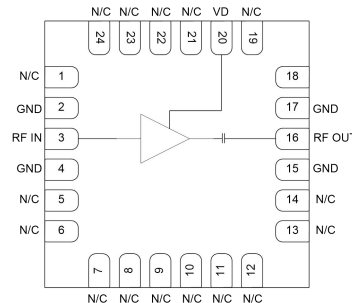


GaAs MMIC low noise amplifier chip, 1-9GHz

Performance characteristics

- Frequency range: 1-9GHz
- Small-signal gain:26.5dB
- Noise figure: 1.1dB Typ.
- P-1dB: 13.5dBm
- Power supply:+5V/70mA
- Input/Output: 50Ohm
- 100% on-film test
- Chip size: QFN 4X4

Functional block diagram



Product Introduction

GLA-0109A-PQ4 is a broadband low noise amplifier chip, the frequency range covers 1GHz~9GHz, small signal gain 26.5dB, in-band noise factor 1.1dB. The GLA-0109A-PQ4 uses a +5V single power supply. The chip is packaged with a 4 x 4mm plastic surface, and the surface of the pin pad is gold-plated, which is suitable for reflow installation process.

Use restriction parameters¹

Maximum leakage voltage	+7V
Maximum input power	+20dBm
Working temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

【1】 Exceeding any of the above maximum limits may result in permanent damage.

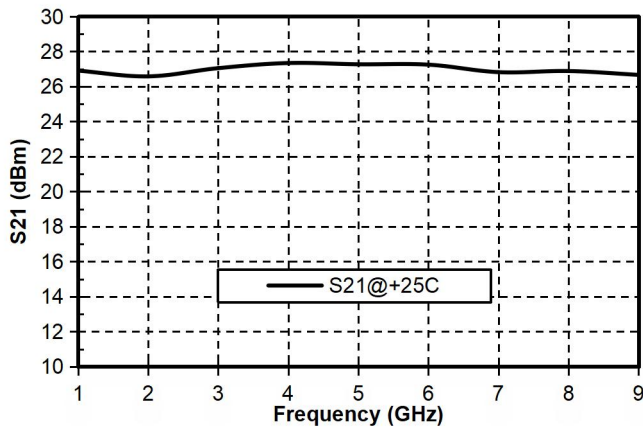
Electrical performance parameters (T_A = +25°C, V_d=+5V)

Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	1-9			GHz
Small signal gain	-	26.5	-	dB
Gain flatness		±0.5		dB
Noise figure	-	1.1	-	dB
P-1dB	-	13.5	-	dBm
Psat	-	14.5	-	dBm
Input return loss	-	10	-	dB
Output return loss	-	13	-	dB
Static current	-	70	-	mA

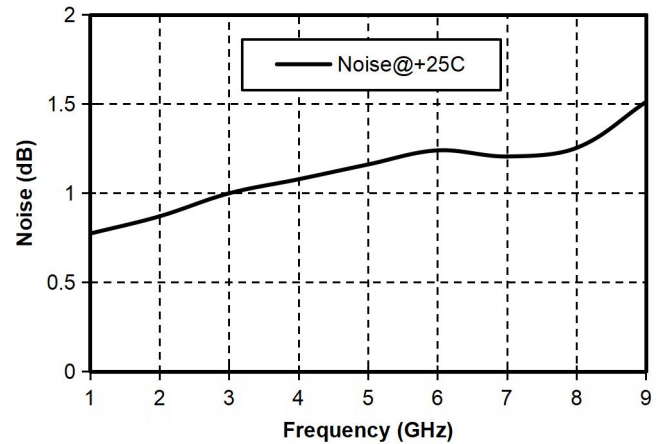
GaAs MMIC low noise amplifier chip, 1-9GHz

