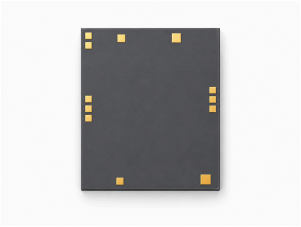
4200–7000 MHz GaN MMIC Power Amplifier Die



LCI-PA-4200-7000-PS42T is a GaN MMIC power amplifier supplied as bare die for 4200–7000 MHz. It supports CW and pulsed operation.

The RF table specifies: PSAT 42 dBm (typical); Power gain 22 dB (typical); PAE 45% (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.8 V; Pin = 20 dBm; τ = 100 µs; D = 10%.

Die dimensions: 2.4 × 2.821 mm. Thickness is not specified.

Either connected gate pad may be used.

RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.8 V; Pin = 20 dBm; τ = 100 µs; D = 10%

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	4200	-	7000	MHz
Saturated output power	Psat	41.8	42	-	dBm
Power gain	Gp	21.8	22	-	dB
Power-gain flatness	ΔGp	-	-	±0.5	dB
Power-added efficiency	PAE	39	45	-	%
Small-signal gain	S21	31	32	33	dB
Small-signal gain flatness	ΔS21	-	-	±2	dB
Input VSWR	VSWR(in)	-	1.8	2	-

DC bias and current

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Drain voltage	Vd	-	28	-	-	V
Gate voltage	Vg	-	-2.8	-	-	V
Quiescent drain current	Id	-	-	-	0.2 (Vd = +28 V)	A

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	-	-	30	dBm
Storage temperature	TSTG	-65	-	150	°C
Maximum channel temperature	Top	-	-	200	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	2.4 × 2.821	mm
Plan-view outline tolerance	±100 (Plan-view outline only; the source does not specify thickness tolerance.)	µm

Current publication record · 1.7 · 2026-11-12. Product description or editorial content updated. Replaces revision 1.6.

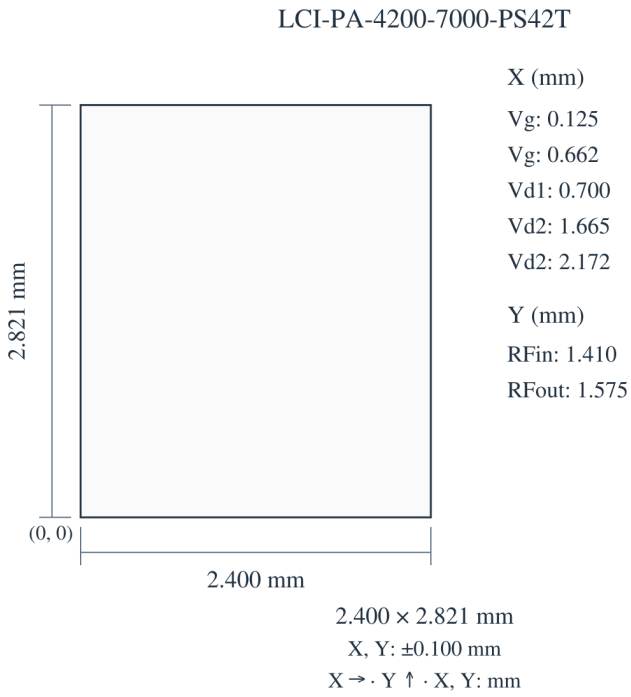
Die integration and bias sequencing

Integrated DC blocking: RFin / RFout. DC path to ground: RFin / RFout → GND. Internally connected gate pads: Vg ↔ Vg. Apply gate bias before drain bias. Remove drain bias before gate bias. Either connected gate pad may be used. 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 × 120 µm. Vd2: 150 × 150 µm. RFout: 120 × 120 µm.

