

TECHNICAL DATASHEET

AVBR00205H47

The AVBR00205H47 is a 50W high gain Solid State Linear High Power Amplifier. This amplifier module utilizes the latest high power RF transistors and also features high efficiency and linearity, with protection functions to ensure high availability. With good Amplitude and Phase Consistency, This amplifier is suitable for Linear System and high power combination.

**Features**

20MHz-520MHz frequency range	Solid-state Class AB Broadband design
Psat 47dBm Min, 47.8dBm Typ.	Instantaneous ultra-broadband
Power gain 48dB	Suitable for CW, Pulse, Modulated Signal
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	20		520	MHz
Output Power CW [ Pin= 0 dBm]	Psat	47	47.8		dBm
Power Gain @ Pin= 0 dBm	Gp		48		dB
Power Gain Flatness @ Rated Psat	ΔGp		± 1.5	± 2	dB
Input Power for Rated Psat	PIN		0		dBm
Harmonics @ Pout =47dBm	2 <sup>nd</sup>			-10	dBc
Noise Figure(If Needed, Please Contact)	NF		11		dB
Spurious Signals@ Pin= 0 dBm	Spur			-60	dBc
Input Return Loss	S11			-15	dB
Third Order Intercept Point					
2-Tone @ 38dBm/Tone, 1MHz Space	IP3		53		dBm
Operating Voltage	VDC	26	28	30	V
Current Consumption@ Pout= 47~48dBm	IDD		6.5	8.5	Amp
Current Consumption @ Shutdown	ISD		0.7		Amp
Quiescent Current	IDQ		1.0		Amp
Switching Time @ 1kHz TTL, PIN = 0dBm	TON/TOFF		2	5	µs

**MECHANICAL SPECIFICATIONS**

Cooling External Heat Sink Needed (Not Supplied)

Length*Width*Height mm	150*90*25
Weight[ Kg ]	0.7
RF Connector Input	SMA, Female
RF Connector Output	SMA, Female

Datasheet: REV A.1/05.15.2021

Unique Amplifier With Innovation

## ENVIRONMENTAL SPECIFICATIONS (Design to meet)

Module Operation Temperature	-20	65	°C
Storage Temperature Range	-40	85	°C
Relative-Humidity		95	%
Altitude	N/A		
Vibration/Shock	N/A		

**Notes:** 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 =40W	$\infty$ @ all load phase & amplitude for duration of 1 minutes;	
Load VSWR @ POUT =50W	3:1 @ all load phase & amplitude continuous	
Thermal Degradation	90°C @ heatsink [recovery@ 60°C]	°C

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

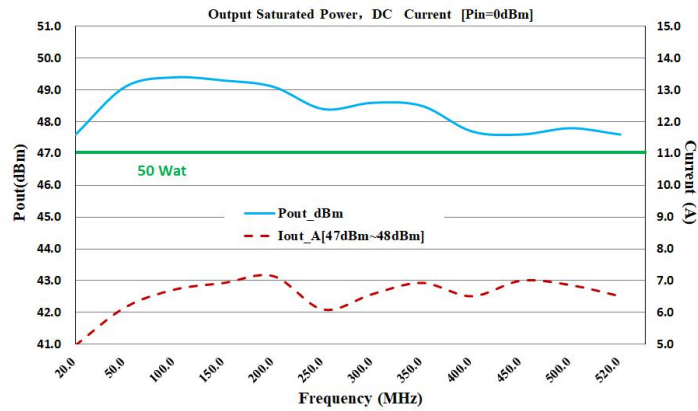
Pin #	Description	Specifications
A1	GND	Ground along with 28V <sub>DC</sub>
A2	VDD	+28VDC
1	CURRENT SENSE	Analog voltage relative to IDD @ 100mV per Ampere
2	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
3	ENABLE	Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low)
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 DATA[CW, Load VSWR≤1.2, 25°C]



Pout and Iout [Load VSWR ≤ 1.2], (Normal temp. +25±3°C)

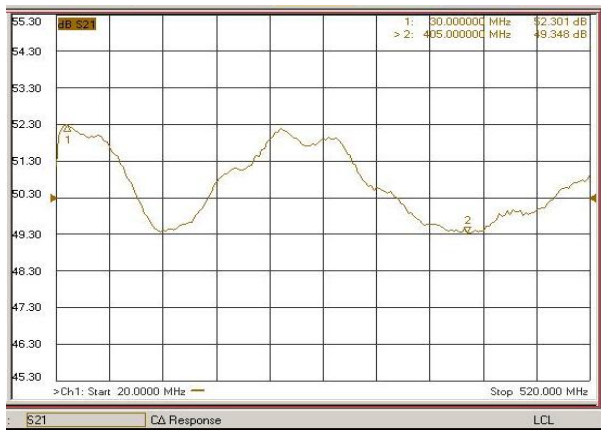


Figure Left: Small signal gain @Pin=-30 dBm (Ambient temp. +25±3°C, DC Voltage= 28V, Load VSWR ≤ 1.2)

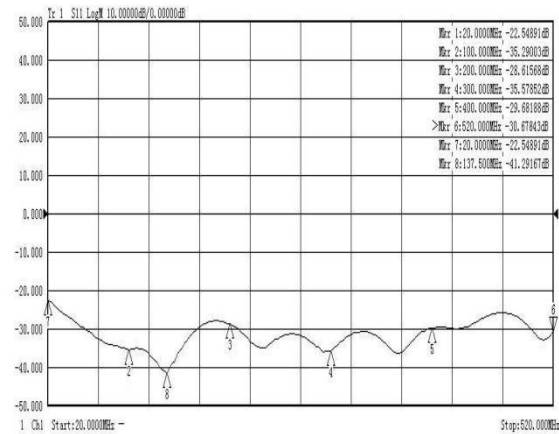
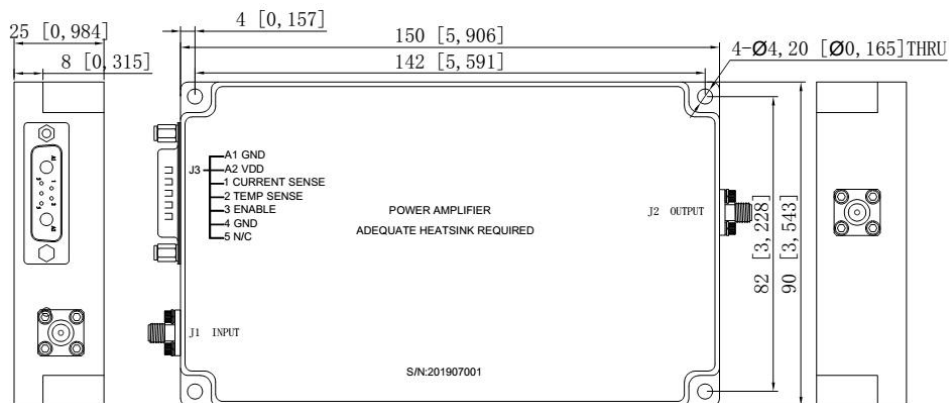


Figure Right: Input Return Loss @ Pin=-30 dBm (Ambient temp. +25±3°C, DC Voltage= 28V, Load VSWR ≤ 1.2)

OUTLINE DRAWING (mm)\*



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