

TECHNICAL DATASHEET

AVBR0520H48

The AVBR0520H48 is a 60W high gain Solid State Linear 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. With good Amplitude and Phase Consistency, This amplifier is suitable for Linear System and high power combination.

**Features**

0.5GHz-2.0GHz frequency range	Solid-state Class AB Broadband design
Psat 47.5dBm Min	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	0.5		2.0	GHz
Output Power CW [ Pin= 0 dBm]	Psat	55	60		W
Power Gain @ Psat	Gp		48		dB
Power Gain Flatness @ Pin= 0 dBm	ΔGp		± 1.5	± 2.0	dB
Input Power for Rated Psat	PIN		0		dBm
Harmonics @ Pin= 0 dBm	2 <sup>nd</sup> /3 <sup>rd</sup>		-20/-20	-13/-15	dBc
Noise Figure(If Needed, Please Contact)	NF		8	10	dB
Spurious Signals@ Pin= 0 dBm	Spur		-70	-65	dBc
Input VSWR	S11		1.3	1.6	
Third Order Intercept Point 2-Tone @ 41dBm/Tone, 1MHz Space(If Needed, Please Contact)	IP3		51		dBm
Operating Voltage	VDC	24	28	30	V
Current Consumption @ Pout= 55~60 W	IDD		4.9	6.5	Amp
Current Consumption @ Shutdown	ISD		0.1	0.2	Amp
Switching Time @ 1kHz TTL, PIN = 0 dBm	TON/TOFF		1	2	μs

**MECHANICAL SPECIFICATIONS**

Cooling External Heat Sink Needed (Not Supplied)

Length*Width*Height mm[inch]	162.56x86.36x25 [6.4 x 3.4 x 0.98]
Weight[ Kg ]	0.8
RF Connector Input	SMA, Female
RF Connector Output	SMA, Female

Datasheet: REV A.2/04.21.2021

Unique Amplifier With Innovation

## ENVIRONMENTAL SPECIFICATIONS(Design to meet)

Module Operation Temperature*	-20	65	°C
Storage Temperature Range	-45	90	°C
Relative-Humidity		95	%
Altitude	N/A		
Vibration/Shock	N/A		

**Notes:** Altitude /Vibration are designed with considerations, Please contact our sales for update the tests and experiments.

**Notes:** Operation Temperature can be extended to -40~+85°C ,Please contact our sales for update

## LIMITS

Input RF drive level without damage	$P_{in} \leq 10$	dBm
Load VSWR @ POUT =40W	$\infty$ @ all load phase & amplitude for duration of 1 minutes;	
Load VSWR @ POUT =60W[Design To Meet]	3:1 @ all load phase & amplitude continuous	
Thermal Degradation	90	°C

## DC INTERFACE CONNECTOR – [ D-sub, 9 Pin, Male]

Pin #	Description	Specifications
1	Reserved	No Connection
2	Current Monitor	Analog voltage relative to IDD @ 50mV/100mA
3	Temp Monitor	Analog voltage relative to module temperature @ 10mV/°C
4	POWER INDICATOR	Output power $\geq 20W$ : TTL Logic High (3.3V) (Internally Pulled-Low)
5	Shutdown	Amplifier Disable: TTL Logic High (3.3V), Internally Pull down
6,7	VDD	+28.0VDC
8,9	GND	Ground

## 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:

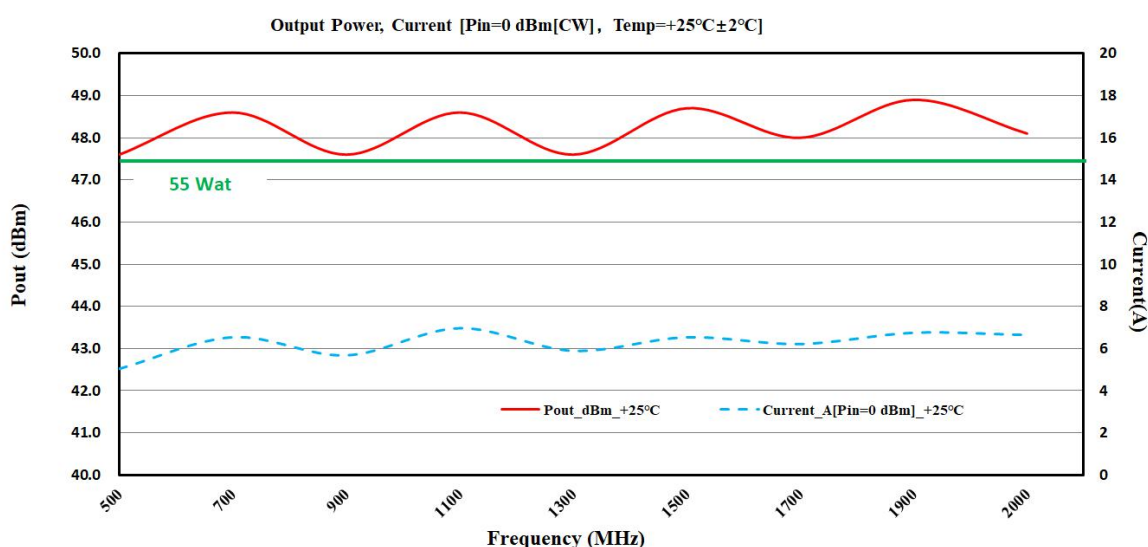
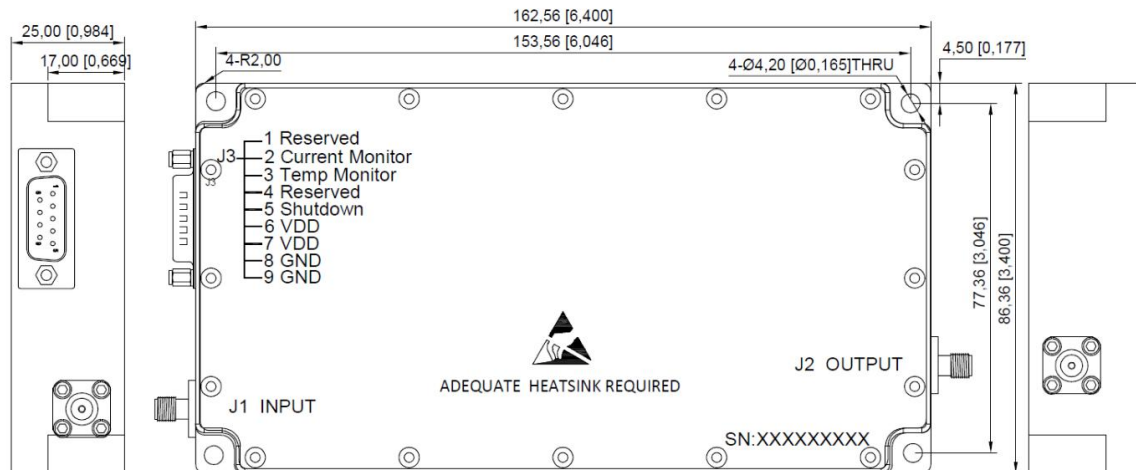


Figure left: Power Gain S21 (Pin=0dBm, Load VSWR≤1.2, 25°C), For reference only.

Figure right: Small signal S11 (Ambient temp. Load VSWR≤1.2, 25°C), For reference only.

OUTLINE DRAWING (mm)\*



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