

3 dB QUADRATURE HYBRID

QH-0516

The QH-0516 is a small size, multi-purpose broadband 3 dB quadrature hybrid. The multisection 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

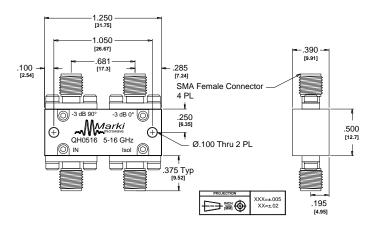
- Broadband Performance
- Excellent Amplitude and Phase Balance
- High Isolation
- Low VSWR
- Small Size
- Microwave Power Dividers & Couplers App Note

Electrical Specifications

Parameter ¹	Frequency Range (GHz)	Min	Тур	Max
Coupling (dB)			3	
Phase Shift (Degrees)			90	
Amplitude Balance (dB) ²	5-16		±0.25	±0.5
Phase Balance (Degrees)			±2	±10
Excess Through Line Insertion Loss (dB) ³				1.5
VSWR	DC to 10			1.45
	10 to 16			1.6
Isolation (dB)	DC to 14	18	24	
	14 to 16	14	20	
Weight (g)			22	

Specifications guaranteed when operated in a 50Ω system.

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



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



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Typical Performance

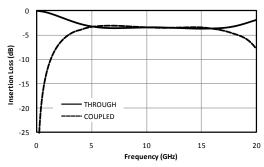


Fig. 1. Through and coupled line insertion loss.

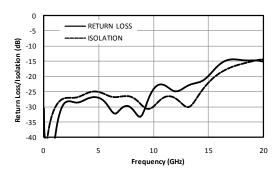


Fig. 2. Typical port return loss and isolation (all ports 50 Ω terminated).

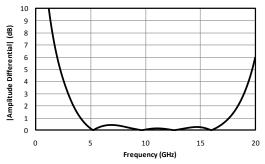


Fig. 3. Amplitude difference between the 0° and 90° output ports.

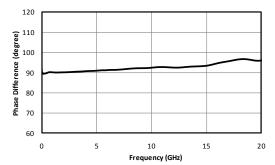


Fig. 4. Phase difference between the 0° and 90° output ports.

Model Number	Description	
QH-0516	5-16 GHz 3 dB Quadrature Hybrid with SMA Female connectors	

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