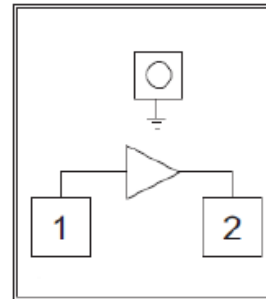


**Features**

- Operating Frequency: DC-6GHz
- Small Signal Gain: 16dB
- Gain Flatness:  $\pm 1.25$ dB
- Noise Figure: 3.2dB
- P-1dB: 12.5dBm
- OIP3: 26dBm@1GHz with -10dBm input
- Current: 40mA
- 50Ohm input/output
- Die Size: 0.62 x 0.62 x 0.1 mm

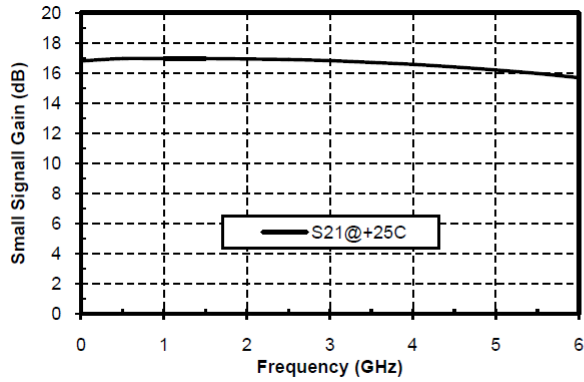
**Functional Block Diagram**

**Typical Applications**

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

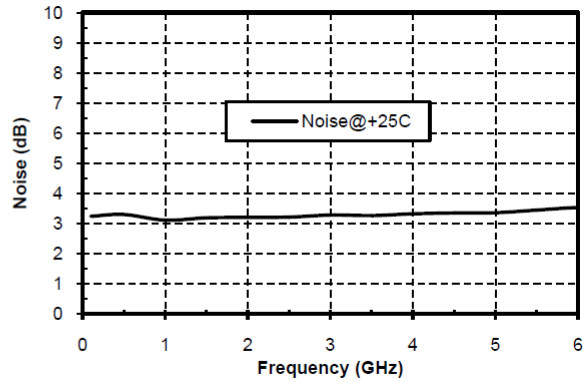
**Electrical Specifications**
**TA = +25°C, VCC=+7V, R<sub>BIAS</sub>=88.7Ω**

Parameters	Min.	Typ.	Max.	Units
<b>Frequency</b>	<b>DC - 6</b>			<b>GHz</b>
<b>Small Signal Gain</b>		<b>16</b>		<b>dB</b>
<b>Gain Flatness</b>		<b><math>\pm 1.25</math></b>		<b>dB</b>
<b>Input Return Loss</b>		<b>23</b>		<b>dB</b>
<b>Output Return Loss</b>		<b>18</b>		<b>dB</b>
<b>Reverse Isolation</b>		<b>19</b>		<b>dB</b>
<b>P-1dB</b>	<b>10.5</b>	<b>12.5</b>	<b>13</b>	<b>dBm</b>
<b>Psat</b>	<b>12.5</b>	<b>13</b>	<b>14.5</b>	<b>dBm</b>
<b>OIP3 @1GHz with -10dBm input</b>		<b>26</b>		<b>dBm</b>
<b>Noise Figure</b>		<b>3.5</b>		<b>dB</b>
<b>Static Current</b>		<b>40</b>		<b>mA</b>
<b>Device Voltage, V<sub>BIAS</sub></b>	<b>3.4</b>	<b>3.6</b>	<b>3.8</b>	<b>V</b>

