

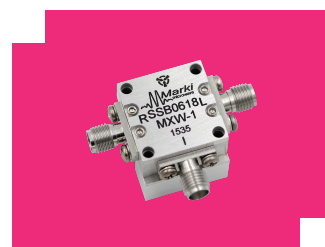
SSB-0618MXW-1

Single-Sideband Double-Balanced Mixers

DEVICE OVERVIEW

General Description

The SSB-0618 is a single sideband mixer that will perform a single sided upconversion. In a single sided upconversion, one of the two upconverted sidebands is suppressed by the mixer out of the RF port. SSB mixers have generally been replaced by MMIQ mixers with superior performance, repeatability, and availability. SSB series mixers are still used in legacy systems and are suitable for laboratory use.



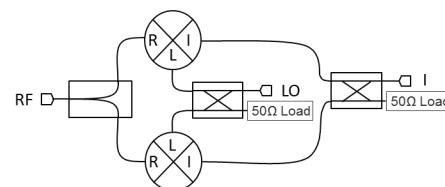
Features

- LO/RF 6.0 to 18.0 GHz
- IF (input) 4 to 210 MHz
- 7.5 dB Typical Conversion Loss
- 35 dB Typical LO to RF Isolation
- 23 dB Typical Sideband Suppression
- Connectorized
- Ultra-Broadband IF

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification
<u>SSB-0618LXW-2</u>	Single-Sideband Double-Balanced Mixers	XW	<u>Standard</u>	Non-RoHS	End of Life	EAR99
SSB-0618MXW-1	Single-Sideband Double-Balanced Mixers	XW	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99
<u>SSB-0618MXW-2</u>	Single-Sideband Double-Balanced 6 - 18 GHz Mixers	XW	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99
<u>SSB-0618LXW-1</u>	Single-Sideband Double-Balanced Mixers	XW	<u>Standard</u>	Non-RoHS	End of Life	EAR99

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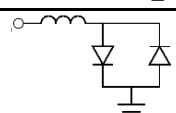
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Port Configuration and Functions

Port Functions

Port	Function	Connector Type	Description	Equivalent Circuit for Package
GND	Ground	-	XW package ground taken through metal housing.	GND 
I	I Input / Output	SMAF	I port is diode coupled and AC matched to 50Ω over the specified I port frequency range.	
LO	LO Input	SMAF	LO port is DC short and AC matched to 50Ω over the specified LO frequency range.	
RF	RF Input / Output	SMAF	RF port is DC short and AC matched to 50Ω over the specified RF frequency range.	

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Specifications

Package Information

Parameter	Details	Rating
Weight	Package name: XW	40g
Dimensions	-	20.32 x 20.32 mm

