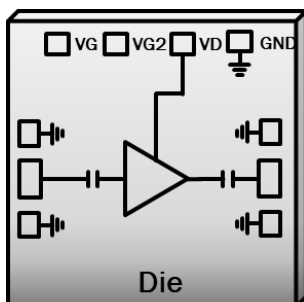


Typical Applications

- Test Instrumentation
- S-band Radios
- Telecom Infrastructure
- 5G Base Stations

Features

- Frequency Range: 2.0 – 4.0 GHz
- Noise Figure: 0.7dB
- Gain: 32.5dB
- P1dB: + 11.6dBm
- Self-Biased: +4V @ 31mA Single Supply
- 50Ω Matched Input / Output DC blocked



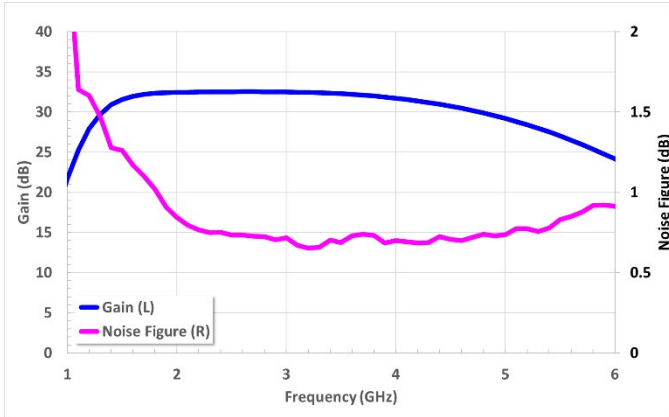
Part#	Packaging
AGLNA013048	Die 1.8 x 1.8 x 0.1 mm
AGLNA013048Q	QFN 4x4 16Lead

Electrical Specifications (TA = +25°C, VD = +4V, IDD = 31mA)

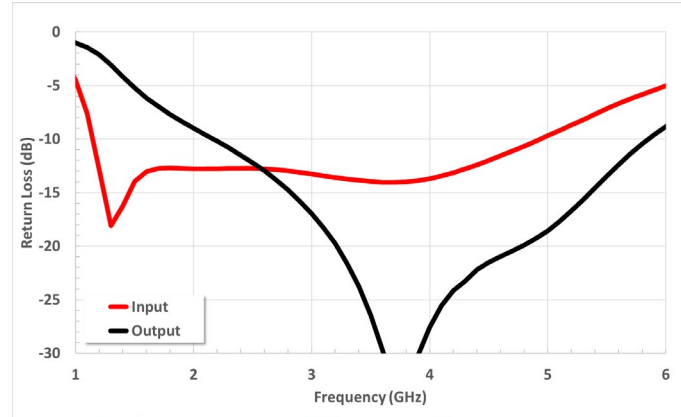
Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	1.3		4.8
Gain	dB		32.5	
Gain Flatness	dB		± 0.5	
Noise Figure	dB		0.7	
Input Return Loss	dB		13	
Output Return Loss	dB		10	
P1dB	dBm		13	
Psat	dBm		13.5	
Supply Voltage	V		+4	
Supply Current	mA		31	
DC Dissipated Power	mW		150	
Package Type			Die/QFN	

