

Broadband High Power Amplifier Module (SSPA)

1000-2000MHz/200Watt/Module

Model Number: MCW1020M53A

The mode MCW1020M53A is a high-power amplifier operating between 1000MHz and 2000MHz and offering a wide dynamic Range with 200Watts 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 _{out}		200		Watt
Small Signal Gain Flatness	Δ G _{SS}		±2.5		dB
Power Gain	G _p		53		dB
Power Gain Flatness	Δ G _p		±1.5		dB
Input Return Loss	S ₁₁			-10	dB
Harmonics @ 150W	H		-20		dBc
Spurious Signals	Spur		-60		dBc
Switch On/ Off@10-90% Time	T _{ON/ OFF}		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 [7.87x5.91x0.98]	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 @ POUT = 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]

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Broadband High Power Amplifier Module (SSPA)

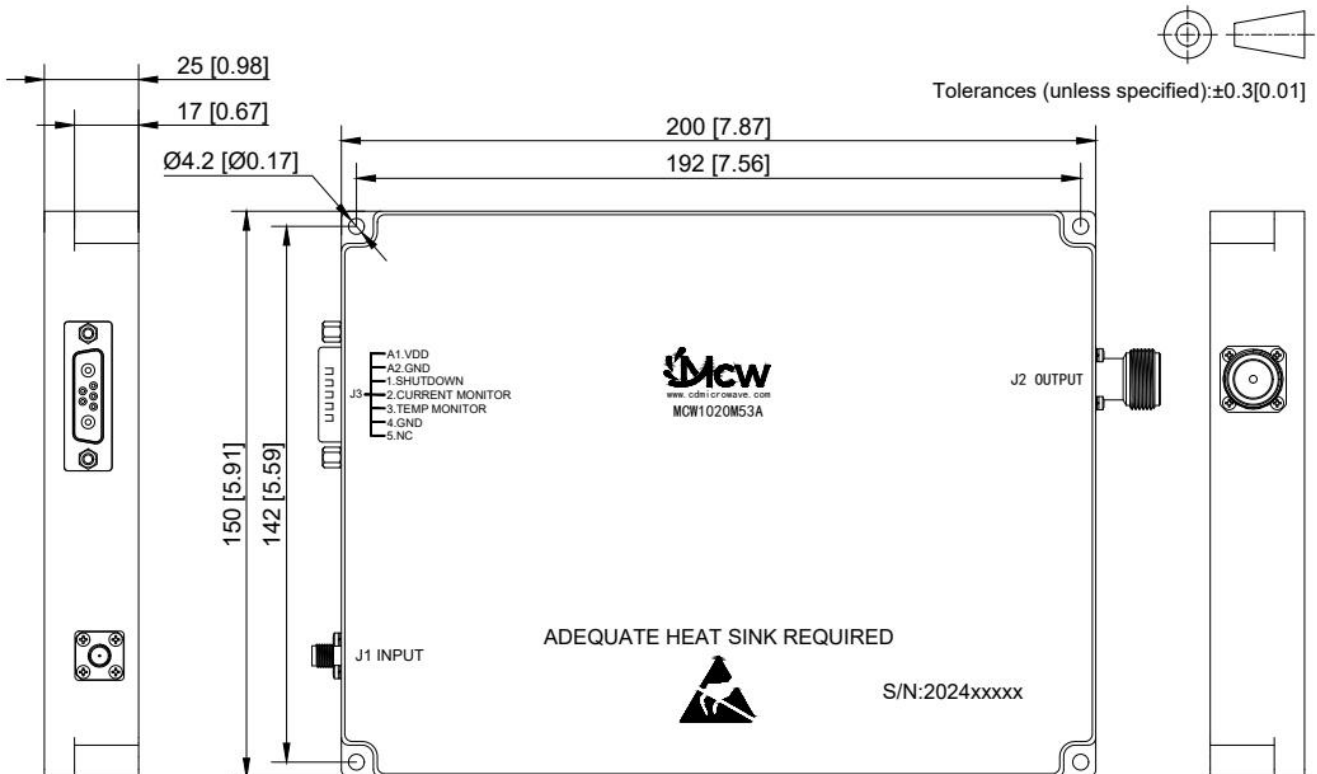
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DC INTERFACE CONNECTOR

