

Preliminary

GaN SSPA Microwave Generator

RIM151K0-20



Product Features

- 1496 ~ 1502MHz
- 1kW CW Peak Power @ 50V
- 62% Drain Efficiency @ 50V
- Low Cost, Light Weight, Compact
- Using GaN-on-SiC HEMT Transistor
- Excellent Thermal Stability and Ruggedness
- Externally 50Ω Matched

Applications

- High Power Industry
- Microwave CVD Reactor
- Plasma Generator
- Food Science
- MW Heating and Drying



Description

RIM151K0-20 using GaN-on-SiC transistors is designed for industrial, scientific, medical (ISM) and plasma applications at 1500MHz. RIM151K0-20 is the world's highest power and efficiency SSPA with affordable price. This amplifier is suitable for use in CW, ISM applications. This high efficiency rugged device is targeted to replace industrial magnetrons and other vacuum tubes which are currently applying into high power industrial applications, artificial diamond manufacturing, semiconductor equipments, and plasma systems.

Electrical Specifications @ $V_{DS}=50V$, $T=25^{\circ}C$, 50Ω System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	1496	-	1502	F _o
Operating Bandwidth	MHz	-	6	-	OBW
CW Output Power	W	-	1000	-	P _o
Efficiency	%	-	62	-	Eff
Input Power	dBm	-	-5	-	P _i
Gain	dB	-	63	-	G _P
Gain Flatness	dB	-	0.5	1	ΔG _P
In/Out Return Loss	dB	-	-	-15	S ₁₁
Operating Voltage	V	-	50	-	V _{dc}
Operating Case Temperature		-	-	60	T _c
VDC Connector	A1	50V ±1%			
	A2	GND			
Controls Connector	1	Current Monitor			
	2	Temp Monitor			
	3	Forward Power Monitor			
	4	Reflect Power Monitor			
	5	Input Power Monitor			
	6	+50VDC Voltage Monitor			
	7	RF En/Dis : Enable(Low), Disable(High or Open)			
	8	Gain Control			
	9, 14	N.C.			
	10, 11	5.6V			
	12, 13	GND			

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Mechanical Specifications

PARAMETER	UNIT	VALUE
Dimensions (L x W x H)	mm	300 x 150 x 45
Weight	Kg	3.48 typ
RF Input Connectors	-	SMA, Female
RF Output Connectors	-	7/16 DIN, Female
DC & I/O Connector	-	302W2CPXX99A10X, SMAW-14C
Cooling	-	Water cooling (25°C typ, 2 liter per minute, 0.2 bar)

Note

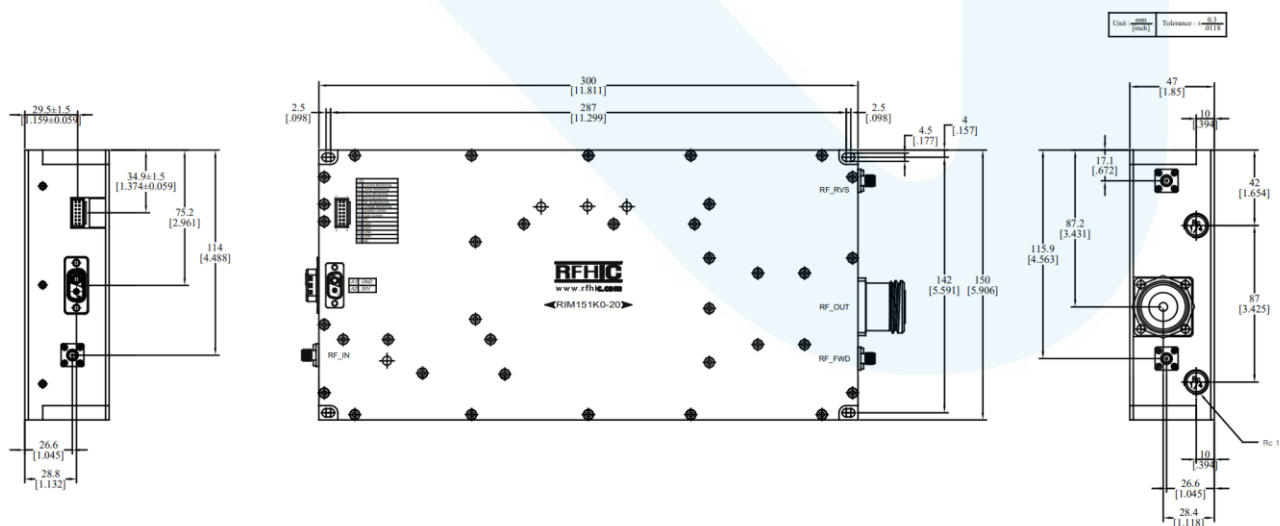
Water cooling condition may be subject to change.

Environmental Specifications

PARAMETER	UNIT	VALUE
Operating Case Temperature ⁽¹⁾	°C	0 ~ 60
Environmental/Storage Temperature	°C	-40 ~ 100

Remarks: (1) Operating case temperature is the temperature detected at the PA temp sensor.

Mechanical Drawings



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Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
RIM151K0-20	July, 2021	1.0	Initial release of datasheet	



Certification

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

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