

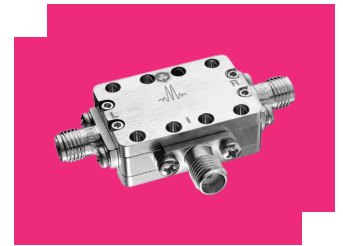
# M4-0150LKV

## Double-Balanced Mixers

### DEVICE OVERVIEW

#### General Description

M4 diplexed IF mixers are hybrid assemblies that combine a low frequency IF (to DC) with a multi-decade bandwidth RF and LO. M4 mixers are commonly used for single tone analyzers (such as antenna test systems) with ultra-broad frequency ranges.



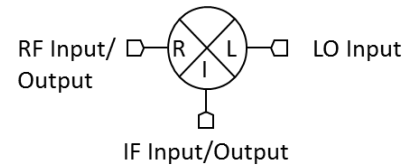
#### Features

- LO/RF 1.0 to 50.0 GHz
- IF DC to 400 MHz
- 9.0 dB Typical Conversion Loss
- 27 dB Typical LO to RF Isolation
- Super-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
M4-0150LKVM-LF	Double-Balanced Mixers	KVM	Standard	Consult Factory	Not Recommended for New Design	EAR99	-
M4-0150LKV	Double-Balanced Mixers	KV	Standard	Consult Factory	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**

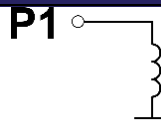
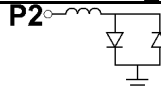
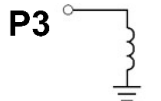
## Revision History

Revision Code	Revision Date	Comment
-	2007-03-01	Initial Release
A	2019-08-01	Added Lead Free Version

NOT RECOMMENDED FOR NEW DESIGN

**Port Configuration and Functions**

**Port Functions**

Port	Function	Connector Type	Description	Equivalent Circuit for Package
Port 1	LO	2.4F	Port 1 is DC short for the KV package.	
Port 2	IF	SMAF	Port 2 is diode connected for the KV Package.	
Port 3	RF	2.4F	Port 3 is DC short for the KV Package.	

NOT RECOMMENDED FOR NEW DESIGN

**Specifications**

**Package Information**

Parameter	Details	Rating
Weight	Package name: KV	25g
Dimensions	-	27.94 X 18.80 mm

**Recommended Operating Conditions**

Parameter	Min	Nominal	Max	Unit
LO Input Power	15	-	19	-

NOT RECOMMENDED FOR NEW DESIGN

## Electrical Specifications

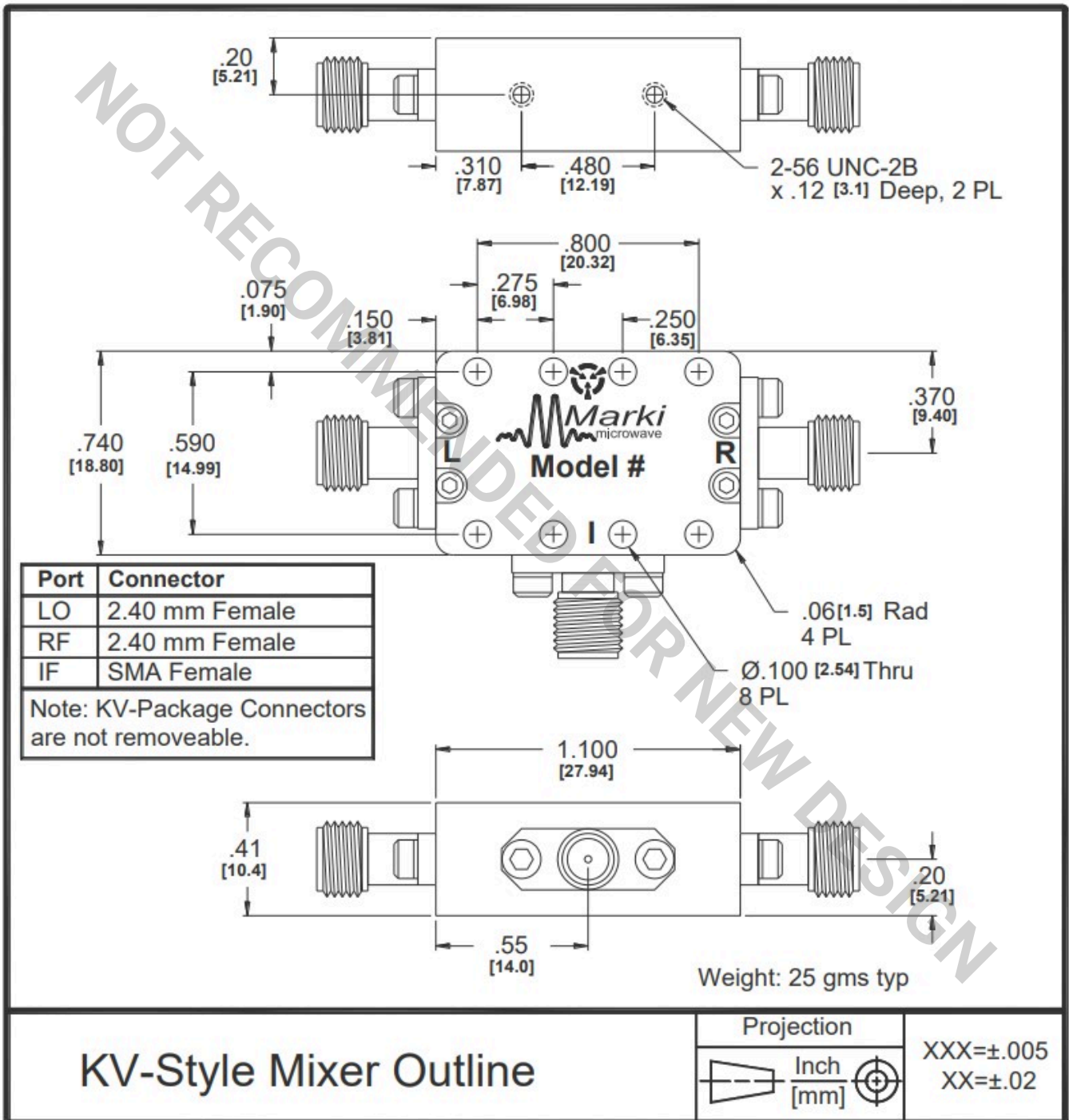
Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

Parameter	Test Conditions	Min	Typ	Max	Unit
Conversion Loss	LO/RF=1-50 GHz IF=DC-.25 GHz	-	9	14	dB
Conversion Loss	LO/RF=1-50 GHz IF=DC-.4 GHz	-	10	15	dB
Input 1 dB Compression	LO/RF=1-50 GHz LO drive level, L Diode Option=15-19 dBm	-	3	-	dBm
Input IP3	LO/RF=1-50 GHz LO drive level, L Diode Option=15-19 dBm	-	13	-	dBm
Isolation, LO to IF	LO/RF=1-50 GHz	-	27	-	dB
Isolation, LO to RF	LO/RF=1-50 GHz	-	27	-	dB
Isolation, RF to IF	LO/RF=1-50 GHz	-	25	-	dB
IF Frequency Range	-	0	-	0.4	GHz
RF Frequency Range	-	1	-	50	GHz

**Mechanical Data**

**Outline Drawing**

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



## Notes

1. Mixer Conversion Loss Plot is done with an IF frequency of 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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