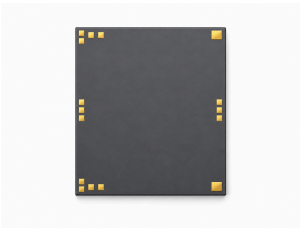
2000–6000 MHz GaN MMIC Power Amplifier Die

LCI-PA-2000-6000-PS45p8T is a GaN MMIC power amplifier supplied as bare die for 2000–6000 MHz. It supports CW and pulsed operation.



The RF table specifies: Saturated output power: 45.8 dBm (typical); Power gain: 18.8 dB (typical); Power-added efficiency: 42 % (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.8 V; Pin = 27 dBm; τ = 100 µs; D = 10%. Die dimensions: 3.17 × 3.58 mm.

RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.8 V; Pin = 27 dBm; τ = 100 µs; D = 10%

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	2000	-	6000	MHz
Saturated output power	Psat	44.8	45.8	-	dBm
Power gain	Gp	17.8	18.8	-	dB
Power-gain flatness	ΔGp	-	-	1.8	dB
Power-added efficiency	PAE	36	42	-	%
Small-signal gain	S21	25	27	29	dB
Small-signal gain flatness	ΔS21	-	-	±2	dB
Input VSWR	VSWR(in)	-	2	2.5	-

DC bias and current

Vd = +28 V

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Drain voltage	Vd	-	28	-	-	V
Gate voltage	Vg	-	-2.8	-	-	V
Quiescent drain current	Id	-	-	-	0.9	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	-	-	29	dBm
Maximum channel temperature	Top	-	-	200	°C
Storage temperature	TSTG	-65	-	150	°C

Die dimensions

Parameter	Value	Unit
Plan-view die dimensions	3.17 × 3.58 (Thickness is not specified.)	mm
Plan-view outline tolerance	±100 (Plan-view outline only; the source does not specify thickness tolerance.)	µm

Current publication record · 1.8 · 2026-11-12. Product description or editorial content updated. Replaces revision 1.7.

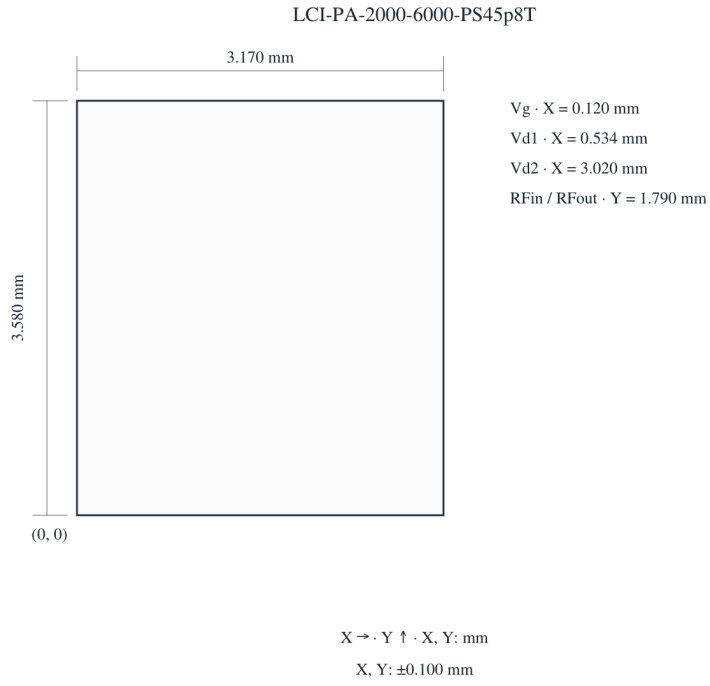
Die integration and bias sequencing

Apply gate bias before drain bias at power-up. At power-down, remove drain bias before gate bias. Use clean handling, ESD protection and a carrier with thermal expansion compatible with the SiC die. 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: 100 × 120 µm; Vd2: 160 × 130 µm; RFout: 110 × 120 µm.