Pin #	Description	Specifications
A1	VDD	28VCC
A2	GND	Ground
1	SHUTDOWN	Amplifier Disable: TTL Logic High (3.3V) (Internally Pulled-Low)
2	CURRENT MONITOR	Analog voltage relative to I _{DD} @ 100mV per Ampere
3	TEMP MONITOR	Analog voltage relative to Module's Temperature @ 10 mV/°C
4	GND	Ground
5	NC	No electrical connection

OUTLINE DRAWING (All dimensions in mm [inch])



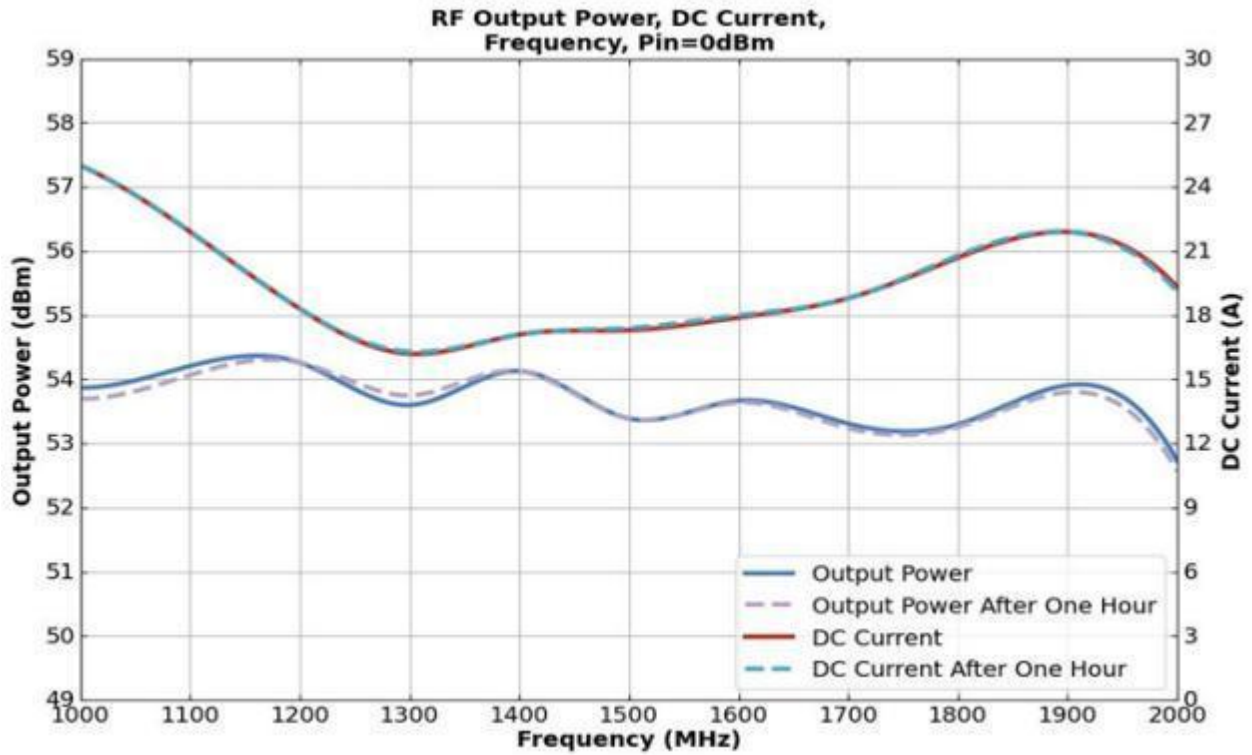
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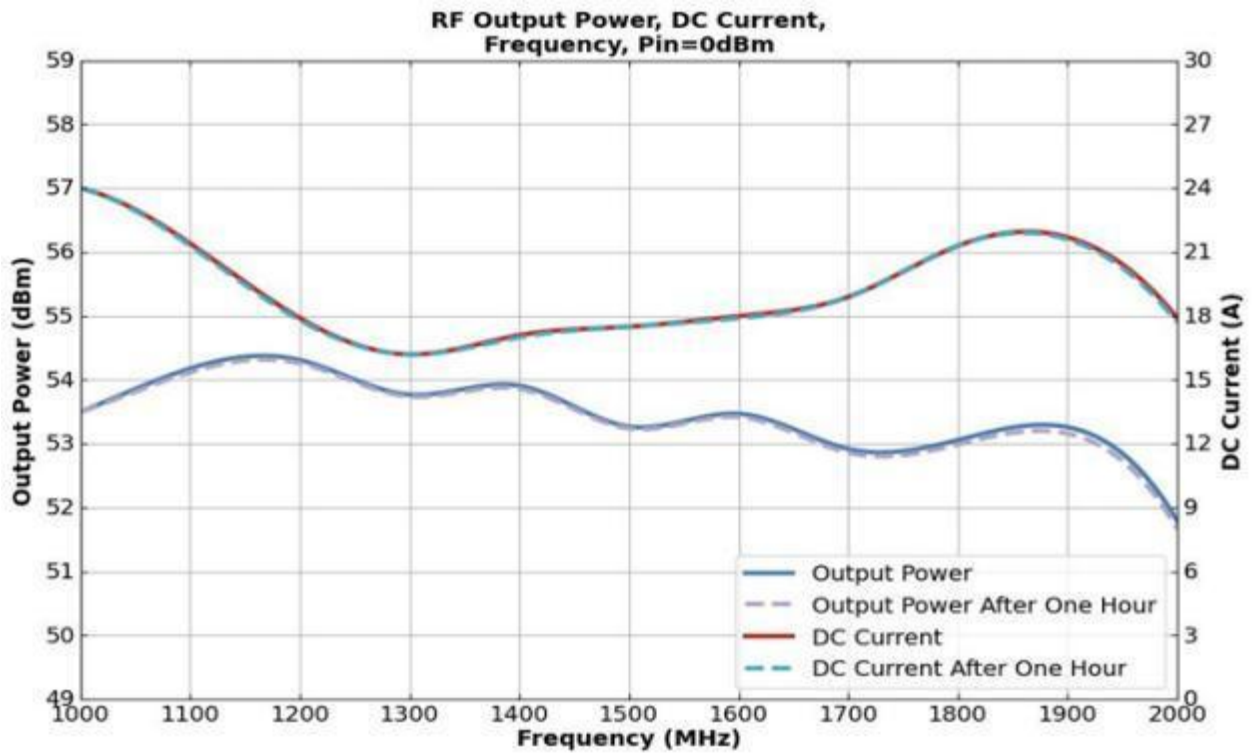
TYPICAL PERFORMANCE PLOTS (FOR REFERENCE ONLY)

