

The MB2.04.0G525028 is a 170W high gain Solid State Broadband High Power Amplifier with High Average Efficiency around 35%. This amplifier module utilizes the latest high power RF GaN transistors and also features built in control and monitoring, with protection functions to ensure high availability. This amplifier is suitable for broadband jamming and EMC testing, and good consistency for high power combination. The amplifier comes with an industry leading warranty.

Features

2GHz-4GHz frequency range	Solid-state Class AB Broadband design
Psat 52.3dBm typ., 51.8dBm Min.	Instantaneous ultra-broadband
High Average Efficiency around 35%	Suitable for CW, and Pulse
50 ohm input/output impedance	Small and lightweight
Output Power Level Indicator	High reliability and ruggedness

ELECTRICAL SPECIFICATIONS(T=25°C,DC Voltage= 28V, Load VSWR ≤ 1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	2		4	GHz
Output Power CW @ Pin = 0dBm	Psat	150	170		W
Power Gain @ Pin = 0dBm	Gp	50	52		dB
Power Gain Flatness @ Pin = 0dBm	ΔGp		±1.5	±1.8	dB
Input Power for Rated PSAT	P _{IN}	-2	0	2	dBm
Harmonics @ Pin = -5dBm	2 nd /3 rd		-20/-25	-12/-20	dBc
Spurious Signals@ Pin = 0dBm	Spur		-70	-60	dBc
Input Return Loss	S ₁₁			-10	dB
Third Order Intercept Point					
2-Tone @ 43dBm/Tone, 100kHz Spacing*	IP3		53		dBm
Operating Voltage	V _{DC}	26	28	30	V
Quiescent Current @Enable=+3.3V	IDQ		4		A
Current Consumption @Pout= 150~170 W	IDD		20	24	A
Module to Module Amplitude Tracking (±)	ΔGt			1	dB
Module to Module Phase Tracking (±)	ΔGp			15	°
Switching Time @ 1kHz TTL, Pin = 0dBm	TON/TOFF		2	5	μs

Note*: IP3 or IMD3 data, please contact sales engineer.

MECHANICAL SPECIFICATIONS

Cooling External: Heat Sink Needed
 Length*Width*Height: 230*160*24 mm
 Weight: 4.4 lbs
 RF Connector Input: SMA, Female
 RF Connector Output: Type N, Female

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Rev 1: 03/14/2024
 Specifications subject to
 change, consult sales for
 latest information

ENVIRONMENTAL SPECIFICATIONS

Module Operation Temperature* ¹	-20	60* ²	°C
Storage Temperature Range	-45	85	°C
Relative-Humidity		95	%
Altitude * ²		N/A	
Vibration/Shock * ²		N/A	

Notes *¹: Module Operation Temperature can be extended to -45~80°C, Contact Sales for update.

Notes *¹: Should Supply Adequate Heat Dissipation, Enough Fan and Heat-Sink is necessary during the Temp Test.

Notes *²: Altitude /Vibration are designed with considerations, but without tests and experiments.

LIMITS

Input RF drive level without damage	$Pin \leq 10$	dBm
Load VSWR @ POUT =100W	$VSWR \leq 5:1$ [Design To Meet]	N/A
Load VSWR @ POUT =150W	$VSWR \leq 3:1$ [Design To Meet]	N/A
Thermal Degradation	Module Surface= $80 \pm 5^\circ\text{C}$ [recovery@ $<60^\circ\text{C}$]	°C

DC POWER SUPPLY /INTERFACE CONNECTOR– [J30J-15ZKP, Male]

Pin #	Description	Specifications
1-7	VDD	28VDC
8-15	GND	Ground

DC CONTROL /INTERFACE CONNECTOR– [J30J-9ZKP, Male]

Pin #	Description	Specifications
1	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
2	CURRENT SENSE	Analog voltage relative to IDD @ 100mV per Ampere
3	Vpower	Analog voltage relative to Output power(we will supply true value table)
4	GND	Ground
5	State	Output power $\geq 47 \pm 2\text{dBm}$: TTL Logic High (3.3V) (Internally Pulled-Low)
6	T/R	Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low)
7	Ctl+(Optional)	TTL+(Differential Signal), Switching Time $\leq 100\text{ns}$
8	Ctl- (Optional)	TTL+(Differential Signal), Switching Time $\leq 100\text{ns}$
9		

