

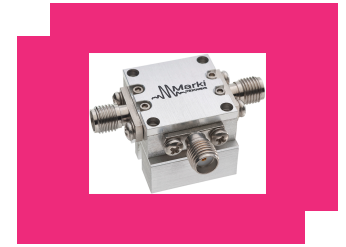
# IRW-0618LXW-2

## Image Reject Double-Balanced Mixers

### DEVICE OVERVIEW

#### General Description

The IRW-0618 is an image reject mixer that performs single sided downconversion, or "image reject" conversion, and offers excellent image rejection across broad bandwidths. This broadband mixer spans 6 to 18 GHz on the RF and LO ports with an IF from 4 to 210 MHz. IR series mixers have generally been replaced with MMIQ mixers with superior performance, repeatability, and availability. IR series mixers are still used in legacy systems and are suitable for laboratory use.



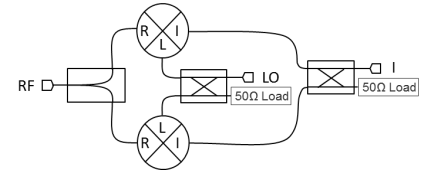
#### Features

- LO/RF 6.0 to 18.0 GHz
- IF 4 to 210 MHz
- 10 dB Typical Conversion Loss
- 35 dB Typical LO to RF Isolation
- 23 dB Typical Image Rejection
- Connectorized
- Ultra-Broadband IF

#### Applications

N/A

#### Functional Block Diagram



#### Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification	Recommended Replacement
IRW-0618MXW-2	Image Reject Double-Balanced Mixers	XW	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99	-
IRW-0618LXW-1	Image Reject Double-Balanced 6 - 18 GHz Mixer	XW	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99	-
IRW-0618MXW-1	Image Reject Double-Balanced 6 - 18 GHz Mixer	XW	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99	-
IRW-0618LXW-2	Image Reject Double-Balanced Mixers	XW	<u>Standard</u>	Non-RoHS	Not Recommended for New Design	EAR99	-

## Table Of Contents

- **Device Overview**
  - General Description
  - Features
  - Applications
  - Functional Block Diagram
- **Port Configuration and Functions**
  - Port Functions
- **Revision History**
- **Specifications**
  - Package Information
  - Recommended Operating Conditions
  - Electrical Specifications
  - Typical Performance Plots
- **Mechanical Data**
  - Outline Drawing
- **Notes**


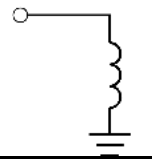
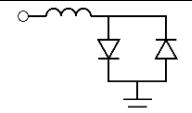
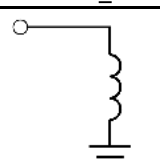
## Revision History

Revision Code	Revision Date	Comment
A	2024-11-01	Updated according to ECN#24097. Electrical spec table updated.

