

## 9.2-9.8GHz/200Watt/Module

Model Number: KNP9500M53A

Model KNP9500M53A is an X-band high power pulsed amplifier operating in the 9.2 to 9.8 GHz frequency range and offering pulsed width up to 300µs with duty cycle up to 5%. The amplifier provides in excess of 200Watts peak output power into a 50 Ohm load. The employment of gallium nitride (GaN) and chip-and-wire technology in manufacturing ensures this module state-of-the-art power performance with excellent power-to-volume ratio. It is ideal for high power pulse applications or radar system.

### FEATURES:

- Small Size and light weight
- Power added efficiency > 10%
- Digital interface option
- Forward and reflected power coupling ports
- pulse width/duty cycle protection
- Over voltage, and over current protection

### ELECTRICAL SPECIFICATIONS @ +32.0VDC, 25°C, 10µS, 5%, 50Ω

Parameter	Symbol	Min.	Typ.	Max.	Units
Operating Frequency	BW	9.2		9.8	GHz
RF Output Power	PPK		200		Watt
Duty Cycle	Duty Cycle			5	%
Pulse Width	PWIDTH	0.5		300	µS
PRI	PRI	40		1500	µS
Harmonics @ Pout =150W	H		-40		dBc
Spurious Signals	Spur		-55		dBc
RF Input Power @ PSAT	PIN	0		1	dBm
Input Return Loss/ Output Return Loss	S11/ S22		-10		dB
Rise /Fall time (Pulse Performance)	TRISE/FALL/OFF(10-90)		100		nS
Switching Speed	TON/OFF		2	5	µS
Power droop	Droop		1		dB
In/Output Impedance	Impedance		50		Ω
Operating Voltage	VDC	30	32	34	Volt
Peak Current Consumption @ Pout =150W	IDD			20	Amp
Average Current Consumption @ Pout =150W	IDD		10		Amp
Power Added Efficiency	Efficiency		12		%

### MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Notes
Dimensions	180x 125 x25 [7x4.9x0.98]	mm [inch]	Max
Weight	2[4.4]	kg [lb]	Typ
RF Connectors Input	Type-SMA, Female		
RF Connectors Output	Type-SMA, Female		
DC Interface Connector	Hybrid,D-Sub 7-Pin,Male		
Cooling	External Heatsink Required (Optional supplying)		

### ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Minimum	Typical	Maximum	Units	Notes
Operating Temperature	-20		60	°C	
Non-operating Temperature	-25		65	°C	Storage
Relative Humidity (non-condensing)			95	%	

*Focus on Your Application*

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Specifications subject to change without notice

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**Absolute Maximum Rating**

Input RF drive level without damage	+5 dBm (Max)
Load VSWR @ Pout =150W	5:1 @ all load phase & amplitude for duration of 1 minute; 3:1 @ all load phase & amplitude continuous
Over Temperature	90°C @ heatsink [restored @ 60°C]

