

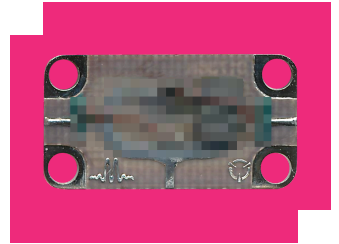
## M2-0208LE-2

### 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.



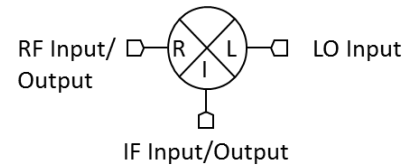
### Features

- LO/RF 2.0 to 8.0 GHz
- IF .001 to 6.0 GHz
- 7.0 dB Typical Conversion Loss
- 20 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	Green Status	Product Lifecycle	Export Classification	Recommended Replacement
<a href="#">M2-0208LE-1</a>	Triple-Balanced Mixers	E	<a href="#">Consult Factory</a>	Not Recommended for New Design	EAR99	<a href="#">MM1-0212LSM-2T3-12LQ-2</a>
<a href="#">M2-0208NE-1</a>	Triple-Balanced Mixers	E	<a href="#">Consult Factory</a>	End of Life	EAR99	<a href="#">MM1-0212HSM-2T3-12LQ-2</a>
<a href="#">M2-0208NE-2</a>	Triple-Balanced Mixers	E	<a href="#">Consult Factory</a>	End of Life	EAR99	<a href="#">MM1-0212HSM-2T3-12LQ-2</a>
M2-0208LE-2	Triple-Balanced Mixers	E	Non-RoHS	Not Recommended for New Design	EAR99	<a href="#">MM1-0212LSM-2T3-12LQ-2</a>
<a href="#">M2-0208ME-2</a>	Triple-Balanced Mixers	E	<a href="#">Consult Factory</a>	End of Life	EAR99	<a href="#">MM1-0212LSM-2T3-12LQ-2</a>

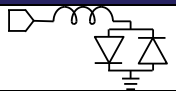
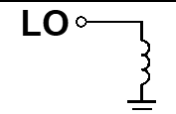
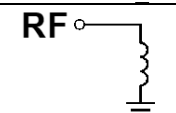
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NOT RECOMMENDED FOR NEW DESIGN

## Port Configuration and Functions

### Port Functions

Port	Function	Description	Equivalent Circuit for Package
IF	IF	The IF port is DC coupled to the diodes and AC matched to 50 Ohms from .001 to 6 GHz. Blocking capacitor is optional.	
LO	LO	The LO port is DC coupled to ground and AC matched to 50 Ohms from 2 to 8 GHz. Blocking capacitor is optional.	
RF	RF	The RF port is DC coupled to ground and AC matched to 50 Ohms from 2 to 8 GHz. Blocking capacitor is optional.	

