

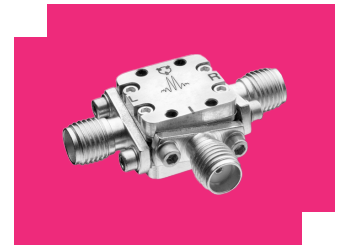
M8-0326MS

Double-Balanced 3 - 26.5 GHz Mixer

DEVICE OVERVIEW

General Description

M8 mixers are hybrid assemblies that use a specially balanced technique to feature very low conversion loss and high isolations. M8 mixers have generally been replaced with MM1 mixers with superior performance, repeatability, and availability. M8 mixers are still used in legacy systems and are suitable for laboratory use.



Features

- LO/RF 3.0 to 26.5 GHz
- IF DC to 2.0 GHz
- 5.5 dB Typical Conversion Loss
- 35 dB Typical LO to RF Isolation
- Ultra-Broadband RF and LO
- Superior Bi-Phase Performance

Applications

N/A

Functional Block Diagram



Part Ordering Options

| Part Number | Description | Package | Connectors | Green Status | Product Lifecycle | Export Classification | Recommended Replacement |
|------------------|------------------------------------|---------|-----------------|-------------------------|--------------------------------|-----------------------|-------------------------|
| M8-0326MS | Double-Balanced 3 - 26.5 GHz Mixer | S | <u>Standard</u> | <u>Consult Factory.</u> | Not Recommended for New Design | EAR99 | <u>MM1-0330HS</u> |
| <u>M8-0326NS</u> | Double-Balanced 3 - 26.5 GHz Mixer | S | <u>Standard</u> | <u>Consult Factory.</u> | End of Life | EAR99 | <u>MM1-0330HS</u> |
| <u>M8-0326LS</u> | Double-Balanced 3 - 26.5 GHz Mixer | S | <u>Standard</u> | Non-RoHS | End of Life | EAR99 | <u>MM1-0330HS</u> |

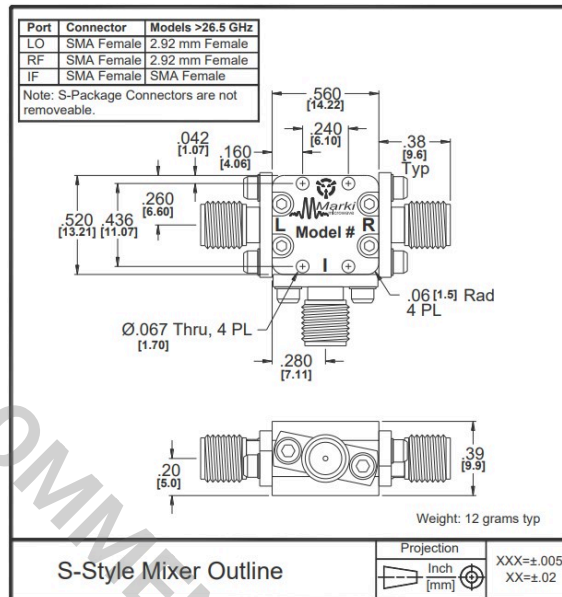
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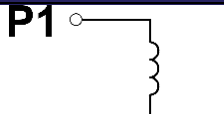
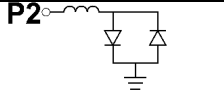
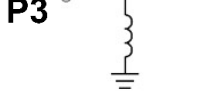
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Port Configuration and Functions

Port Diagram



Port Functions

| Port | Function | Connector Type | Description | Equivalent Circuit for Package |
|--------|----------|----------------|--|---|
| Port 1 | LO | SMAF | Port 1 is DC short for the S package. | P1  |
| Port 2 | IF | SMAF | Port 2 is diode connected for the S Package. | P2  |
| Port 3 | RF | SMAF | Port 3 is DC short for the S Package. | P3  |

Specifications

Package Information

| Parameter | Details | Rating |
|------------|-----------------|------------------|
| Weight | Package name: S | 12g |
| Dimensions | - | 14.22 x 13.21 mm |

