12000–15000 MHz GaN MMIC Power Amplifier Die

LCI-PA-12000-15000-PS47p5T is a GaN MMIC power amplifier supplied as bare die for 12000–15000 MHz. It supports pulsed operation.

pulsed: PSAT: 47 dBm (minimum) / 47.5 dBm (typical); Power gain: 22 dB (minimum) / 22.5 dB (typical); PAE: 30 % (minimum) / 34 % (typical). Die dimensions: 4.1 × 5 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.8 V; pulsed

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	12000	-	15000	MHz
Saturated output power	Psat	47	47.5	-	dBm
Power gain	Gp	22	22.5	-	dB
Power-gain flatness	ΔGp	-	±0.3	-	dB
Power-added efficiency	PAE	30	34	-	%
Small-signal gain	S21	-	28	-	dB
Input VSWR	VSWR(in)	-	1.8	-	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	24	28	30	V
Gate voltage	Vg	-3	-2.8	-2.6	V
Quiescent drain current	Id	-	2	-	A
Dynamic drain current	Idd	-	6.5	-	A
Dynamic gate current	Igg	-	-	2	mA

Absolute limits

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum drain-source voltage	Vd	-	-	30	V
Minimum gate bias	Vg	-5	-	-	V
Maximum input power	Pin	-	-	28	dBm
Storage temperature	TSTG	-65	-	150	°C
Maximum channel temperature	Top	-	-	225	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	4.1 × 5 × 0.1	mm

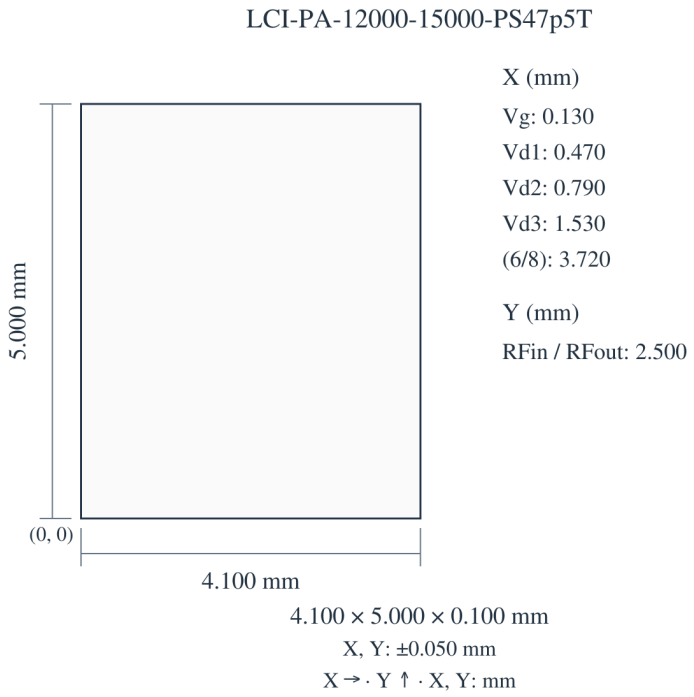
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Die integration and bias sequencing

Integrated DC blocking: RFin / RFout. DC path to ground: RFin → GND. Separate characterization: Vd = +28 V; Vg = -2.8 V; τ = 100 µs; D = 10%; Pin = 25 dBm. Apply gate bias before drain bias. Remove drain bias before gate bias. Two-sided bias feed is recommended.

Mechanical Outline

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

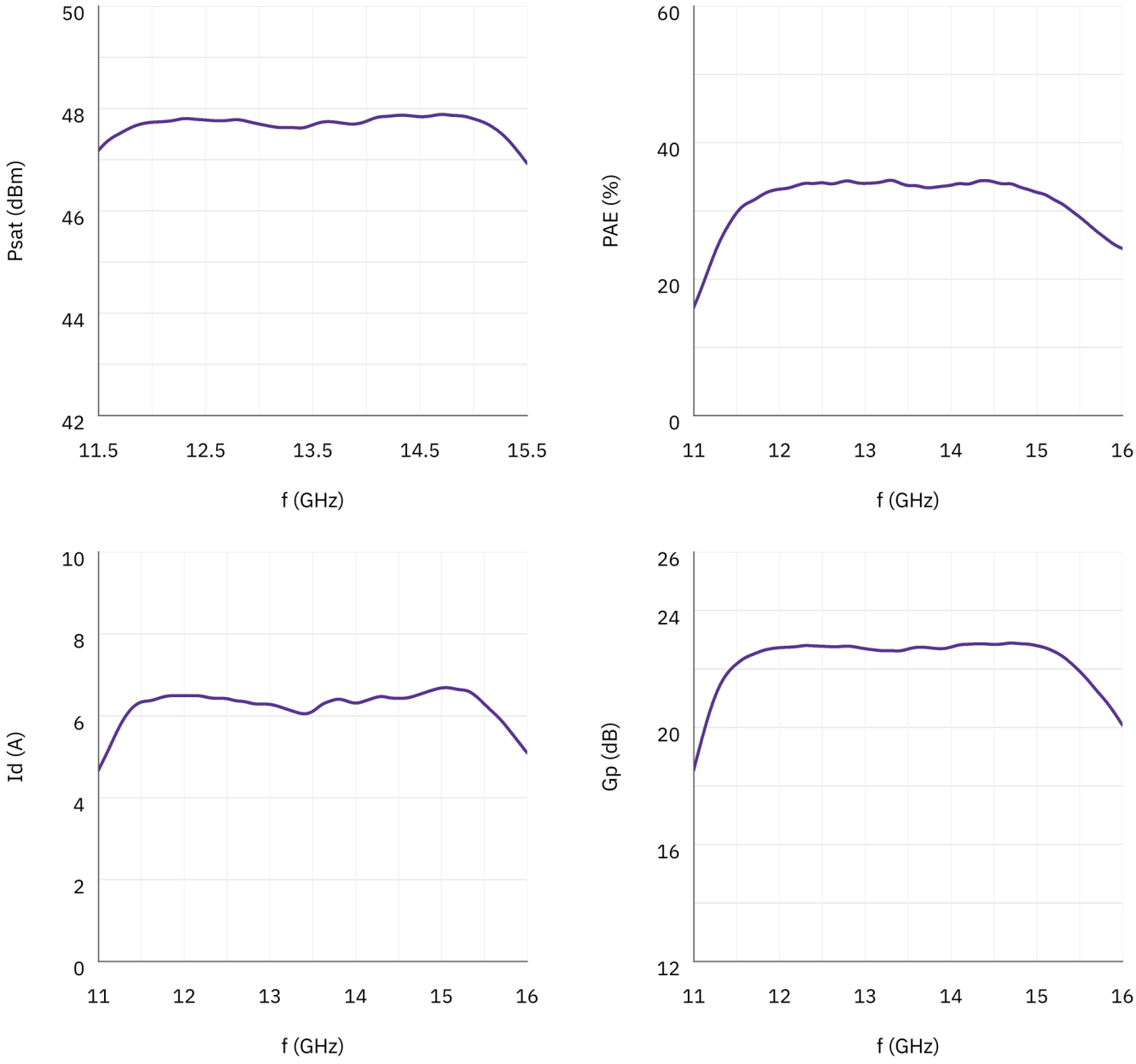


Performance curves

Each performance plot applies to its stated operating conditions.

Pulsed — Saturated output power; Power-added efficiency; Dynamic drain current; Power gain.

Figure notes: Vd=+28V; Vg=-2.8V. Pin = 25 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.