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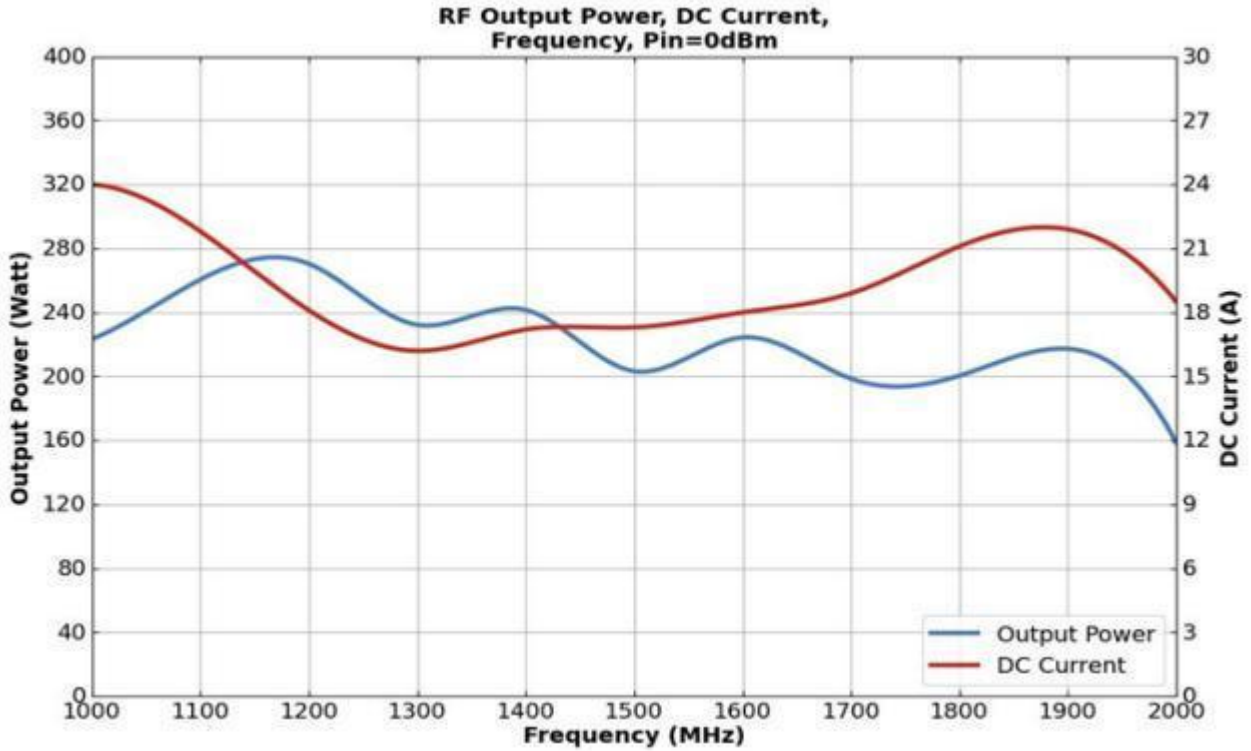
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Graph3 : Output Power (Normal temp. +25±3C)



