

Features

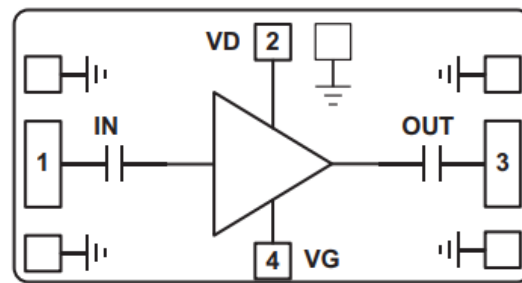
According to working need, there are two working modes:
Medium power drive amplification and small signal amplification:

- Medium Power Amplification Gain: 8.7dB
- Small Signal Amplification Gain: 8.3dB
- Middle Power P1dB: +19dBm
- Small Signal Amplification Noise Figure: 4.5dB
- Medium Power Amplification Biasing: +5V @ 118 mA
- Small Signal Amplification Biasing +3V @ 40 mA
- Impedance: 50Ω
- Die Size: 1.5 x 1.0 x 0.1 mm

Typical Applications

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

Functional Block Diagram



Medium Power Amplification Electrical Specifications

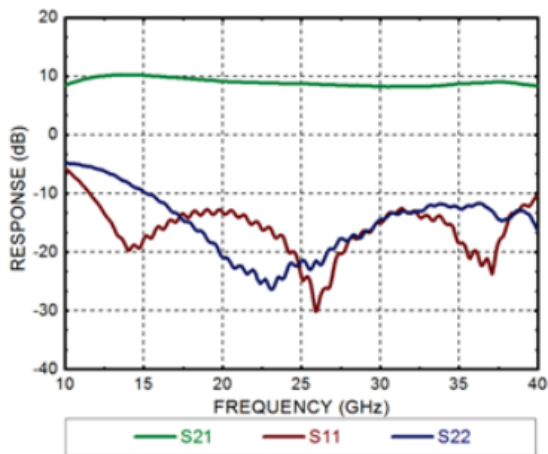
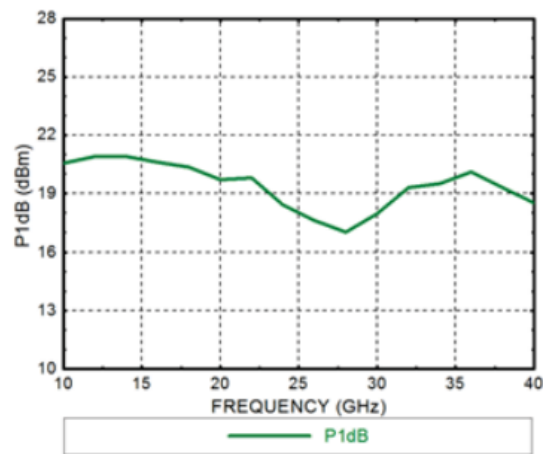
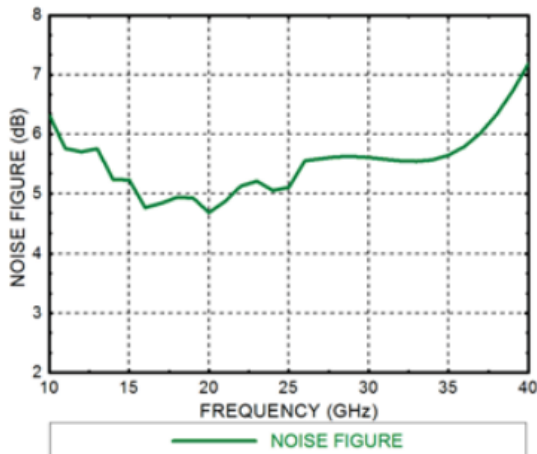
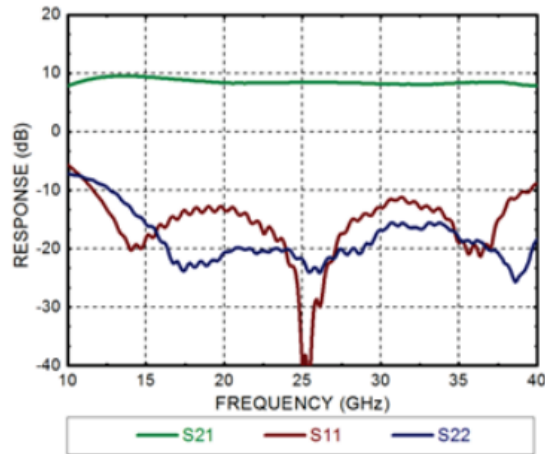
TA = +25°C, Vdd = +5V VG=-0.4V* Idd = 118mA *

