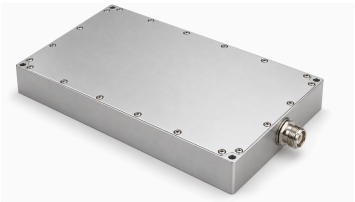
500–2500 MHz GaN RF Power Amplifier, 100 W Typical, Variant A



GaN variant A covers 500–2500 MHz with 100 W typical saturated output and 50 dB typical gain. Typical current is 12 A at 100 W, while the harmonic measurement remains tied to 70 W output.

Maximum dimensions are 180 × 120 × 25 mm, with an SMA input, N-K output and seven-pin hybrid D-Sub. Control includes TTL enable, temperature sensing at 10 mV/°C, current sensing at 100 mV/A and a VSWR protection status signal.

Electrical Specifications

+28.0VDC; 25°C; 50Ω The electrical table specifies 26 VDC minimum, 28 VDC typical and 30 VDC maximum, while the A1 VDD row states 28–32 VDC. The A1 supply-range claim is withheld. Confirm the permitted supply range and A1 wiring before applying power; 32 VDC is not an accepted operating maximum here.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	BW	500	-	2500	MHz
RF output power @ PSAT	PSAT	-	100	-	W
Power gain @ PSAT	Gp	-	50	-	dB
Power gain flatness @ PSAT	ΔGp	-	±2	-	dB
Input return loss	S11	-	-	- 10	dB
Harmonics at 70 W	H	-	-10	-8	dBc
Spurious signals @ PSAT	Spur	-	-60	-	dBc
Input/output impedance	Impedance	-	50	-	Ω
Operating voltage	VDC	26	28	30	VDC
Power-added efficiency	Eff	-	27	-	-
DC current @ 100W	IDD	-	12	-	A

Monitoring and Protection

Parameter	Specification
Monitoring	Voltage, current, output power, reflected power, and temperature
Output VSWR protection	VSWR 3.5–4 → Shutdown
Over-temperature protection	85 °C → Shutdown
Supply protection	(VDC >33 V) or Reversed polarity → Shutdown
Over-current protection	IDD >16 A → Shutdown

Absolute Maximum Ratings

Parameter	Rating
RF input drive without damage	+10 dBm maximum
Load VSWR at Pout = 100 W	∞; All load phases and amplitudes; for one minute
Thermal overload	85 °C ±5 °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	-	85	°C
Relative humidity (non-condensing)	-	-	95	%

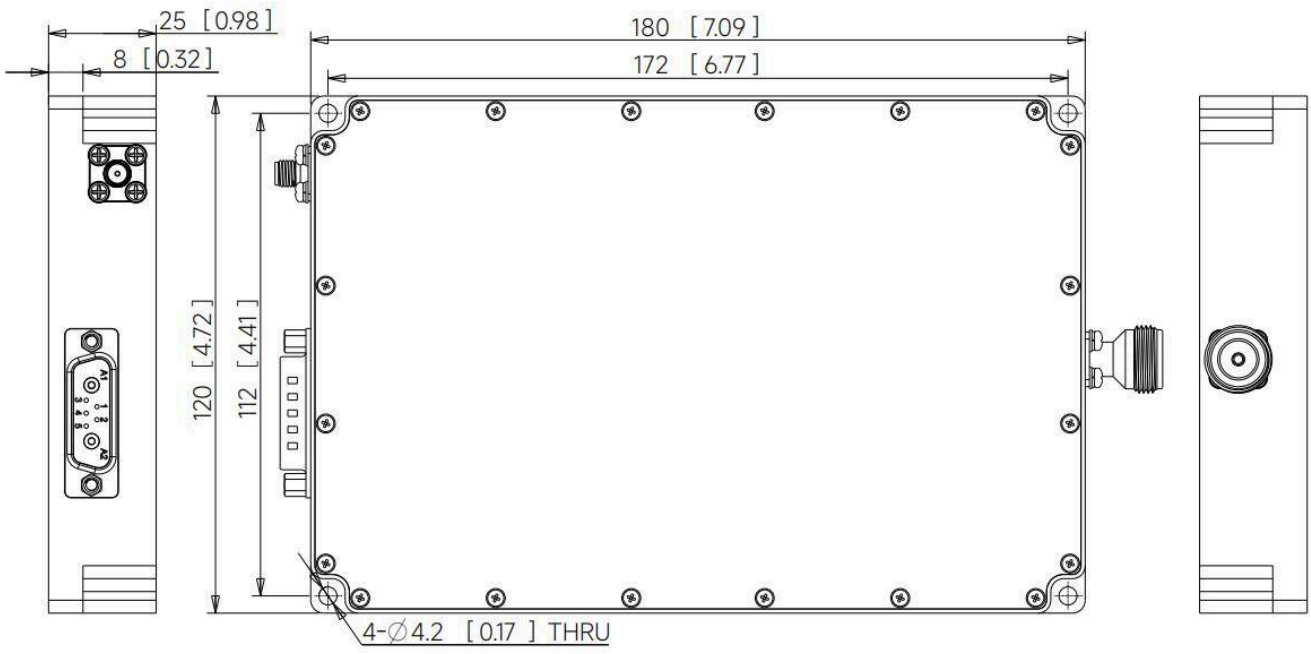
[1] Storage temperature

DC and Control Interface

Pin #	Description	Specification
A2	A2 — Ground	Ground
1	1 — Enable	TTL logic high (3.3 V); internally pulled low
2	2 — Temperature sense output	750 ±20 mV @25 °C; 10 mV/°C
3	3 — Current sense output	100 mV/A
4	4 — VSWR alarm	TTL = 0 → Normal; TTL = 1 → Abnormal
5	5 — Ground	Ground

Mechanical Specifications

Parameter	Value	Unit
Dimensions	180 × 120 × 25 [7.09 × 4.72 × 0.98] mm [in] (maximum)	mm [in]
Weight	1.5 [3.3] kg [lb]	kg [lb]
RF input connector	SMA, female	-
RF output connector	N-K, female	-
DC/control interface	Hybrid, D-Sub 7, male	-



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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.