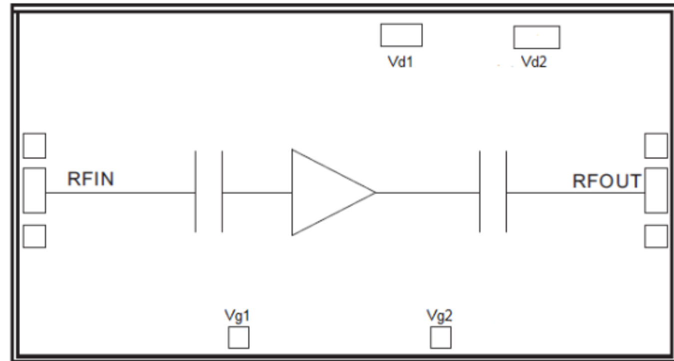
GaAs pHEMT MMIC
Power Amplifier
4-8GHz



## Features

- Frequency:4-8GHz
- Small Signal Gain: 21dB
- Gain Flatness: ±1.6dB
- P1dB: 28.5dBm
- Psat: 29dBm
- Power Supply: 8V@190mA
- Input/Output: 50Ω
- Die Size: 2.32 x 1.17 x 0.1 mm

## Functional Block Diagram



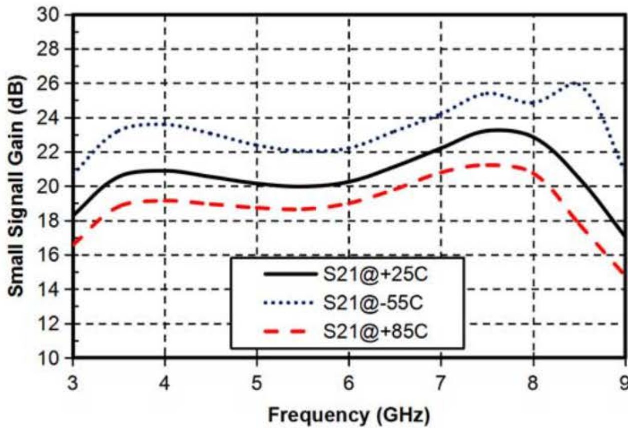

## Typical Applications

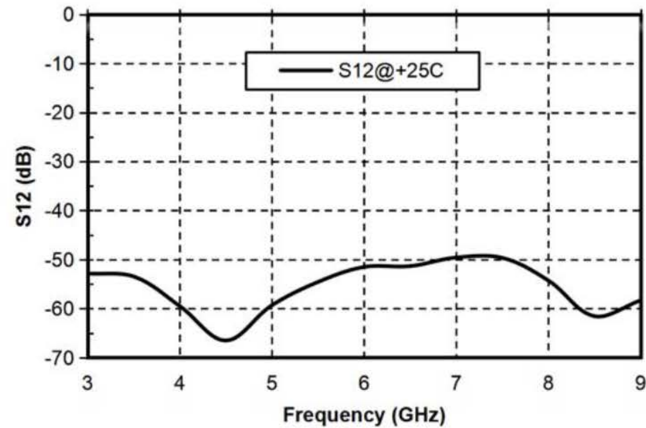
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

