TECHNICAL DATASHEET **AVBR00210H49**

The AVBR00210H49 is an 80W high gain Solid State Broadband High Power Amplifier. This amplifier module utilizes the latest high power RF LDMOS 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.

Features

20MHz-1000MHz frequency range
Psat 49dBm type,48.5dBm min
Power gain 50dB type
50 ohm input/output impedance
Built-in control, monitoring and protection circuits
Solid-state Class AB Broadband design
Instantaneous ultra-broadband
Suitable for AM, and FM
High Linearity
High reliability and ruggedness

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

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	20		1000	MHz
Output Power CW	Psat	70	80		W
Output Power CW@P1dB	P1dB	40	70		W
Power Gain@ Pin=0dBm	Gp	48	50		dB
Power Gain Flatness @ Pin=0dBm	ΔGp		±1.4	±1.8	dB
Input Power for Rated P_{SAT}	P_{IN}		0		dBm
Harmonics @ Pin=-4 dBm	$2^{nd}/3^{rd}$		-15/-15	-10/-10	dBc
Noise Figure	NF		12		dB
Spurious Signals@ Pin=0 dBm	Spur		-70	-60	dBc
Input Return Loss	S11			-10	dB
Operating Voltage	VDC	26	28	30	V
Current Consumption @ Pout=70～100W	IDD		8.5	10	A
Switching Time @ 1kHz TTL, P_{IN} =0dBm	TON/TOFF		2	5	μs

MECHANICAL SPECIFICATIONS

Cooling External Heat Sink Needed (Not Supplied)

Length* Width*Height[mm]	150*90*25
Weight[Kg]	0.6
RF Connector Input	SMA, Female
RF Connector Output	SMA, Female
DC interface connector	Hybrid D-Sub 7 Pin, Male

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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 =50W	VSWR≤5:1[Design To Meet]	N/A
Load VSWR @ POUT =80W	VSWR≤3:1[Design To Meet]	N/A
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/° C
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 positive temperature coefficient of approximately 10mV/°C by design.
The Temp sense voltage can be calculated using the equation:VT(mV)=500mV+10mV*Temp

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 Workstation.