Mechanical Outline

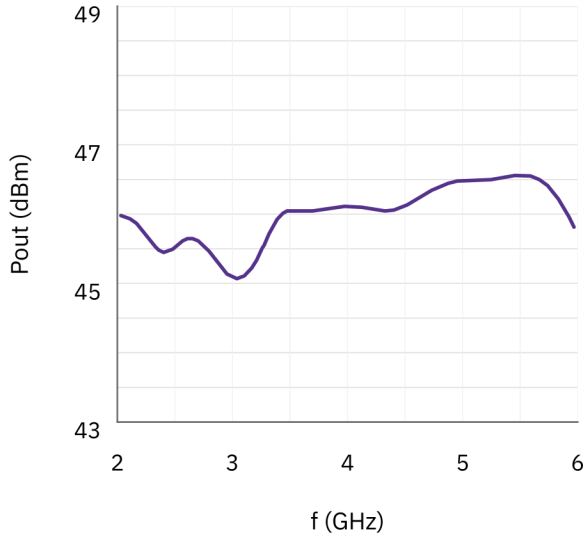


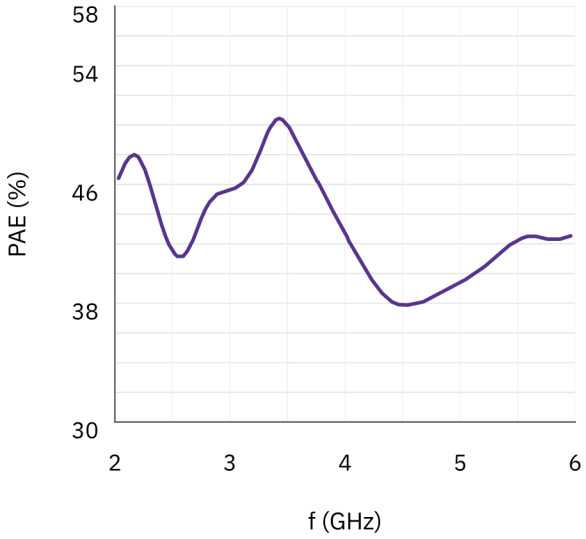
Performance curves

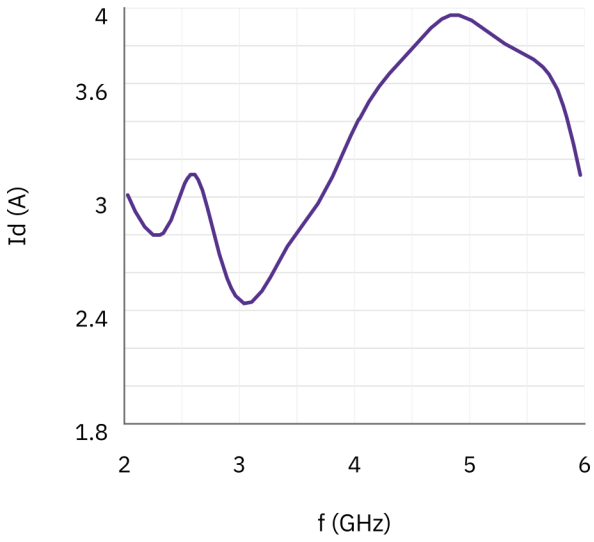
Read each figure with its stated operating conditions.

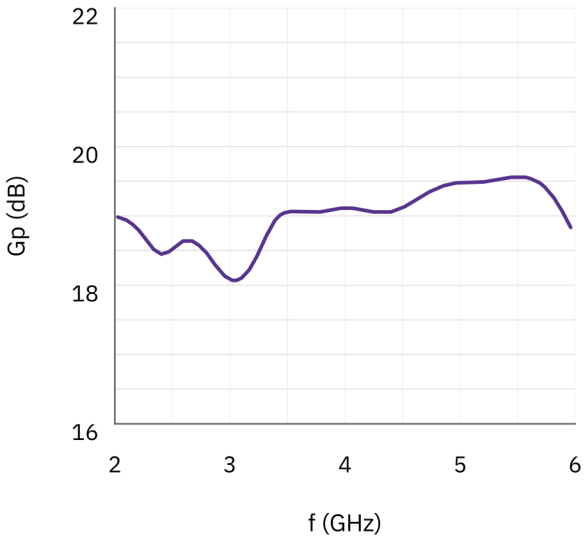
Pulsed — Saturated output power; Dynamic drain current; Power-added efficiency; Power gain.

Figure notes: TA=+25°C; Vd=+28V; Vg=-2.8V; Pin=27dBm. Readings are approximate. Pulse width = 100 µs; duty cycle = 10%.