Power Gain:



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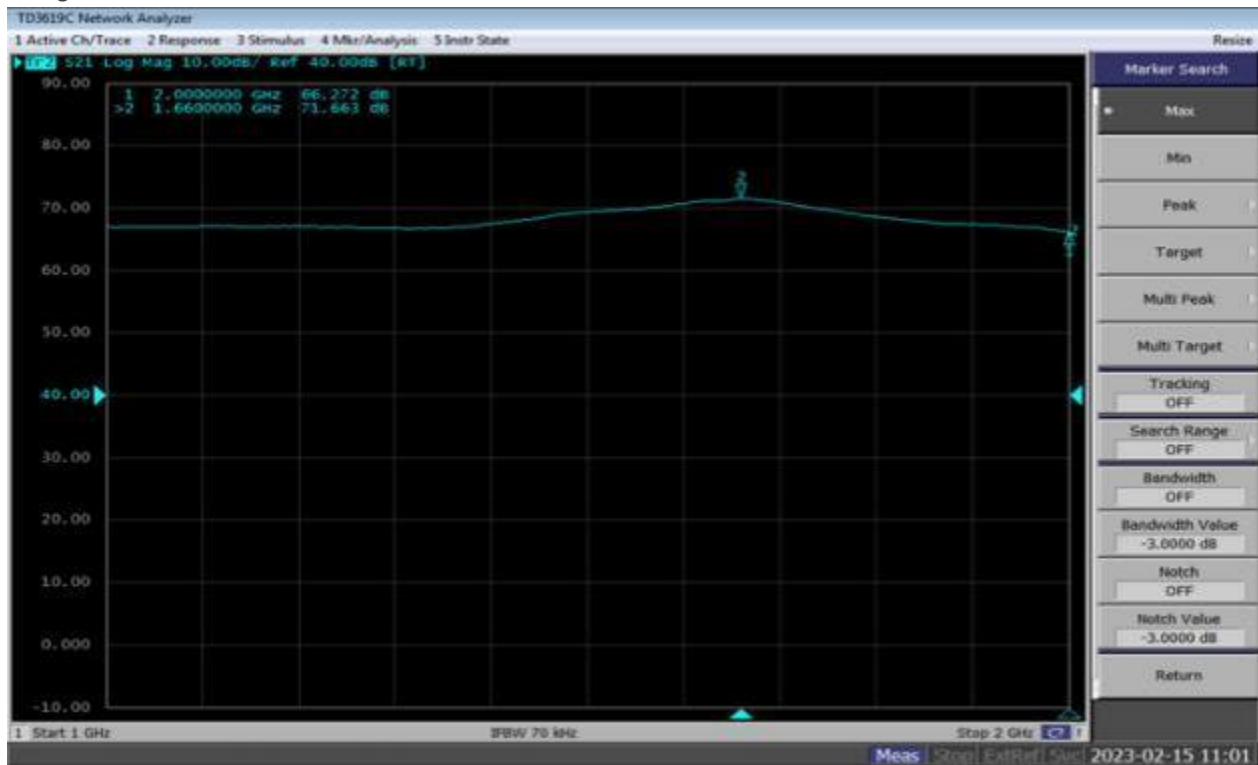
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Input Return Loss:



Small Signal Gain:



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