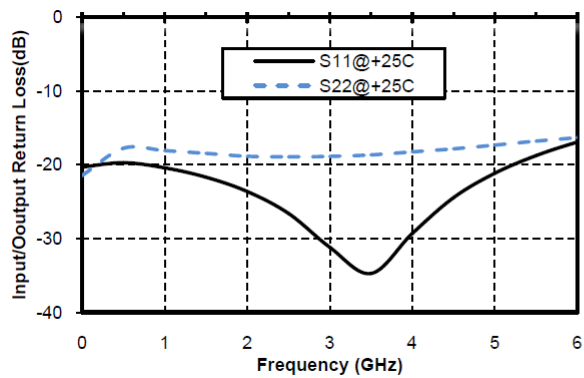
Gain vs. Frequency



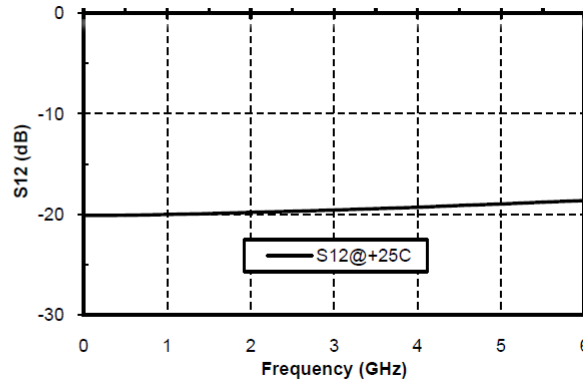
Noise Figure vs. Frequency



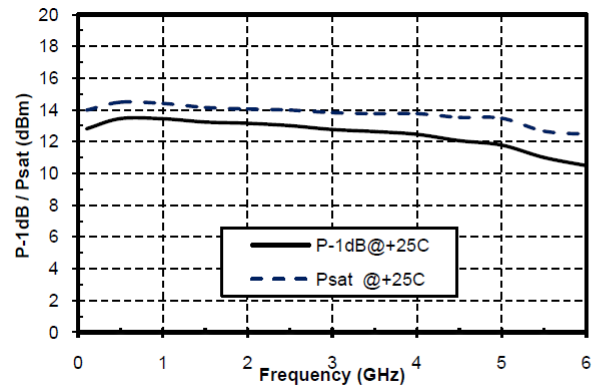
Input/Output Return Loss vs. Frequency



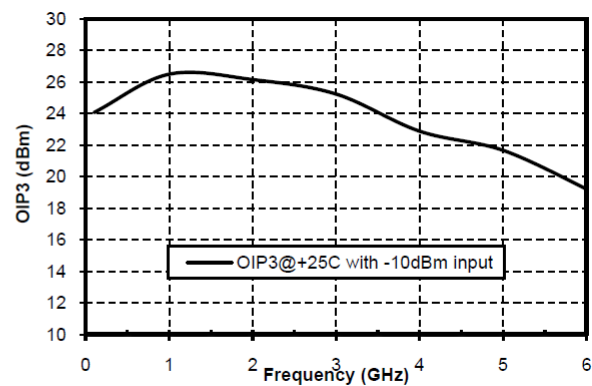
Reverse Isolation vs. Frequency



P-1dB/Psat vs. Frequency

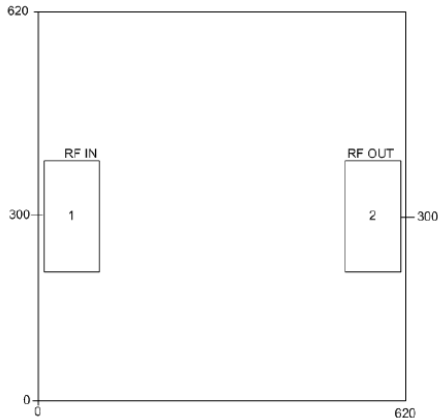


OIP3 with -10dBm input vs. Frequency

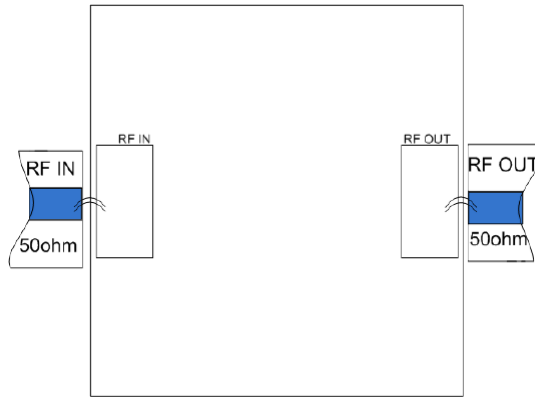


**Outline Drawing(Die):**

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	6	7	8	10	12	15	20			
R <sub>BIAS</sub> (Ω)	35	60	88.7	113	162	213	287	392			

\*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: 60mA
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C