# 2000–18000 MHz GaN MMIC Power Amplifier Die

LCI-PA-2000-18000-PS35T is a GaN MMIC power amplifier supplied as bare die for 2000–18000 MHz. It supports CW operation.

The RF table specifies: PSAT 35 dBm (typical); Power gain 7 dB (typical); PAE 20% (typical). RF test conditions: TA = +25 °C; Vd = +28 V; Vg = -2.5 V.

Die dimensions: 2.7 × 1.65 × 0.1 mm.



## RF characteristics

TA = +25 °C; Vd = +28 V; Vg = -2.5 V

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Operating frequency | f | 2000 | - | 18000 | MHz |
| Saturated output power | Psat | - | 35 | - | dBm |
| Power gain | Gp | - | 7 | - | dB |
| Power-gain flatness | ΔGp | - | ±1 | - | dB |
| Power-added efficiency | PAE | - | 20 | - | % |
| Input VSWR | VSWR(in) | - | 2 | - | - |

## DC bias and current

TA = +25 °C

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Drain voltage | Vd | 24 | 28 | 29 | V |
| Gate voltage | Vg | -2.8 | -2.5 | -2.2 | V |
| Quiescent drain current | Id | - | 0.27 | - | A |
| Dynamic drain current | Idd | - | 0.54 | - | A |
| Dynamic gate current | Igg | - | - | 1 | mA |

## Absolute limits

Absolute limits; these are not normal operating targets.

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Maximum drain-source voltage | Vd | - | - | 29 | V |
| Minimum gate bias | Vg | -2.8 | - | - | V |
| Maximum input power | Pin | - | - | 30 | dBm |
| Storage temperature | TSTG | -65 | - | 150 | °C |
| Maximum channel temperature | Top | - | - | 190 | °C |

## Die dimensions

| Parameter | Value | Unit |
|---|---|---|
| Die dimensions | 2.7 × 1.65 × 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

Integrated DC blocking: RFin / RFout. DC path to ground: RFin → GND. Apply gate bias before drain bias. Remove drain bias before gate bias. Outline and dimensioned coordinates in mm. Use this drawing as a dimensional reference. Fabrication and wire bonding require complete drawings.

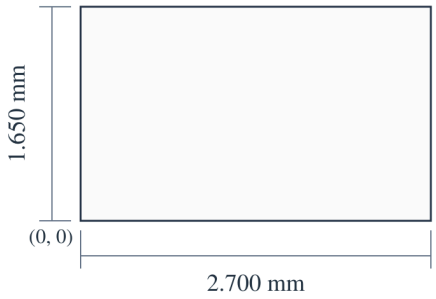
## Bond-pad dimensions

RFin: 90 × 110 µm. Vg: 110 × 110 µm. RFout: 90 × 110 µm. Vd: 120 × 90 µm.

## Mechanical Outline

LCI-PA-2000-18000-PS35T

X, Y (mm)
RFin: (0.120, 0.400)
Vg: (1.300, 0.140)
(3): (0.320, 1.550)
(4): (2.590, 0.400)




2.700 × 1.650 × 0.100 mm
X, Y: ±0.050 mm
X → · Y ↑ · X, Y: mm

## Performance curves

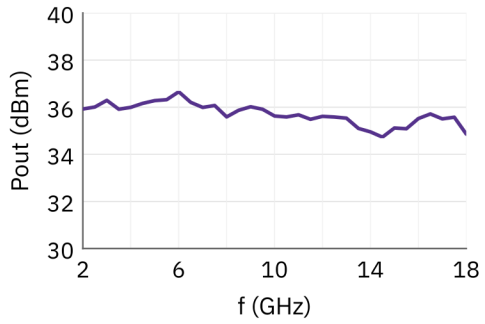
Read each figure with its stated operating conditions.

### Continuous wave (CW) — Saturated output power; Power-added efficiency; Dynamic drain current; Power gain; Small-signal gain; Input matching; Port matching.

Figure notes: Vd=+28V; Vg=-2.5V. For saturated output power, PAE, dynamic drain current and power gain: Pin = 28 dBm. For small-signal gain and input VSWR: Pin = -20 dBm. Readings are approximate.

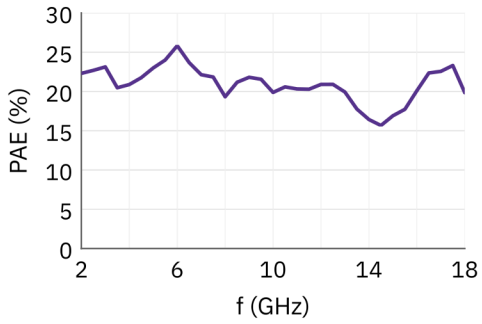
**Pout**

Pin = 28 dBm



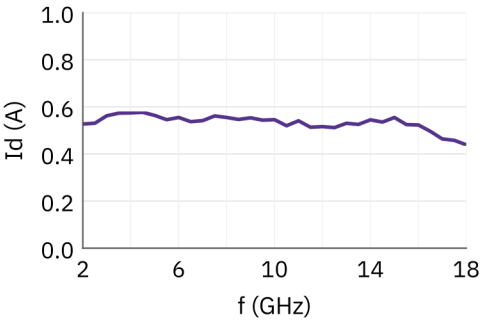

**PAE**

Pin = 28 dBm



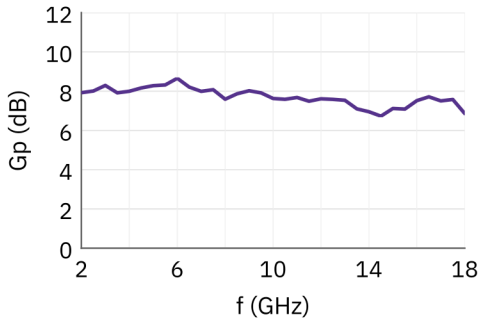

**Id**

Pin = 28 dBm



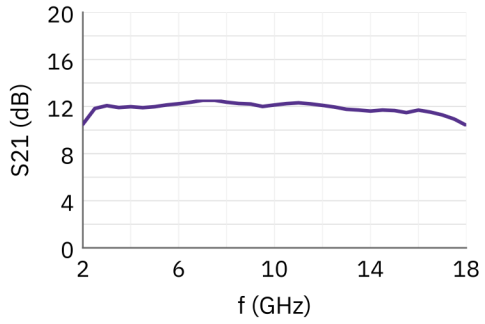

**Gp**

Pin = 28 dBm



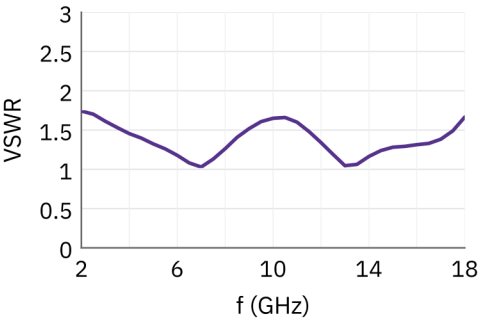

**S21**

Pin = −20 dBm




**VSWR**

Pin = −20 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.