# GLA-00502C

## GaAs MMIC Low Noise Amplifier Chip，0.5-2GHz

### Performance characteristics

- Frequency range: 0.5-2GHz
- Small signal gain: 22.5dB
- Gain flatness: ±0.25dB
- Noise figure: 0.6dB
- P-1dB: 17dBm
- Power supply: 5V/50mA
- Input/Output: 50Ohm
- 100% on-chip testing
- Chip size: 2.0 x 0.98 x 0.1 mm

### Product Introduction

GLA-00502C is a gallium arsenide monolithic amplifier operating from 0.5-2GHz. The amplifier has a noise figure of 0.6dB and provides a gain of 22.5dB and a P-1dB output power of +17dBm. The chip uses an on-chip through-hole metallization process to ensure good grounding, which requires no additional grounding measures, and is simple and convenient to use. The back side of the chip is metallized and is suitable for eutectic sintering or conductive adhesive bonding processes.

| Use restriction parameters[1] | |
|---|---|
| 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，Vd=+5V) | | | | |
|---|---|---|---|---|
| Index | Minimum value | Typical value | Maximum value | Unit |
| Frequency range | | 0.5-2 | | GHz |
| Small signal gain | - | 22.5 | - | dB |
| Gain flatness | - | ±0.25 | - | |
| Input return loss | - | 15 | - | dB |
| Output return Loss | - | 28 | - | dB |
| Reverse isolation | - | 28 | - | dB |
| P-1dB | - | 17 | - | dBm |
| Psat | - | 18.5 | - | dBm |
| Noise figure | - | 0.6 | - | dB |
| Static current | | 50 | | mA |
| *The noise coefficient testing instrument is N5245B. | | | | |

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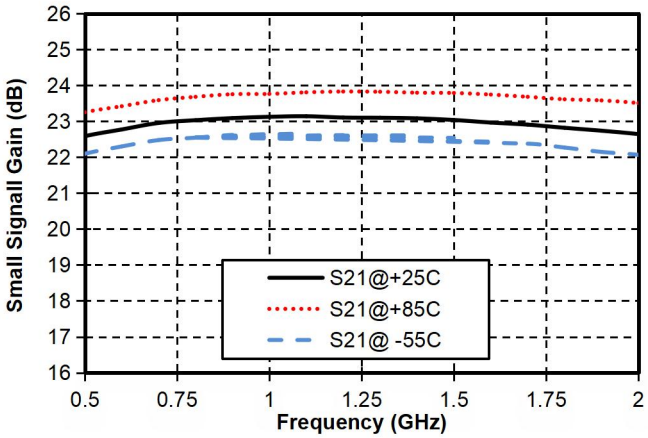
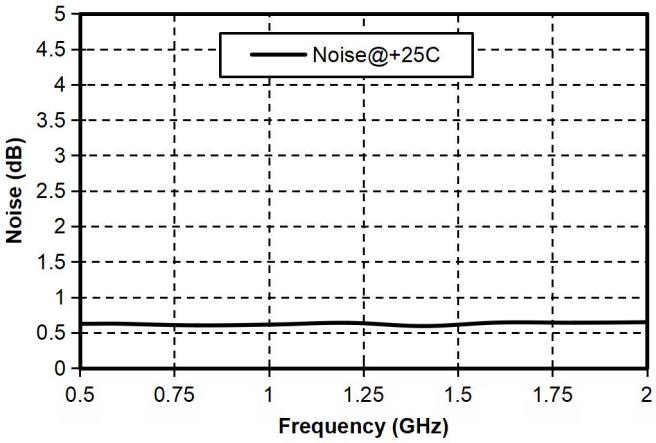
### Main indicator testing curve

