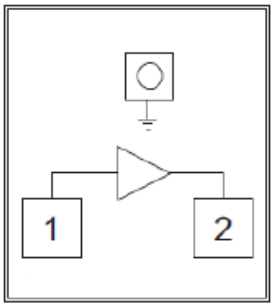
Features

- Operating Frequency: DC-6GHz
- Small Signal Gain: 19.5dB
- Noise Figure: 3.2dB
- P-1dB: 19dBm
- OIP3: 35.5dBm@1GHz with -7dBm input
- Current: 105mA
- 50Ohm input/output
- Die Size: 0.72 x 0.72 x 0.1 mm

Functional Block Diagram



Typical Applications

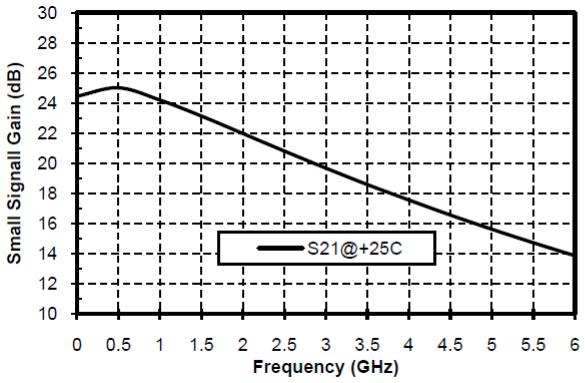
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

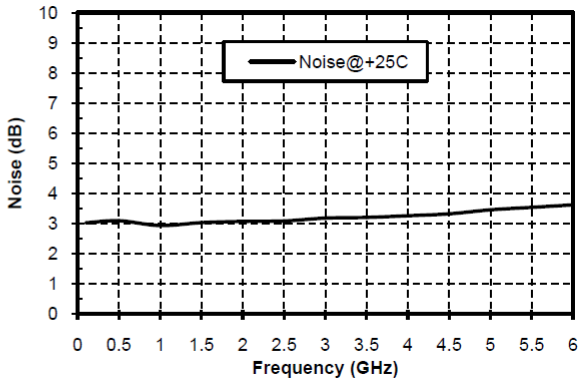
TA = +25°C, VCC=+6V, R_{BIAS}=3.1Ω

Parameters	Min.	Typ.	Max.	Units
Frequency		DC - 6		GHz
Small Signal Gain	13	19	24	dB
Input Return Loss		21		dB
Output Return Loss		12		dB
Reverse Isolation		24		dB
P-1dB	14.5	19	22	dBm
Psat	16.5	20.5	22.5	dBm
OIP3 @1GHz with -7dBm input		35.5		dBm
Noise Figure		3.2		dB
Static Current		105		mA
Device Voltage, V_{BIAS}	5.4	5.7	6	V

