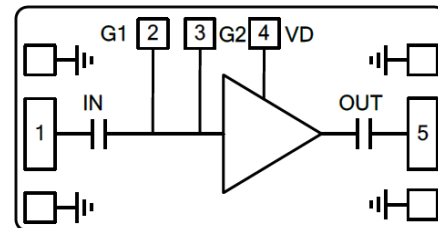


Features

- Single Biasing Voltage (Self Biased)
- Two operating mode: high power consumption and low power consumption
- Frequency: 7-13GHz
- Noise Figure: 0.7dB
- Gain: 31dB@21mA, 29dB@13mA
- P1dB: 11dBm@21mA, 6dBm@13mA
- Power Supply: +5V@21mA, G1,G2 are floating
- +5V@13mA, G1,G2 connected to GND
- Input/Output: 50Ω
- Die Size: 2 x 0.8 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, VDD=+5V, G1,G2 are floating

Parameters	Min.	Typ.	Max.	Units
Frequency		7-13		GHz
Gain		31		dB
Gain Flatness		±0.3		dB
Input Return Loss		17		dB
Output Return Loss		14		dB
Output 1dB Compression (P1dB)		11		dBm
Psat		13		dBm
Output IP3		21		dBm
Noise Figure		0.7		dB
Operating current	10	21	35	mA

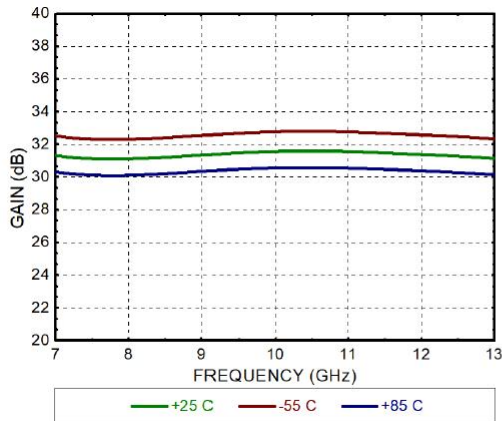


Electrical Specifications

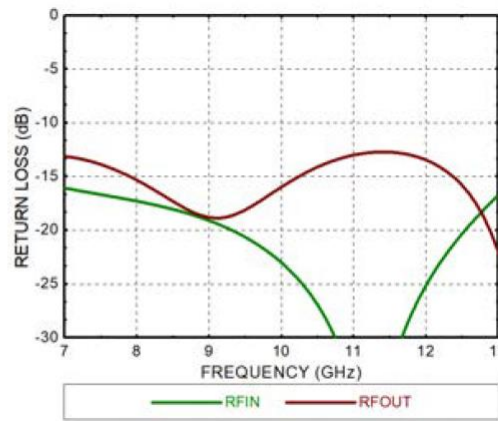
TA = +25°C, VDD=+5V, G1,G2 are connected to GND.

Parameters	Min.	Typ.	Max.	Units
Frequency		7-13		GHz
Gain		29		dB
Gain Flatness		±0.6		dB
Input Return Loss		13		dB
Output Return Loss		13		dB
Output 1dB Compression (P1dB)		6		dBm
Psat		8		dBm
Output IP3		16		dBm
Noise Figure		0.75		dB
Operating current	5	13	22	mA

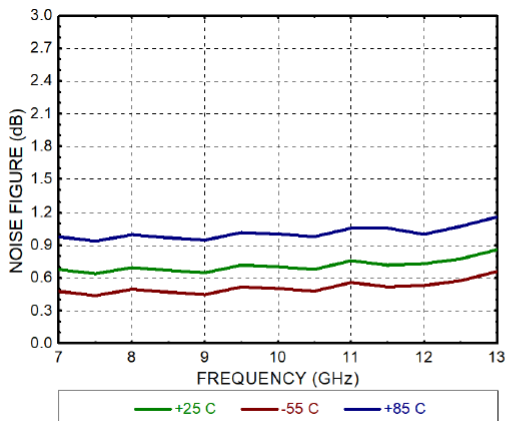
Gain (G1,G2 are floating)



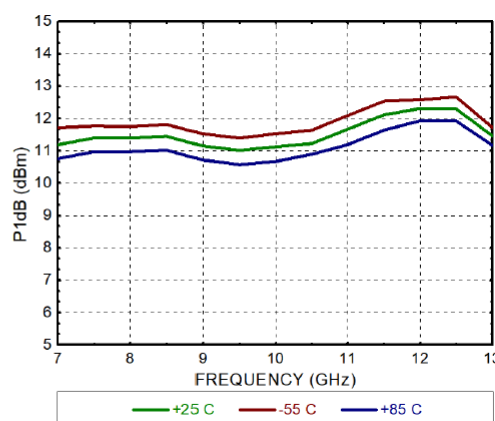
Return Loss (G1,G2 are floating)



