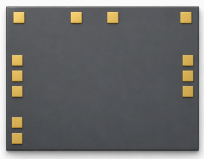
9000–11000 MHz GaN MMIC Power Amplifier Die

LCI-PA-9000-11000-PS37T is a GaN MMIC power amplifier supplied as bare die for 9000–11000 MHz. It supports CW and pulsed operation.

The RF table specifies: Saturated output power: 37 dBm (typical); Power gain: 22 dB (typical); Power-added efficiency: 38 % (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.8 V. Die dimensions: 2.04 × 1.54 × 0.1 mm.



RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.8 V

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	f	9000	-	11000	MHz
Saturated output power	Psat	-	37	-	dBm
Power gain	Gp	-	22	-	dB
Power-gain flatness	ΔGp	-	±0.2	-	dB
Power-added efficiency	PAE	-	38	-	%
Small-signal gain	S21	-	35	-	dB
Input VSWR	VSWR(in)	-	1.5	-	-

DC bias and current

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Drain voltage	Vd	24	28	30	V
Gate voltage	Vg	-3	-2.8	-2.6	V
Quiescent drain current	Id	-	0.15	-	A
Dynamic drain current	Idd	-	0.5	-	A
Dynamic gate current	Igg	-	-	2	mA

Absolute limits

Absolute limits; these are not normal operating targets.

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Maximum drain-source voltage	Vd	-	-	30	-	V
Minimum gate bias	Vg	-5	-	-	-	V
Maximum input power	Pin	-	-	18	-	dBm
Maximum channel temperature	Top	-	-	225	-	°C
Storage temperature	TSTG	-65	-	150	-	°C

Absolute limits

Absolute limits; these are not normal operating targets.

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Load mismatch survival	-	-	-	-	3:1	-

Die dimensions

Parameter	Value	Unit
Die dimensions	2.04 × 1.54 × 0.1	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

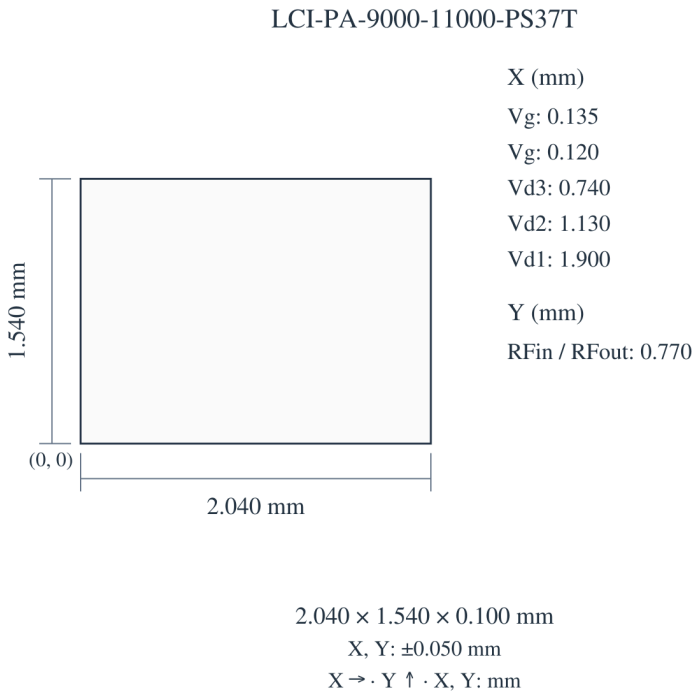
Apply gate bias before drain bias at power-up. At power-down, remove drain bias before gate bias. Use clean handling, ESD protection and a carrier with thermal expansion compatible with the SiC die.

Bond-pad dimensions

Symbol: 1 RFin; Dimensions (µm): 100 × 120. Symbol: 2,7 Vg; Dimensions (µm): 100 × 100. Symbol: 3 RFout; Dimensions (µm): 100 × 120. Symbol: 4 Vd1; Dimensions (µm): 120 × 110. Symbol: 5 Vd2; Dimensions (µm): 120 × 110. Symbol: 6 Vd3; Dimensions (µm): 130 × 100.