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	10 - 20		20 - 30		30 - 40					GHz
Gain		9.5			8.7			8.6		dB
Gain Flatness		±0.9			±0.5			±0.4		dB
Input Return Loss		10			15			12		dB
Output Return Loss		10			15			12		dB
Output 1dB Compression (P1dB)		20.5			18			19		dBm
Saturated Output Power (Psat)		23			20.5			21.5		dBm
Output Third Order Intercept (IP3)		29			26.5			27.5		dBm
Current		118*			118*			118*		mA
Memo	Adjust VG (-0.7V~-0.1V) to control device current.									

Small Signal Amplification Electrical Specifications

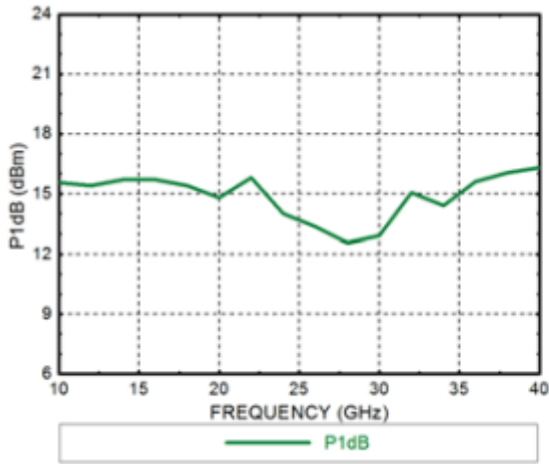
TA = +25°C, Vdd = +3V VG = -0.9V Idd = 40mA *

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	10 - 20			20 - 30			30 - 40			GHz
Gain		8.7			8.3			8.2		dB
Gain Flatness		±0.9			±0.3			±0.4		dB
Input Return Loss		10			15			12		dB
Output Return Loss		10			20			15		dB
Noise Figure		4.5			4			5		dB
Current		40*			40*			40*		mA
Memo	Adjust VG (-1.2V~-0.6V) to control device current.									

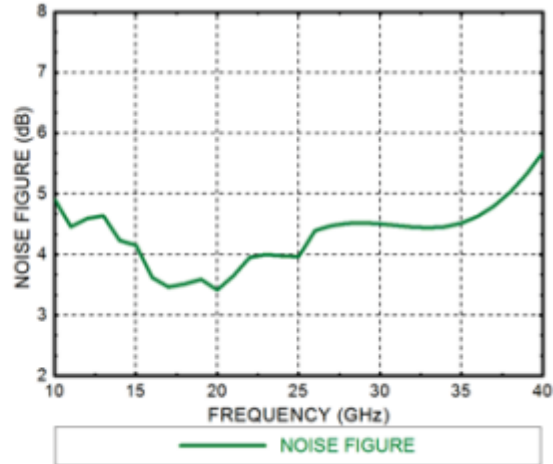
Gain & Return Loss (5V @ 118 mA)

Output Power P-1 (5V @ 118 mA)

Noise Figure(5V @ 118 mA)

Gain & Return Loss (3V @ 43 mA)




Output Power P-1 (3V @ 43 mA)

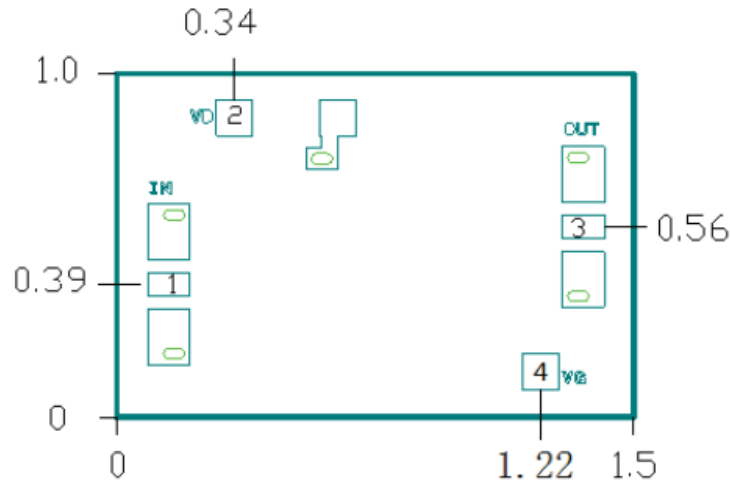


Noise Figure(3V @ 43 mA)



