

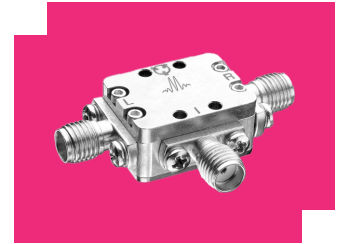
M2-0226LP

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.



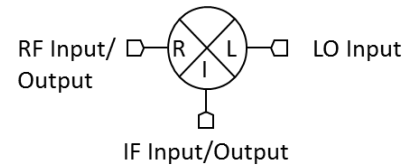
Features

- LO/RF 2.0 to 26.5 GHz
- IF .001 to 6.0 GHz
- 7.5 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 | Recommended Replacement |
|------------------|------------------------|---------|-----------------|------------------------|--------------------------------|-----------------------|---------------------------|
| M2-0226LP | Triple-Balanced Mixers | P | <u>Standard</u> | Non-RoHS | Not Recommended for New Design | EAR99 | <u>T3-20GLSMM1-0222LS</u> |
| <u>M2-0226MP</u> | Triple-Balanced Mixers | P | <u>Standard</u> | <u>Consult Factory</u> | Not Recommended for New Design | EAR99 | <u>T3-20GLSMM1-0222LS</u> |

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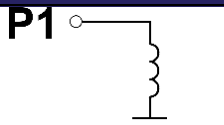
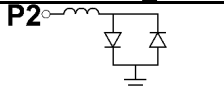
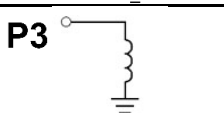
- Outline Drawing

■ Notes

NOT RECOMMENDED FOR NEW DESIGN

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 P package. |  |
| Port 2 | IF | SMAF | Port 2 is diode connected for the P Package. |  |
| Port 3 | RF | SMAF | Port 3 is DC short for the P Package. |  |

NOT RECOMMENDED FOR NEW DESIGN

Specifications

Package Information

| Parameter | Details | Rating |
|------------|-----------------|------------------|
| Weight | Package name: P | 18g |
| Dimensions | - | 20.32 x 14.99 mm |

