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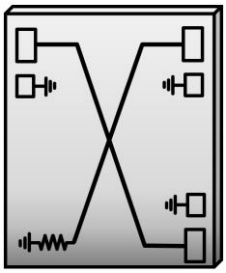
GaAs MMIC
6.0 – 18.0GHz Quadrature Hybrid

Typical Applications

- Power Splitting/Combining
- Balanced Amplifiers
- IQ Modulators
- Phase Shifters
- Balanced Variable Attenuators

Features

- Frequency Range: 6.0 – 18.0 GHz
- Back-to-Back Insertion Loss: 1.4dB @ 12GHz
- Isolation: 25dB
- Amplitude Balance: ±0.9dB
- Phase Balance: ±3°
- Integrated 50Ω termination
- 50Ω Matched DC coupled RF Ports
- Die Size: 2.00 x 2.50 x 0.1 mm





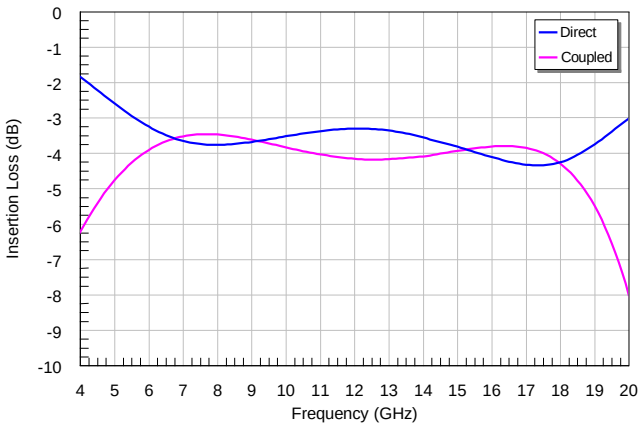
Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	6.0		18.0
Coupling	dB		3	
Nominal Phase Shift	deg		90	
Return Loss	dB		20	
Isolation	dB		25	
Amplitude Balance	dB		±0.9	
Phase Balance	deg		±3	
Package Type			Die	

