

TECHNICAL DATESHEET

AVBC0727H47

The AVBC0727H47 is a 50W 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

- 0.7GHz-2.7GHz frequency range
- Psat 45.5dBm Min, 47dBm Typ.
- Power gain 35.5dB Min, 37dBm Typ.
- 50 ohm input/output impedance
- Built-in control, monitoring and protection circuits
- Solid-state Class AB Broadband design
- Instantaneous ultra-broadband
- Suitable for CW, Pulse, Modulated Signal
- Small and lightweight
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS(T=25°C,DC Voltage= 32V, Load VSWR ≤ 1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	0.7		2.7	GHz
Output Power CW [ Pin= 10 dBm]	Psat	46	47		dBm
Power Gain @ Pin=10 dBm	Gp	35.5	37		dB
Power Gain Flatness @ Pin=10 dBm	ΔGp		± 1.2	± 1.8	dB
Input Power for Rated Psat	PIN	8	10	12	dBm
Harmonics @ Pin=10 dBm	2 <sup>nd</sup> /3 <sup>rd</sup>		-15/-15		dBc
Spurious Signals@ Pin=10 dBm	Spur			-65	dBc
Input Return Loss	S11		-20	-18	dB
Third Order Intercept Point					
2-Tone @ 41dBm/Tone, 1MHz Space(If Needed, Please Contact)	IP3	49	51		dBm
Operating Voltage	VDC	26	32	34	V
Current Consumption @ Pin=10 dBm	IDD		3.5	6.0	Amp
Quiescent Current	IDQ		1.5	2	Amp
Switching Time @ 1kHz TTL, PIN = -2dBm	TON/TOFF		2	5	µs

MECHANICAL SPECIFICATIONS

- Cooling External Heat Sink Needed (Not Supplied)
- Length\*Width\*Height mm[inch] 72x50.8x16.6
- Weight[ Kg ] 0.3
- RF Connector Input SMA, Female
- RF Connector Output SMA, Female

Datasheet: REV 2.0/06.04.2021

Unique Amplifier With Innovation

## ENVIRONMENTAL SPECIFICATIONS

Operation Ambient Temperature*	-40	60	°C
Operation Case Temperature	-20	80	°C
Storage Temperature	-50	110	°C
Relative-Humidity		95	%
Altitude		N/A	
Vibration/Shock		MIL-STD-810G Method 514.6 ANNEX C	

**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	Pin≤20	dBm
Load VSWR @ Pin=10 dBm	5:1 @ all load phase & amplitude continuous	
Thermal Degradation	90	°C

## DC INTERFACE CONNECTOR – [SMW200-08, Male]

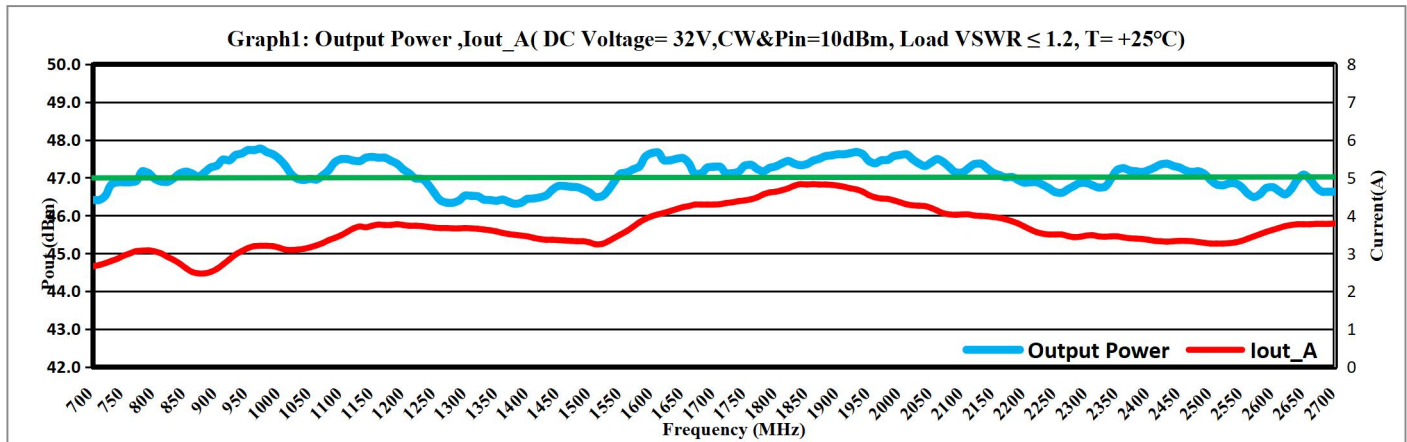
Pin #	Description	Specifications
1	VDD	+32.0VDC
2	VDD	+32.0VDC
3	VDD	+32.0VDC
4	GND	Ground
5	GND	Ground
6	Switch ON/OFF	Enable: TTL Logic Low (0~0.5V) , Diable,:TTL Logic High(2.5~5V)
7	Shut Down	Enable: TTL Logic Low (0~0.5V) , Diable,:TTL Logic High(2.5~5V)
8	Temp Monitor	Analog voltage relative to module temperature @ 10mV/°C

