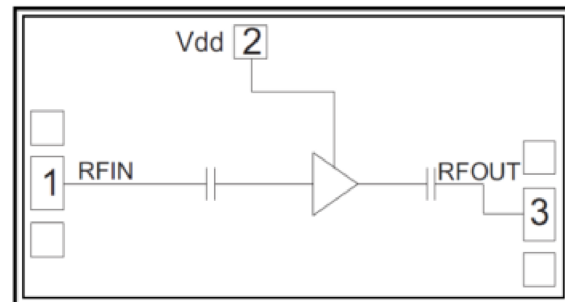
GaAs pHEMT MMIC
Power Amplifier
6-18GHz

Features

- **Single Biasing Voltage (Self Biased)**
- **Frequency: 6-18GHz**
- **Small Signal Gain: 9.5dB**
- **Gain Flatness: ±0.25dB**
- **Noise Figure: 3.5dB, typ.**
- **P1dB: 19.5dBm**
- **Psat: 20.5dBm**
- **Power Supply: +5V@75mA**
- **Input/Output: 50Ω**
- **Die Size: 1.65 x 1.05 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 = +5V

Parameters	Min.	Typ.	Max.	Units
Frequency		6-18		GHz
Small Signal Gain		9.5		dB
Gain Flatness		±0.25		dB
Noise Figure	3.2	3.5	3.7	dB
P1dB	19	19.5		dBm
Psat	20	20.5		dBm
Input Return Loss	13	18		dB
Output Return Loss	17	18		dB
Quiescent Current		75		mA

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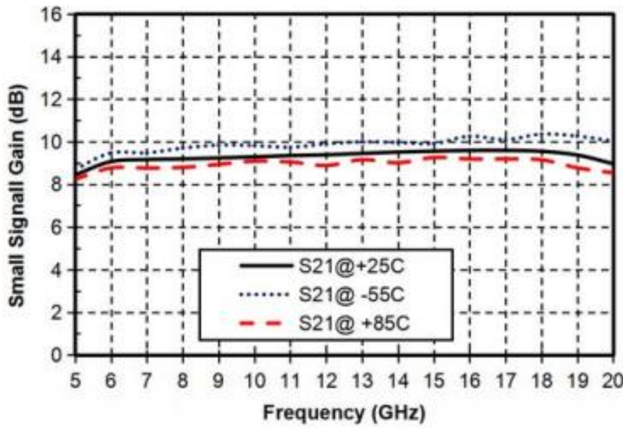
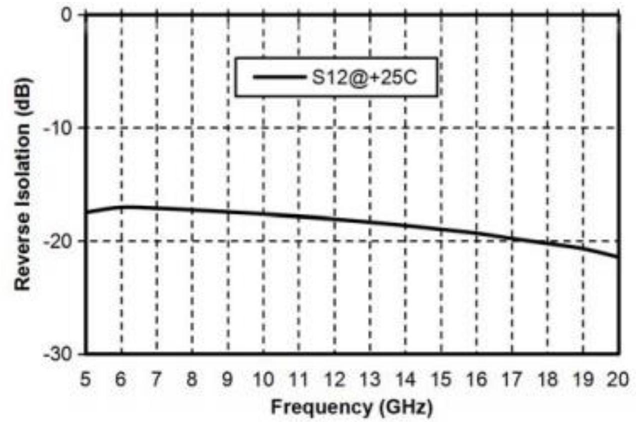
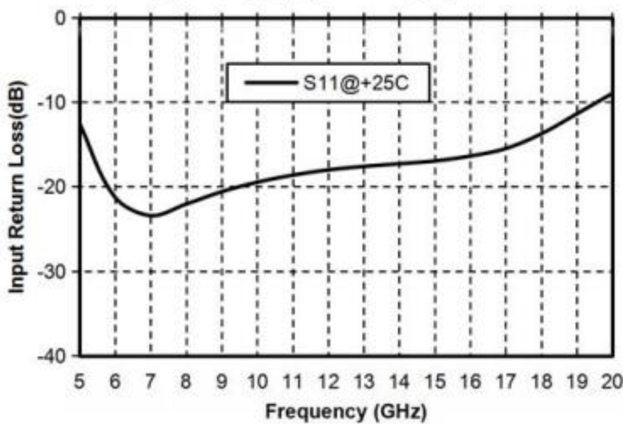
Gain vs. Frequency



