30–500 MHz 100 W Broadband RF Power Amplifier Module

This 30–500 MHz RF stage provides 100 W typical saturated output and 50 dB typical gain. At 100 W, typical current is 10 A and power-added efficiency is 50%.

The 180 × 120 × 25 mm module uses SMA female input, N female output and a 7-pin D-Sub. RS-485 and internally pulled-low 3.3 V TTL enable are specified, with overcurrent shutdown above 15 A.



Electrical Specifications

+28.0 VDC, 25 °C, 50 Ω system unless otherwise stated

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating frequency	BW	30	-	500	MHz
Saturated RF output power	Pout	-	100	-	W
Power gain	Gp	-	50	-	dB
Power gain flatness	Gp	-	±1.5	-	dB
VSWR	S11	-	1.5	-	-
Harmonics at 100 W	H	-	-10	-	dBc
Spurious signals	Spur	-	-60	-	dBc
Input/output impedance	Impedance	-	50	-	Ω
Operating voltage	VDC	24	28	32	VDC
Power-added efficiency	Eff	-	50	-	%
Current consumption at Pout = 100 W	IDD	-	10	-	A

Monitoring and Protection

Parameter	Specification
Monitoring	Voltage, current, output power, reflected power, and temperature
Over-temperature protection	Amplifier shutdown above 85 °C
Supply protection	Shutdown above 32 V, below 24 V, or with accidental reverse wiring
Over-current protection	Amplifier shutdown above 15 A

Absolute Maximum Ratings

Exceeding these ratings may damage the module

Parameter	Rating
RF input drive without damage	+10 dBm
Load VSWR at Pout = 100 W	3:1 at all load phases, continuous
Thermal overload	85 °C shutdown

Environmental Specifications

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

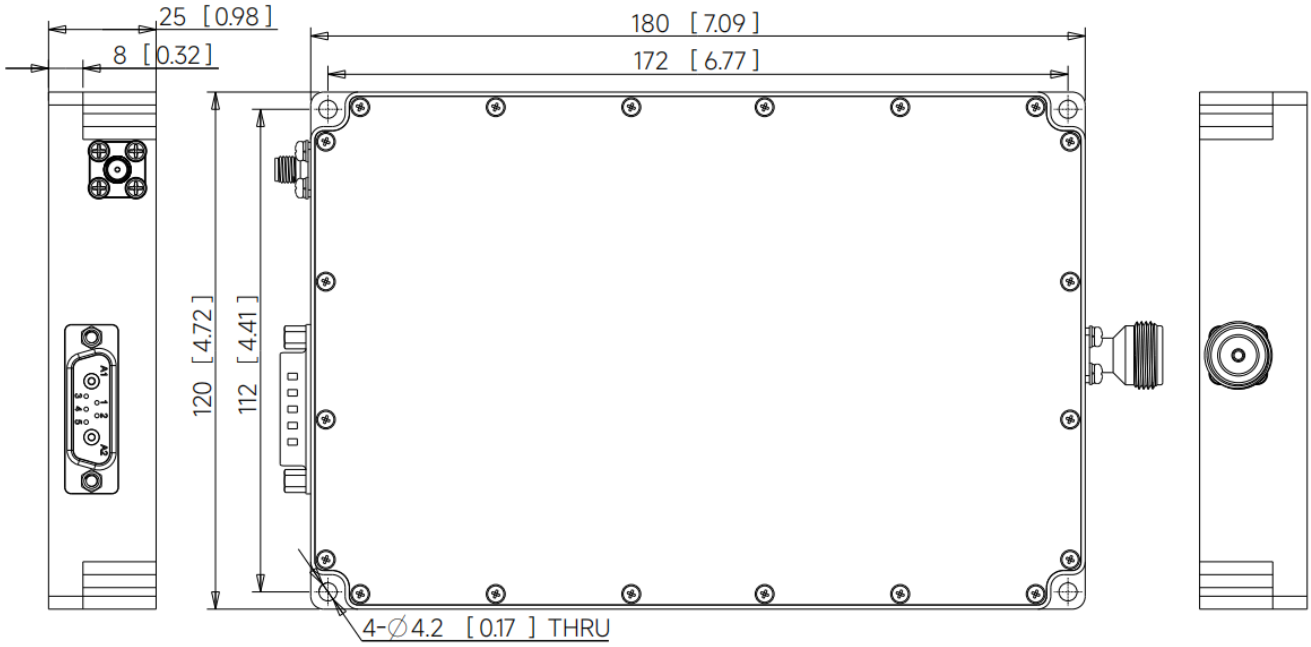
Parameter	Minimum	Typical	Maximum	Unit
Operating temperature	-20	-	50	°C
Storage temperature	-25	-	65	°C
Relative humidity (non-condensing)	-	-	95	% RH

DC and Control Interface

Pin #	Description	Specification
A1	GND	Ground
A2	VDD	+28V
1	ENABLE	TTL logic high (3.3 V); internally pulled low
2	GND	Ground
3	485A	RS-485 serial communication
4	485B	RS-485 serial communication
5	NC	Not connected

Mechanical Specifications

Parameter	Value	Unit
Dimensions	180 × 120 × 25[7.09 × 4.72 × 0.98] (Maximum)	mm [in]
Weight	2[4.4] (Maximum)	kg [lb]
RF input connector	SMA female	-
RF output connector	N female	-
DC/control interface	Hybrid D-Sub 7-pin 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.