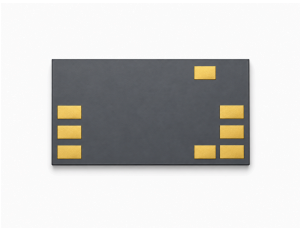
4000–12000 MHz GaAs MMIC Low-Noise Amplifier Die — NF 0.6 dB (typical)



LCI-LNA-4000-12000-NF0p6T · 4000–12000 MHz · GaAs MMIC Low-Noise Amplifier Die.

The RF table specifies: NF 0.6 dB (typical); Small-signal gain 34.5 dB (typical); P1dB 7 dBm (typical). RF test conditions: TA = +25 °C; Vd = +5 V.

Single-supply operation.

Input and output DC-blocking capacitors are integrated.

Vd: 4 ↔ 8

Die dimensions: 1.45 × 0.8 × 0.1 mm.

RF characteristics

TA = +25 °C; Vd = +5 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	4000	-	12000	MHz
Output 1 dB compression power	P1dB	6.5	7	8.5	dBm
Small-signal gain	Gain	-	34.5	-	dB
Small-signal gain flatness	ΔGain	-	±0.2	-	dB
Noise figure	NF	-	0.6	0.7	dB
Input VSWR	VSWR-in	-	1.3	1.5	-
Output VSWR	VSWR-out	-	1.3	2	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating voltage	-	-	5	-	V
Quiescent current	-	0.017	0.018	0.02	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	-	-	-	18	dBm
Storage temperature	-	-65	-	150	°C
Maximum channel temperature	-	-	-	175	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	1.45 × 0.8 × 0.1	mm
Plan-view outline tolerance	±100	µm

Bond-pad assignments

Pins	Symbol	mm
2	RFin	0.150 × 0.100
6	RFout	0.150 × 0.100
4, 8	Vd	0.150 × 0.100
1, 3, 5, 7	GND	0.170 × 0.100

Current publication record · 1.7 · 2026-11-12. Product description or editorial content updated. Replaces revision 1.6.

Integration notes

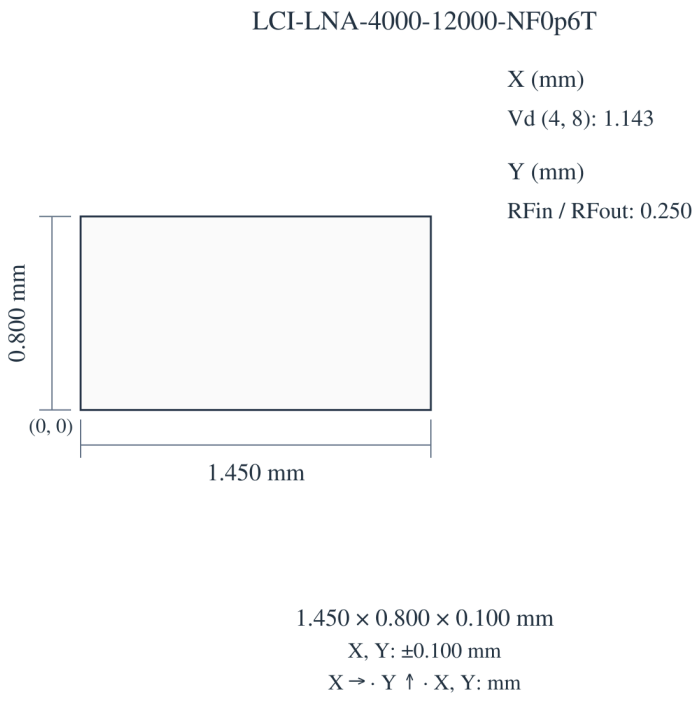
Single-supply operation. Input and output DC-blocking capacitors are integrated. Vd: 4 ↔ 8

Pad connection notes

The listed GND pads are test ground pads. Vd: 4 ↔ 8

Mechanical Outline

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



1.450 × 0.800 × 0.100 mm
X, Y: ±0.100 mm
X → · Y ↑ · X, Y: mm

Performance curves

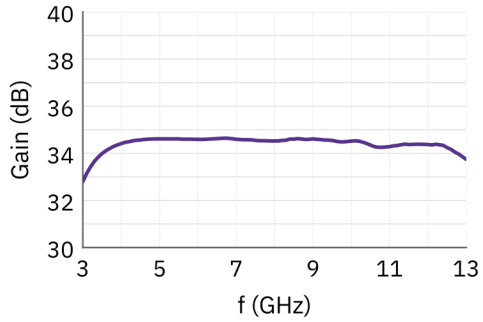
Each performance plot applies to its stated operating conditions.

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

Figure notes: TA = +25°C; Vd=+5V; Pin=-40dBm. Readings are approximate.

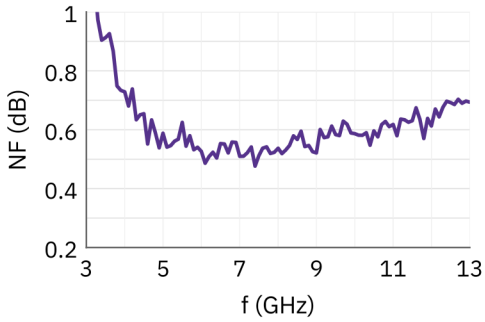
Gain

Vd = +5 V



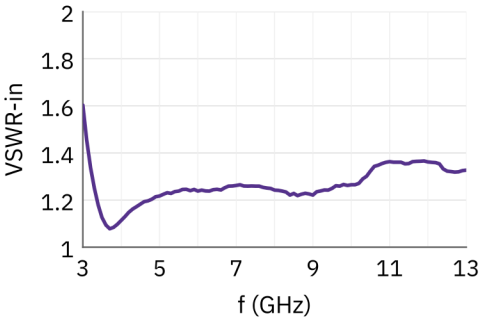
NF

Vd = +5 V



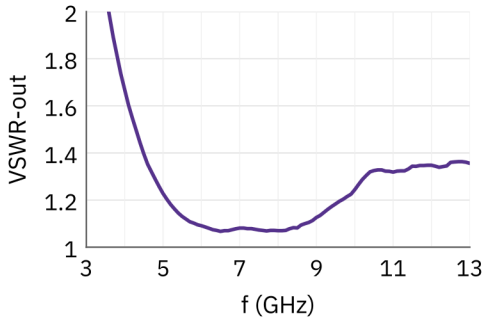
VSWR-in

Vd = +5 V



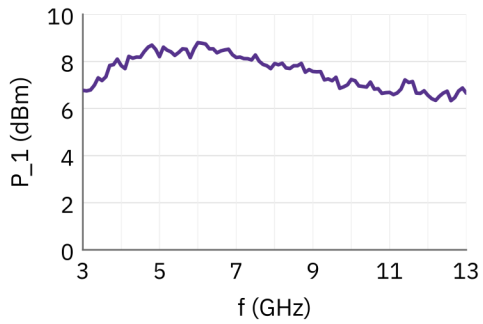
VSWR-out

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.