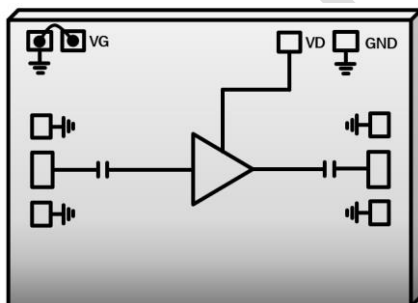


Typical Applications

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

Features

- Frequency Range: 17.0 – 22.0 GHz
- Noise Figure: 1.2dB
- Gain: 23dB
- P1dB: -4dBm
- Self-Biased: +0.5V @ 36mA Single Supply
- 50Ω Matched Input/Output DC blocked
- Chip Size: 2.20 x 0.90 x 0.075 mm

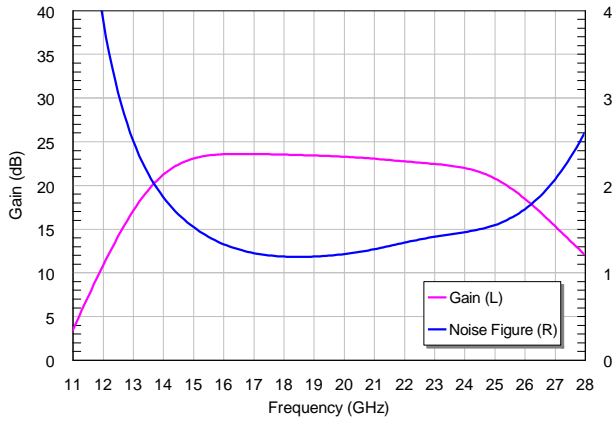


Electrical Specifications (TA = +25°C, VD = +0.5V, ID = 36mA)

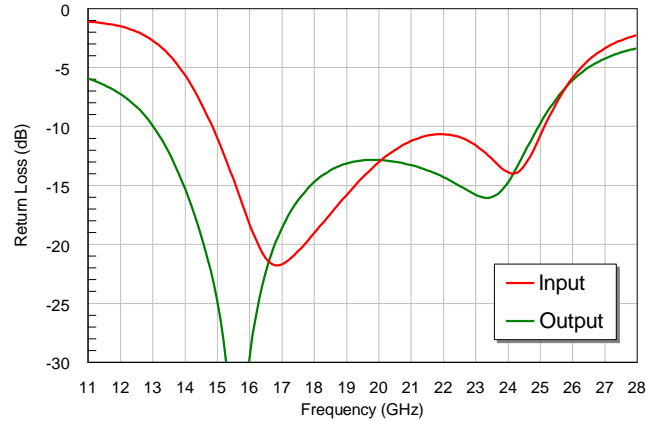
Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	17.0		22.0
Gain	dB		23	
Gain Flatness	dB		± 0.5	
Noise Figure	dB		1.2	
Input Return Loss	dB	10	15	
Output Return Loss	dB	12	14	
P1dB	dBm		-4	
Psat	dBm		+2	
Supply Voltage	V		+0.5	
Supply Current	mA		36	
DC Dissipated Power	mW		18	
Package Type			Die	

Performance Graphs

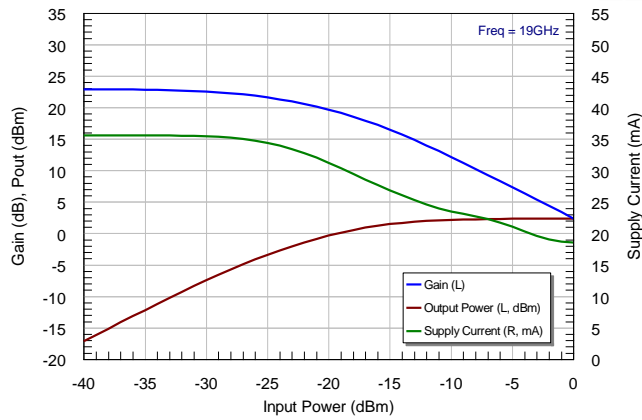
Gain and Noise Figure (Simulated)



