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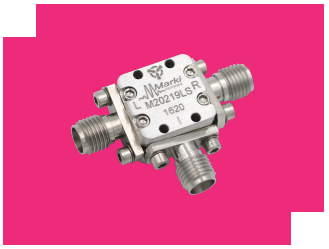
M2-0219MZ

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.



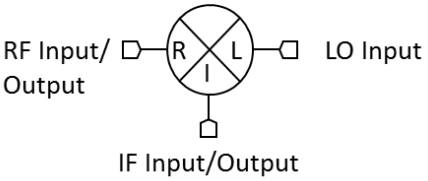
Features

- LO/RF 2.0 to 19.0 GHz
- IF .001 to 6.0 GHz
- 7.0 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
M2-0219LS	Triple-Balanced Mixers	S	Standard	Non-RoHS	End of Life	EAR99
M2-0219MZ	Triple-Balanced Mixers	Z	Standard	Consult Factory	End of Life	EAR99
M2-0219MS	Triple-Balanced Mixers	S	Standard	Consult Factory	End of Life	EAR99
M2-0219LZ	Triple-Balanced Mixers	Z	Standard	Consult Factory	End of Life	EAR99

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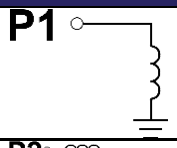
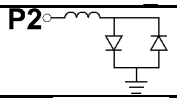
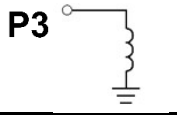
Port Configuration and Functions

Port Functions

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

Specifications

Package Information

Parameter	Details	Rating
Weight	Package name: Z	11g
Dimensions	-	14.22 x 13.21 mm

Recommended Operating Conditions

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

Electrical Specifications

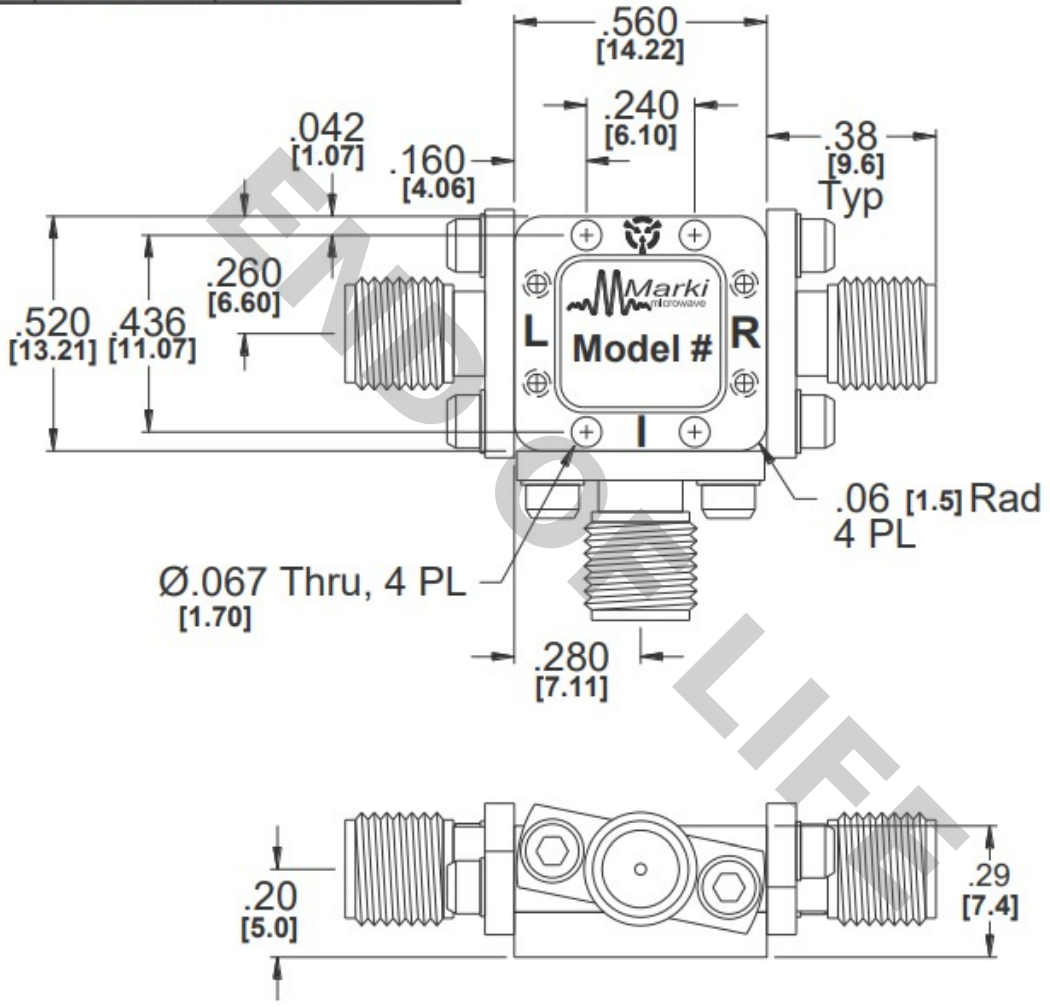
Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

Parameter	Test Conditions	Min	Typ	Max	Unit
RF Frequency Range	-	2	-	19	GHz
Conversion Loss	LO/RF=2-19 GHz IF=.001-1 GHz	-	7	9.5	dB
Conversion Loss	LO/RF=2-19 GHz IF=1-3 GHz	-	7.5	10	dB
Conversion Loss	LO/RF=2-19 GHz IF=3-6 GHz	-	8	10.5	dB
Isolation, LO to RF	LO/RF=2-4 GHz	12	20	-	dB
Isolation, LO to RF	LO/RF=4-19 GHz	16	25	-	dB
Isolation, LO to IF	LO/RF=2-19 GHz	-	25	-	dB
Isolation, RF to IF	LO/RF=2-19 GHz	-	30	-	dB
Input IP3	LO/RF=2-19 GHz LO drive level, M Diode Option=13-16 dBm	-	18	-	dBm
IF Frequency Range	-	0.001	-	6	GHz
Input 1 dB Compression	LO/RF=2-19 GHz LO drive level, M Diode Option=13-16 dBm	-	8	-	dBm

Mechanical Data

Outline Drawing

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



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.

DISCLAIMER