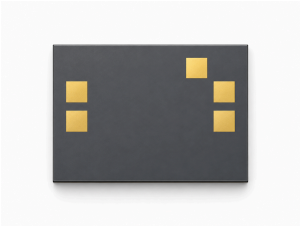
# 800–2000 MHz GaAs MMIC Low-Noise Amplifier Die — NF 0.45 dB (typical)



LCI-LNA-800-2000-NF0p45T · 800–2000 MHz · GaAs MMIC Low-Noise Amplifier Die.

The RF table specifies: NF 0.45 dB (typical); Small-signal gain 23 dB (typical); P1dB 20.5 dBm (typical). RF test conditions: TA = +25 °C; Vd = +5 V.

Single-supply operation.

Input and output DC-blocking capacitors are integrated.

The RF pads do not require external DC-blocking capacitors; add the specified supply filtering at VDD.

L1 = 56 nH

Die dimensions: 0.9 × 0.65 × 0.1 mm.

## RF characteristics

TA = +25 °C; Vd = +5 V

| Parameter | Symbol | Minimum | Typical | Maximum | Value | Unit |
|---|---|---|---|---|---|---|
| Operating frequency | f | 800 | - | 2000 | - | MHz |
| Output 1 dB compression power | P1dB | - | 20.5 | - | - | dBm |
| Saturated output power | Psat | - | - | - | 22 | dBm |
| Small-signal gain | Gain | - | 23 | - | - | dB |
| Small-signal gain flatness | ΔGain | - | ±0.3 | - | - | dB |
| Noise figure | NF | - | 0.45 | - | - | dB |
| Input VSWR | VSWR-in | - | 1.5 | - | - | - |
| Output VSWR | VSWR-out | - | 1.4 | - | - | - |

## DC bias and current

TA = +25 °C

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Operating voltage | Vd | - | 5 | - | V |
| Quiescent current | Id | - | 0.055 | - | 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 | - | - | - | 6 | dBm |
| Storage temperature | - | -65 | - | 150 | °C |
| Maximum channel temperature | - | - | - | 175 | °C |

## Die dimensions

| Parameter | Value | Unit |
|---|---|---|
| Die dimensions | 0.9 × 0.65 × 0.1 | mm |
| Plan-view outline tolerance | ±50 | µm |

## Bond-pad assignments

| Pins | Symbol | mm |
|---|---|---|
| 1 | RFin | 0.100 × 0.100 |
| 2 | RFout | 0.100 × 0.100 |
| 3 | VDD | 0.100 × 0.100 |
| 4, 5 | 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. The RF pads do not require external DC-blocking capacitors; add the specified supply filtering at VDD. L1 = 56 nH

## 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.

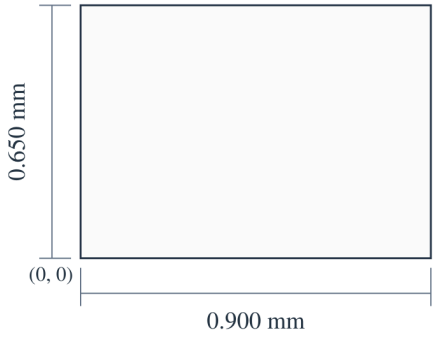
LCI-LNA-800-2000-NF0p45T

X (mm)

VDD: 0.670

Y (mm)

RFin / RFout: 0.290




0.900 × 0.650 × 0.100 mm

X, Y: ±0.050 mm

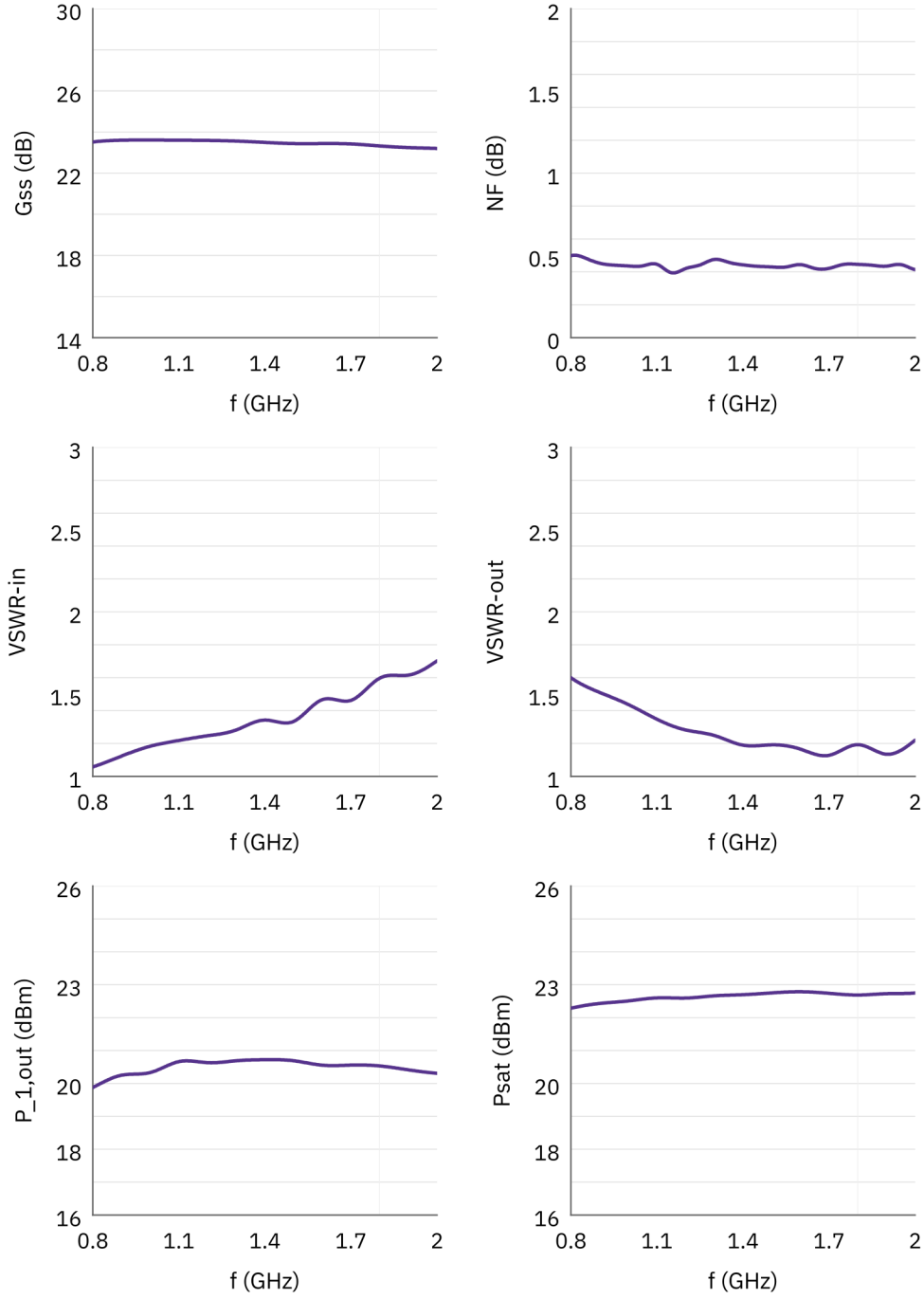
X → · Y ↑ · X, Y: mm

## Performance curves

Each performance plot applies to its stated operating conditions.

**P_1,out; Small-signal gain; Input matching; Output matching; Noise figure; Saturated output power.**

Figure notes: Vd=+5V; Pin=-30dBm. Readings are approximate.




**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.