TECHNICAL DATA SHEET **AVBR0204H56**

The AVBR0204H56 is a 400W 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

225GHz-400MHz frequency range
Psat 56 dBm type, 55.5dBm min
Power gain 56dB Type.
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= 42V,Load VSWR ≤ 1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	225		400	MHz
Output Power CW@ Pin=0 dBm	Psat	55.5	56		dBm
Power Gain @ Pin=0dBm	Gp		56		dB
Power Gain Flatness @ Rated Pin=0 dBm	ΔGp		±0.8	±1	dB
Small signal Gain @ Pin=-30dBm	G_{SS}		62		dB
Small signal Flatness	ΔG_{SS}		±1	±1.5	dB
Input Power for Rated Psat	P_{IN}	-2	0	2	dBm
Harmonics @ Pin=-5dBm	2^{nd} /3^{rd}		-15/-20	-15/-12	dBc
Noise Figure*	NF		12		dB
Third Order Intercept Point 2-Tone @ 49dBm/Tone, 100kHz Spacing*	IP3		60		dBm
Spurious Signals@ Pin=-5dBm	Spur		-60		dBc
Input Return Loss	S11		-15	-10	dB
Operating Voltage	VDC	40	42	44	V
Power Added Efficiency	PAE		48		%
Current Consumption @ Pout= 350~400W	IDD		19	22	A
Current Consumption @ Shutdown	ISD		0.1	0.2	Amp
Quiescent Current@Enable=+3.3V	IDQ		2.5		Amp
Switching Time @ 1kHz TTL, PIN = -5dBm	TON/TOFF		2	5	μs

Note*: contact our sales for further information.

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MECHANICAL SPECIFICATIONS

Cooling External Heat Sink Needed (Not Supplied)	
Length* Width*Height[mm]	200*150*30
Weight[Kg]	2.5
RF Connector Input	SMA, Female
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 = 200W	VSWR≤5:1[Design To Meet]	N/A
Load VSWR @ POUT = 350W	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	42VDC
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 positive temperature coefficient of approximately 10mV/°C by design.
The Temp sense voltage can be calculated using the equation: VT(mV)= 500mV+10mV*Temp

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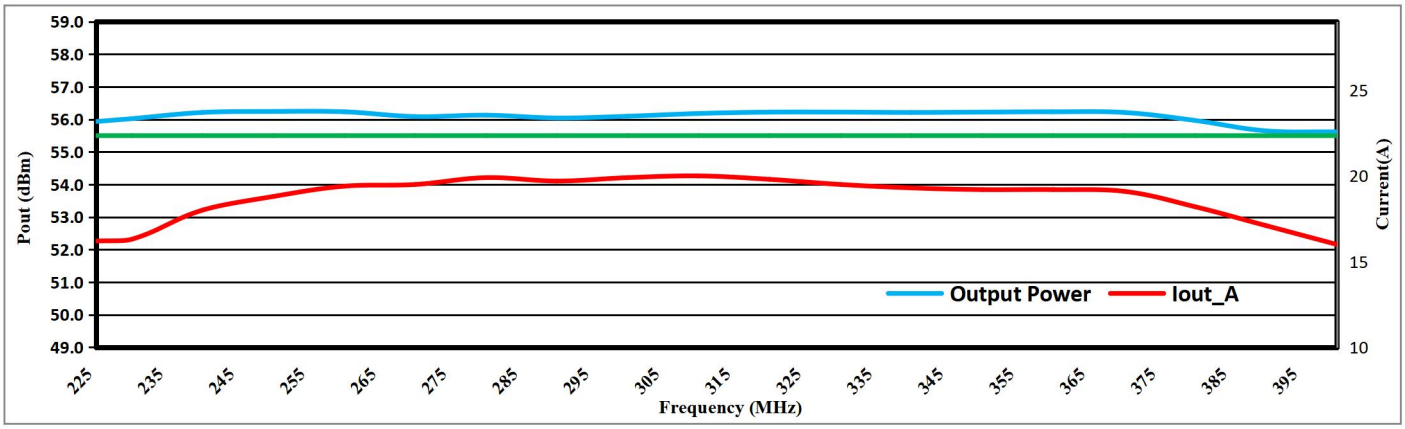
PLOTTED AND OTHER DATA

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.

TYPICAL PERFORMANCE DATA[Volume Shipment product data for Reference] [DC Voltage= 42V,Load VSWR ≤ 1.2,Ambient temp. +25±3℃]



Output power &Iout（Pin=0 dBm)

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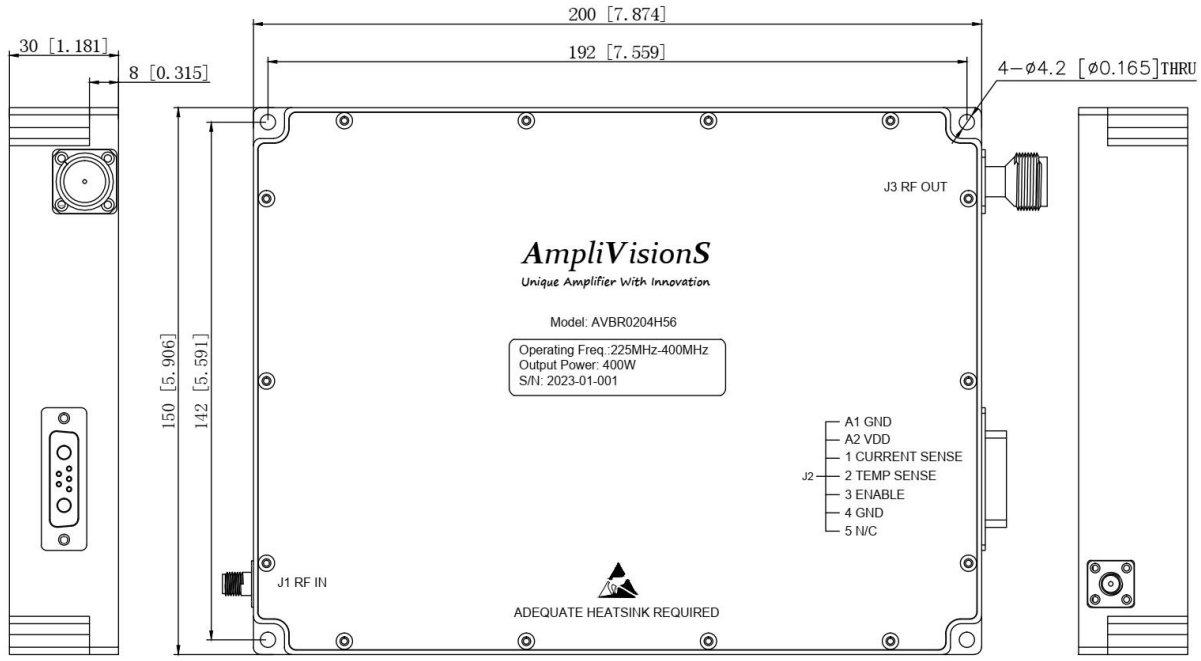
OUTLINE DRAWING. Surface: Surface: Nickel plating.



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.

Part Number	Version	Release Date	Modification	Status
AVBR0204H56	A.1	4.20.2021	-	Preliminary
AVBR0204H56	A.1.1	2.12.2025	Update Edit Error	Production

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