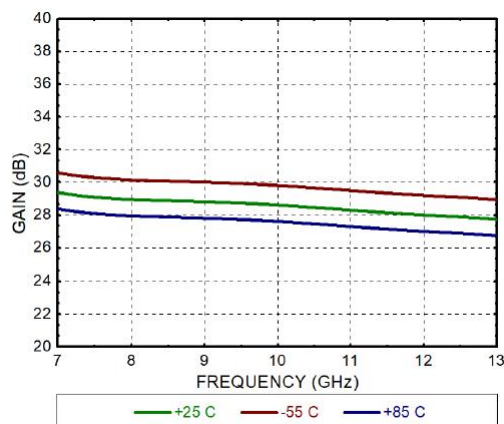
Noise Figure(G1,G2 are floating)



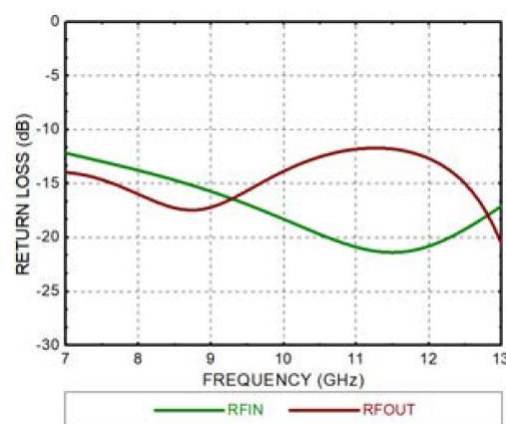
P1dB(G1,G2 are floating)



Gain (G1,G2 connected to GND)

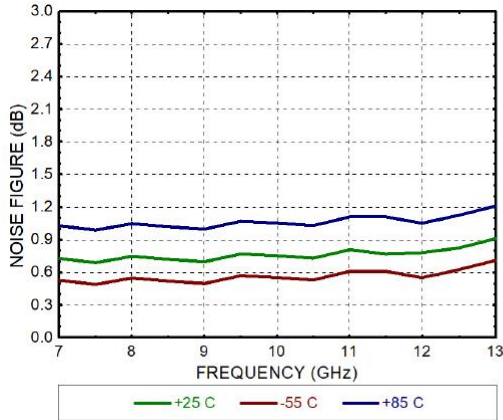


Return Loss (G1,G2 connected to GND)

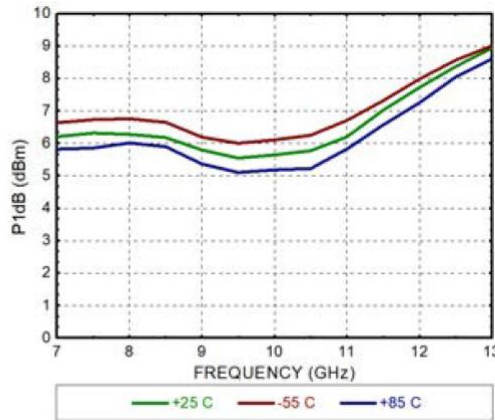




Noise Figure (G1,G2 connected to GND)

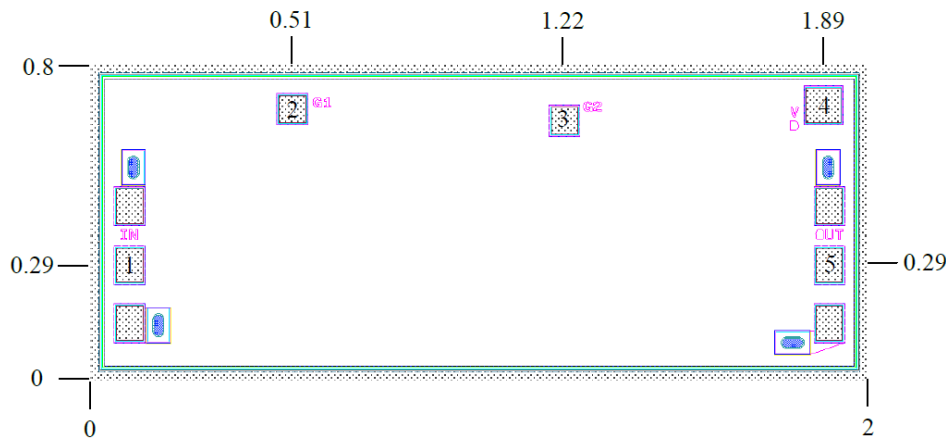


P1dB(G1,G2 connected to GND)



