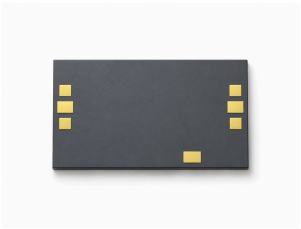
# 7000–13000 MHz GaAs MMIC Low-Noise Amplifier Die — NF 1 dB (typical)

LCI-LNA-7000-13000-NF1T · 7000–13000 MHz · GaAs MMIC Low-Noise Amplifier Die.



The RF table specifies: NF 1 dB (typical); Small-signal gain ≥ 28 dB; P1dB 6 dBm (typical). RF test conditions: TA = +25 °C; Vd = +5 V.

Single-supply operation.

Input and output DC-blocking capacitors are integrated.

Die dimensions: 1.8 × 1 × 0.1 mm.

## RF characteristics

TA = +25 °C; Vd = +5 V

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Operating frequency | f | 7000 | - | 13000 | MHz |
| Output 1 dB compression power | P1dB | - | 6 | - | dBm |
| Small-signal gain | Gain | 28 | - | - | dB |
| Small-signal gain flatness | ΔGain | - | ±2 | - | dB |
| Noise figure | NF | - | 1 | - | dB |
| Input VSWR | VSWR-in | - | 1.3 | 1.4 | - |
| Output VSWR | VSWR-out | - | 1.2 | 1.4 | - |

## DC bias and current

TA = +25 °C

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Operating voltage | Vd | - | 5 | - | V |
| Quiescent current | Id | - | 0.019 | - | A |

## Absolute limits

Absolute limits; these are not normal operating targets.

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Maximum operating voltage | - | - | - | 6 | V |
| Maximum input power | - | - | - | 15 | dBm |
| Storage temperature | - | -65 | - | 150 | °C |
| Maximum channel temperature | - | - | - | 175 | °C |

## Die dimensions

| Parameter | Value | Unit |
|---|---|---|
| Die dimensions | 1.8 × 1 × 0.1 | mm |
| Plan-view outline tolerance | ±100 | µm |

## Bond-pad assignments

| Pins | Symbol | mm |
|---|---|---|
| 2 | RFin | 0.140 × 0.100 |
| 5 | RFout | 0.140 × 0.100 |
| 7 | Vd | 0.150 × 0.100 |
| 1, 3, 4, 6 | GND | 0.100 × 0.100 |

**Current publication record** · 1.6 · 2026-11-12. Product description or editorial content updated. Replaces revision 1.5.

## Integration notes

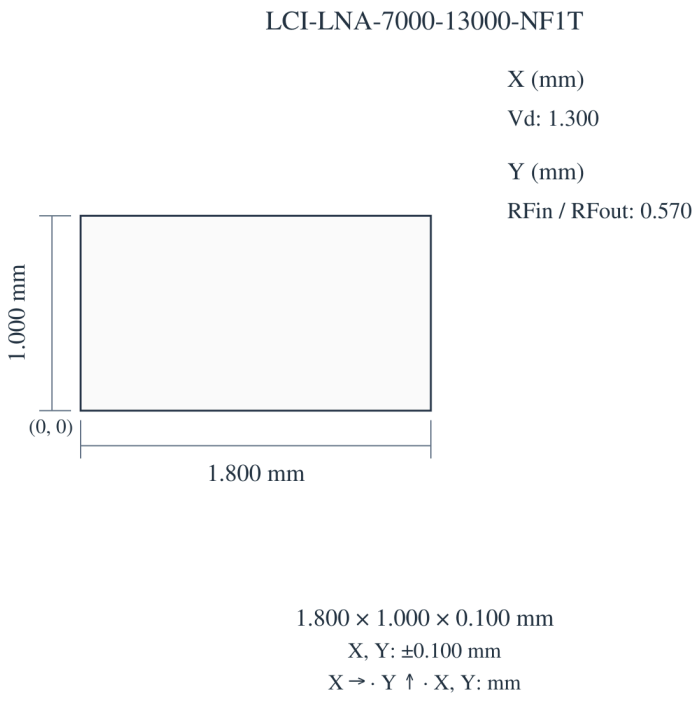
Single-supply operation. Input and output DC-blocking capacitors are integrated.

