

QH-0550

3 dB Quadrature Hybrid

DEVICE OVERVIEW

General Description

The QH-0550 is a 5-50 GHz, multi-purpose broadband 3dB quadrature hybrid. The multisection tri-plate stripline design exhibits excellent amplitude balance with broadband quadrature phasing (90o) 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](#)

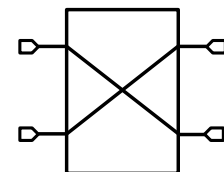
Features

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

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Packing Size	Green Status	Product Lifecycle	Export Classification
QH-0550	3 dB Quadrature Hybrid	-	-	Non-RoHS	Released	EAR99

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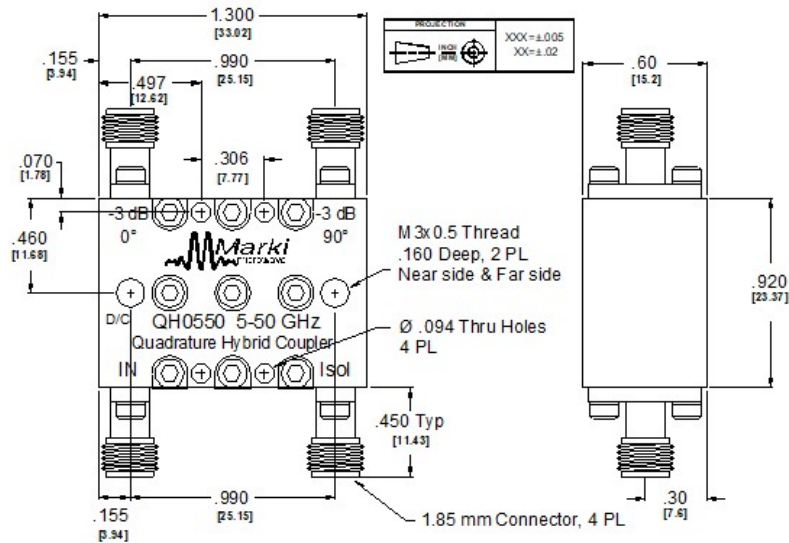
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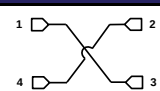
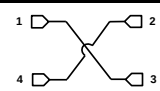
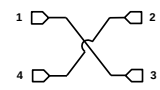
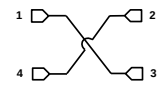
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Port Configuration and Functions

Port Diagram



Port Functions

Port	Function	Description	Equivalent Circuit for Package
Port 1	0° Output	Port 1 is DC short to port 3 and open to ground.	
Port 2	90° 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	-	42g
Dimensions	-	33.02 x 23.37 mm

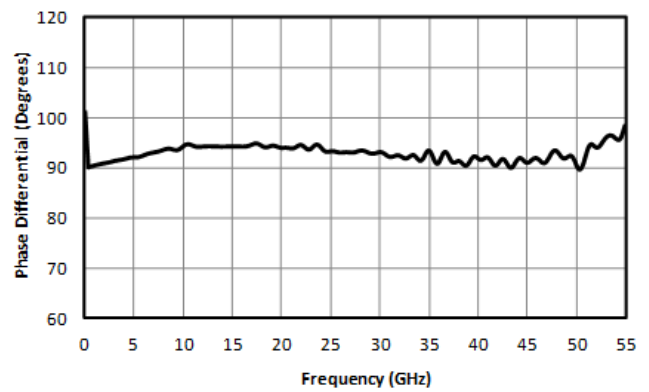
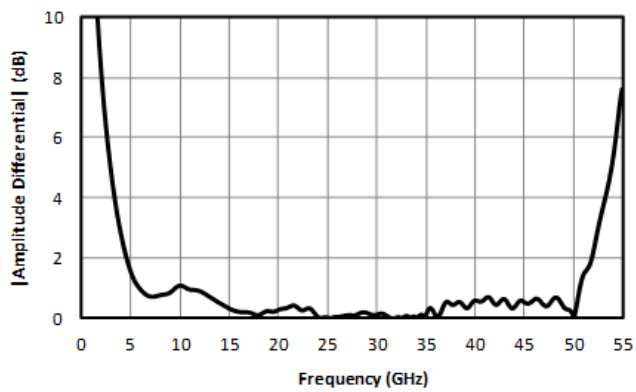
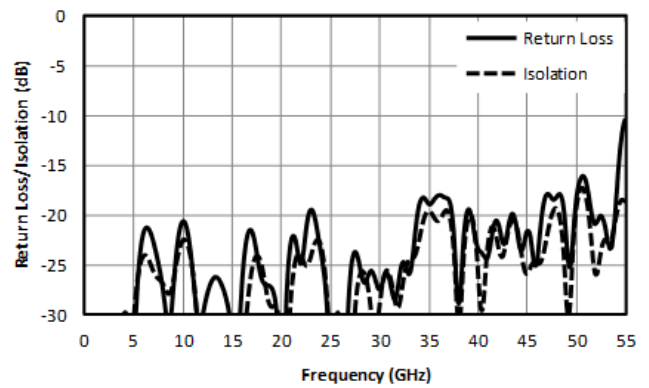
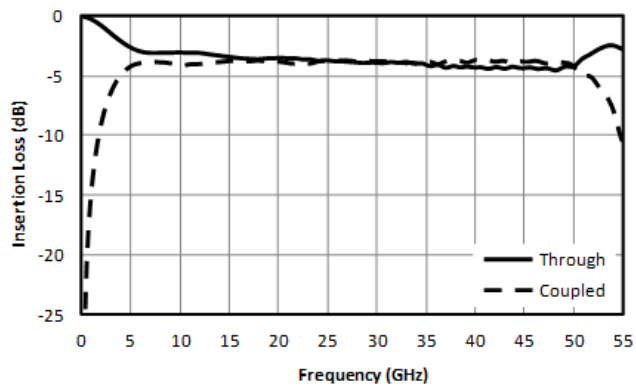
Electrical Specifications

