

3 dB QUADRATURE HYBRID

QH-0867

The QH-0867 is a 8-67 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.



Features

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

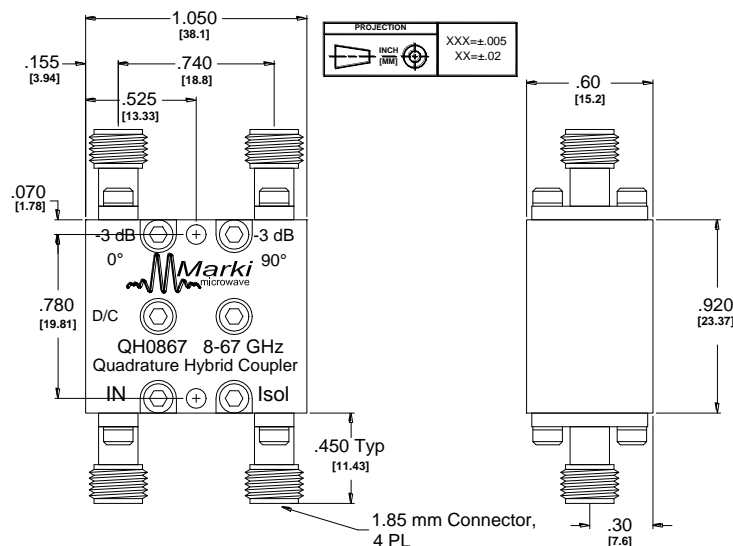
Electrical Specifications

Parameter ¹	Frequency Range (GHz)	Min	Typ	Max
Coupling (dB)	8 to 67		3	
Phase Shift (Degrees)			90	
Amplitude Balance (dB) ²			±0.6	±1.2
Phase Balance (Degrees)			±6	±18
Excess Through Line Insertion Loss (dB) ³				1.2
VSWR	8 to 40		1.3	1.65
	40 to 67		1.6	
Isolation (dB)	8 to 50	13	18	
	50 to 67	9	13	
Weight (g)			36	

¹Specifications guaranteed when operated in a 50Ω system.

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

³Excess Insertion Loss = (Input to Output Insertion Loss) – 3 dB.



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Typical Performance

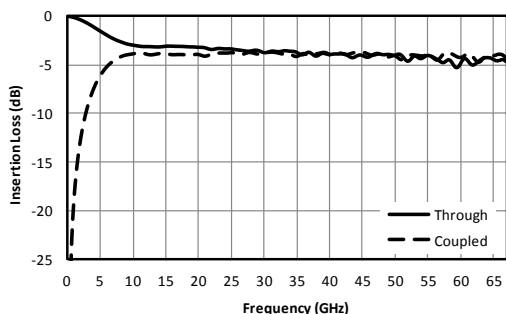


Fig. 1. Through and coupled line insertion loss.

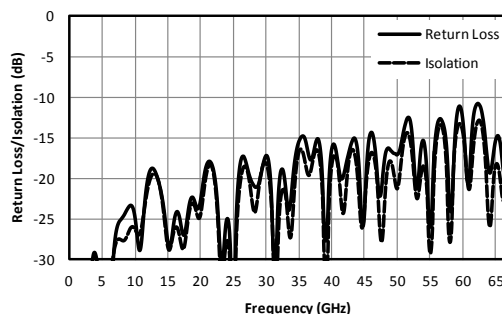


Fig. 2. Typical port return loss and isolation (all ports 50 Ω terminated).

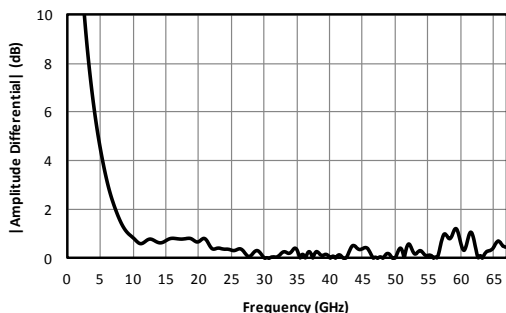


Fig. 3. Amplitude difference between the 0° and 90° output ports.

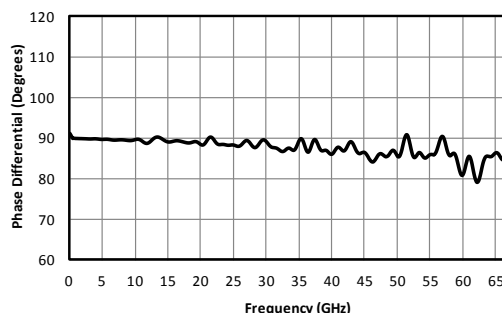


Fig. 4. Phase difference between the 0° and 90° output ports.

Model Number	Description
QH-0867	8-67 GHz 3 dB Quadrature Hybrid with 1.85 mm connectors ¹

¹Default is 1.85 mm female connectors. Consult factory for other connector options.

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