

GaAs MMIC Low Noise Amplifier Chip, 10-13GHz

Performance characteristics

- Frequency range:10-13GHz
- Small signal gain: 22.5dB
- Gain flatness: ± 0.5 dB
- Noise figure:0.85dB
- P-1dB: 12.5dBm
- Power supply:+5V/50mA
- Input/Output: 50Ohm
- 100% on-chip testing
- Chip size: 1.48 x 0.82 x 0.1 mm

Product Introduction

GLA-1013B is a broadband low-noise amplifier chip with a frequency range of 10GHz~13GHz, a small signal gain of 22.5dB, and an in band noise figure of 0.85dB. GLA-1013B adopts a+5V single power supply with a current of 50mA.

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.

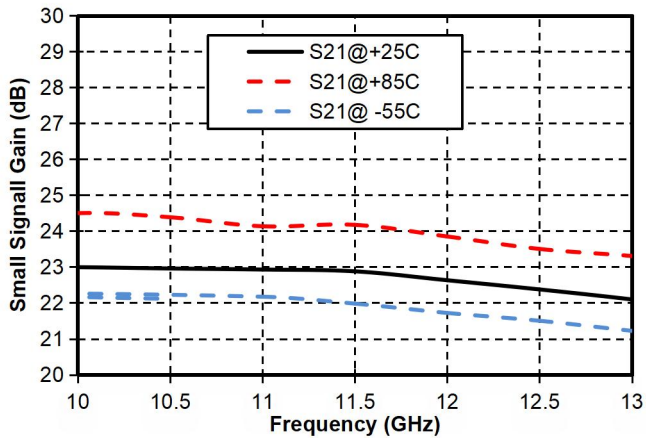
Electrical performance parameters($T_A = +25^\circ\text{C}$, $V_d = +5\text{V}$)

Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	10-13			GHz
Small signal gain	-	22.5	-	dB
Gain flatness		± 0.5		dB
Noise figure	-	0.85	-	dB
P-1dB	-	12.5	-	dBm
Psat		13.5		dBm
Input return loss	-	19	-	dB
Output return Loss	-	21	-	dB
Static current		50		mA

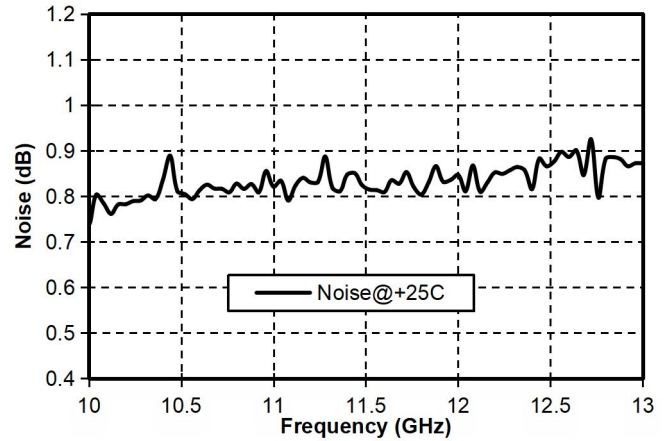
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Main indicator testing curve

