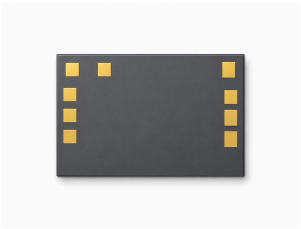
6000–12000 MHz GaAs MMIC Amplifier Die — P1dB 23 dBm (typical)

LCI-AMP-6000-12000-P1DB23T · 6000–12000 MHz · GaAs MMIC Amplifier Die.



The RF table specifies: P1dB 23 dBm (typical); Small-signal gain 23 dB (typical); NF 5 dB (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.

VEN accepts TTL control: high enables normal gain, low switches the amplifier off. The DC table specifies 110 mA typical at VEN = 5 V and 1 mA typical at VEN = 0 V.

Die dimensions: 1.45 × 0.94 × 0.1 mm.

RF characteristics

TA = +25 °C; Vd = +5 V

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Operating frequency	f	6000	-	12000	-	MHz
Output 1 dB compression power	P1dB	-	23	-	-	dBm
Saturated output power	Psat	-	-	-	23.8	dBm
Small-signal gain	Gain	-	23	-	-	dB
Small-signal gain flatness	ΔGain	-	±0.5	-	-	dB
Noise figure	NF	-	5	-	-	dB
Input VSWR	VSWR-in	-	1.8	-	-	-
Output VSWR	VSWR-out	-	1.6	-	-	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating voltage	-	-	5	-	V
Quiescent current (VEN = +5 V) [1]	-	-	0.11	-	A
Quiescent current (VEN = 0 V) [2]	-	-	0.001	-	A

[1] VEN = +5 V

[2] VEN = 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	-	-	-	20	dBm
Storage temperature	-	-65	-	150	°C
Maximum channel temperature	-	-	-	175	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	1.45 × 0.94 × 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 × 0.120
3	VEN	0.100 × 0.100
4	VDD1	0.100 × 0.100
5	VDD2	0.100 × 0.100
6–9	GND	0.100 × 0.100

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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. VEN accepts TTL control: high enables normal gain, low switches the amplifier off. The DC table specifies 110 mA typical at VEN = 5 V and 1 mA typical at VEN = 0 V.

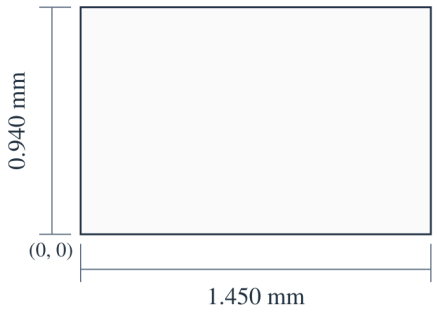
Pad connection notes

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-AMP-6000-12000-P1DB23T



X (mm)
VEN: 0.120
VDD1: 0.370
VDD2: 1.330

Y (mm)
RFin: 0.470
RFout: 0.450

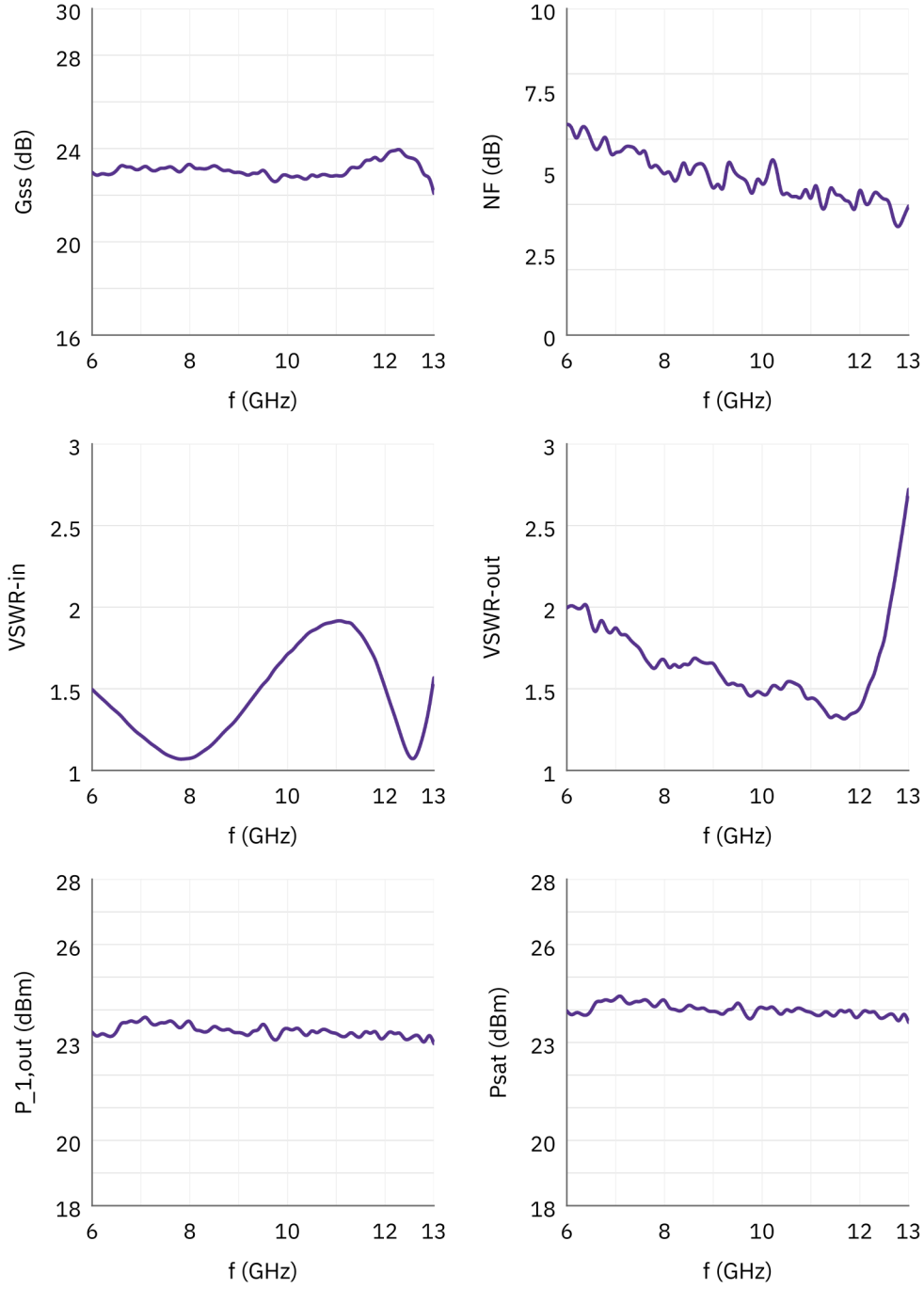
1.450 × 0.940 × 0.100 mm
X, Y: ±0.050 mm
X → · Y ↑ · X, Y: mm

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: VDD=+5V; Pin=-20dBm. Readings are approximate. VEN = 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.