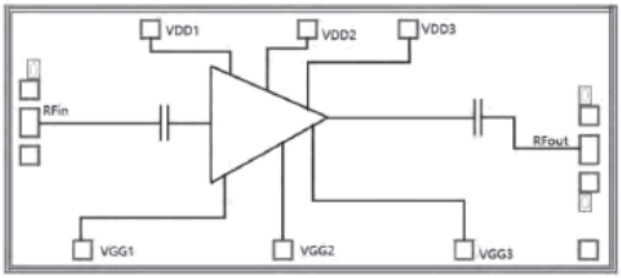
V1.0.0

GaAs MMIC
Driver Amplifier
12-17GHz

Features

- **Frequency: 12-17GHz**
- **Gain: 28dB**
- **Noise figure：2.5dB**
- **P1dB: +25dBm**
- **Power supply: +5.0V@200mA**
- **Die Size: 3000 x 1290 μm**

Functional Block Diagram



Typical Applications

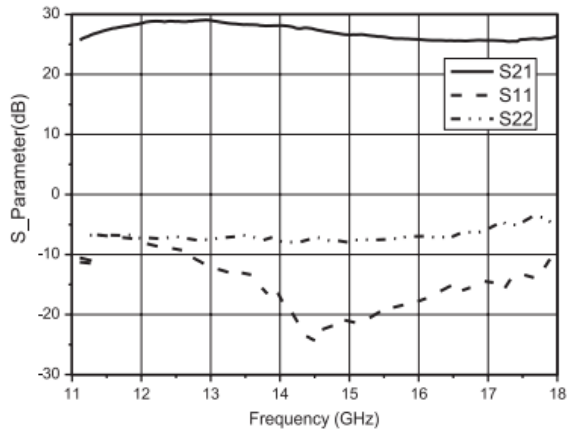
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

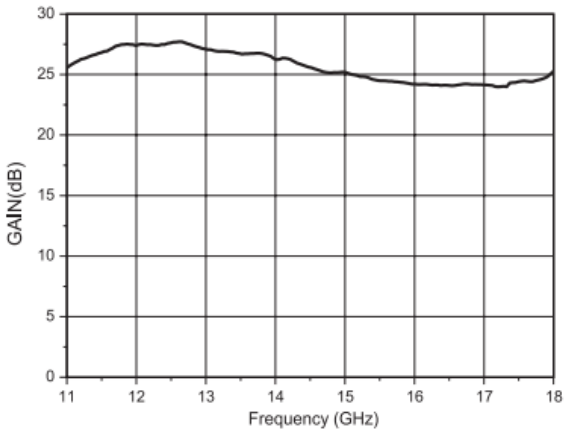
TA = +25ºC, Vdd = +5V, Vgg = -0.8V

Parameters	Min.	Typ.	Max.	Units
Frequency		**12-17**		**GHz**
Gain		**28**		**dB**
Noise figure		**2.5**		**dB**
P1dB		**25**		**dBm**
Input Return Loss		**15**		**dB**
Output Return Loss		**7**		**dB**
PAE		**30%**		
Operating Current		**200**		**mA**