NOT RECOMMENDED FOR NEW DESIGN

## Specifications

### Package Information

Parameter	Details	Rating
Weight	Package name: E	1g
Dimensions	-	15.24 x 8.13 mm

### Recommended Operating Conditions

Parameter	Min	Nominal	Max	Unit
LO Input Power	10	-	13	-

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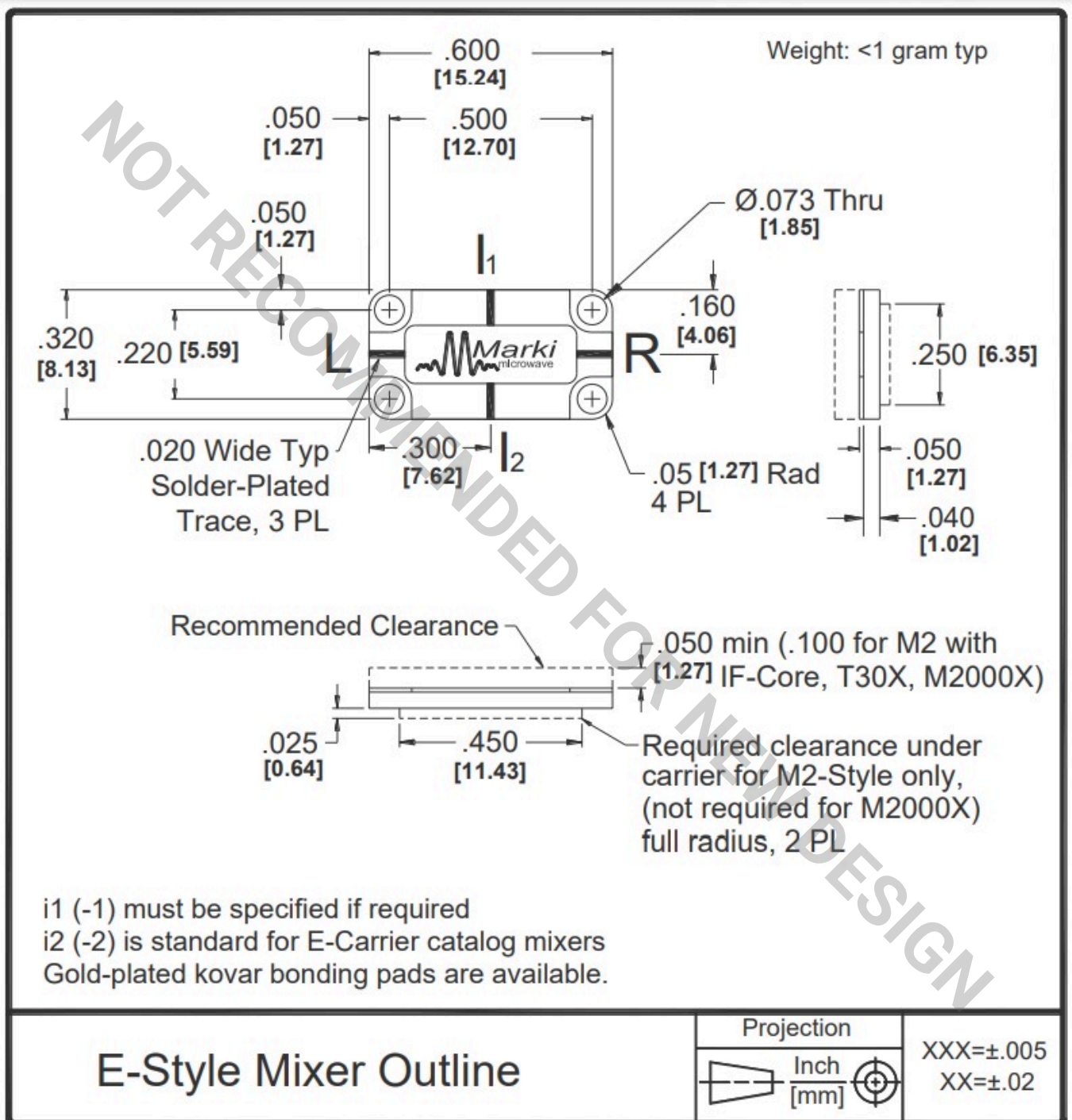
### Electrical Specifications

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

Parameter	Test Conditions	Min	Typ	Max	Unit
Conversion Loss	LO/RF=2-8 GHz IF=.001-2 GHz	-	7	8	dB
Conversion Loss	LO/RF=2-8 GHz IF=2-4 GHz	-	7.5	8.5	dB
Conversion Loss	LO/RF=2-8 GHz IF=4-6 GHz	-	8.5	9.5	dB
Input 1 dB Compression	LO/RF=2-8 GHz LO drive level, L Diode Option=10-13 dBm	-	5	-	dBm
Input IP3	LO/RF=2-8 GHz LO drive level, L Diode Option=10-13 dBm	-	15	-	dBm
Isolation, LO to IF	LO/RF=2-8 GHz	-	30	-	dB
Isolation, LO to RF	LO/RF=2-8 GHz	15	20	-	dB
Isolation, LO to RF	LO/RF=4-8 GHz	18	22	-	dB
Isolation, RF to IF	LO/RF=2-8 GHz	-	20	-	dB
IF Frequency Range	-	0.001	-	6	GHz
RF Frequency Range	-	2	-	8	GHz

Mechanical Data

Outline Drawing



## 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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