

3 dB QUADRATURE HYBRID

QH-0R714

The QH-0R714 is a 0.7-14.5 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](#)

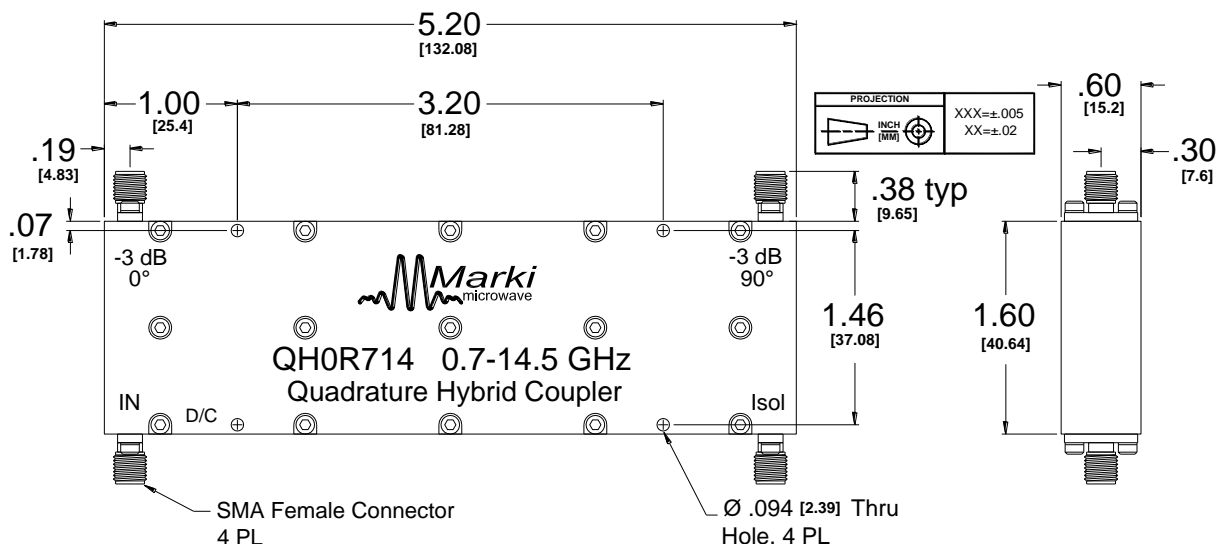
Electrical Specifications

Parameter ¹	Frequency Range (GHz)	Min	Typ	Max
Coupling (dB)	0.7 to 14.5		3	
Phase Shift (Degrees)			90	
Amplitude Balance (dB) ²			±0.2	±0.8
Phase Balance (Degrees)			±2	±8
Excess Insertion Loss (dB) ³			1.2	2.5
VSWR			1.2	1.5
Isolation (dB)		15	22	
CW Power (W)				20
Weight (g)				225

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 Port to Output Port Insertion Loss) – 3 dB.



Typical Performance

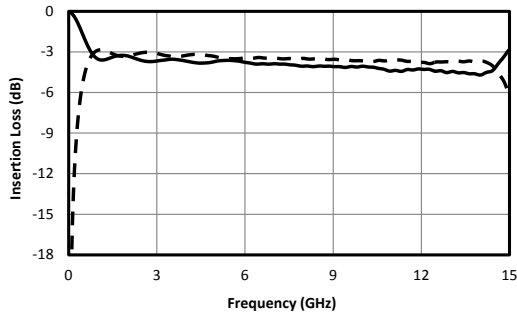


Fig. 1. Through and coupled line insertion loss.

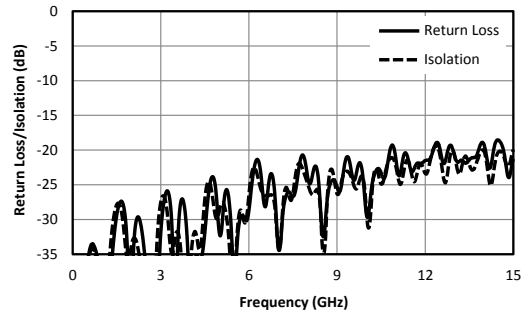


Fig. 2. Return loss and isolation (all ports 50 Ω terminated).

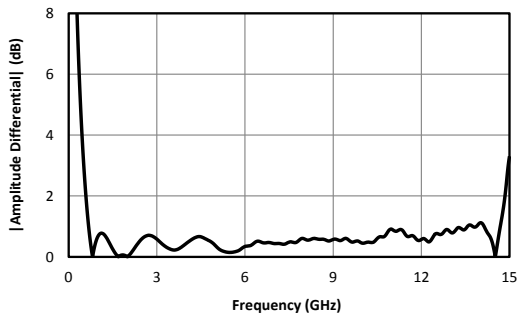


Fig. 3. Amplitude difference between the 0° and 90° output ports.

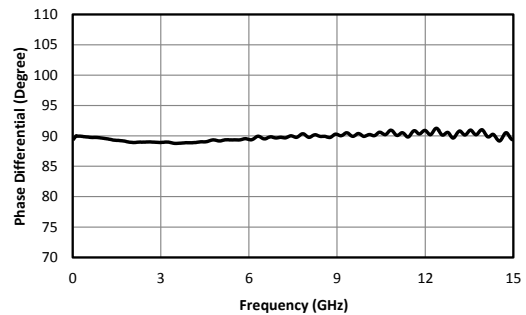


Fig. 4. Phase difference between the 0° and 90° output ports.

Model Number	Description
QH-0R714	0.7-14.5 GHz 3 dB Quadrature Hybrid with SMA connectors ¹

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

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