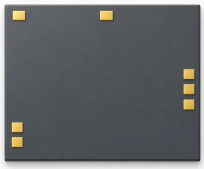
6000–18000 MHz GaN MMIC Power Amplifier Die

LCI-PA-6000-18000-PS33p5T 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: 33.5 dBm (typical); Power gain: 12 dB (typical); Power-added efficiency: 20 % (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2 V. Die dimensions: 2.1 × 1.7 × 0.08 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	6000	-	18000	MHz
Saturated output power	Psat	33	33.5	-	dBm
Power gain	Gp	11	12	-	dB
Power-gain flatness	ΔGp	-	-	±1.5	dB
Power-added efficiency	PAE	-	20	-	%

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	-	28	-	V
Gate voltage	Vg	-3	-2	-1.6	V
Quiescent drain current	Id	-	0.4	-	A
Dynamic drain current	Idd	-	0.6	0.7	A
Dynamic gate current	Igg	-	1	5	mA

Absolute limits

Absolute limits; these are not normal operating targets.

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Maximum drain-source voltage	Vd	-	-	32	-	V
Minimum gate bias	Vg	-5	-	-	-	V
Maximum input power	Pin	-	-	27	-	dBm
Maximum channel temperature	Top	-	-	225	-	°C
Storage temperature	TSTG	-65	-	150	-	°C
Load mismatch survival	-	-	-	-	10:1	-

Die dimensions

Parameter	Value	Unit
Die dimensions	2.1 × 1.7 × 0.08	mm
Plan-view outline tolerance	±50 (Plan-view outline only; the source does not specify thickness tolerance.)	µm

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Die integration and bias sequencing

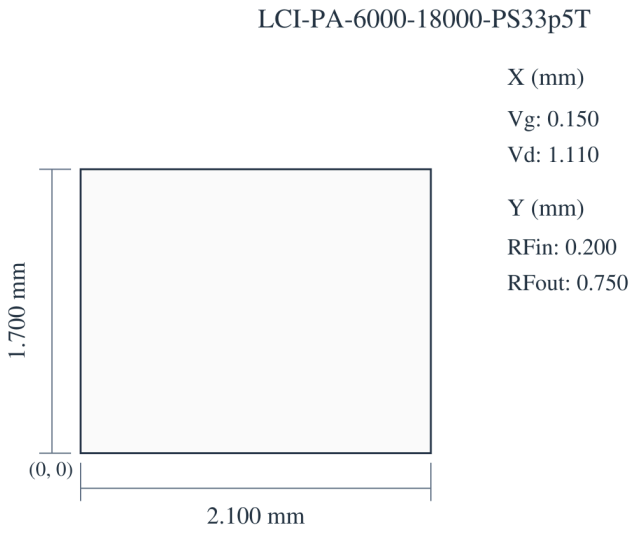
Apply gate bias before drain bias at power-up. At power-down, remove drain bias before gate bias. Use clean handling, ESD protection and a carrier with thermal expansion compatible with the SiC die.

Bond-pad dimensions

Symbol: 1 RFin; Dimensions (µm): 110 × 110. Symbol: 2 Vg; Dimensions (µm): 140 × 90. Symbol: 3 Vd; Dimensions (µm): 140 × 90. Symbol: 4 RFout; Dimensions (µm): 100 × 130.

Mechanical Outline

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



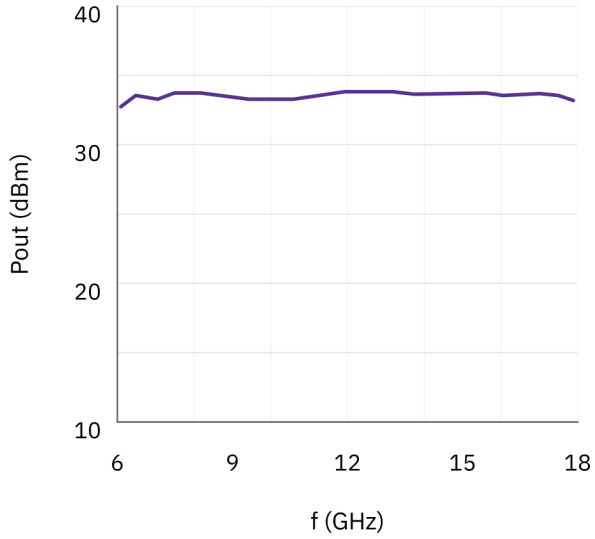
2.100 × 1.700 × 0.080 mm
X, Y: ±0.050 mm
X → · Y ↑ · X, Y: mm

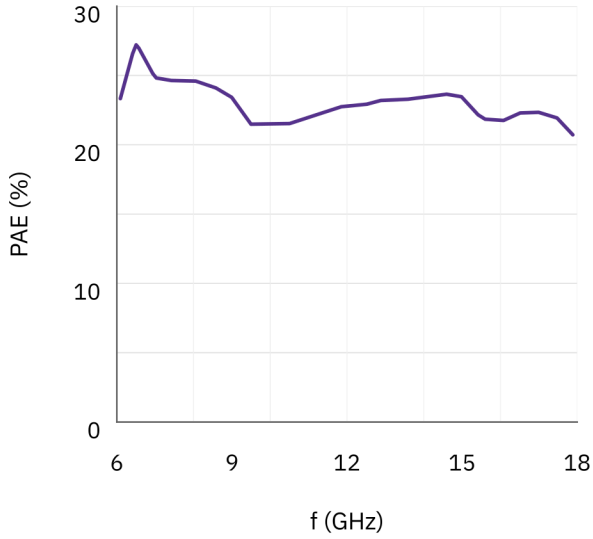
Performance curves

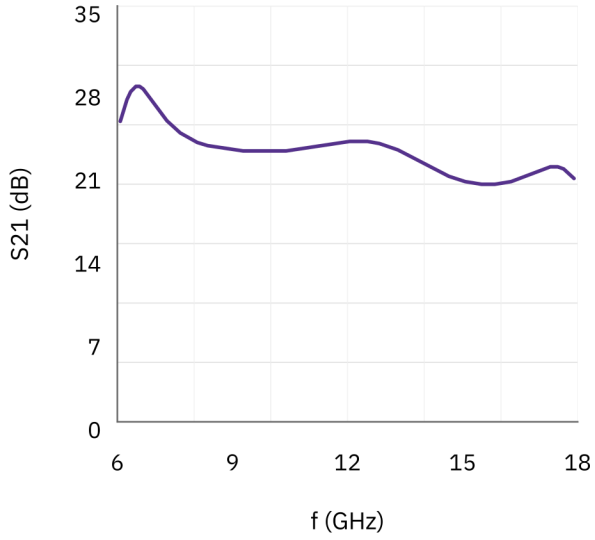
Each performance plot applies to its stated operating conditions.

Continuous wave (CW) — Small-signal gain; Saturated output power; Power-added efficiency.

Figure notes: Vd=+28V; Vg=-2.0V. Readings are approximate. Pout / PAE: Pin = 22 dBm; S21: Pin = −30 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.