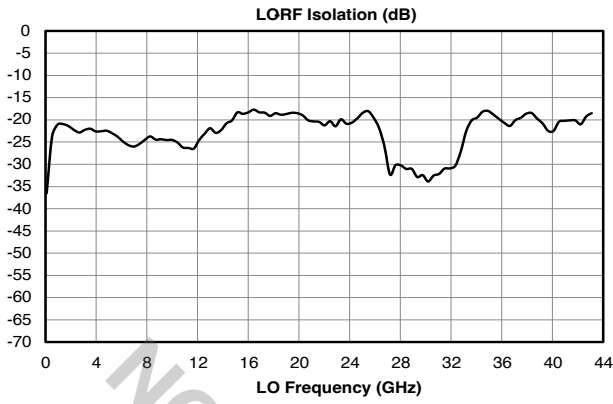
Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

Parameter	Test Conditions	Min	Typ	Max	Unit
Conversion Loss	LO/RF=2-43 GHz IF=.4-43 GHz	-	10	-	dB
Input 1 dB Compression	LO/RF=2-43 GHz LO drive level, L Diode Option=15-20 dBm	-	5	-	dBm
Input IP3	LO/RF=2-43 GHz LO drive level, L Diode Option=15-20 dBm	-	15	-	dBm
Isolation, LO to IF	LO/RF=2-43 GHz	-	25	-	dB
Isolation, LO to RF	LO/RF=2-43 GHz	-	30	-	dB
Isolation, RF to IF	LO/RF=2-43 GHz	-	20	-	dB
IF Frequency Range	-	0.4	-	43	GHz
RF Frequency Range	-	2	-	43	GHz

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Typical Performance Plots

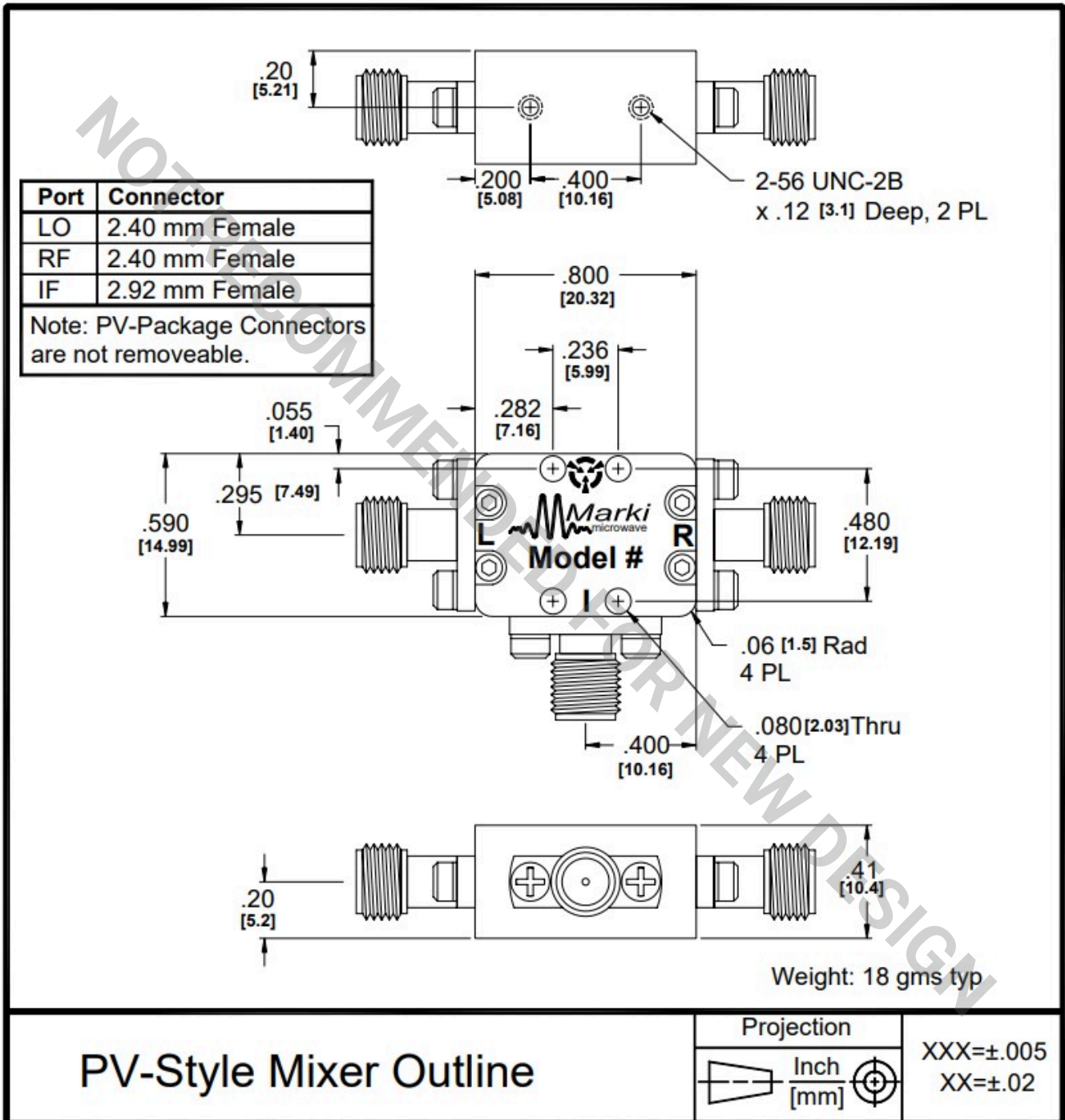




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Mechanical Data

Outline Drawing



Notes

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

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