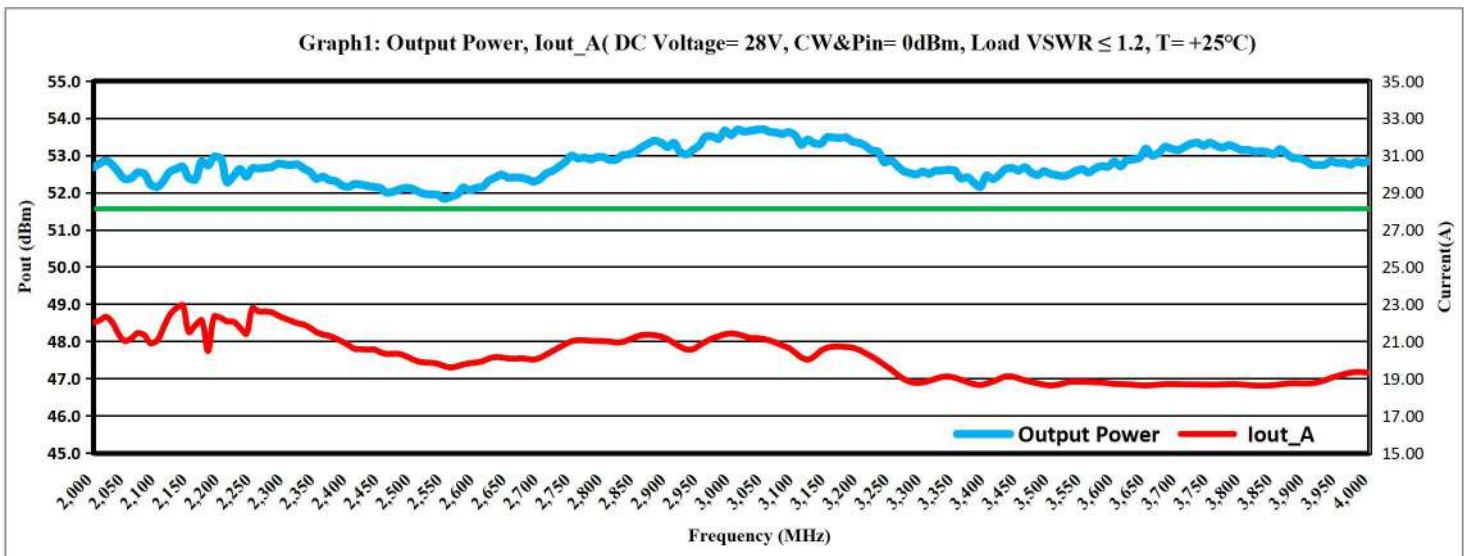
PLOTTED AND OTHER DATA

Notes:

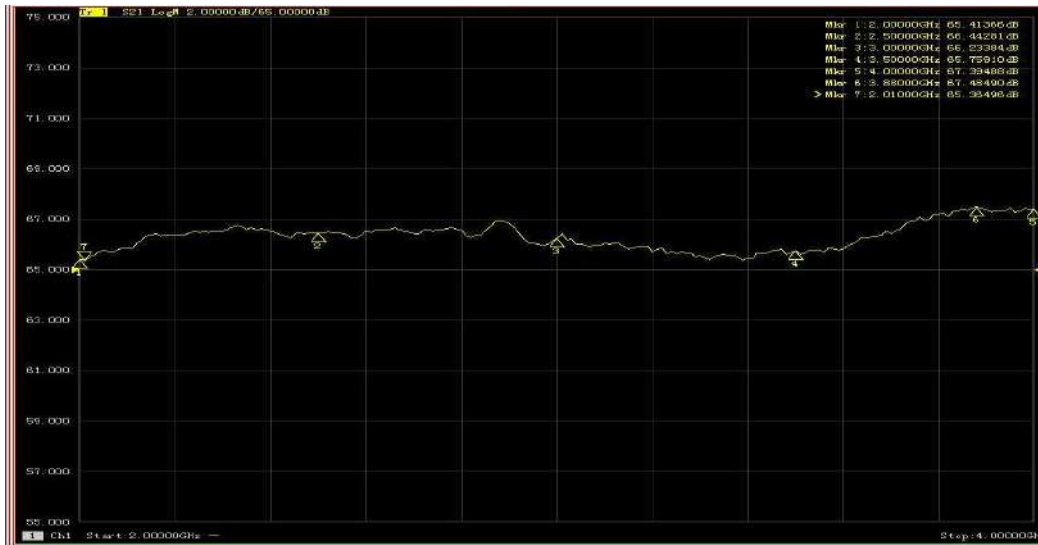
1. Values at +25°C, sea level.
2. ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
3. Heat Sink required for Proper Operation, Unit is cooled by conduction to heat sink.

