

## 1000-2000MHz/200Watt/Module

Model Number: KB1020M53A

The model KB1020M53A is a high-power amplifier operating between 1000 MHz and 2000 MHz and offering a wide dynamic Range with 200 Watts typical saturated power. 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 broadband high power, linear applications.

**FEATURES:**

- Broadband & High power
- High Efficiency
- Great Linearity
- Small Size & Light Weight
- Built-In Control and Protection Circuits
- CLASS AB

**ELECTRICAL SPECIFICATIONS @ +28.0VDC, 25°C, 50Ω**

Parameter	Symbol	Min	Typ	Max	Units
Operating Frequency	BW	1000		2000	MHz
RF Output Power	P <sub>out</sub>		200		Watt
Small Signal Gain Flatness	Δ G <sub>ss</sub>		±2.5		dB
Power Gain	G <sub>p</sub>		53		dB
Power Gain Flatness	Δ G <sub>p</sub>		±1.5		dB
Input Return Loss	S <sub>11</sub>			-10	dB
Harmonics @150W	H		-20		dBc
Spurious Signals	Spur		-60		dBc
Switch On/Off@10-90% Time	T <sub>ON/OFF</sub>		2	4	μS
In/ Output Impedance	Impedance		50		Ω
Operating Voltage	VDC	24	28	32	Volt
Power add efficiency	Eff		35		%
DC Current @200W	IDD		20		Amp

**MECHANICAL SPECIFICATIONS**

Parameter	Value	Units	Notes
Dimensions	200x150x25 [7.87x5.9x0.98]	mm [inch]	Maximum
Weight	1.75[3.86]	kg [lbs]	Maximum
RF Connectors Input	SMA, Female		
RF Connectors Output	N-Type, Female		
DC Interface Connector	Hybrid, D-Sub 7-Pin, Male		
Cooling	External Heatsink Required (Not Supplied)		

**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	%	

**ABSOLUTE MAXIMUM RATING**

Input RF drive level without damage	+10 dBm (Max)
Load VSWR @ P <sub>OUT</sub> =150W	∞ @ all load phase & amplitude for duration of 1 minutes; 3:1 @ all load phase & amplitude continuous
Over Temperature	85°C @ heatsink [restored @ 60°C]

*Focus on Your Application*

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Specifications subject to change without notice

