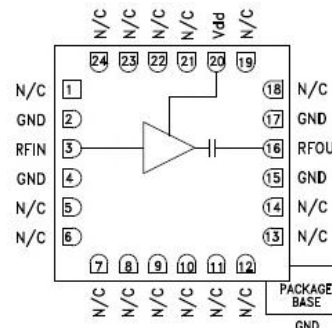


## GaAs MMIC low noise amplifier chip, 1-9GHz

### Performance characteristics

- Frequency range: 1-9GHz
- Small-signal gain: 27.5dB
- Noise figure: 0.9dB Typ.
- P-1dB: 13.5dBm
- Power supply: +5V/64mA
- Input/Output: 50Ohm
- 100% on-film test
- Chip size: QFN 4X4

### Functional block diagram



### Product Introduction

GLA-0109A-CQ4 is a broadband low noise amplifier chip, the frequency range covers 1GHz~9GHz, small signal gain 27.5dB, in-band noise factor 0.9dB. The GLA-0109A-CQ4 uses a +5V single power supply. The amplifier adopts 4X4mm surface pasted leadless ceramic shell, which can realize airtight package, and the surface of the pin pad is gold-plated, which is suitable for reflow installation process.

### Use restriction parameters<sup>1</sup>

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.

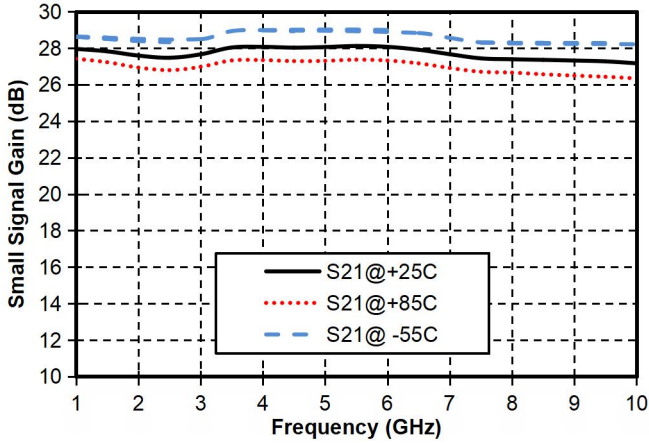
### Electrical performance parameters (T<sub>A</sub> = +25°C, V<sub>d</sub> = +5V)

Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	1-9			GHz
Small signal gain	-	27.5	-	dB
Gain flatness	-	±0.5	-	dB
Noise figure	-	0.9	-	dB
P-1dB	-	13.5	-	dBm
Psat	-	14.5	-	dBm
Input return loss	9.5	11	-	dB
Output return loss	10.5	17	-	dB
Static current	-	64	-	mA

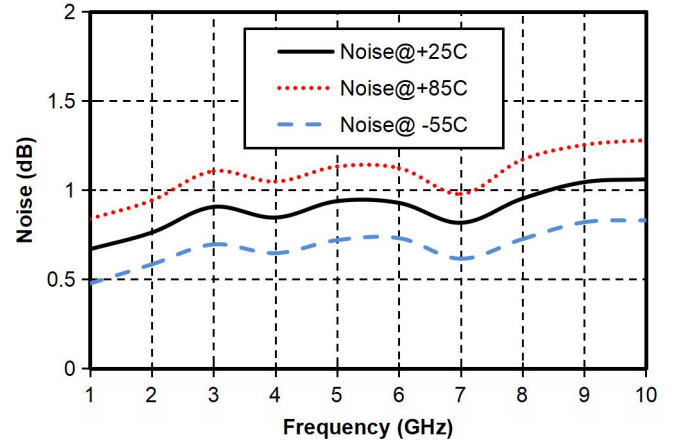
## GaAs MMIC low noise amplifier chip, 1-9GHz