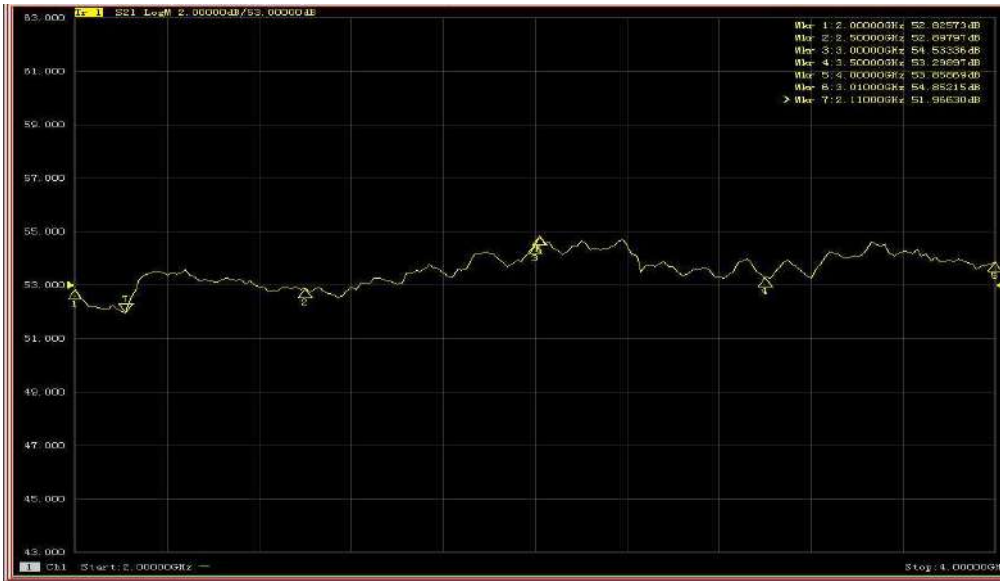
TYPICAL PERFORMANCE DATA [Volume Shipment product data for Reference]

Pout and Current [Pin=0 dBm, Load VSWR ≤ 1.2], (Normal temp. +25±3°C, Heat-Sink with Fan Cooling)

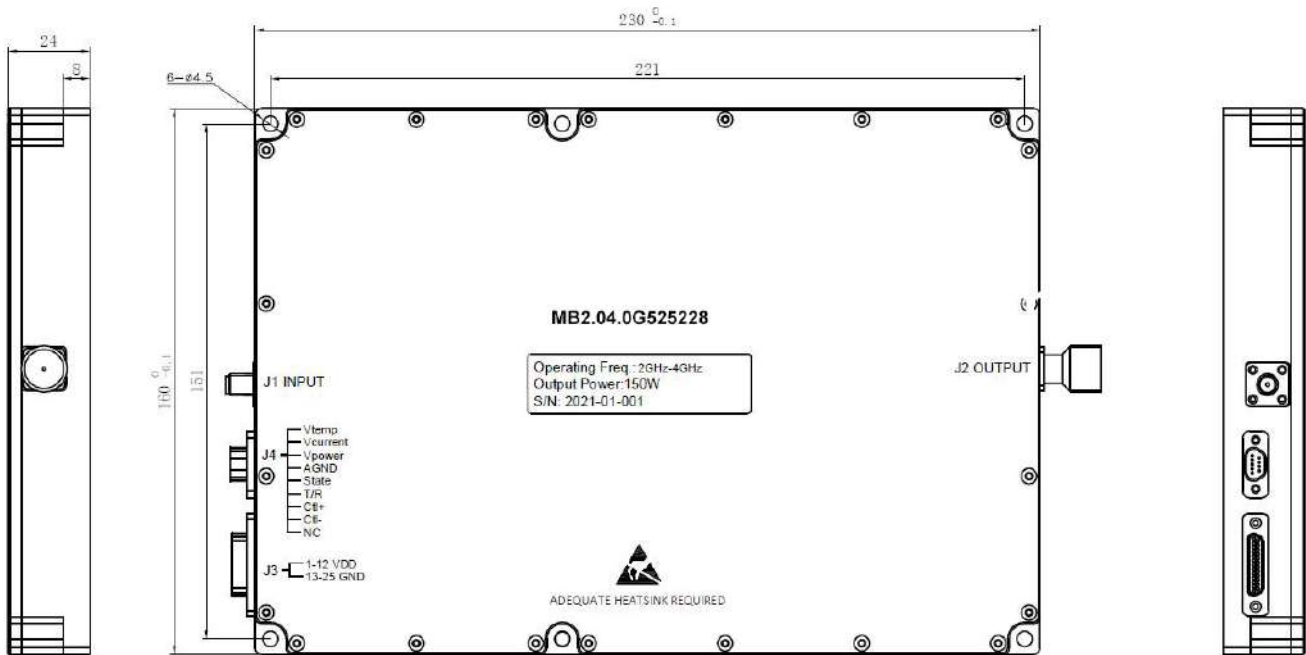


S21 Pin=-25dBm (up), and S21 Pin=0 dBm (down), [Load VSWR ≤ 1.2] , For Reference Only





OUTLINE DRAWING [mm]



PRODUCT VIEW

