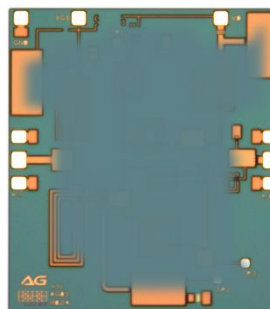
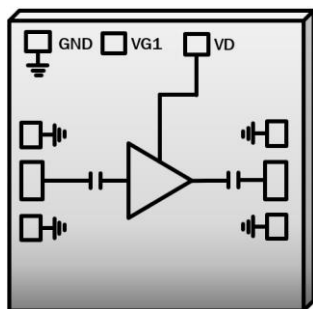


## Typical Applications

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

## Features

- Frequency Range: 2.0 – 4.0 GHz
- Noise Figure: 0.8dB
- Gain: 26.5dB
- P1dB: + 11dBm
- Self-Biased: +5V @ 25mA Single Supply
- 50Ω Matched Input/Output DC blocked
- Chip Size: 1.8 x 2.0 x 0.1 mm

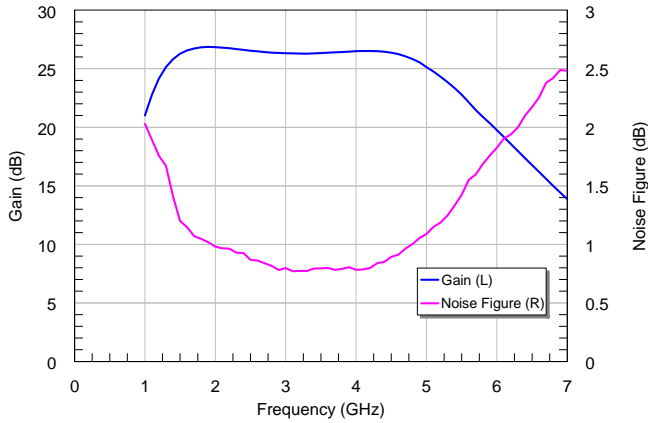


## Electrical Specifications (TA = +25°C, VD = +5V, IDD = 25mA)

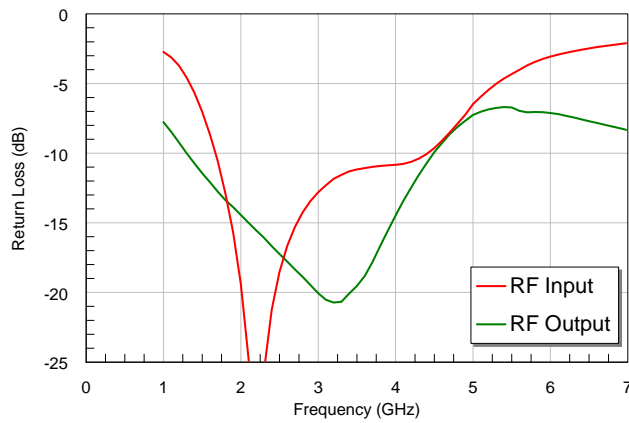
Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	1.8		4.7
Gain	dB		26.5	
Gain Flatness	dB		± 0.2	
Noise Figure	dB		0.8	
Input Return Loss	dB		15	
Output Return Loss	dB		15	
P1dB	dBm		11	
Psat	dBm		12	
Supply Voltage (Vdq)	V		+5	
Supply Current	mA		25	
DC Dissipated Power	mW		125	
Package Type			Die	