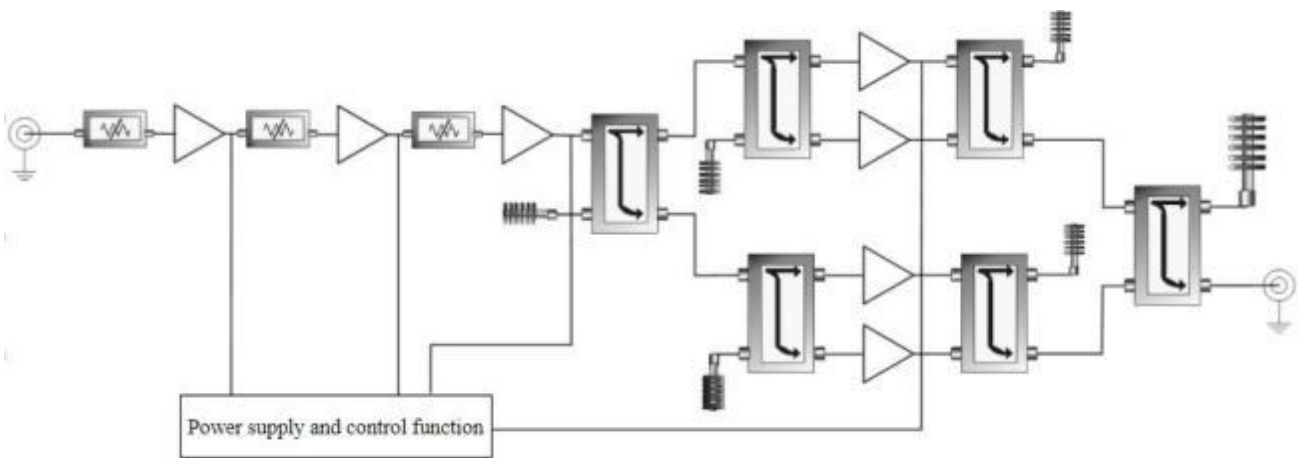
# 1000-2000MHz/200Watt/Module

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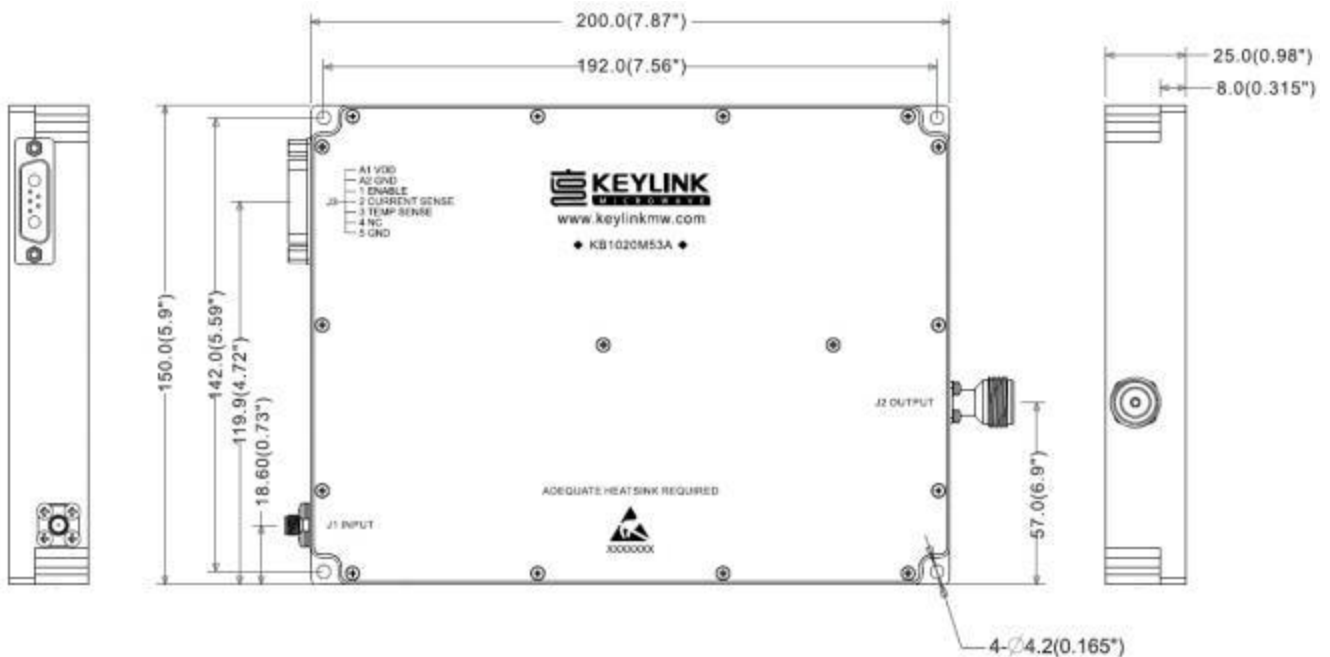
## DC INTERFACE CONNECTOR

Pin #	Description	Specifications
A1	VDD	28Vdc
A2	GND	Ground
1	ENABLE	Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low)
2	CURRENT SENSE	Analog voltage relative to I <sub>DD</sub> @ 100mV per Ampere
3	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
4	NC	No electrical connection
5	GND	Ground

