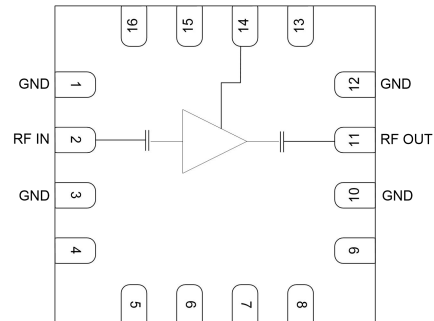


GaAs MMIC Low Noise Amplifier Chip, 12 - 19 GHz

Performance characteristics

- Frequency range: 12 - 19 GHz
- Small signal gain: 25dB
- Noise figure: 1.9dB Typ.
- P -1 dB: 2dBm
- Power supply: + 5V /15mA
- 50Ohm input / output
- 100% on-wafer testing
- Chip size: QFN 3X3

Block Diagram



Product Introduction

GLA-1219B-PQ3 is a broadband low noise amplifier chip with a frequency range of 12GHz~19GHz, a small signal gain of 25dB, and an in-band noise figure of 1.9dB. GLA-1219B-PQ3 is powered by a single +5V power supply. This chip is packaged in a 3 x 3 mm plastic surface mount package, and the surface of the pin pad is gold-plated, which is suitable for reflow soldering installation.

Use limit parameters

| | |
|-----------------------|--------------|
| Maximum drain voltage | +7V |
| Maximum input power | +20dBm |
| Operating temperature | -55 ~ +85°C |
| Storage temperature | -65 ~ +150°C |

Exceeding any of these maximum limits may cause permanent damage.

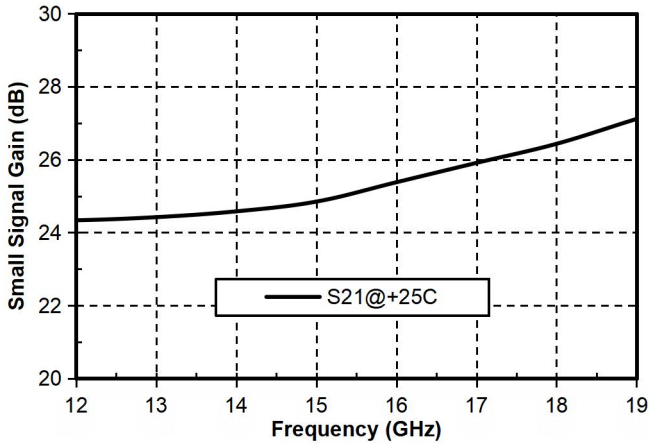
Electrical performance parameters (TA = +25°C, Vd=+5V)

| Index | Minimum | Typical Value | Maximum | Unit |
|--------------------|---------|---------------|---------|------|
| Frequency Range | 12-19 | | | G Hz |
| Small Signal Gain | 24 | 25 | 26.5 | dB |
| Gain Flatness | | ± 0.75 | | dB |
| Noise Figure | - | 1.9 | 2.0 | dB |
| P -1dB | - | 2 | - | dBm |
| Input return loss | - | 15 | - | dB |
| Output return loss | - | 17 | - | dB |
| Quiescent Current | 8 | 15 | 22 | mA |

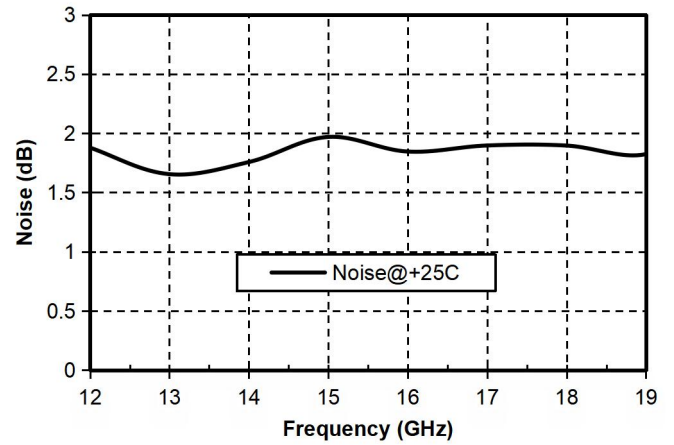
GaAs MMIC Low Noise Amplifier Chip, 12 - 19 GHz

