

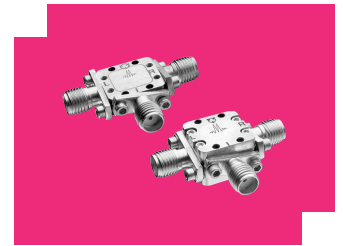
M1R-0726NS

Double-Balanced Mixers

DEVICE OVERVIEW

General Description

M1 double balanced mixers are hybrid assemblies that have been hand-tuned to feature low conversion loss and high isolations and a DC IF response. M1 mixers have generally been replaced with MM1 mixers with superior performance, repeatability, and availability. M1 mixers are still used in legacy systems and are suitable for laboratory use.



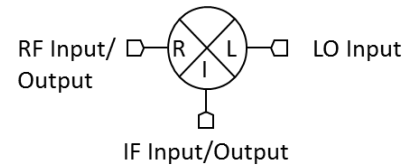
Features

- LO/RF 7.0 to 26.5 GHz
- IF DC to 8.0 GHz
- 6.0 dB Typical Conversion Loss
- 38 dB Typical LO to RF Isolation
- 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 |
|------------------------------|------------------------|---------|--------------------------|----------------------------------|--------------------------------|-----------------------|--------------------------------------|
| M1R-0726LS-1 | Double-Balanced Mixers | S | Standard | Consult Factory. | Not Recommended for New Design | EAR99 | MM1-0832LSMM1-0626HS |
| M1R-0726LZ | Double-Balanced Mixers | Z | Standard | Non-RoHS | End of Life | EAR99 | MM1-0626HSMM1-0832LS |
| M1R-0726MS | Double-Balanced Mixers | S | Standard | Consult Factory. | Not Recommended for New Design | EAR99 | MM1-0626HSMM1-0832LS |
| M1R-0726MZ | Double-Balanced Mixers | Z | Standard | Non-RoHS | Not Recommended for New Design | EAR99 | MM1-0626HSMM1-0832LS |
| M1R-0726LZ-1 | Double-Balanced Mixers | Z | Standard | Consult Factory. | End of Life | EAR99 | MM1-0832LSMM1-0626HS |
| M1R-0726NS | Double-Balanced Mixers | S | Standard | Non-RoHS | End of Life | EAR99 | MM1-0626HS |
| M1R-0726LS | Double-Balanced Mixers | S | Standard | Consult Factory. | Not Recommended for New Design | EAR99 | MM1-0626HSMM1-0832LS |

| Part Number | Description | Package | Connectors | Green Status | Product Lifecycle | Export Classification | Recommended Replacement |
|----------------------------|------------------------|---------|--------------------------|----------------------------------|--------------------------------|-----------------------|--------------------------------------|
| M1R-0726LS | Double-Balanced Mixers | S | Standard | Consult Factory. | Not Recommended for New Design | EAR99 | MM1-0626HSMM1-0832LS |
| M1R-0726NZ | Double-Balanced Mixers | Z | Standard | Non-RoHS | End of Life | EAR99 | MM1-0626HS |

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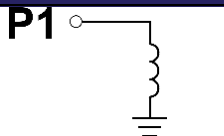
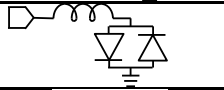
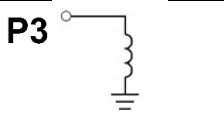
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Port Configuration and Functions

Port Functions

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

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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 | 14 | - | 17 | - |