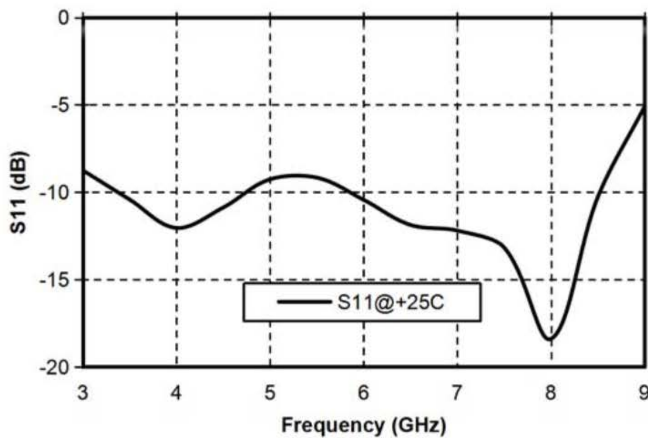
## Electrical Specifications

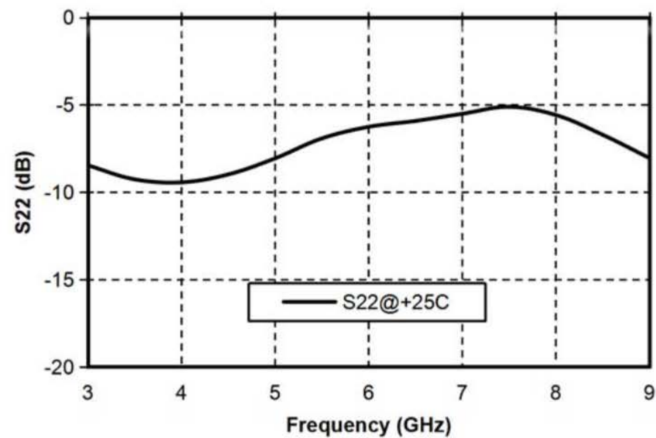
TA = +25ºC, Vd = +8V，Ids=190mA

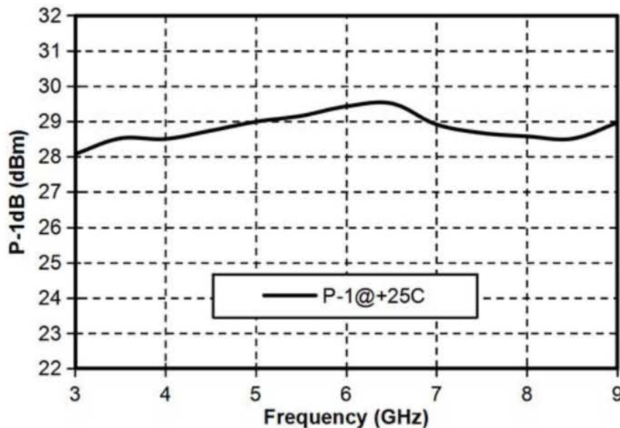
| Parameters | Min. | Typ. | Max. | Units |
|---|---|---|---|---|
| Frequency | | 4-8 | | GHz |
| Small Signal Gain | | 21 | | dB |
| Gain Flatness | | ±1.6 | | dB |
| P1dB | | 28.5 | | dBm |
| Psat | | 29 | | dBm |
| Input Return Loss | | 18 | | dB |
| Output Return Loss | | 9 | | dB |
| Quiescent Current | | 190 | | mA |
| By tuning the Vg terminal voltage from -2V to 0V, the Vg terminal voltage is recommended to be -0.7V. | | | | |

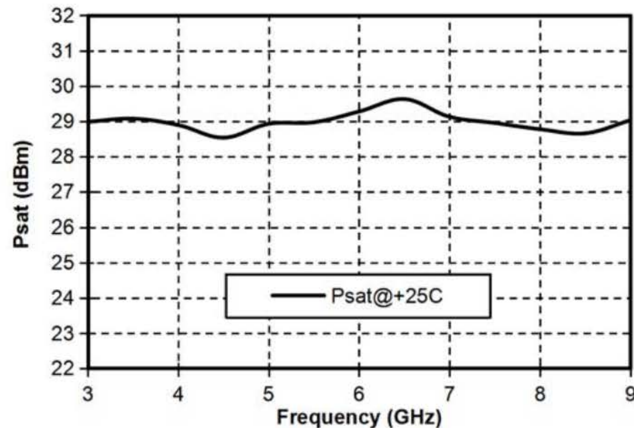

Gain vs. Frequency
Small Signall Gain (dB)
Frequency (GHz)
S21@+25C
S21@-55C
S21@+85C


