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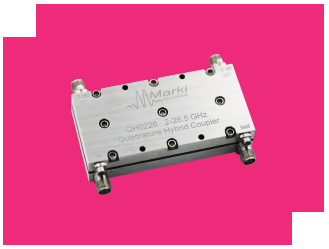
QH-0226

3 dB Quadrature Hybrid

DEVICE OVERVIEW

General Description

The QH-0226 is a 2 to 26 GHz, multi-purpose broadband 3 dB quadrature hybrid. The multisection tri-plate stripline design exhibits excellent amplitude balance with broadband quadrature phasing (90°) between the output ports. Custom designs are also available; contact the factory for details.



Download s-parameters here

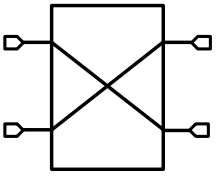
Features

- Broadband Performance
- Excellent amplitude and phase balance
- Excellent 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	Package	Packing Size	Green Status	Product Lifecycle	Export Classification
QH-0226	3 dB Quadrature Hybrid	-	-	Non-RoHS	Released	EAR99

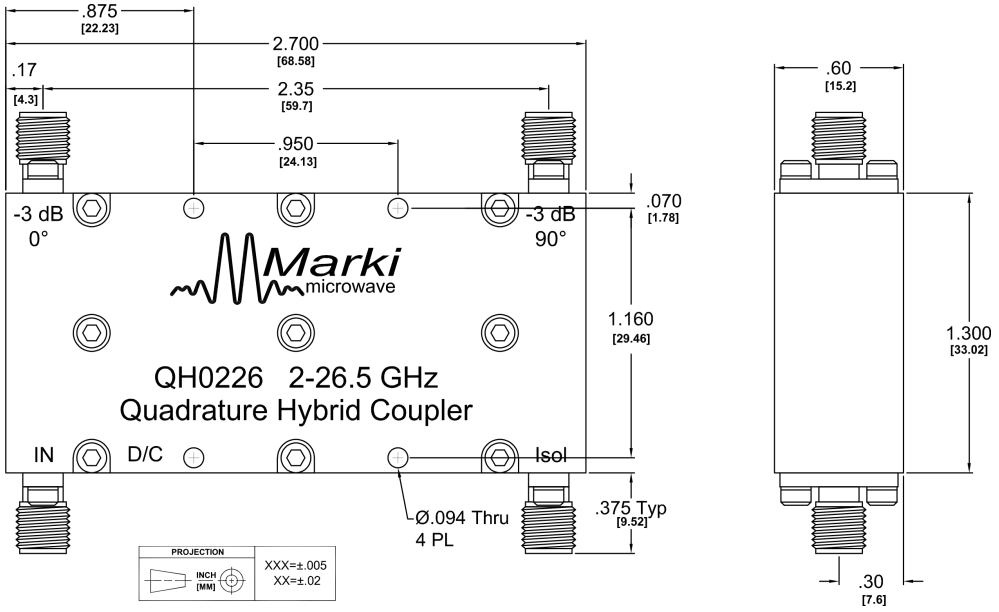
Table Of Contents

Revision History

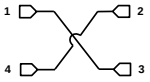
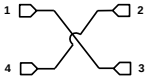
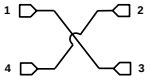
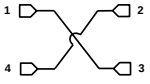
Revision Code	Revision Date	Comment
-	2020-01-06	Datasheet Initial Release

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 the 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	-	100g
Dimensions	-	68.58x33.02mm

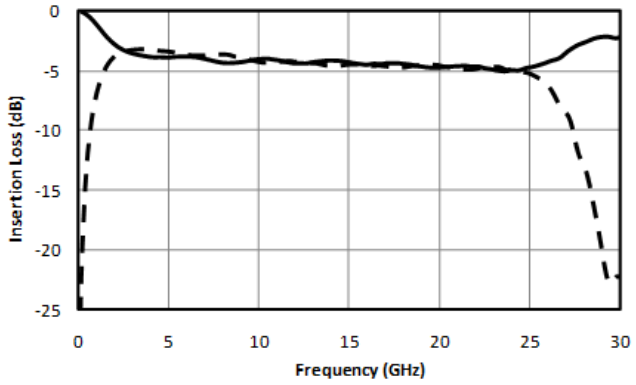
Electrical Specifications

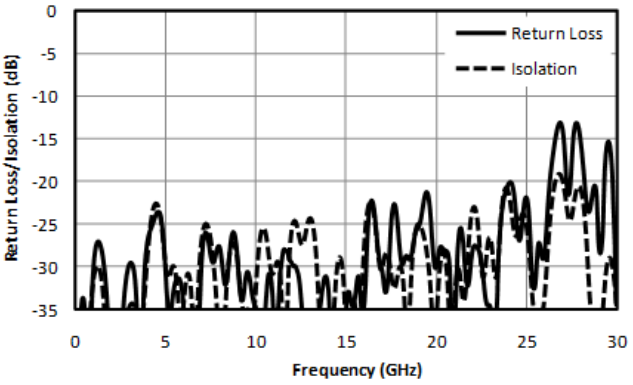
Specifications guaranteed when operated in a 50Ω system.

