

QH-0R71R3

3 dB Quadrature Hybrid

DEVICE OVERVIEW

General Description

The QH-0R71R3 is an octave band multi-purpose 3dB quadrature (90°) hybrid. It is designed to mate with the MLIQ connectorized package, for use as an image reject downconverter or single sideband upconverter. Custom designs are also available; contact the factory for details.

[Download s-parameters here](#)

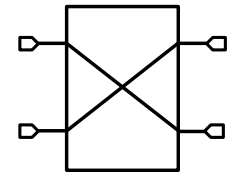
Features

- Low insertion loss
- High isolation
- Low VSWR

Applications

- Balanced Amplifiers
- Microwave Correlators
- Microwave Butler Matrices
- Single Sideband Upconverters
- Image Reject Downconverter

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Packing Size	Green Status	Product Lifecycle	Export Classification
QH-0R71R3	3 dB Quadrature Hybrid	-	-	Non-RoHS	Released	EAR99

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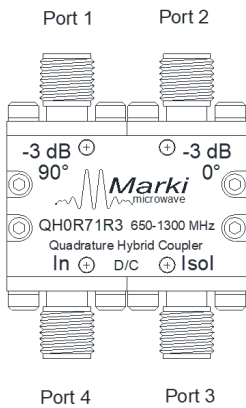
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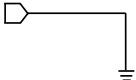
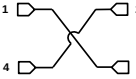
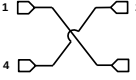
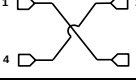
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Port Configuration and Functions

Port Diagram



Port Functions

Port	Function	Description	Equivalent Circuit for Package
GND	Ground	Package ground is provided through metal housing and outer coax conductor.	
Port 1	90° Output	Port 1 is DC short to Port 3 and open to ground.	
Port 2	0° Output	Port 2 is DC short to Port 4 and open to ground.	
Port 3	Isolated	Port 3 is DC short to Port 1 and open to ground.	
Port 4	Input	Port 4 is DC short to Port 2 and open to ground.	

Specifications

Package Information

Parameter	Details	Rating
Weight	-	16g
Dimensions	-	27.94 x 16.51 mm

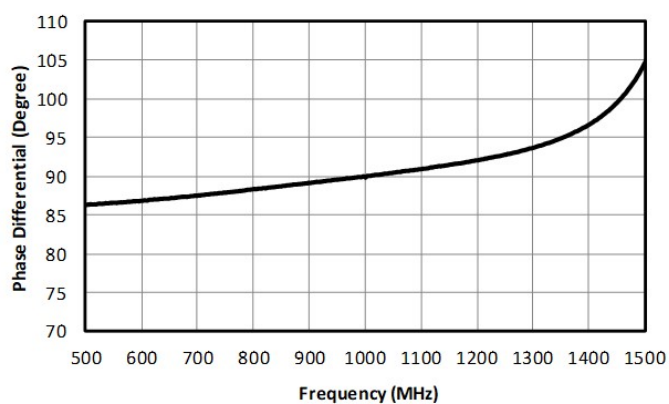
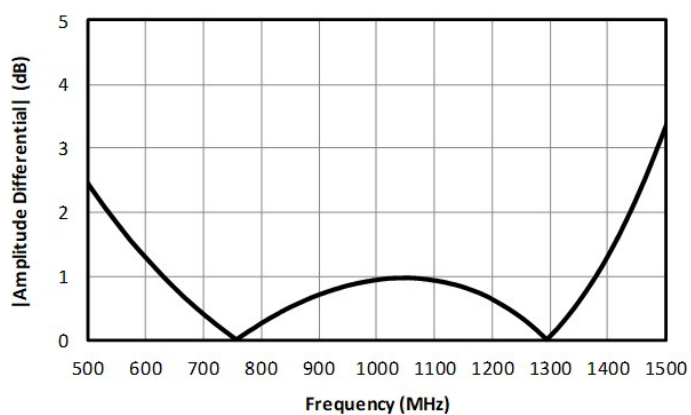
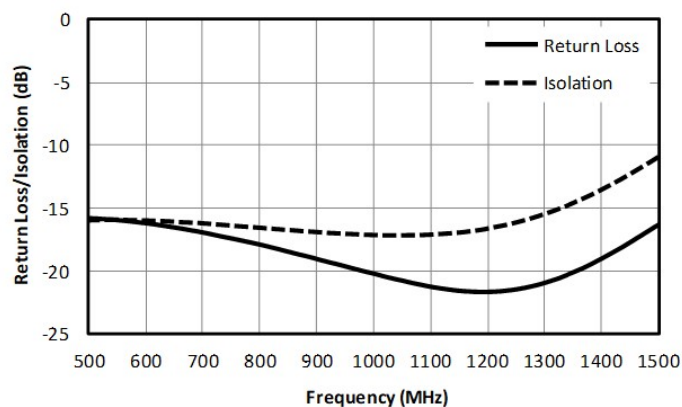
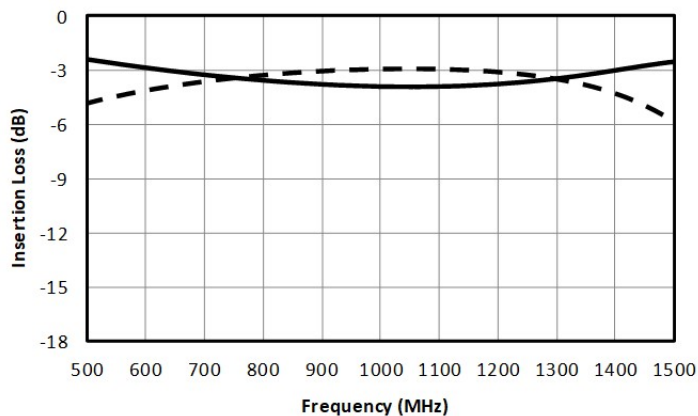
Electrical Specifications

