

DM-X1K0-01 1000W X-Band GaN Pulsed Power Amplifier (SSPA)

The Diamond Microwave 1kiloWatt GaN amplifier is designed as a compact alternative to vacuum tube amplifiers (TWT). This model has a 1.2GHz bandwidth and offers pulsed widths up to 100µs with duty cycles up to 20%. This is a modular product, based on the proven Diamond Microwave 100W variant, and can be provided with either co-axial or waveguide outputs. The standard design has an N-type output connector.

Using gallium nitride (GaN) devices and manufactured using chip-and-wire technology, this product offers state-of-the-art power

performance coupled with a power-to-volume ratio we believe to be among the highest in the industry for such products.

- Ultra-compact X-band GaN SSPA
- Pulsed operation
- 1000W (+60dBm) peak pulsed power
- >10% Bandwidth
- Solid State reliability
- Alternative to TWT
- Power Added Efficiency >20%
- Well-matched to airborne radar applications

Provisional Data: Performance at 25°C unless otherwise specified¹

Parameter	Value	Unit	Comment
Centre frequency	9.5	GHz	Nominal
60dBm bandwidth	1200	MHz	
Peak output power (P _{sat})	1000	W	
Maximum duty cycle ²	20	%	
Pulse width	100	µs	Maximum
PRF	500	kHz	Maximum
Pulse rise/fall time	50	ns	Maximum
Power added efficiency (PAE)	22	%	Minimum
Input RF power	2	dBm	
Power supply voltage ³ (nominal)	40	VDC	
Size ⁴	244 x 134 x 50	mm	Excluding heat-sink and connectors
Weight (maximum)	3000	g	Excluding heat-sink
Interface DC power	Screw terminal		Micro-D option available
Interface RF input	SMA Type		
Interface RF output	N Type		WG16 output available. Flange user defined
Amplifier/pulse control	LVC MOS		Amplifier on/off, duty cycle select, PRF select
Operating temperature range	-40 to +85	°C	

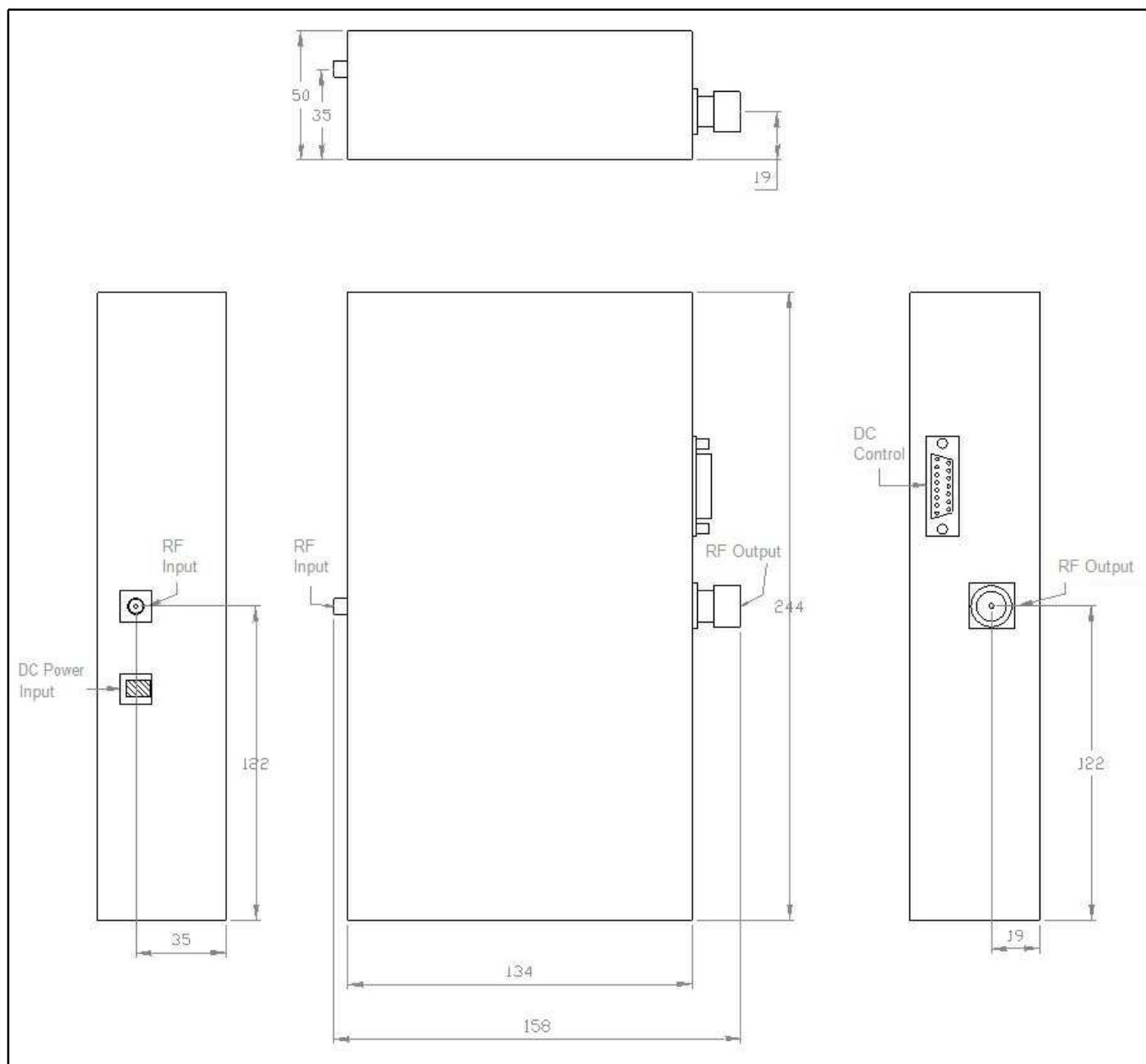
¹ Parameters and performance can be tailored to meet customer specific requirements

² Heat sinking is required

³ The module can be operated from a 28V DC supply but with lower output power and some degradation of performance

⁴ Other form factors available

Schematic Layout



All dimensions in mm

Note: Specification subject to change without notice



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