Main index test curve

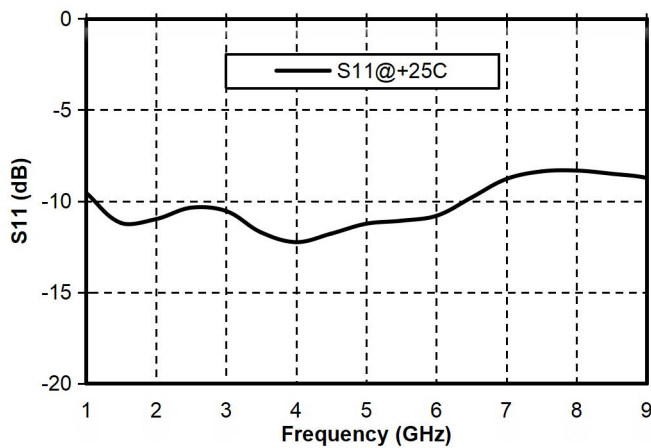
Gain vs. Frequency



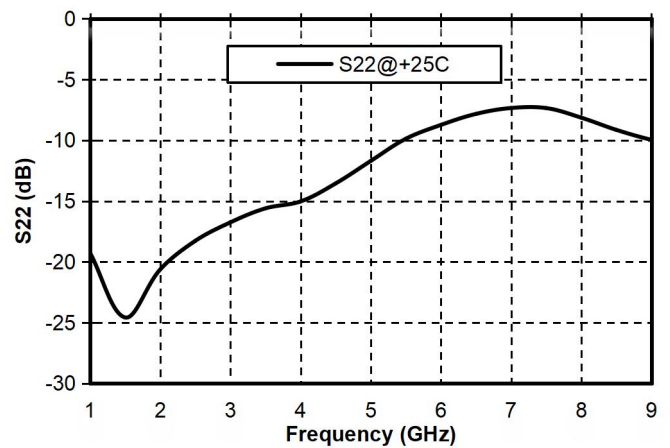
Noise coefficient vs. Frequency



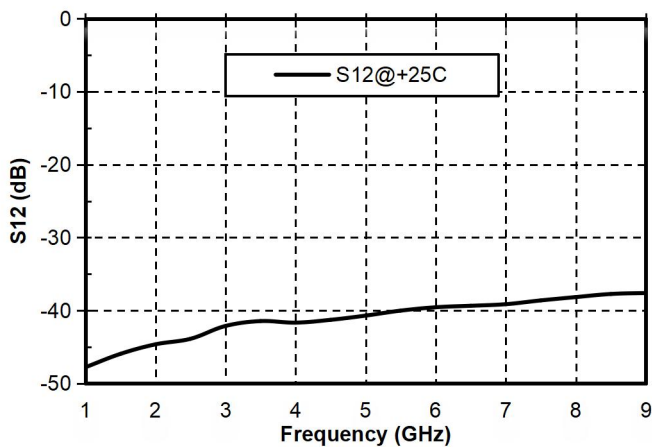
Input return loss vs. Frequency



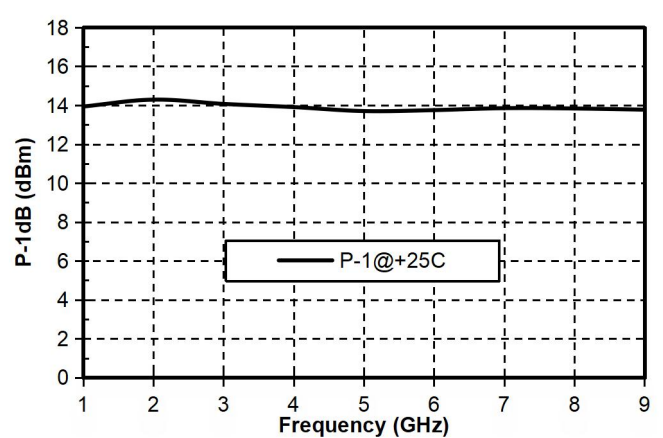
Output return loss vs. Frequency



Reverse isolation vs. Frequency

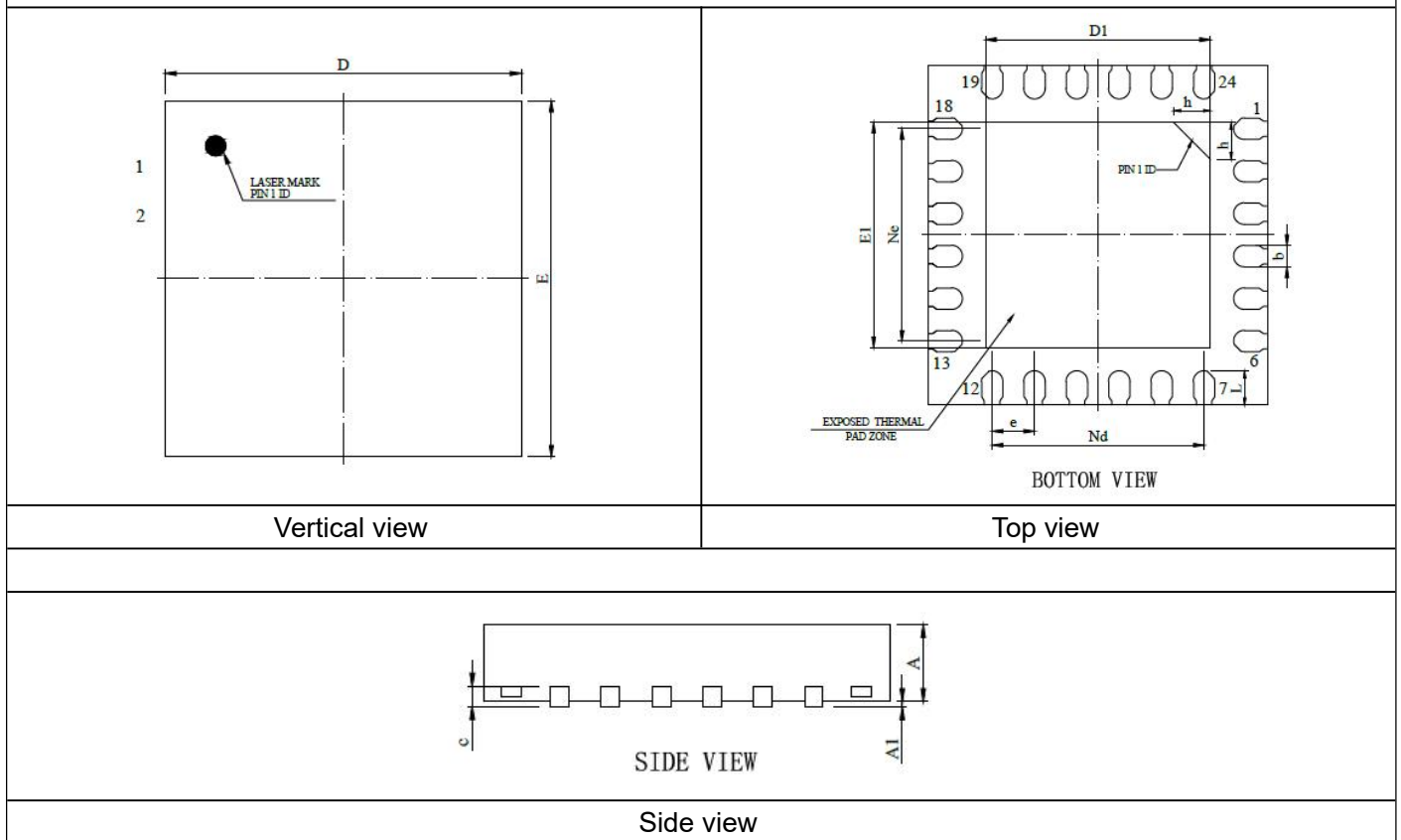


P-1dB vs. Frequency



GaAs MMIC low noise amplifier chip, 1-9GHz

Exterior structure



Structural dimension

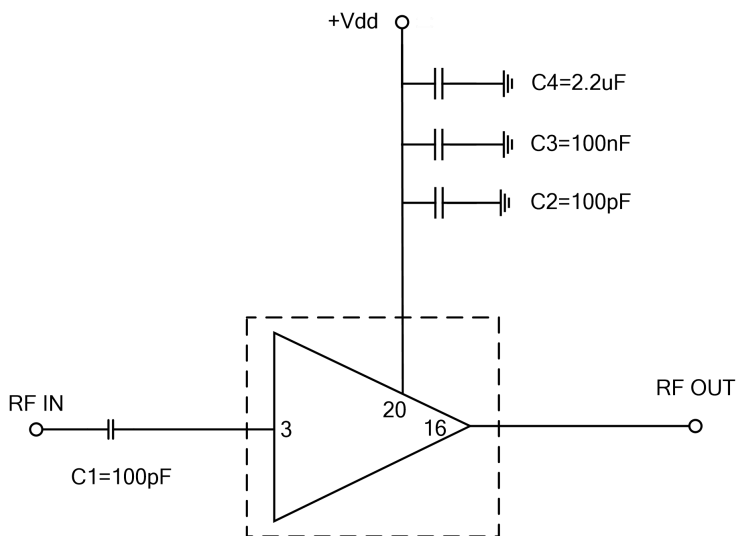
Label	Minimum	Standard	Max	Label	Minimum	Standard	Max
A	0.70	0.75	0.80	e	0.50BSC		
A1	-	0.02	0.05	Ne	2.50BSC		
b	0.20	0.25	0.30	Nd	2.50BSC		
c	0.203REF			E	3.90	4.00	4.10
D	3.90	4.00	4.10	E1	2.60	2.70	2.80
D1	2.60	2.70	2.80	L	0.35	0.40	0.45
				h	0.30	0.35	0.40

The units in the figure are millimeters.

GaAs MMIC low noise amplifier chip, 1-9GHz

Pin definition		
Bond point number	Functional symbols	Function Description
3	RFIN	At the input end of the RF signal, separate the capacitor
16	RFOUT	Rf signal output, no need to isolate the capacitor
20	VDD	Amplifier leakage bias
2、4、15、17	GND	The bottom of the chip must be properly grounded with the RF and DC
Others	NC	No welding required

Recommended circuit



Notice

- Sealing material: low pressure injection molding plastic in accordance with ROHS specification
- Lead frame material: copper alloy
- Lead surface coating: 100% matte tin
- Maximum peak reflow temperature: 260°C