Recommended Operating Conditions

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

NOT RECOMMENDED FOR NEW DESIGN

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Electrical Specifications

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

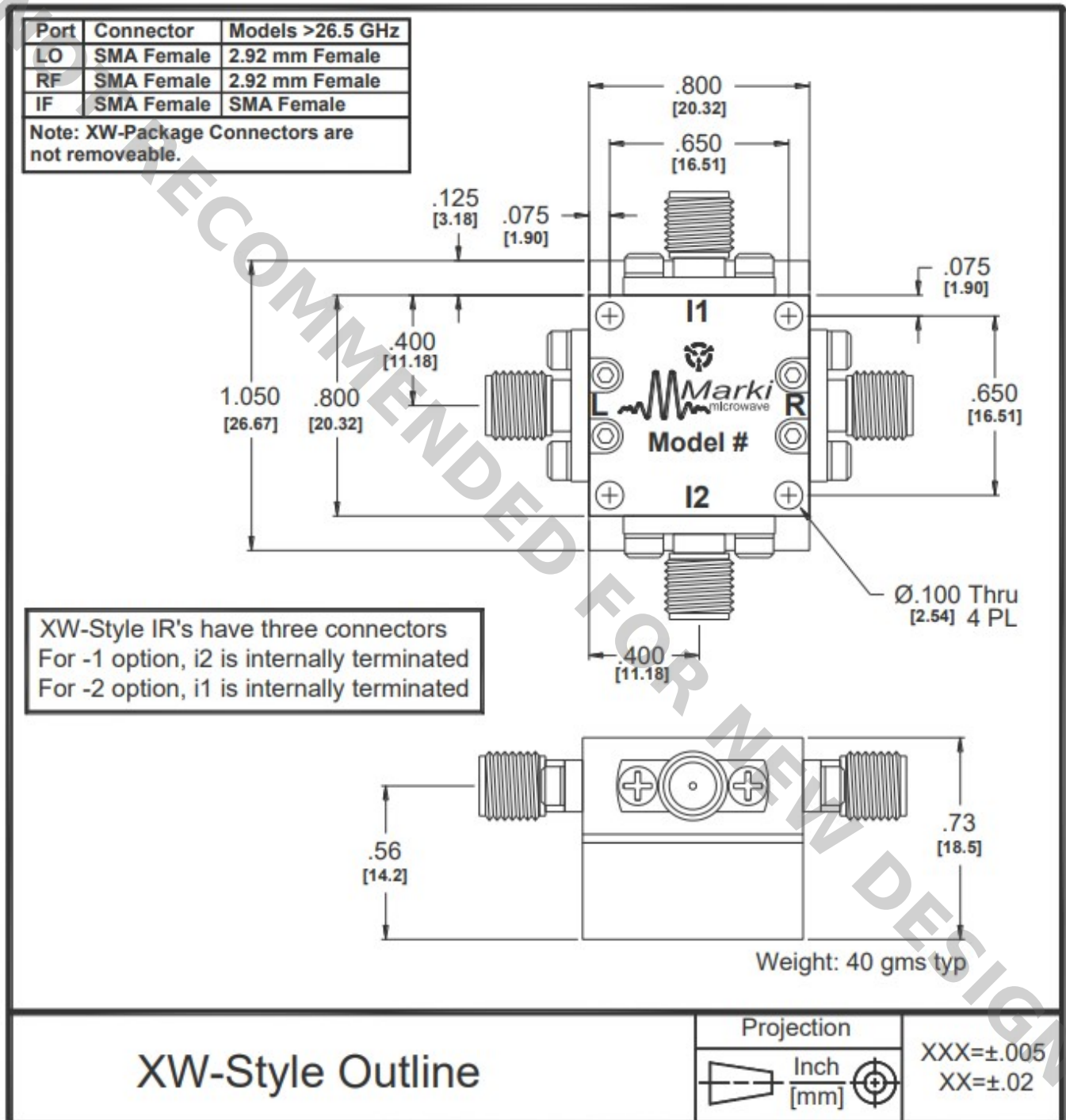
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
RF Frequency Range	-	-	-	6	-	18	GHz
Conversion Loss	LO/RF=6-18 GHz IF=0.004-0.21 GHz	6	18	-	7.5	9	dB
Input IP3	LO/RF=6-18 GHz LO drive level, M Diode Option=13-16 dBm	6	18	-	16	-	dBm
IF Frequency Range	-	-	-	0.004	-	0.21	GHz
Input 1 dB Compression	LO/RF=6-18 GHz LO drive level, M Diode Option=13-16 dBm	6	18	-	6	-	dBm
Sideband Suppression	LO/RF=6-18 GHz IF=0.004-0.21 GHz	6	18	14	23	-	dB
Isolation, LO to IF	LO/RF=8-18 GHz	8	18	-	25	-	dB
Isolation, LO to RF	LO/RF=8-18 GHz	8	18	25	35	-	dB
Isolation, RF to IF	LO/RF=8-18 GHz	8	18	-	25	-	dB
Sideband Suppression	LO/RF=8-18 GHz IF=0.004-0.21 GHz	8	18	16	23	-	dB

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Mechanical Data

Outline Drawing



Notes

DATA SHEET NOTES:

1. Mixer Conversion Loss Plot IF frequency is 70 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 +26 dBm at +25°C, derated linearly to +23 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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