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Phase Shift	-	0.65	1.3	-	90	-	°
Amplitude Balance ¹	-	0.65	1.3	-	0.3	0.7	dB
Phase Balance	-	0.65	1.3	-	3	10	°
Excess Through Line Insertion Loss ²	-	0.65	1.3	-	0.5	1.2	dB
Isolation	-	0.65	1.3	13	16	-	dB
VSWR	-	0.65	1.3	-	1.3	-	-
Mean Coupling	-	0.65	1.3	-	3	-	dB

^[1] Maximum amplitude differential is twice the magnitude of the amplitude balance.

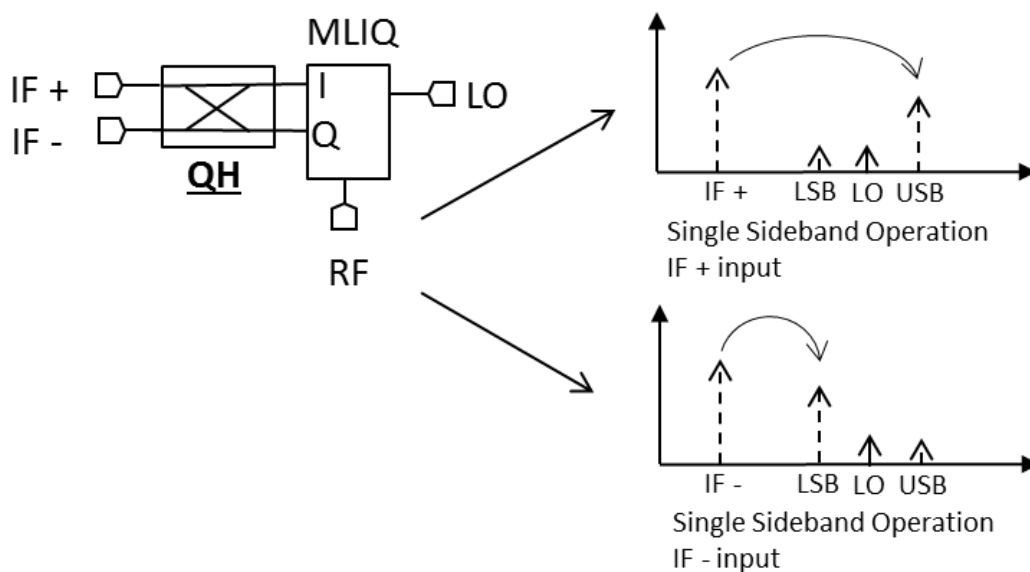
^[2] Excess Insertion Loss = (Input to Output Insertion Loss) – 3 dB.

