950–1250 MHz GaN MMIC Power Amplifier Die

LCI-PA-950-1250-PS47p5T is a GaN MMIC power amplifier supplied as bare die for 950–1250 MHz. It supports CW and pulsed operation.

The RF table specifies: Saturated output power: 47.5 dBm (typical); Power gain: 22.5 dB (typical); Power-added efficiency: 60 % (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.8 V. Die dimensions: 4.35 × 3.43 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.8 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	950	-	1250	MHz
Saturated output power	Psat	47	47.5	-	dBm
Power gain	Gp	22	22.5	-	dB
Power-gain flatness	ΔGp	-	-	±0.3	dB
Power-added efficiency	PAE	-	60	-	%
Small-signal gain	S21	-	35	-	dB
Small-signal gain flatness	ΔS21	-	-	±1	dB
Input VSWR	VSWR(in)	-	1.6	2	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	-	28	36	V
Gate voltage	Vg	-3.2	-3	-2.8	V
Quiescent drain current	Id	-	1	-	A
Dynamic drain current	Idd	-	3.5	3.8	A
Dynamic gate current	Igg	-	1	3	mA

Absolute limits

Absolute limits; these are not normal operating targets.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum drain-source voltage	Vd	-	-	36	V
Minimum gate bias	Vg	-5	-	-	V
Maximum input power	Pin	-	-	30	dBm
Maximum channel temperature	Top	-	-	225	°C
Storage temperature	TSTG	-65	-	150	°C

Die dimensions

Parameter	Value	Unit
Die dimensions	4.35 × 3.43 × 0.1	mm
Plan-view outline tolerance	±100 (Plan-view outline only; the source does not specify thickness tolerance.)	µm

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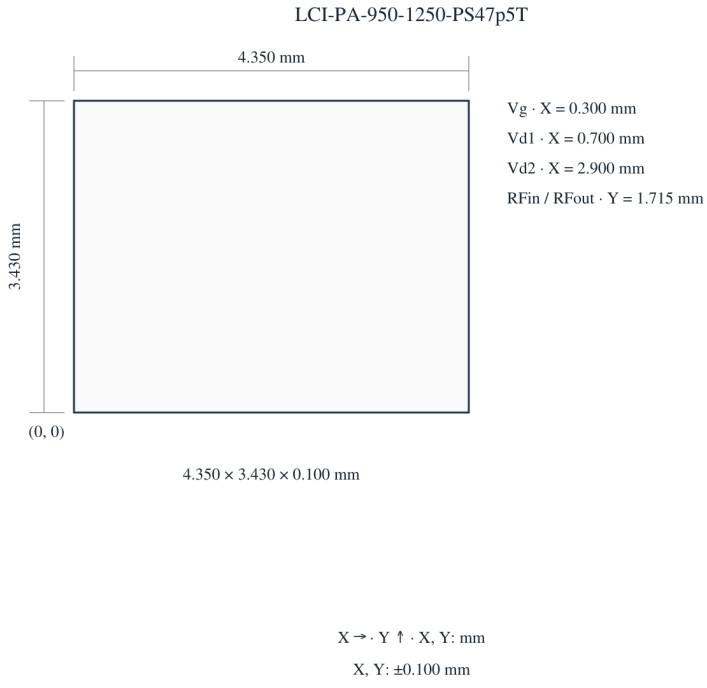
Die integration and bias sequencing

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 × 100 µm; Vg: 120 × 100 µm; Vd1: 120 × 100 µm; Vd2: 200 × 100 µm; RFout: 100 × 120 µm.

