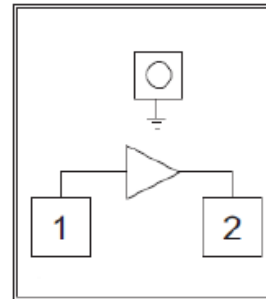


**Features**

- Operating Frequency: DC-4GHz
- Small Signal Gain: 18dB
- Noise Figure: 0.9dB
- P-1dB: 20.5dBm
- Power Supply: +5V/75mA
- 50Ohm input/output
- Die Size: 1.0 x 0.95 x 0.1 mm

**Functional Block Diagram**

**Typical Applications**

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

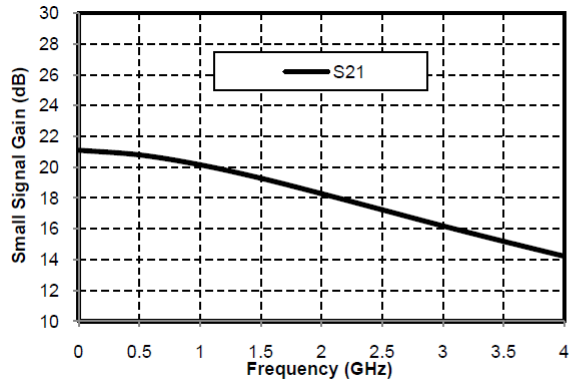
**Electrical Specifications**

 TA = +25°C, Vd=+5V, R<sub>BIAS</sub>=19.5Ω

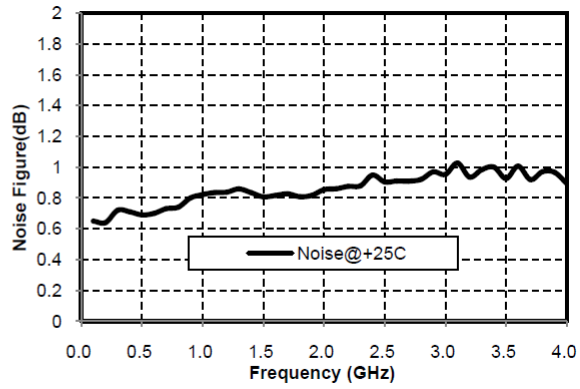
Parameters	Min.	Typ.	Max.	Units
Frequency	DC-4			GHz
Small Signal Gain	14	18	21	dB
Input Return Loss	16	23		dB
Output Return Loss	11	18		dB
P-1dB		20.5		dBm
Psat		21		dBm
Noise Figure		0.9		dB
Static Current		75		mA



