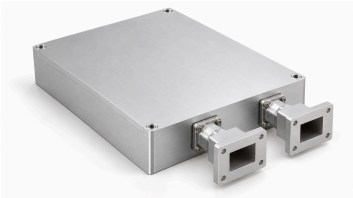
10700–12750 MHz GaN RF Power Amplifier, 100 W Typical, WR75 Adapter

The GaN amplifier covers 10700–12750 MHz with 100 W typical saturated output and 50 dB minimum gain. Typical output at 1 dB compression is 40 W; typical current is 21 A at 100 W.



Dimensions are for the housing. Confirm the complete installation envelope, including the output adapter and mounting projections, with LCRF. The RF input is SMA and the output uses an N-K to WR75 waveguide adapter. SW selects CH1 at a low level and CH2 at a high level, with switching in less than 15 ms.

Analog temperature and current sensing are provided. Confirm the function of pin 5 with LCRF before wiring or applying power.

Electrical Specifications

+28.0VDC; 25°C; 50Ω

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	BW	10700	-	12750	MHz
Output power at 1 dB compression	P-1dB	-	40	-	W
RF output power @ PSAT	PSAT	-	100	-	W
Power gain @ PSAT	Gp	50	-	-	dB
Power gain flatness @ PSAT	ΔGp	-	±1	-	dB
Input return loss	S11	-	-15	-	dB
Harmonics at 100 W	H	-	-20	-	dBc
Spurious signals @ PSAT	Spur	-	-60	-	dBc
Input/output impedance	Impedance	-	50	-	Ω
Operating voltage	VDC	-	28	-	VDC
Power-added efficiency @ 100W	Eff	-	25	-	%
DC current @ 100W	IDD	-	21	-	A

Absolute Maximum Ratings

Parameter	Rating
RF input drive without damage	+10 dBm maximum
Load VSWR at Pout = 100 W	∞; All load phases and amplitudes; continuous
Thermal overload	85 °C → Shutdown (maximum)

Environmental Specifications

The environmental figures are design targets. Confirm the applicable values for your project.

Parameter	Minimum	Typical	Maximum	Unit
Operating temperature	-20	-	50	°C
Storage temperature [1]	-25	-	65	°C
Relative humidity (non-condensing)	-	-	95	%

[1] Storage temperature

DC and Control Interface

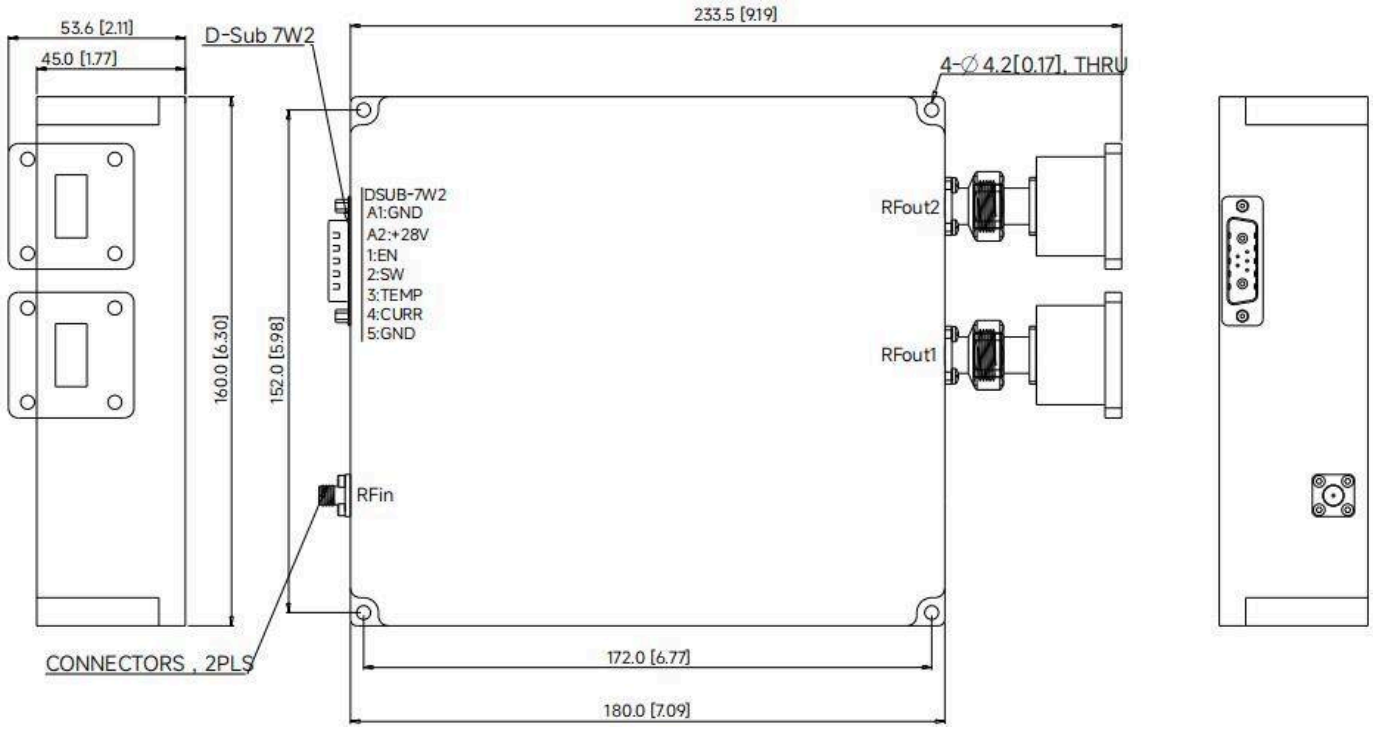
Pin #	Description	Specification
A1	A1 — Ground	Ground
A2	A2 — Positive supply	+28V
1	1 — Enable	TTL logic high (3.3 V); internally pulled low
2	2 — RF channel selection (SW)	CH1: Low level; CH2: High level; <15 ms
3	3 — Temperature sense output	750 ±20 mV @25 °C; 10 mV/°C
4	4 — Current sense output	100 mV/A

Mechanical Specifications

Dimensions are for the housing. Confirm the complete installation envelope, including the output adapter and mounting projections, with LCRF.

Parameter	Value	Unit
Body dimensions	180 × 160 × 45 mm (Dimensions are for the housing. Confirm the complete installation envelope, including the output adapter and mounting projections, with LCRF.)	mm
Weight	2.5 kg (maximum)	kg
RF input connector	SMA, female	-
RF output connector	N-K → WR75 Waveguide adapter	-
DC/control interface	Hybrid, D-Sub 7, male	-

Mechanical Outline



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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.