Die Performance Graphs

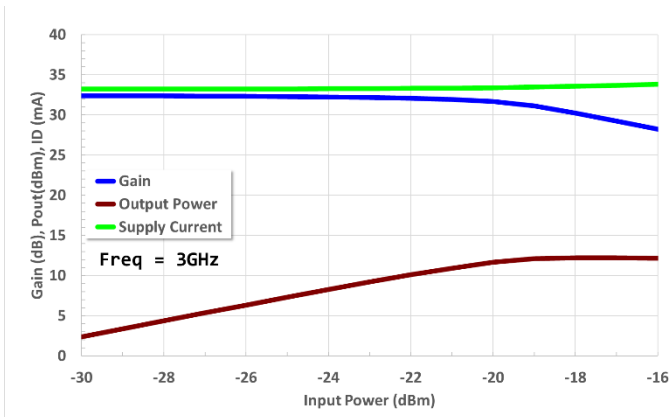
Gain and Noise Figure



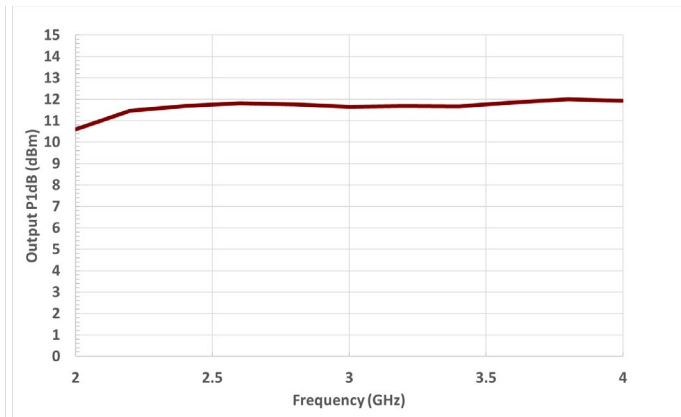
Return Losses



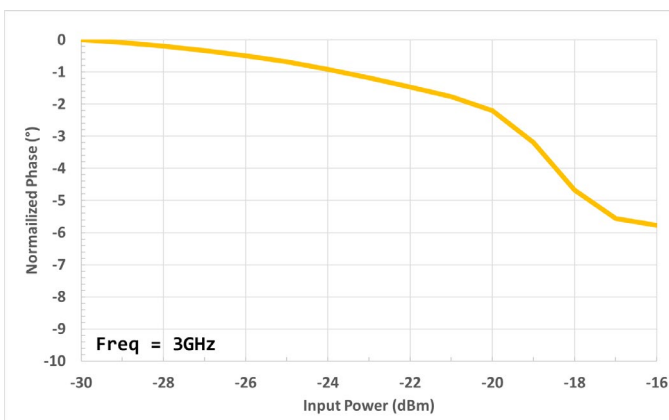
Power Sweep



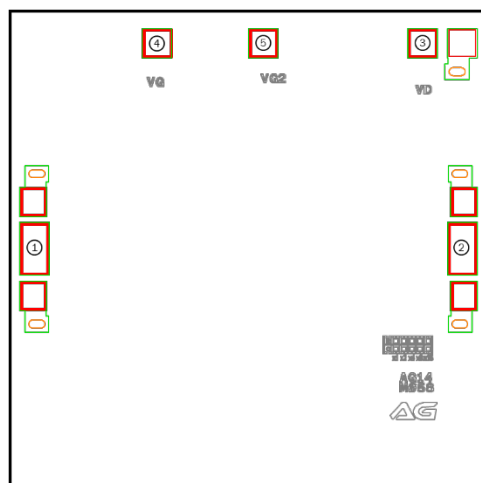
Power Out P1dB



AM to PM



Die Outline Drawing (dimensions in mm)



Die Pad Descriptions

Pad	Function	Pad Size	Description
1	RFIN	111x200 μ m	AC coupled 50 Ω Matched
2	RFOUT	111x200 μ m	AC coupled 50 Ω Matched
3	VD	111x111 μ m	Drain Power Supply voltage, bypass capacitors needed*
4	VG	111x111 μ m	No connect, Optional Gate Power Supply voltage
5	VG2	111x111 μ m	No connect, Optional Gate Power Supply voltage
Die Bottom	GND	Backside	Epoxy/Solder to Baseplate

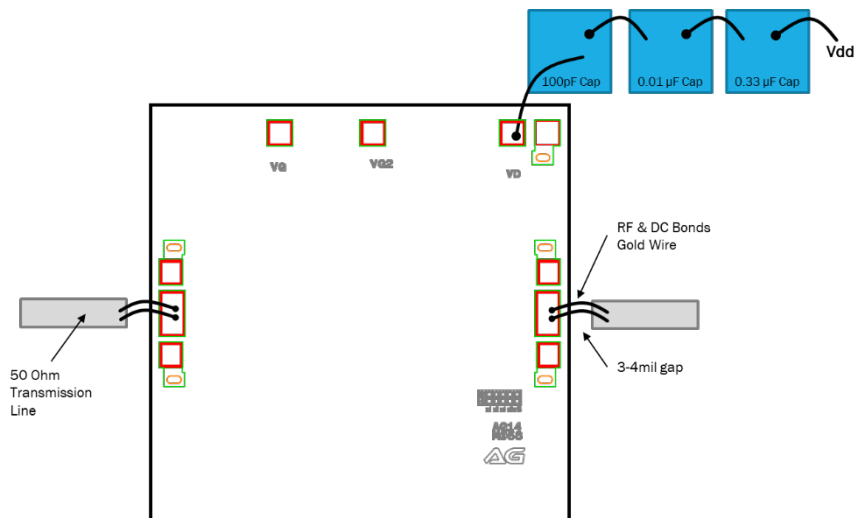
*See Assembly Diagram

Absolute Maximum Ratings

Parameter	Rating
Drain Bias Voltage (VDD)	+8V DC
RF Input Power (RFIN)	+20dBm*
Channel Temperature	200°C
Storage Temperature	-65 to 150°C
Operating Temperature	-55 to 85°C