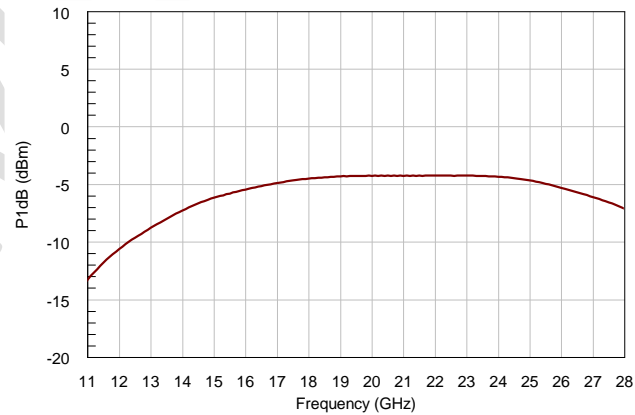
Return Losses (Simulated)



Power Sweep (Simulated)



Output Power P1dB (Simulated)



Outline Drawing



Pad Descriptions

Pad	Function	Pad Size	Description
1	RFIN	107x207 μ m	AC coupled 50 Ω Matched
2	RFOUT	107x207 μ m	AC coupled 50 Ω Matched
3	VD	107x107 μ m	Drain Power Supply voltage, bypass capacitors needed*
4	VG	107x107 μ m	No connect, Optional Gate Power Supply voltage
Die Bottom	GND	Backside	Epoxy/Solder to Baseplate

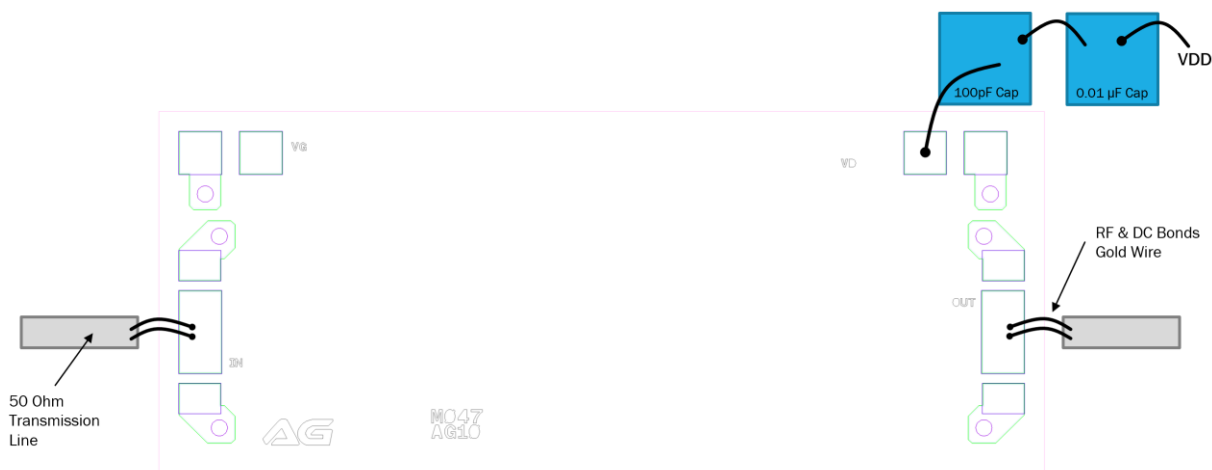
*See Assembly Diagram

Absolute Maximum Ratings

Parameter	Rating
Drain Bias Voltage (VDD)	+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)

Datasheet M047.v00	Information on this datasheet is believed to be accurate and reliable. Specifications are subject to change without notice	For price, delivery, and place to order contact: AmpliTech Sales 155 Plant Avenue, Hauppauge, NY 11788 USA Tel. +1 631.521.7831 Order online at www.AmpliTechInc.com	Pg.4
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