Main index test curve

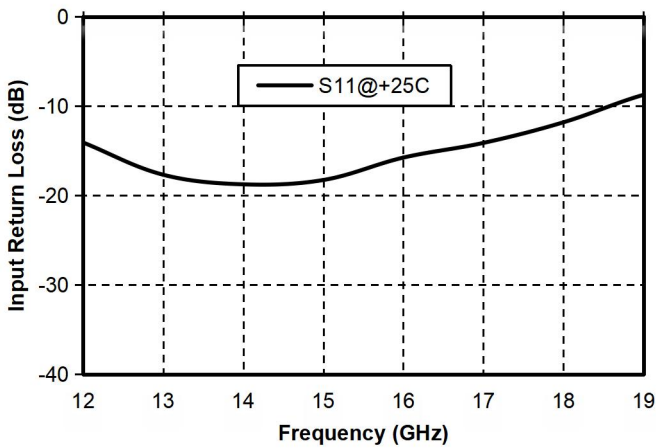
Gain vs. Frequency



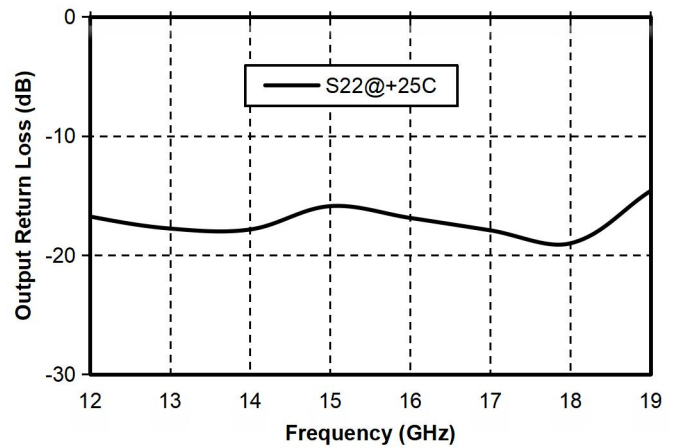
Noise Figure vs. Frequency



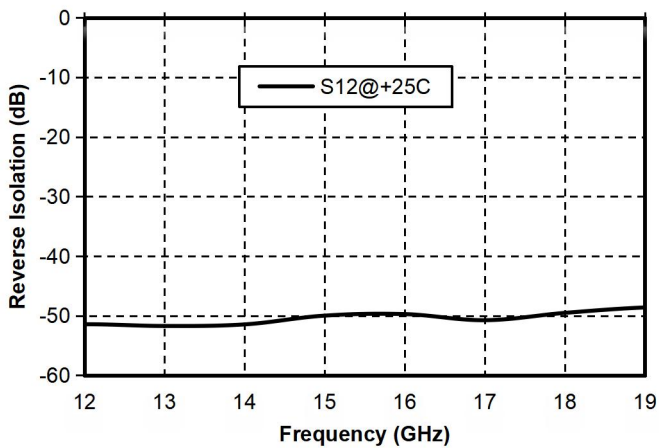
Input Return Loss vs. Frequency



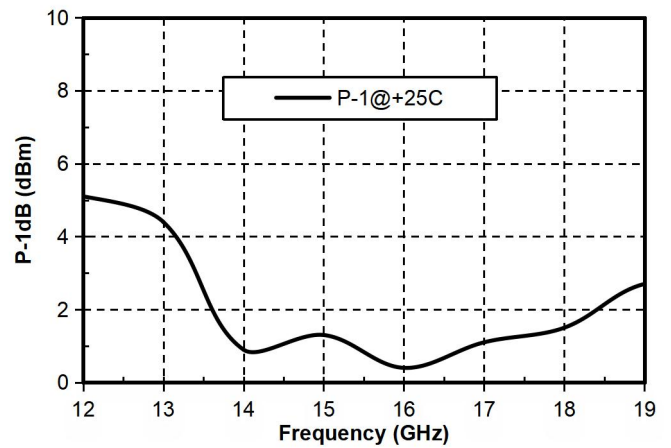
Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

