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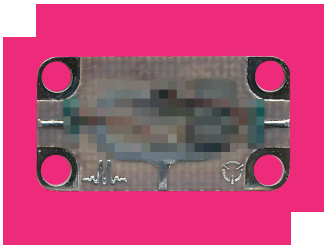
M2-0026LE-1

Triple-Balanced .01 - 26.5 GHz Mixer

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.



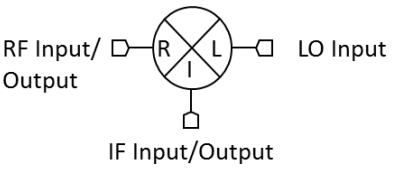
Features

- LO/RF .01 to 26.5 GHz
- IF .001 to 6.0 GHz
- 8.0 dB Typical Conversion Loss
- Ultra-Broadband RF, LO, and IF

Applications

N/A

Functional Block Diagram



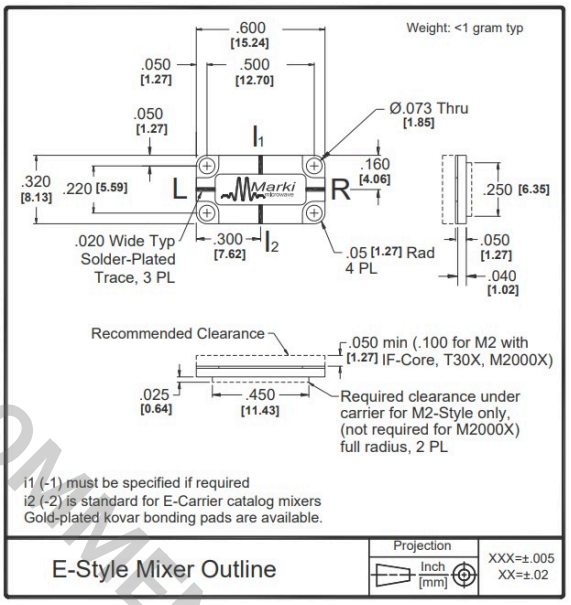
Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification	Recommended Replacement
M2-0026LE-1	Triple-Balanced .01 - 26.5 GHz Mixer	E	Consult Factory	Not Recommended for New Design	EAR99	T3-20GLES-1T3-20GLCTG-1
M2-0026LE-2	Triple-Balanced .01 - 26.5 GHz Mixer	E	Non-RoHS	Not Recommended for New Design	EAR99	T3-20GLES-2T3-20GLCTG-2

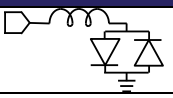
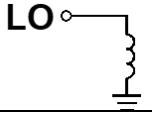
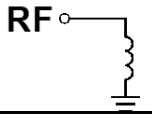
Table Of Contents

Port Configuration and Functions

Port Diagram



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 0.001 to 6 GHz. Blocking capacitor is optional.	
LO	LO	The LO port is DC coupled to ground and AC matched to 50 Ohms from 0.01 to 26.5 GHz. Blocking capacitor is optional.	
RF	RF	The RF port is DC coupled to ground and AC matched to 50 Ohms from 0.01 to 26.5 GHz. Blocking capacitor is optional.	