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Phase Shift	-	5	50	-	90	-	°
Amplitude Balance ¹	-	5	50	-	0.6	1.2	dB
Phase Balance	-	5	50	-	5	15	°
Excess Through Line Insertion Loss ²	-	5	50	-	1	-	dB
Isolation	-	5	30	16	22	-	dB
Isolation	-	30	50	13	18	-	dB
VSWR	-	-	-	-	1.3	1.65	-
Weight	-	-	-	-	42	-	g
Mean Coupling	-	5	50	-	3	-	dB

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

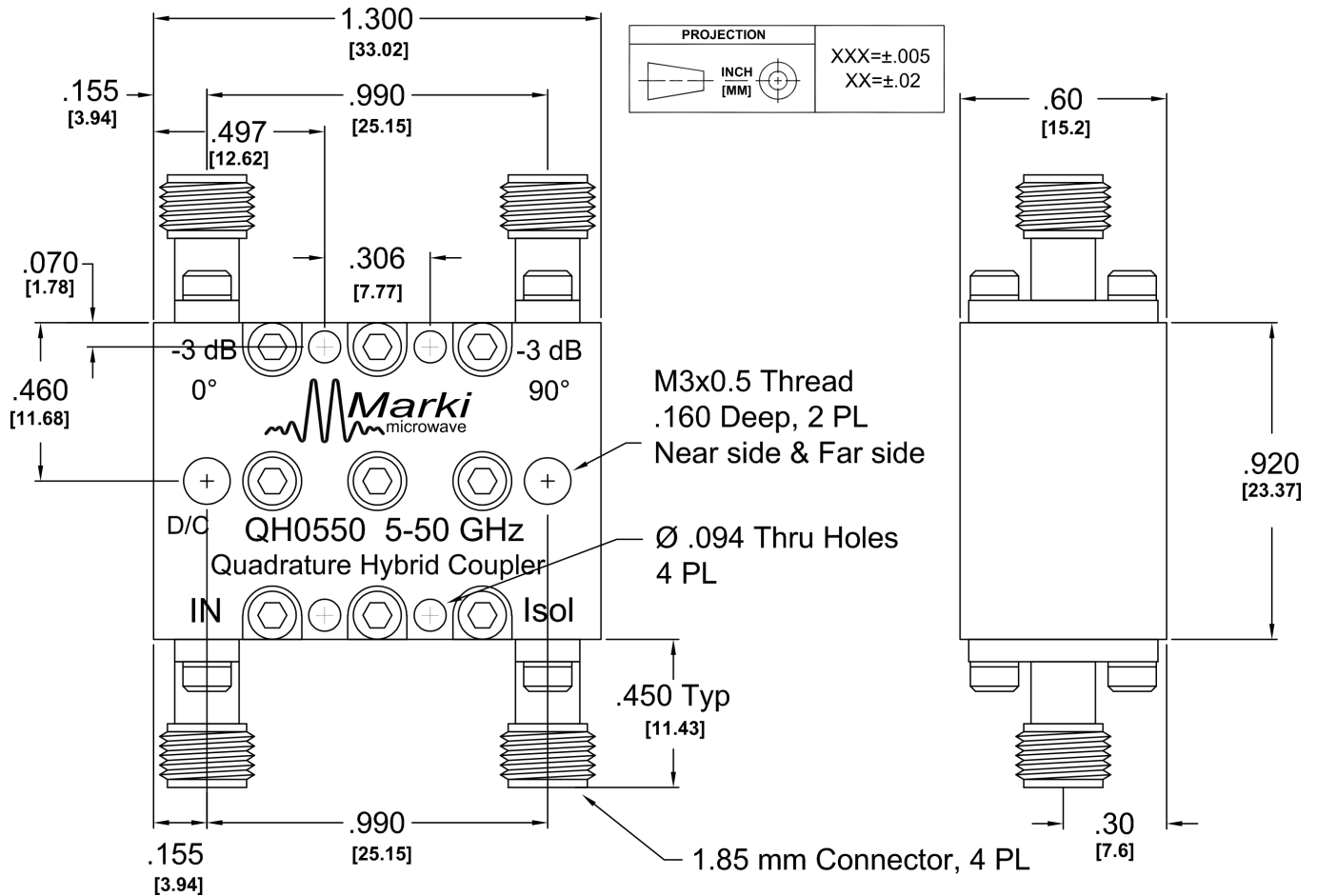
^[2] Excess Insertion Loss = (Input to Output Insertion Loss) – 3 dB.

Typical Performance



Mechanical Data

Outline Drawing



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