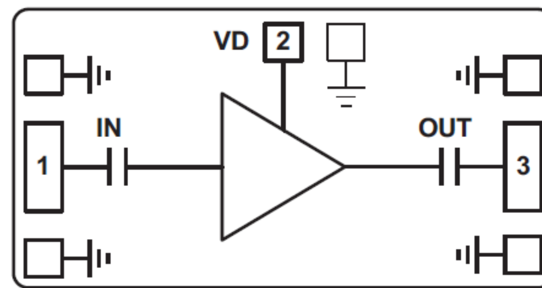
MILLER MMIC

**GaAs pHEMT MMIC
Driver Amplifier
0.8-18GHz**

Features

- Gain: 9.5dB
- P1dB: +20dBm
- Psat: +22dBm
- Biasing +5V @ 105mA
- Impedance: 50Ω
- Die Size: 1.9 x 1.2 x 0.1 mm

Functional Block Diagram



Typical Applications

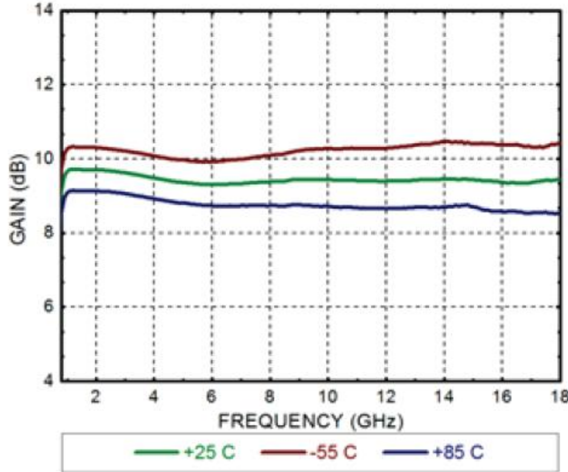
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

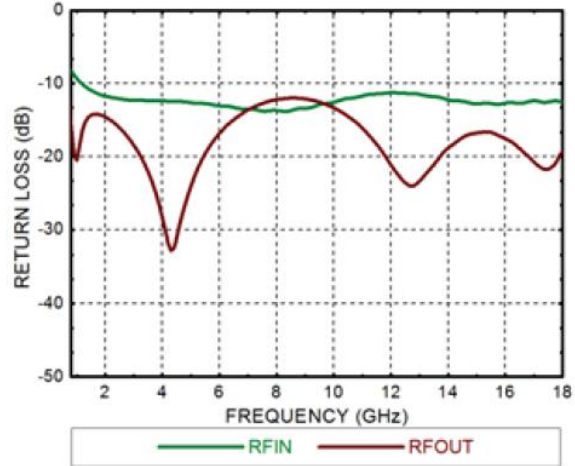
TA = +25°C, Vdd = +5V Idd = 105mA

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	0.8 - 6			6 -12			12 -18			GHz
Gain		9.5			9.4			9.4		dB
Gain Flatness		±0.3			±0.1			±0.1		dB
Input Return Loss		10			12			12		dB
Output Return Loss		15			12			15		dB
Output 1dB Compression (P1dB)		21			20.5			19.5		dBm
Saturated Output Power (Psat)		23			22.5			21.5		dBm
Output Third Order Intercept (IP3)		29			28.5			27.5		dBm
Current	80	105	130	80	105	130	80	105	130	mA