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	-
LO Input Power	15	-	18	-

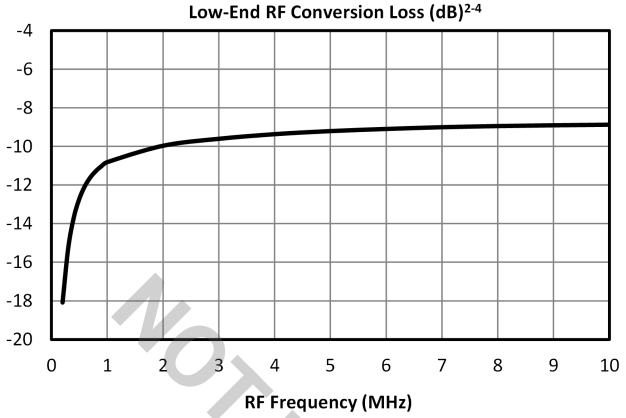
Electrical Specifications

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

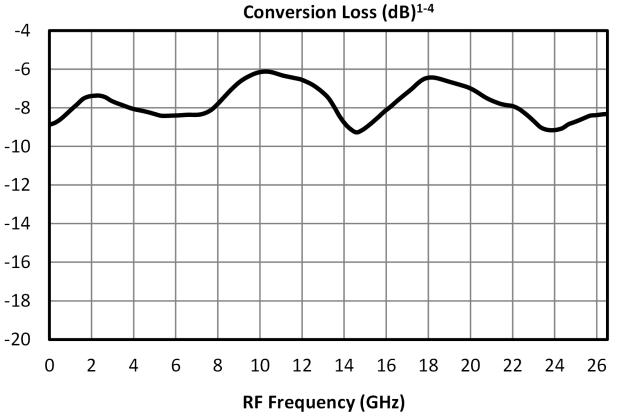
Parameter	Test Conditions	Min	Typ	Max	Unit
Conversion Loss	LO/RF=0.01-26.5 GHz IF=0.001-6 GHz	-	8	-	dB
Input 1 dB Compression	LO/RF=0.01-26.5 GHz L Diode drive level=15-18 dBm	-	5	-	dBm
Input IP3	LO/RF=0.01-26.5 GHz L Diode drive level=15-18 dBm	-	15	-	dBm
Isolation, LO to IF	LO/RF=0.01-26.5 GHz	-	30	-	dB
Isolation, LO to RF	LO/RF=0.01-26.5 GHz	-	30	-	dB
Isolation, RF to IF	LO/RF=0.01-26.5 GHz	-	30	-	dB
IF Frequency Range	-	0.001	-	6	GHz
RF Frequency Range	-	1	-	26.5	GHz

Typical Performance Plots

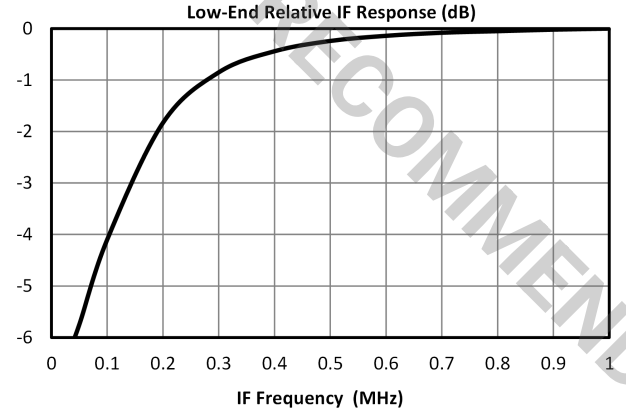
Low-End RF Conversion Loss (dB)[2-4]



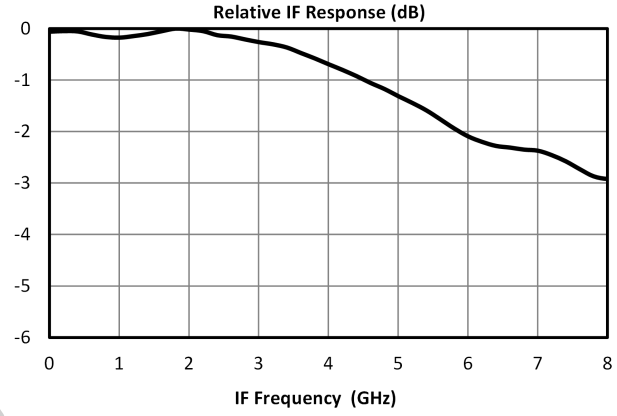
Conversion Loss (dB)[1-4]



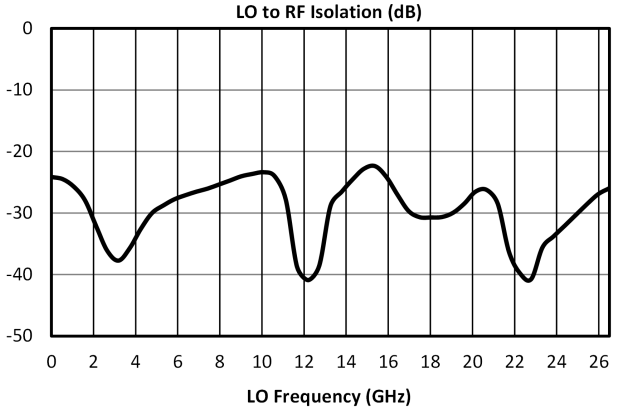
Low-End Relative IF Response (dB)



