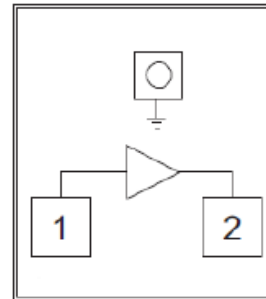


**Features**

- 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

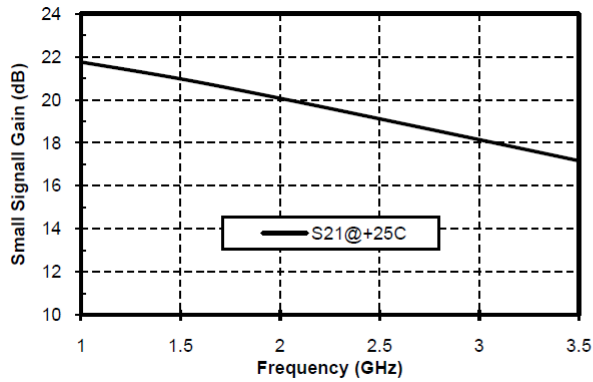
**Functional Block Diagram**

**Typical Applications**

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

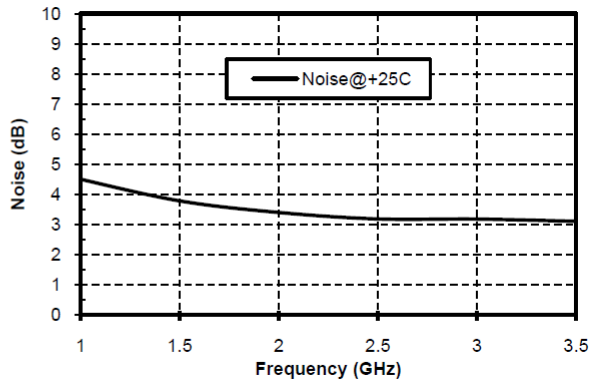
**Electrical Specifications**
**TA = +25°C, VCC=+5V, R<sub>BIAS</sub>=47Ω**

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

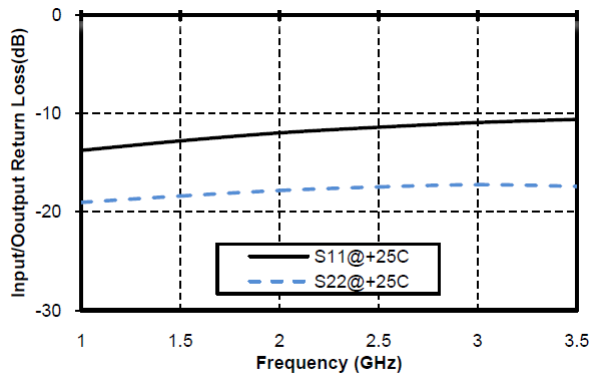
Gain vs. Frequency



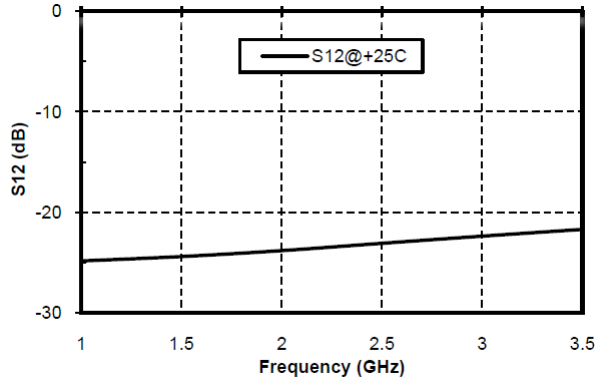
Noise Figure vs. Frequency



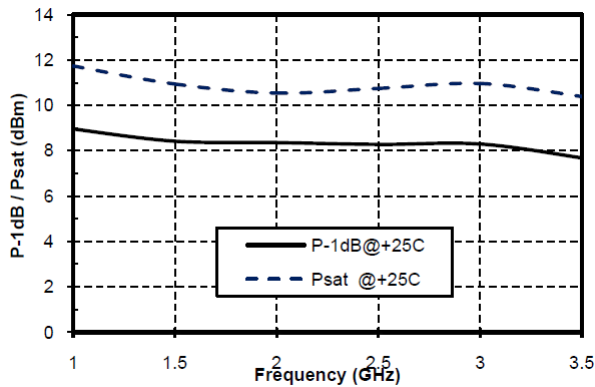
Input/Output Return Loss vs. Frequency



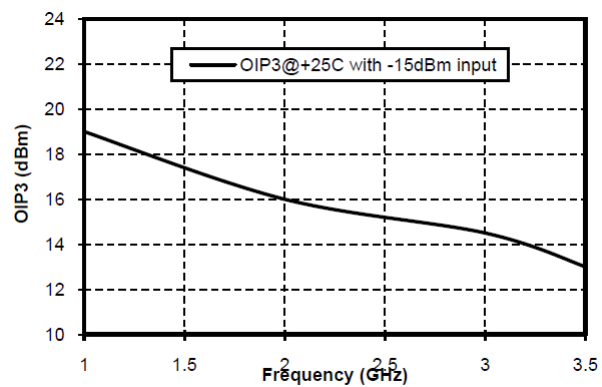
Reverse Isolation vs. Frequency



P-1dB/Psat vs. Frequency

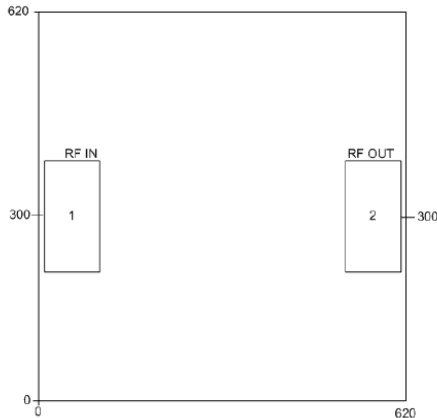
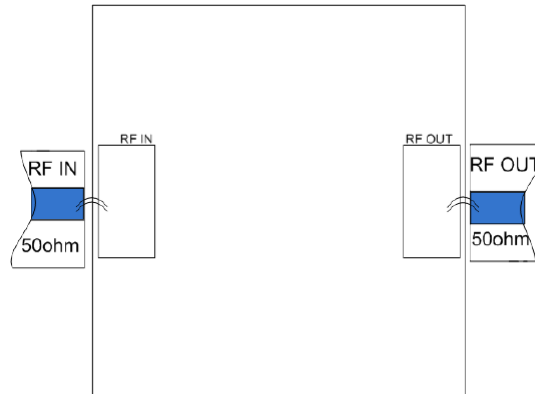


OIP3 vs. Frequency (Pin=-15dBm)



**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 <sub>CC</sub> (V)	5	6	7	8	9	10
	R <sub>BIAS</sub> (Ω)	47	97	147	197	247	297

\*Note: R<sub>BIAS</sub> 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 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: +25dBm
2. Operating Current: 40mA
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C