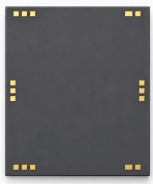
4000–8000 MHz GaN MMIC Power Amplifier Die

LCI-PA-4000-8000-PS43p5T 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 43.5 dBm (typical); Power gain 20.5 dB (typical); PAE 40% (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.2 V.

Die dimensions: 2.73 × 3.2 × 0.08 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.2 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	4000	-	8000	MHz
Saturated output power	Psat	43	43.5	-	dBm
Power gain	Gp	20	20.5	-	dB
Power-gain flatness	ΔGp	-	-	±0.5	dB
Power-added efficiency	PAE	-	40	-	%

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	-	28	-	V
Gate voltage	Vg	-3	-2.2	-1.8	V
Quiescent drain current	Id	-	1.2	-	A
Dynamic drain current	Idd	-	1.8	2.3	A
Dynamic gate current	Igg	-	1	5	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 [1]	Pin	-	-	27	dBm
Storage temperature	TSTG	-65	-	150	°C
Maximum channel temperature	Top	-	-	225	°C

[1] CW

Die dimensions

Parameter	Value	Unit
Die dimensions	2.73 × 3.2 × 0.08	mm
Plan-view outline tolerance	±50 (Plan-view outline only; the source does not specify thickness tolerance.)	µm

Current publication record · 1.9 · 2026-11-12. Product description or editorial content updated. Replaces revision 1.8.

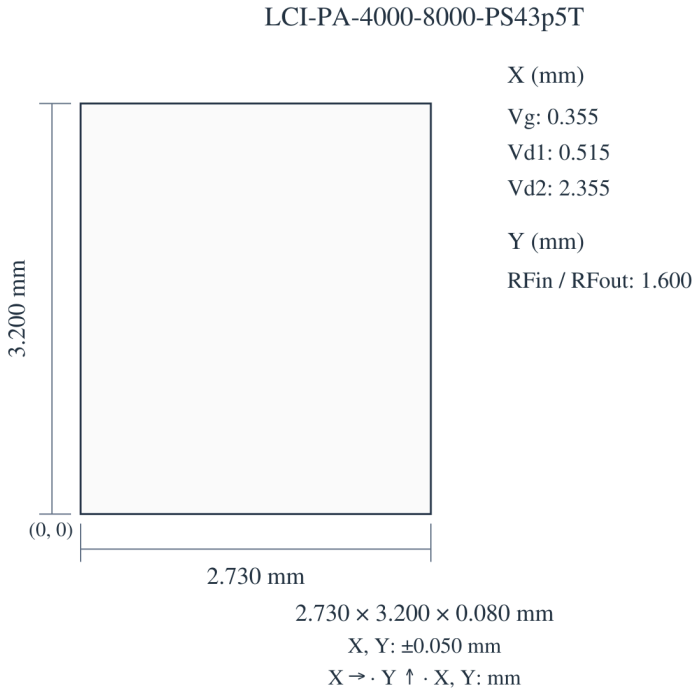
Die integration and bias sequencing

Integrated DC blocking: RFin / RFout. DC path to ground: RFin → GND. 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: 90 × 90 µm. Vg: 90 × 90 µm. Vd1: 90 × 90 µm. Vd2: 140 × 90 µm. RFout: 90 × 90 µm.

Mechanical Outline



Performance curves

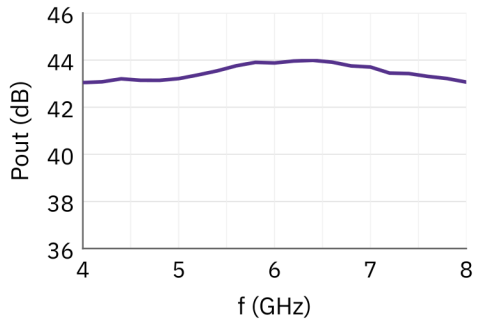
Read each figure with its stated operating conditions.

Small-signal gain; Saturated output power; Power-added efficiency; Power gain; Dynamic drain current; Input matching.

Figure notes: Vd=+28V; Vg=-2.2V. Pout/PAE/ID/Gp: Pin = 23 dBm; S21/S11: Pin = -20 dBm. The Pout axis is labeled dB. The absolute power unit for this plot is unspecified. Input matching is plotted as dB(S11). Readings are approximate.

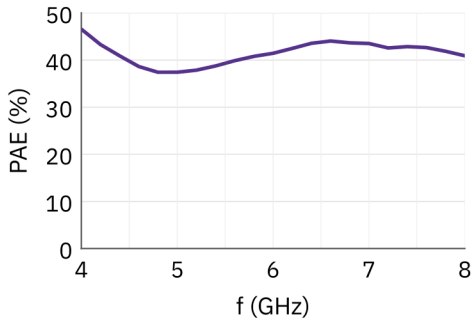
Pout

Pin = 23 dBm



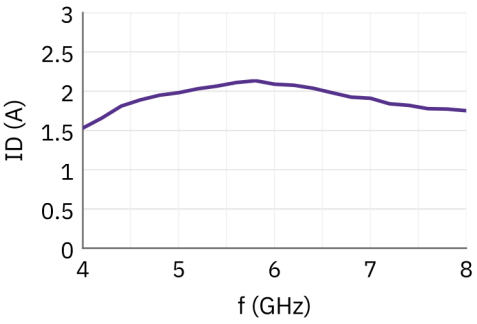
PAE

Pin = 23 dBm



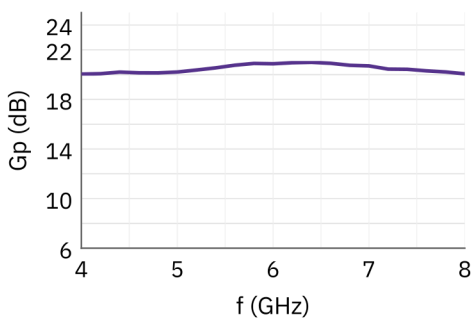
ID

Pin = 23 dBm



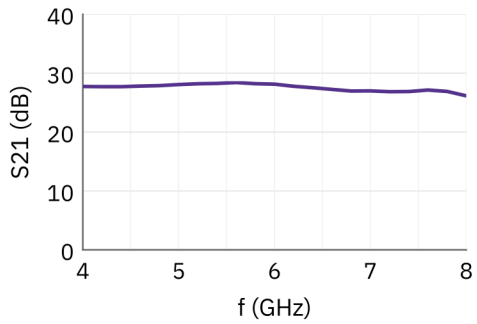
Gp

Pin = 23 dBm



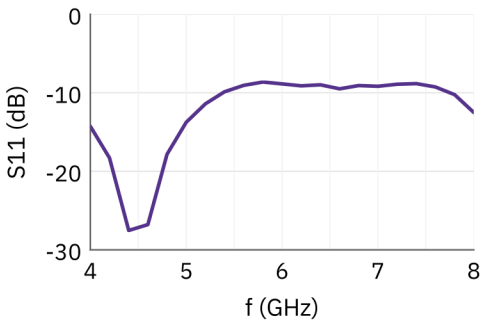
S21

Pin = −20 dBm



S11

Pin = −20 dBm



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.