TECHNICAL DATASHEET **AVBR0730H51**

The AVBR0730H51 is a 120W high gain Solid State High Power Amplifier. This amplifier module utilizes the latest high power RF GaN transistors and also features high efficiency and linearity, with protection functions to ensure high availability. This amplifier is suitable for Linear System and high power combination.

Features

- 0.7GHz-3.0GHz frequency range
- Psat 51dBm Typ, 49.5dBm Min
- Power gain 50dB
- 50 ohm input/output impedance
- Built-in control, monitoring and protection circuits
- Solid-state Class AB Broadband design
- Instantaneous ultra-broadband
- Suitable for CW, and Pulse
- Small and lightweight
- High reliability and ruggedness

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

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	0.7		3.0	GHz
Output Power CW@ Pin = 0dBm	P_{sat}	49.5	51		dBm
Power Gain @ Pin = 0dBm	Gp		50		dB
Power Gain Flatness @ Pin = 0dBm	ΔGp		±1.3	±1.8	dB
Input Power for Rated P_{SAT}	P_{IN}		0		dBm
Harmonics @ Pin = -5dBm	2^{nd} /3^{rd}		-20/-25	-12/-18	dBc
Noise Figure*	NF		8	10	dB
Spurious Signals@ Pin = 0dBm	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, 100kHz Spacing*	OIP3		54		dBm
Operating Voltage	V_{DC}	26	28	30	V
Current Consumption @Pout=100~120W	I_{DD}		12.5	16.0	Amp
Current Consumption @ Shutdown	ISD		0.1	0.2	Amp
Quiescent Current@Enable=+3.3V	IDQ		3	4	Amp
Switching Time @ 1kHz TTL, P_{IN} = -2dBm	T_{ON}/T_{OFF}		1	2	μs

Note*: contact our sales for further information.

MECHANICAL SPECIFICATIONS

Cooling External Heat Sink Needed (Not Supplied)	
Length*Width*Height mm	180x140x25
Weight[Kg]	1.6
RF Connector Input	SMA, Female

*Chengdu AmpliVisionS Technology Co., Ltd.**
High-Tech(West) Zone, Chengdu, P. R. China

Phone: +86(28)61892455
Email: sales@amplivisions.com
www.amplivisions.com

RF Connector Output	Type-N, Female
DC interface connector	Hybrid D-Sub 7 Pin, Male

ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Module Operation Temperature*[1]	-20	65*[2]	℃
Storage Temperature Range	-45	85	℃
Relative-Humidity		95	%
Altitude *[3]	N/A		
Vibration/Shock *[3]	N/A		

Notes *[1]**:** Module Operation Temperature can be extended to -45~85℃, Contact Sales for update.

Notes *[2]**:** Should Supply Adequate Heat Dissipation, Enough Fan and Heat-Sink is necessary during the Temp Test.

Notes *[3]**:** 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	Module Surface=90±5℃ [recovery@80±5℃]	℃

DC INTERFACE CONNECTOR – [Hybrid D-Sub 7-Pin, 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/℃*
3	ENABLE	Amplifier Disable: TTL Logic Low(0~0.6V) Amplifier Enable: TTL Logic High(3.3~5V)(Internally Pulled-Low)
4	GND	Ground
5	N/C	No Connection

Note*： Temp sense has a negative temperature coefficient of approximately -10mV/°C by design.
The Temp sense voltage can be calculated using the equation:

$$T = -1525.04 + \sqrt{2.4182 \times 10^{6} + \frac{1.8015 - V_{TEMP}}{3.479 \times 10^{-6}}}$$

PLOTTED AND OTHER DATA

Notes:

1、Values at +25℃， sea level.

