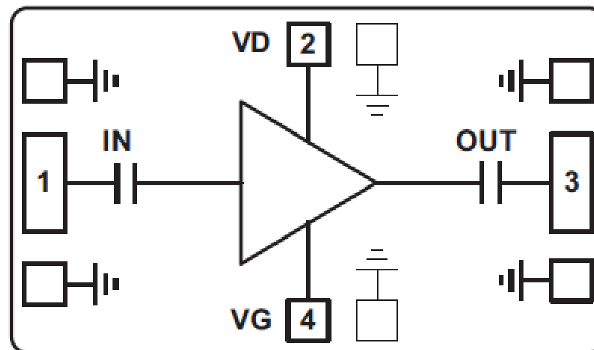
Features
- Noise Figure: 4dB
- Gain: 7.5dB
- P1dB: +13dBm
- Biasing +3V @ 40 mA
- Impedance: 50Ω
- Die Size: 1.3 x 1.0 x 0.1 mm

Functional Block Diagram



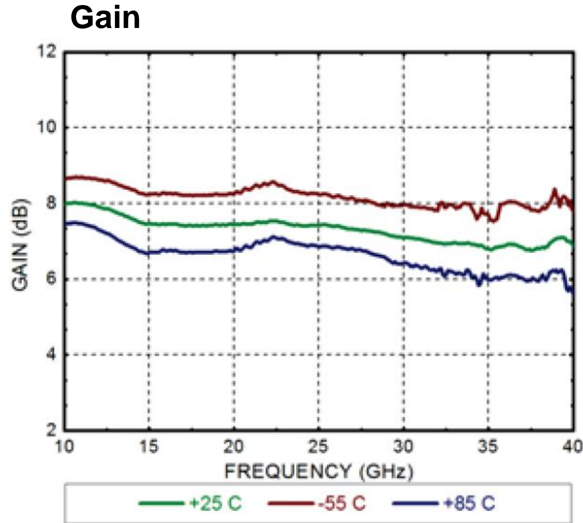
Typical Applications
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

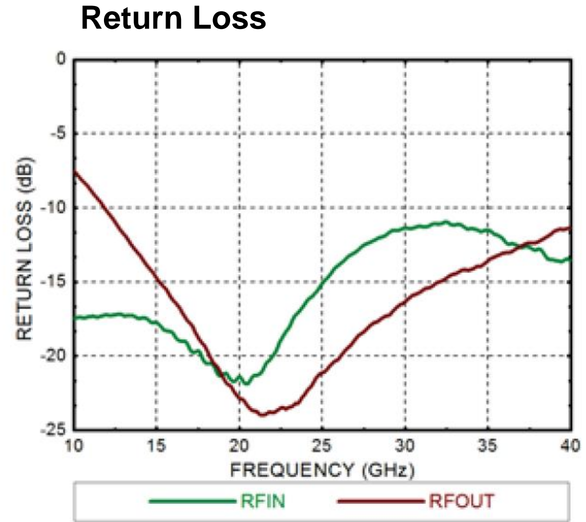
TA = +25ºC, Vdd = +3V Idd = 40mA *

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency		10 - 20			20 - 30			30 - 40		GHz
Gain		7.7			7.2			7		dB
Gain Flatness		±0.3			±0.2			±0.3		dB
Input Return Loss		18			15			12		dB
Output Return Loss		10			15			12		dB
Output 1dB Compression (P1dB)		14			14			13		dBm
Saturated Output Power (Psat)		16.5			16.5			15.5		dBm
Output Third Order Intercept (IP3)		23			23			22		dBm
Noise Figure		4.7			4			4.2		dB
Current		40			40			40		mA
Memo	* Adjust VG (-0.6V~-0V) to obtain device current.									