Reverse Isolation vs. Frequency
S12 (dB)
Frequency (GHz)
S12@+25C


Input Return Loss vs. Frequency
S11 (dB)
Frequency (GHz)
S11@+25C

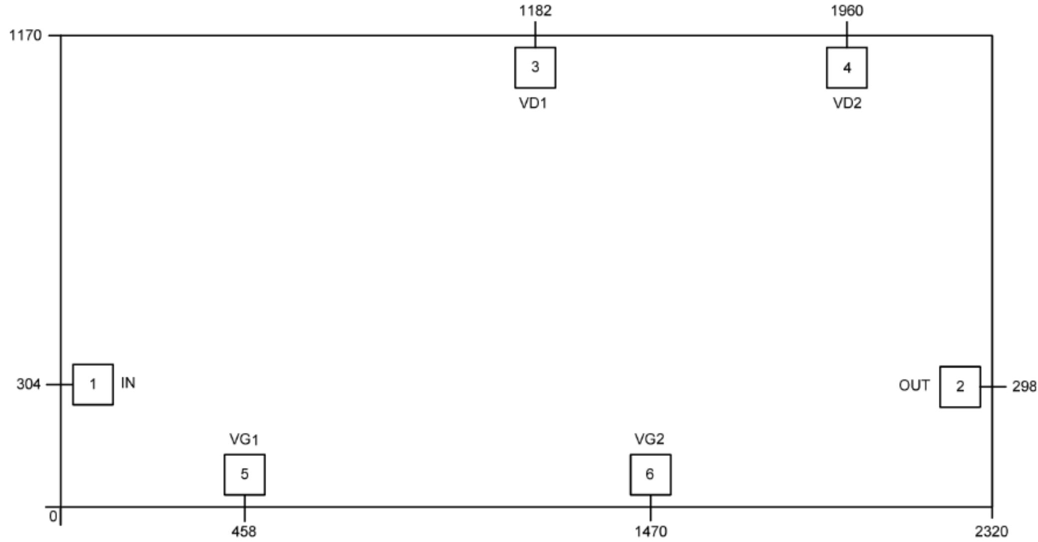

Output Return Loss vs. Frequency
S22 (dB)
Frequency (GHz)
S22@+25C


P-1dB vs. Frequency
P-1dB (dBm)
Frequency (GHz)
P-1@+25C


Psat vs. Frequency
Psat (dBm)
Frequency (GHz)
Psat@+25C

## Outline Drawing:

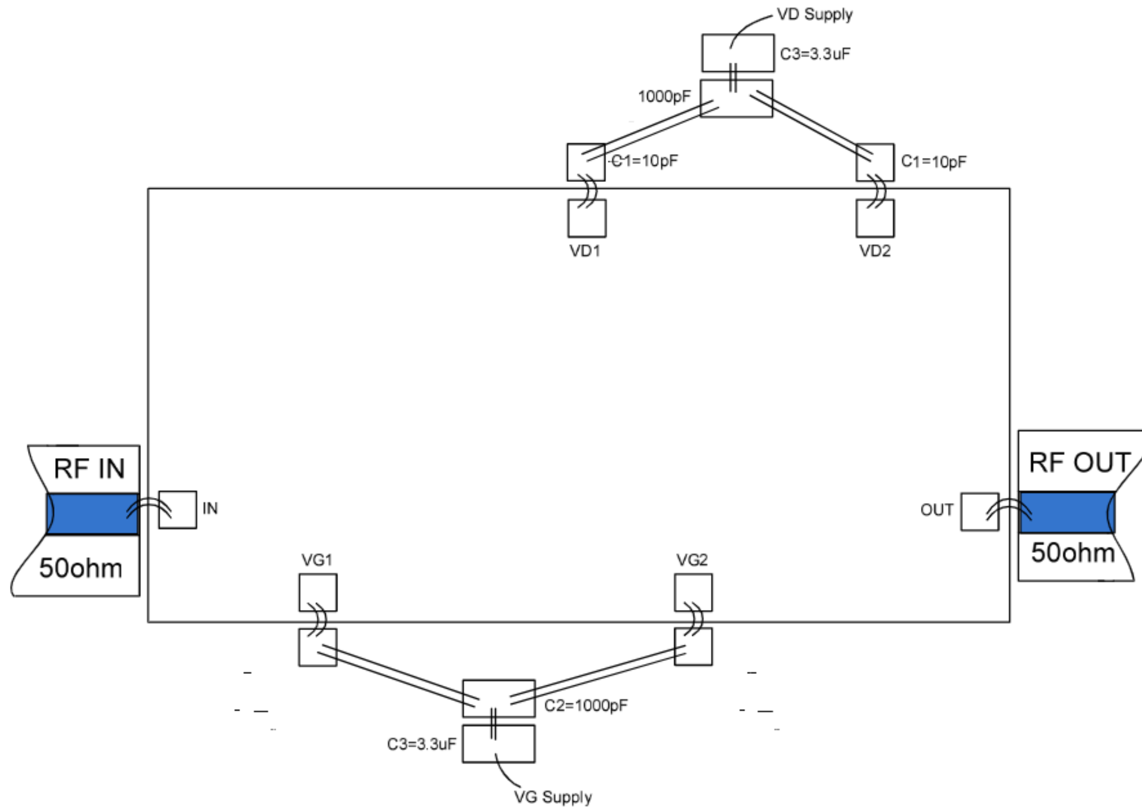
All Dimensions in um




## Pad Description

| PAD | Function | Description |
|---|---|---|
| 1 | RF IN | RF signal input terminal, no blocking capacitor required |
| 2 | RF OUT | RF signal output terminal, no blocking capacitor required |
| 3,4 | Vd1, Vd2 | Amplifier drain bias, connected to external 10pF, 1000pF,3.3uF bypass capacitor. |
| 5,6 | Vg1, Vg2 | Amplifier gate bias, connected to external 10pF, 1000pF 3.3uF bypass capacitor. |
| 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. **Maximum drain voltage: +10V**
2. **Maximum input power: +20dBm**
3. **Operating temperature: -55℃ to +85℃**
4. **Storage temperature: -65℃ to +150℃**