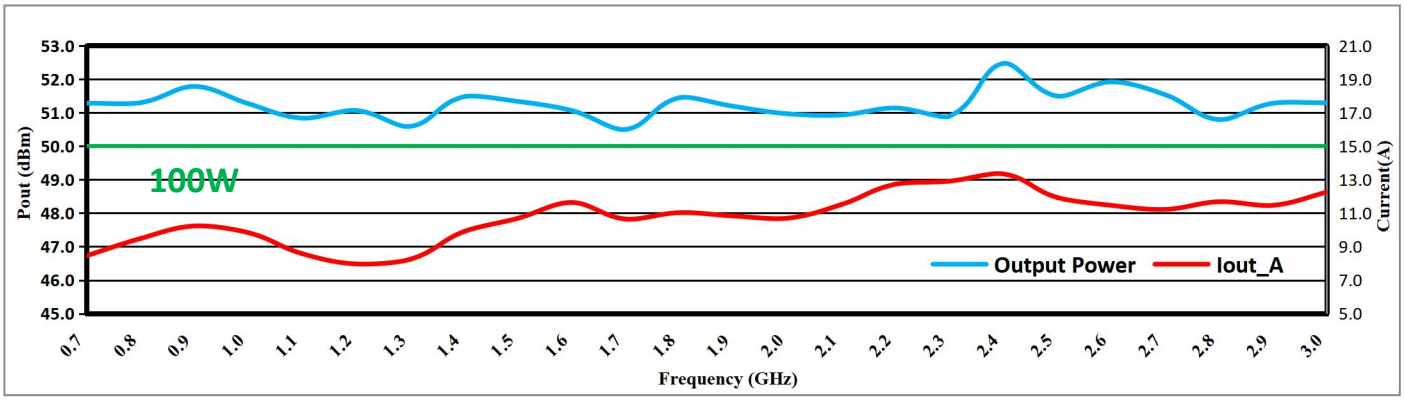
2 、 ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD

*Chengdu AmpliVisionS Technology Co., Ltd.**
High-Tech(West) Zone, Chengdu, P. R. China
Phone: +86(28)61892455
Email: sales@amplivisions.com
www.amplivisions.com

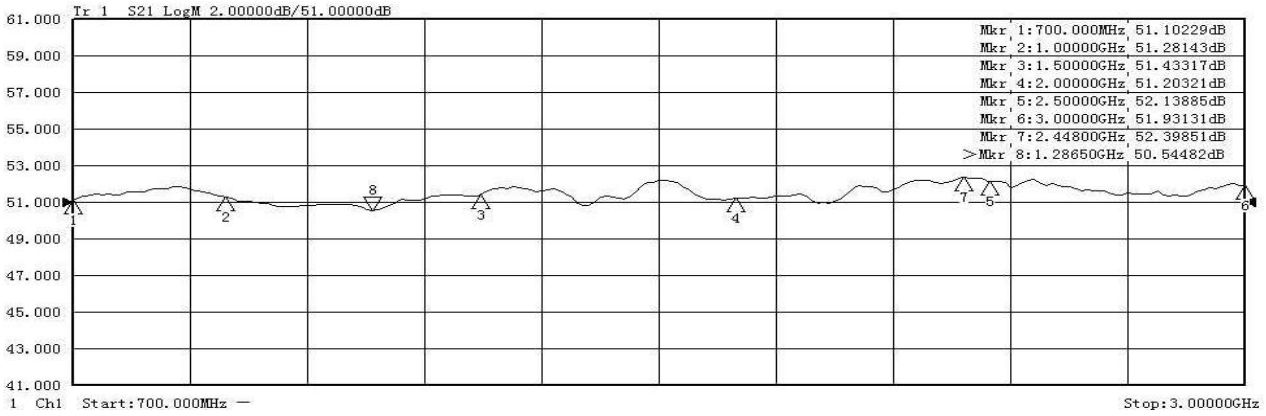
Workstation.

3、Heat Sink required for Proper Operation, Unit is cooled by conduction to heat sink.

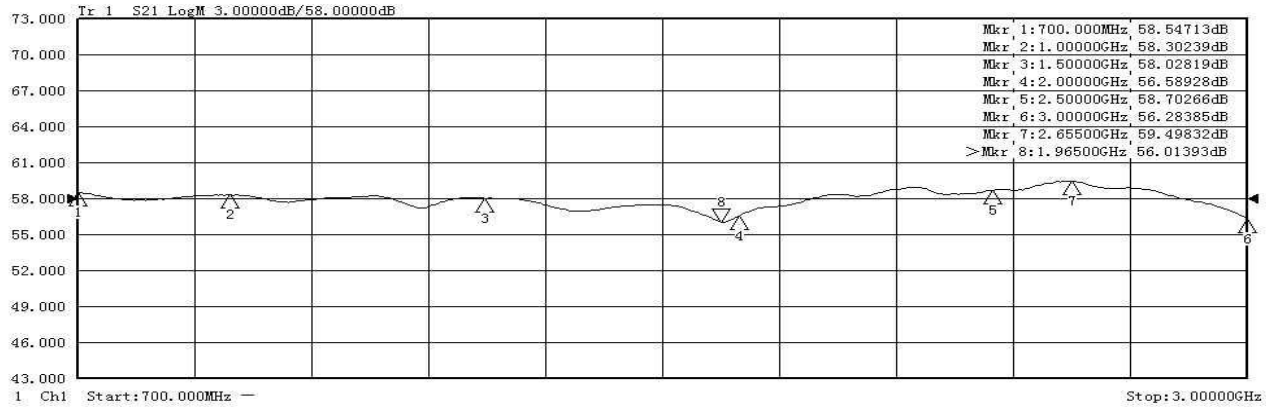
TYPICAL PERFORMANCE DATA[Volume Shipment product data for Reference] [DC Voltage=28V,Load VSWR ≤ 1.2,Ambient temp. +25±3℃]



