

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 (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](#)

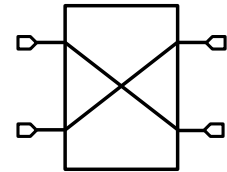
Features

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

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Connectors	Green Status	Product Lifecycle	Export Classification
QH-0550	3 dB Quadrature Hybrid	<u>Standard</u>	REACH RoHS	Released	EAR99

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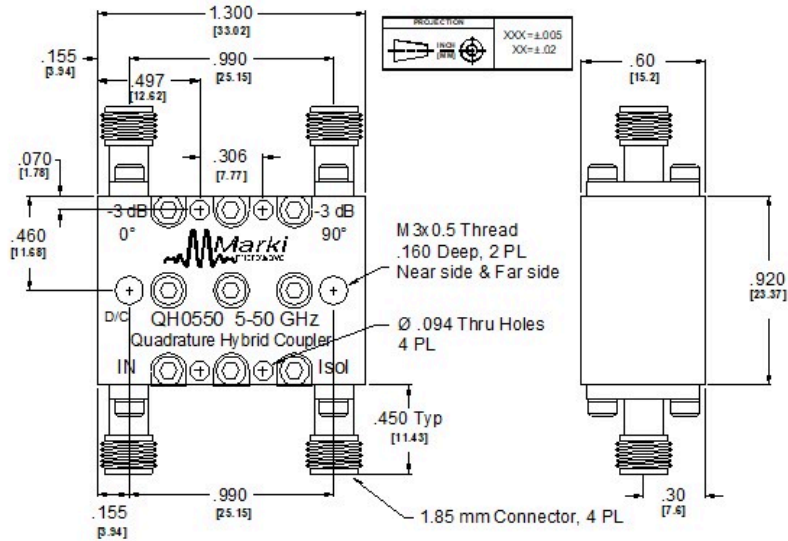
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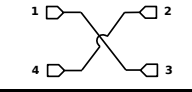
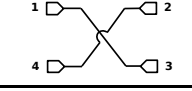
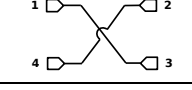
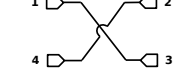
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Port Configuration and Functions

Port Diagram



Port Functions

Port	Function	Connector Type	Description	DC Equivalent Circuit
Port 1	0° Output	1.85F	Port 1 is DC short to port 3 and open to ground.	
Port 2	90° Output	1.85F	Port 2 is DC short to port 4 and open to ground	
Port 3	Isolated	1.85F	Port 3 is DC short to port 1 and open to ground.	
Port 4	Input	1.85F	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

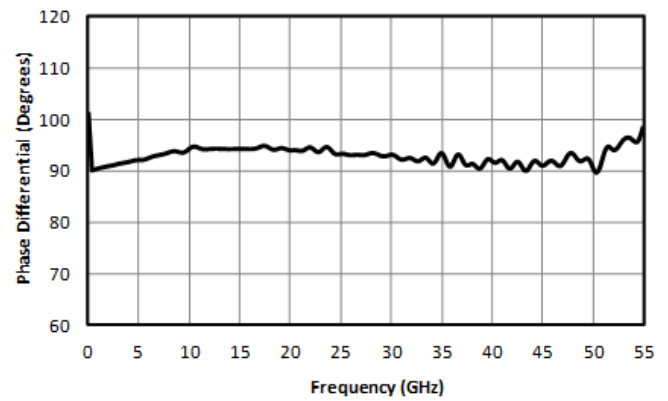
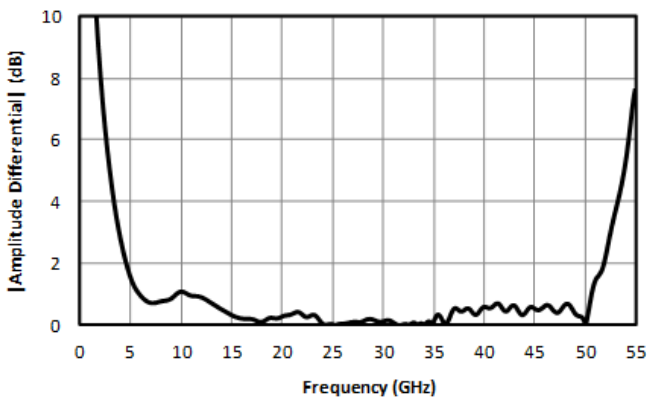
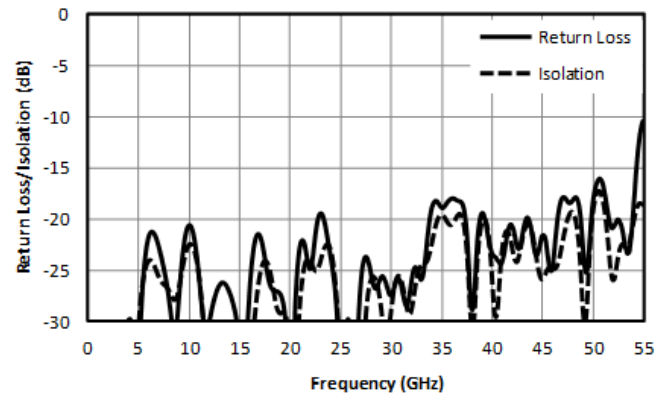
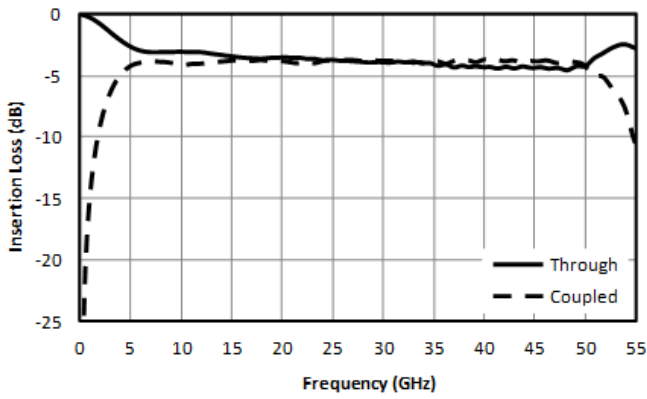
Electrical Specifications