## Functional Diagram



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



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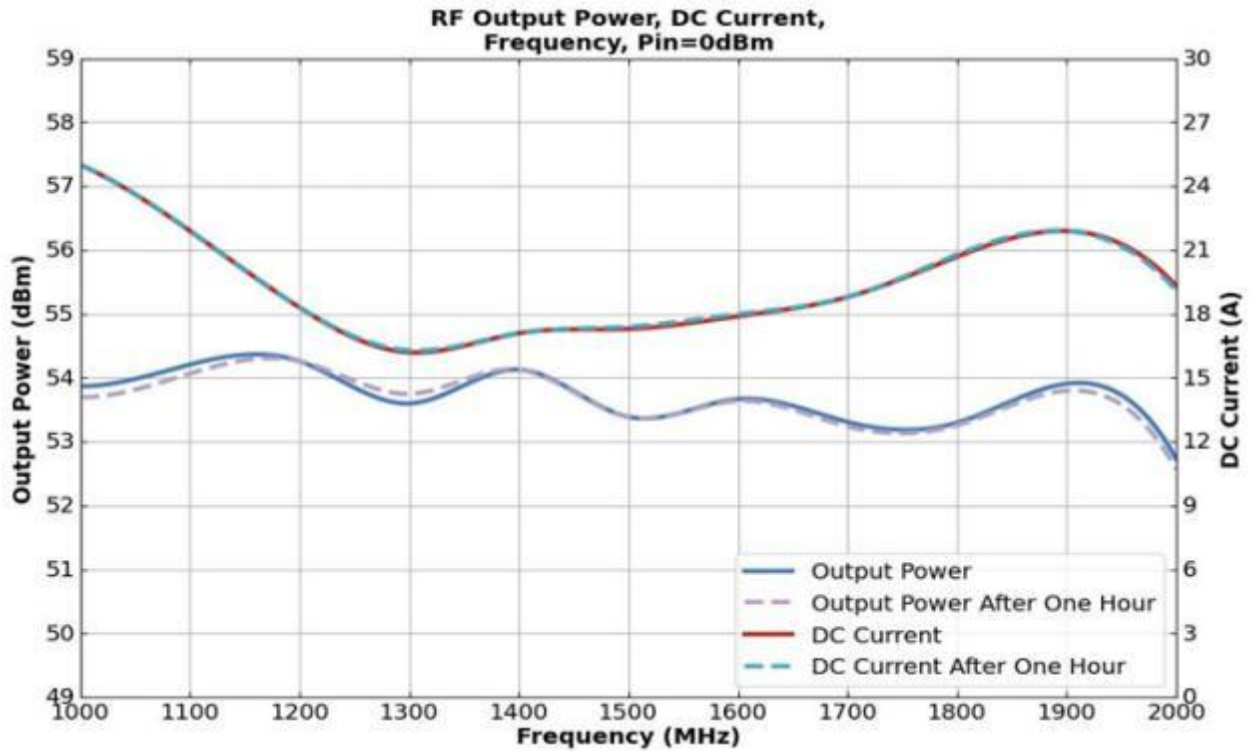
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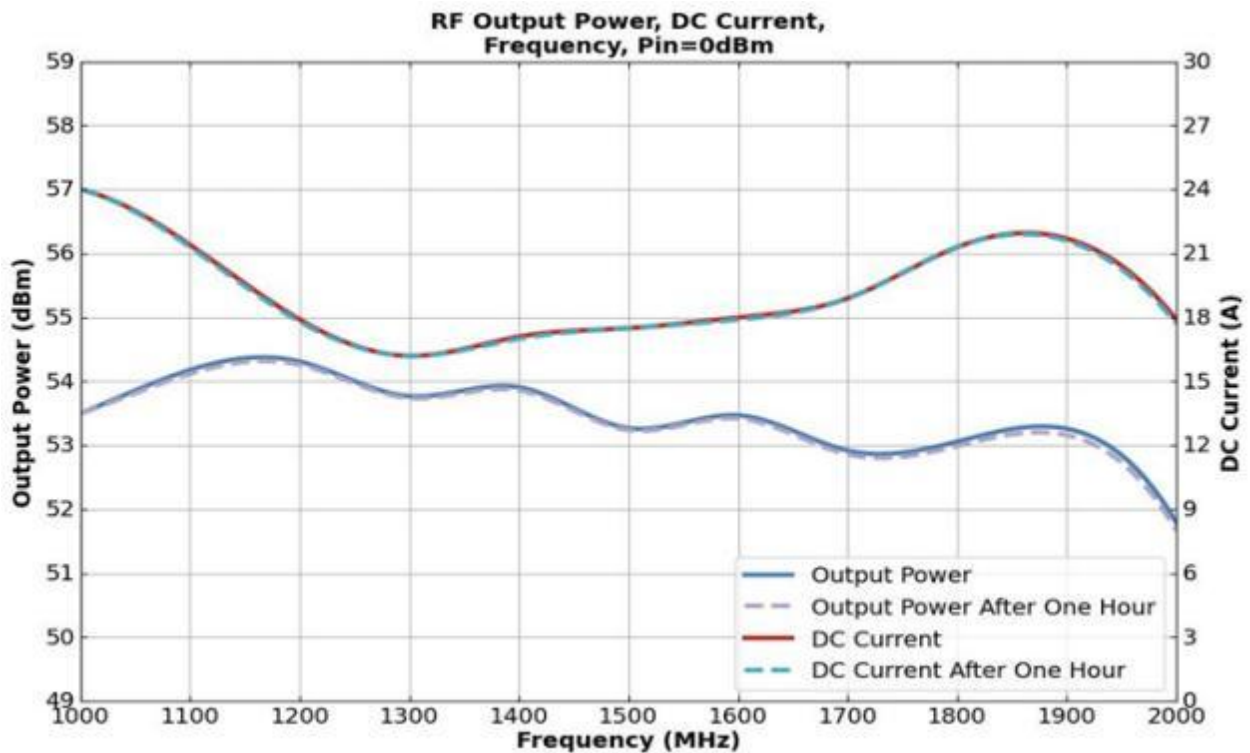
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## TYPICAL PERFORMANCE PLOTS (FOR REFERENCE ONLY)

