8000–12000 MHz GaAs MMIC Low-Noise Amplifier Die

LCI-LNA-8000-12000-NF0p7T-SG28T — 8000–12000 MHz GaAs MMIC Low-Noise Amplifier Die.

Noise figure: 0.7 dB (typical) / 0.75 dB (maximum); Small-signal gain: 26.5 dB (minimum) / 28 dB (typical); Output 1 dB compression power: 10 dBm (typical). Die dimensions: 1.4 × 0.9 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +5 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	-	8000	-	12000	MHz
Output 1 dB compression power	-	-	10	-	dBm
Small-signal gain	-	26.5	28	-	dB
Small-signal gain flatness	-	-	±1.3	-	dB
Noise figure	-	-	0.7	0.75	dB
Input VSWR	-	-	1.4	1.7	-
Output VSWR	-	-	1.3	1.4	-

DC bias and current

TA = +25 °C; Vd = +5 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating voltage	-	-	5	-	V
Quiescent current	-	0.024	0.028	0.032	A

DC bias and current

TA = +85 °C; Vd = +5 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Quiescent current	-	-	0.024	-	A

DC bias and current

TA = +125 °C; Vd = +5 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Quiescent current	-	-	0.027	-	A

DC bias and current

TA = -55 °C; Vd = +5 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Quiescent current	-	-	0.0265	-	A

Absolute limits

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum operating voltage	-	-	-	6	V
Maximum input power	-	-	-	18	dBm
Maximum channel temperature	-	-	-	175	°C

Environmental specifications

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Storage temperature	-	-65	-	150	°C

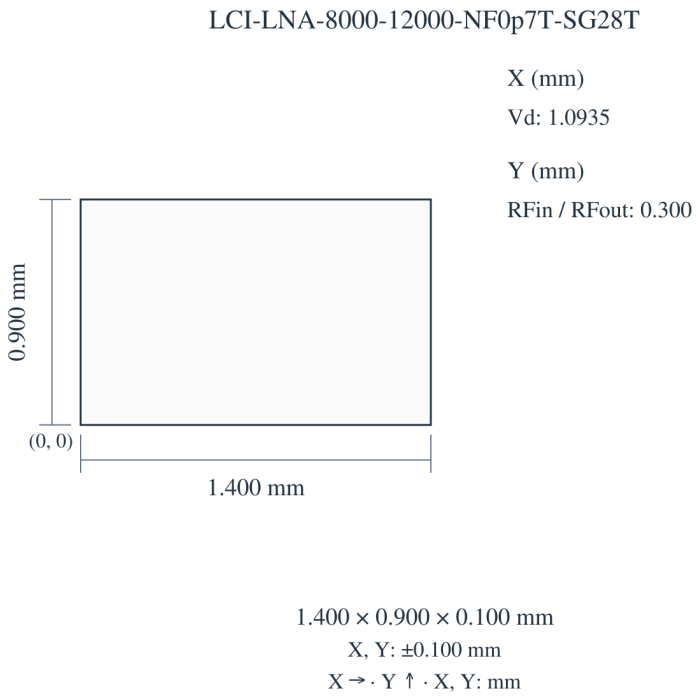
Bond-pad assignments

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

Die dimensions

Parameter	Value	Unit
Die dimensions	1.4 × 0.9 × 0.1	mm

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



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Die integration and bias sequencing

Input and output DC-blocking capacitors are integrated.

Pad connection notes

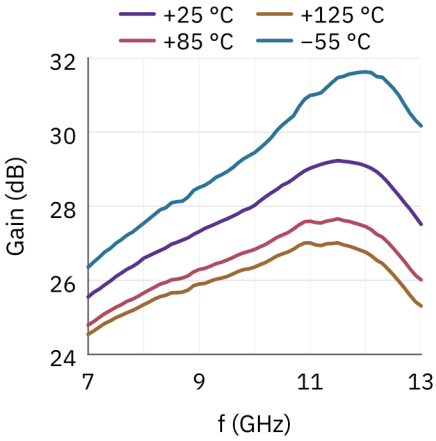
The listed GND pads are test ground pads.

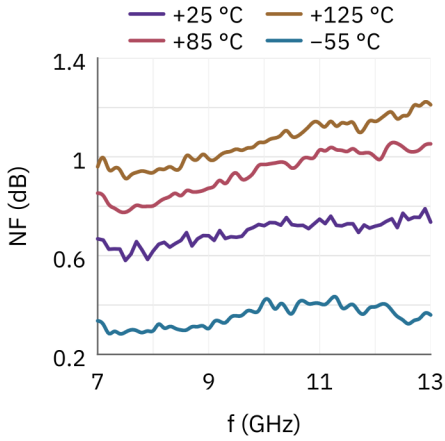
Performance curves

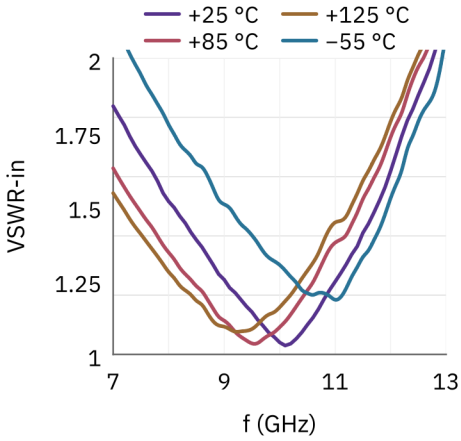
Each performance plot applies to its stated operating conditions.

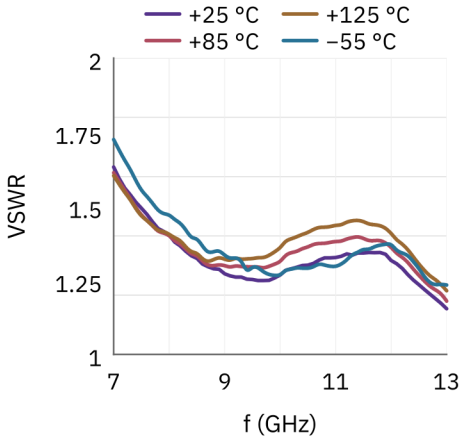
Series reference curves — P_1; Small-signal gain; Input matching; VSWR; Noise figure.

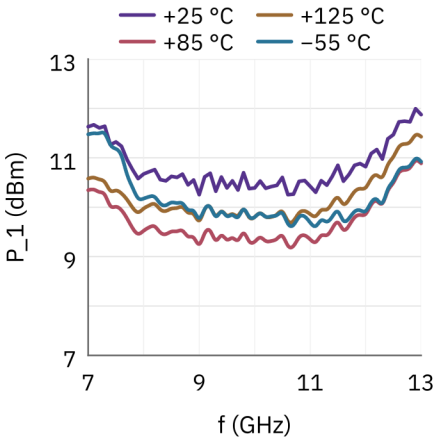
Figure notes: Vd=+5V; Pin=-30dBm. Readings are approximate. P_1 values are not specified as 1 dB compression points. Use the second VSWR plot for qualitative reference only. It does not identify a specific port. Read each trace with the conditions shown in its plot.











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.