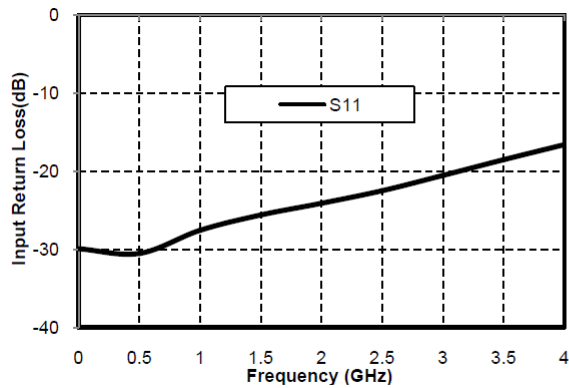
### Gain vs. Frequency



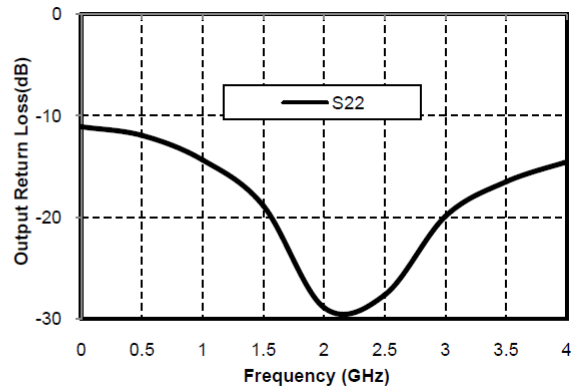
### Noise Figure vs. Frequency



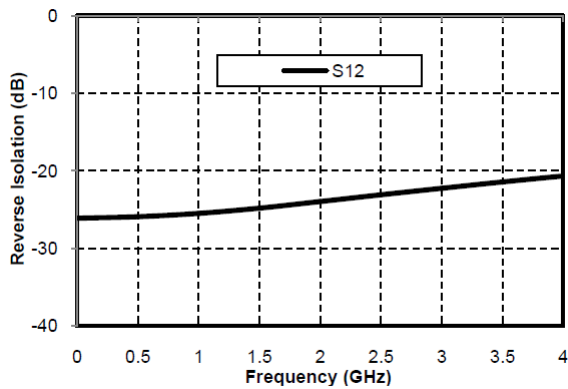
### Input Return Loss vs. Frequency



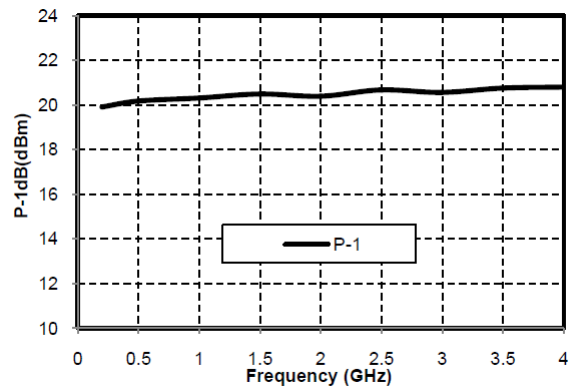
### Output Return Loss vs. Frequency



### Reverse Isolation vs. Frequency

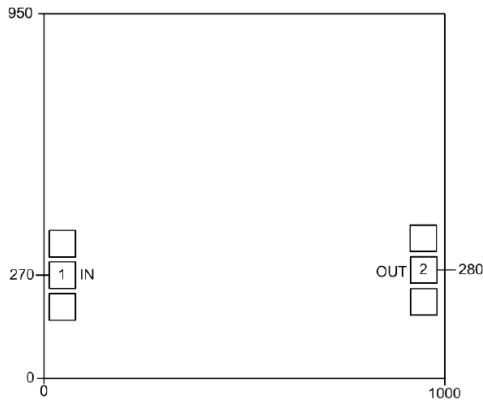
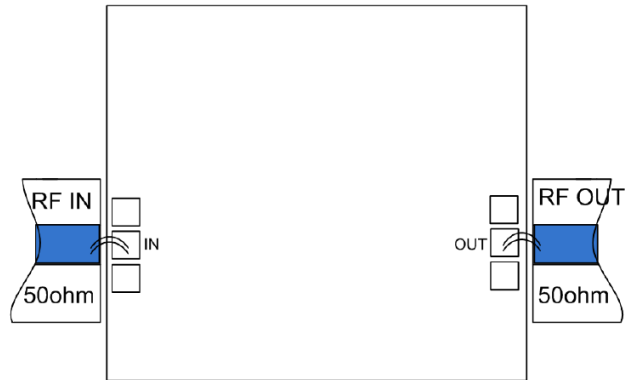


### P-1dB vs. Frequency



**Outline Drawing(Die):**

All Dimensions in um


**Assembly Drawing(Die):**

**Pad Description**

PAD	Function	Description
1	RF IN	RF input, external DC-blocking capacitor required
2	RF OUT	RF output and DC bias, bias the current by external choke inductor at output terminal , external DC-blocking capacitor required
Die Bottom	GND	Die bottom must be connected to RF/DC ground



### Recommended bias circuit

	Device	Frequency (MHz)			
		10	1000	2000	4000
	L1	10µH	270nH	270nH	270nH
	C1, C2	0.01µF	0.01µF	0.01µF	0.01µF
	V <sub>CC</sub> (V)	5			
	R <sub>BIAS</sub> (Ω)	19.5			

\*Note: R<sub>BIAS</sub> can be changed with different application condition,  $R_{BIAS} = (V_{CC} - V_{BIAS}) / I_{BIAS}$

#### Notes:

1. Die thickness: 100µm
2. Typical bond pad is 100\*100 µm<sup>2</sup>
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. RF input power: +20dBm
2. Drain Voltage: +7V
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C