Graph1: Output Power (Low temp.  $-20\pm 3^{\circ}\text{C}$ )



Graph2: Output Power (High temp.  $+60\pm 3^{\circ}\text{C}$ )



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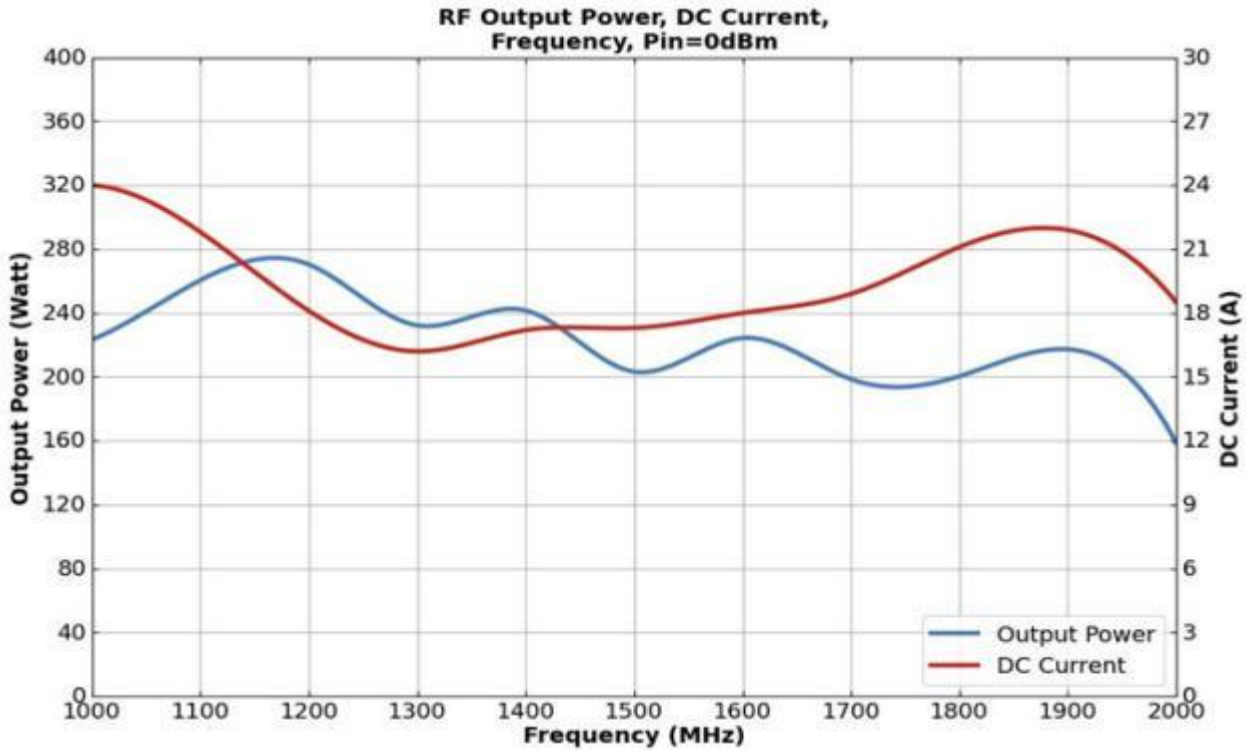
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Graph3: Output Power (Normal temp. +25±3C)