## Performance Graphs

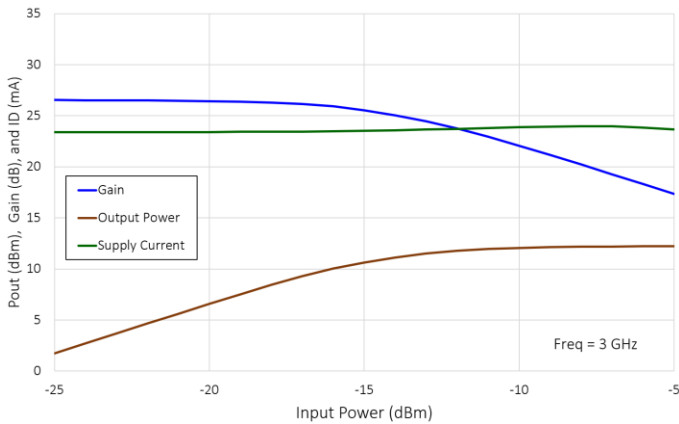
### Gain and Noise Figure



### Return Losses

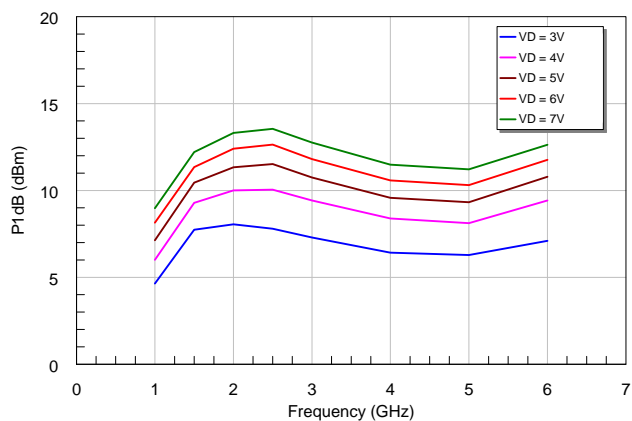


### Power Sweep

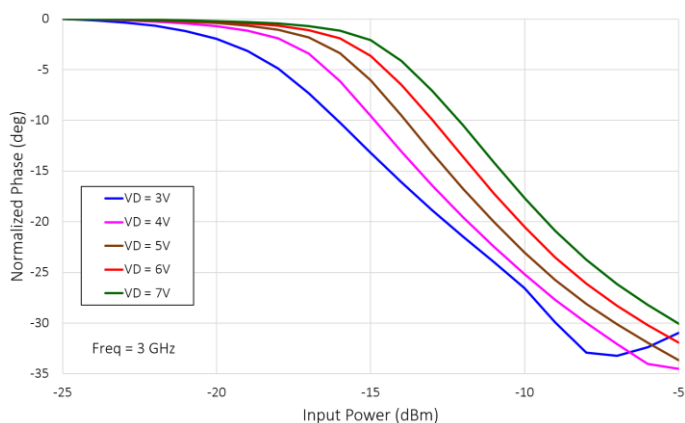


## GaAs pHEMT MMIC 2.0 – 4.0GHz Low Noise Amplifier

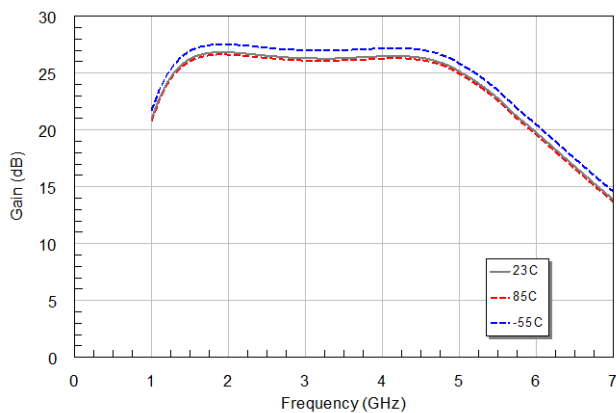
### Output Power P1dB



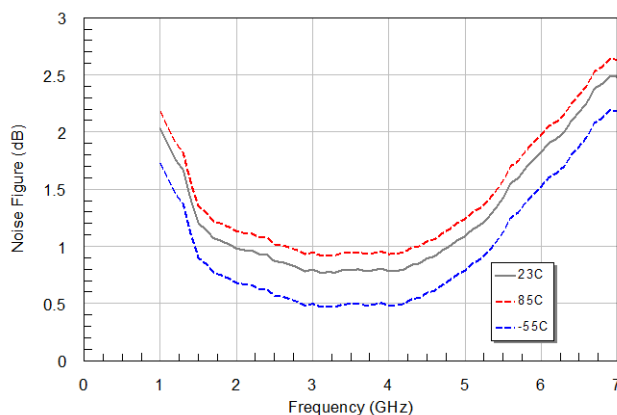
### AM to PM



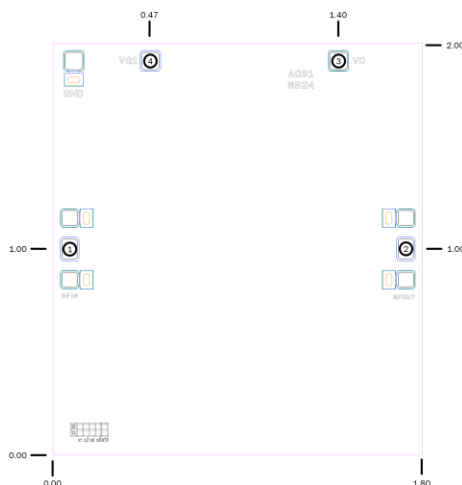
### Gain vs Temperature



### Noise Figure vs Temperature



## Outline Drawing (dimensions in mm)



## Pad Descriptions

Pad	Function	Pad Size	Description
1	RFIN	75x100 $\mu$ m	AC coupled 50 $\Omega$ Matched
2	RFOUT	75x100 $\mu$ m	AC coupled 50 $\Omega$ Matched
3	VD	85x85 $\mu$ m	Drain Power Supply voltage, bypass capacitors needed*
4	VG1	85x85 $\mu$ m	No connect needed – if AGC function needed vary 0-5V