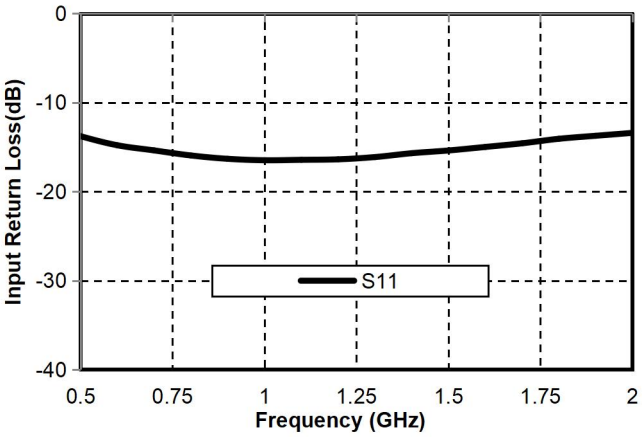
Gain vs. Frequency range



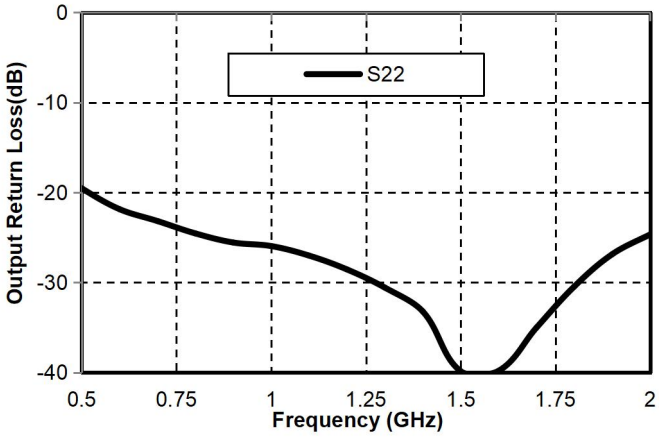

Noise Figure vs. Frequency



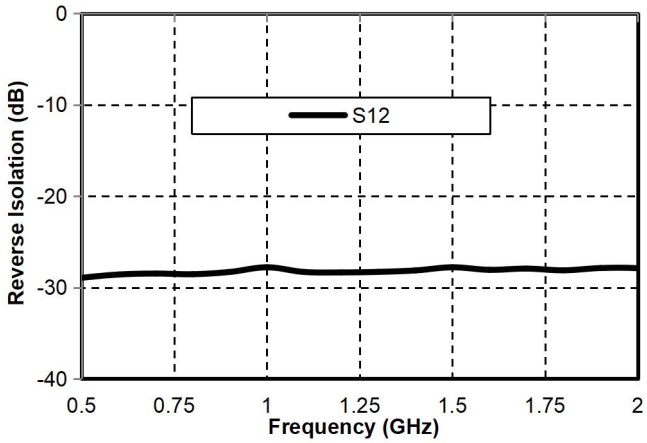

Input return loss vs. Frequency



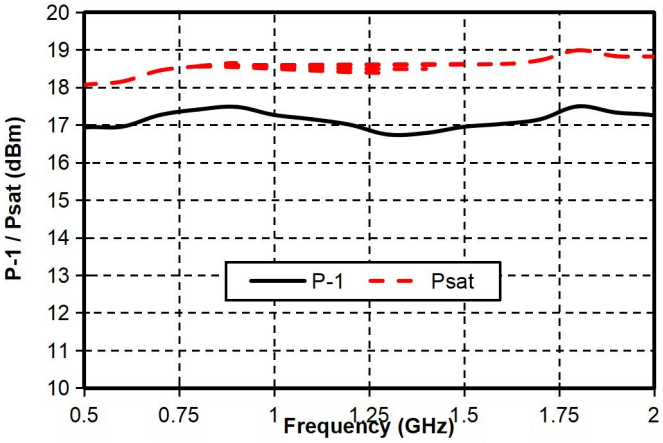

Output return Loss vs. Frequency




Reverse isolation vs. Frequency




P-1dB/Psat vs. Frequency

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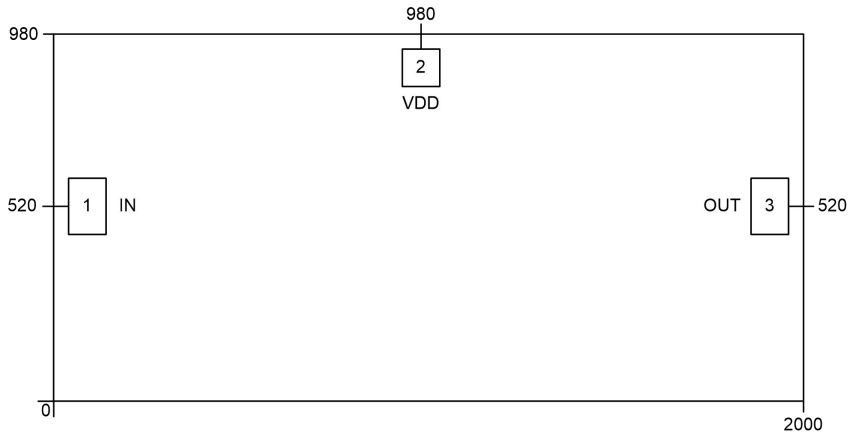
### External structure[2]




【2】The units in the figure are all millimeters,with a tolerance of ±100um.

| Definition of bonding pressure point | | |
|---|---|---|
| Bond point number | Functional symbols | Function Description |
| 1 | RFIN | RF signal input terminal, no need to install DC isolation capacitor. |
| 2 | RFOUT | RF signal output terminal, no need to install DC isolation capacitor. |
| 3 | VDD | Amplifier drain bias; VDD1 and VDD2 need to be connected simultaneously; External 100pF bypass capacitor for power supply. |
| Chip bottom | GND | The bottom of the chip needs to be well grounded with RF and DC. |

### Recommended assembly diagram