Mechanical Outline

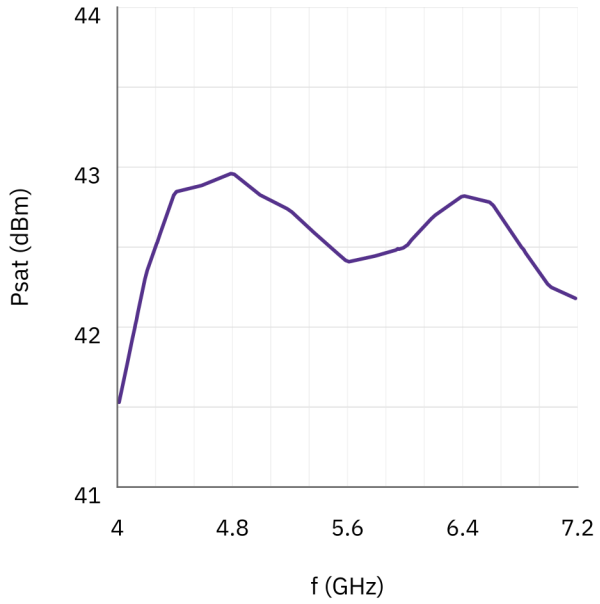


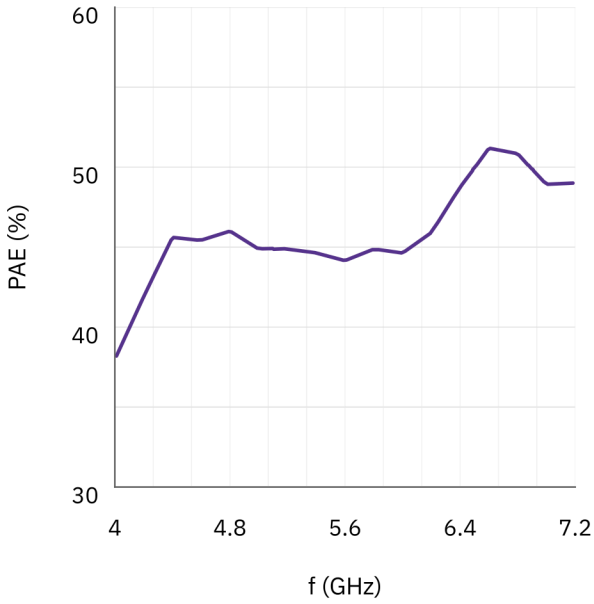
Performance curves

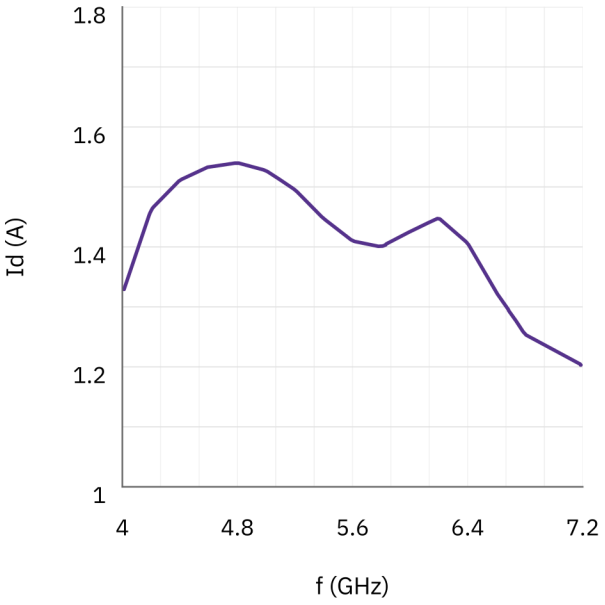
Read each figure with its stated operating conditions.

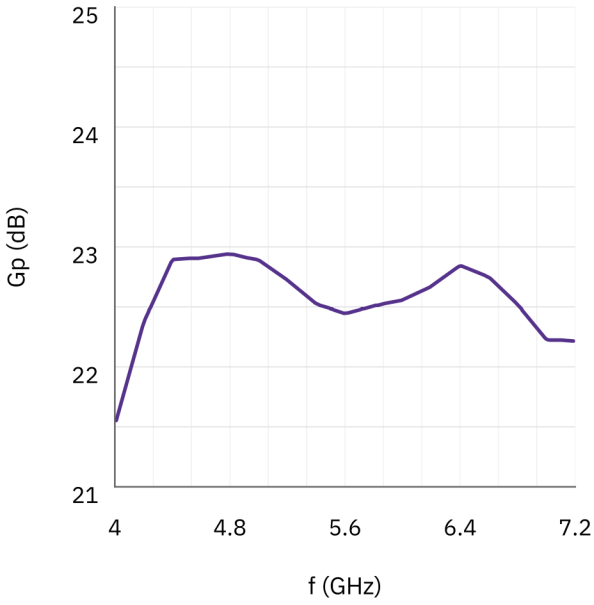
Pulsed — Saturated output power; Power-added efficiency; Power gain; Dynamic drain current.