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Electrical Specifications

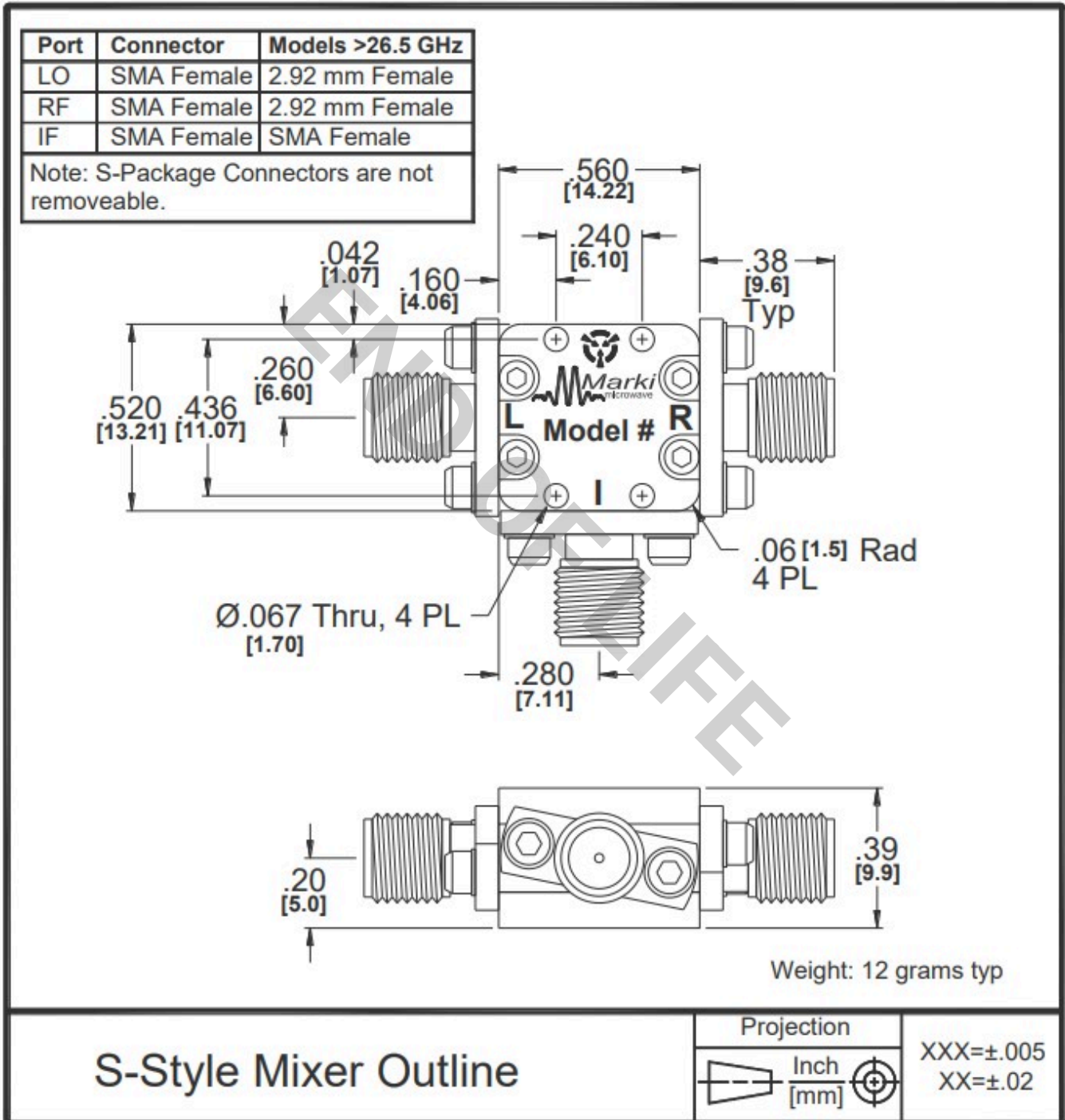
Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

| Parameter | Test Conditions | Min | Typ | Max | Unit |
|------------------------|--|-----|-----|------|------|
| Conversion Loss | LO/RF=20-26.5 GHz IF=3-8 GHz | - | 9 | 11 | dB |
| Conversion Loss | LO/RF=20-26.5 GHz IF=DC-3 GHz | - | 8 | 10 | dB |
| Conversion Loss | LO/RF=7-20 GHz IF=3-8 GHz | - | 7 | 9 | dB |
| Conversion Loss | LO/RF=7-20 GHz IF=DC-3 GHz | - | 6 | 8 | dB |
| Input 1 dB Compression | LO/RF=7-26.5 GHz LO drive level, N Diode Option=14-17 dBm | - | 8 | - | dBm |
| Input IP3 | LO/RF=7-26.5 GHz LO drive level, N Diode Option=14-17 dBm | - | 18 | - | dBm |
| Isolation, LO to IF | LO/RF=7-26.5 GHz | - | 25 | - | dB |
| Isolation, LO to RF | LO/RF=7-26.5 GHz | 25 | 38 | - | dB |
| Isolation, RF to IF | LO/RF=7-26.5 GHz | - | 25 | - | dB |
| IF Frequency Range | - | 0 | - | 8 | GHz |
| RF Frequency Range | - | 7 | - | 26.5 | GHz |

Mechanical Data

Outline Drawing

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



Notes

DATA SHEET NOTES:

1. Mixer Conversion Loss Plots 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 +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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