

TECHNICAL DATASHEET

AVBR1030H51

The AVBR1030H51 is a 120W high gain Solid State Broadband High Power Amplifier. 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 Communication, Test & Measurement, Defense and EMC testing.

Features

- | | |
|--|---------------------------------------|
| 1.0GHz-3.0GHz frequency range | Solid-state Class AB Broadband design |
| Psat 50.8dBm Typ, 50dBm Min | Instantaneous ultra-broadband |
| Power gain 51dB | Suitable for CW and Pulse |
| 50 ohm input/output impedance | Small and lightweight |
| Built-in control, monitoring and protection circuits | 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	1.0		3.0	GHz
Output Power CW [Pin= 0 dBm]	Psat	100	120		W
Power Gain @ Psat	Gp	50	51		dB
Power Gain Flatness @ Rated Psat	ΔGp		± 1	± 1.5	dB
Input Power for Rated Psat	PIN		0		dBm
Harmonics @ Pout =50W	2 nd /3 rd		-20/-25	-15/-18	dBc
Noise Figure(If Needed, Please Contact)	NF		8	10	dB
Spurious Signals@ Pout =50W	Spur		-70	-65	dBc
Input VSWR	VSWR_in		1.3	1.5	/
Output VSWR	VSWR_out		1.5	2	/
Third Order Intercept Point					
2-Tone @ 41dBm/Tone, 1MHz Space(If Needed, Please Contact)	OIP3		54		dBm
Operating Voltage	VDC	26	28	30	V
Current Consumption @Pout=100~120W	IDD		12.5	16.0	Amp
Current Consumption @ Shutdown	ISD		0.1	0.2	Amp
Switching Time @ 1kHz TTL, PIN = -2dBm	TON/TOFF		2	3	µs

MECHANICAL SPECIFICATIONS

- | | |
|--|----------------|
| Cooling External Heat Sink Needed (Not Supplied) | |
| Length*Width*Height mm | 180x140x25 |
| Weight[Kg] | 1.8 |
| RF Connector Input | SMA, Female |
| RF Connector Output | Type-N, Female |

Datasheet: REV A.1/04.27.2021

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ENVIRONMENTAL SPECIFICATIONS(Design to meet)

Module Operation Temperature* ¹	-20	65	°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 -45~85°C, Contact Sales for update.

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

LIMITS

Input RF drive level without damage	Pin ≤ 10	dBm
Load VSWR @ POUT =80W	∞ @ all load phase & amplitude for duration of 1 minutes;	
Load VSWR @ POUT =100W	3:1 @ all load phase & amplitude continuous	
Thermal Degradation	90	°C

DC INTERFACE CONNECTOR – [Hybrid D-Sub 7W2, Male]