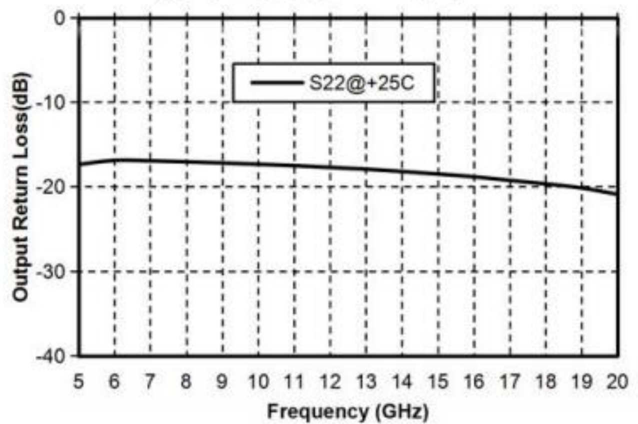
Reverse Isolation vs. Frequency



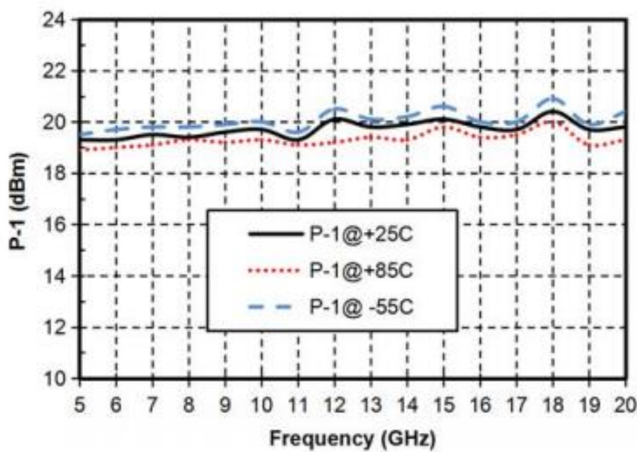
Input Return Loss vs. Frequency



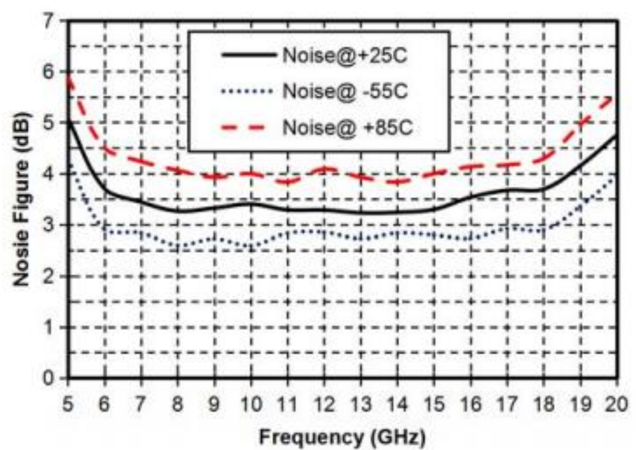
Output Return Loss vs. Frequency



P-1dB vs. Frequency

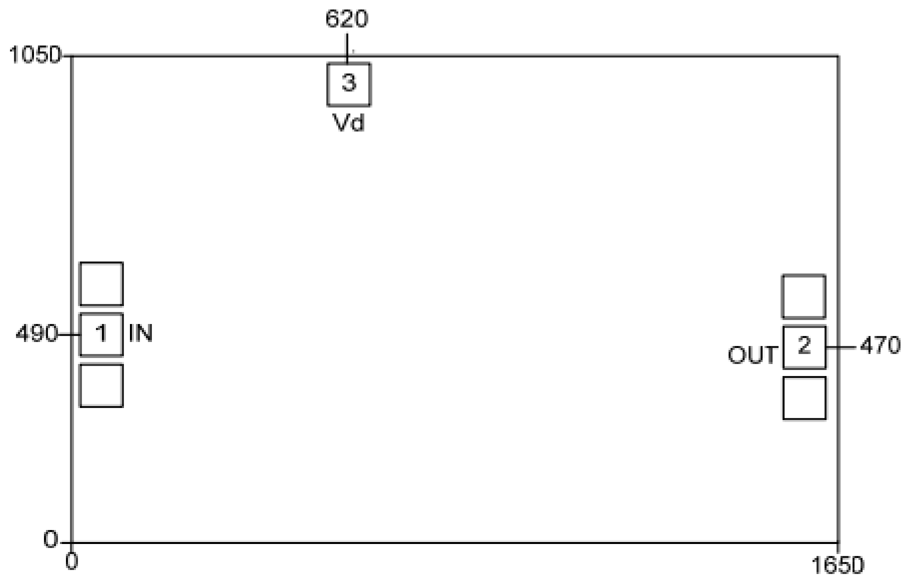


NF vs. Frequency



Outline Drawing:

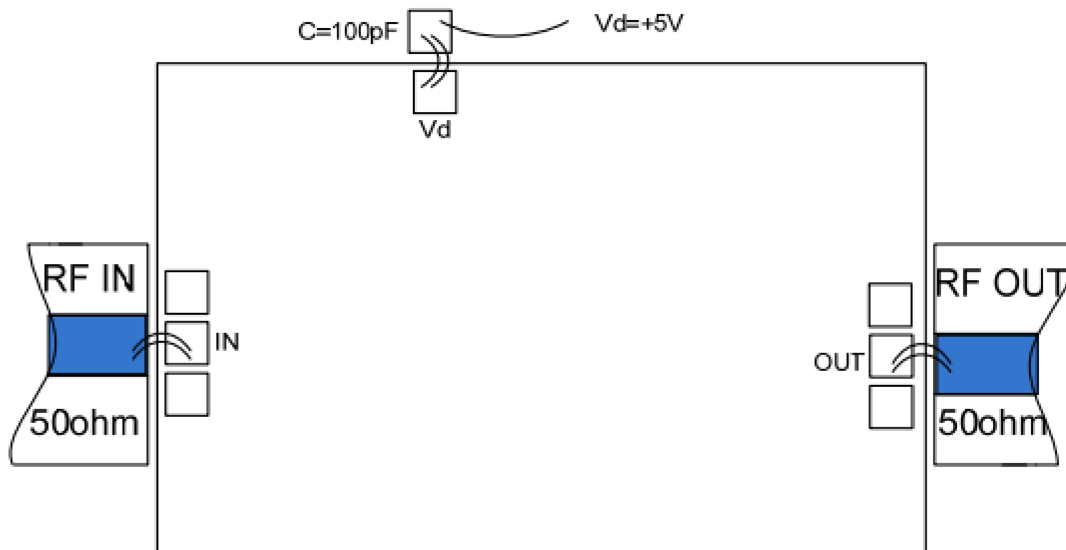
All Dimensions in um



Pad Description

PAD	Function	Description	Equivalent Circuit
1	RF IN	RF signal input terminal, no blocking capacitor required	
2	RF OUT	RF signal output terminal, no blocking capacitor required	
3	Vd	Amplifier drain bias, connected to external 100pF bypass capacitor	
Die Botto m	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: +7V
2. Maximum input power: +20dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