Typical Performance Plots

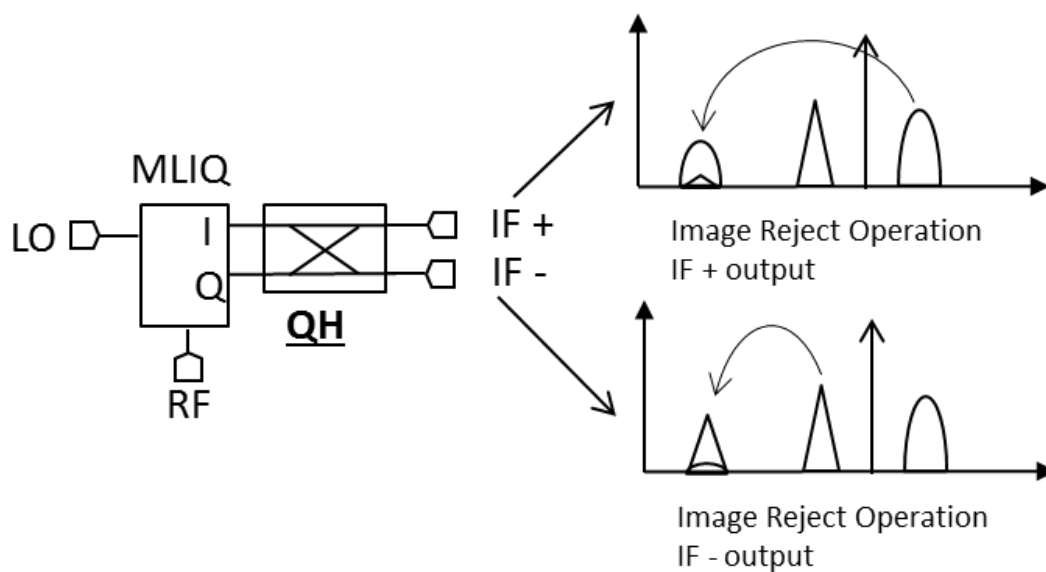


Application Information

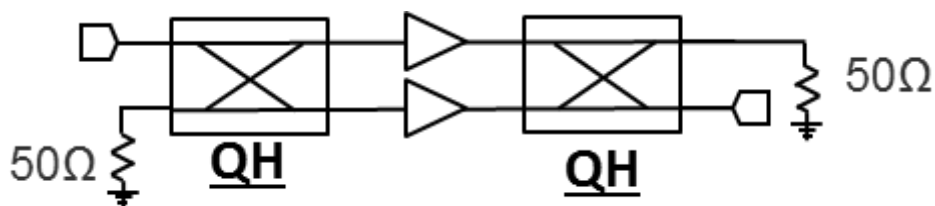
Application Examples



Through and coupled line insertion loss.



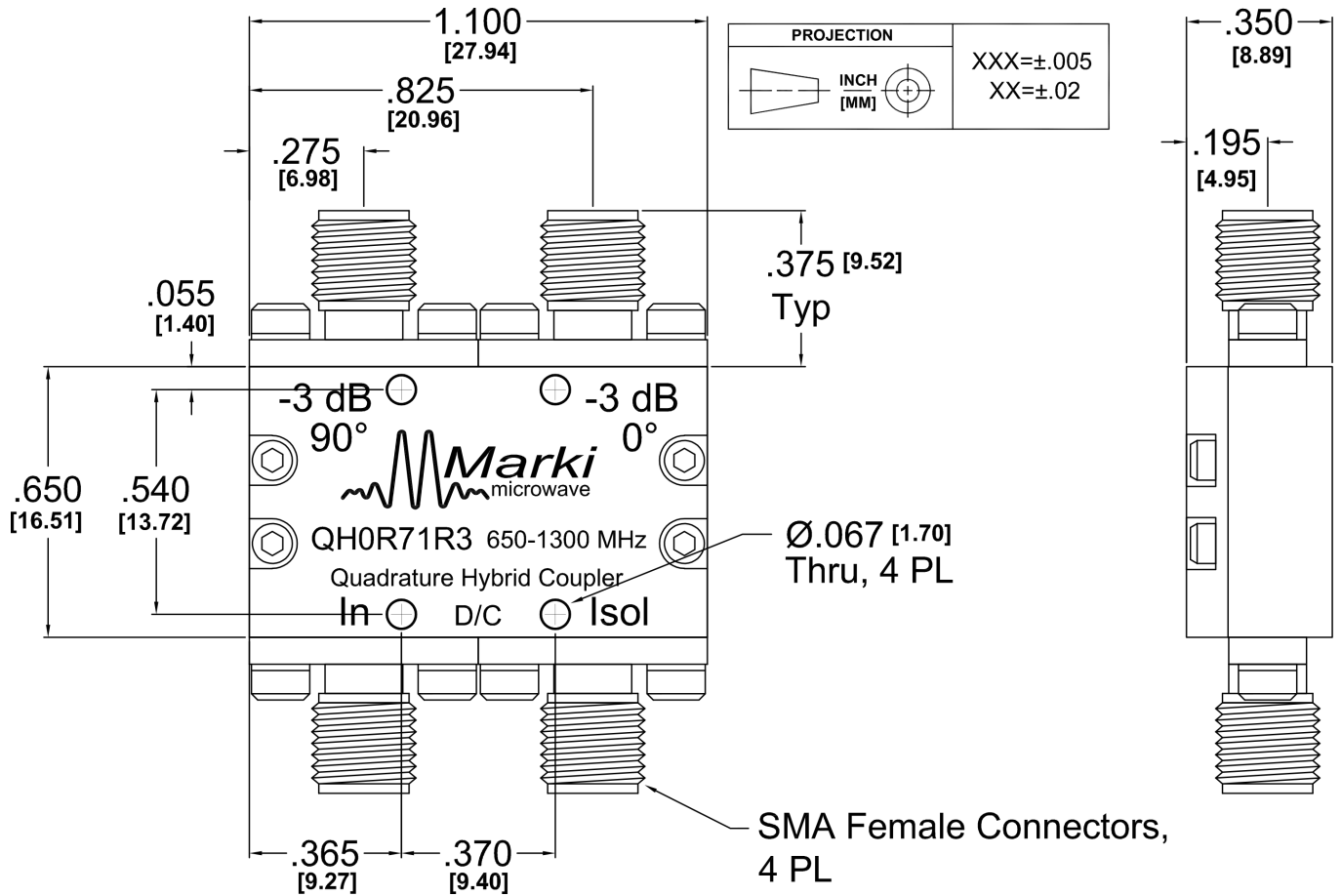
Through and coupled line insertion loss.



Through and coupled line insertion loss.

Mechanical Data

Outline Drawing



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