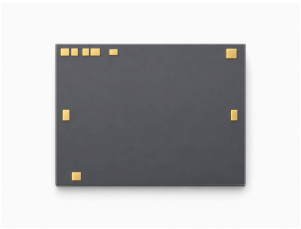
2000–6000 MHz GaN MMIC Power Amplifier Die

LCI-PA-2000-6000-PS40p5T 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: 40.5 dBm (typical); Power gain: 22.5 dB (typical); Power-added efficiency: 38 % (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.4 V; Pin = 18 dBm; CW. Die dimensions: 2.8 × 2.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.4 V; Pin = 18 dBm; CW

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	2000	-	6000	MHz
Saturated output power	Psat	39.5	40.5	-	dBm
Power gain	Gp	21.5	22.5	-	dB
Power-gain flatness	ΔGp	-	-	±0.8	dB
Power-added efficiency	PAE	34	38	-	%
Small-signal gain	S21	27	28	30	dB
Small-signal gain flatness	ΔS21	-	-	±1.5	dB
Input VSWR	VSWR(in)	-	1.8	2	-

DC bias and current

Vd = +28 V

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Drain voltage	Vd	-	28	-	-	V
Gate voltage	Vg	-	-2.4	-	-	V
Quiescent drain current	Id	-	-	-	0.7	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	-	-	20	dBm
Maximum channel temperature	Top	-	-	200	°C
Storage temperature	TSTG	-65	-	150	°C

Die dimensions

Parameter	Value	Unit
Plan-view die dimensions	2.8 × 2.1 (Thickness is not specified.)	mm
Plan-view outline tolerance	±100 (Plan-view outline only; the source does not specify thickness tolerance.)	µm

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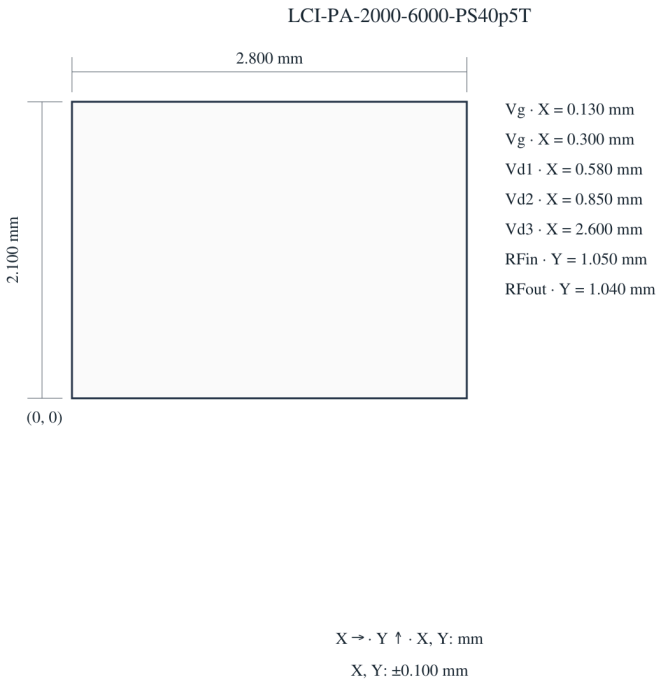
Die integration and bias sequencing

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 × 150 µm; Vg: 130 × 100 µm; Vd1: 140 × 100 µm; Vd2: 120 × 80 µm; Vd3: 150 × 130 µm; RFout: 100 × 150 µm.

