GaN Solid State Power Amplifier

RIM032K0-20

Product Features

- 325 MHz (≥ +/-1 MHz)
- Output power: 2kW (CW) Peak 50V
- Built with GaN on SiC HEMT
- 70% System Efficiency
- High Reliability
- Power & Frequency Monitoring Available

Applications

- Building Block for High-Power Systems
- Accelerator Light Source
- Plasma Generation
- Industrial Heating and Drying
- Microwave CVD
- Microwave Sintering
- Microwave Chemistry
- Materials Processing
- Study of Biological Phenomena
- Semiconductor Equipment

Description

The RIM032K0-20 is a 2kW Solid-State Power Amplifier (SSPA) engineered with cutting-edge GaN on SiC HEMT technology, delivering exceptional efficiency and high breakdown voltage. This rugged amplifier is meticulously optimized to meet the stringent demands of linear accelerators (Linacs) and particle accelerator RF infrastructures..

Electrical Specifications @ V_{DS} =50V, T=25°C, 50Ω System

PARAMETER	UNIT	MIN	TYP	MAX
Operating Frequency	MHz		325	
Operating Bandwidth	MHz	324		326
CW Variable Output Power	W	25	-	2000
Power Gain @Peak Power	dB		72	
RF Input power	dBm	-10		-8
Efficiency (DC to RF)	%	-	-	70
Operating Voltage	VDC	-	50	-
Max. Mismatch @ Max Output Power*	6: 1 VSWR			

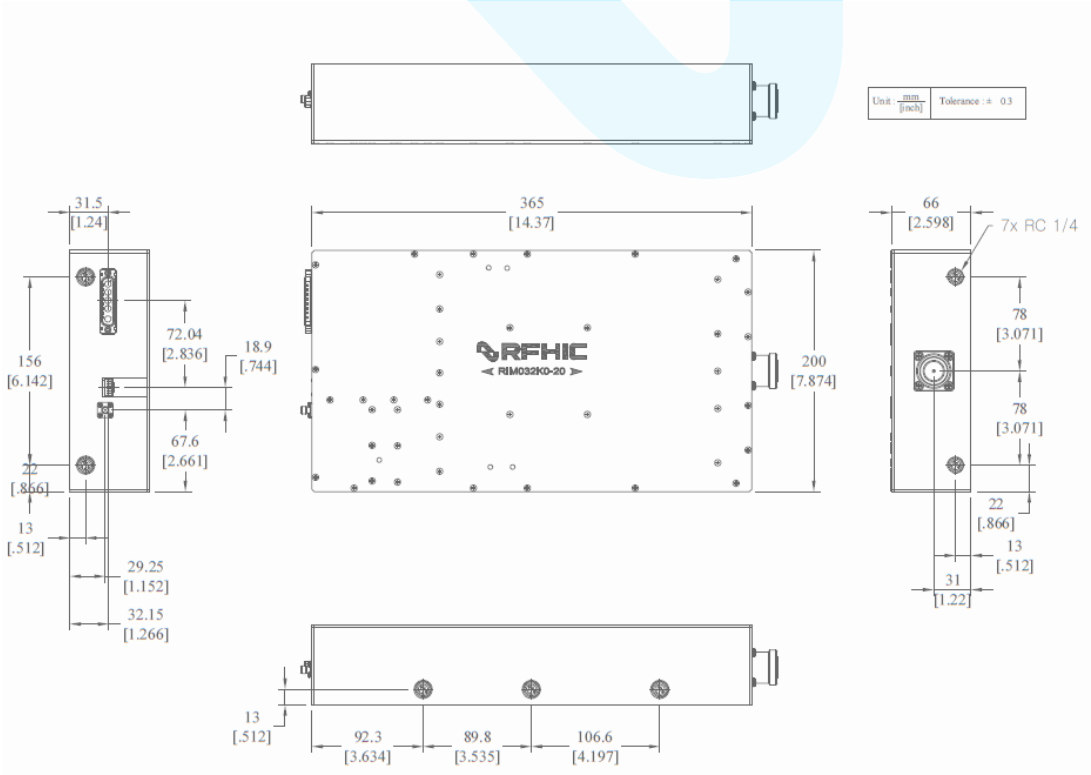
Mechanical Specifications

PARAMETER	UNIT	VALUE	
Dimensions (L x W x H)	mm	360 x 200 x 66	
Weight	kg	6	
RF Input Connector	-	SMA, Female	
RF Output Connector		7/16DIN, Female	
DC & GND: DB-8W8 6-Pin Female	-	D-Sub 5W5	
I/O Connector	-	SMAW200-14C	
Cooling Type	-	**Water Cooling Rate**	
		Cooling Water Inlet Temperature	20°C~25°C ((typ.)
		Relative humidity below dew point (non-condensing)	
		* De-ionized water shall be used to prevent system damage	
Fluid Inlet/Outlet Size	Inch	1/4 Tapered Pipe Thread	

Note

Dimension and weight may be subject to change.

Mechanical drawing



Interface Connector

12 Pin-Control (SMAW200-12C)

Pin No	Description	Pin No	Description
1	GND	2	GND
3	Voltage Monitoring	4	NC
5	Forward power Monitoring	6	Current Monitoring
7	RF Enable (Low Enable)	8	Temperature Monitoring
9	INPUT Monitoring	10	Gain Control (0~5V)
11	Reverse power Monitoring	12	Phase Control (0~5V)

8 Pin-Power (3005W5SXX99A10X)

Pin No	Description	Pin No	Description
A1(131A10049X)	50V	A2(131A10049X)	50V
A3(131A10049X)	50V	A4(131A10049X)	GND
A5(131A10049X)	GND		

Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
RIM032K0-20	August, 2025	0.1	Initial release of datasheet	Preliminary

Certification

This product is manufactured by a company that is certified for the AS9100D quality management system.