Power Gain:



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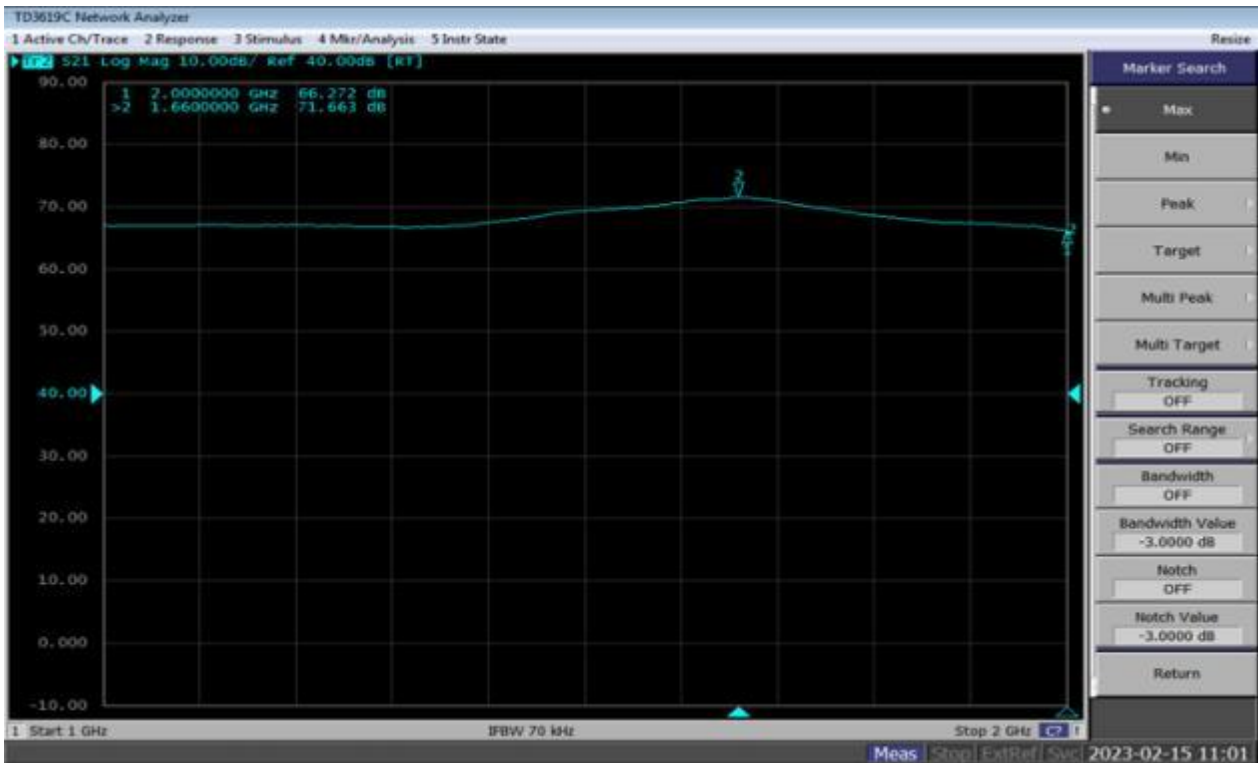
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## Input Return Loss:



## Small Signal Gain:



Note: Adequate heatsink required.

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