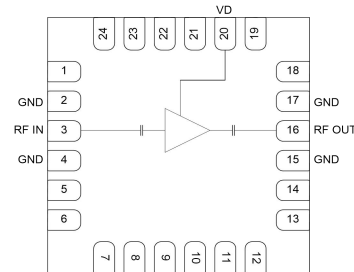


GaAs MMIC Low Noise Amplifier Chip, 0.3-2.5 GHz

Performance characteristics

- Frequency range: 0.3 - 2.5 GHz
- Small signal gain: 18dB
- Noise figure: 0.6dB
- P -1 dB: 17dBm
- Psat : 18.5dBm
- Power supply: +5 V /55mA
- 50Ohm input / output
- Chip size: QFN 4X4

Block Diagram



Product Introduction

GPA-003025D-CQ4 is a broadband amplifier chip with a frequency range of 0.3~2.5GHz, a small signal gain of 18dB, a noise figure of 0.6dB, and a P-1 output of 17dBm. GPA-003025D-CQ4 is powered by a single +5V power supply. This chip uses a 4 x 4 mm ceramic surface mount package to achieve airtight packaging. The surface of the pin pad is gold-plated and is suitable for reflow soldering installation.

Use limit parameters

| | |
|-----------------------|--------------|
| Maximum drain voltage | +8 V |
| Maximum input power | +20dBm |
| Operating temperature | -55 ~ +85°C |
| Storage temperature | -65 ~ +150°C |

Exceeding any of these maximum limits may cause permanent damage.

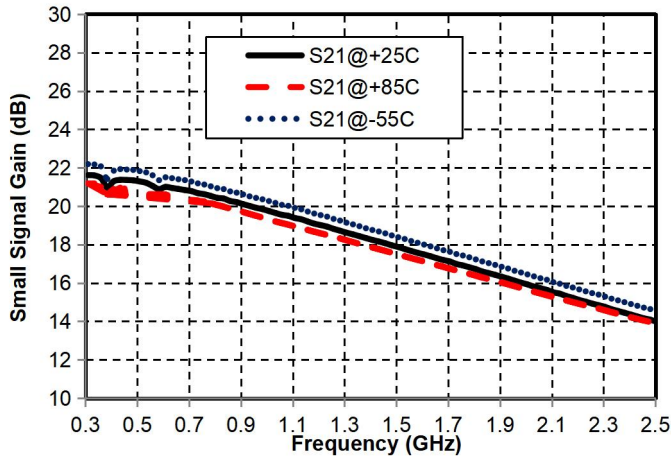
Electrical performance parameters (TA = +25°C, Vd = +5V)

| Index | Minimum | Typical Value | Maximum | Unit |
|--------------------|---------|---------------|---------|------|
| Frequency Range | 0.3~2.5 | | | G Hz |
| Small Signal Gain | - | 18 | - | dB |
| Gain Flatness | - | ± 4.0 | | dB |
| Noise Figure | - | 0.6 | - | dB |
| P -1dB | - | 17 | - | dBm |
| Psat | - | 18.5 | - | dBm |
| Input return loss | - | 12 | - | dB |
| Output return loss | - | 16 | - | dB |
| Quiescent Current | | 55 | | mA |

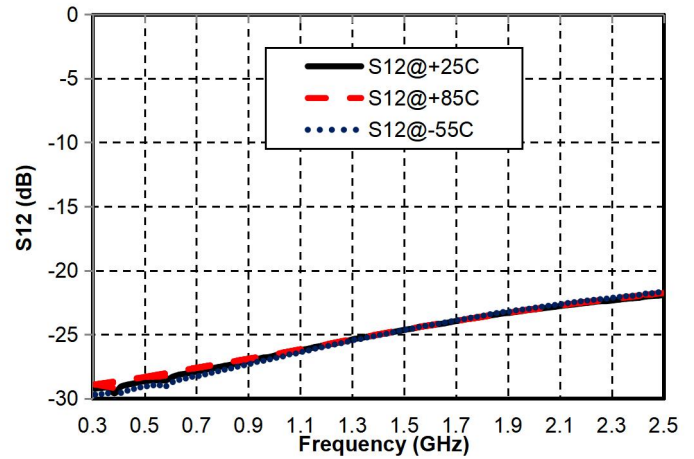
GaAs MMIC Power Amplifier Chip, 0.3 - 2.5 GHz