## PLOTTED AND OTHER DATA

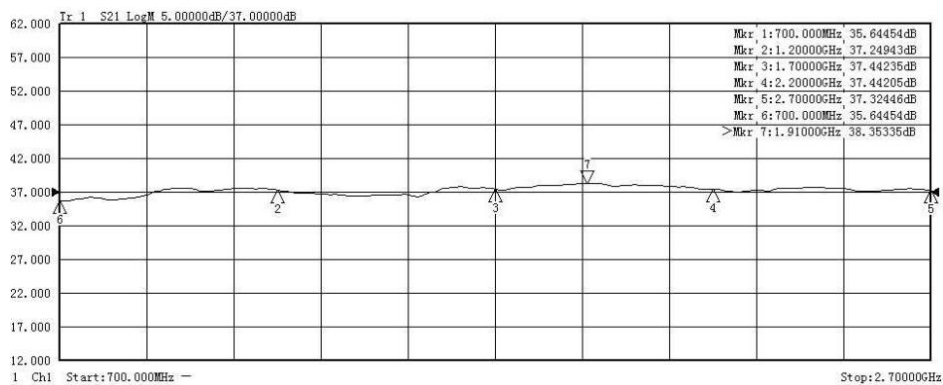
Notes:

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.

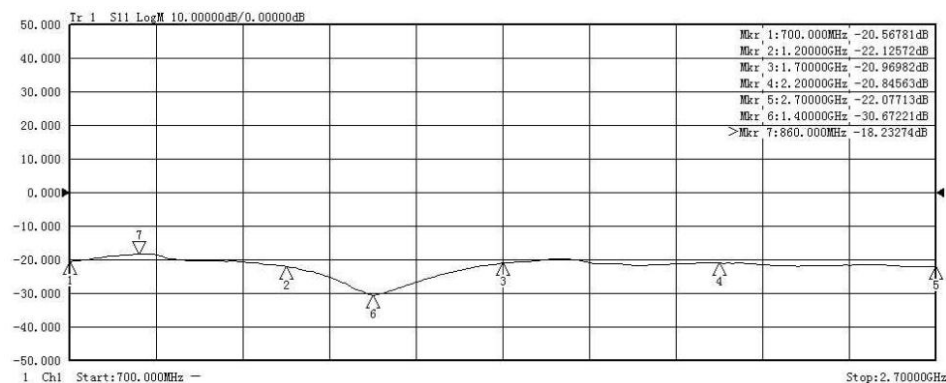
TYPICAL PERFORMANCE DATA[CW, Load VSWR≤1.2, 25°C]



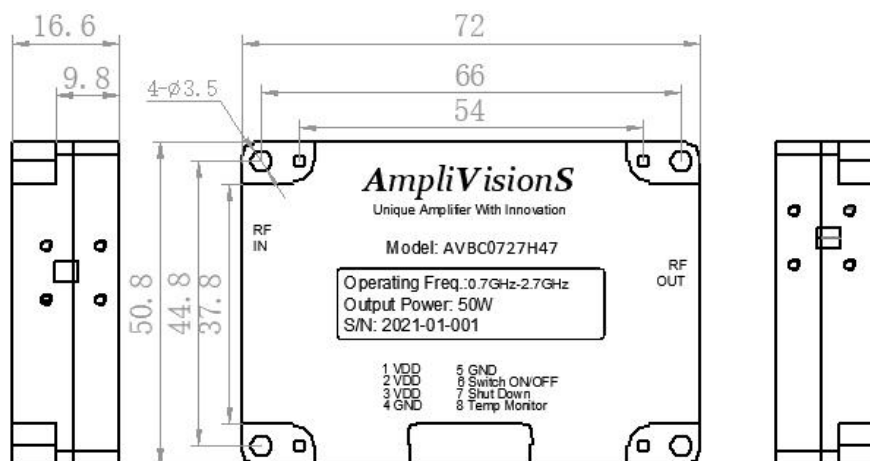
Graph 2: Power Gain (DC Voltage= 32V,Pin=10dBm, Load VSWR ≤ 1.2, T= +25°C)



Graph 3: Input Return Loss (DC Voltage= 32V,Pin=-30dBm, Load VSWR ≤ 1.2, T= +25°C)



OUTLINE DRAWING (mm)\*



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

Part Number	Version	Release Date	Modification	Status
AVBC0727H47	1.0	2020.12.10	-	Preliminary