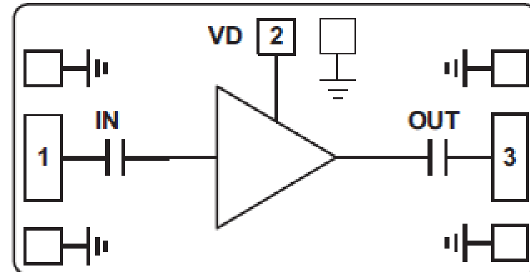
GaAs pHEMT MMIC
Driver Amplifier
2-18GHz

Features

- Gain 9.2dB
- P1dB: +20dBm
- Psat: +22dBm
- Biasing: +5V @ 112mA
- Impedance: 50Ω
- Die Size: 1.9 x 1.2 x 0.1 mm

Functional Block Diagram



Typical Applications

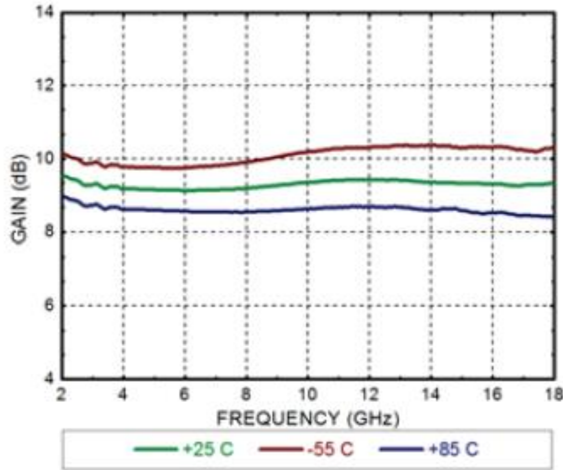
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

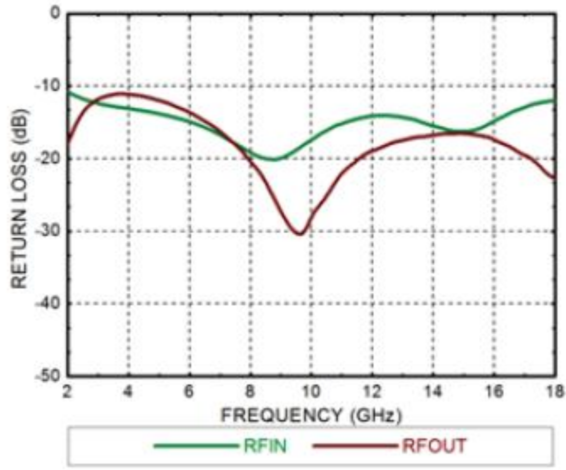
TA = +25°C, Vdd = +5V Idd = 112mA

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency		2 -6			6 -12			12 -18		GHz
Gain		9.3			9.1			9.3		dB
Gain Flatness		±0.2			±0.15			±0.2		dB
Input Return Loss		13			15			14		dB
Output Return Loss		13			15			15		dB
Output 1dB Compression (P1dB)		20.6			20			20		dBm
Current	85	112	139	85	112	139	85	112	139	mA

