

### 3 dB QUADRATURE HYBRID

**QH-0226**

The QH-0226 is a 2 to 26.5 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. 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.



#### Features

- Broadband Performance
- Excellent amplitude and phase balance
- Excellent isolation
- Low VSWR
- [Microwave Power Dividers & Couplers App Note](#)

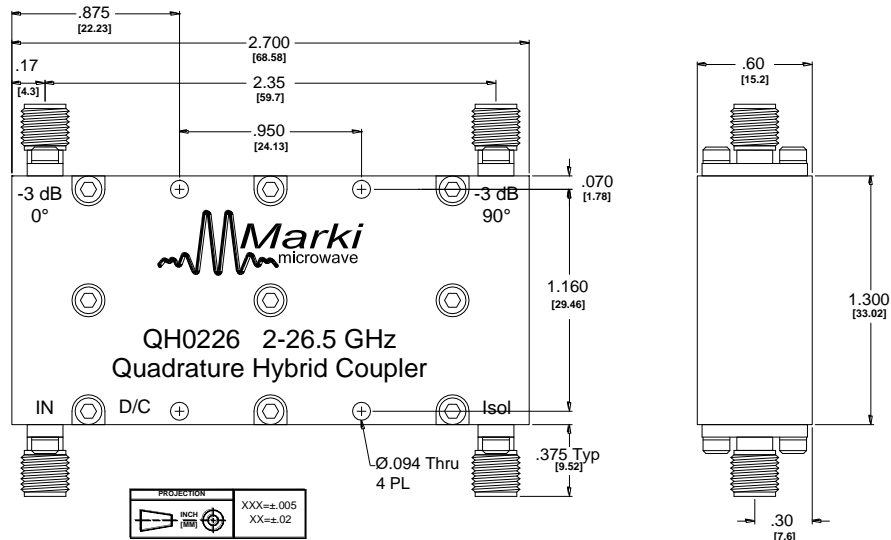
#### Electrical Specifications

Parameter <sup>1</sup>	Frequency Range (GHz)	Min	Typ	Max
Coupling (dB)	2-26.5		3	
Phase Shift (Degrees)			90	
Amplitude Balance (dB) <sup>2</sup>			±0.25	±1
Phase Balance (Degrees)			±2	±10
Excess Through Line Insertion Loss (dB) <sup>3</sup>				
VSWR	DC to 20			1.35
	20 to 26.5			1.6
Isolation (dB)	DC to 20	16	22	
	20 to 26.5	13	18	
Weight (g)			100	

<sup>1</sup>Specifications guaranteed when operated in a 50Ω system.

<sup>2</sup>Maximum amplitude *differential* is twice the magnitude of the amplitude *balance* (see Fig. 3).

<sup>3</sup>Excess Insertion Loss = (Input to Output Insertion Loss) – 3 dB.



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#### Typical Performance

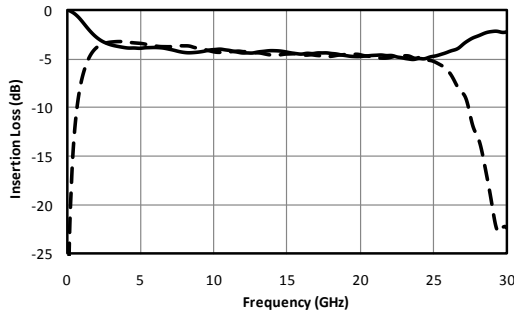


Fig. 1. Through and coupled line insertion loss.

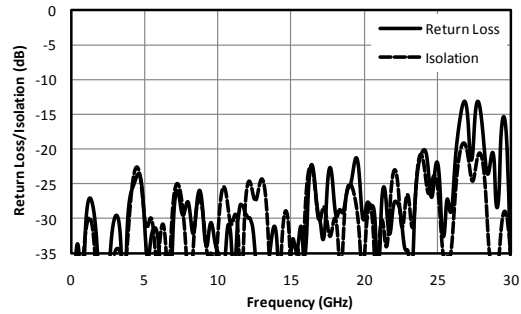


Fig. 2. Typical port return loss and isolation (all ports 50 Ω terminated).

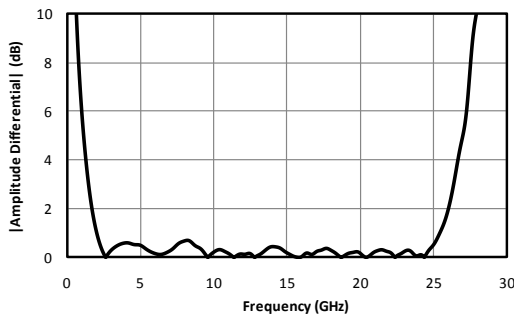


Fig. 3. Amplitude difference between the 0° and 90° output ports.

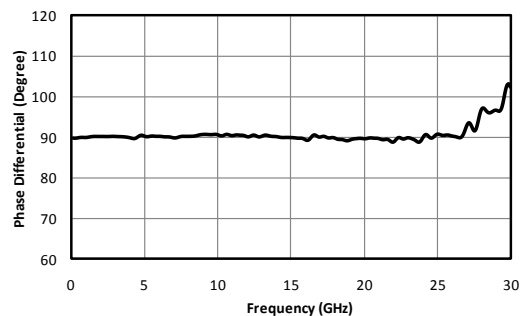


Fig. 4. Phase difference between the 0° and 90° output ports.

Model Number	Description
QH-0226	2-26.5 GHz, 3 dB Quadrature Hybrid with SMA connectors <sup>1</sup>

<sup>1</sup>Default is SMA female connectors. Consult factory for other connector options.

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