

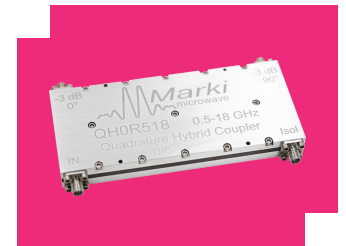
QH-0R518

3 dB Quadrature Hybrid

DEVICE OVERVIEW

General Description

The QH-0R518 is a 0.5-18 GHz, multi-purpose broadband 3dB quadrature hybrid. The multisection tri-plate stripline design exhibits excellent amplitude balance with broadband quadrature phasing (90°) between the output ports. Applications include single sideband upconverters, image rejection downconverters, IQ modulators, balanced amplifiers, microwave correlators and microwave Butler matrices. Custom designs are also available; contact the factory for details.



[Download s-parameters here](#)

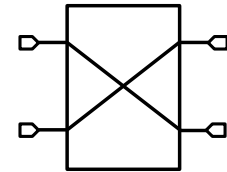
Features

- Broadband performance
- Excellent amplitude and phase balance
- High isolation
- Low VSWR

Applications

- Single Sideband Upconverters
- Image Rejection Downconverters
- IQ Modulators
- Balanced Amplifiers
- Microwave Correlators
- Microwave Butler Matrices

Functional Block Diagram



Part Ordering Options

Part Number	Description	Connectors	Green Status	Product Lifecycle	Export Classification
QH-0R518	3 dB Quadrature Hybrid	<u>Standard</u>	REACH RoHS	Released	EAR99

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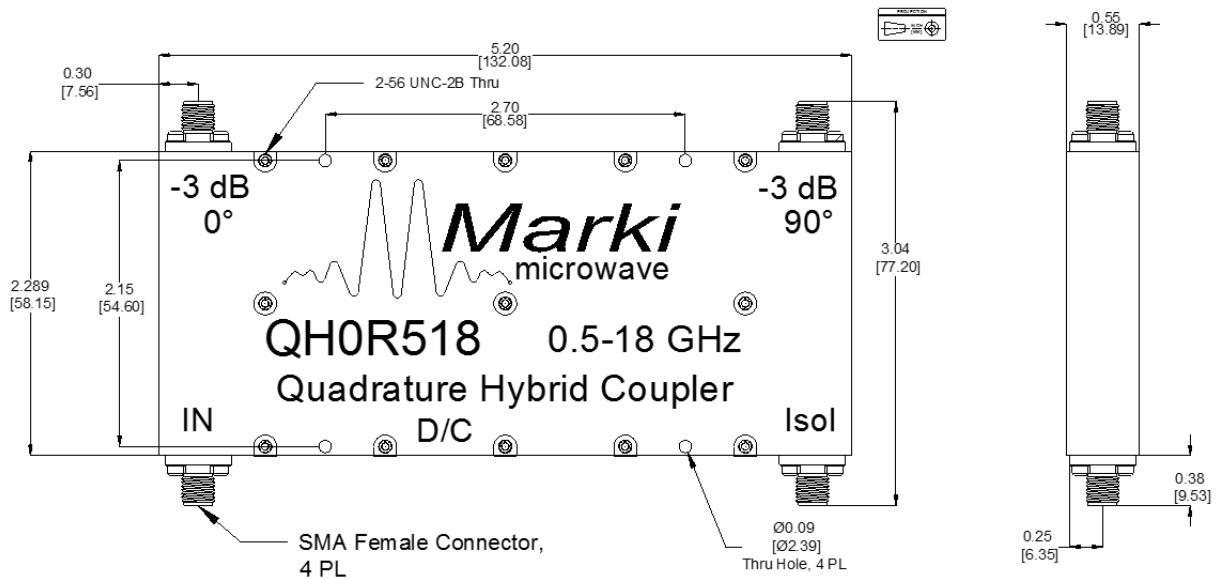
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Revision History

