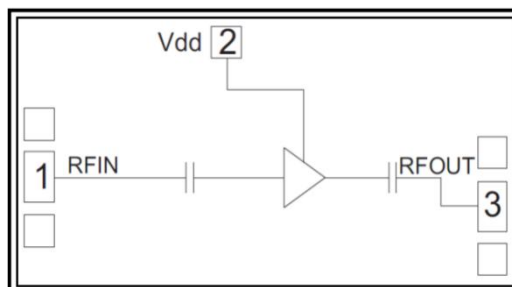


GaAs MMIC Low Noise Amplifier Chip, 5-14GHz

Performance characteristics

- Frequency range: 5-14GHz
- Small signal gain: 22.5dB
- Gain flatness: ± 1.0 dB
- Noise figure: 0.9dB typ.
- P-1dB: 8.5dBm
- Power supply: +3.3V/20mA
- Input/Output: 50Ohm
- 100% on-chip testing
- Chip size: 1.68 x 1.07 x 0.09 mm

Functional Block Diagram



Product Introduction

GLA-0514B is a broadband low-noise amplifier chip, with a frequency range of 5GHz~14GHz, a small signal gain of 22.5dB, an in band noise figure of 0.9dB, and a P-1 power of 8.5dBm. GLA-0514B is powered by a +3.3V single power supply.

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($T_A = +25^\circ\text{C}$, $V_d = +3.3\text{V}$)

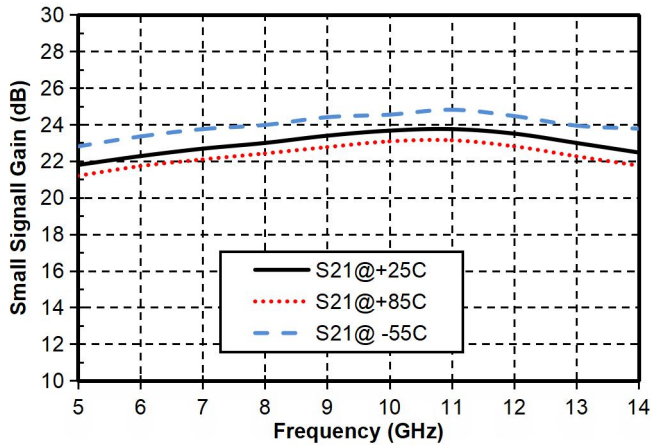
Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	5-14			GHz
Small signal gain	-	22.5	-	dB
Gain flatness		± 1.0		dB
Noise figure	-	0.9	1.1	dB
P-1dB	-	8.5	-	dBm
Psat	-	9.5	-	dBm
Input return loss	-	17	-	dB
Output return Loss	-	17	-	dB
Static current		20		mA

*The noise coefficient testing instrument is N5245B.

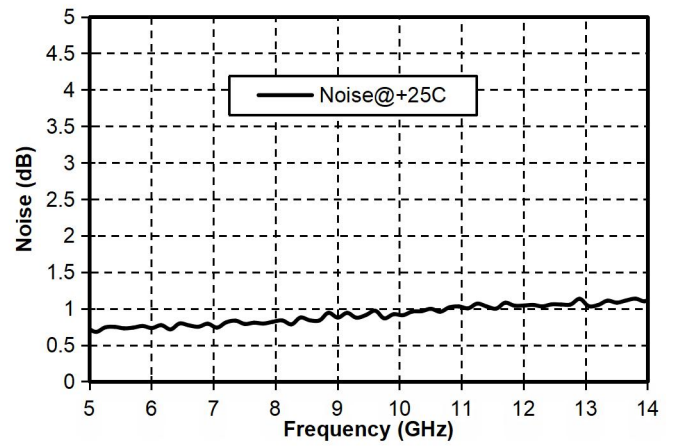
GaAs MMIC Low Noise Amplifier Chip, 5-14GHz