Recommended Operating Conditions

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

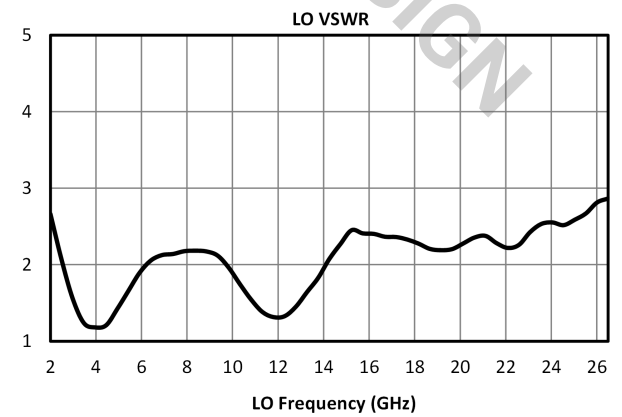
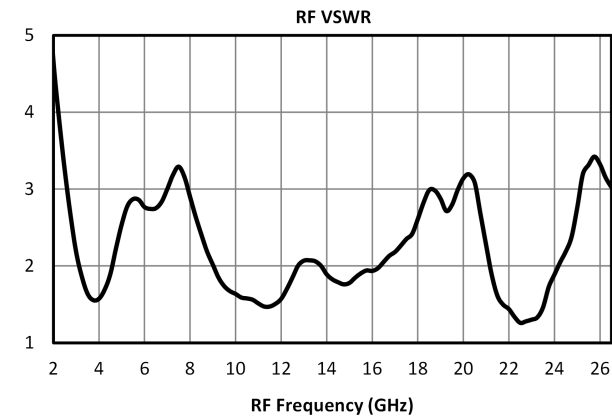
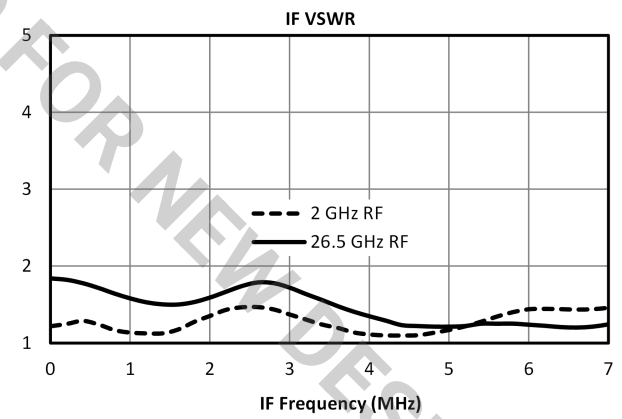
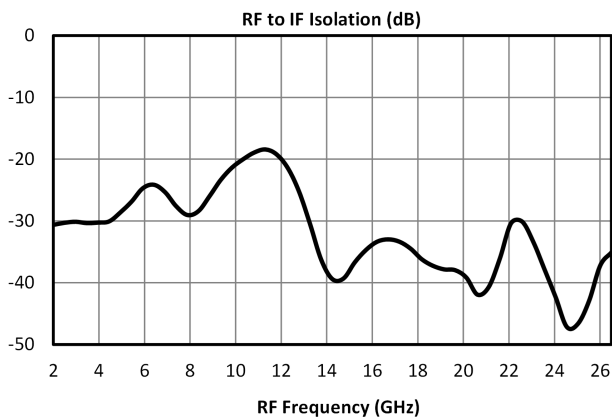
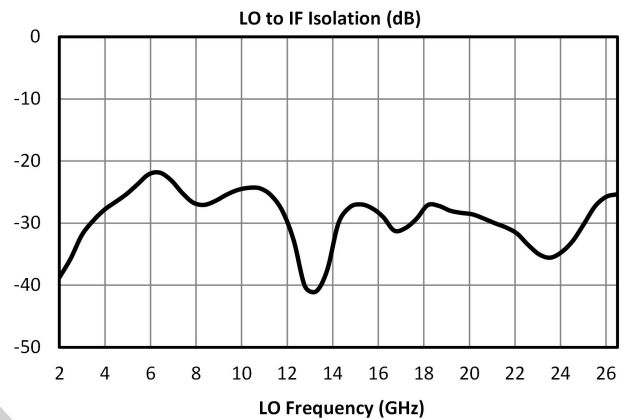
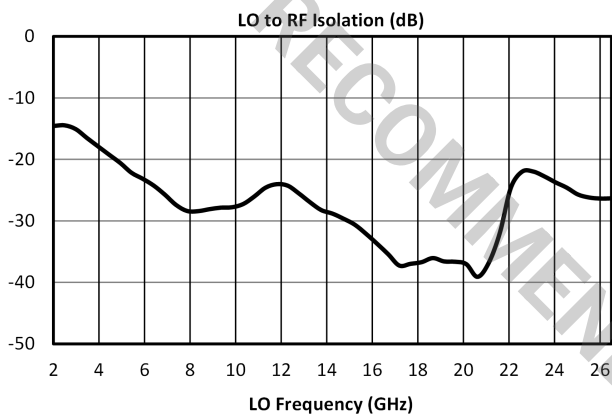
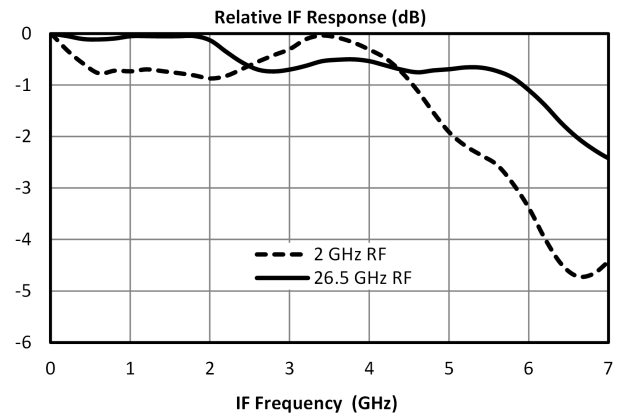
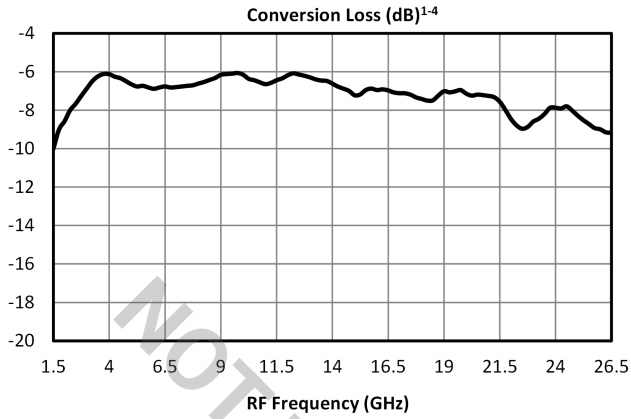
NOT RECOMMENDED FOR NEW DESIGN

