

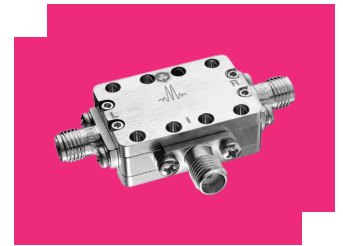
M4-0126LK

Double-Balanced 1 - 26.5 Mixer

DEVICE OVERVIEW

General Description

M4 diplexed IF mixers are hybrid assemblies that combine a low frequency IF (to DC) with a multi-decade bandwidth RF and LO. M4 mixers are commonly used for single tone analyzers (such as antenna test systems) with ultra-broad frequency ranges.



Features

- LO/RF 1 to 26.5 GHz
- IF DC to 700 MHz
- 8 dB Typical Conversion Loss
- 30 dB Typical LO to RF Isolation
- Ultra-Broadband RF and LO

Applications

N/A

Functional Block Diagram



Part Ordering Options

| Part Number | Description | Package | Connectors | Green Status | Product Lifecycle | Export Classification | Recommended Replacement |
|------------------|--------------------------------|---------|-----------------|-------------------------|--------------------------------|-----------------------|-------------------------|
| M4-0126LK | Double-Balanced 1 - 26.5 Mixer | K | <u>Standard</u> | Non-RoHS | Not Recommended for New Design | EAR99 | - |
| <u>M4-0126HK</u> | Double-Balanced 1 - 26.5 Mixer | K | <u>Standard</u> | <u>Consult Factory.</u> | End of Life | EAR99 | - |

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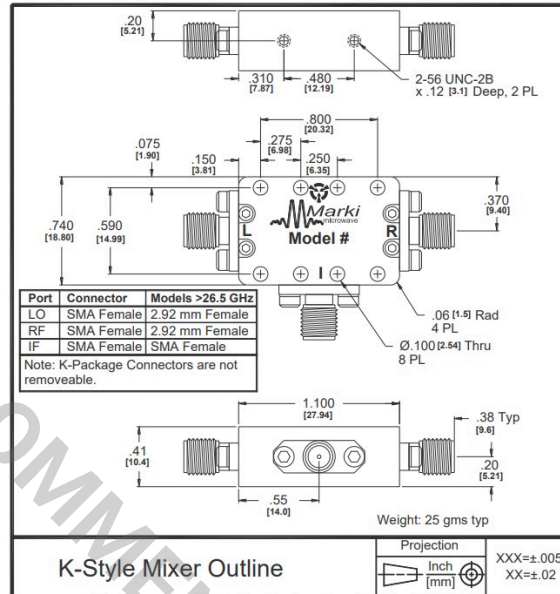
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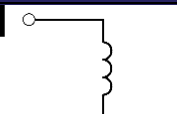
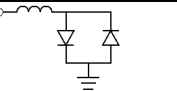
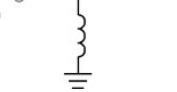
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Port Configuration and Functions

Port Diagram



Port Functions

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

Specifications

Package Information

| Parameter | Details | Rating |
|------------|-----------------|------------------|
| Weight | Package name: K | 25g |
| Dimensions | - | 27.94 X 18.80 mm |