Mechanical Outline

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

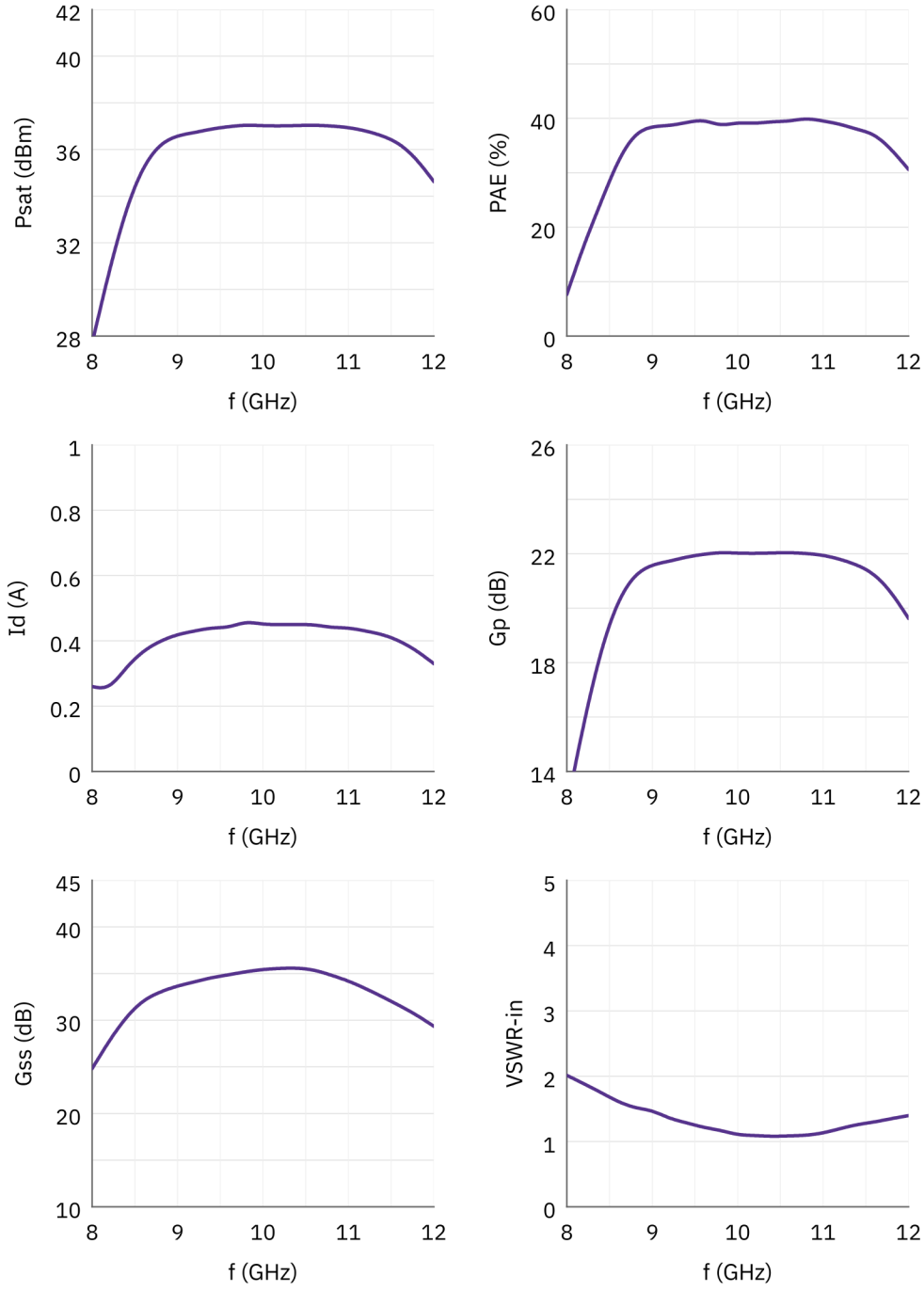


Performance curves

Each performance plot applies to its stated operating conditions.

Pulsed — Saturated output power; Power-added efficiency; Dynamic drain current; Power gain; Small-signal gain; Input matching.

Figure notes: Vd=+28V; Vg=-2.8V. For saturated output power, PAE, dynamic drain current and power gain: Pin = 15 dBm. For small-signal gain and input VSWR: Pin = -20 dBm. 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.