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

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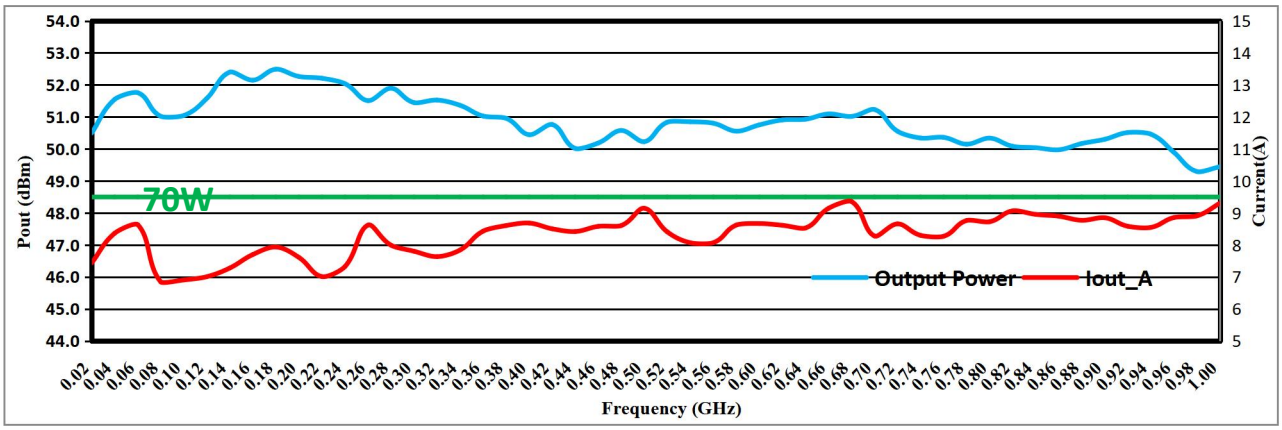
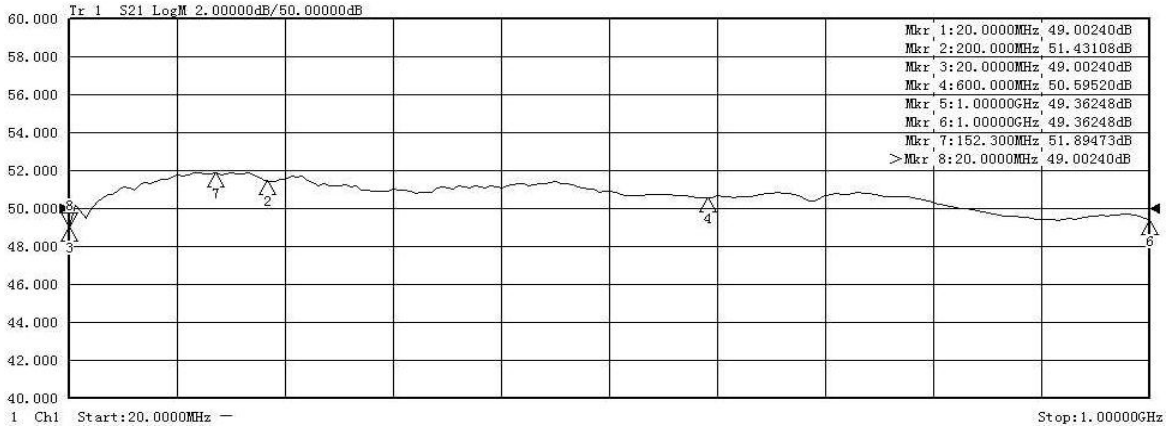
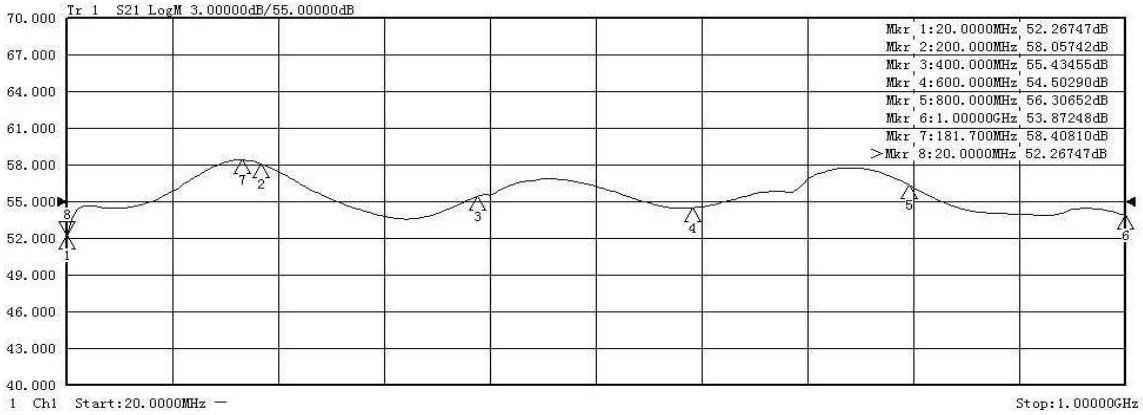
TYPICAL PERFORMANCE DATA[Volume Shipment product data for Reference] [DC Voltage= 28V,Load VSWR ≤ 1.2,Ambient temp. +25±3℃]



