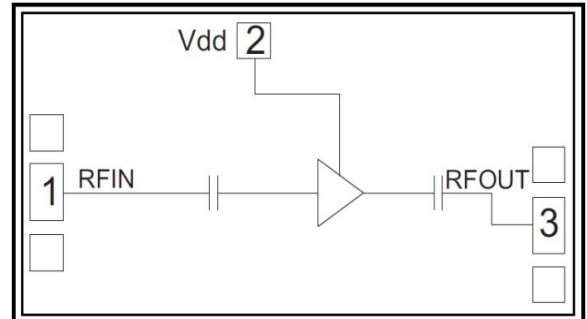


GaAs MMIC Low Noise Amplifier, 1-12GHz

Features:

- Freq. Range: 1-12GHz
- Gain: 17dB
- NF: 1.3dB typ.
- P-1dB: 19dBm
- Supply: +5V/40mA
- 50Ohm Input/Output
- 100% On Wafer Test
- Size: 1.6 x 1.25 x 0.09 mm

Functional Diagram:



Product Introduction:

ILA-0112E is a broadband Low Noise Amplifier, the frequency range covers 1GHz~12GHz, the gain is 17dB, and the in-band noise figure is 1.3dB. ILA-0112E uses +5V single Supply.

Absolute Maximum Ratings¹

| | |
|---|--------------|
| Maximum Vdd | +7V |
| Maximum Input Power | +20dBm |
| Working Temperature | -55 ~ +85°C |
| Storage Temperature | -65 ~ +150°C |
| 【1】 Exceeding any of the above maximum limits may cause permanent damage. | |

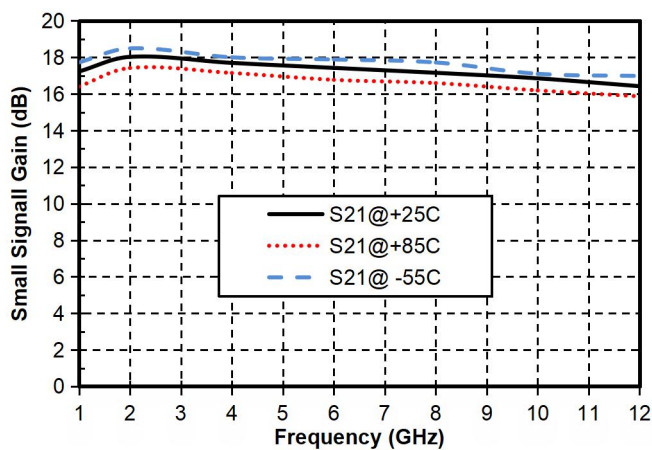
Electrical Specifications($T_A = +25^\circ\text{C}$, $V_d = +5\text{V}$)

| Parameter | Min. | Typ. | Max. | Units |
|--------------------|------|------------|------|-------|
| Freq. Range | 1-12 | | | GHz |
| Gain | 16.5 | 17 | 18 | dB |
| Gain Flatness | | ± 0.75 | | dB |
| NF | - | 1.3 | 1.7 | dB |
| P-1dB | 18.5 | 19 | 19.5 | dBm |
| Psat | 19.5 | 20 | 21 | dBm |
| Input Return Loss | 11 | 13 | - | dB |
| Output Return Loss | 13 | 15 | - | dB |
| Current | | 40 | | mA |

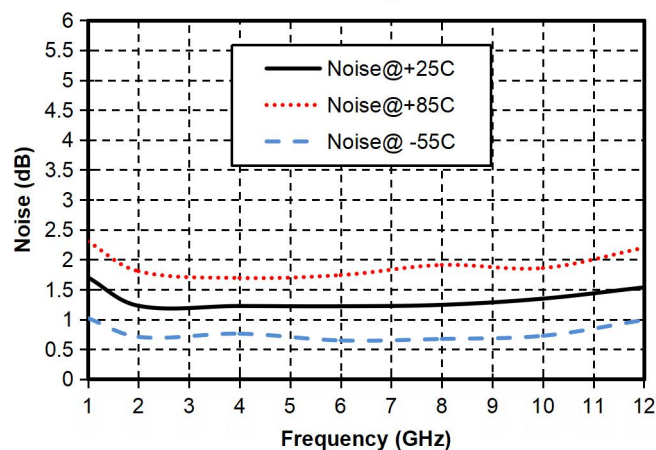
GaAs MMIC Low Noise Amplifier, 1-12GHz

Test Curve

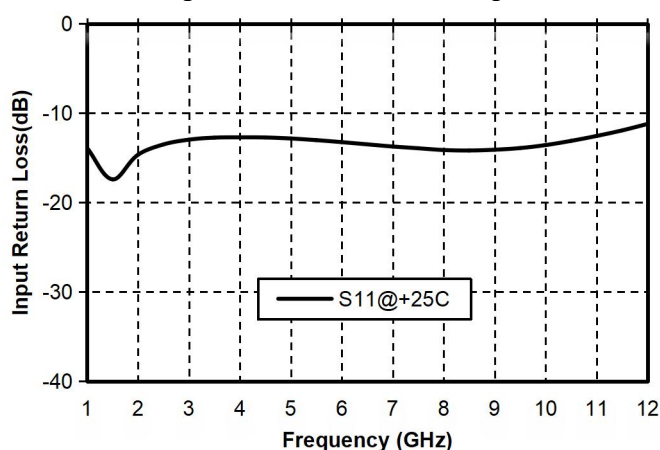
Gain vs. Freq.