Recommended Operating Conditions

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

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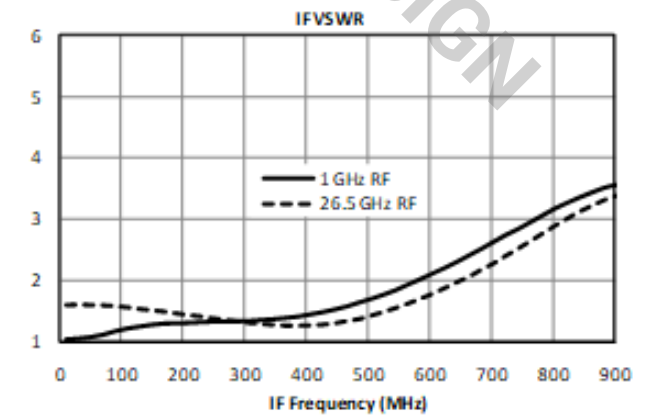
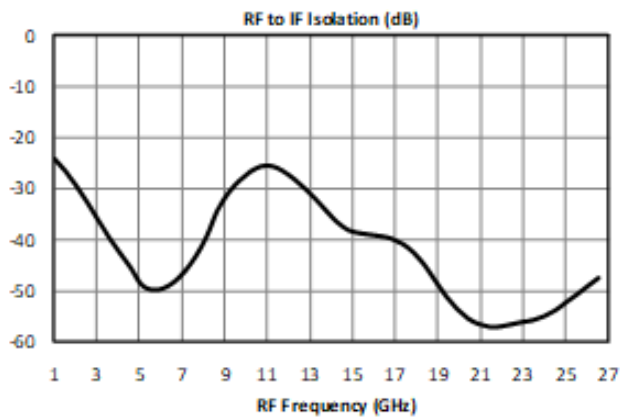
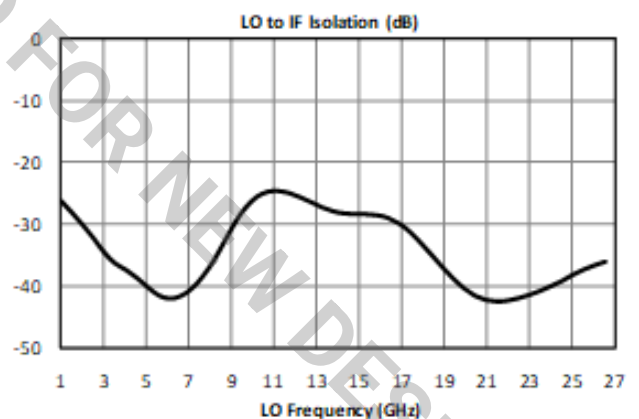
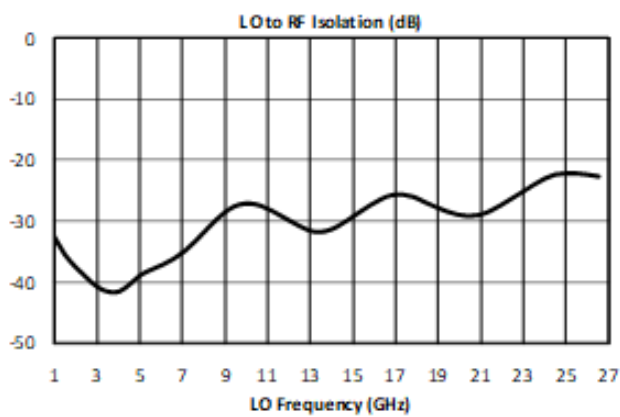
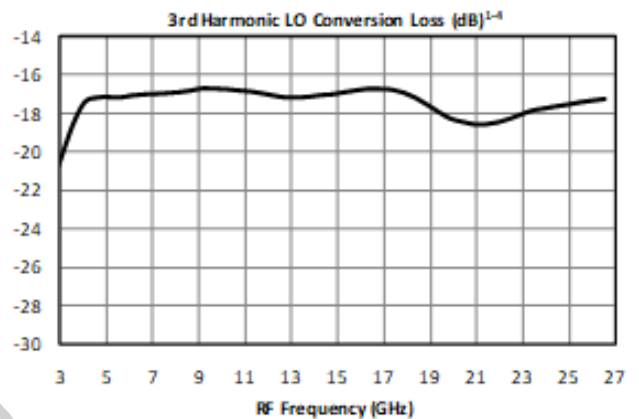
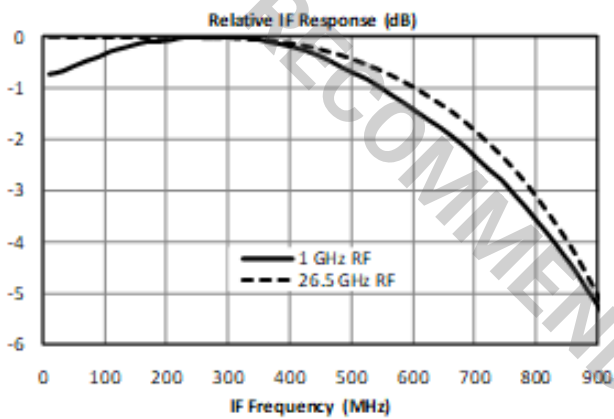
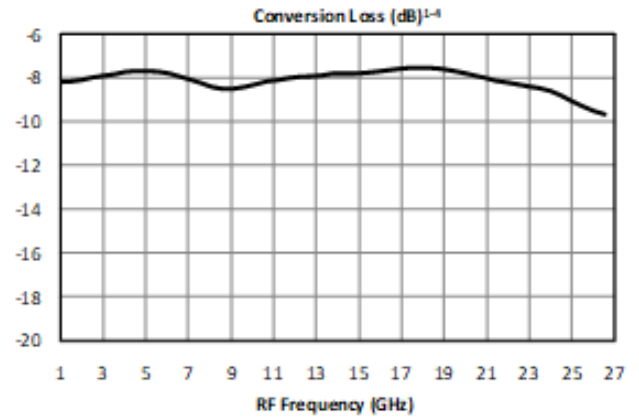
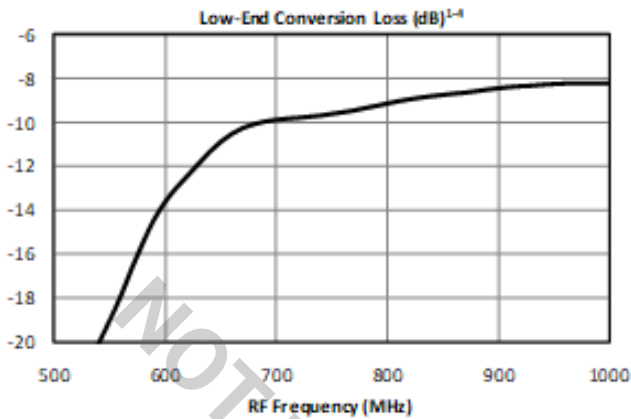
Electrical Specifications