*To be tested

Die Assembly Diagram

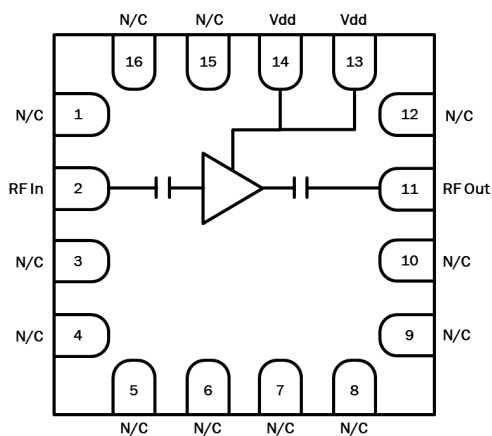


Die Assembly Notes:

1. Die Thickness is 100μm
2. Backside and Bondpad metallization: 3μm gold
3. Silver Epoxy or AuSn Eutectic attach MMIC
4. Gap between MMIC and 50 Ohm lines should be 3-4mils
5. Off-Chip bypass capacitor values are approximate



QFN Packaging Information

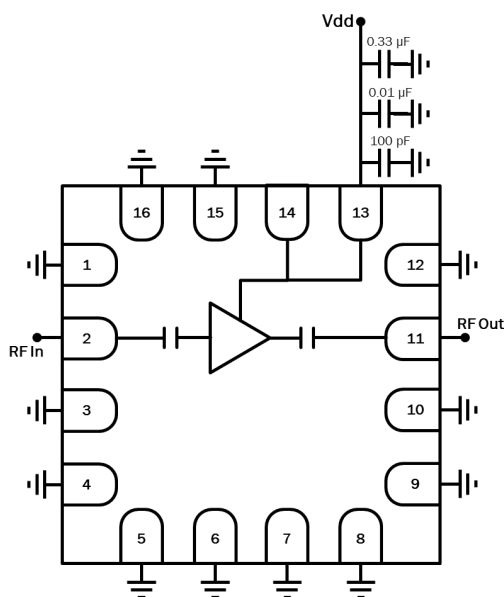


QFN Pin Descriptions

Pin	Function	Description
2	RFIN	AC coupled 50Ω Matched
11	RFOUT	AC coupled 50Ω Matched
13, 14	Vdd	Drain Power Supply voltage, bypass capacitors needed*
1,3-10,12,15,16	N/C	No connect, recommend connect to RF/DC GND
QFN Paddle	GND	Epoxy/Solder to RF/DC GND

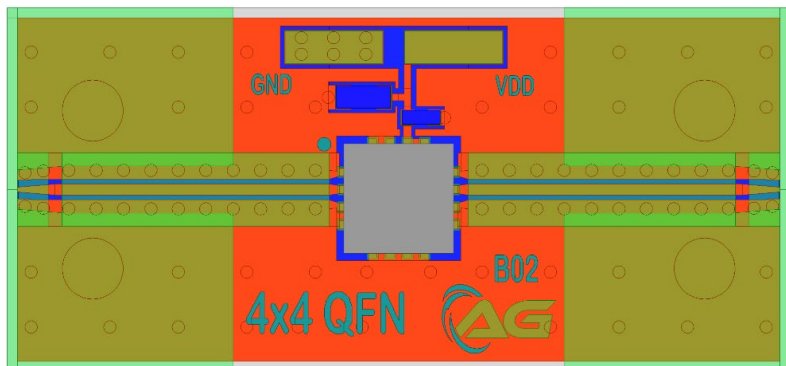
*See Application Circuit

Application Circuit



Evaluation Board*

*Gerber files available upon request



Layer	Dimension
Cu Top	½ oz
Rogers 4003	8.7mil
Cu Bottom	½ oz

Important Notice

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