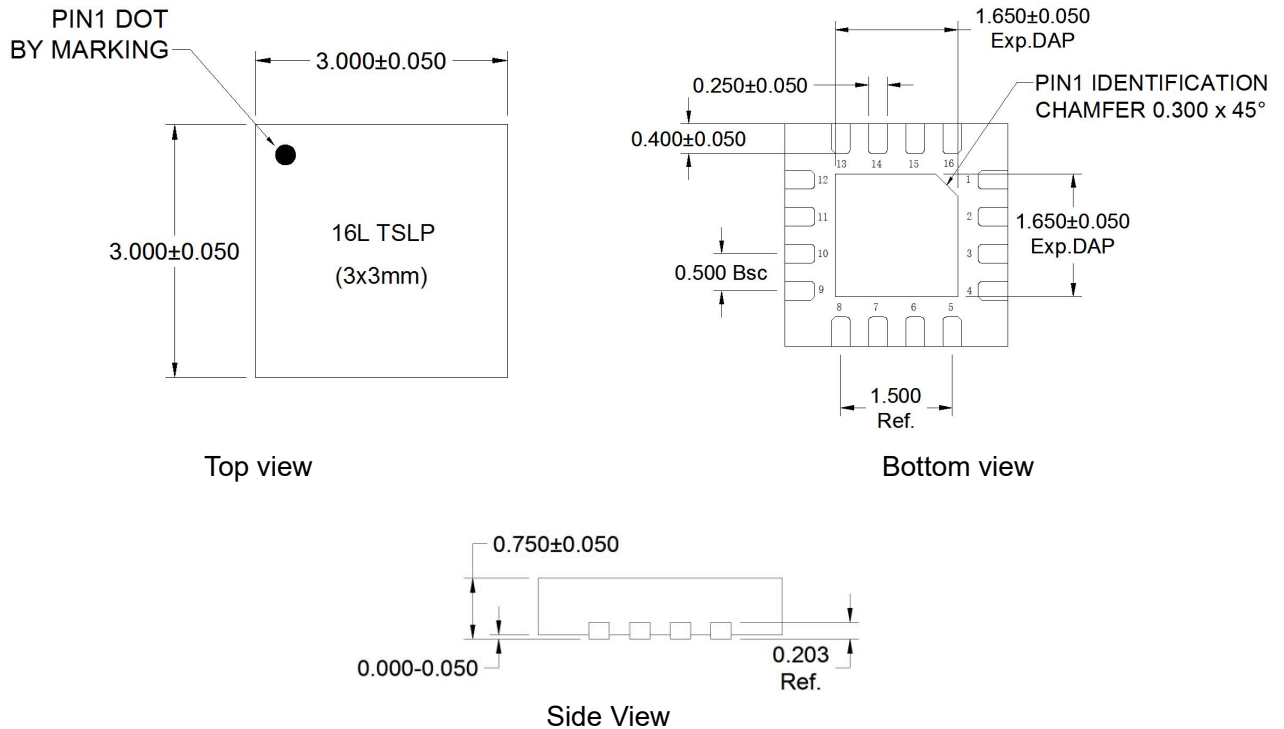


P-1dB vs. Frequency



GaAs MMIC Low Noise Amplifier Chip, 12 - 19 GHz

Appearance structure

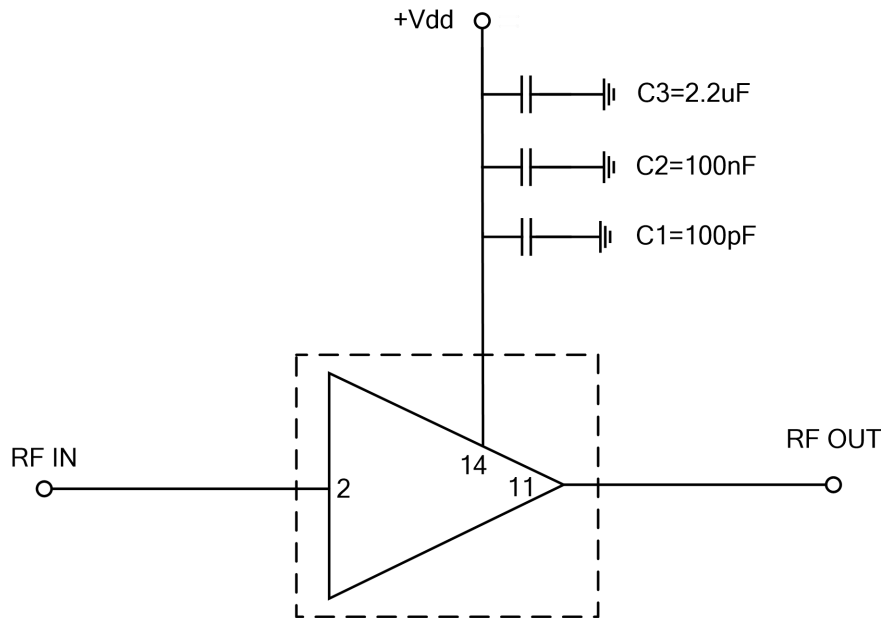


The units in the figure are all millimeters, with a tolerance of ± 0.05 mm.

| Pin Definition | | |
|----------------------|-----------------|---|
| Bonding point number | Function Symbol | Functional Description |
| 2 | RFIN | RF signal input terminal, no DC blocking capacitor required |
| 11 | RFOUT | RF signal output terminal, no DC blocking capacitor required |
| 14 | VDD | Amplifier Drain Bias |
| 1, 3, 10, 12 | GND | The bottom of the chip needs to be well grounded to RF and DC |
| 4~9, 13, 15, 16 | NC | No welding required |

GaAs MMIC Low Noise Amplifier Chip, 12 - 19 GHz

Recommended Circuit



| Raw material | Capacitance, inductance, resistance |
|--------------|-------------------------------------|
| C1 | 100pF |
| C 2 | 100nF |
| C 3 | 2.2uF |

Precautions for use

- Sealing material: Low-pressure injection molding plastic that meets ROHS specifications
- Lead frame material: copper alloy
- Lead surface plating: 100% matte tin
- Maximum reflow peak temperature: 260 °C