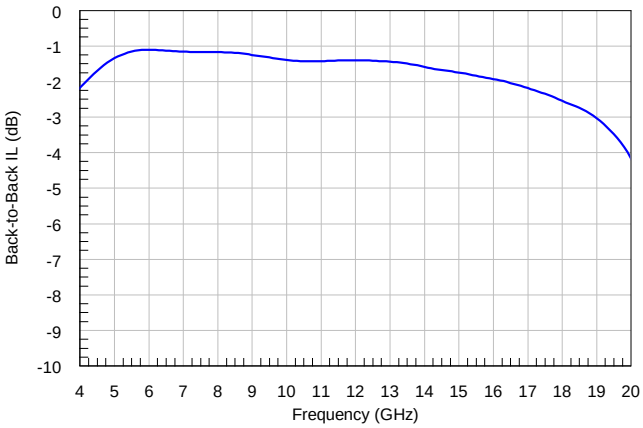
Couplers - Die

Performance Graphs

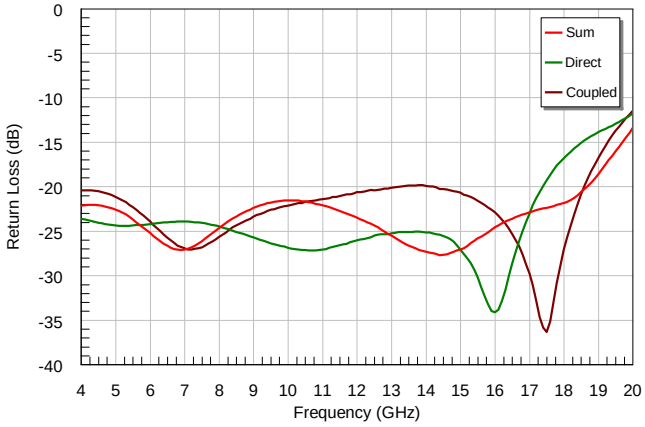
Insertion Loss



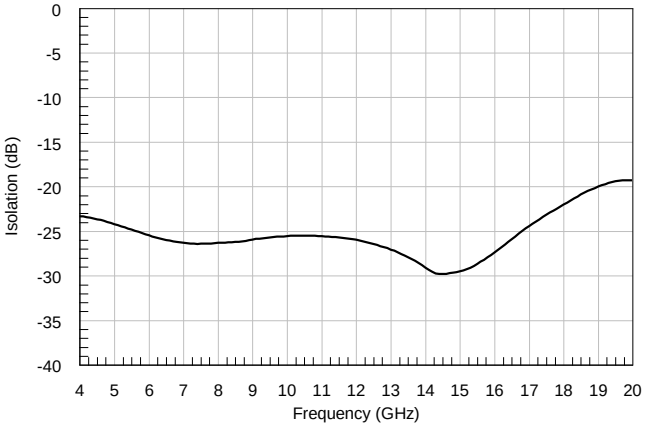
Back-to-Back Insertion Loss



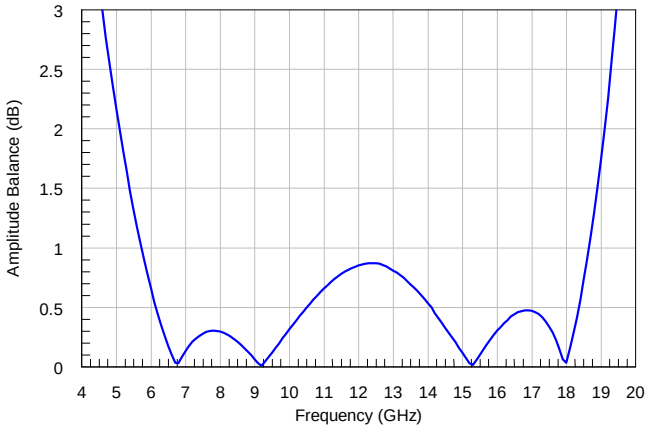
Return Losses



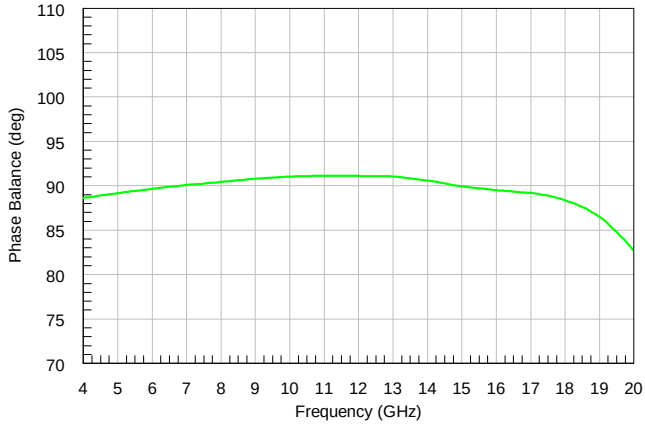
Isolation



Amplitude Balance



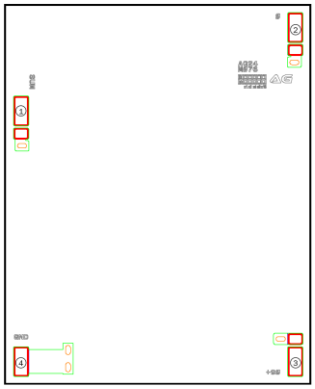
Phase Balance



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Outline Drawing



Pad Descriptions

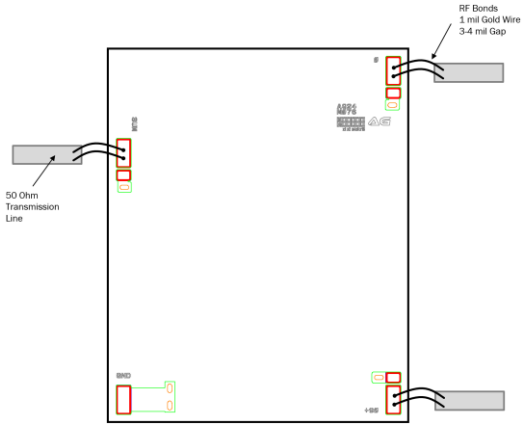
Pad	Function	Pad Size	Description
1	SUM	101x200µm	DC coupled 50Ω Matched
2	DIRECT (0°)	101x200µm	DC coupled 50Ω Matched
3	COUPLED (+90°)	101x200µm	DC coupled 50Ω Matched
4	GND	101x200µm	No connect
Die Bottom	GND	Backside	Epoxy/Solder to Baseplate

Absolute Maximum Ratings

Parameter	Rating
RF Input Power (RFIN)	+20dBm*
Storage Temperature	-65 to 150°C
Operating Temperature	-55 to 85°C

*To be tested

Assembly Diagram



Assembly Notes:

1. Die Thickness is 100µm
2. Bondpad metallization: 7µm gold
3. Backside metallization: 4.5µm gold
4. Silver Epoxy or AuSn Eutectic attach MMIC



Die Packaging Information

- GP-4 (Gel-Pak)

Important Notice

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