2000–20000 MHz GaAs MMIC Low-Noise Amplifier Die — NF 2 dB (typical)



LCI-LNA-2000-20000-NF2T · 2000–20000 MHz · GaAs MMIC Low-Noise Amplifier Die.

The RF table specifies: NF 2 dB (typical); Small-signal gain 17 dB (typical); P1dB 14 dBm (typical). RF test conditions: TA = +25 °C; Vd = +5 V; Vg = 0 V.

Input and output DC-blocking capacitors are integrated.

Vg = 0 V; C1 = 100 pF; C2 = 10000 pF

Die dimensions: 3.025 × 1.525 × 0.1 mm.

RF characteristics

TA = +25 °C; Vd = +5 V; Vg = 0 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	2000	-	20000	MHz
Output 1 dB compression power	P1dB	-	14	-	dBm
Small-signal gain	Gain	-	17	-	dB
Small-signal gain flatness	ΔGain	-	±0.5	-	dB
Noise figure	NF	-	2	-	dB
Input VSWR	VSWR-in	-	1.3	-	-
Output VSWR	VSWR-out	-	1.4	-	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Operating voltage	Vd	-	5	-	-	V
Quiescent current	Id	-	0.055	-	-	A
Gate voltage	Vg	-	-	-	0	V

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	3.025 × 1.525 × 0.1	mm
Plan-view outline tolerance	±100	µm

Bond-pad assignments

Pins	Symbol	mm
2	RFin	0.150 × 0.100
4	Vd	0.150 × 0.126
6	RFout	0.150 × 0.100
8	Vg	0.150 × 0.100

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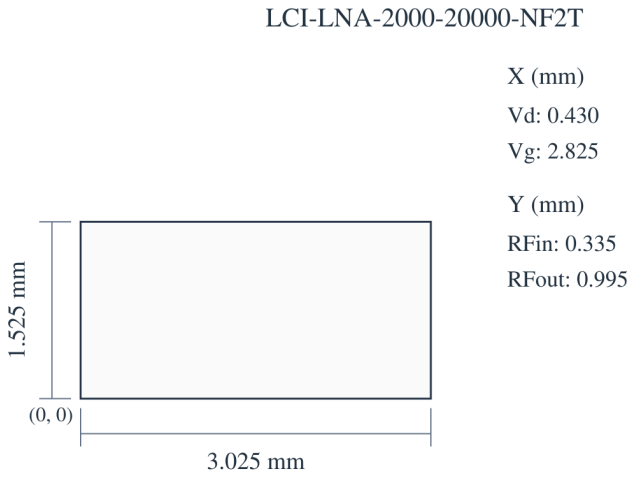
Integration notes

Input and output DC-blocking capacitors are integrated. Vg = 0 V; C1 = 100 pF; C2 = 10000 pF

Mechanical Outline

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



3.025 × 1.525 × 0.100 mm
X, Y: ±0.100 mm
X → · Y ↑ · X, Y: mm

Performance curves

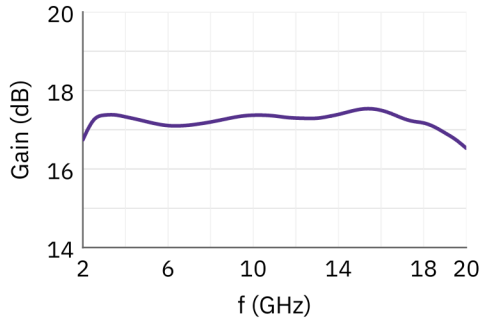
Each performance plot applies to its stated operating conditions.

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

Figure notes: Vd=+5V; Vg=0V; Pin=-30dBm. Readings are approximate.

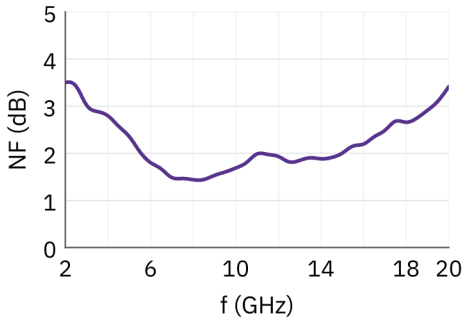
Gain

Vd = +5 V; Vg = 0 V



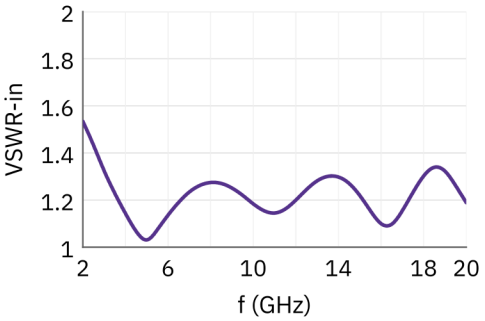
NF

Vd = +5 V; Vg = 0 V



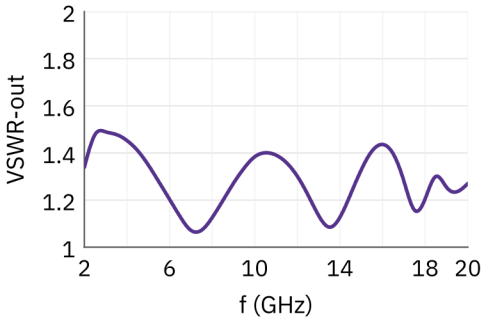
VSWR-in

Vd = +5 V; Vg = 0 V



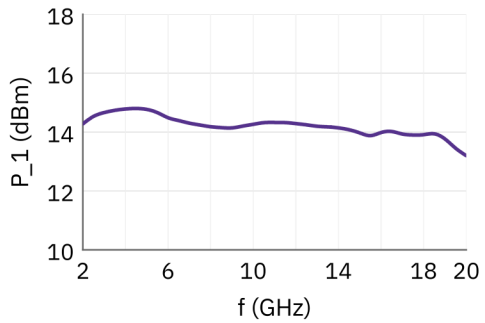
VSWR-out

Vd = +5 V; Vg = 0 V



P_1,out

Vd = +5 V; Vg = 0 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.