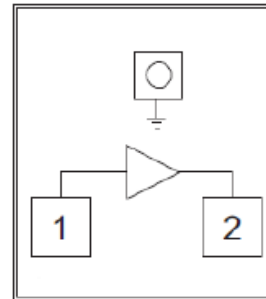


Features

- Operating Frequency: DC-4GHz
- Small Signal Gain: 13dB
- Gain Flatness: ± 0.1 dB
- Noise Figure: 5.5dB
- P-1dB: 17dBm
- OIP3: 28dBm@1GHz with 0dBm input
- Current: 70mA
- 50Ohm input/output
- Die Size: 0.62 x 0.62 x 0.1 mm

Functional Block Diagram

Typical Applications

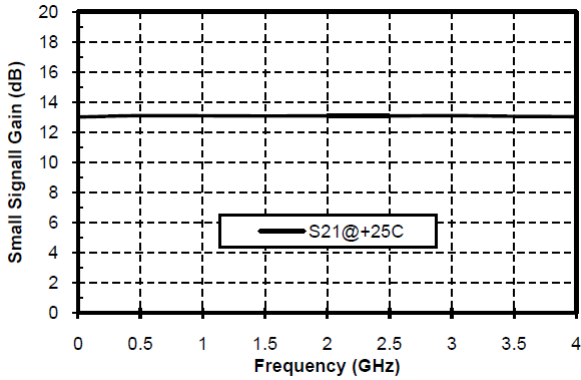
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

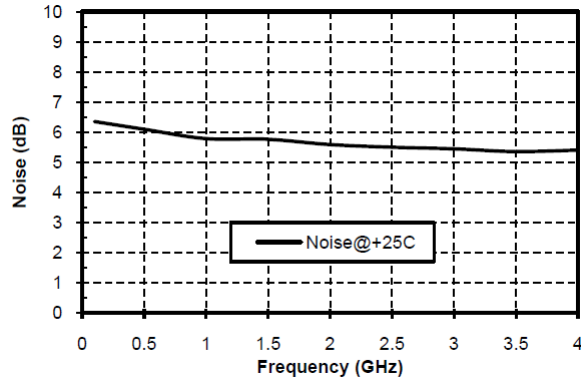
 TA = +25°C, VCC=+7V, R_{BIAS}=33.2Ω

Parameters	Min.	Typ.	Max.	Units
Frequency	DC - 4			GHz
Small Signal Gain		13		dB
Gain Flatness		±0.1		dB
Input Return Loss		23		dB
Output Return Loss		26		dB
Reverse Isolation		18		dB
P-1dB	16	17	17.5	dBm
Psat	17.5	18		dBm
OIP3 @1GHz with 0dBm input		28		dBm
Noise Figure		5.5		dB
Static Current		70		mA
Device Voltage, V_{BIAS}	4.7	5.0	5.3	V

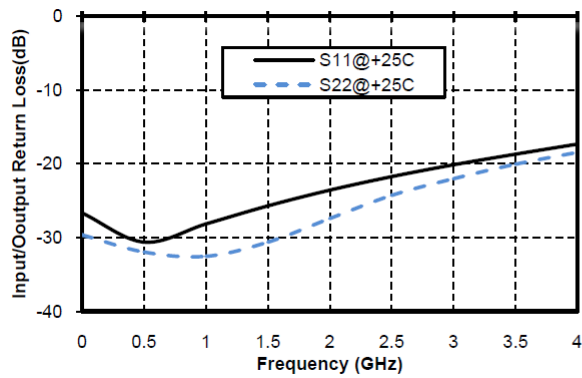
Gain vs. Frequency



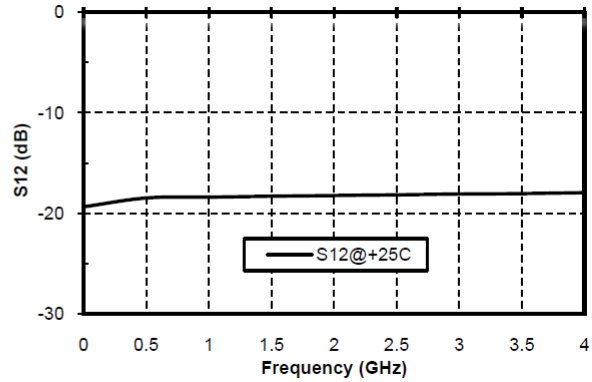
Noise Figure vs. Frequency



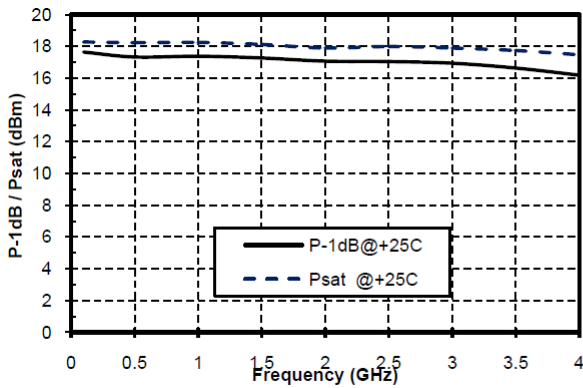
Input/Output Return Loss vs. Frequency



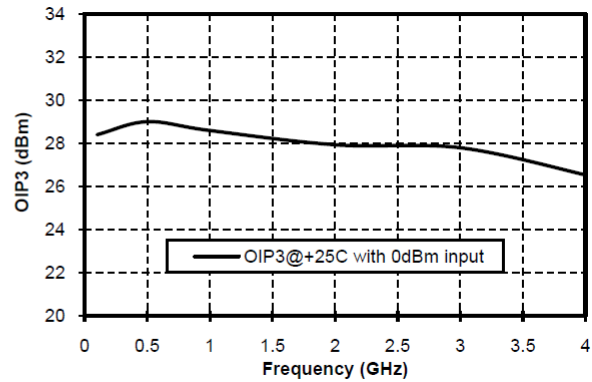
Reverse Isolation vs. Frequency



P-1dB/Psat vs. Frequency

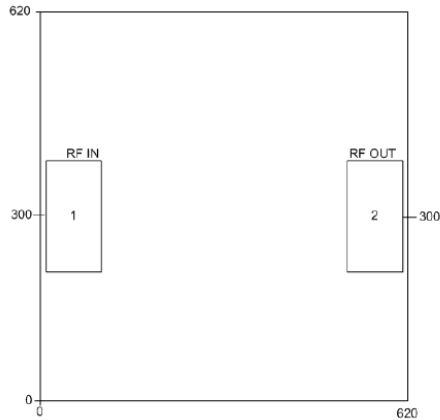


OIP3 with 0dBm input vs. Frequency

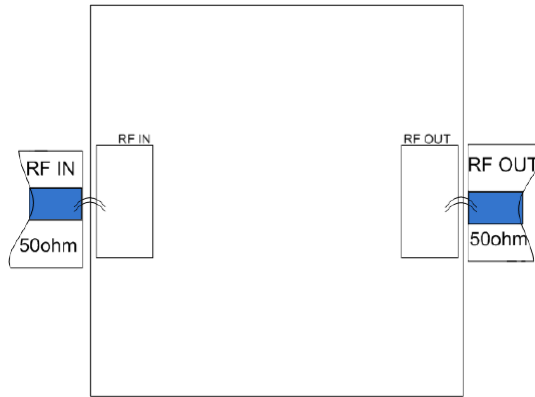


Outline Drawing(Die):

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 _{CC} (V)	5	6	7	8	10	12	15	20
R _{BIAS} (Ω)	0	17	33.2	48.7	78.7	110	158	232	

*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: 100mA
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C