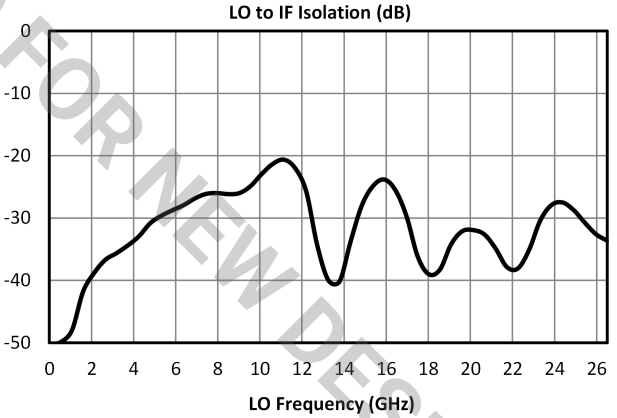
Relative IF Response (dB)



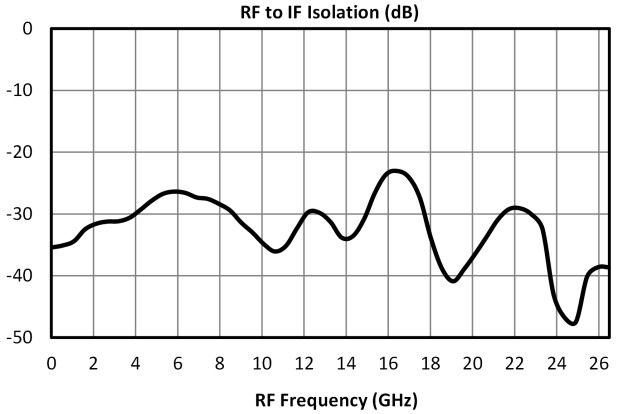
LO to RF Isolation (dB)



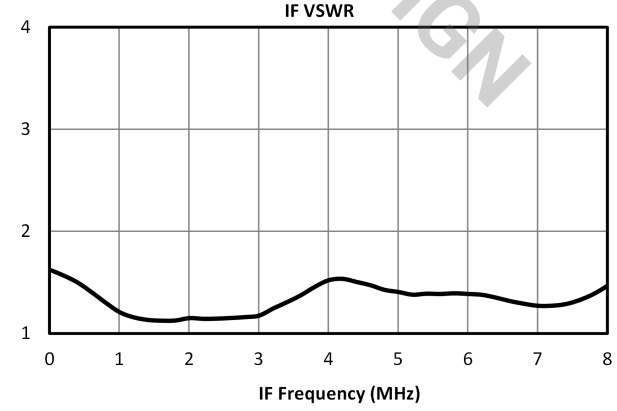
LO to IF Isolation (dB)

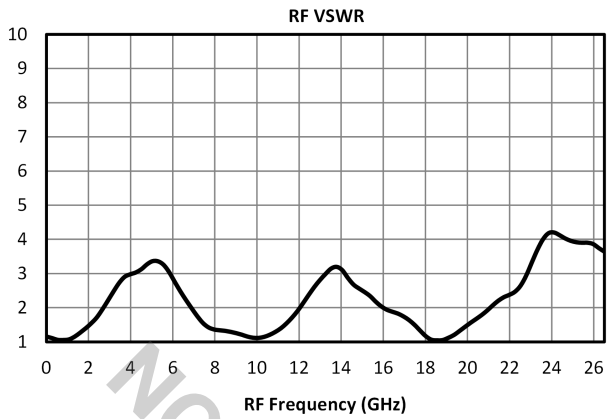


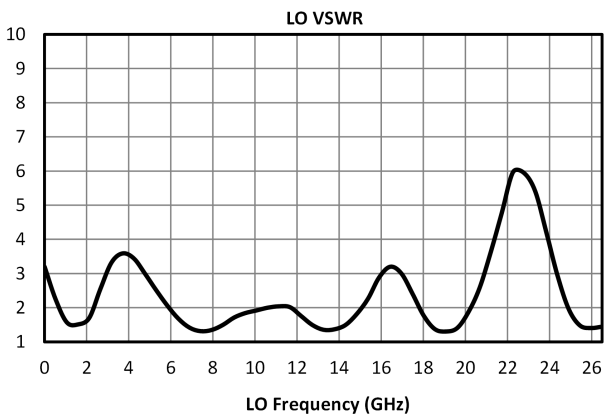
RF to IF Isolation (dB)