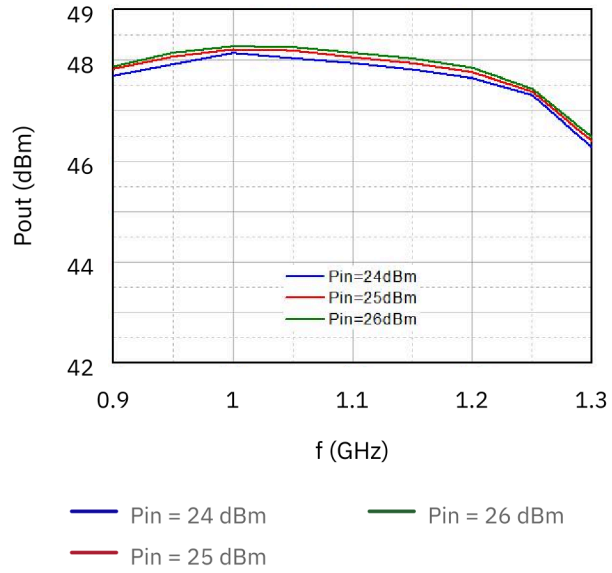
Mechanical Outline

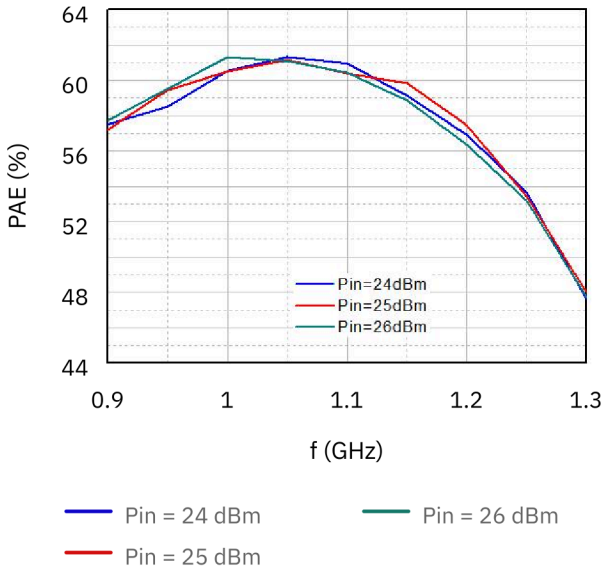


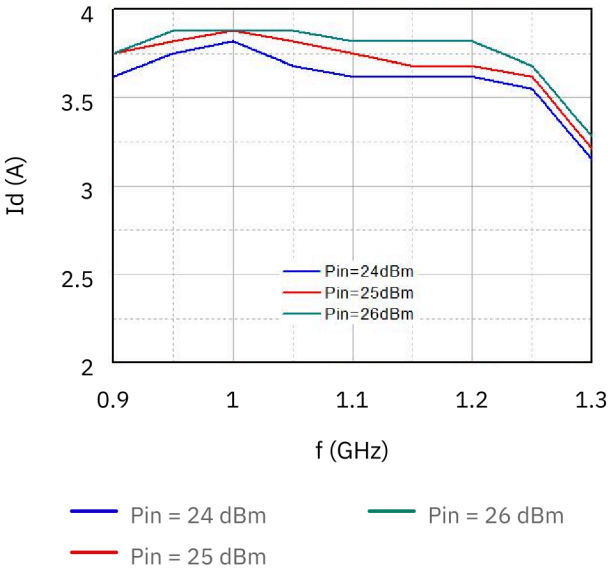
Performance curves

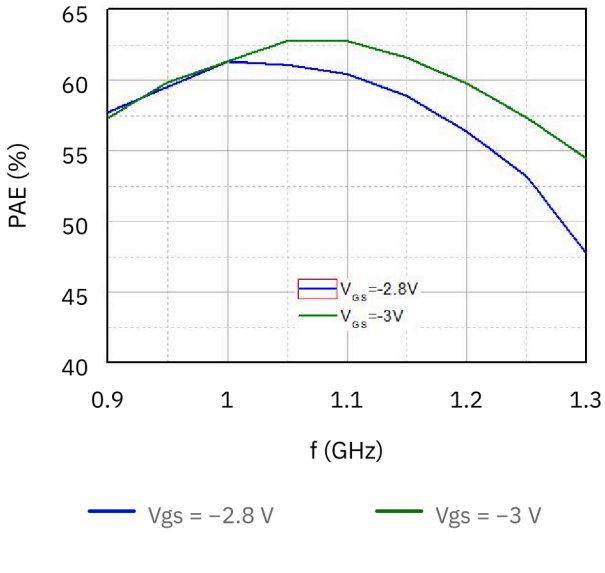
Read each figure with its stated operating conditions.