Die Bottom	GND	Backside	Epoxy/Solder to Baseplate

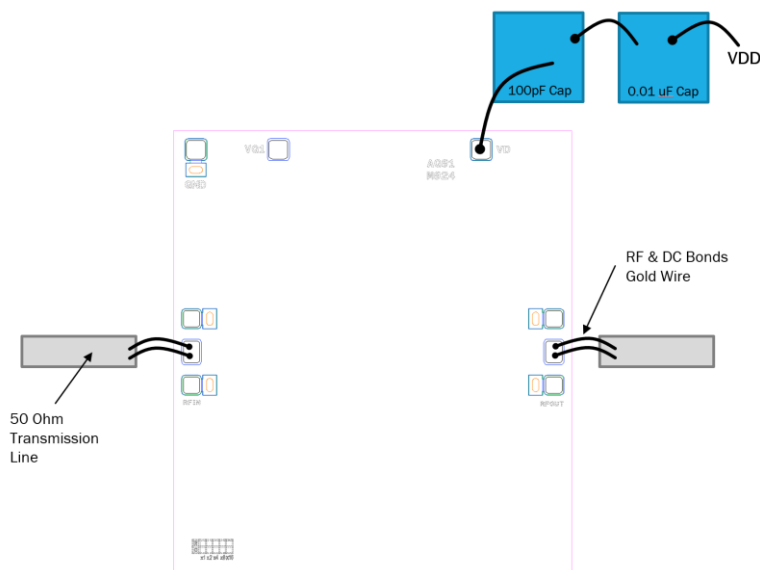
\*See Assembly Diagram

## Absolute Maximum Ratings

Parameter	Rating
Drain Bias Voltage (VDD)	+9V DC
RF Input Power (RFIN)	+20dBm*
Channel Temperature	150 $^{\circ}$ C
Storage Temperature	-65 to 150 $^{\circ}$ C
Operating Temperature	-55 to 85 $^{\circ}$ C

\*To be tested

## Assembly Diagram



## Assembly Notes:

1. Die Thickness is 100 $\mu$ m
2. Backside and Bondpad metallization: 4 $\mu$ m gold
3. Silver Epoxy or AuSn Eutectic attach MMIC



## Die Packaging Information

- GP-4 (Gel-Pak)

## Biasing and Operation

The AGLNA0204 is biased with a positive drain supply. The preferred biasing procedure is as follows:

### Turn ON procedure:

1. Set VD to Vd<sub>q</sub>.
2. Apply RF signal.

### Turn OFF procedure:

1. Turn off RF signal.
2. Turn off VD.