Figure notes: TA=+25°C; Vd=+28V; Vg=-2.8V; Pin=20dBm. Readings are approximate. Pulse width = 100 µs; duty cycle = 10%.



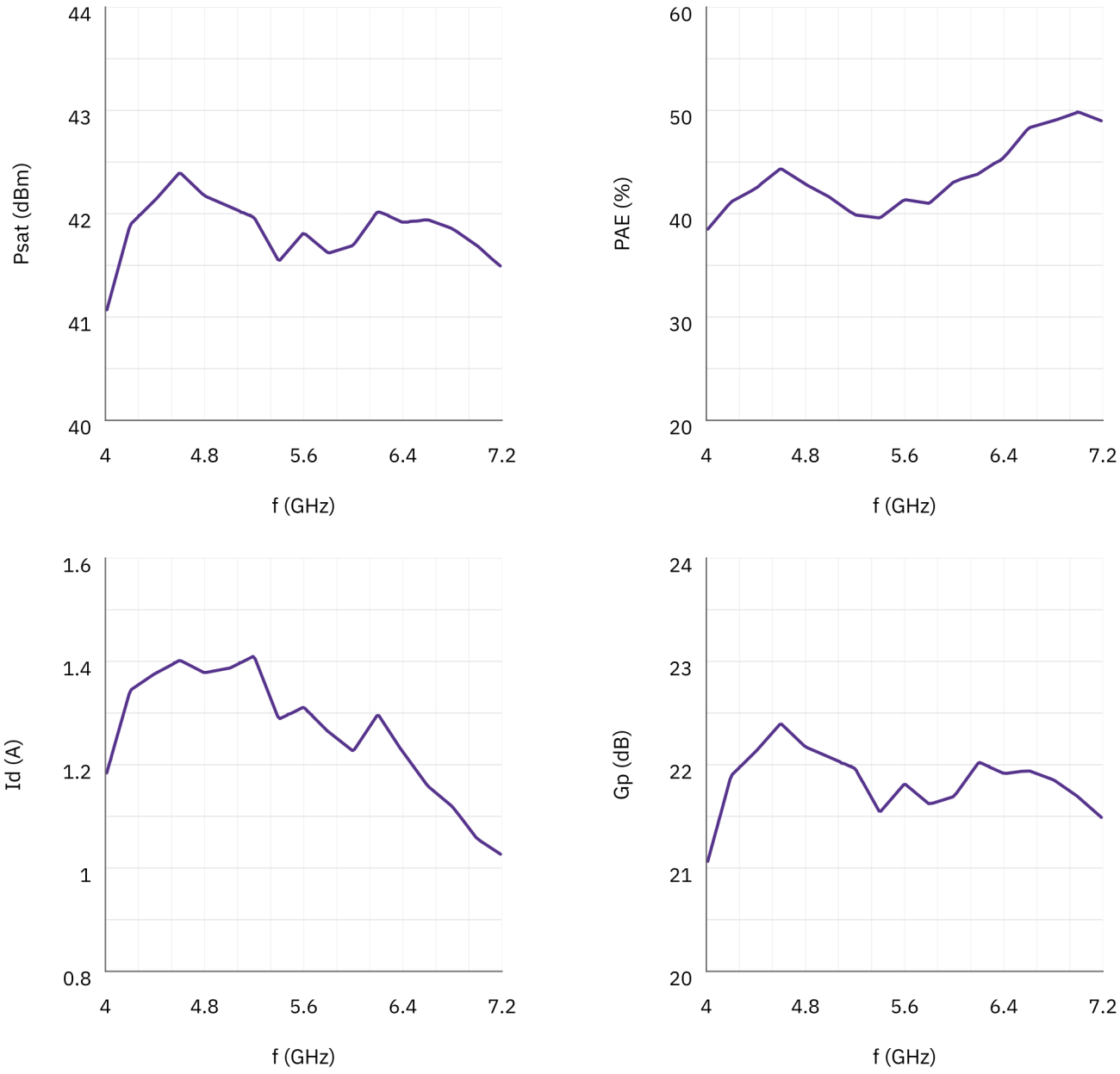






Continuous wave (CW) — Saturated output power; Power-added efficiency; Power gain; Dynamic drain current.

Figure notes: TA=+25°C; Vd=+28V; Vg=-2.8V; Pin=20dBm. 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.