Main index test curve

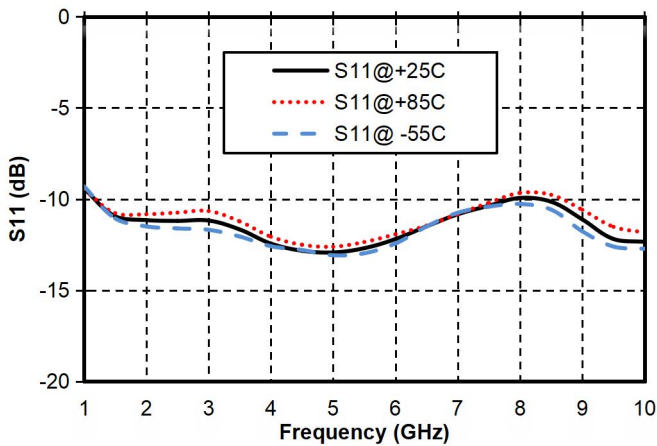
Gain vs. Frequency



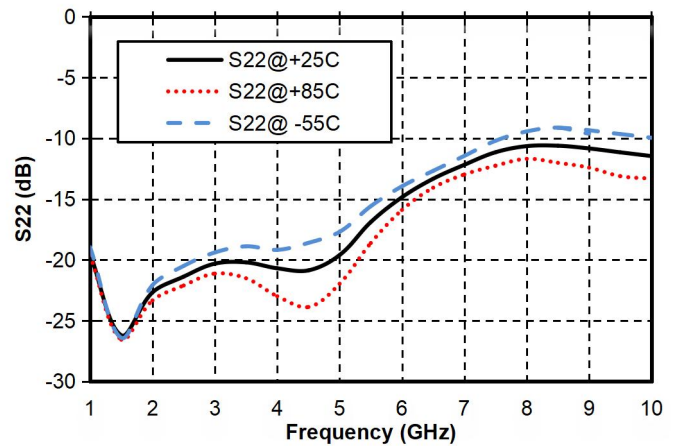
Noise coefficient vs. Frequency



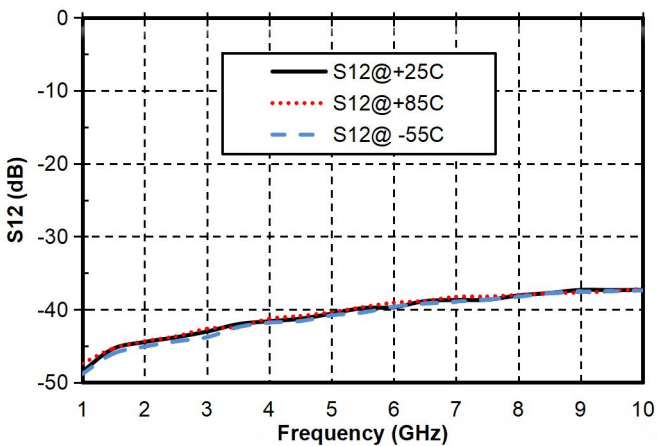
Input return loss vs. Frequency



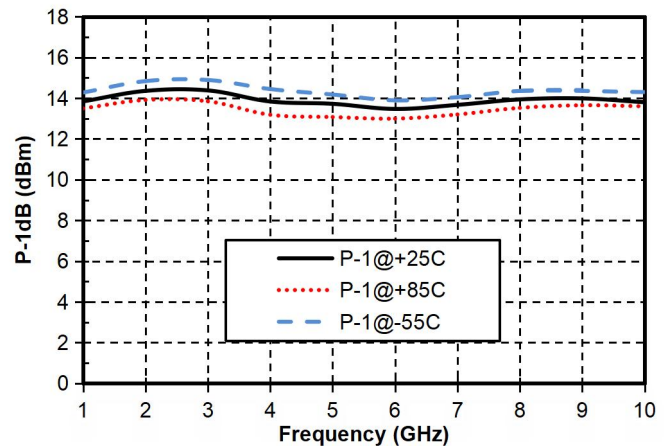
Output return loss vs. Frequency



Reverse isolation vs. Frequency

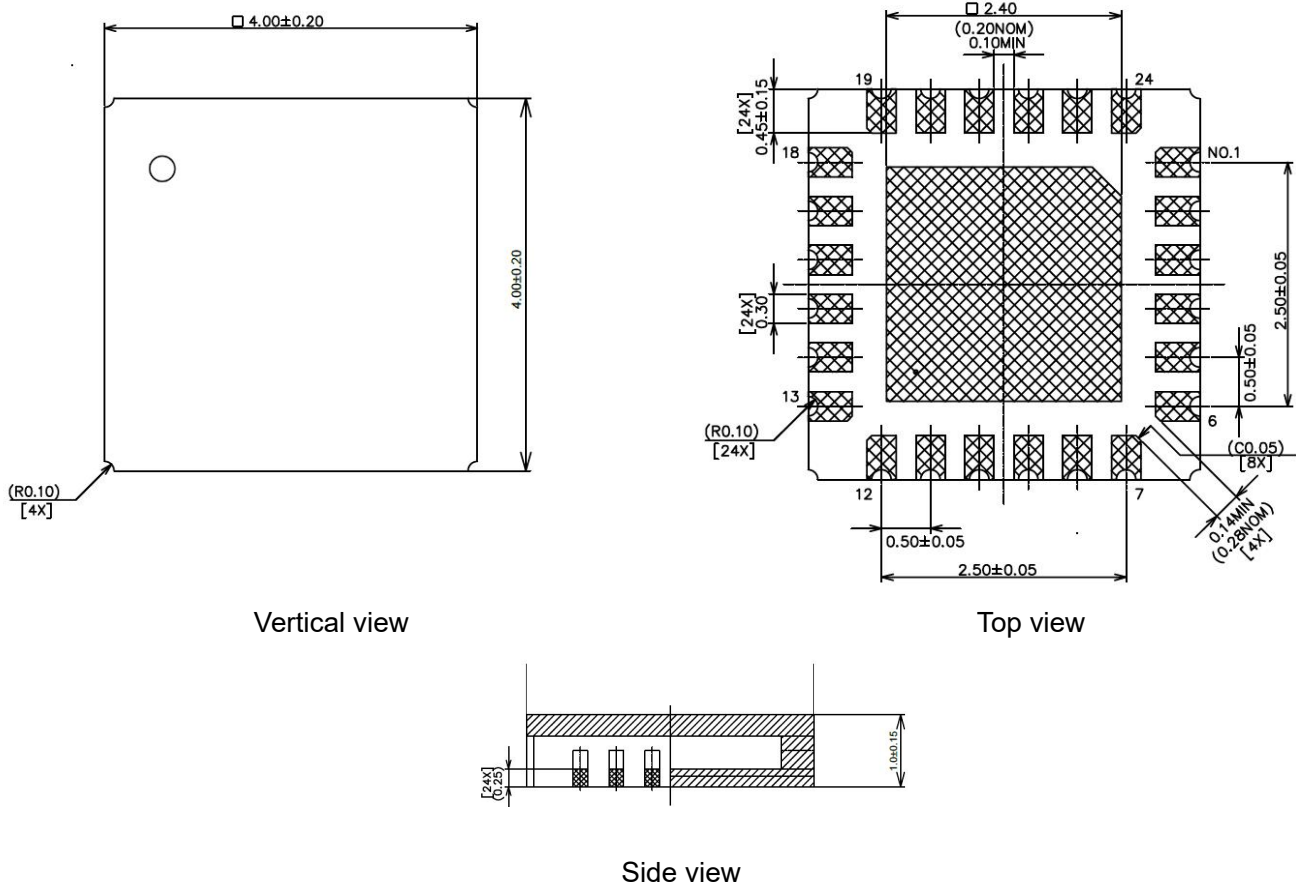


P-1dB vs. Frequency



## GaAs MMIC low noise amplifier chip, 1-9GHz

### Exterior structure

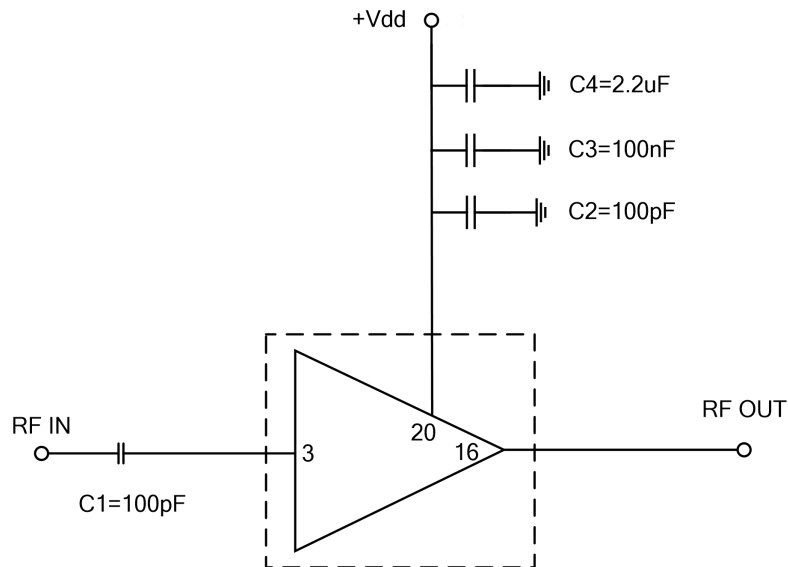


The units in the figure are millimeters.

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 drain bias
2、4、15、17	GND	The bottom of the chip must be properly grounded with the RF and DC
1、5~14、18、19、21~24	NC	No welding required

## GaAs MMIC low noise amplifier chip, 1-9GHz

### Recommended circuit



Ingredients	Capacity value, sensing value, resistance value
C1	100pF
C2	100pF
C3	100nF
C4	2.2uF

### Notice

- Sealing material: ceramic material in accordance with ROHS specification
- Lead frame material: copper alloy
- Lead surface coating: gold, gold layer thickness greater than 1.5um
- Maximum peak reflow temperature: 260°C