Output power &Iout@Pin=0 dBm



Power Gain S21 @Pin=0 dBm



Small signal Gain S21 @Pin=-30 dBm

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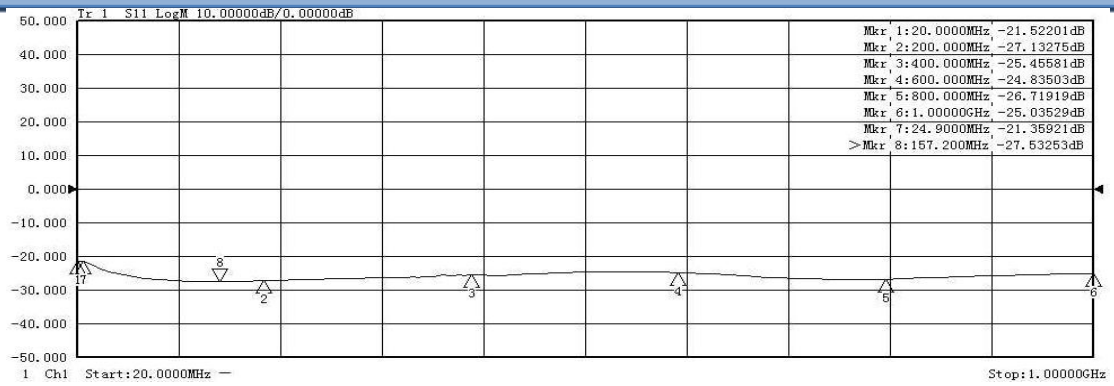
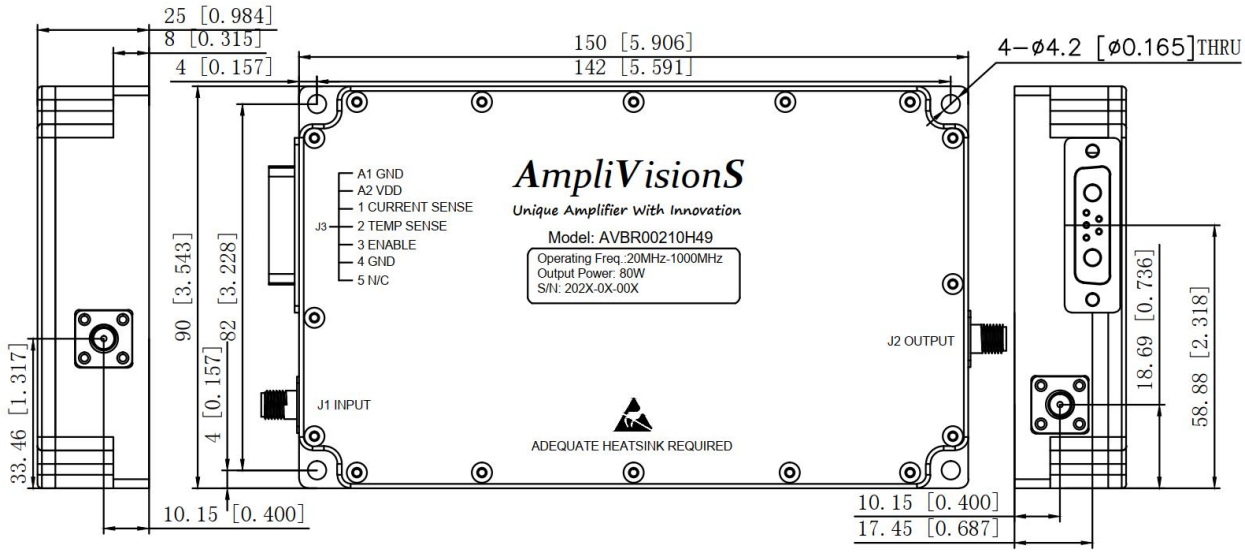
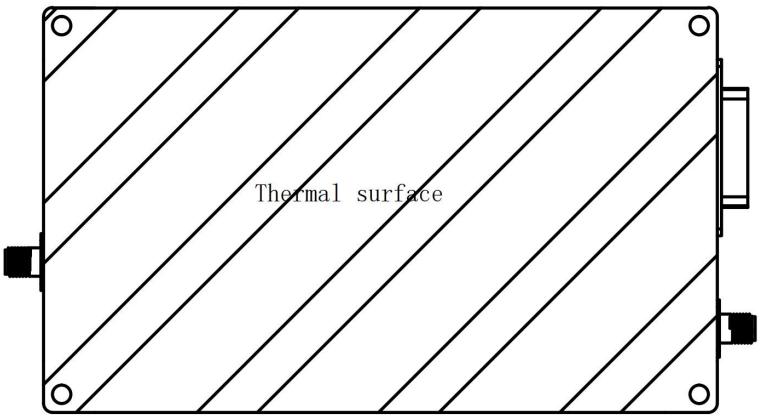


Input return loss: S11 @Pin=-30 dBm

OUTLINE DRAWING [mm]. Surface: Natural color conductive oxidation.





(Bottom view)

Unit：mm[inch]Tolerance：±0.2[0.008]

Datasheet: *REV* A.2.1/ 2.17.2025

Unique Amplifier With Innovation

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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 AVS001 is recommended.

OUTLINE - Fabricated

Part Number	Version	Release Date	Modification	Status
AVBR00210H49	1.0	11.7.2020	Based on Product data	Product
AVBR00210H49	2.0	2.7.2023	Updated Electrical Specification Based on Product data, Add multi-product test data	Volume Production
AVBR00210H49	2.1	2.17.2025	1.Update product appearance (trademark); 2.Add bottom heat dissipation distribution diagram 3.Update product photos and data (remove batch product test data)	Product

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