Pulsed — Output power; Power-added efficiency; Dynamic drain current; Power-added efficiency (different gate biases).
Figure notes: Vd = 28 V; Vg = −2.8 V; D = 10%.



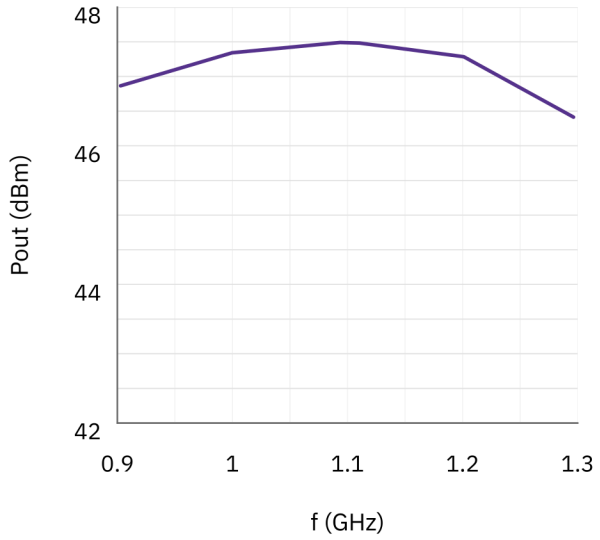


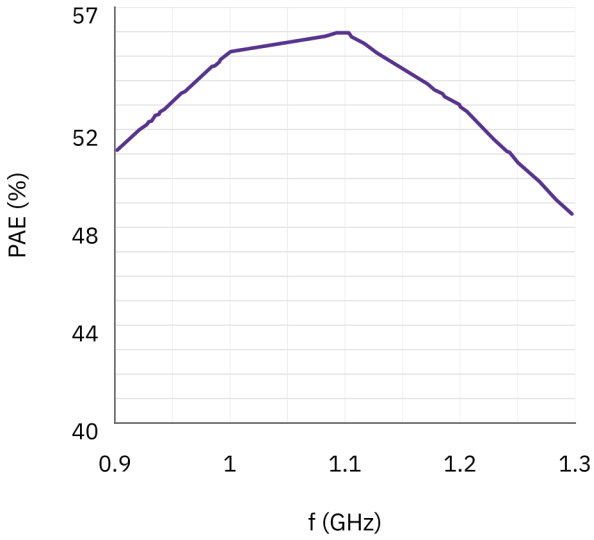


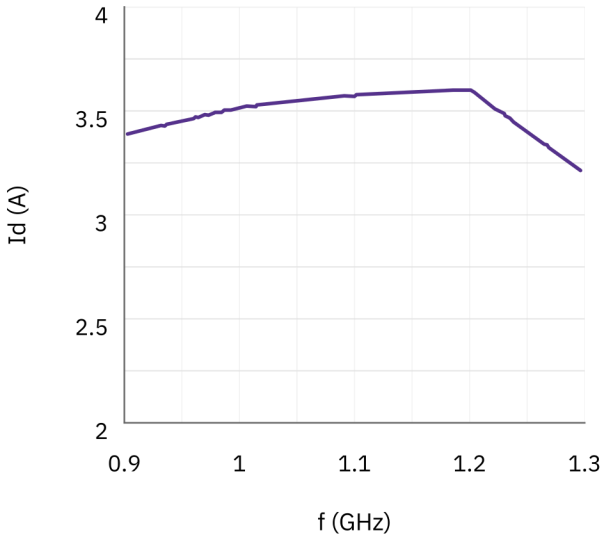


Continuous wave (CW) — Output power; Power-added efficiency; Dynamic drain current.

Figure notes: Vd = 28 V; Vg = −2.8 V. 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.