8000–12000 MHz GaAs MMIC Amplifier Die — PSAT 28 dBm (typical)

LCI-AMP-8000-12000-PS28T · 8000–12000 MHz · GaAs MMIC Amplifier Die.



The RF table specifies: PSAT 28 dBm (typical); Small-signal gain 21 dB (typical). RF test conditions: TA = +25 °C; Vd = +5 V; Vg = -0.6 V.

Input and output DC-blocking capacitors are integrated.

Die dimensions: 1.8 × 1 × 0.1 mm.

RF characteristics

TA = +25 °C; Vd = +5 V; Vg = -0.6 V

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Operating frequency	f	8000	-	12000	-	MHz
Saturated output power	-	27.8	28	-	-	dBm
Power gain	-	-	19	-	-	dB
Power-added efficiency	-	-	40	-	-	%
Dynamic current	-	-	-	-	0.33	A
Small-signal gain	-	-	21	-	-	dB
Input VSWR	-	-	1.3	1.4	-	-
Output VSWR	-	-	1.6	1.7	-	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating voltage	Vd	-	5	-	V
Gate voltage	Vg	-	-0.6	-	V
Quiescent current	-	-	0.35	-	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	-	-	-	12	dBm
Storage temperature	-	-65	-	150	°C
Maximum gate bias	-	-	-	-0.5	V
Maximum channel temperature	-	-	-	175	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	1.8 × 1 × 0.1	mm
Plan-view outline tolerance	±100	µm

Bond-pad assignments

Pins	Symbol	mm
2	RFin	0.100 × 0.120
4, 5	Vd1, Vd2	0.140 × 0.100
7	RFout	0.100 × 0.120
9	Vg	0.140 × 0.100
1, 3, 6, 8, 10	GND	0.100 × 0.100

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Integration notes

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.

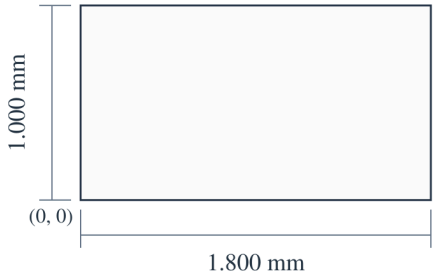
LCI-AMP-8000-12000-PS28T

X (mm)

Vg: 0.325

Y (mm)

RFin / RFout: 0.500



1.800 × 1.000 × 0.100 mm

X, Y: ±0.100 mm

X → · Y ↑ · X, Y: mm

Performance curves

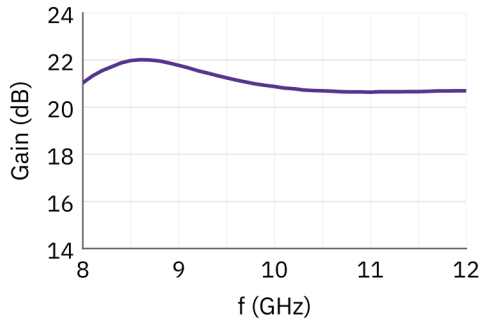
Each performance plot applies to its stated operating conditions.

Input matching; Power-added efficiency; Small-signal gain; Output matching; Saturated output power; Power gain; Gain @ PSAT.

Figure notes: Vd=+5V; Vg=-0.6V; Pin=9dBm. Readings are approximate.

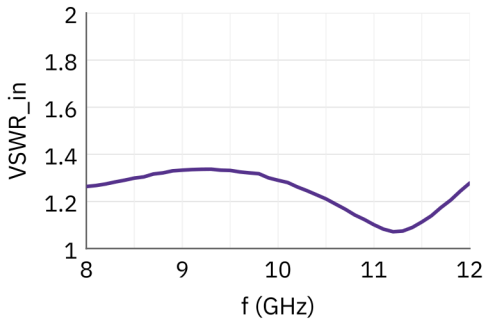
Gain

Vd = +5 V



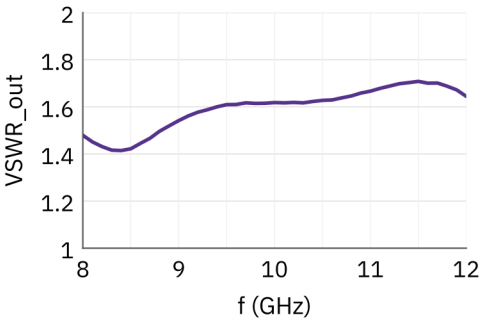
VSWR_in

Vd = +5 V



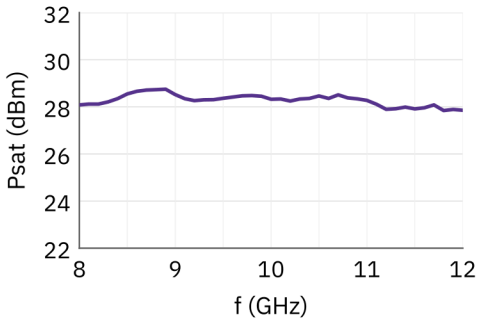
VSWR_out

Vd = +5 V



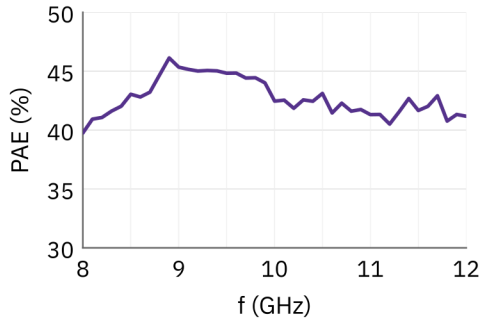
Psat

Vd = +5 V



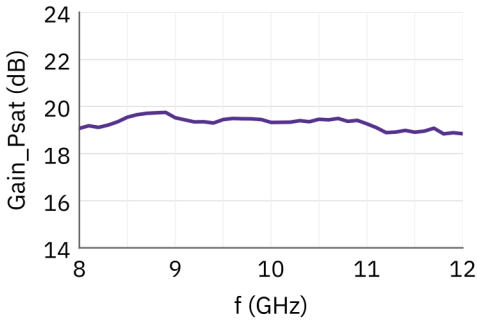
PAE

Vd = +5 V



Gain_Psat

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.