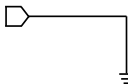
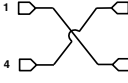

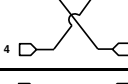
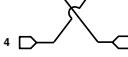
Revision Code	Revision Date	Comment
-	2019-06-05	Initial Date Release

Port Configuration and Functions

Port Diagram



Port Functions

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

Specifications

Package Information

Parameter	Details	Rating
Weight	-	225g
Dimensions	-	132.08 x 58.15 mm

Electrical Specifications

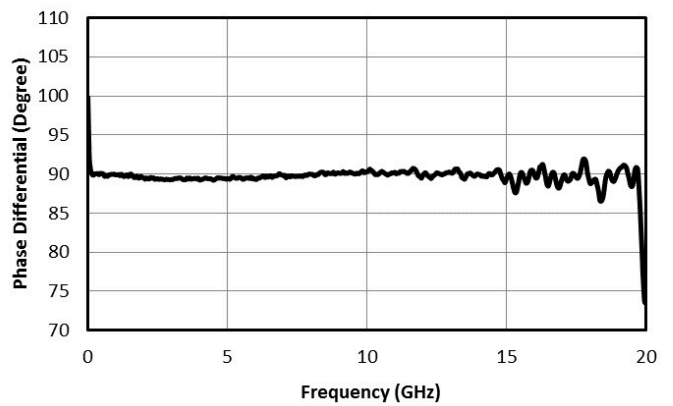
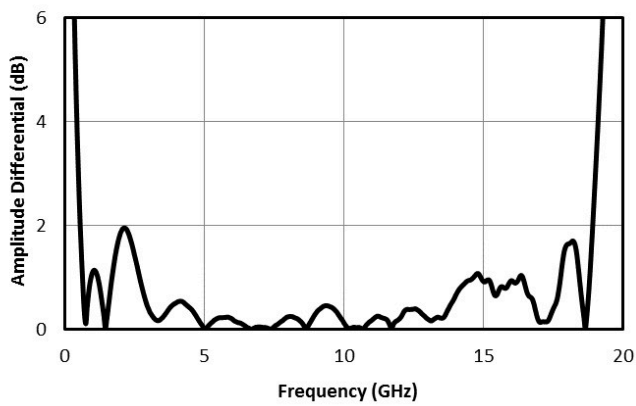
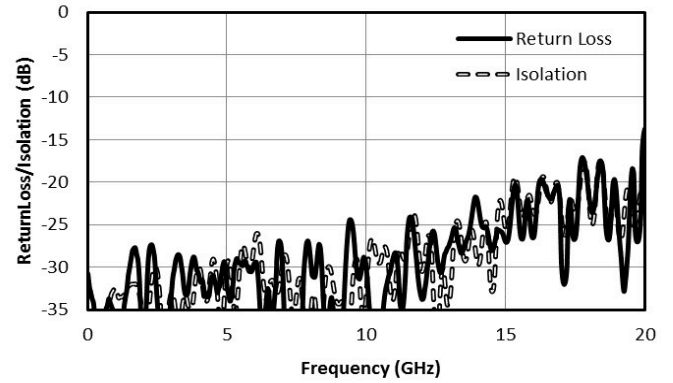
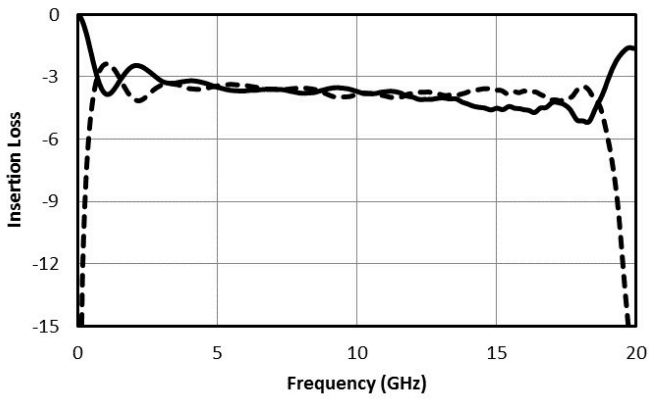
Specifications guaranteed when operated in a 50Ω system.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Amplitude Balance ¹	-	0.5	18	-	0.5	-	dB
CW Power	-	0.5	18	-	-	20	W
Excess Insertion Loss (dB) ²	-	0.5	18	-	1.5	-	dB
Isolation	-	0.5	18	-	20	-	dB
Mean Coupling	-	0.5	18	-	3	-	dB
Phase Balance	-	0.5	18	-	3	-	°
Phase Shift	-	0.5	18	-	90	-	°
VSWR	-	0.5	18	-	1.5	-	