Output power &Iout（Pin=0 dBm）



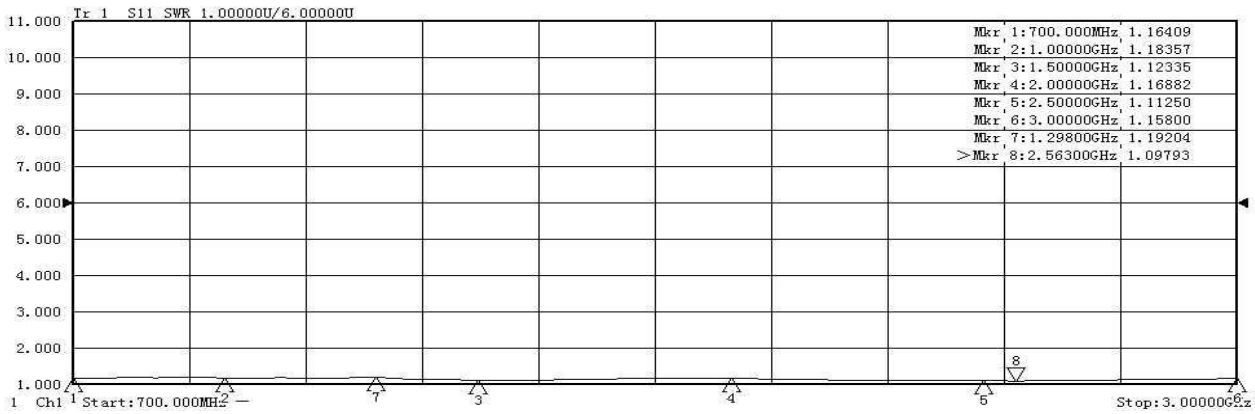
Power Gain S21 @Pin=0 dBm



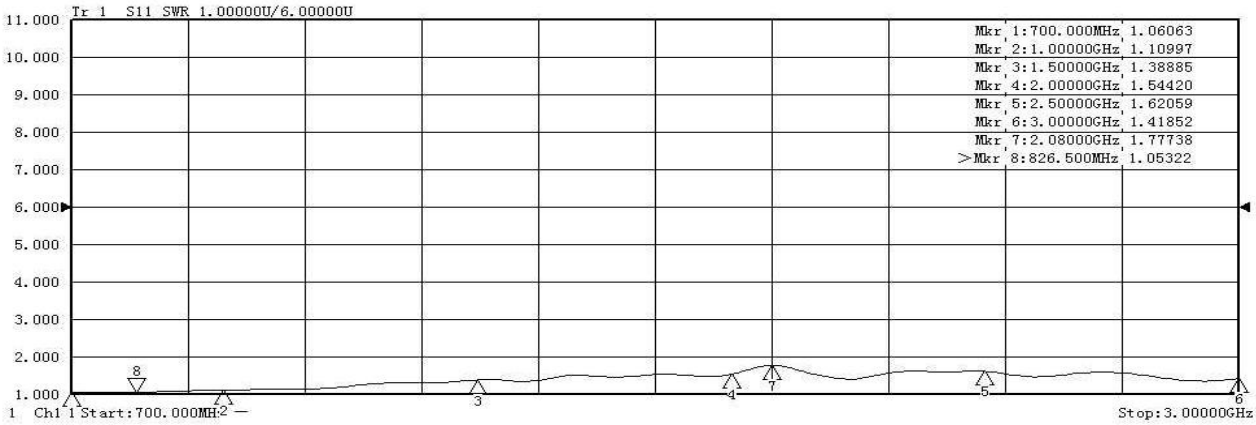
Small signal Gain S21 @Pin=-30 dBm

*Chengdu AmpliVisionS Technology Co., Ltd.**
High-Tech(West) Zone, Chengdu, P. R. China

