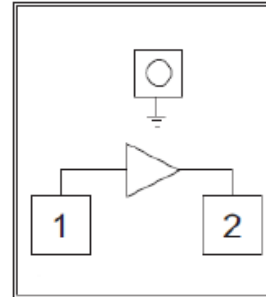


Features

- Operating Frequency: 1-3.5GHz
- Small Signal Gain: 19.5dB
- Noise Figure: 3.5dB
- P-1dB: 8.0dBm
- OIP3: 19dBm@1GHz with Pin=-15dBm
- Current: 20mA
- 50Ohm input/output
- Die Size: 0.62 x 0.62 x 0.1 mm

Functional Block Diagram

Typical Applications

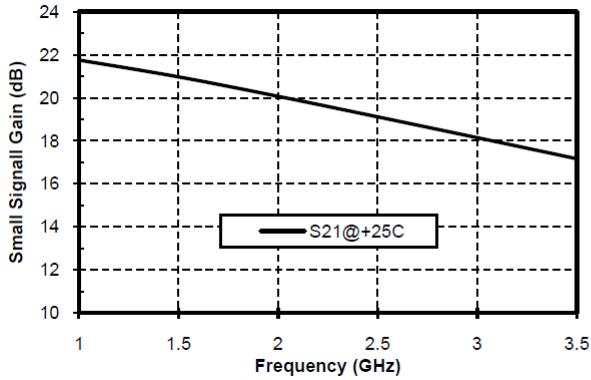
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

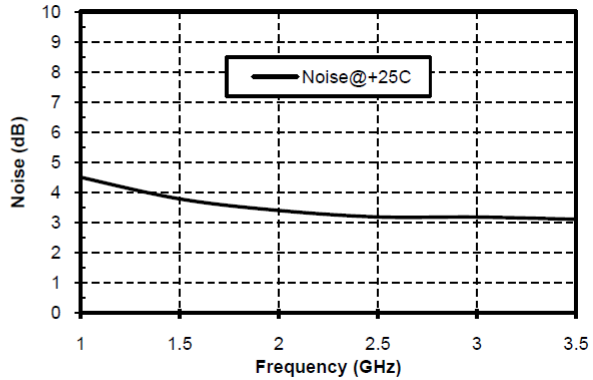
 TA = +25°C, VCC=+5V, R_{BIAS}=47Ω

Parameters	Min.	Typ.	Max.	Units
Frequency	1 - 3.5			GHz
Small Signal Gain		19.5		dB
Input Return Loss		11		dB
Output Return Loss		17		dB
Reverse Isolation		23		dB
P-1dB		8.0		dBm
Psat		10.5		dBm
OIP3@1GHz with Pin=-15dBm		19		dBm
Noise Figure		3.5		dB
Static Current		20		mA

