14000–18000 MHz GaN MMIC Power Amplifier Die

LCI-PA-14000-18000-PS42p5T is a GaN MMIC power amplifier supplied as bare die for 14000–18000 MHz. It supports CW and pulsed operation.

Saturated output power: 42 dBm (minimum) / 42.5 dBm (typical); Power gain: 22 dB (minimum) / 22.5 dB (typical); Power-added efficiency: 35 % (minimum). Die dimensions: 3 × 2 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.6 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	-	14000	-	18000	MHz
Saturated output power	-	42	42.5	-	dBm
Power gain	-	22	22.5	-	dB
Power-gain flatness	-	-	±0.5	-	dB
Power-added efficiency	-	35	-	-	%
Small-signal gain	-	-	34	-	dB
Small-signal gain flatness	-	-	-	±0.5	dB
Input VSWR	-	-	1.5	2	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Drain voltage	-	-	28	32	-	V
Gate voltage	-	-	-	-	-2.6	V
Quiescent drain current	-	0.6	0.8	1	-	A
Dynamic drain current	-	1.5	2	2.2	-	A
Dynamic gate current	-	-	-	3	-	mA

Absolute limits

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum drain-source voltage	-	-	-	32	V
Maximum input power [1]	-	-	-	25	dBm
Maximum channel temperature	-	-	-	225	°C

[1] CW

Environmental specifications

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

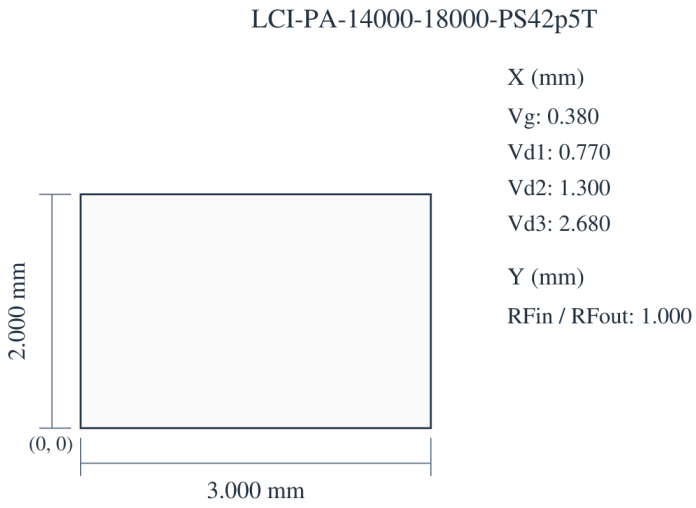
Bond-pad assignments

Pins	Symbol	mm
1	RFin	0.100 × 0.100
2, 9	Vg	0.100 × 0.100
3	Vd1	0.100 × 0.100
4, 8	Vd2	0.140 × 0.090
5, 7	Vd3	0.100 × 0.100
6	RFout	0.100 × 0.100

Die dimensions

Parameter	Value	Unit
Die dimensions	3 × 2 × 0.1	mm

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



3.000 × 2.000 × 0.100 mm
X, Y: ±0.050 mm
X → · Y ↑ · X, Y: mm

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Die integration and bias sequencing

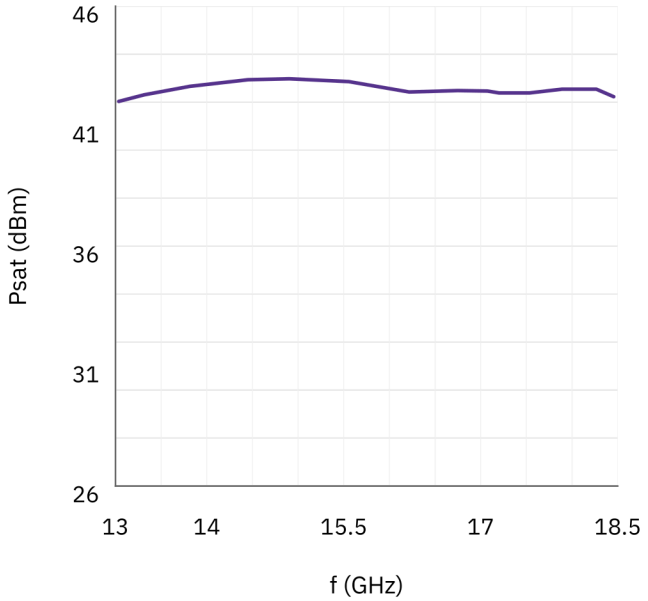
Apply the negative supply before the positive supply; remove the positive supply before the negative supply. Input and output DC-blocking capacitors are integrated. The RF input includes a DC short to ground.

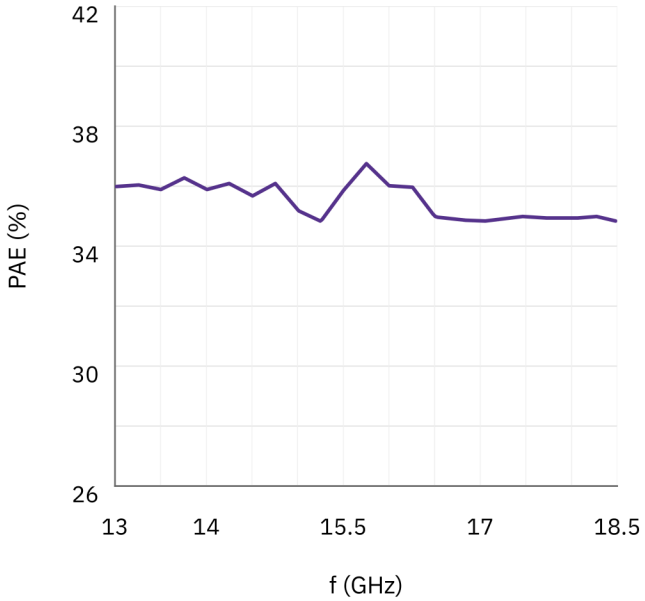
Performance curves

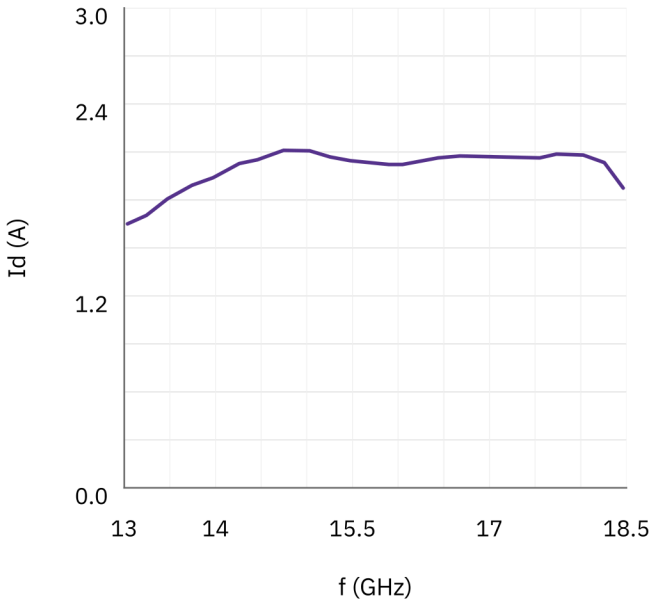
Each performance plot applies to its stated operating conditions.

Output power; Power-added efficiency; Drain current.

Figure notes: TA = +25°C; Vd=+28V; Vg=-2.6V. Pin = 20 dBm. Readings are approximate.







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.