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=20-26.5 GHz IF=.001-2 GHz | - | 9.5 | 12 | dB |
| Conversion Loss | LO/RF=20-26.5 GHz IF=2-4 GHz | - | 10.5 | 13 | dB |
| Conversion Loss | LO/RF=20-26.5 GHz IF=4-6 GHz | - | 11.5 | 14 | dB |
| Conversion Loss | LO/RF=2-20 GHz IF=.001-2 GHz | - | 7.5 | 10 | dB |
| Conversion Loss | LO/RF=2-20 GHz IF=2-4 GHz | - | 8.5 | 11 | dB |
| Conversion Loss | LO/RF=2-20 GHz IF=4-6 GHz | - | 9.5 | 12 | dB |
| Input 1 dB Compression | LO/RF=2-26.5 GHz LO drive level, L Diode Option=10-13 dBm | - | 5 | - | dBm |
| Input IP3 | LO/RF=2-26.5 GHz LO drive level, L Diode Option=10-13 dBm | - | 15 | - | dBm |
| Isolation, LO to IF | LO/RF=2-26.5 GHz | - | 28 | - | dB |
| Isolation, LO to RF | LO/RF=2-26.5 GHz | 12 | 25 | - | dB |
| Isolation, LO to RF | LO/RF=4-19 GHz | 18 | 28 | - | dB |
| Isolation, RF to IF | LO/RF=2-26.5 GHz | - | 30 | - | dB |
| IF Frequency Range | - | 0.001 | - | 6 | GHz |
| RF Frequency Range | - | 2 | - | 26.5 | GHz |

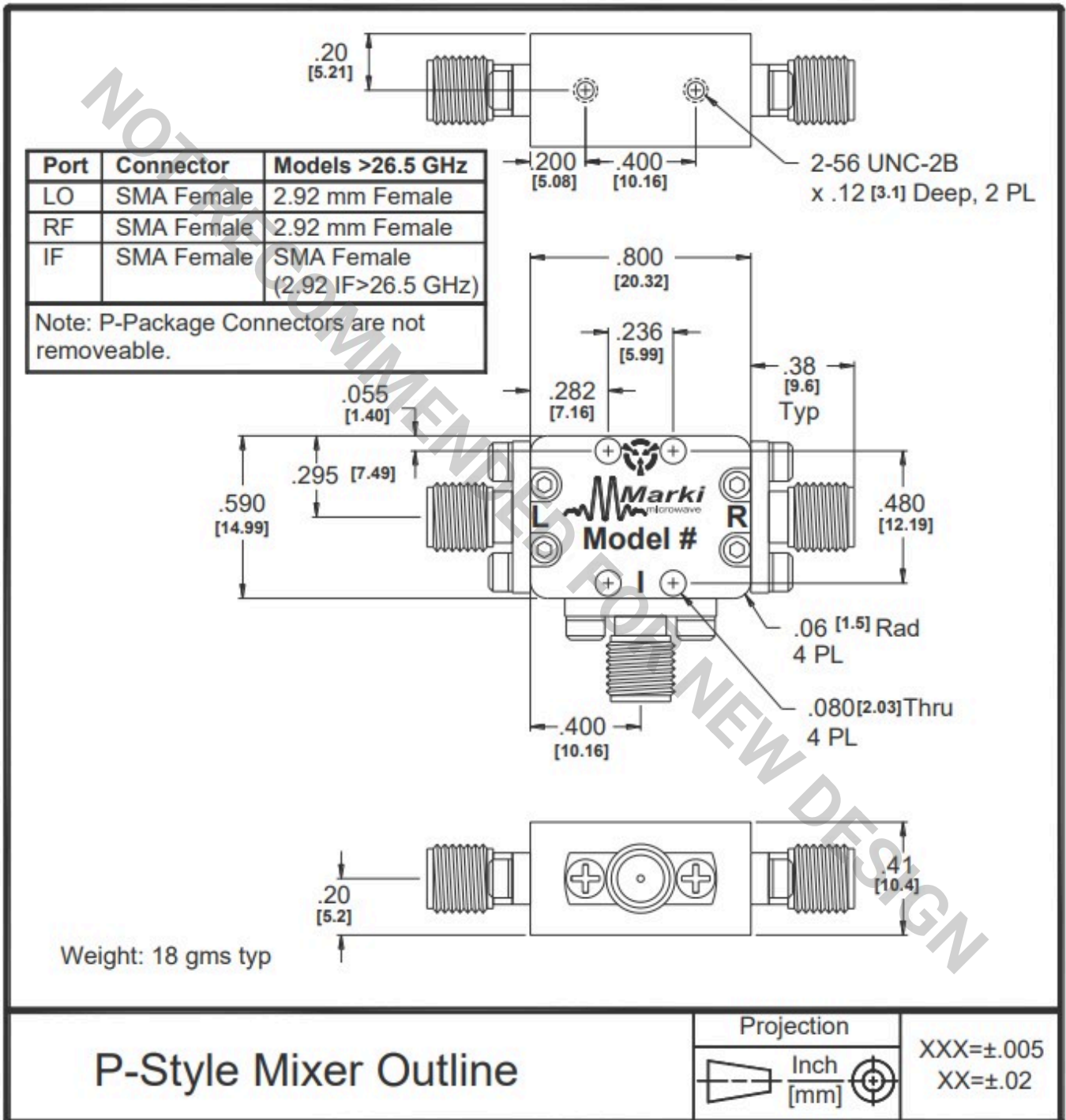
Typical Performance Plots



Mechanical Data

Outline Drawing

Download : [Outline 3D Drawing](#) | [Outline 3D STP](#)



Notes

DATA SHEET 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.

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