## Pad connection notes

The listed GND pads are test ground pads.

## Mechanical Outline

Outline and dimensioned coordinates in mm. Use this drawing as a dimensional reference. Fabrication and wire bonding require complete drawings.



## Performance curves

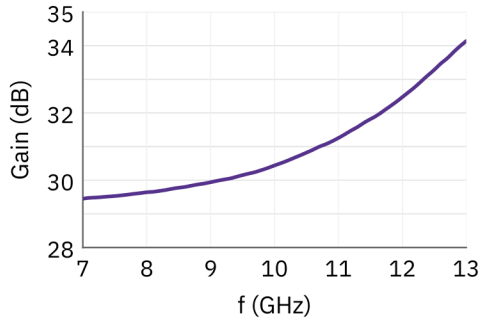
Each performance plot applies to its stated operating conditions.

**Output 1 dB compression power; Small-signal gain; Input matching; Output matching; Noise figure.**

Figure notes: Vd=+5V; Pin=-35dBm. Readings are approximate.

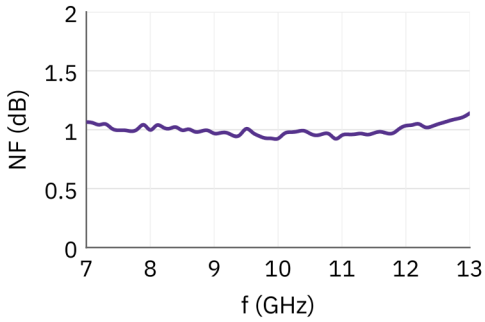
### Gain

Vd = +5 V



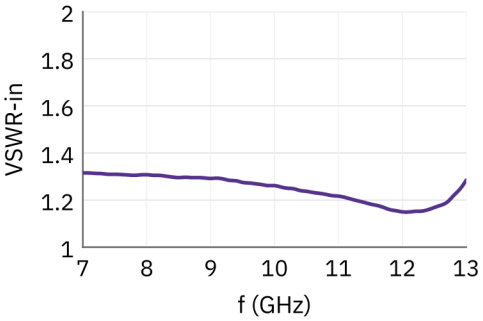

### NF

Vd = +5 V



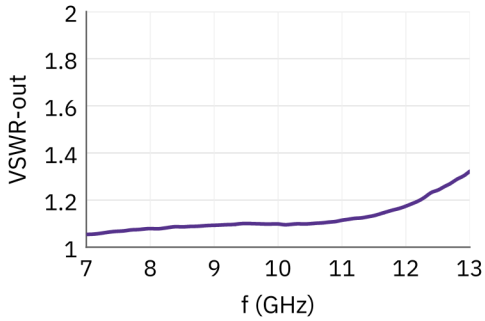

### VSWR-in

Vd = +5 V



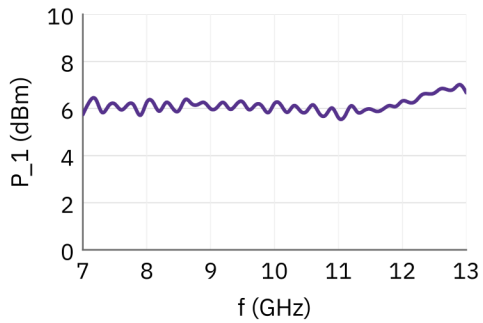

### VSWR-out

Vd = +5 V




### P_1,out

Vd = +5 V




**Document notice**

Specifications are subject to revision. Before design release, confirm the current document revision and product-specific requirements with LCRF. The approved quotation and order documentation define the supplied configuration.