12700–14500 MHz GaN MMIC Power Amplifier Die

LCI-PA-12700-14500-PS47T is a GaN MMIC power amplifier supplied as bare die for 12700–14500 MHz. It supports CW and pulsed operation.

pulsed: PSAT: 46.8 dBm (minimum) / 47 dBm (typical); Power gain: 18.8 dB (minimum) / 19 dB (typical); PAE: 37 % (typical). Die dimensions: 3.7 × 5.9 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.96 V; pulsed

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	12700	-	14500	MHz
Saturated output power	Psat	46.8	47	-	dBm
Power gain	Gp	18.8	19	-	dB
Power-gain flatness	ΔGp	-	±0.3	-	dB
Power-added efficiency	PAE	-	37	-	%
Input VSWR	VSWR(in)	-	1.8	-	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	24	28	32	V
Gate voltage	Vg	-5	-2.96	-2.6	V
Quiescent drain current	Id	-	0.5	-	A
Dynamic drain current	Idd	-	5	-	A
Dynamic gate current	Igg	-	0.5	5	mA

Absolute limits

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum drain-source voltage	Vd	-	-	32	V
Minimum gate bias	Vg	-5	-	-	V
Maximum input power	Pin	-	-	31	dBm
Storage temperature	TSTG	-65	-	150	°C
Maximum channel temperature	Top	-	-	225	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	3.7 × 5.9 × 0.1	mm

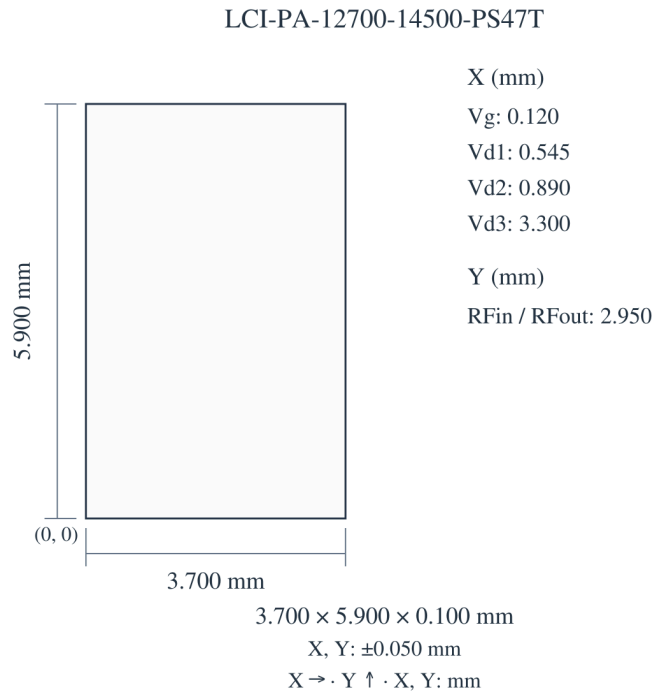
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Die integration and bias sequencing

Integrated DC blocking: RFin / RFout. DC path to ground: RFin → GND. Separate characterization: Vd = +28 V; Vg = -2.96 V; CW; Pin = 28 dBm. Apply gate bias before drain bias. Remove drain bias before gate bias. Two-sided bias feed is recommended.

Mechanical Outline

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

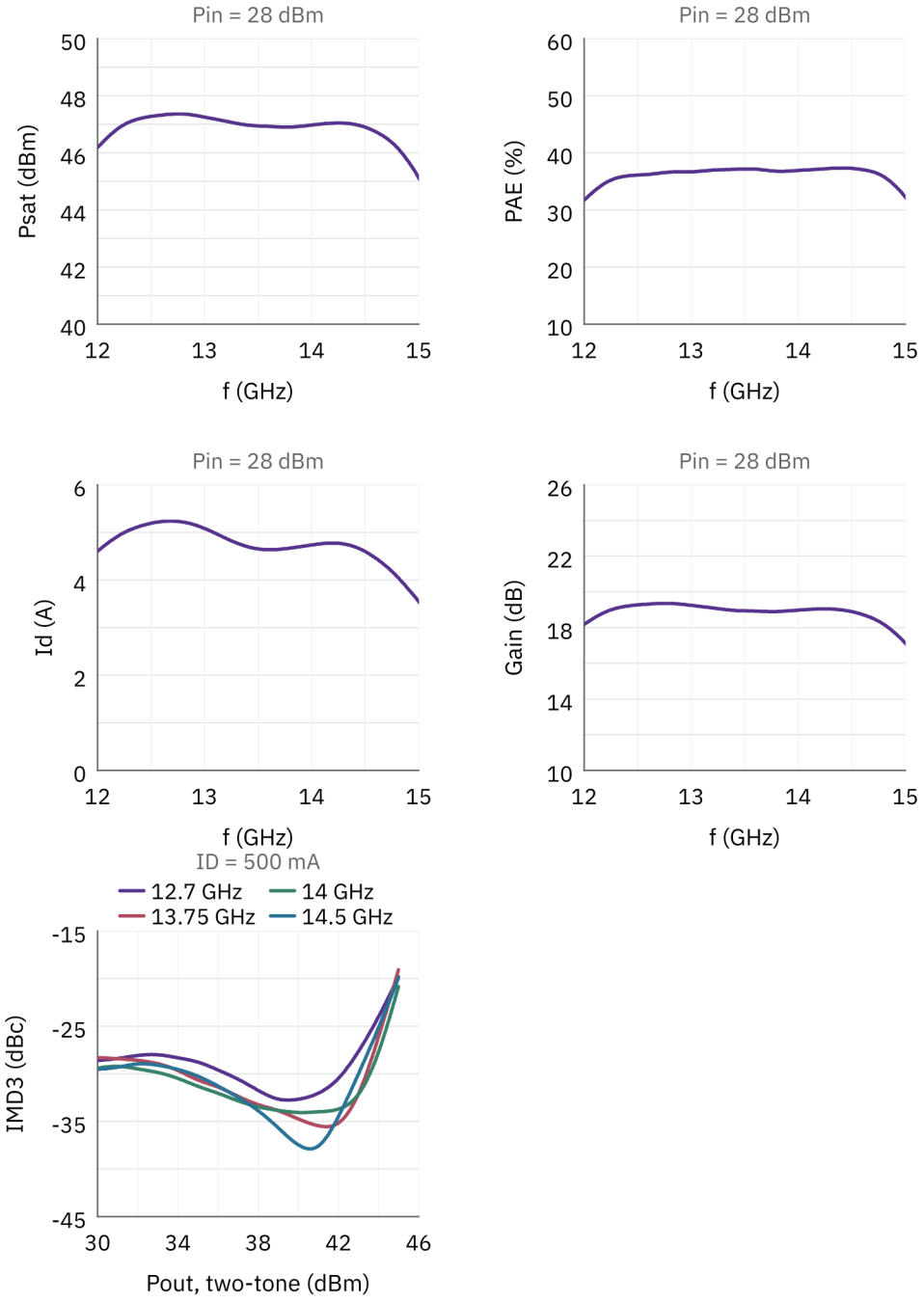


Performance curves

Each performance plot applies to its stated operating conditions.

Saturated output power; Power-added efficiency; Dynamic drain current; Power gain; IMD3.

Figure notes: Vd=+28V; Vg=-2.96V. Readings are approximate. Psat/PAE/Id/Gain: Pin = 28 dBm. IMD3: Id = 500 mA.



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.