IF VSWR

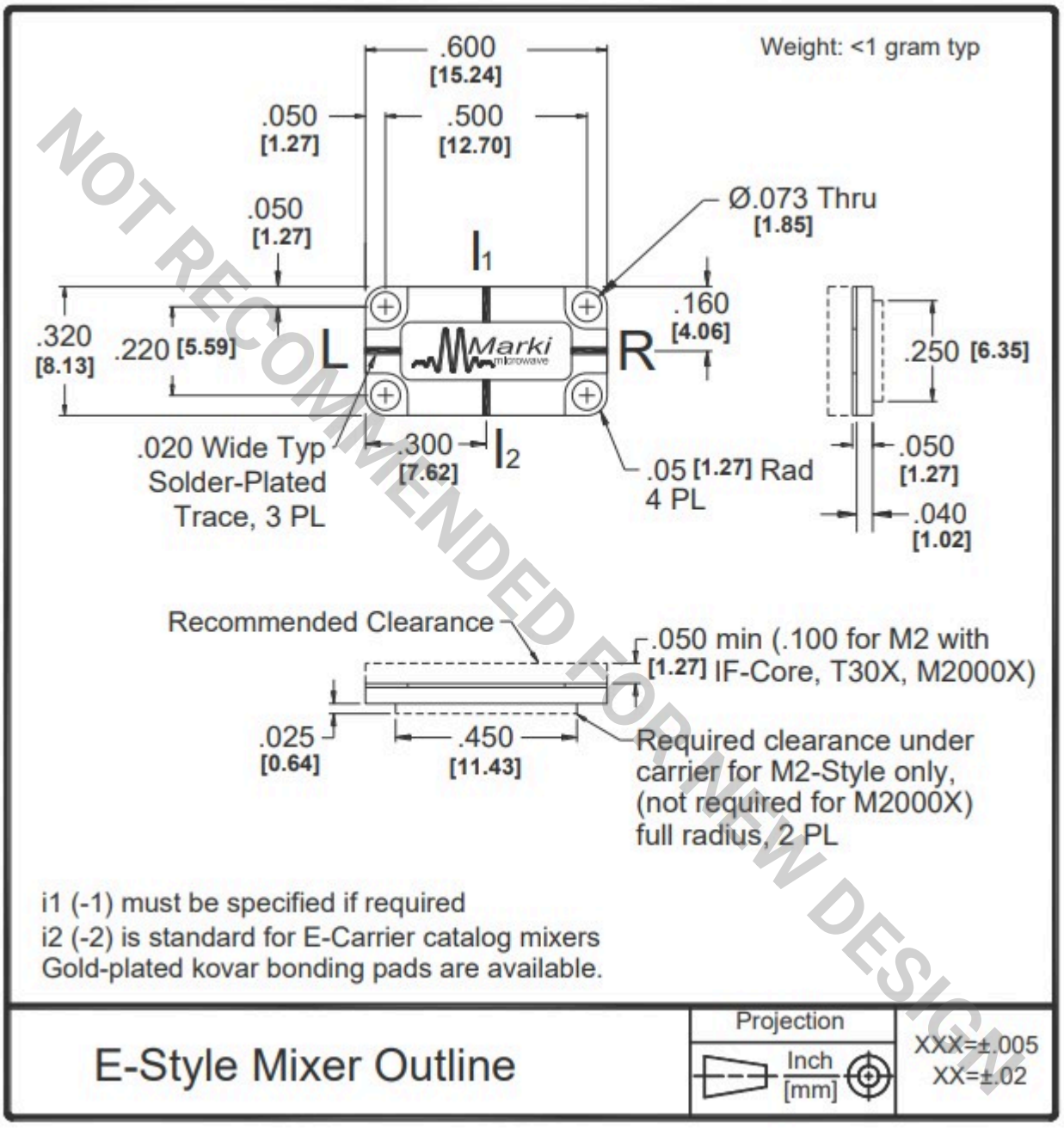




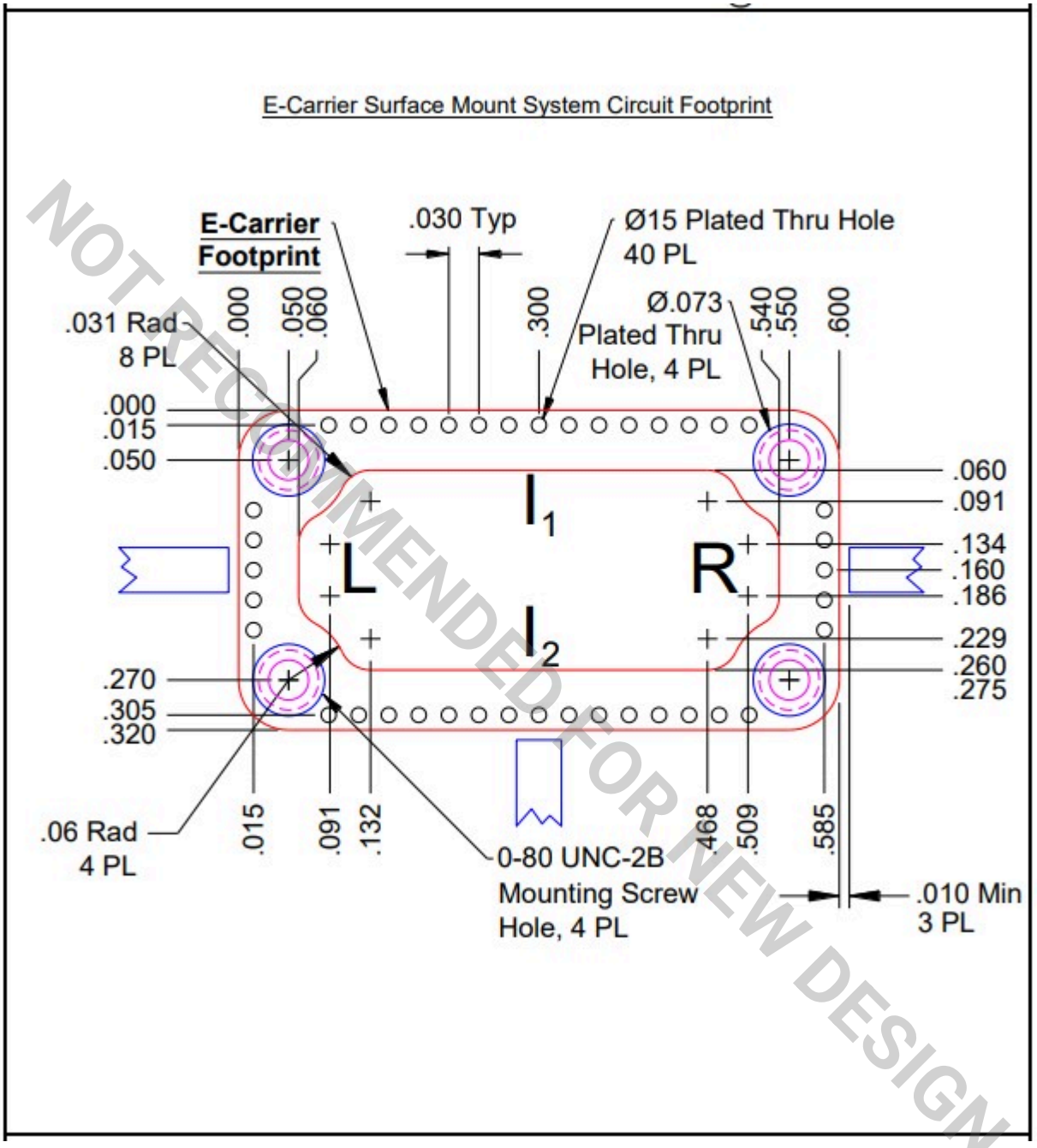


Mechanical Data

Outline Drawing



Footprint Image



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 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