Recommended Operating Conditions

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

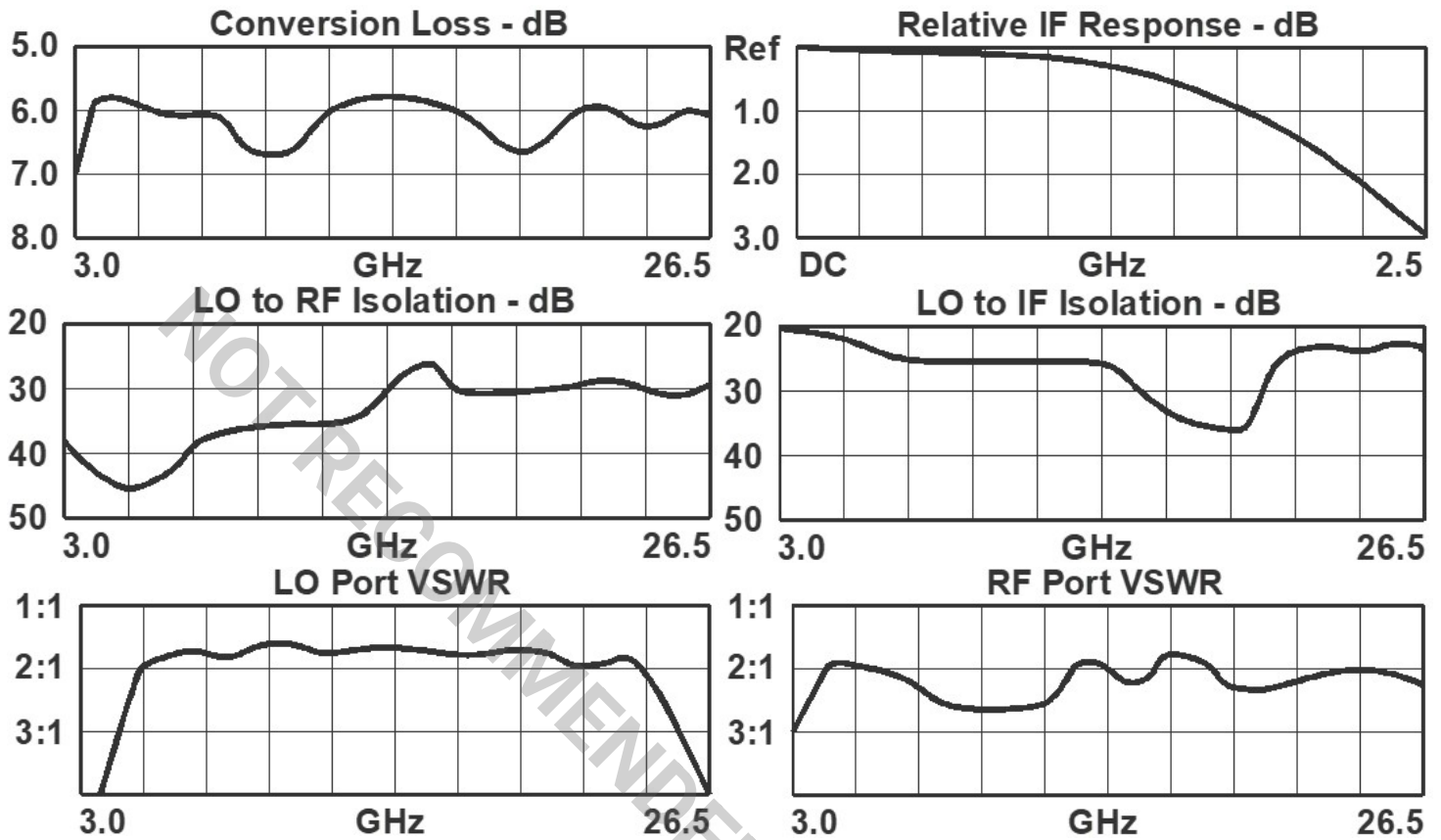
NOT RECOMMENDED FOR NEW DESIGN

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=1-2 GHz | - | 6 | - | dB |
| Conversion Loss | LO/RF=20-26.5 GHz IF=DC-1 GHz | - | 7.5 | 11 | dB |
| Conversion Loss | LO/RF=3-20 GHz IF=1-2 GHz | - | 6.5 | - | dB |
| Conversion Loss | LO/RF=3-20 GHz IF=DC-1 GHz | - | 5.5 | 9 | dB |
| Input 1 dB Compression | LO/RF=3-26.5 GHz M Diode drive level=10-13 dBm | - | 5 | - | dBm |
| Input IP3 | LO/RF=3-26.5 GHz M Diode drive level=10-13 dBm | - | 15 | - | dBm |
| Isolation, LO to IF | LO/RF=3-26.5 GHz | - | 25 | - | dB |
| Isolation, LO to RF | LO/RF=3-26.5 GHz | - | 35 | - | dB |
| Isolation, RF to IF | LO/RF=3-26.5 GHz | - | 25 | - | dB |
| IF Frequency Range | - | 0 | - | 2 | GHz |
| RF Frequency Range | - | 3 | - | 26 | GHz |

