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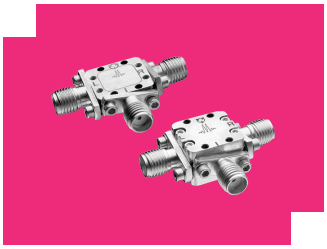
M1R-0726MS

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.



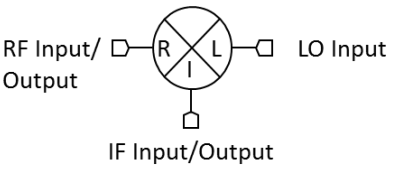
Features

- 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

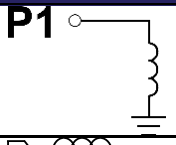
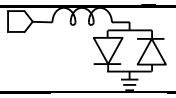
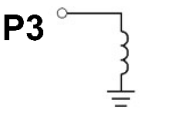
Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification	Recommended Replacement
M1R-0726LS-1	Double-Balanced Mixers	S	Standard	Consult Factory	Not Recommended for New Design	EAR99	MM1-0832LSMM 0626HS
M1R-0726LZ	Double-Balanced Mixers	Z	Standard	Non-RoHS	End of 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	MM1-0832LSMM 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

Table Of Contents

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.	

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	11	-	14	-

Electrical Specifications

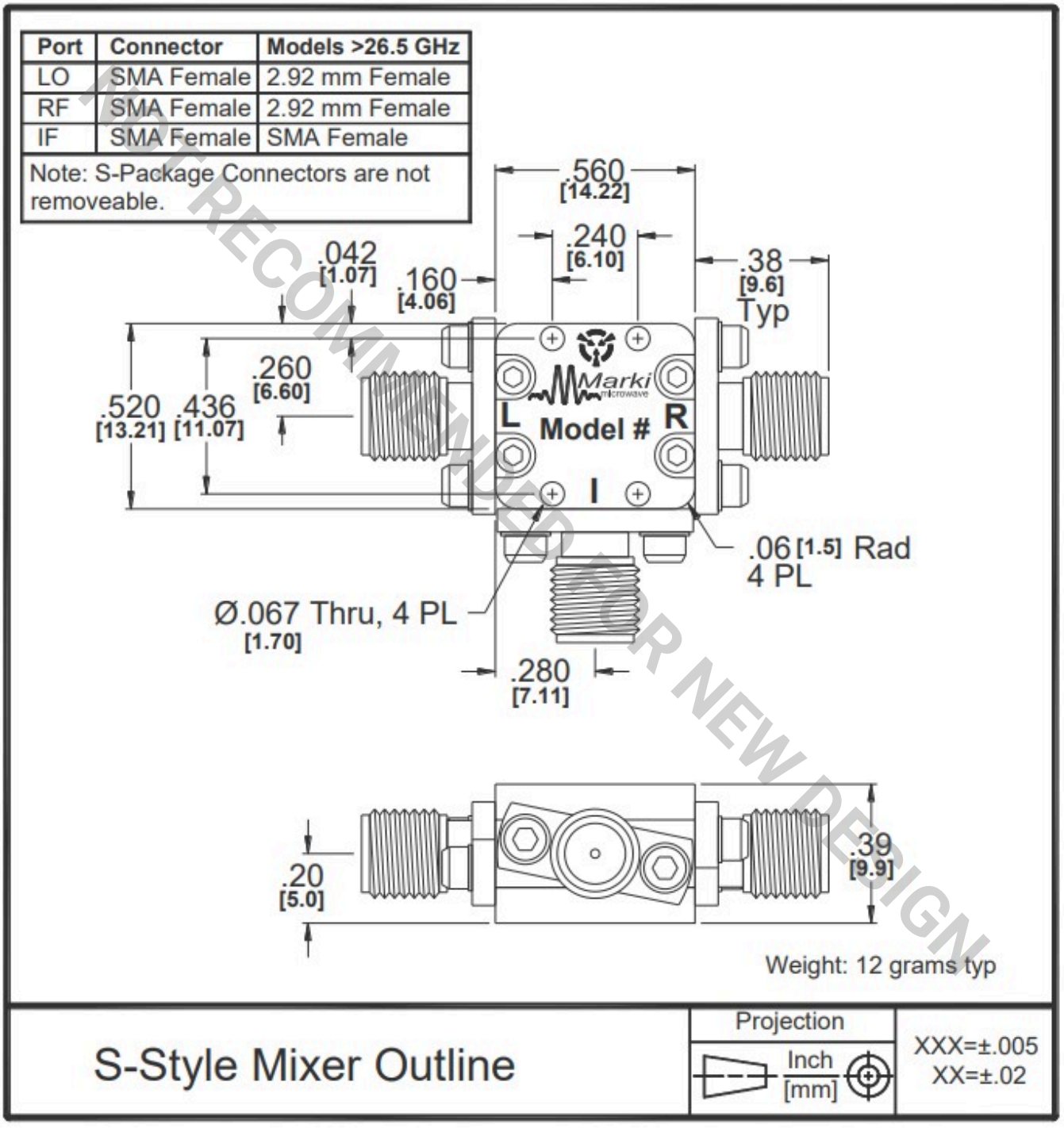
Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

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, M Diode Option=11-14 dBm	-	5	-	dBm
Input IP3	LO/RF=7-26.5 GHz LO drive level, M Diode Option=11-14 dBm	-	15	-	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.

DISCLAIMER