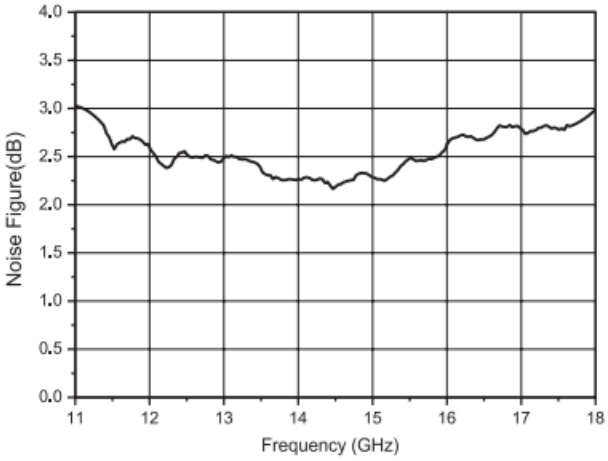
S_Parameter vs. Frequency



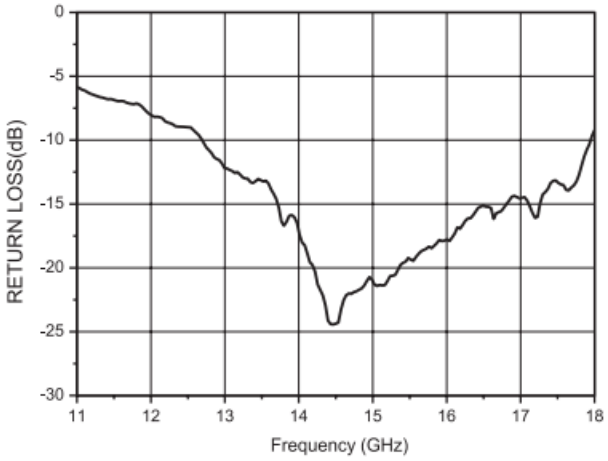
Gain vs. Frequency



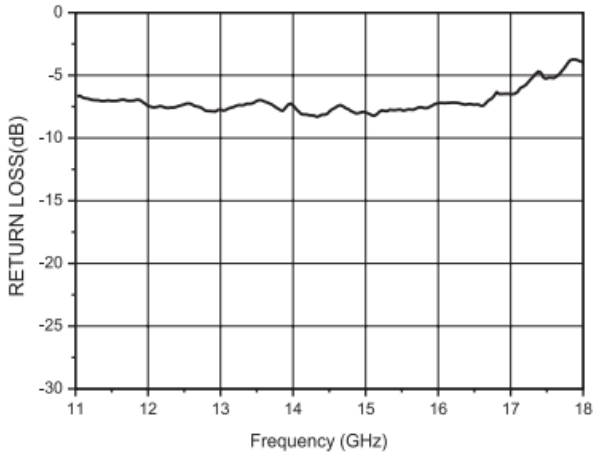
Noise Figure vs. Frequency



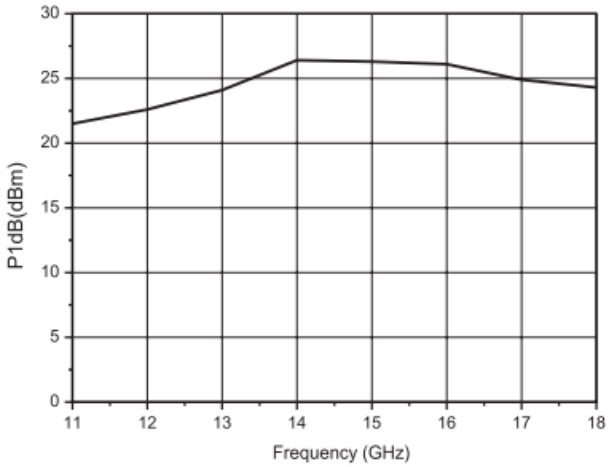
Input Return Loss vs. Frequency



Output Return Loss vs. Frequency

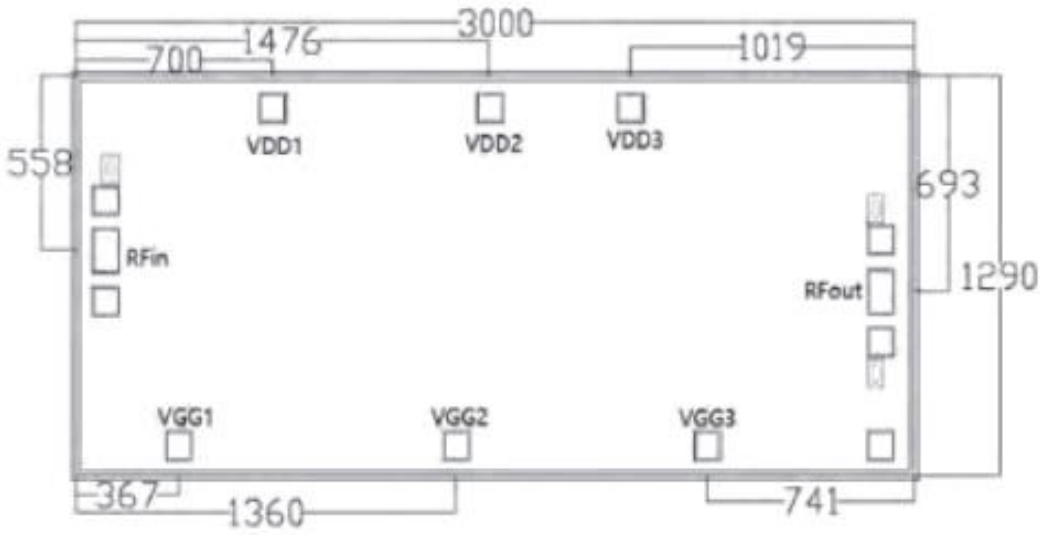


P-1dB vs. Frequency



Outline Drawing:

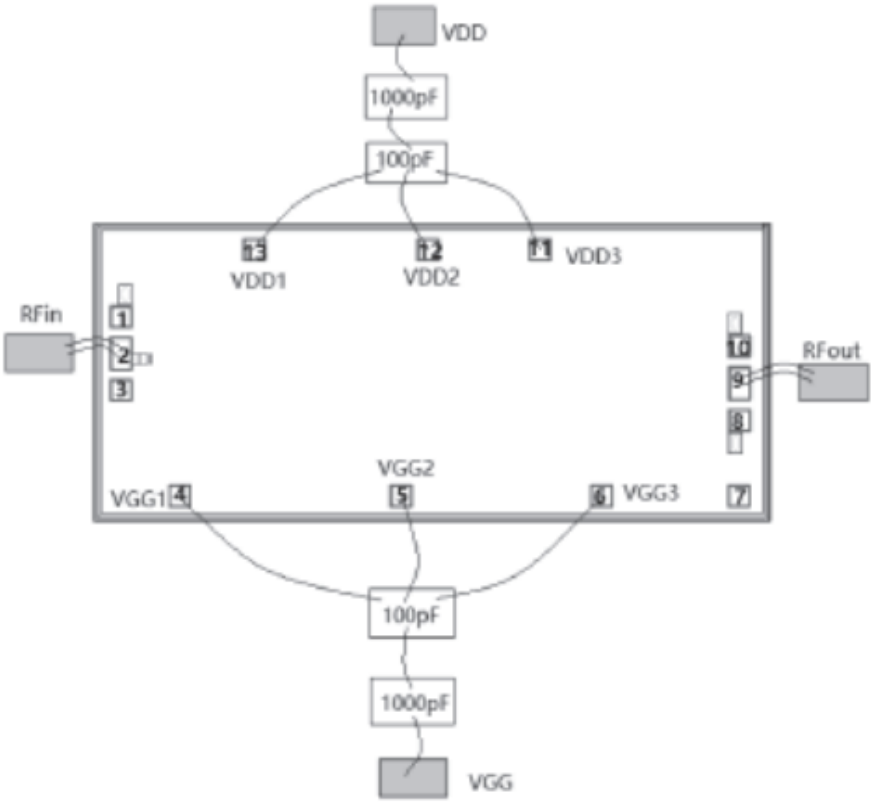
All Dimensions in um



Pad Description

PAD	Function	Description
1,3,7,8,10	GND	Die bottom must be connected to RF/DC ground
2	RF IN	RF signal input terminal, external 50-ohm system required
9	RF OUT	RF signal output terminal, external 50-ohm system required
11,12,13	Vdd	Amplifier drain power supply, external 100pF capacitor required
4,5,6	Vgg	Amplifier gate power supply, external 100pF capacitor required

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. Supply voltage: +5.5V
2. RF input power: 10dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