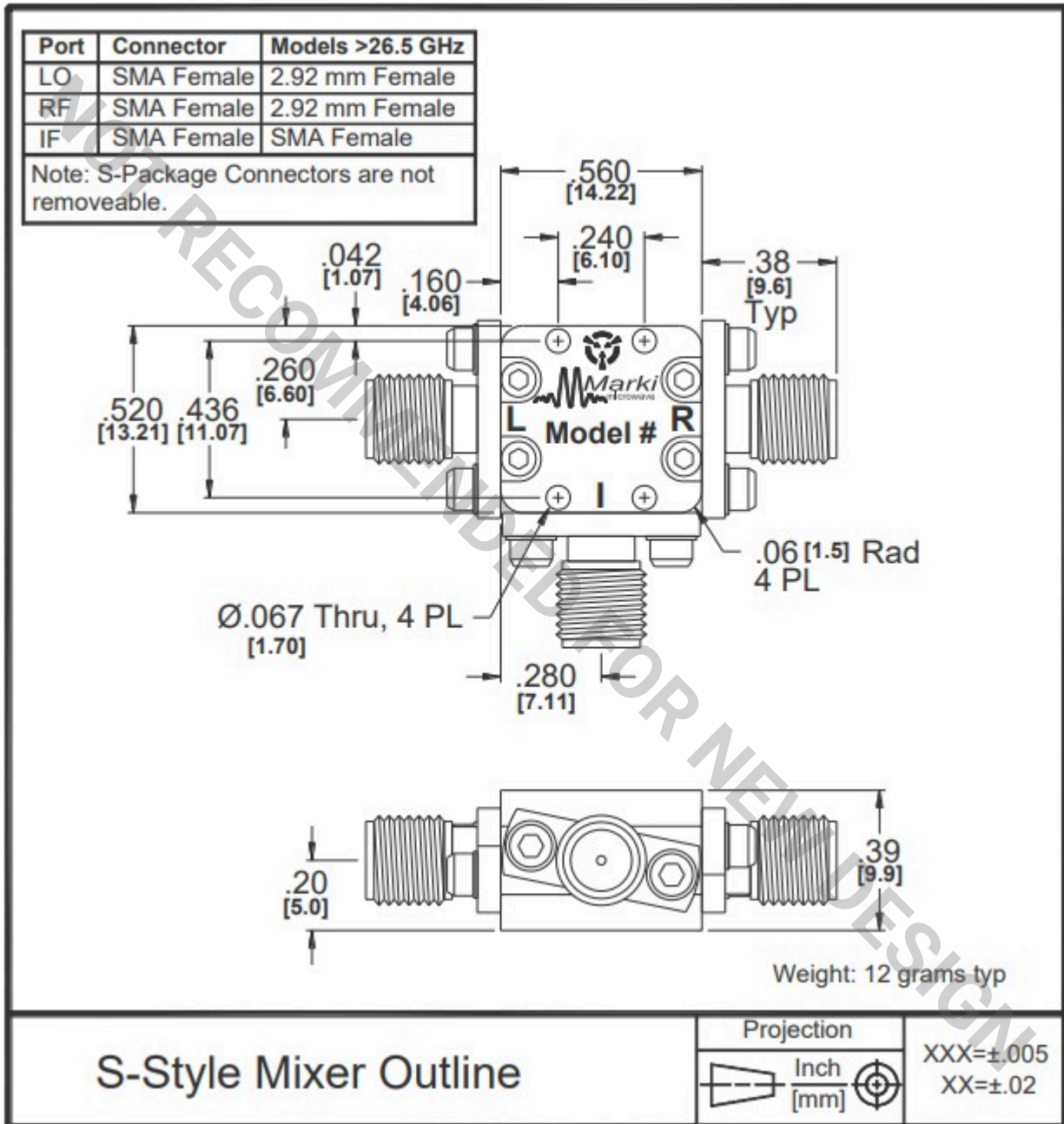
Typical Performance Plots



Mechanical Data

Outline Drawing

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



Notes

1. Mixer Conversion Loss Plot is done with an IF frequency of 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 +23 dBm at +25°C, derated linearly to +20 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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