Outline Drawing:

All Dimensions in mm

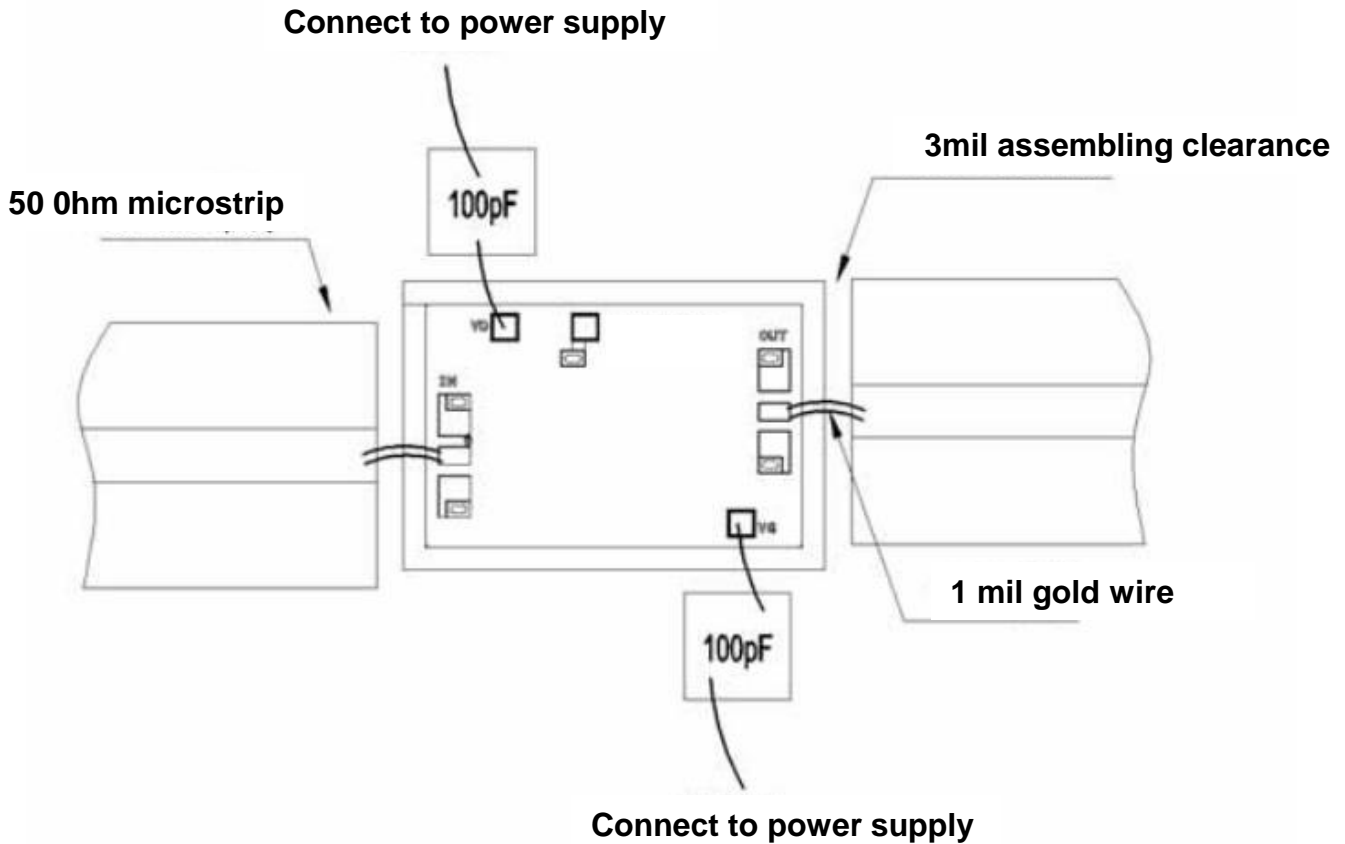


Pad Description

PAD	Function	Description
1	IN	Input AC coupling 50Ω Impedance
2	VD	The pad provides the power supply voltage of the amplifier and needs to be externally connected with the 100pF bypass capacitor.
3	OUT	Output AC coupling 50Ω Impedance
4	VG	The pad provides the power supply voltage of the amplifier and needs to be externally connected with the 100pF bypass capacitor.
Die Bottom	GND	Die bottom must be connected to RF/DC ground



Assembly Drawing



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. Power supply voltage: +6V
2. RF input power: +16dBm
2. Storage temperature: -65°C to +175°C
3. Operating temperature: -55°C to +85°C