Mechanical Outline

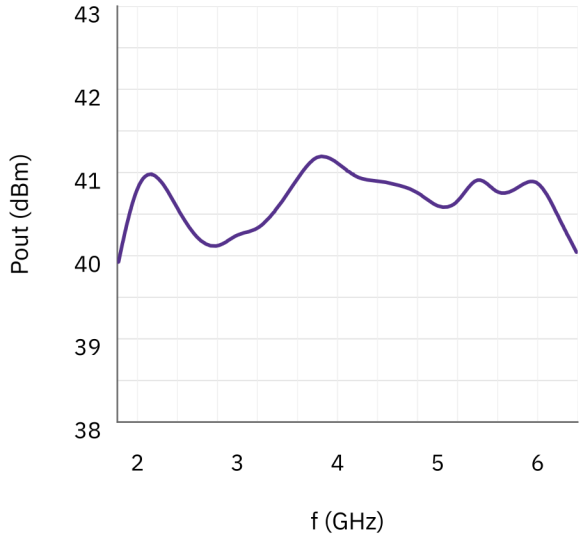


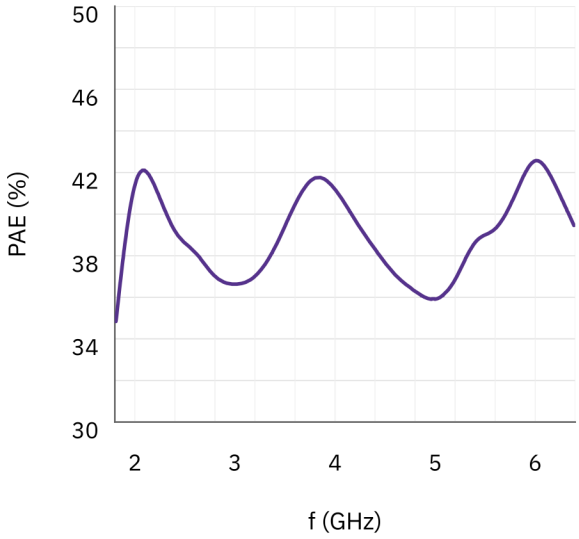
Performance curves

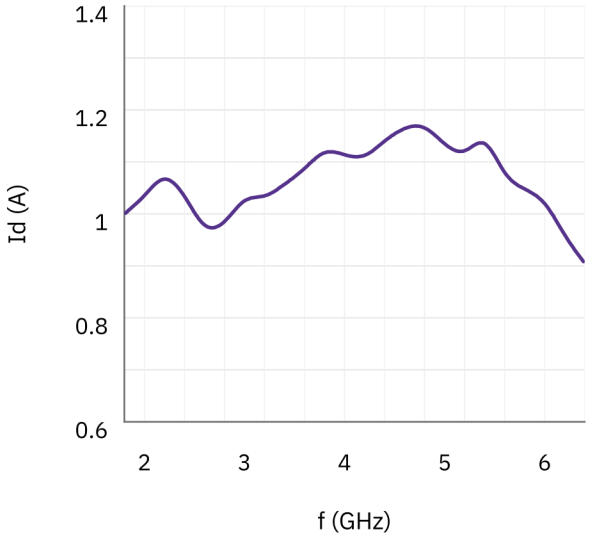
Read each figure with its stated operating conditions.

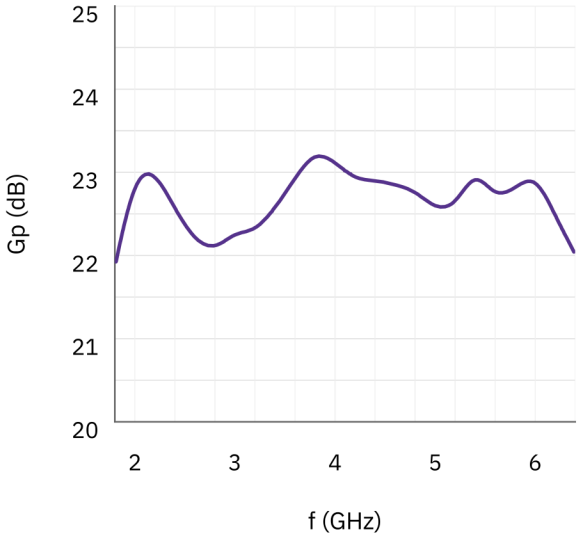
Continuous wave (CW) — Saturated output power; Dynamic drain current; Power-added efficiency; Power gain.

Figure notes: TA=+25°C; Vd=+28V; Vg=-2.4V; Pin=18dBm. 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.