TECHNICAL DATASHEET **AVBR0727H47**

The AVBR0727H47 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 47dBm Min
- Power gain 48dB
- 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℃,DC Voltage= 28V, Load VSWR ≤ 1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	0.7		2.7	GHz
Output Power CW [Pin= 0 dBm]	Psat	50	60		W
Power Gain @ Pin= 0 dBm	Gp		48		dB
Power Gain Flatness @Pin= 0 dBm	ΔGp		±1	±1.5	dB
Input Power for Rated PSAT	PIN		0		dBm
Harmonics @ Pin =-5dBm	$2^{nd}/3^{nd}$		-20/-20	-12/-15	dBc
Noise Figure*	NF		9	12	dB
Spurious Signals@ Pin= 0 dBm	Spur			-60	dBc
Input Return Loss	S11			-10	dB
Third Order Intercept Point 2-Tone @ 41dBm/Tone, 1MHz Space*	IP3		51		dBm
Operating Voltage	VDC	26	28	30	V
Current Consumption @ Pout= 50 W	IDD		4.9	6.5	Amp
Current Consumption @ Shutdown	ISD		0.1	0.2	Amp
Switching Time @ 1kHz TTL, PIN = -2dBm	TON/TOFF		1	2	μs

Note*: please contact our sales for data or information

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

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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 *2	N/A		
Vibration/Shock *2	N/A		

Notes *1**:** Module Operation Temperature can be extended to -45~80℃, Contact Sales for update.

Notes *1**:** Should Supply Adequate Heat Dissipation, Enough Fan and Heat-Sink is necessary during the Temp Test.

Notes *2**:** Altitude /Vibration are designed with considerations, but without tests and experiments.

LIMITS

Input RF drive level without damage	Pin≤20	dBm
Load VSWR @ POUT =40W	∞ @ all load phase & amplitude for duration of 1 minutes;	
Load VSWR @ POUT =50W[Design To Meet]	3:1 @ all load phase & amplitude continuous	
Thermal Degradation	Module Surface=90±5℃ [recovery@<80±5℃]	℃

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

Pin #	Description	Specifications
1	Reserved	No Connection
2	Current Monitor	Analog voltage relative to IDD @ 100mV per Ampere
3	Temp Monitor	Analog voltage relative to module temperature @ 10 mV/℃*
4	Reserved	No Connection
5	Enable	Amplifier Enable: TTL Logic High(3.3~5V)(Internally Pulled-Low)
6,7	VDD	+28.0VDC
8,9	GND	Ground