^[1] Maximum amplitude differential is twice the magnitude of the amplitude balance (see Amplitude difference between the 0° and 90° output ports.)

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

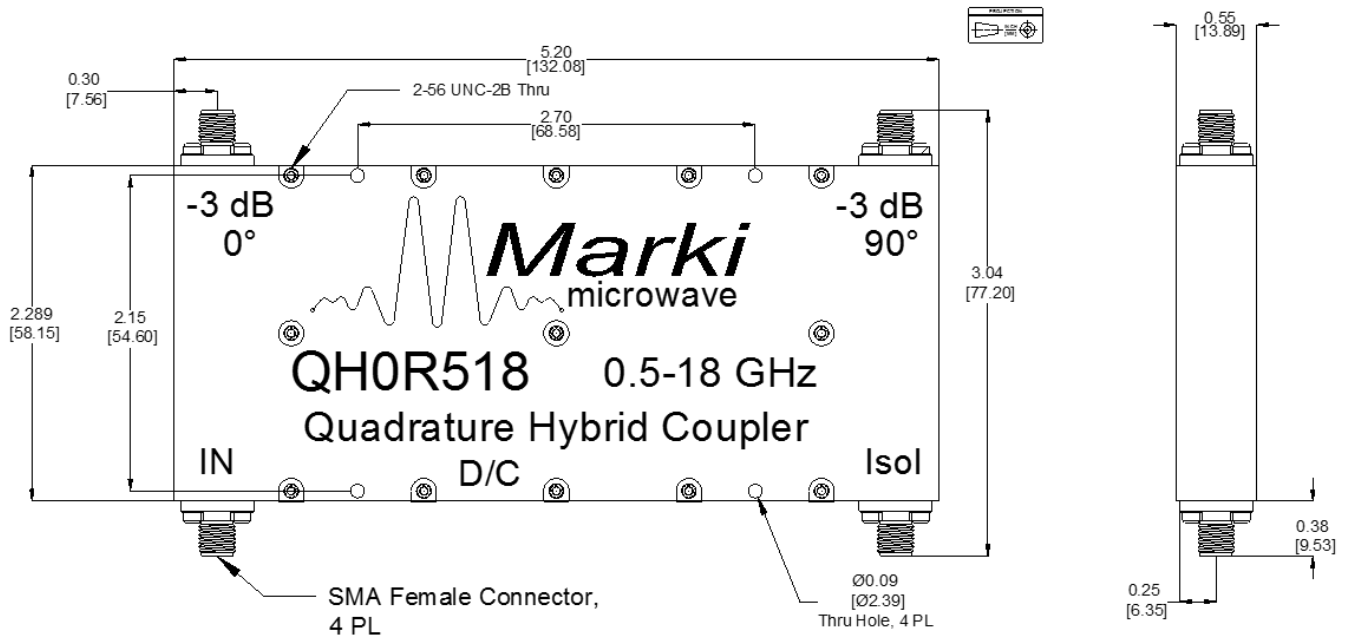
Typical Performance Plots



Mechanical Data

Outline Drawing

Download : [Outline 2D Drawing](#) | [Outline 3D Drawing](#) | [Outline 3D STP](#)



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