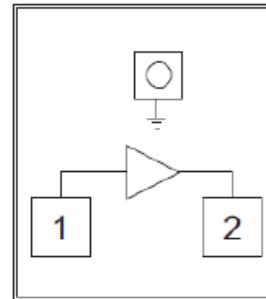


Features

- Operating Frequency: DC-3GHz
- Small Signal Gain: 21dB
- Gain Flatness: ± 1.25 dB
- Noise Figure: 4.7dB
- P-1dB: 11.5dBm
- OIP3: 21.5dBm@1GHz with -15dBm input
- Current: 33mA
- 50Ohm input/output
- Die Size: 0.62 x 0.62 x 0.1 mm

Functional Block Diagram

Typical Applications

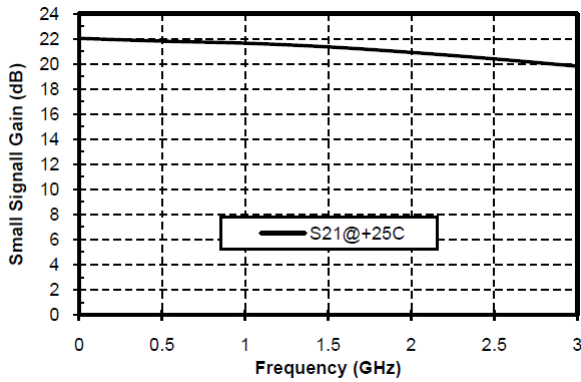
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

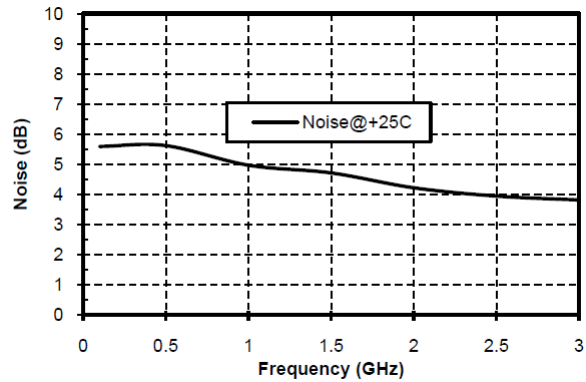
 TA = +25°C, VCC=+7V, R_{BIAS}=107Ω

Parameters	Min.	Typ.	Max.	Units
Frequency	DC - 3			GHz
Small Signal Gain		21		dB
Gain Flatness		± 1.25		dB
Input Return Loss		16		dB
Output Return Loss		12		dB
Reverse Isolation		24		dB
P-1dB		11.5		dBm
Psat		13		dBm
OIP3 @1GHz with -15dBm input		21.5		dBm
Noise Figure		4.7		dB
Static Current		33		mA
Device Voltage, V_{BIAS}	3.3	3.5	3.7	V

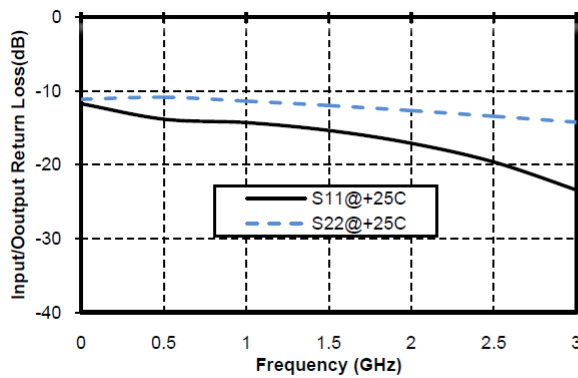
Gain vs. Frequency



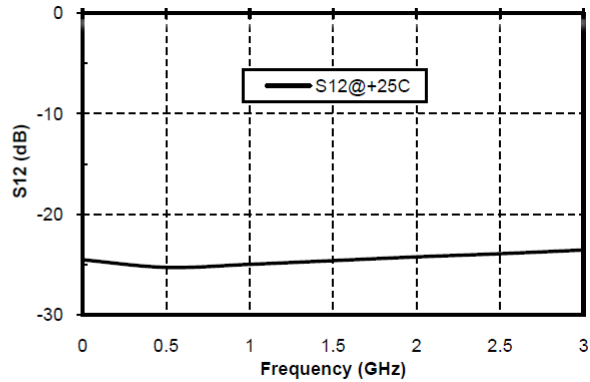
Noise Figure vs. Frequency



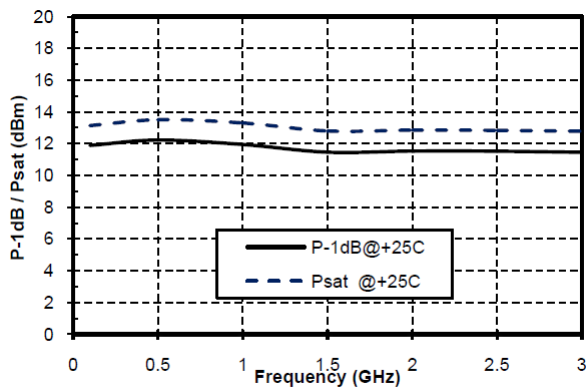
Input/Output Return Loss vs. Frequency



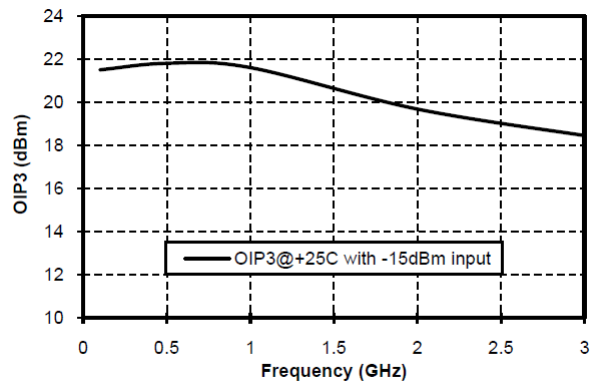
Reverse Isolation vs. Frequency



P-1dB/Psat vs. Frequency

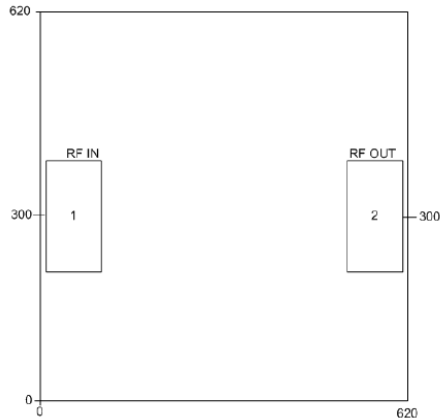


OIP3 with -15dBm input vs. Frequency

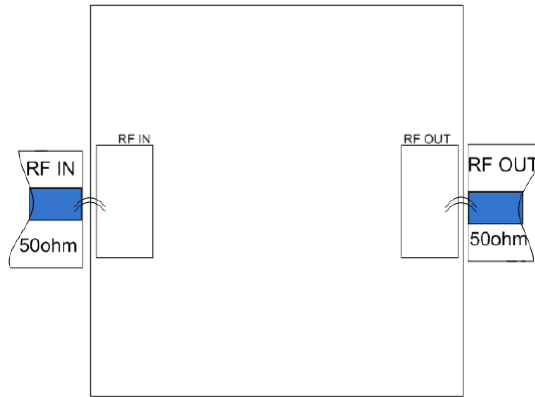


Outline Drawing(Die):

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)		60	90	107	133	191	251	340	475	

*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: 50mA
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C