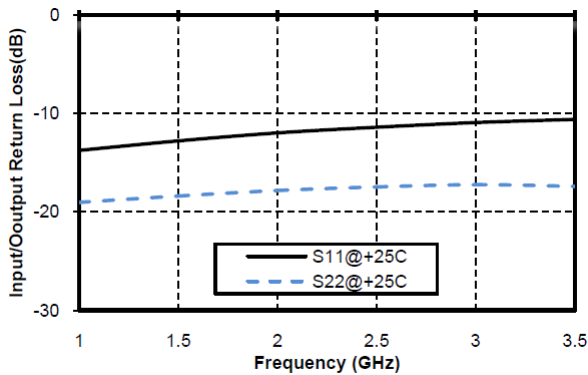
Gain vs. Frequency



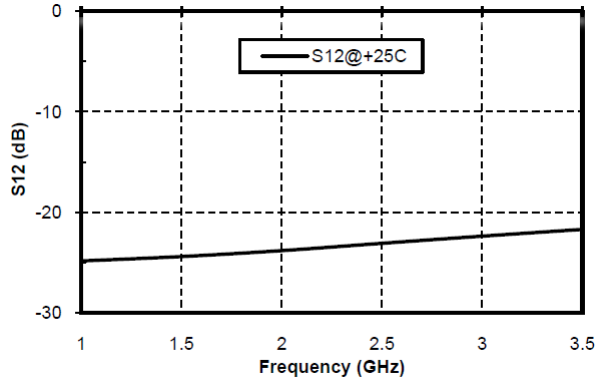
Noise Figure vs. Frequency



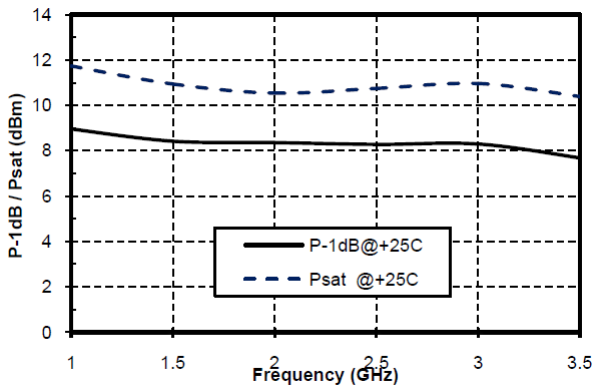
Input/Output Return Loss vs. Frequency



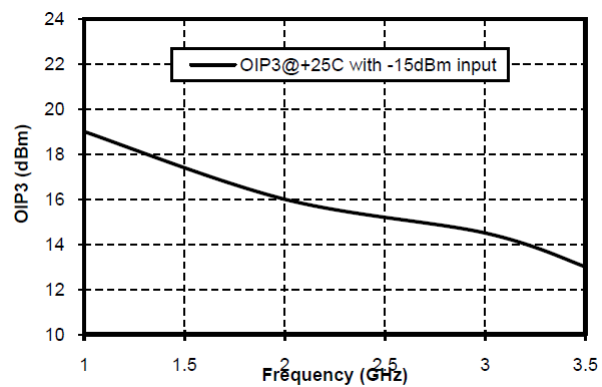
Reverse Isolation vs. Frequency



P-1dB/Psat vs. Frequency

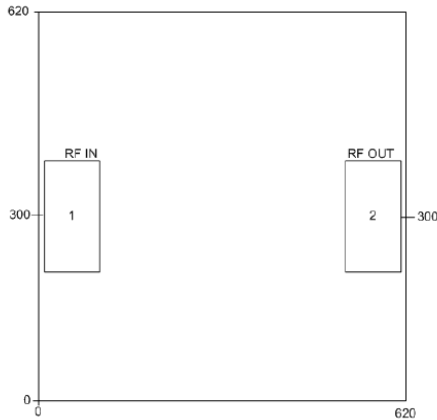


OIP3 vs. Frequency (Pin=-15dBm)

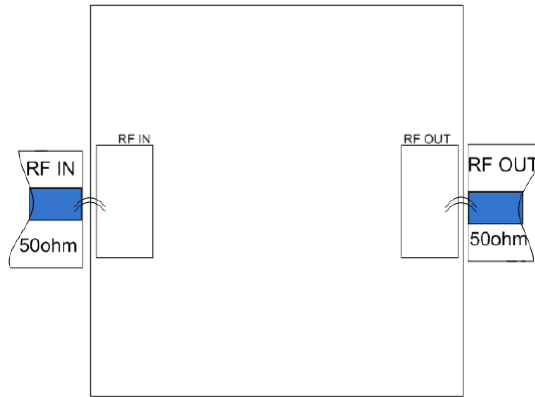


Outline Drawing(Die):

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)					
		50	1000	2000	4000		
	L1	270nH	270nH	270nH	270nH		
	C1, C2	0.01μF	0.01μF	0.01μF	0.01μF		
	V _{CC} (V)	5	6	7	8	9	10
	R _{BIAS} (Ω)	47	97	147	197	247	297

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

Notes:

1. Die thickness: 100um
2. Typical bond pad is 100*100 μm²
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: +25dBm
2. Operating Current: 40mA
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C