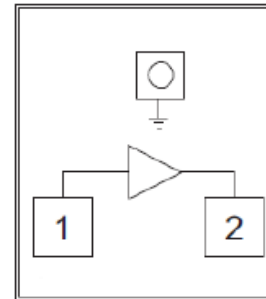


Features

- Operating Frequency: DC-4GHz
- Small Signal Gain: 20dB
- Gain Flatness: ± 1.25 dB
- Noise Figure: 2.8dB
- P-1dB: 17dBm
- OIP3: 33dBm@1GHz with -10dBm input
- Current: 64mA
- 50Ohm input/output
- Die Size: 0.62 x 0.62 x 0.1 mm

Functional Block Diagram

Typical Applications

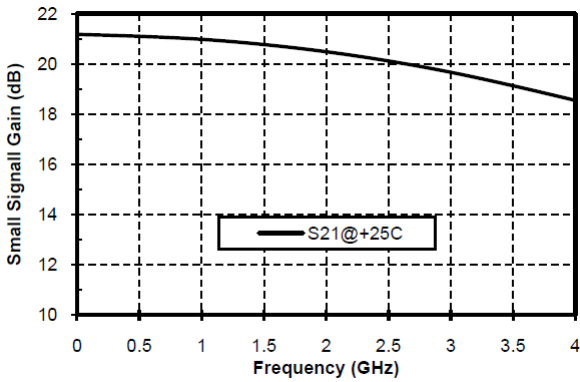
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

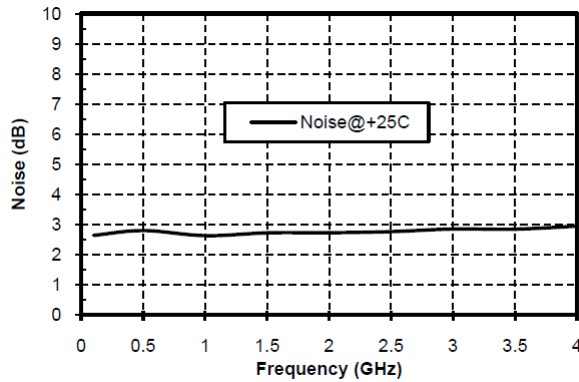
 TA = +25°C, VCC=+7V, R_{BIAS}=33.2Ω

Parameters	Min.	Typ.	Max.	Units
Frequency	DC - 4			GHz
Small Signal Gain		20		dB
Gain Flatness		±1.25		dB
Input Return Loss		21		dB
Output Return Loss		20		dB
Reverse Isolation		23		dB
P-1dB	14	17	18	dBm
Psat	16	18	19	dBm
OIP3 @1GHz with -10dBm input		33		dBm
Noise Figure		2.8		dB
Static Current		64		mA
Device Voltage, V_{BIAS}	4.55	4.85	5.15	V