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

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

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

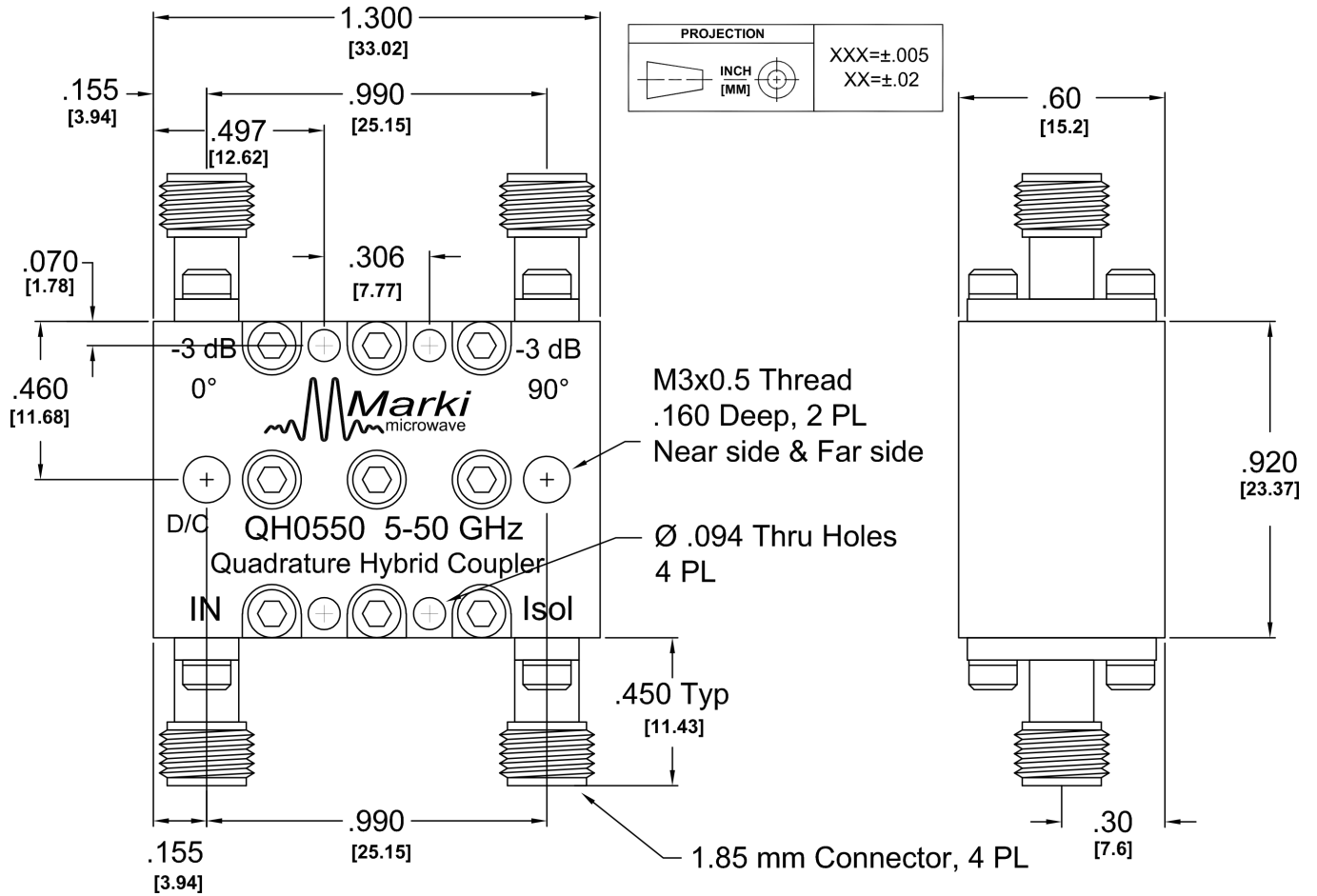
Typical Performance



Mechanical Data

Outline Drawing

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



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