Main indicator testing curve

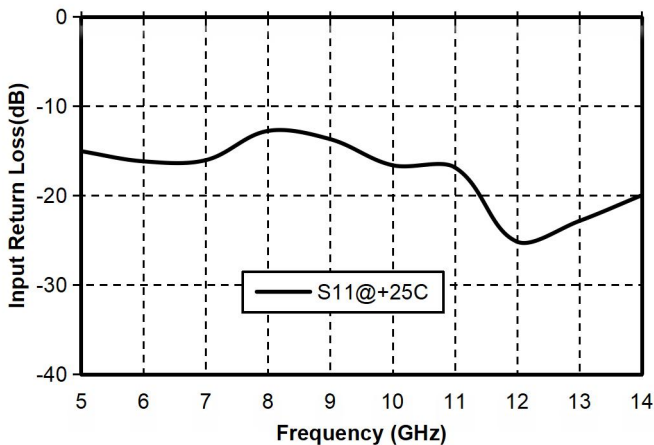
Gain vs. Frequency range



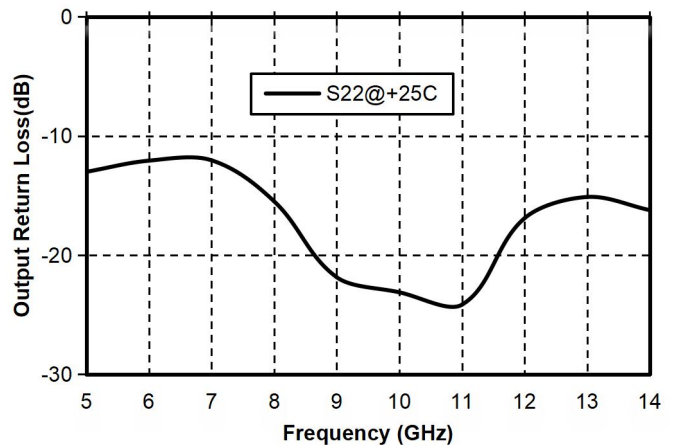
Noise Figure vs. Frequency



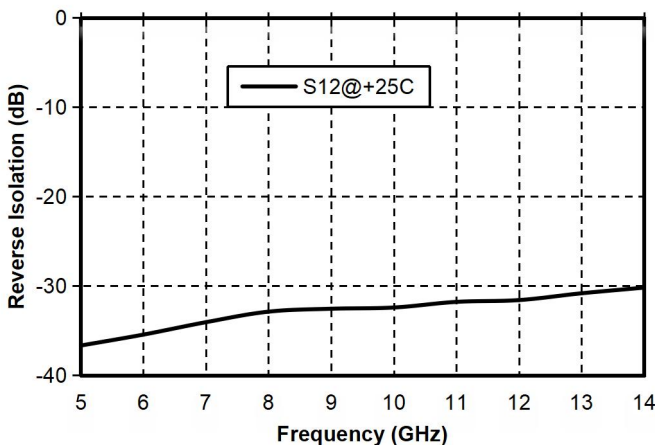
Input return loss vs. Frequency



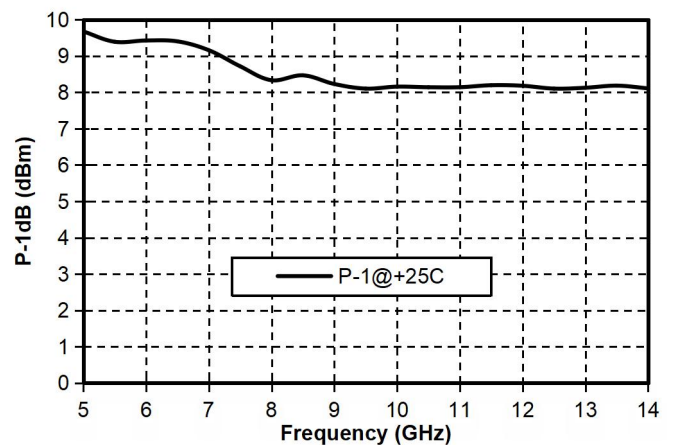
Output return Loss vs. Frequency



Reverse isolation vs. Frequency

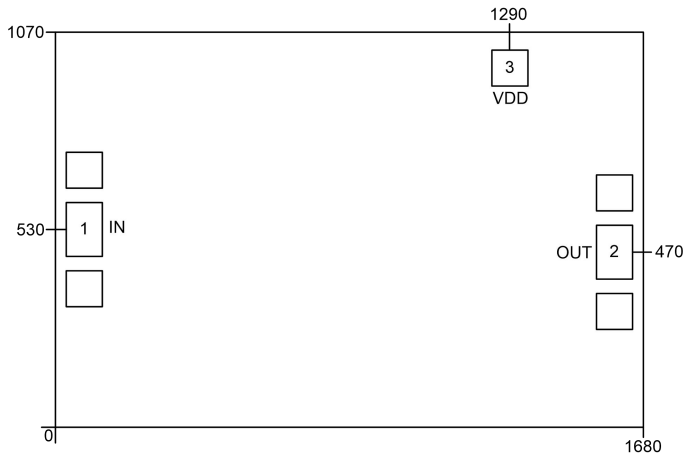


P-1dB vs. Frequency



GaAs MMIC Low Noise Amplifier Chip, 5-14GHz

External structure²



【2】 The units in the figure are all millimeters, with a tolerance of $\pm 100\mu\text{m}$.

Definition of bonding pressure point

Bond point number	Functional symbols	Function Description
1	RFIN	RF signal input terminal, no need for DC capacitors.
2	RFOUT	RF signal output terminal, no need for DC isolation capacitor.
3	VDD	Amplifier drain bias, requires external 100pF, 1000pF bypass capacitors.
Chip bottom	GND	The bottom of the chip needs to be well grounded with RF and DC.

Recommended assembly diagram