Outline Drawing:

All Dimensions in mm



Pad Description

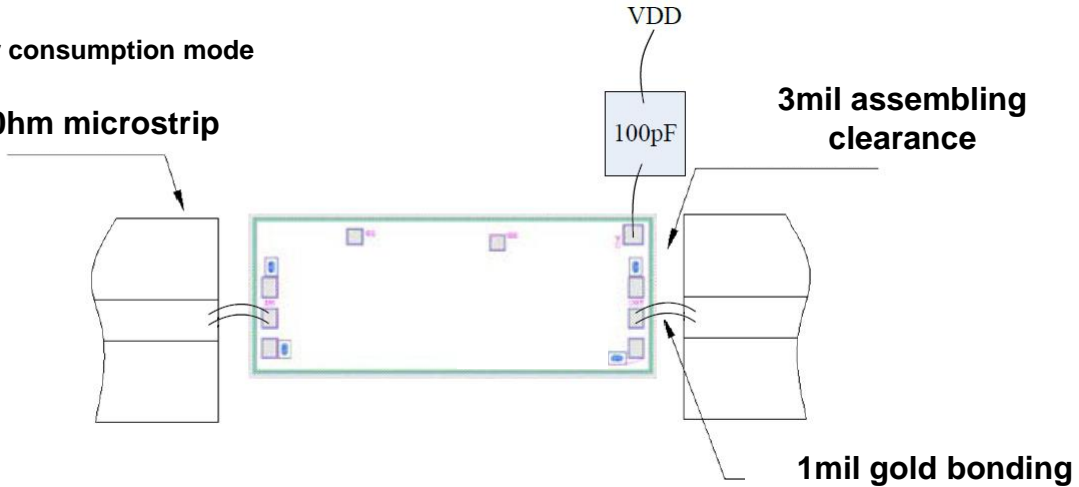
PAD	Function	Description
1	IN	This pad is AC coupling, 50 ohm matched.
2,3	G1, G2	The pads determine the die's operating mode. When they are floating, it's high power consumption mode. When they are connected to RF/DC GND, it's low power consumption mode.
4	VD	The pad provide power supply for the amplifier. It should be connected to extra 100pF bypass capacitor.
5	OUT	This pad is AC coupling, 50 ohm matched.
Die Bottom	GND	Die backside must connect to RF/DC GND.



Assembly Drawing

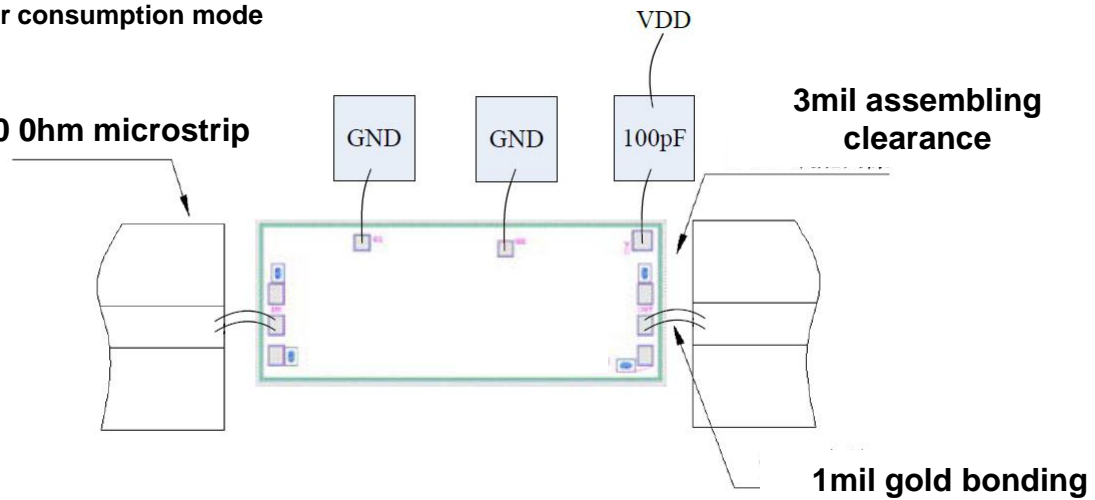
High power consumption mode

50 Ohm microstrip



Low power consumption mode

50 Ohm microstrip



Notes:

1. Die thickness: 100um
2. Typical bond pad is 100*80 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. Maximum drain voltage: +6V
2. Maximum input power: +15dBm
3. Operating temperature: -55°C to +85°C
4. Storage temperature: -65°C to +175°C