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)= 0.5+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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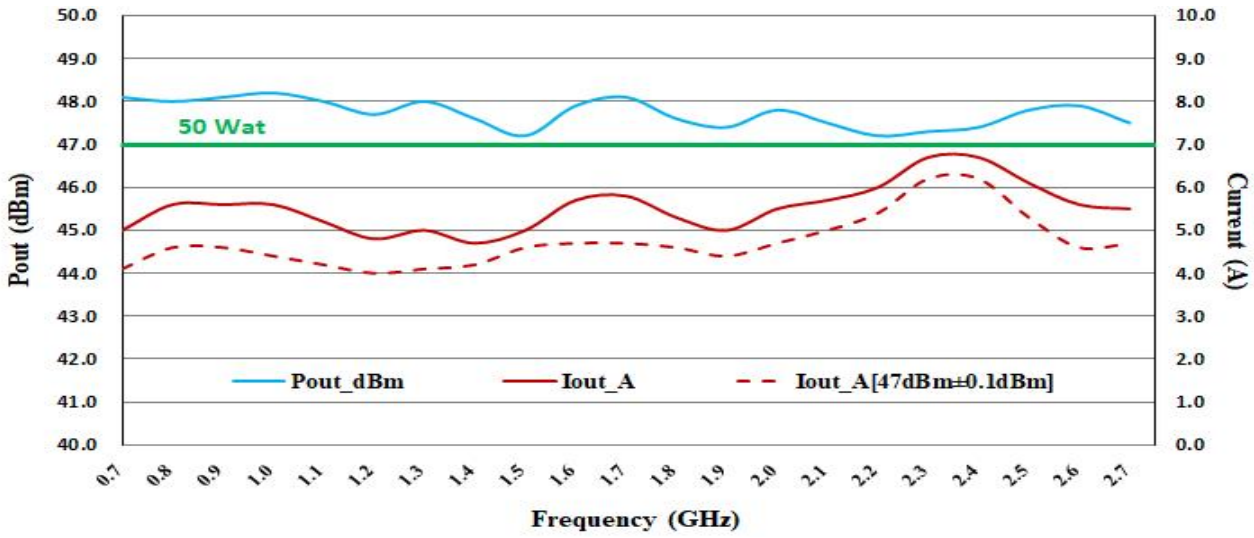
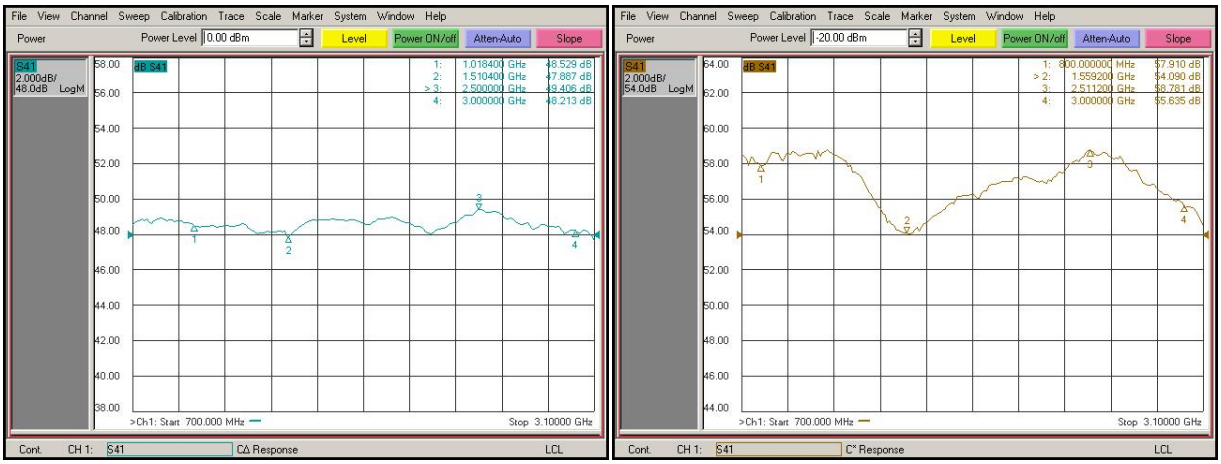
TYPICAL PERFORMANCE DATA[Volume Shipment product data for Reference] [DC Voltage= 28V,Load VSWR ≤ 1.2, Ambient temp. +25±3℃]



Pout and Current@Pin=0dBm



Graph left: Power gain@ Pin=0 dBm，right: small signal gain@ Pin=-30 dBm

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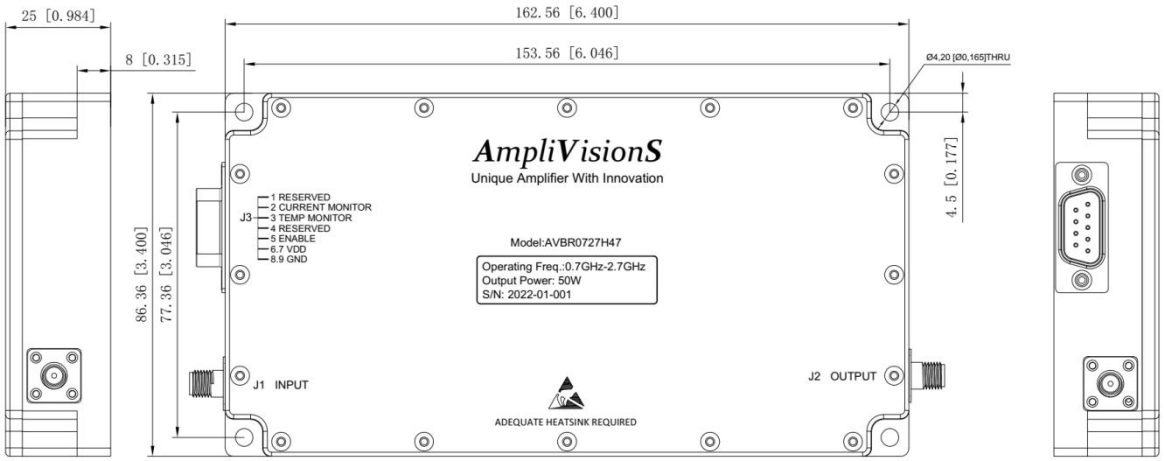
OUTLINE DRAWING (mm)*



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

Part Number	Version	Release Date	Modification	Status
AVBR0727H47	1.0	2020.03.03	Based on Product data	Preliminary
AVBR0727H47	2.0	2022.11.23	Updated Electrical Specification Based on Product data	Preliminary

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