AGLNA160420

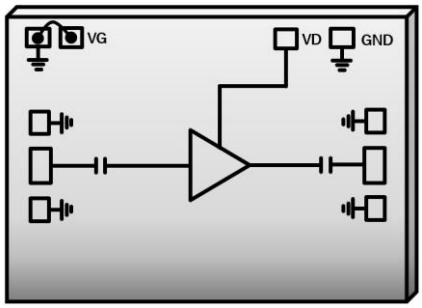
InP HEMT MMIC
18.0 – 40.0GHz Low Noise Amplifier

Typical Applications

- Point-to-Point Radio
- K/Ka-Band SATCOM
- Cryogenic

Features

- Frequency Range: 18.0 – 40.0 GHz
- Noise Figure: 1.4dB
- Gain: 21.5dB
- P1dB: -3dBm
- Self-Biased: +0.5V @ 36mA Single Supply
- 50Ω Matched Input/Output DC blocked
- Chip Size: 2.20 x 0.90 x 0.075 mm

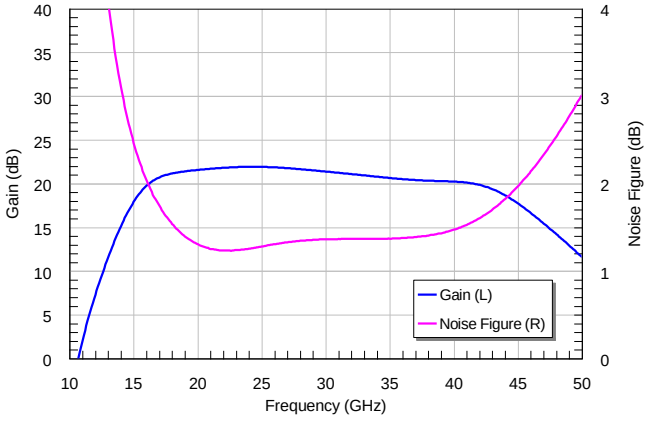


Electrical Specifications (TA = +25°C, VD = +0.5V, ID = 36mA)

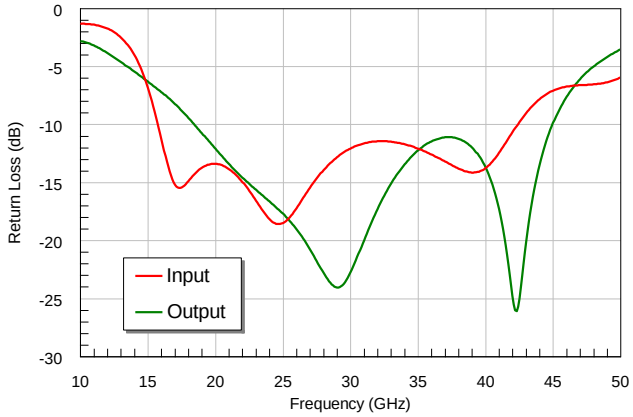
Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	18.0		40.0
Gain	dB		21.5	
Gain Flatness	dB		± 0.5	
Noise Figure	dB		1.4	
Input Return Loss	dB	12	13	
Output Return Loss	dB	9	15	
P1dB	dBm		-3	
Psat	dBm		+3.5	
Supply Voltage	V		+0.5	
Supply Current	mA		36	
DC Dissipated Power	mW		18	
Package Type			Die	

Performance Graphs

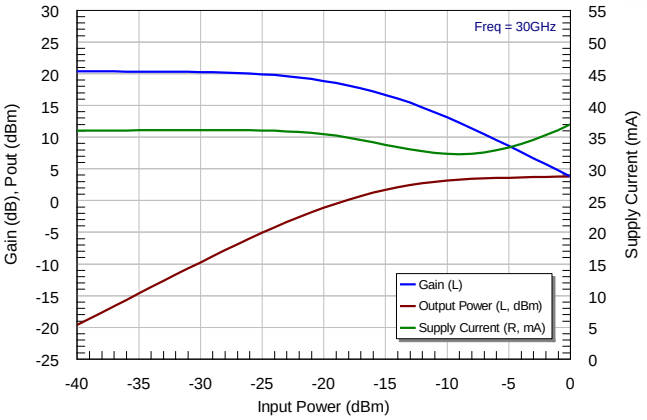
Gain and Noise Figure (Simulated)