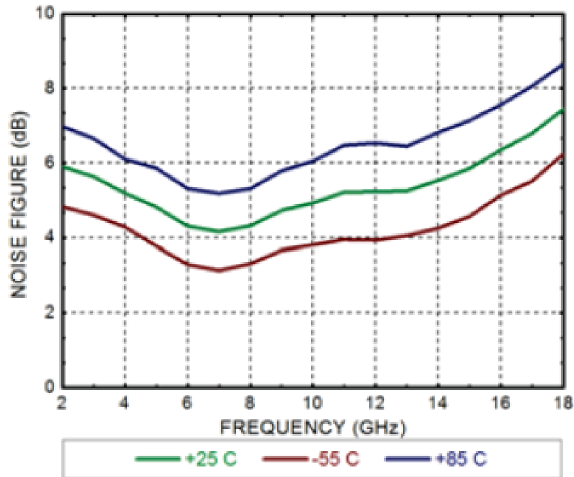
Gain



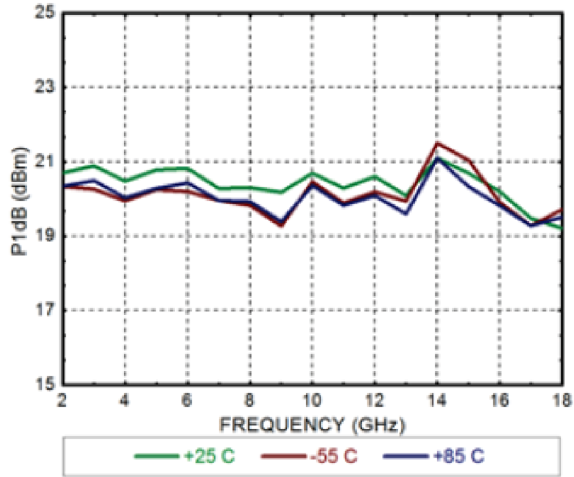
Return Loss



Noise Figure

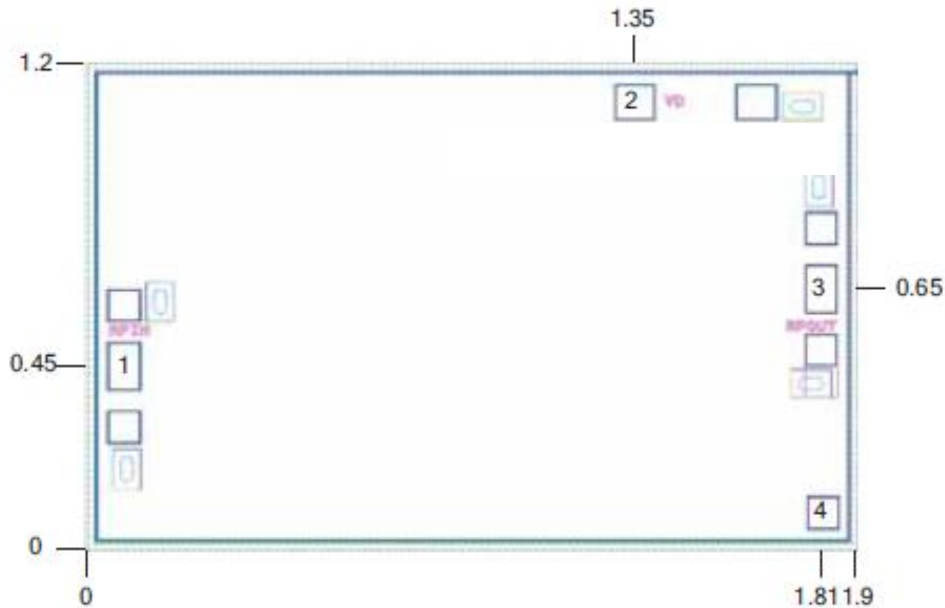


Output Power P_{-1}



Outline Drawing:

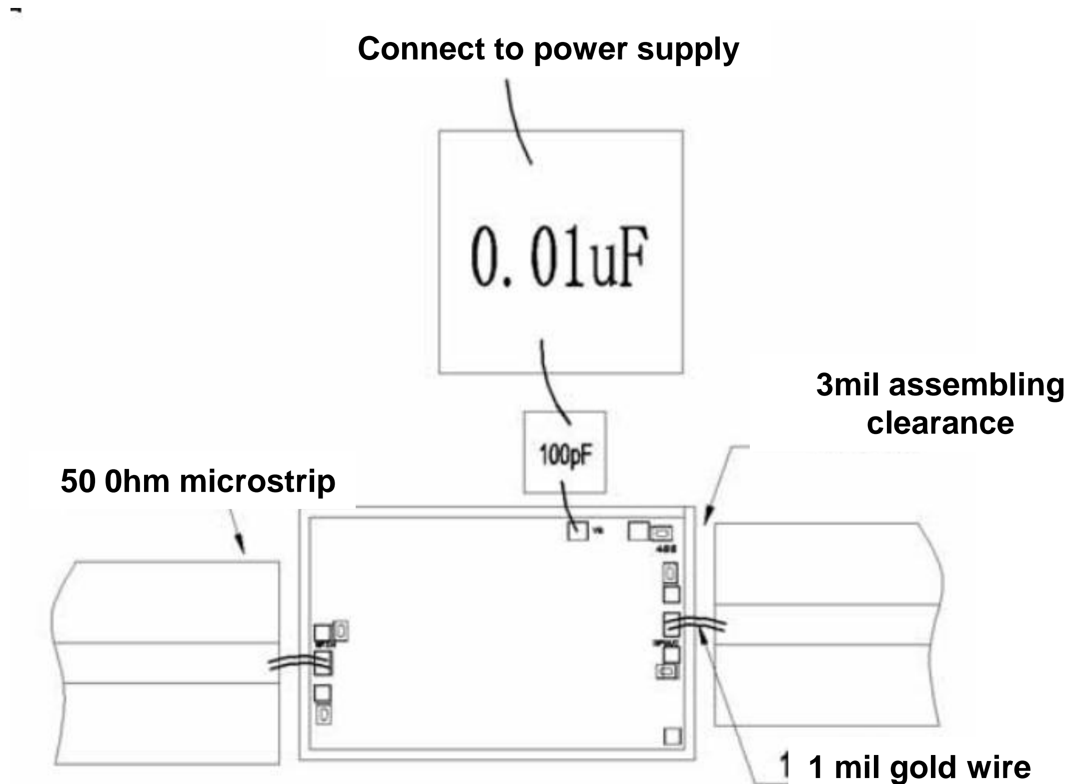
All Dimensions in mm



Pad Description

PAD	Function	Description
1	IN	The pad is AC coupling and matches to 50 ohms.
2	VD	The pad provides the power voltage of the amplifier, which needs to be externally connected with the 100pF bypass capacitance, and the pad to the capacitor cascade is controlled within 600um.
3	OUT	The pad is AC coupling and matches to 50 ohms.
4	VG	The pad can adjust the chip gain, and when normal use is suspended, if the gain can be increased by 0-0.5V voltage, the gain can be reduced to -0.5-0V voltage.
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℃