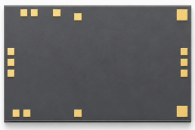
6000–18000 MHz GaN MMIC Power Amplifier Die

LCI-PA-6000-18000-PS40T is a GaN MMIC power amplifier supplied as bare die for 6000–18000 MHz. It supports CW and pulsed operation.

The RF table specifies: Saturated output power: 40 dBm (typical); Power gain: 19 dB (typical); Power-added efficiency: 23 % (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.2 V; Pin = 21 dBm; τ = 100 µs; D = 10%. Die dimensions: 3 × 1.8 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.2 V; Pin = 21 dBm; τ = 100 µs; D = 10%

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	6000	-	18000	MHz
Saturated output power	Psat	39	40	-	dBm
Power gain	Gp	18	19	-	dB
Power-gain flatness	ΔGp	-	-	±0.8	dB
Power-added efficiency	PAE	18	23	-	%
Small-signal gain	S21	27	28	31	dB
Small-signal gain flatness	ΔS21	-	-	±2	dB
Input VSWR	VSWR(in)	-	1.8	2	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	-	28	32	V
Gate voltage	Vg	-3	-2.4	-2.2	V
Quiescent drain current	Id	-	1	1.2	A
Dynamic drain current	Idd	-	1.6	1.7	A
Dynamic gate current	Igg	-	0.1	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
Maximum input power	Pin	-	-	24	dBm
Maximum channel temperature	Top	-	-	200	°C
Maximum gate bias	Vg	-	-	-2.2	V
Storage temperature	TSTG	-65	-	150	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	3 × 1.8 × 0.1	mm
Plan-view outline tolerance	±50 (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

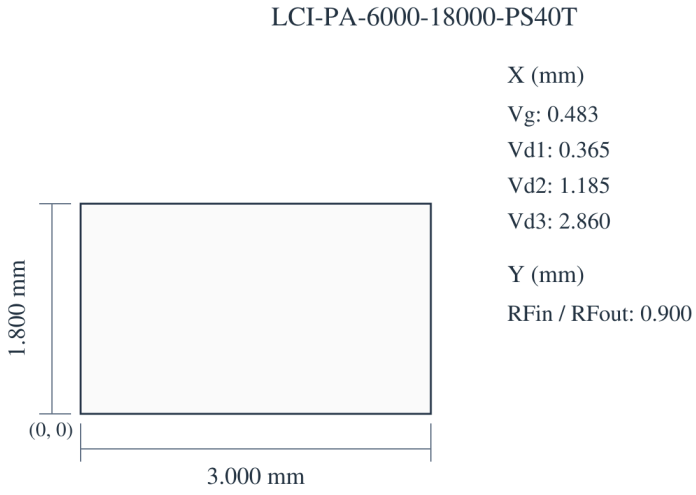
Apply gate bias before drain bias at power-up. At power-down, remove drain bias before gate bias. Use clean handling, ESD protection and a carrier with thermal expansion compatible with the SiC die.

Bond-pad dimensions

Symbol: RFin; Dimensions (µm): 100 × 100. Symbol: Vg; Dimensions (µm): 120 × 100. Symbol: Vd1; Dimensions (µm): 100 × 100. Symbol: Vd2; Dimensions (µm): 140 × 100. Symbol: Vd3; Dimensions (µm): 160 × 150. Symbol: RFout; Dimensions (µm): 100 × 120.

Mechanical Outline

Outline and dimensioned coordinates in mm. Use this drawing as a dimensional reference. Fabrication and wire bonding require complete drawings.