Main index test curve

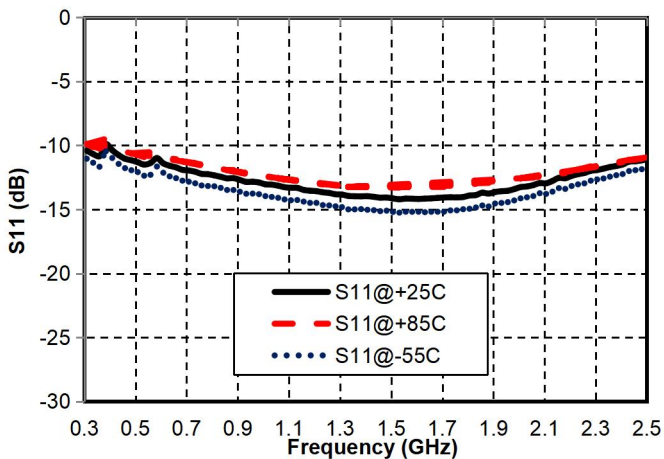
Gain vs. Frequency



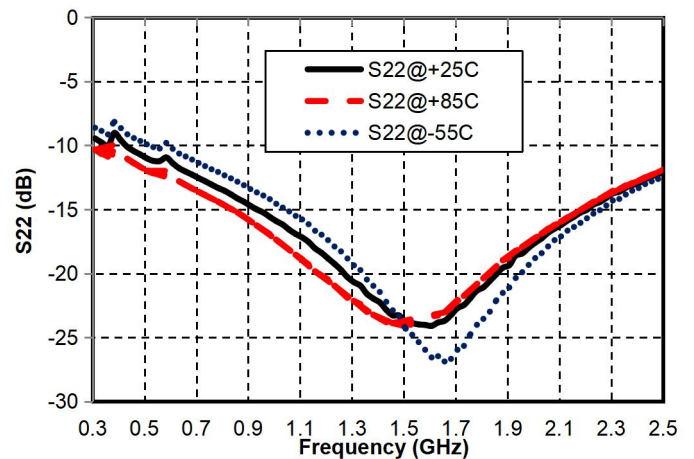
Reverse Isolation vs. Frequency



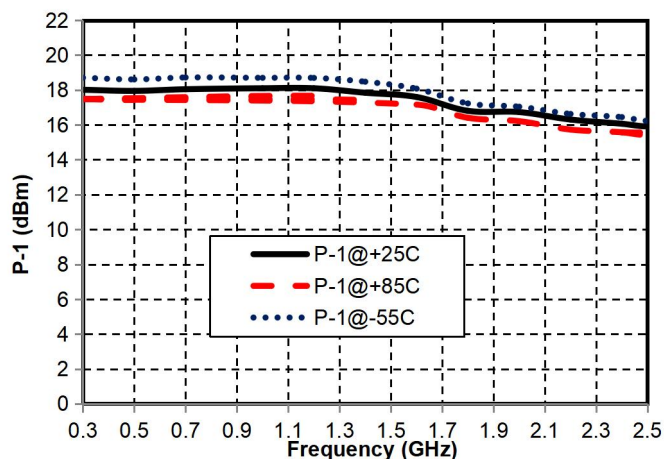
Input Return Loss vs. Frequency



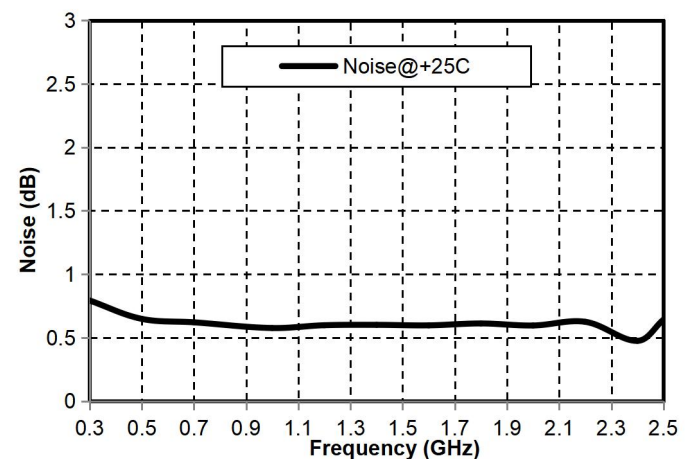
Output Return Loss vs. Frequency



P-1dB vs. Frequency

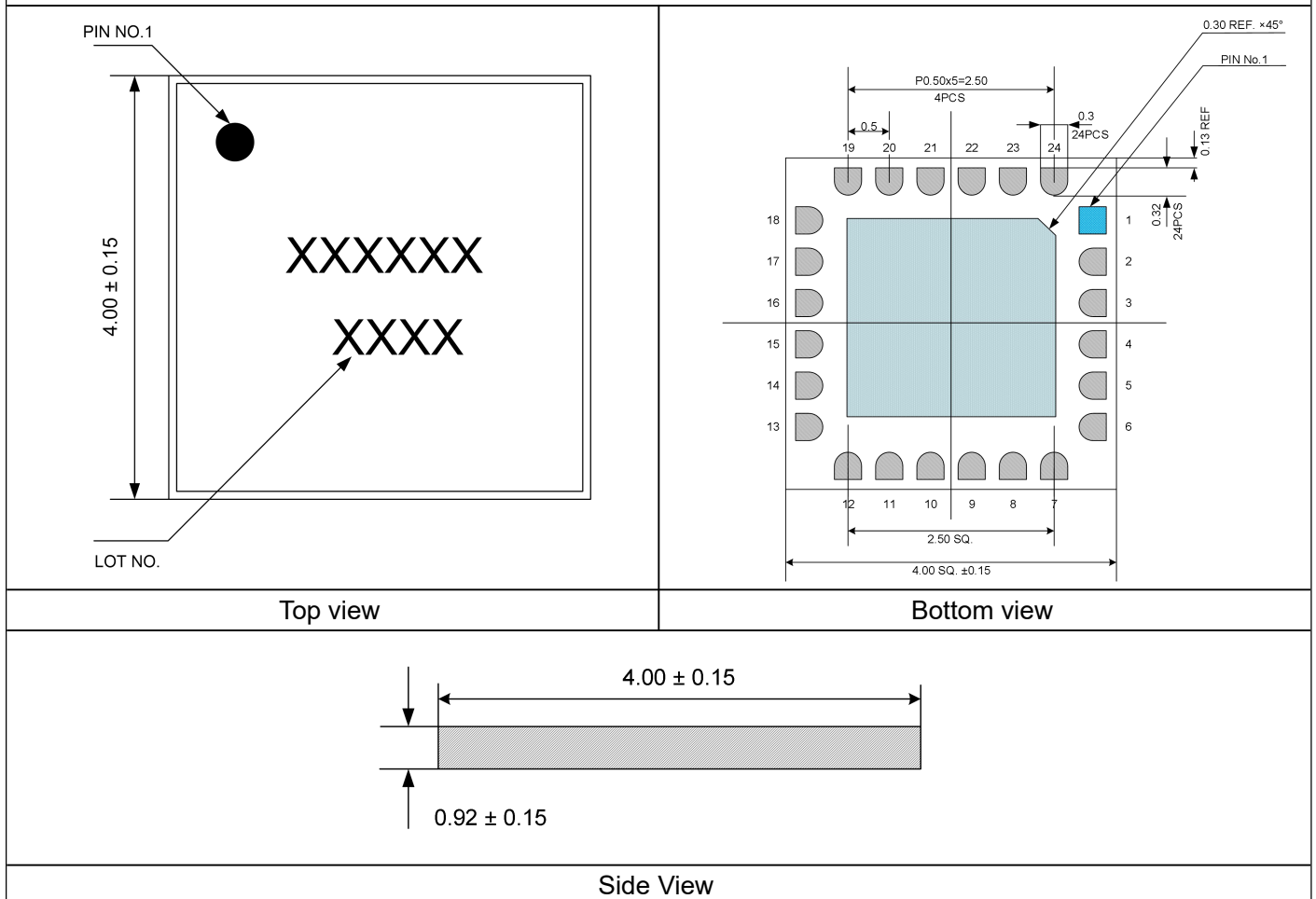


Noise vs. Frequency



GaAs MMIC Power Amplifier Chip, 0.3 - 2.5 GHz

Appearance structure



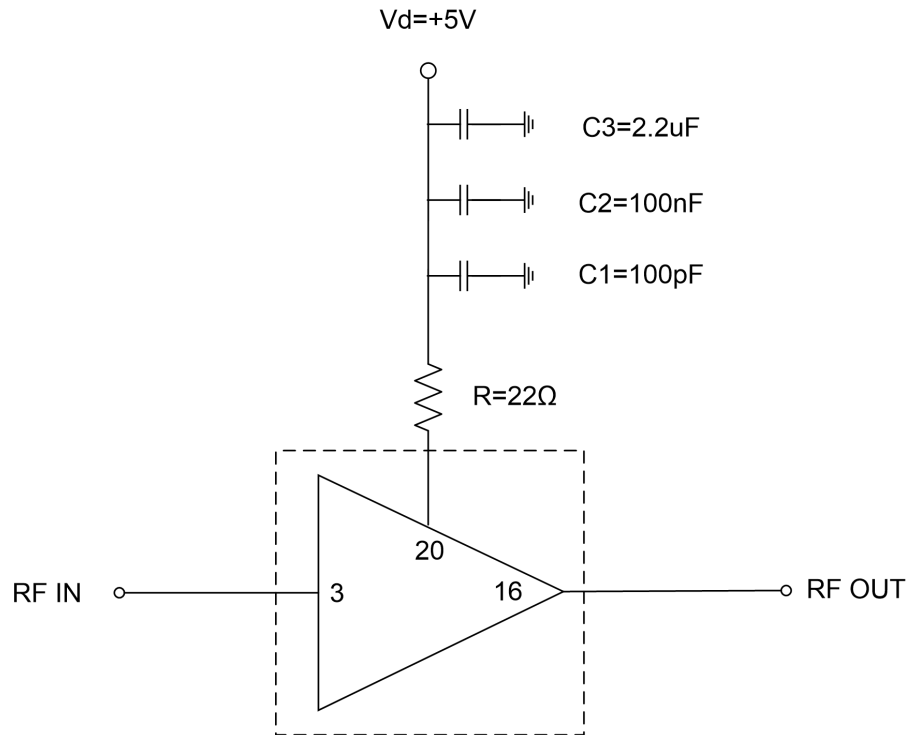
The units in the figures are all in millimeters , and the tolerance is ± 0.15 mm.

Pin Definition

| Pin Definition | Function Symbol | Functional Description |
|----------------|-----------------|---|
| 3 | RFIN | RF signal input terminal, no DC blocking capacitor required |
| 16 | RFOUT | RF signal output terminal, no DC blocking capacitor required |
| 20 | VDD | Amplifier drain bias |
| 2, 4, 15, 17 | GND | need to be in good contact with the RF and DC grounds. |
| Chip bottom | GND | The bottom of the chip needs to be well grounded to RF and DC |
| other | NC | No welding required |

GaAs MMIC Power Amplifier Chip, 0.3 - 2.5 GHz

Recommended Circuit



| Raw material | Capacitance, inductance, resistance |
|--------------|-------------------------------------|
| C 1 | 100pF |
| C 2 | 100nF |
| C 3 | 2.2uF |
| R | 22 Ω |

Precautions for use

- Sealing material : Ceramic material that meets ROHS standards
- Lead frame material: copper alloy
- Lead surface plating: gold, gold layer thickness 0.30um MIN
- Maximum reflow peak temperature: 260 °C