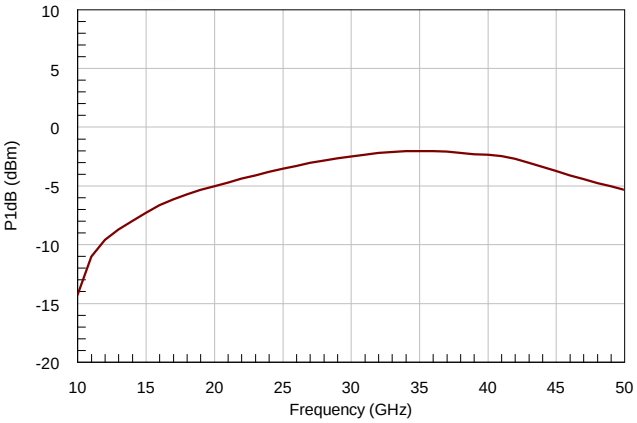
Return Losses (Simulated)



Power Sweep (Simulated)



Output Power P1dB (Simulated)



Outline Drawing

Pad Descriptions

Pad	Function	Pad Size	Description
1	RFIN	107x207µm	AC coupled 50Ω Matched
2	RFOUT	107x207µm	AC coupled 50Ω Matched
3	VD	107x107µm	Drain Power Supply voltage, bypass capacitors needed*
4	VG	107x107µm	No connect, Optional Gate Power Supply voltage
Die Bottom	GND	Backside	Epoxy/Solder to Baseplate

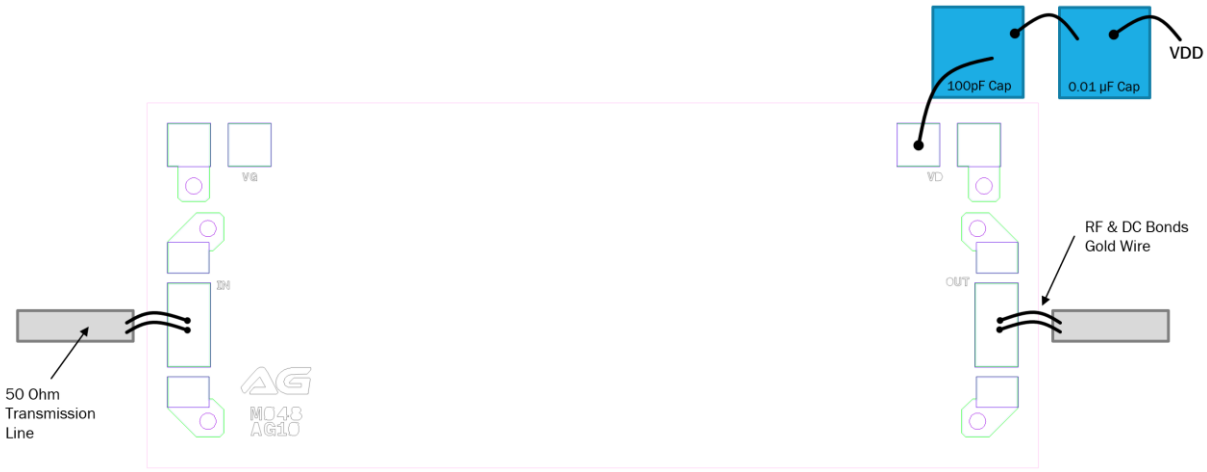
*See Assembly Diagram

Absolute Maximum Ratings

Parameter	Rating
Drain Bias Voltage (VDD)	+1.2V DC
RF Input Power (RFIN)	0dBm*
Channel Temperature	125°C
Storage Temperature	-65 to 150°C
Operating Temperature	-55 to 85°C

*To be tested

Assembly Diagram



Assembly Notes:

1. Die Thickness is 75µm
2. Bondpad metallization: 4.3µm gold
3. Backside metallization: 3.5µm gold
4. Silver Epoxy or AuSn Eutectic attach MMIC

Die Packaging Information

- GP-4 (Gel-Pak)