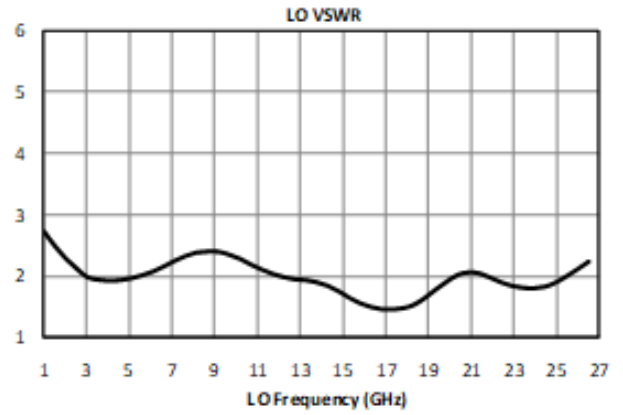
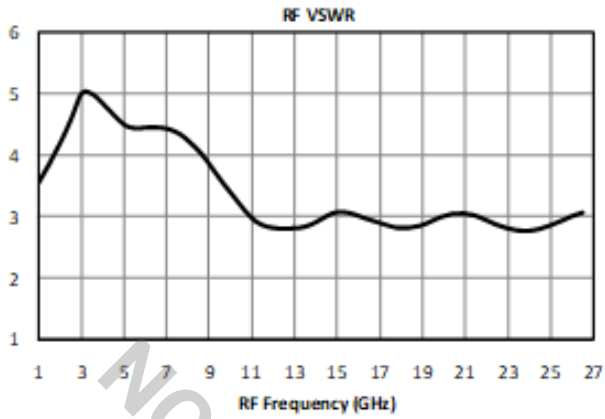
Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

| Parameter | Test Conditions | Min | Typ | Max | Unit |
|------------------------|---|-----|-----|------|------|
| Conversion Loss | LO/RF=1-26.5 GHz IF=DC-300 GHz | - | 8 | 10 | dB |
| Conversion Loss | LO/RF=1-26.5 GHz IF=DC-500 GHz | - | 8.5 | 11 | dB |
| Conversion Loss | LO/RF=1-26.5 GHz IF=DC-700 GHz | - | 10 | 13 | dB |
| Input 1 dB Compression | LO/RF=1-26.5 GHz L Diode drive level=10-13 dBm | - | 3 | - | dBm |
| Input IP3 | LO/RF=1-26.5 GHz L Diode drive level=10-13 dBm | - | 9 | - | dBm |
| IF Frequency Range | - | 0 | - | 0.7 | GHz |
| Isolation, LO to RF | - | - | 30 | - | dB |
| RF Frequency Range | - | 1 | - | 26.5 | GHz |

