

### 3 dB QUADRATURE HYBRID

### QH-0R518

The QH-0R518 is a 0.5-18 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.



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

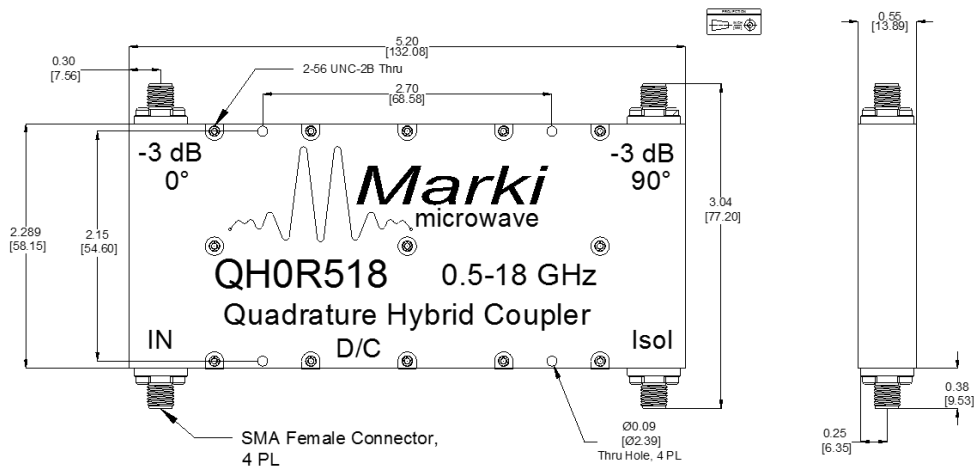
#### Electrical Specifications

Parameter <sup>1</sup>	Frequency Range (GHz)	Min	Typ	Max	
Coupling (dB)	0.5 to 18		3		
Phase Shift (Degrees)			90		
Amplitude Balance (dB) <sup>2</sup>			±0.5		
Phase Balance (Degrees)			±3		
Excess Insertion Loss (dB) <sup>3</sup>			1.5		
VSWR			1.5		
Isolation (dB)			20		
CW Power (W)					20
Weight (g)				225	

<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 Port to Output Port Insertion Loss) – 3 dB.



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## Typical Performance

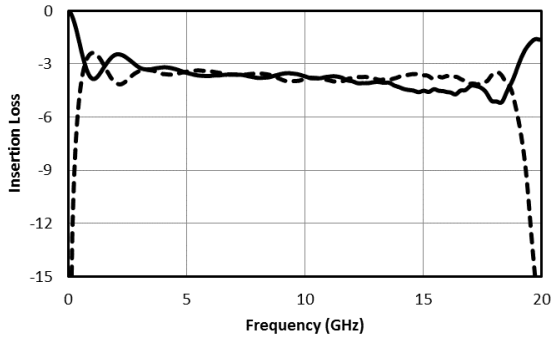


Fig. 1. Through and coupled line insertion loss.

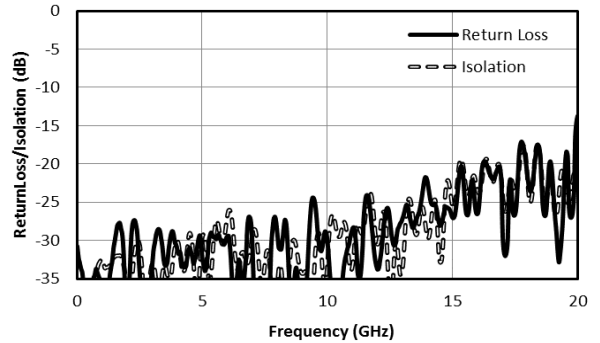


Fig. 2. Return loss and isolation (all ports 50 Ω terminated).

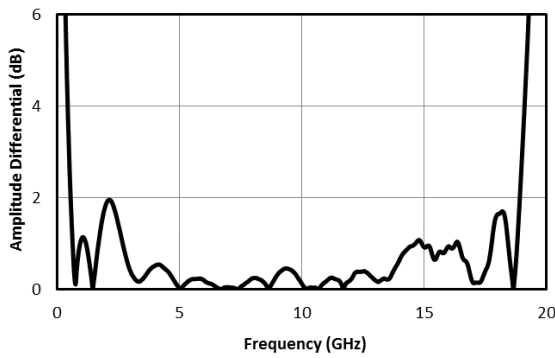


Fig. 3. Amplitude difference between the 0° and 90° output ports.

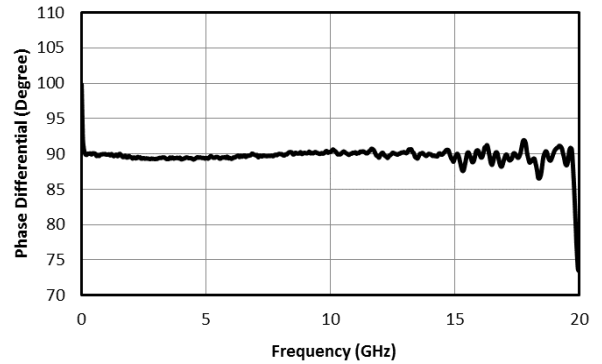


Fig. 4. Phase difference between the 0° and 90° output ports.

Model Number	Description
QH-0R518	0.5-18 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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