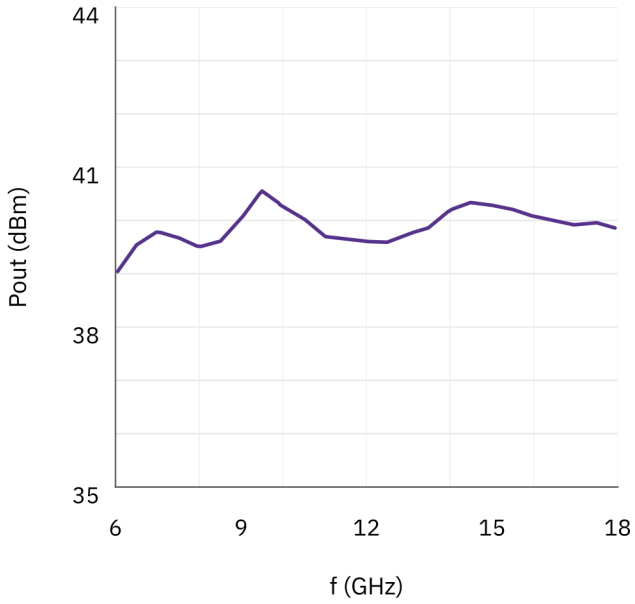
3.000 × 1.800 × 0.100 mm
X, Y: ±0.050 mm
X → · Y ↑ · X, Y: mm

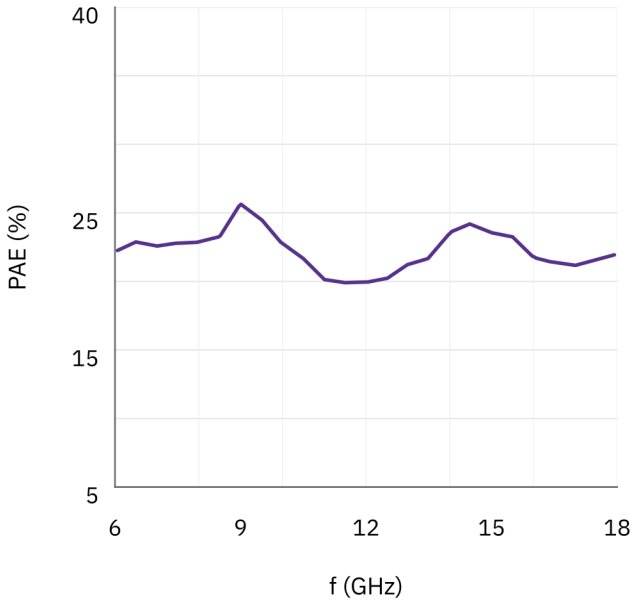
Performance curves

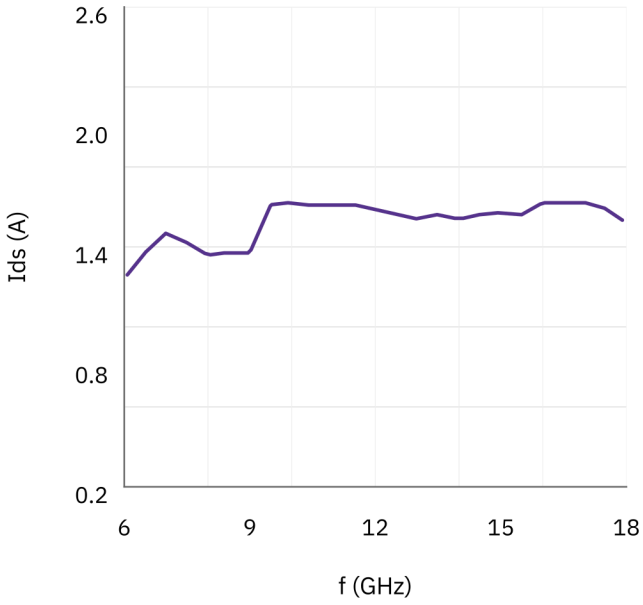
Each performance plot applies to its stated operating conditions.

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

Figure notes: TA=+25°C; Vd=+28V; Vg=-2.2V; Pin=21dBm. Pulse width = 100 µs; duty cycle = 10%. Readings are approximate.