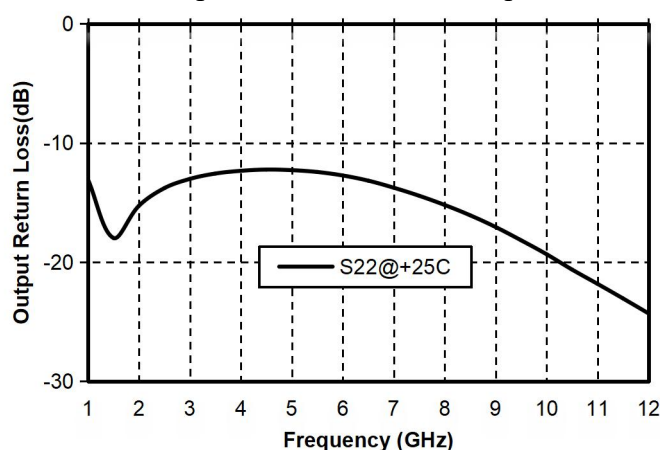
NF vs. Freq.



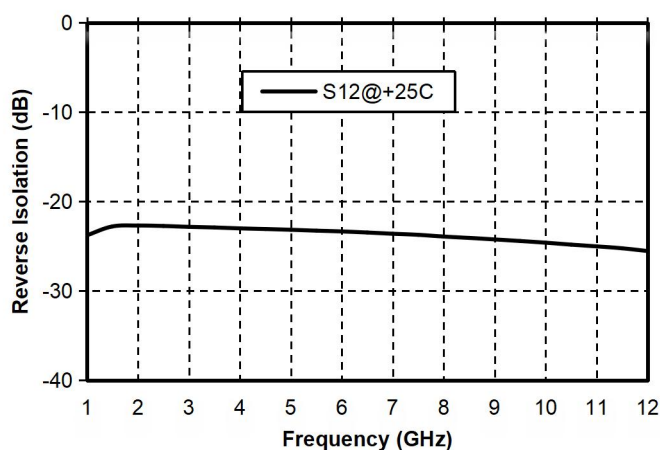
Input Return Loss vs. Freq.



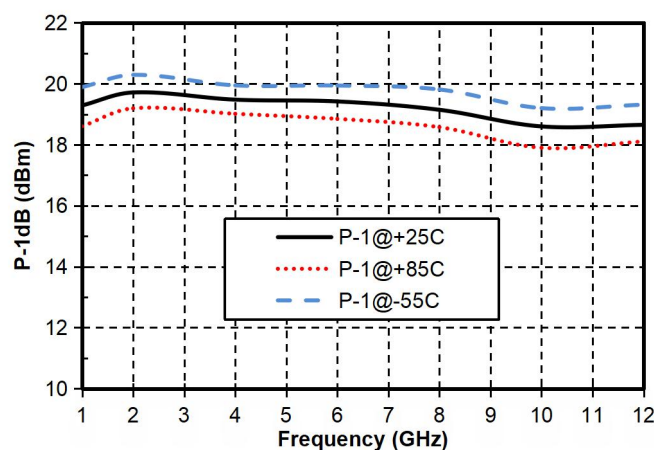
Output Return Loss vs. Freq.



Reverse Isolation vs. Freq.

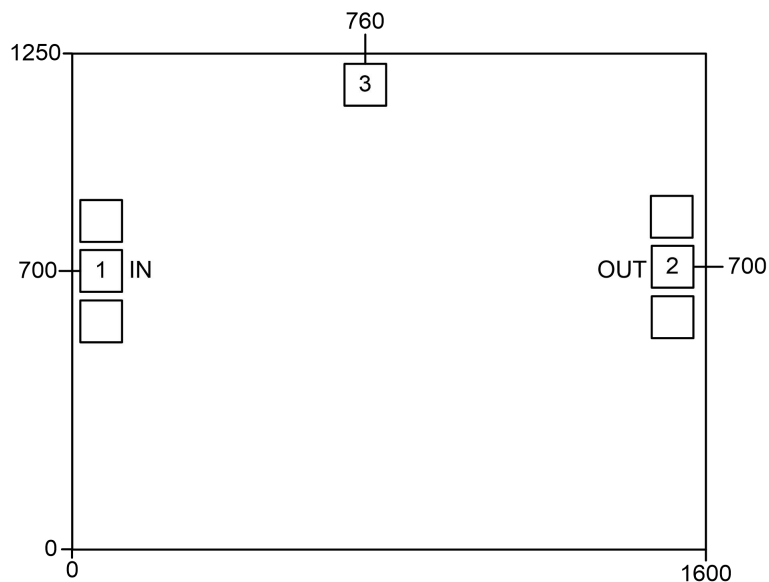


P-1dB vs. Freq.



GaAs MMIC Low Noise Amplifier, 1-12GHz

Outline Drawing²



【2】 The units in the figure are all microns.

Pad Descriptions

| Pad Number | Function Symbol | Description |
|--------------------|-----------------|---|
| 1 | RFIN | RF signal input terminal, no DC blocking capacitor required |
| 2 | RFOUT | RF signal Output terminal, no DC blocking capacitor required |
| 3 | VDD | Amplifier drain bias, an external 100pF bypass capacitor is required. |
| Bottom of the chip | GND | Bottom of the chip needs to be well grounded with RF and DC |

GaAs MMIC Low Noise Amplifier, 1-12GHz

Recommended assembly drawing