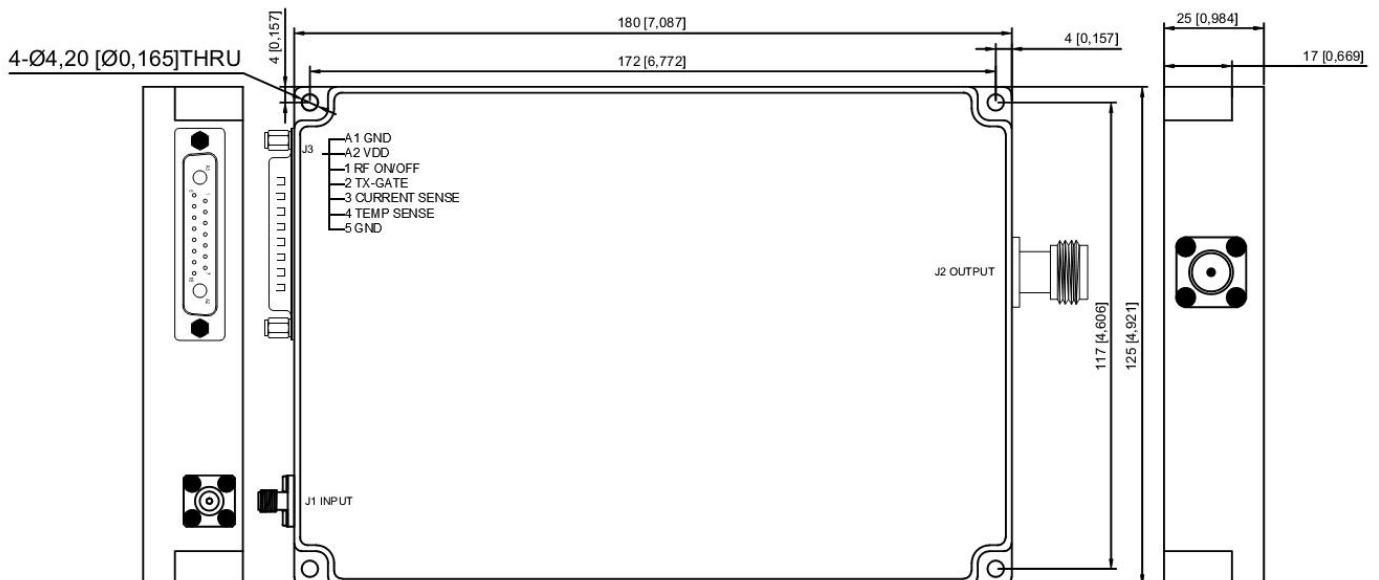
**DC INTERFACE CONNECTOR**

Pin #	Description	Specifications
A1	GND	Ground
A2	VDD	40VDC
1	RF ON/OFF	RF On: TTL Logic High (2.8-5.5V) Amplifier Radiate / To forbid radiate
2	TX-GATE	TX-GATE On: TTL Logic High (2.8-5.5V) Amplifier Standby /
3	CURRENT SENSE	Analog voltage relative to IDD @ 100mV per Ampere
4	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
5	GND	Ground

**PROTECTION AND WARNING FUNCTION**

- Over threshold of VSWR (High VSWR)
- Over threshold of duty cycle (High duty cycle)
- Over threshold of current
- Over threshold of temperature
- Warning low RF output power

**OUTLINE DRAWING (All dimensions in mm [inch])**



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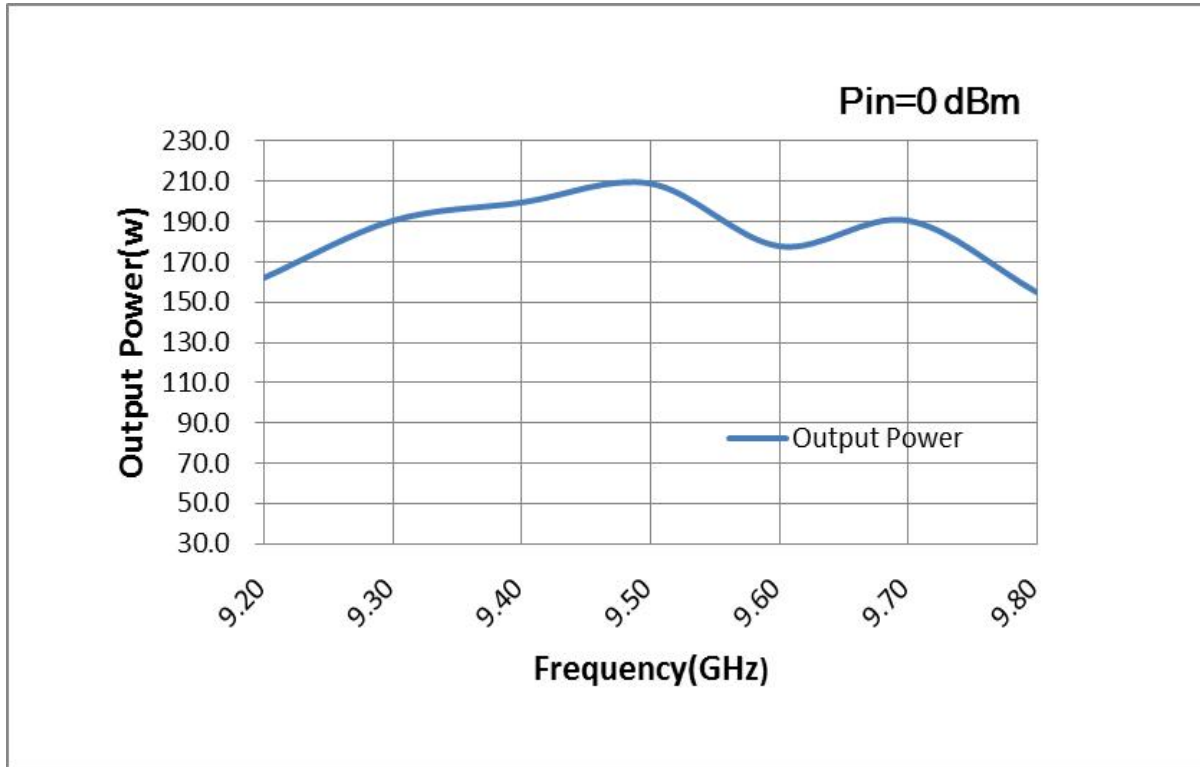
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TYPICAL PERFORMANCE PLOTS(For reference only)



Note:

1. Adequate heatsink required.
2. This product will be developed upon contract/order. All the above specs are for reference only. Actual product may be different. Please check with KeyLink sales team if you have any question.

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