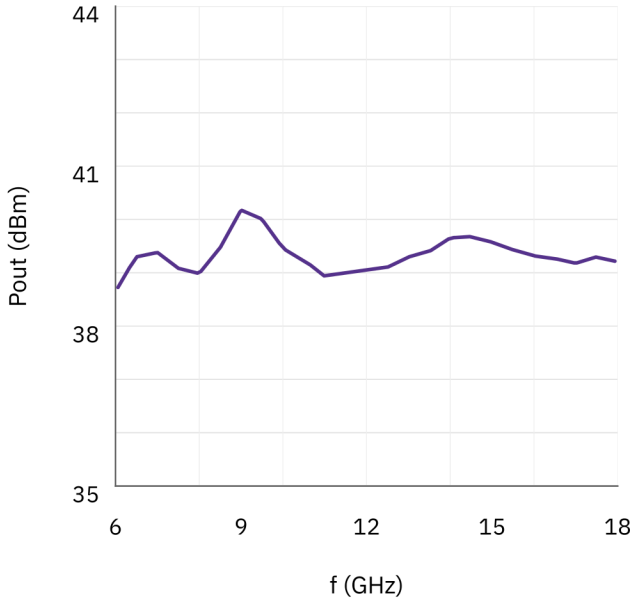


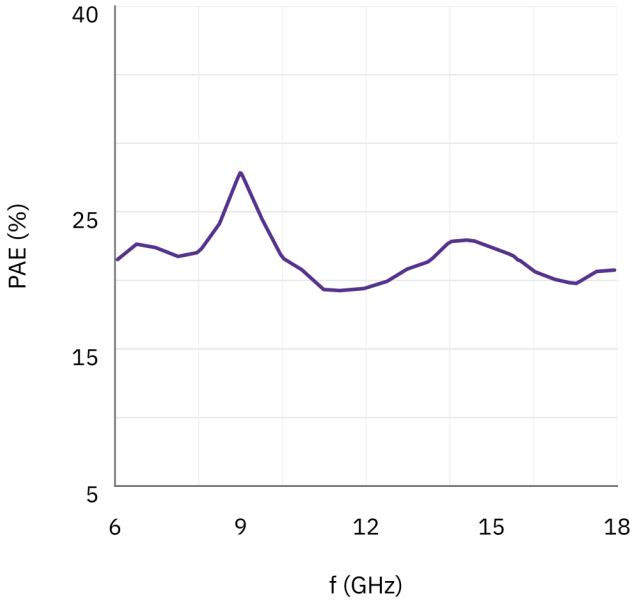


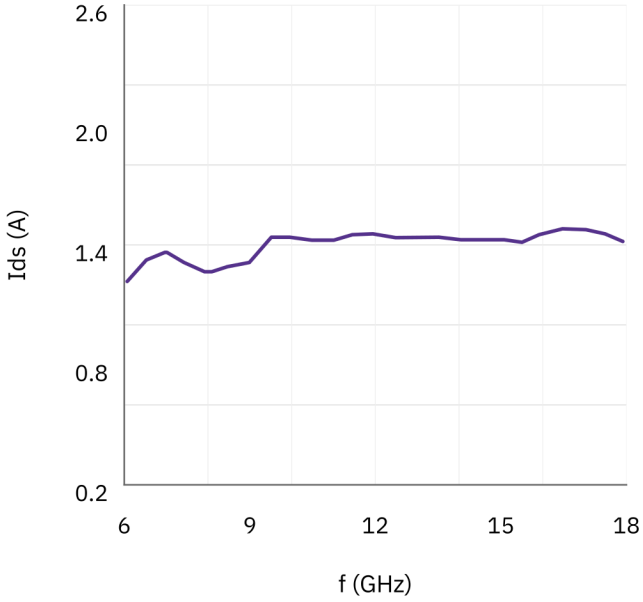


Continuous wave (CW) — Saturated output power; Dynamic drain current; Power-added efficiency.

Figure notes: TA=+25°C; Vd=+28V; Vg=-2.2V; Pin=21dBm. 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.