Phone: +86(28)61892455
Email: sales@amplivisions.com
www.amplivisions.com

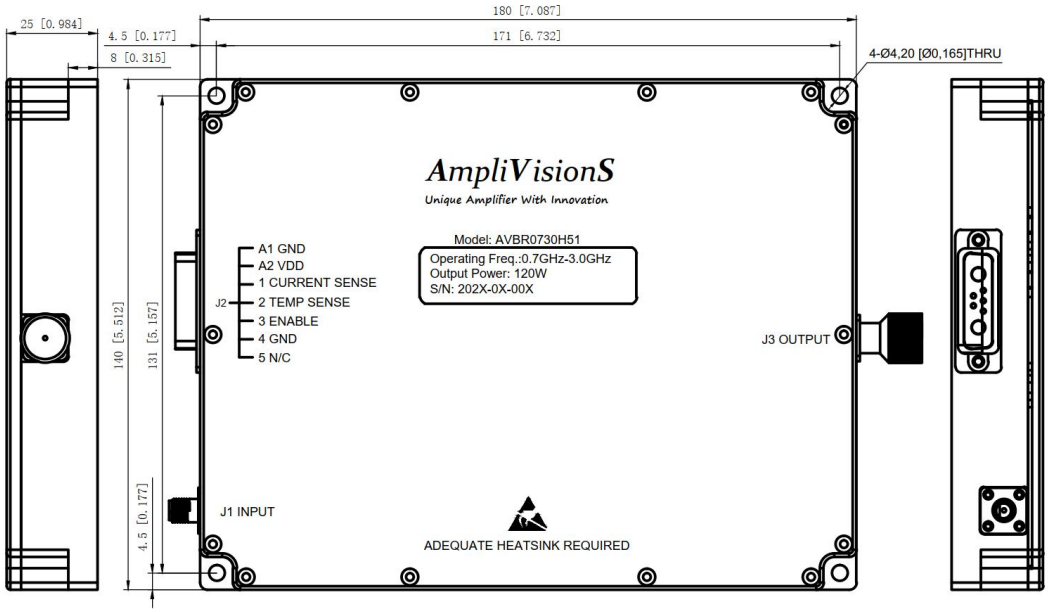


Input VSWR: S11 @Pin=-30 dBm



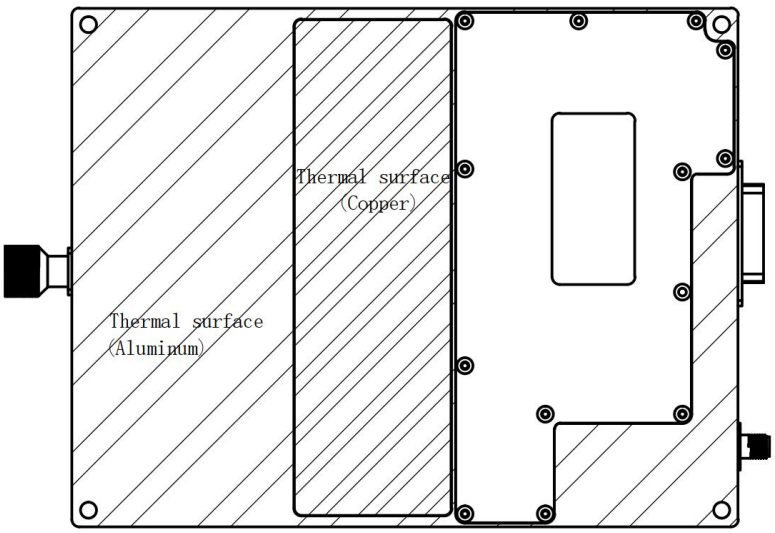
Output VSWR: S22 @Pin=-30dBm

OUTLINE DRAWING Surface: Natural color conductive oxidation.



*Chengdu AmpliVisionS Technology Co., Ltd.**
High-Tech(West) Zone, Chengdu, P. R. China

Phone: +86(28)61892455
Email: sales@amplivisions.com
www.amplivisions.com



(Bottom view)

Unit：mm[inch]Tolerance：±0.2[0.008]

Note*1: The Outline and Functions can be customized, please contact our sales for further information.

Note*2: thermal grease with a thermal conductivity of 3-6W/m-K is recommended. Accessory type AVS002 is recommended

OUTLINE - Fabricated

Part Number	Version	Release Date	Modification	Status
AVBR0730H51	1.0	1.24.2021	Based on Product data	Preliminary
AVBR0730H51	2.0	11.24.2022	Add multi-product test data	Preliminary
AVBR0730H51	2.1	2.12.2025	1. Update product appearance (trademark); 2. Add bottom heat dissipation distribution diagram 3. Update product photos and data	Preliminary

*Chengdu AmpliVisionS Technology Co., Ltd.**
High-Tech(West) Zone, Chengdu, P. R. China

Phone: +86(28)61892455
Email: sales@amplivisions.com
www.amplivisions.com