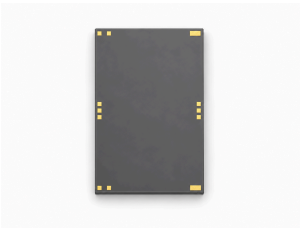
4000–8000 MHz GaN MMIC Power Amplifier Die

LCI-PA-4000-8000-PS47p5T is a GaN MMIC power amplifier supplied as bare die for 4000–8000 MHz. It supports CW and pulsed operation.

The RF table specifies: PSAT 47.5 dBm (typical); Power gain 17.5 dB (typical); PAE 40% (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.6 V.

Die dimensions: 3.5 × 5.5 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.6 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	4000	-	8000	MHz
Saturated output power	Psat	47	47.5	-	dBm
Power gain	Gp	17	17.5	-	dB
Power-gain flatness	ΔGp	-	-	±0.8	dB
Power-added efficiency	PAE	-	40	-	%
Small-signal gain	S21	28	29	30	dB
Small-signal gain flatness	ΔS21	-	-	±1	dB
Input VSWR	VSWR(in)	-	1.6	2.5	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	-	28	32	V
Gate voltage	Vg	-3	-2.6	-2.4	V
Quiescent drain current	Id	-	1.6	-	A
Dynamic drain current	Idd	-	5	6	A
Dynamic gate current	Igg	-	3	20	mA

Absolute limits

Absolute limits; these are not normal operating targets.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum drain-source voltage	Vd	-	-	32	V
Minimum gate bias	Vg	-5	-	-	V
Maximum input power	Pin	-	-	32	dBm
Storage temperature	TSTG	-65	-	150	°C
Maximum channel temperature	Top	-	-	225	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	3.5 × 5.5 × 0.1	mm
Plan-view outline tolerance	±100 (Plan-view outline only; the source does not specify thickness tolerance.)	µm

Current publication record · 1.6 · 2026-11-12. Product description or editorial content updated. Replaces revision 1.5.

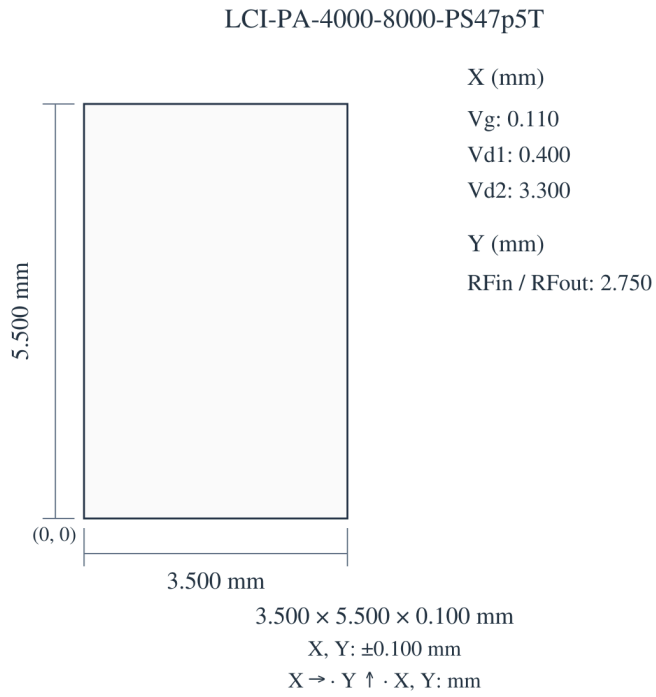
Die integration and bias sequencing

Integrated DC blocking: RFin / RFout. DC path to ground: RFin → GND. Separate characterization: Vd = +24 V; Vg = -2.6 V; Pin = 30 dBm; CW. Apply gate bias before drain bias. Remove drain bias before gate bias. Outline and dimensioned coordinates in mm. Use this drawing as a dimensional reference. Fabrication and wire bonding require complete drawings.

Bond-pad dimensions

RFin: 100 × 100 µm. Vg: 100 × 100 µm. Vd1: 120 × 100 µm. Vd2: 250 × 120 µm. RFout: 100 × 100 µm.

Mechanical Outline

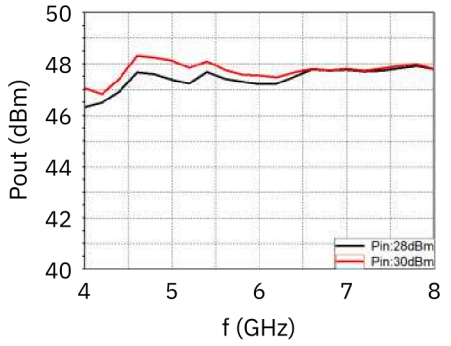


Performance curves

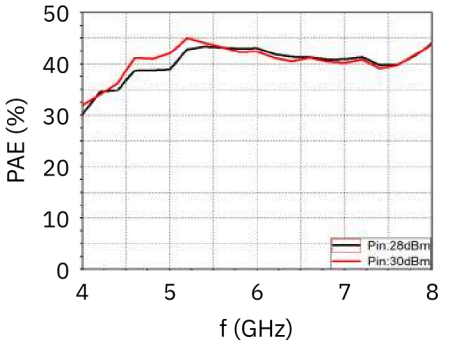
Read each figure with its stated operating conditions.