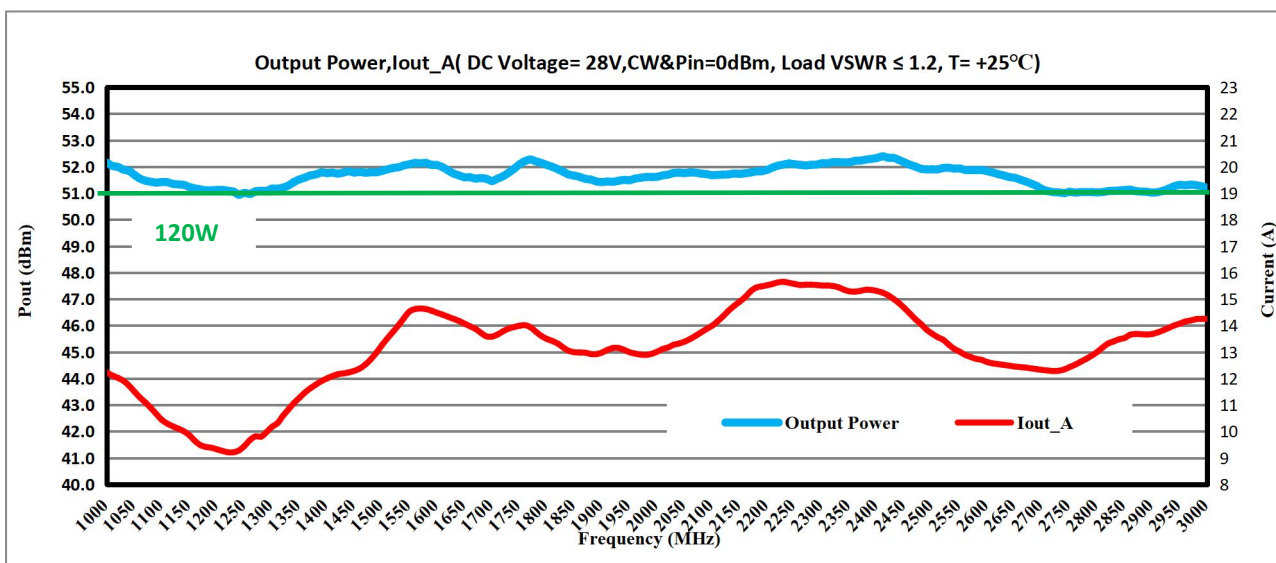
Pin #	Description	Specifications
A1	GND	Ground
A2	VDD	28VDC
1	CURRENT SENSE	Analog voltage relative to IDD @ 100mV per Ampere
2	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
3	ENABLE	Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low)
4	GND	Ground
5	N/C	No Connection

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:



Pout & Iout_A [Pin=0 dBm, CW, Load VSWR≤1.2, 25°C]