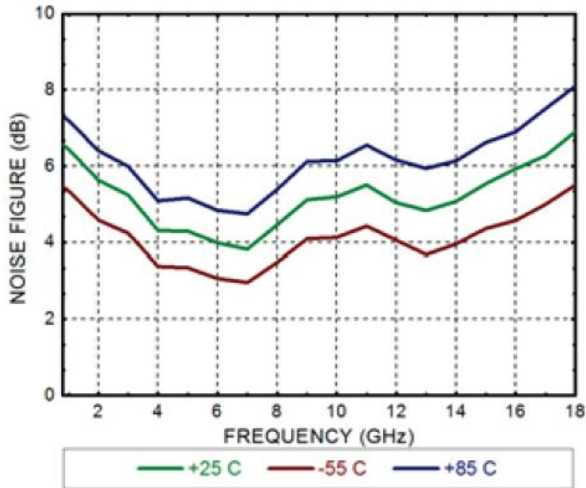
Gain



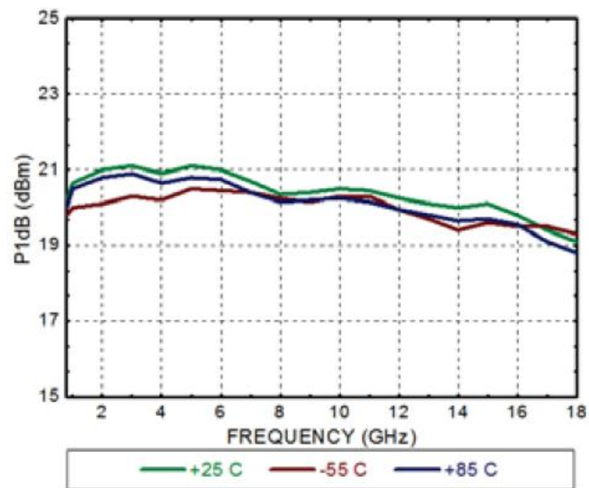
Return Loss



Noise Figure

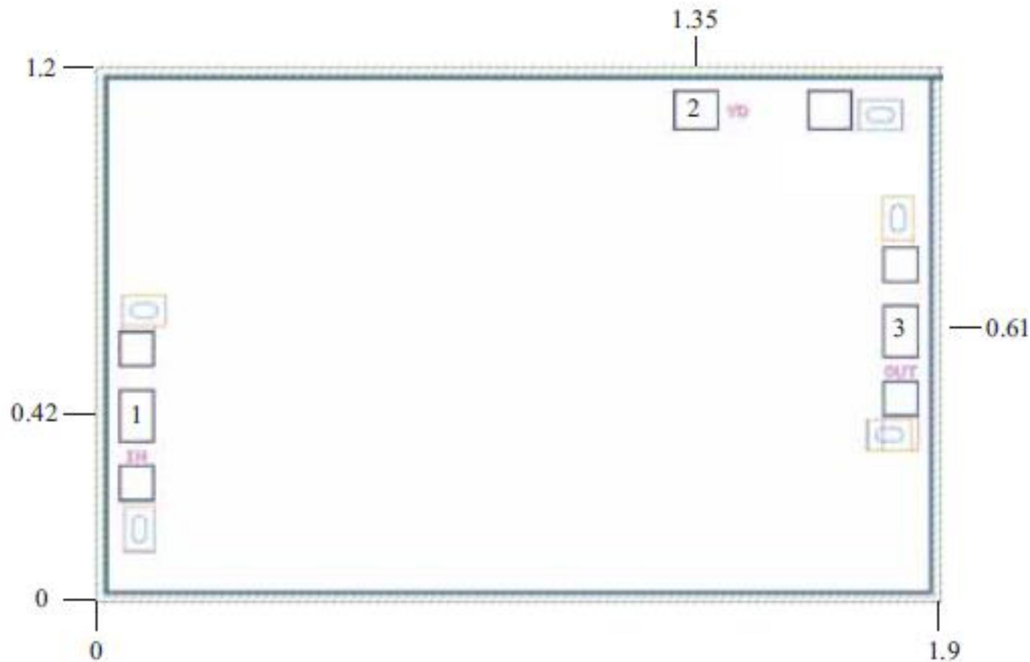


Output Power P_{-1}



Outline Drawing:

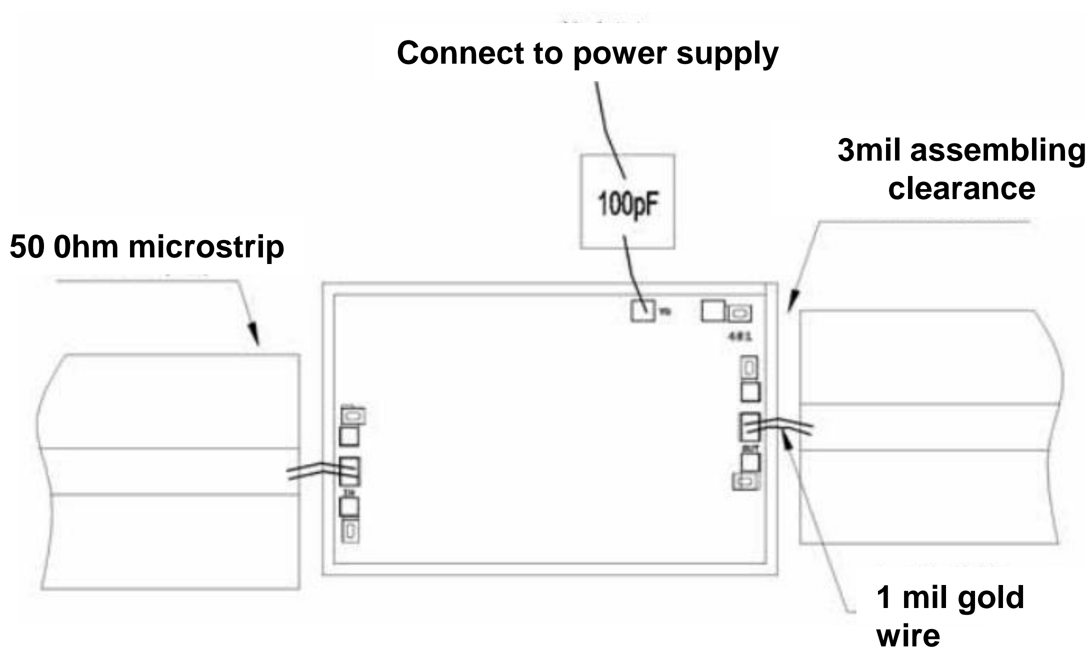
All Dimensions in mm



Pad Description

PAD	Function	Description
1	IN	Input AC coupling 50Ω Impedance
2	VD	The pad provides the power voltage of the amplifier, which needs to be externally connected with the 100pF bypass capacitor, and the pad to the capacitor cascade is controlled within 600um.
3	OUT	Output AC coupling 50Ω Impedance
Die Bottom	GND	Die bottom must be connected to RF/DC ground

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: +6V
2. RF input power: +18dBm
3. Storage temperature: -65℃ to +175℃
4. Operating temperature: -55℃ to +85℃