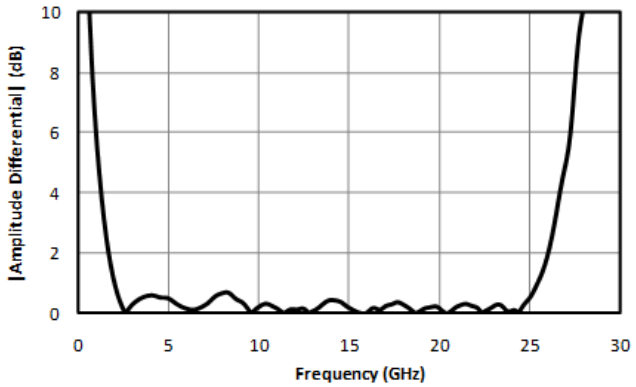
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Phase Shift	-	2	26	-	90	-	°
Amplitude Balance [1]	-	2	26	-	0.25	1	dB
Phase Balance	-	2	26	-	2	10	°
Excess Through Line Insertion Loss [2]	-	2	26	-	-	3	dB
Isolation	-	20	26	13	18	-	dB
VSWR	-	20	26	-	-	1.65	-
Weight	-	-	-	-	100	-	g
Mean Coupling	-	2	26	-	-	3	dB

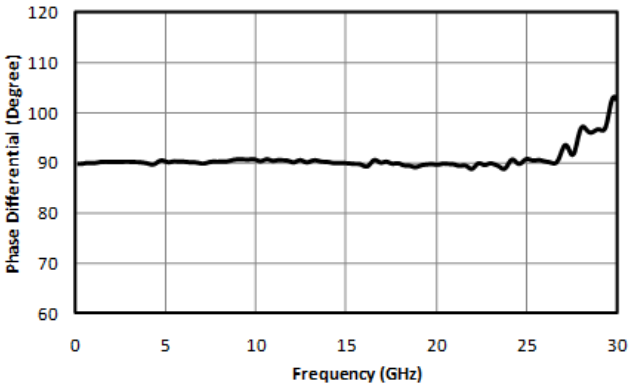
[1] Maximum amplitude differential is twice the magnitude of the amplitude balance (see Fig. 3).
[2] Excess Insertion Loss = (Input to Output Insertion Loss) – 3 dB

Typical Performance Plots



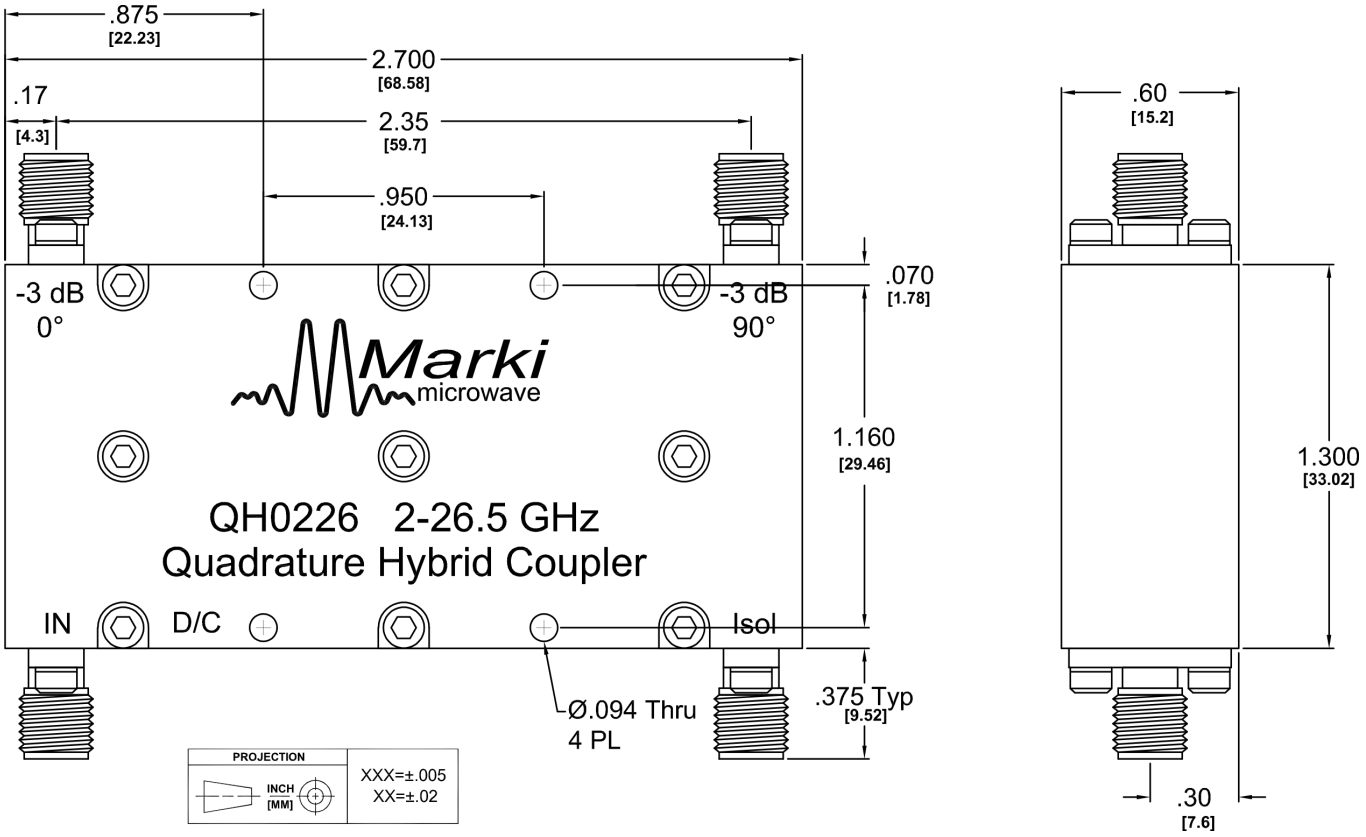






Mechanical Data

Outline Drawing



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