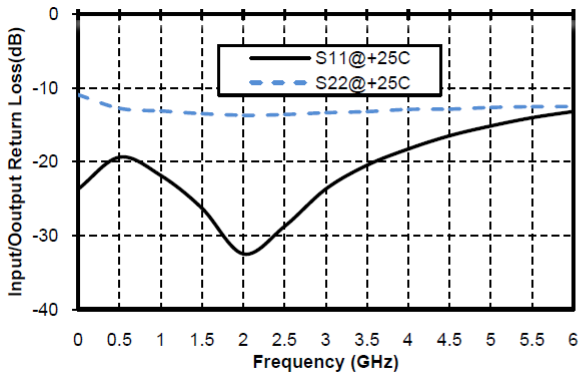
Gain vs. Frequency



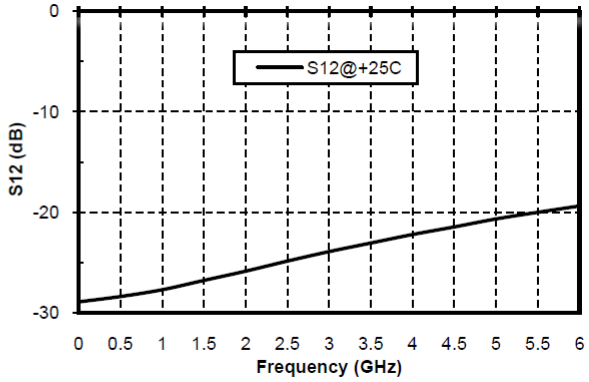
Noise Figure vs. Frequency



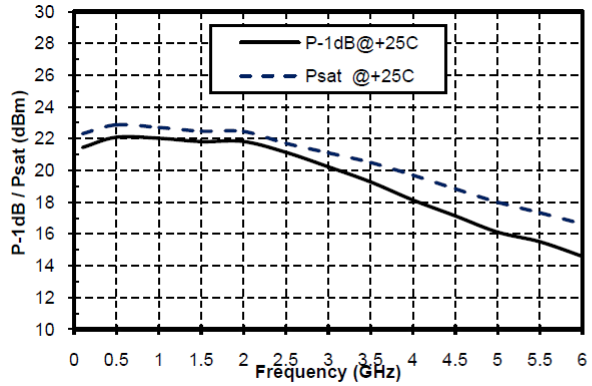
Input/Output Return Loss vs. Frequency



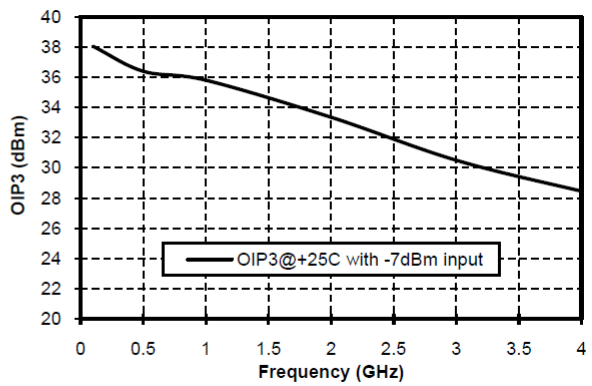
Reverse Isolation vs. Frequency



P-1dB/Psat vs. Frequency

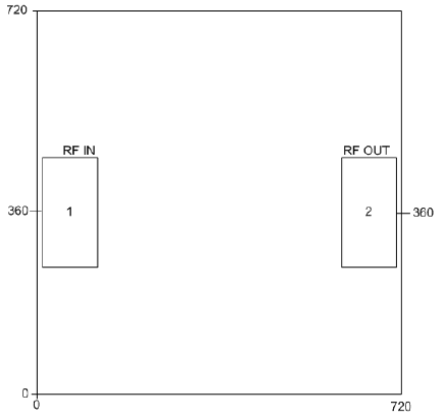


OIP3 with -7dBm input vs. Frequency

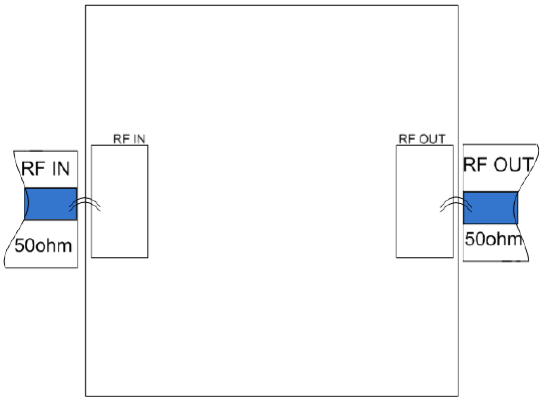


Outline Drawing(Die):

All Dimensions in um



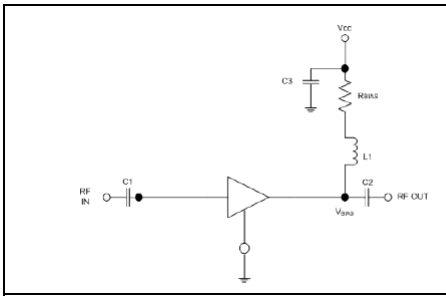
Assembly Drawing(Die):



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)	6	7	8	9	10
R_{BIAS} (Ω)	3.1	12.5	22	31.5	40.8

*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 μm^2
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: 140mA
3. Storage temperature: -65℃ to +150℃
4. Operating temperature: -55℃ to +85℃