Pulsed — Saturated output power; Power-added efficiency; Dynamic drain current; Input matching; Gain.

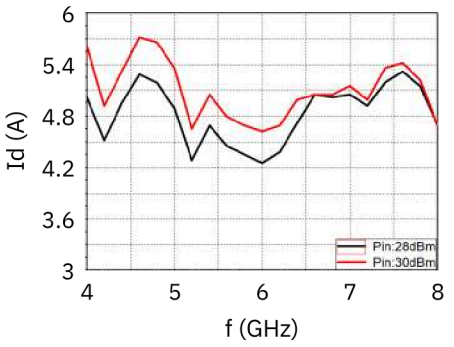
Figure notes: Vd=+28V; Vg=-2.6V. τ = 100 µs; D = 10%; Pin = 28 / 30 dBm. Conditions apply to the indicated plots and their own legends.



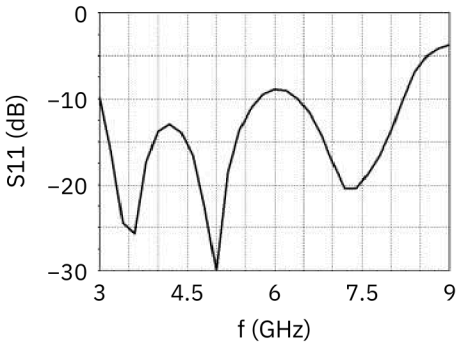
Pin = 28 dBm Pin = 30 dBm

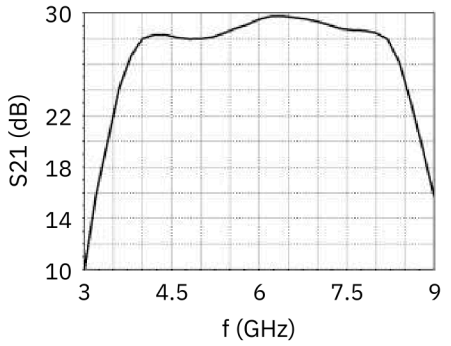


Pin = 28 dBm Pin = 30 dBm



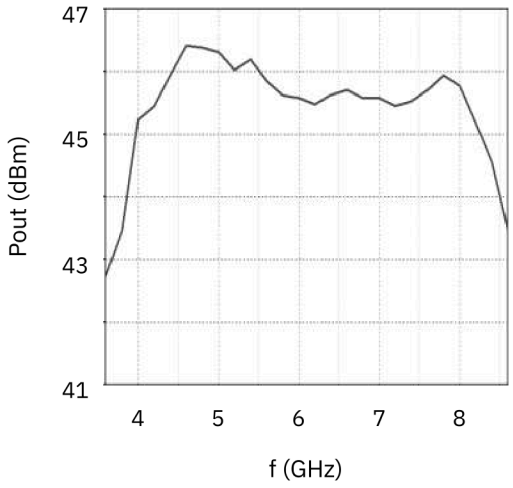
Pin = 28 dBm Pin = 30 dBm

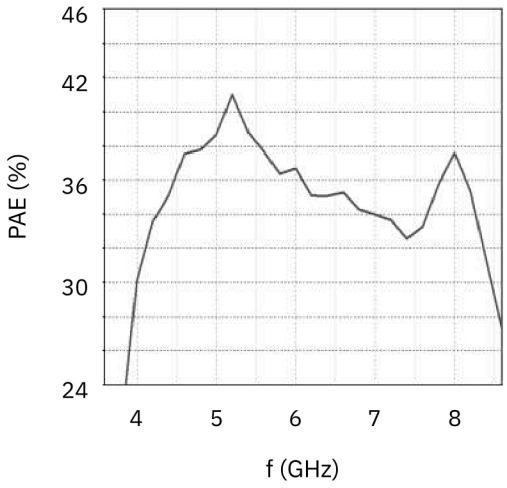


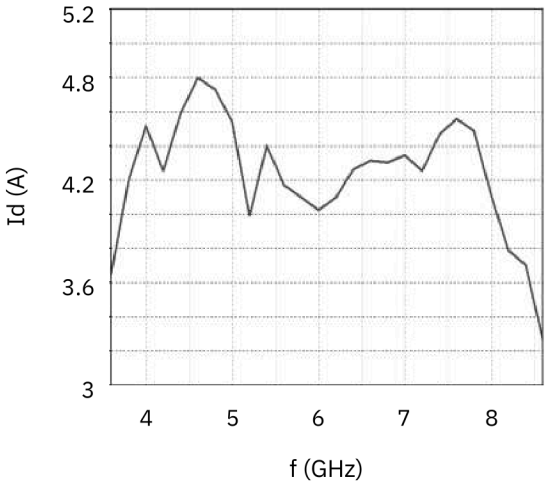


Continuous wave (CW) — Saturated output power; Power-added efficiency; Dynamic drain current.

Figure notes: Vd=+24V; Vg=-2.6V; Pin=30dBm.







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.