NOT RECOMMENDED FOR NEW DESIGN

Typical Performance Plots



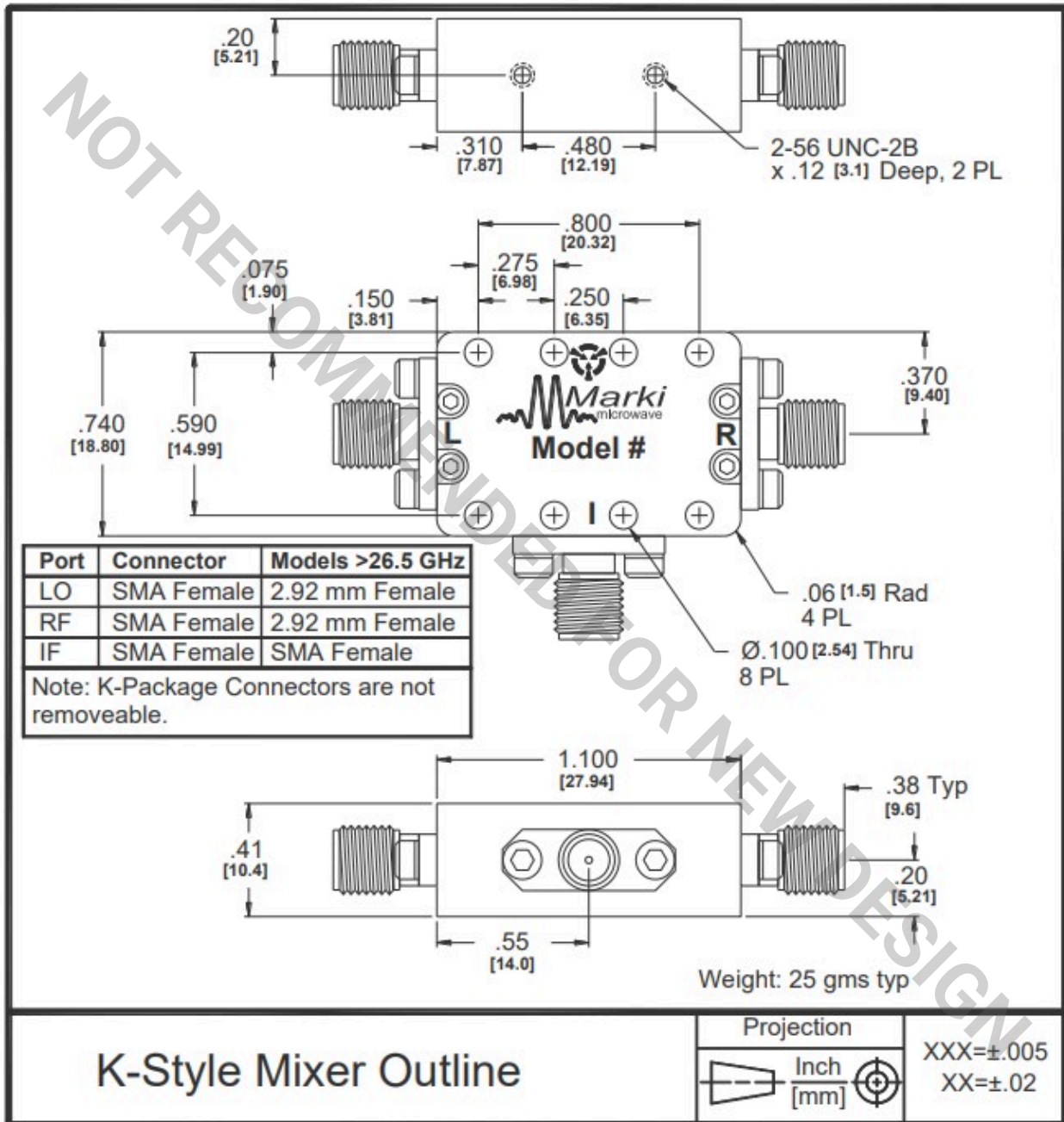


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Mechanical Data

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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