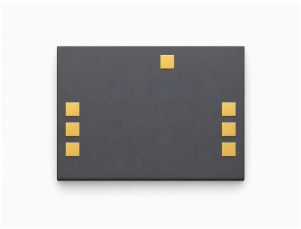
7000–13000 MHz GaAs MMIC Low-Noise Amplifier Die — NF 0.9 dB (typical)

LCI-LNA-7000-13000-NF0p9T · 7000–13000 MHz · GaAs MMIC Low-Noise Amplifier Die.



The RF table specifies: NF 0.9 dB (typical); Small-signal gain 22 dB (typical); P1dB 14 dBm (typical). RF test conditions: TA = +25 °C; Vd = +5 V.

Single-supply operation.

Input and output DC-blocking capacitors are integrated.

Die dimensions: 1.4 × 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	-	14	-	dBm
Small-signal gain	Gain	-	22	-	dB
Small-signal gain flatness	ΔGain	-	-	±0.4	dB
Noise figure	NF	-	0.9	-	dB
Input VSWR	VSWR-in	-	1.4	1.7	-
Output VSWR	VSWR-out	-	1.4	1.6	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating voltage	-	-	5	-	V
Quiescent current	-	-	0.04	0.045	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	1.4 × 1 × 0.1	mm
Plan-view outline tolerance	±100	µm

Bond-pad assignments

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

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Integration notes

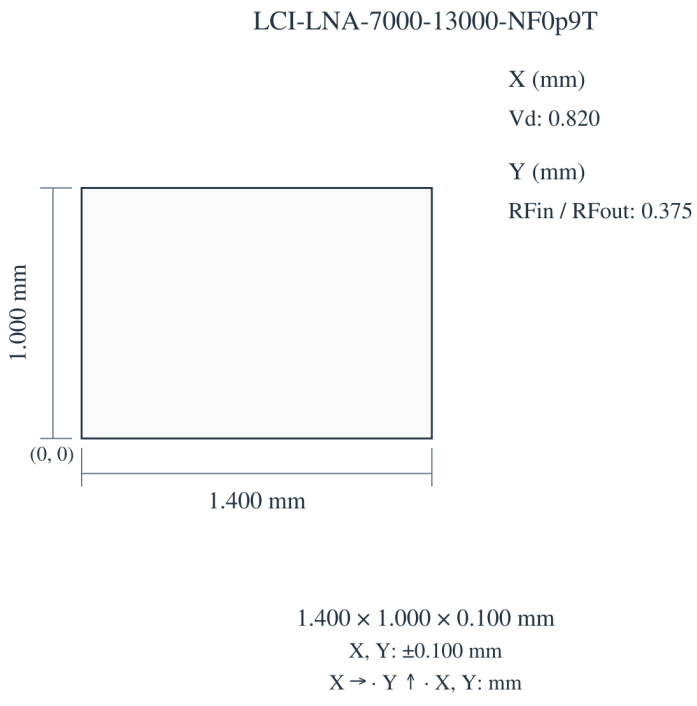
Single-supply operation. Input and output DC-blocking capacitors are integrated.

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

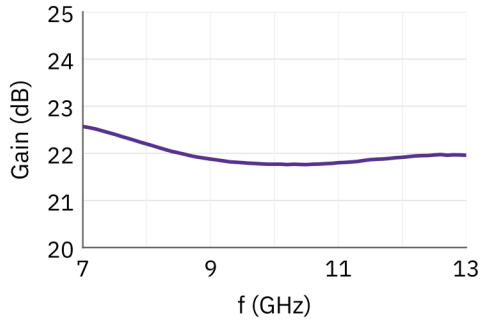
Each performance plot applies to its stated operating conditions.

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

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

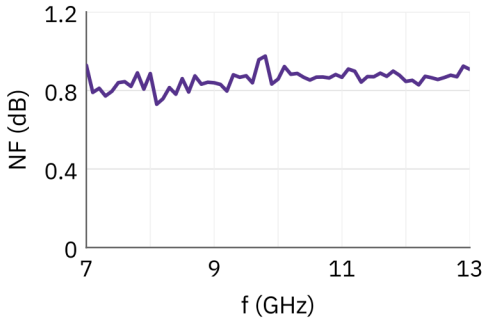
Gain

Vd = +5 V



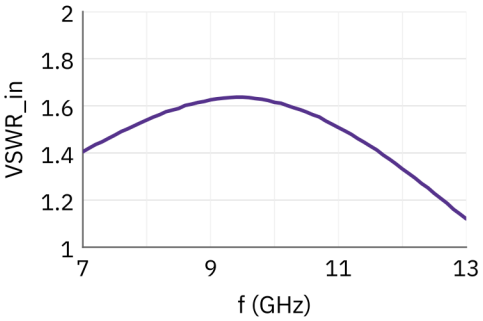
NF

Vd = +5 V



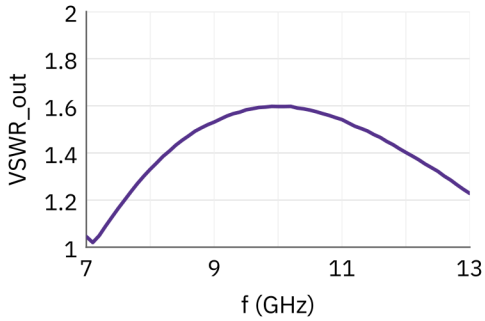
VSWR_in

Vd = +5 V



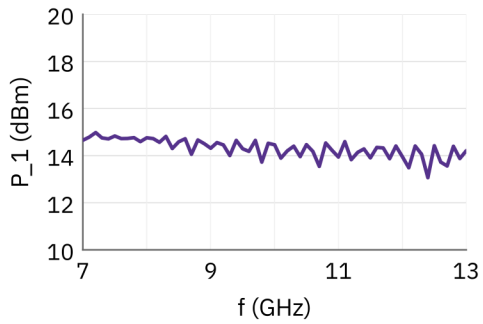
VSWR_out

Vd = +5 V



P_1

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.