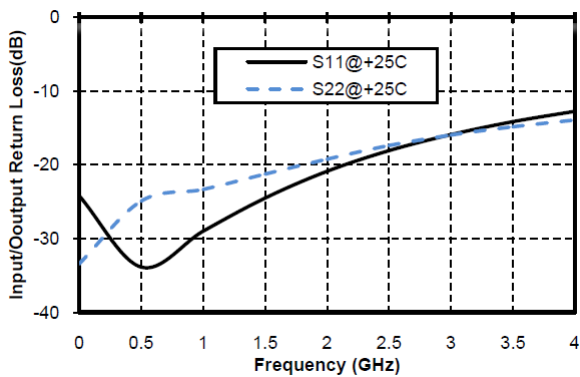
Gain vs. Frequency



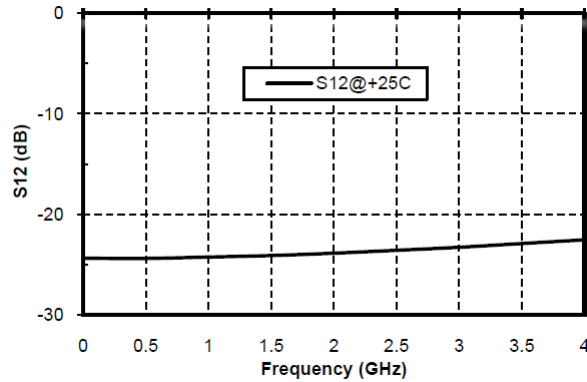
Noise Figure vs. Frequency



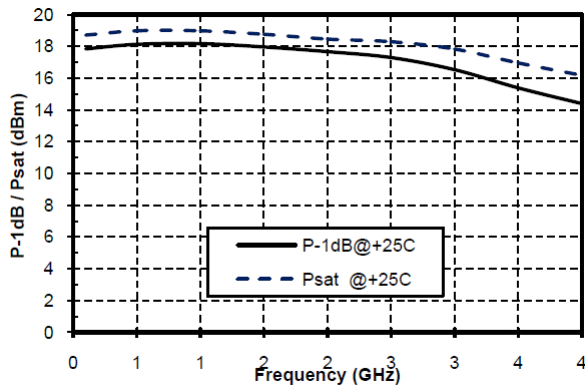
Input/Output Return Loss vs. Frequency



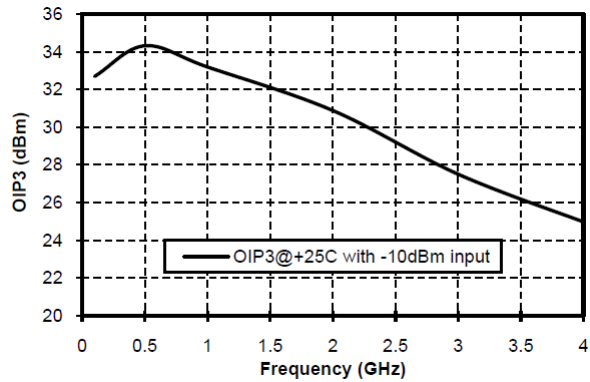
Reverse Isolation vs. Frequency



P-1dB/Psat vs. Frequency

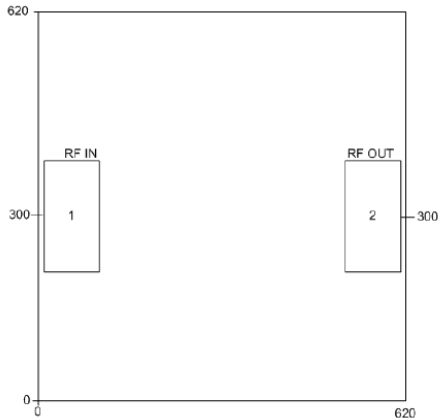


OIP3 with -10dBm input vs. Frequency

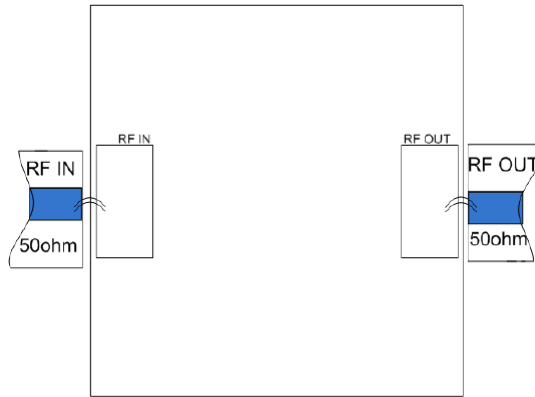


Outline Drawing(Die):

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	270nH	56nH	47nH	8.2nH		
	C1, C2	0.01μF	100pF	100pF	100pF		
	V _{CC} (V)	5	6	10	12	15	20
	R _{BIAS} (Ω)	0	19	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: 85mA
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C