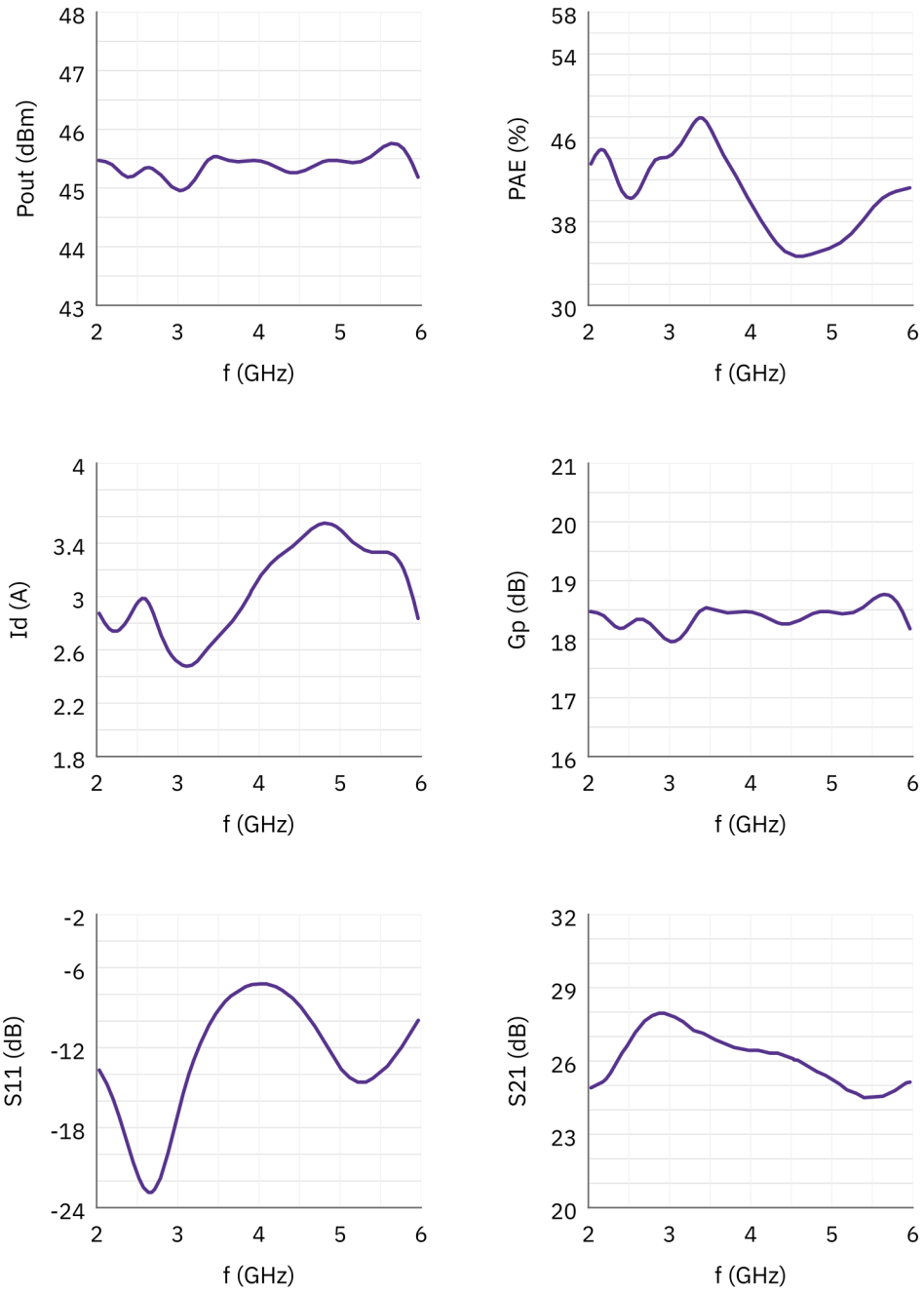






Continuous wave (CW) — Saturated output power; Dynamic drain current; Input matching; Power-added efficiency; Power gain; Small-signal gain.

Figure notes: TA=+25°C; Vd=+28V; Vg=-2.8V; Pin=27dBm. Readings are approximate. No separate input-power condition is stated for the input-matching or small-signal-gain plots.



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.