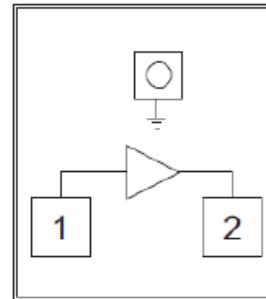


Features

- Operating Frequency: DC-10GHz
- Small Signal Gain: 17dB
- Noise Figure: 4.5dB
- P-1dB: 13.5dBm
- Current: 55mA
- 50Ohm input/output
- Die Size: 0.72 x 0.72 x 0.1 mm

Functional Block Diagram

Typical Applications

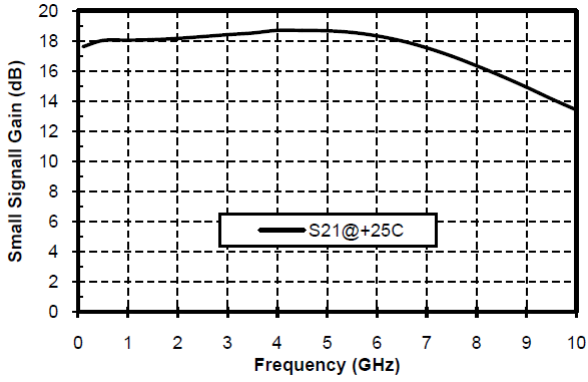
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

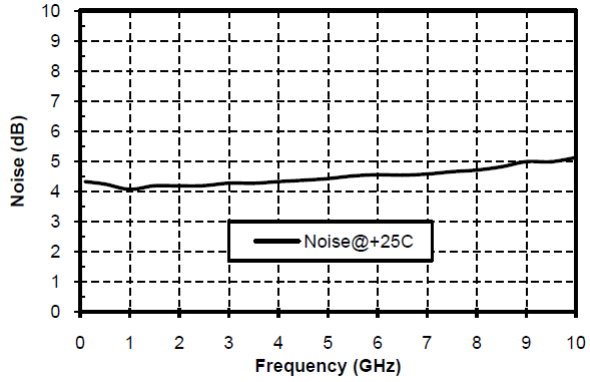
 TA = +25°C, VCC=+5V, R_{BIAS}=12Ω

Parameters	Min.	Typ.	Max.	Units
Frequency	DC - 10			GHz
Small Signal Gain	13	17	18	dB
Input Return Loss		18		dB
Output Return Loss		14		dB
Reverse Isolation		22		dB
P-1dB	9.5	13.5	15.5	dBm
Psat	12	15.5	17	dBm
Noise Figure		4.5		dB
Static Current		55		mA

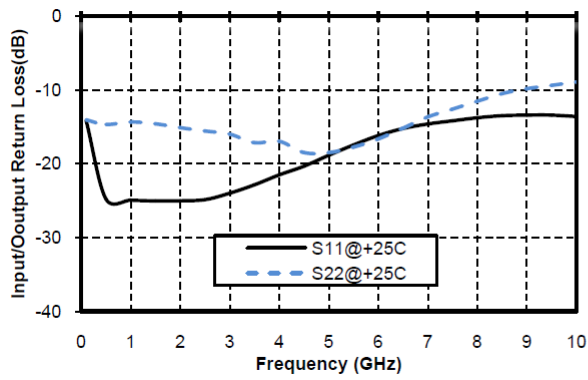
Gain vs. Frequency



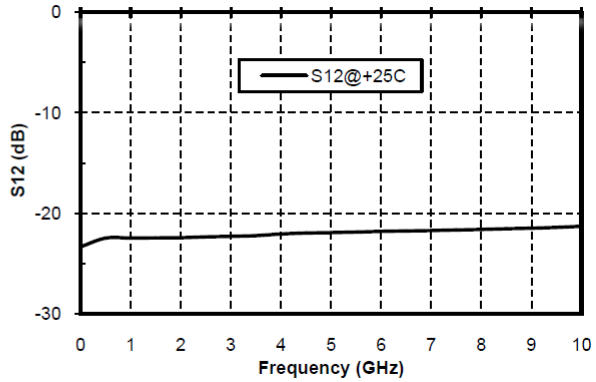
Noise Figure vs. Frequency



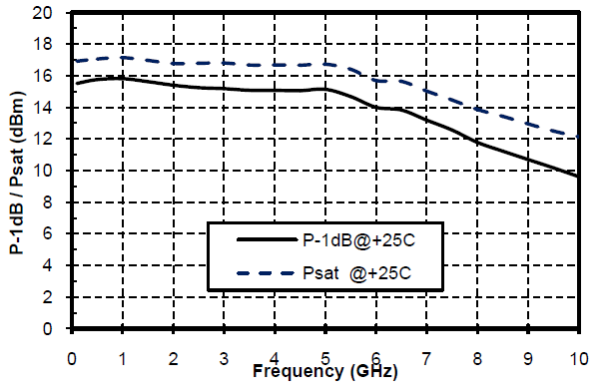
Input/Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

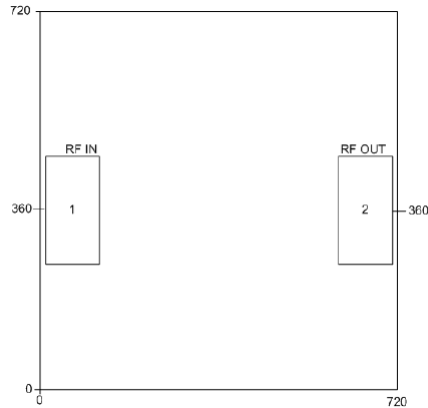


P-1dB/Psat vs. Frequency

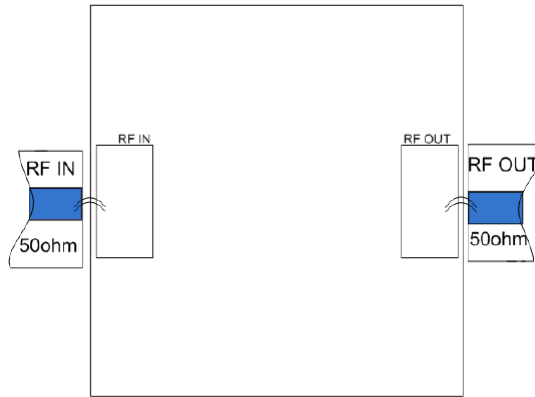


Outline Drawing(Die):

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	4000	8000	12000
	L1	10 μ H	270nH	270nH	270nH	
	C1, C2	0.01 μ F	0.01 μ F	0.01 μ F	0.01 μ F	
	V _{CC} (V)	5	6	7	8	9
R _{BIAS} (Ω)	12	31	50	70	89	108

*Note: R_{BIAS} can be changed with different application condition, $R_{BIAS}=(V_{CC}-V_{BIAS})/I_{BIAS}$

Notes:

1. Die thickness: 100 μ m
2. Typical bond pad is 100*100 μ m²
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: 80mA
3. Storage temperature: -65 $^{\circ}$ C to +150 $^{\circ}$ C
4. Operating temperature: -55 $^{\circ}$ C to +85 $^{\circ}$ C