NOT RECOMMENDED FOR NEW DESIGN

## Port Configuration and Functions

### Port Functions

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

**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	-

NOT RECOMMENDED FOR NEW DESIGN

**Electrical Specifications**

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

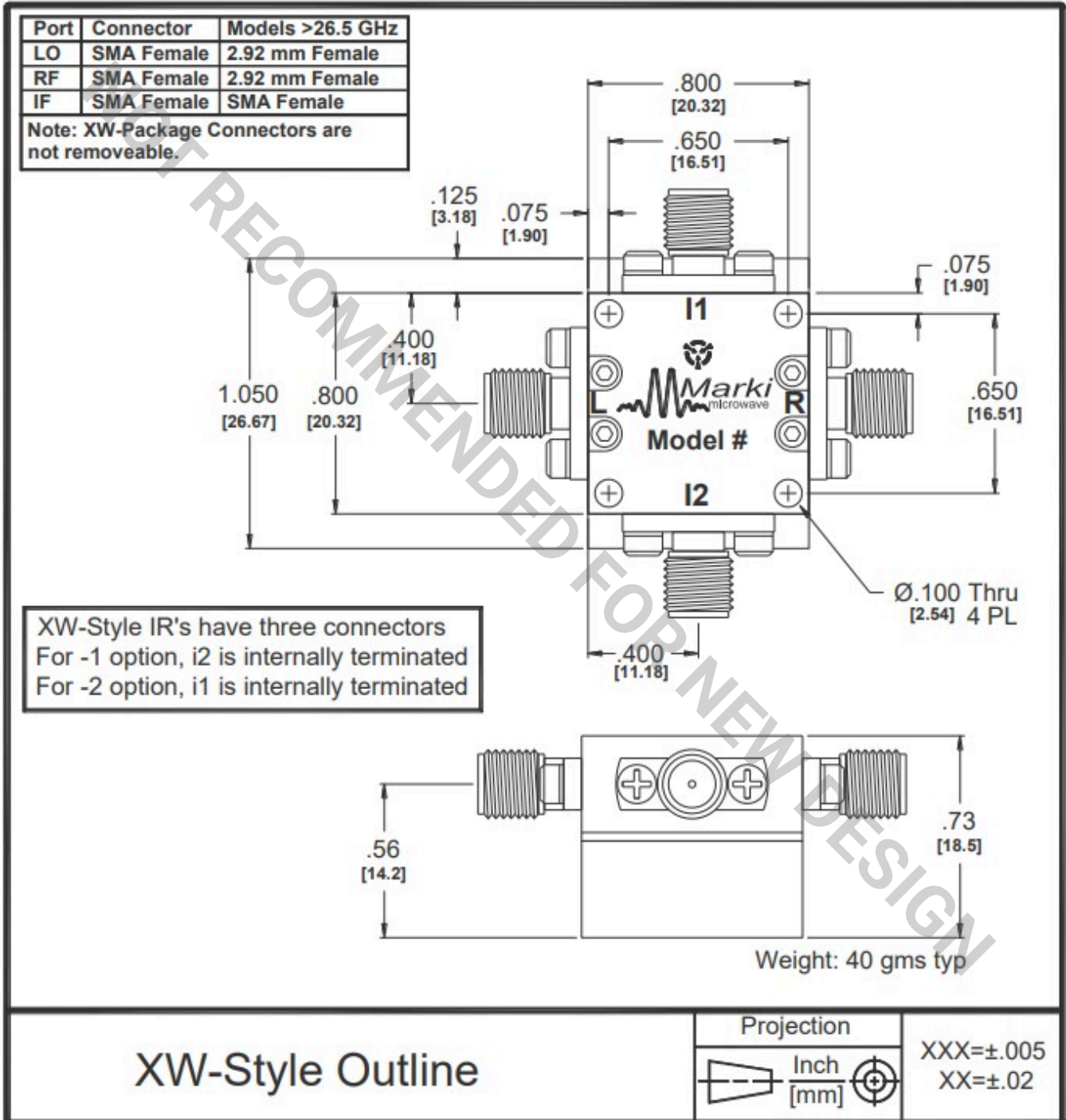
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Conversion Loss	LO/RF=6-18 GHz IF=0.004-0.21 GHz	6	18	-	10	14	dB
Image Rejection	LO/RF=6-18 GHz IF=0.004-0.21 GHz	6	18	-	23	-	dB
Input 1 dB Compression	LO/RF=6-18 GHz LO drive level, L Diode Option=10-13 dBm	6	18	-	4	-	dBm
Input IP3	LO/RF=6-18 GHz LO drive level, L Diode Option=10-13 dBm	6	18	-	14	-	dBm
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
IF Frequency Range	-	-	-	0.004	-	0.21	GHz
RF Frequency Range	-	-	-	6	-	18	GHz

NOT RECOMMENDED FOR NEW DESIGN

Mechanical Data

Outline Drawing

Download : [Outline 2D 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.

## DISCLAIMER

MARKI MICROWAVE, INC., ("MARKI") PROVIDES TECHNICAL SPECIFICATIONS AND DATA (INCLUDING DATASHEETS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, AND OTHER INFORMATION AND RESOURCES "AS IS" AND WITH ALL FAULTS. MARKI DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

These resources are intended for developers skilled in the art designing with Marki products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards and other requirements. Marki makes no guarantee regarding the suitability of its products for any particular purpose, nor does Marki assume any liability whatsoever arising out of your use or application of any Marki product.

Marki grants you permission to use these resources only for development of an application that uses Marki products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Marki intellectual property or to any third-party intellectual property. Marki reserves the right to make changes to the product(s) or information contained herein without notice.

MARKI MICROWAVE and T3 MIXER are trademarks or registered trademarks of Marki Microwave, Inc. All other trademarks used are the property of their respective owners.

© 2024, Marki Microwave, Inc