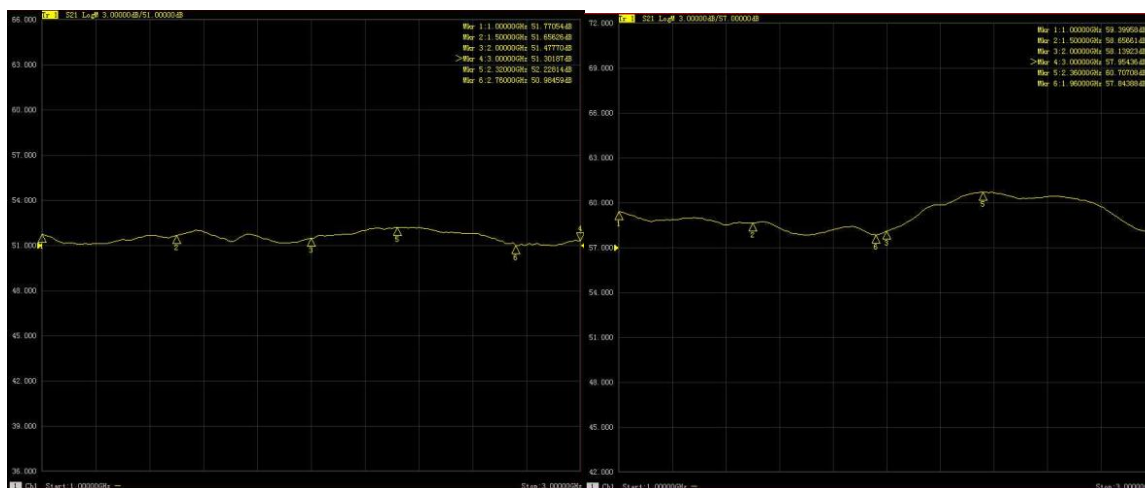
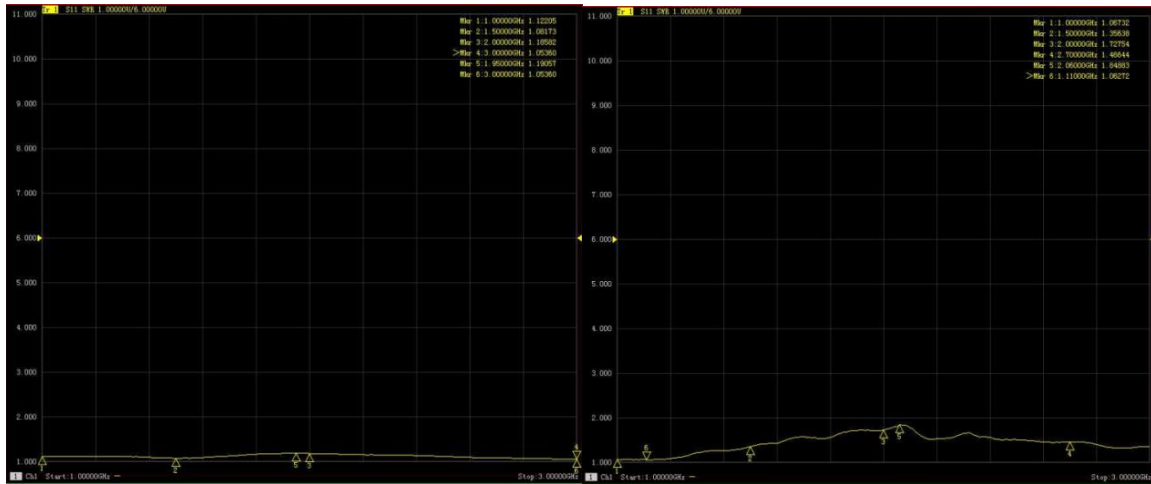
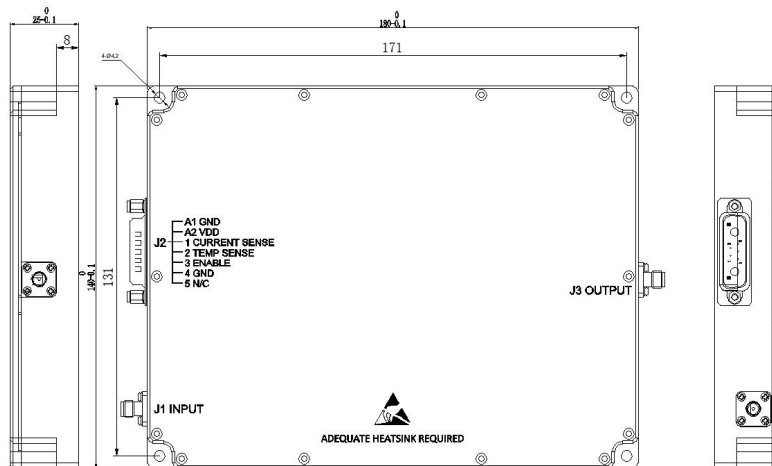


Figure left: Power Gain S21 (Pin=0dBm, Load VSWR≤1.2, 25°C), For reference only.

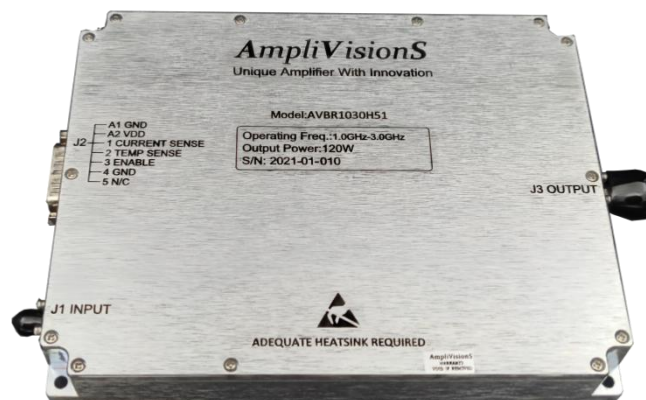
Figure right: Small signal gain S21 (Pin=-25dBm, Load VSWR≤1.2, 25°C), For reference only.



OUTLINE DRAWING (mm)



Product View:



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