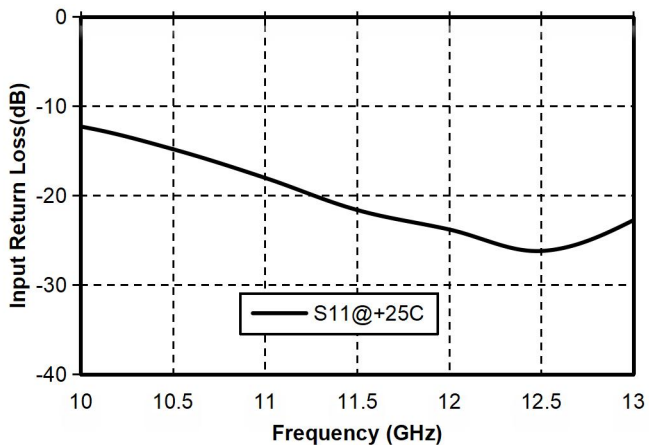
Gain vs. Temperature



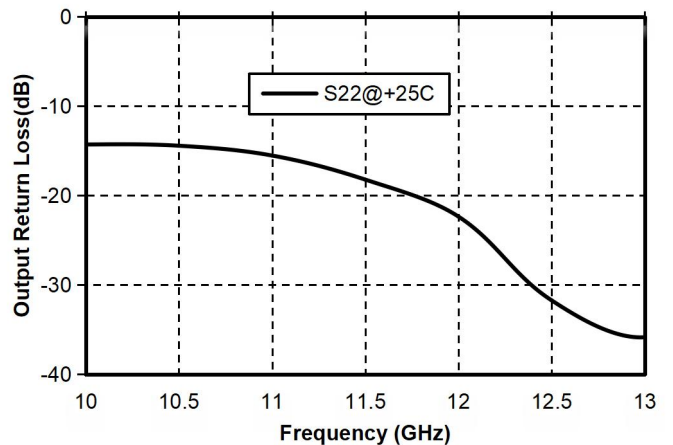
Noise Figure vs. Frequency



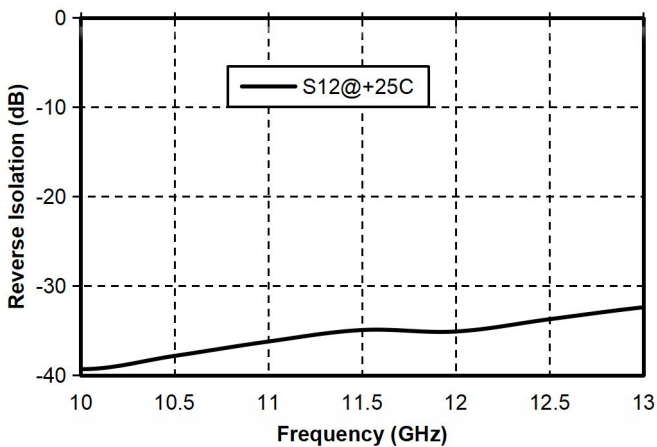
Input return loss vs. Frequency



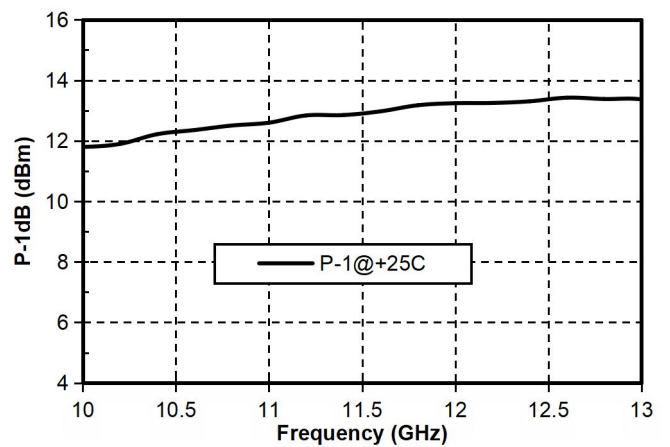
Output return Loss vs. Frequency



Reverse isolation vs. Frequency

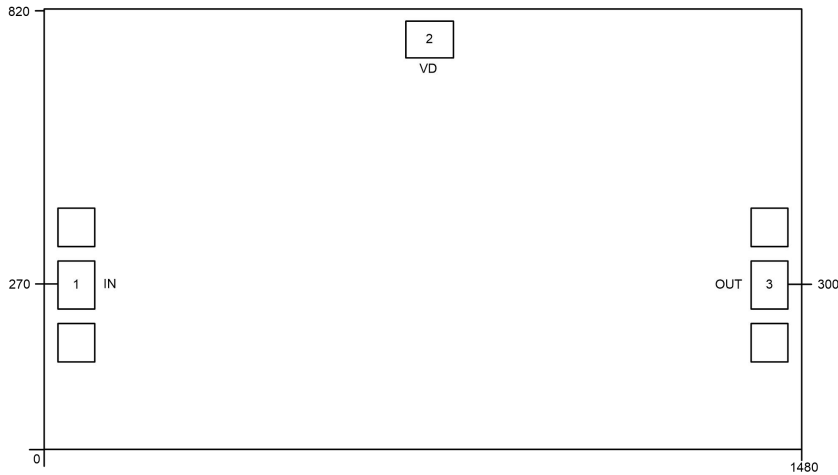


P-1dB vs. Frequency



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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.
3	RFOUT	RF signal output terminal, no need for DC isolation capacitor.
2	VDD	Amplifier drain bias, requires an external 100pF bypass capacitor.
Chip bottom	GND	The bottom of the chip needs to be well grounded with RF and DC.

Recommended assembly diagram