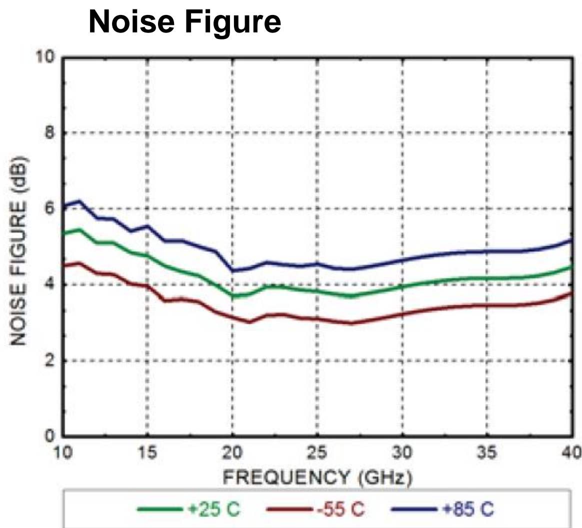
Gain



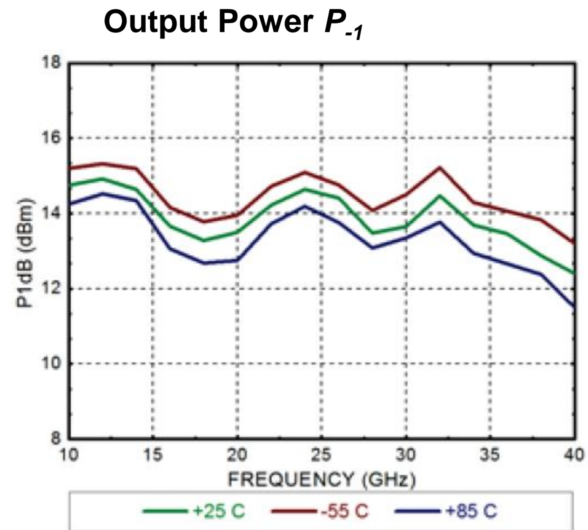
Return Loss



Noise Figure

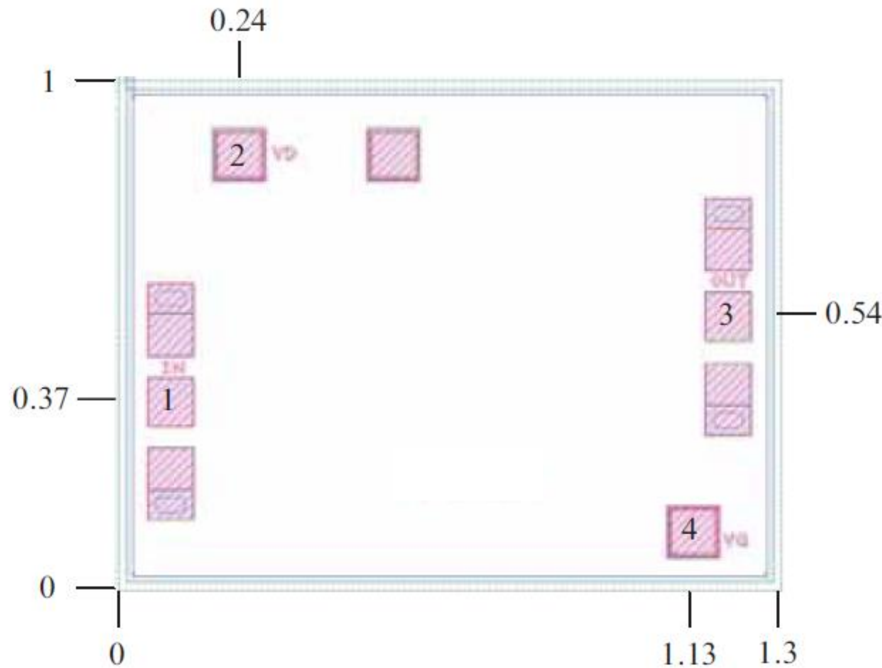


Output Power P_{-1}



Outline Drawing:

All Dimensions in mm



Pad Description

PAD	Function	Description
1	IN	Input AC coupling 50Ω Impedance.
2	VD	This disc provides power supply voltage for the amplifier and requires external 100pF and.01uf bypass capacitor.
3	OUT	Output AC coupling 50Ω Impedance.
4	VG	Gate control for amplifier. Attach bypass capacitor 100pf per application circuit.
Die Bottom	GND	Die bottom must be connected to RF/DC ground.

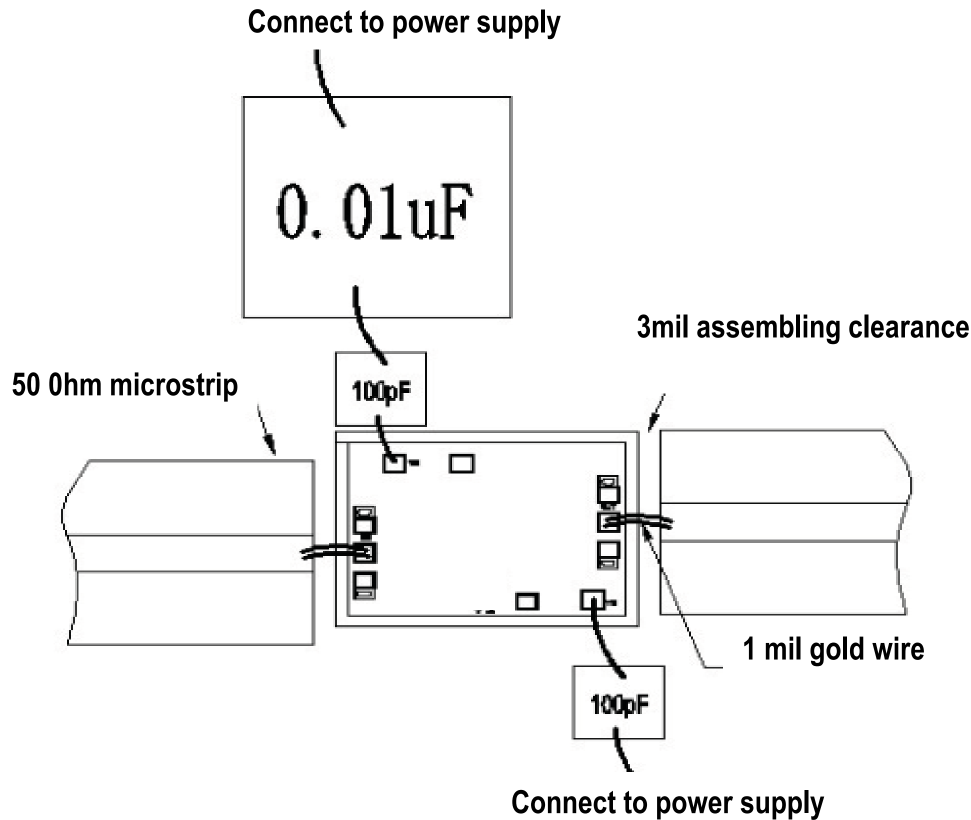
MILLER MMIC

MML019

V1.0.0

GaAs pHEMT MMIC
Low Noise Amplifier
10-40 GHz

Assembly Drawing



Notes:

1. Die thickness: 100um
2. Typical bond pad is 100*100 μm^2
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

Maximum Ratings:

1. Power supply voltage: +5V
2. RF input power: +16dBm
3. Storage temperature: -65℃ to +175℃
4. Operating temperature: -55℃ to +85℃

MML019

LOW NOISE AMPLIFIER – MMIC 10-40GHZ