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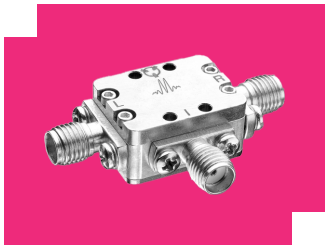
M1B-0618MP

Double-Balanced Mixers Bi-Phase Modulators

DEVICE OVERVIEW

General Description

The M1B-0618MP is a well balanced double balanced mixer that is particularly well suited as a bi-phase modulator due to low insertion loss, excellent balance, and characterization as a bi-phase modulator.



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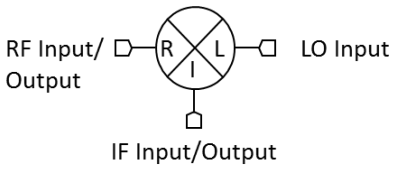
Features

- LO/RF 6.0 to 18.0 GHz
- IF DC to 4.0 GHz
- 5.5 dB Typical Conversion Loss
- 33 dB Typical LO to RF Isolation
- Recommended for Bi-Phase Applications
- 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
M1B-0618LP	Double-Balanced Mixers Bi-Phase Modulators	P	Standard	Consult Factory	End of Life	EAR99	MM1-0320LS
M1B-0618MP	Double-Balanced Mixers Bi-Phase Modulators	P	Standard	Non-RoHS	End of Life	EAR99	MM1-0320LS

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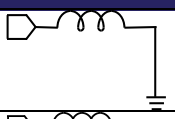
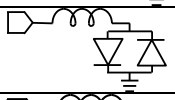
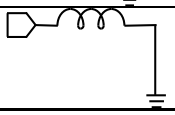
Port Configuration and Functions

Port Functions

Port	Function	Connector Type	Description	Equivalent Circuit for Package
Port 1	LO	SMAF	Port 1 is DC short for the 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.	

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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	-

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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=14-18 GHz IF=2-4 GHz	-	7.5	10	dB
Conversion Loss	LO/RF=14-18 GHz IF=DC-2 GHz	-	6.5	9	dB
Conversion Loss	LO/RF=6-14 GHz IF=2-4 GHz	-	6.5	8	dB
Conversion Loss	LO/RF=6-14 GHz IF=DC-2 GHz	-	5.5	7	dB
IF Frequency Range	-	0	-	4	GHz
Input 1 dB Compression	LO/RF=6-18 GHz LO drive level, M Diode Option=10-13 dBm	-	5	-	dBm
Input IP3	LO/RF=6-18 GHz LO drive level, M Diode Option=10-13 dBm	-	15	-	dBm
Isolation, LO to IF	LO/RF=6-18 GHz	-	30	-	dB
Isolation, LO to RF	LO/RF=6-18 GHz	25	33	-	dB
Isolation, RF to IF	LO/RF=6-18 GHz	-	25	-	dB
LO Drive Level	-	10	-	13	dBm
RF Frequency Range	-	6	-	18	GHz
Input 1 dB Compression	-	-	5	-	dBm
Input IP3	-	-	15	-	dBm

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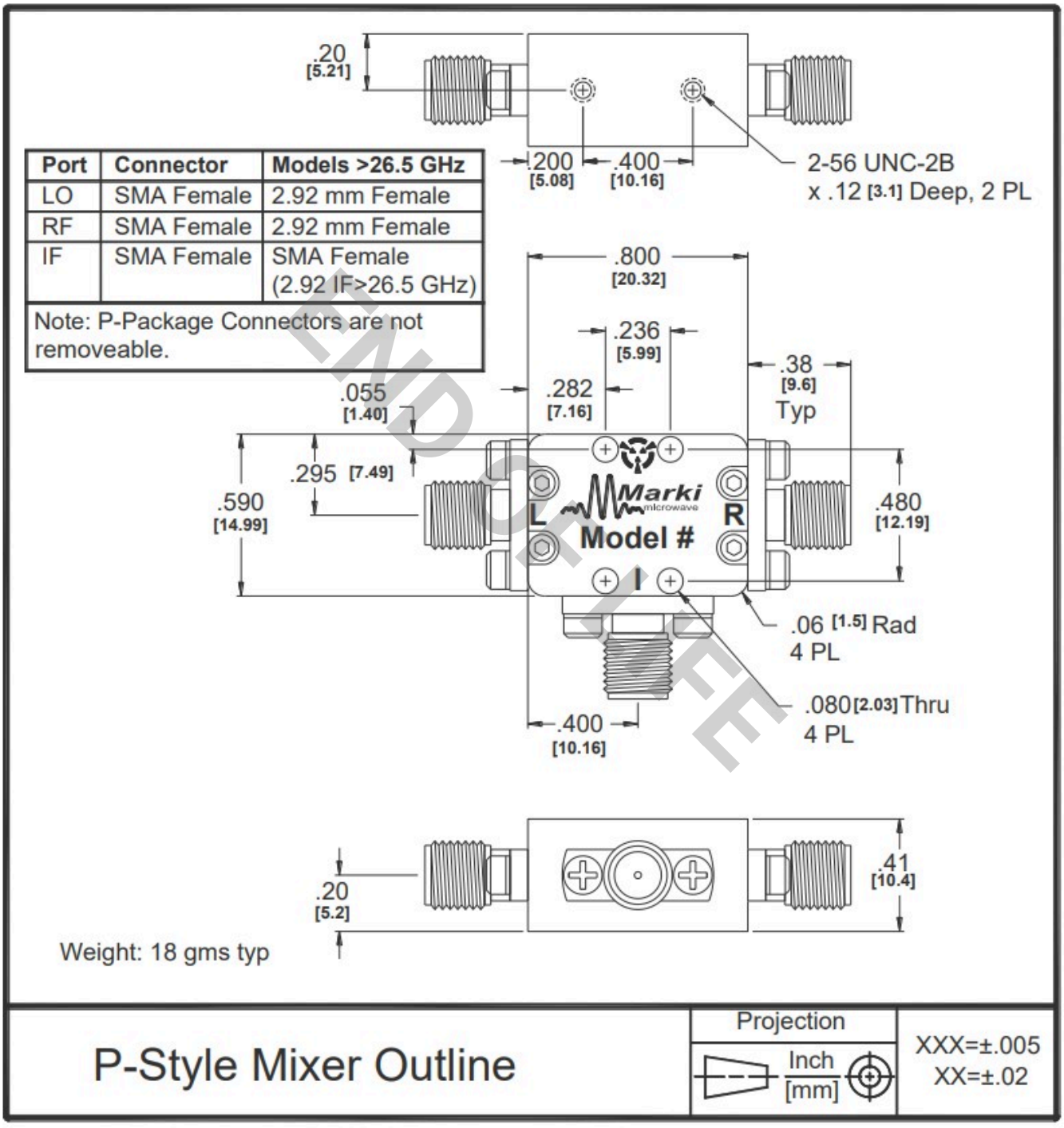
Mechanical Data

Outline Drawing

Download : Outline 3D Drawing | Outline 3D STP



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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 +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. Standard configuration for A, B, and C 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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