

TECHNICAL DATASHEET

AVBR60180U49

The AVBR60180U49 is a 80W Solid State Broadband High Power Amplifier System. This amplifier utilizes the latest high power RF GaN transistors and also features built in control and monitoring, with protection functions to ensure high availability. This amplifier is suitable for high power CW or Pulse Radar system applications, Communication Modulated Signal Test (LTE&& 5G), or EMC testing situation.

**Features**

6GHz-18GHz frequency range	Solid-state Class AB Broadband design
Psat 48 dBm Min, 49dBm type.	Instantaneous ultra-broadband
Power gain 53 dB	Suitable for pulse or CW applications
50 ohm input/output impedance	Small and light weight
Built-in control, monitoring and protection circuits	High reliability and ruggedness

**ELECTRICAL SPECIFICATIONS (T=25°C ± 3°C, VDC =28V, CW, Load VSWR<1.2)**

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	6		18	GHz
Output Power-CW ** @ Pin=0dBm	Psat	48	49		dBm
Power Gain @ Pin= 0dBm	Gp		53		dB
Power Gain Flatness	Δ Gp		± 1.5	± 2.5	dB
Input Power for Rated PSAT	P <sub>IN</sub>		0		dBm
2nd/3rd Harmonics @ Pin=0 dBm	2 <sup>nd</sup> /3 <sup>rd</sup>		-20/-30	-12/-12	dBc
Spurious Signals@ Pout =0 dBm	Spur		-65	-60	dBc
Small Signal Gain @ Pin= -30 dBm	Gs		65		dB
Small Signal Flatness @ Pin= -30dBm	Δ Gs		±3	±4	dB
Input VSWR			1.5	2	/
Output VSWR			2.2		/
Supply Voltage	VDC	26	28	30	V
Power Consumption @ Pout =46~48 dBm	PPC		650	700	W

Note\*\*: Fundamental Power, Harmonics are excluded

**MECHANICAL SPECIFICATIONS**

Cooling External Heat-Sink Needed (Not Supplied)	
Length*Width*Height[ mm ]	345 x241 x 86
Weight[ Kg ]	15
RF Connector Input	Type SMA, Female
RF Connector Output	Type N, Female
DC Connector	Hybrid D-Sub 7W2, Male*2

Datasheet: REVA.1/10.19.2021

Unique Amplifier With Innovation

## ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Module Operation Temperature*1	-10	45	°C
Storage Temperature Range	-20	55	°C
Relative-Humidity	N/A		
Altitude*2	N/A		
Vibration/Shock*2	N/A		

Notes \*1: Amplifier Operation Temperature can be extended to -40~65°C, Contact Sales for update.

Notes \*2: Altitude /Vibration are designed with considerations, but without tests and experiments. Contact Sales for experimental verification.

## LIMITS

Input RF drive level without damage	$P_{in} \leq 10$	dBm
Load VSWR @ POUT =48 dBm	$VSWR \leq 5:1$	N/A
Thermal Degradation	55	°C
Over Reflection Power Protection	$P_{reflect}$ among 30W~60W	N/A

## DC INTERFACE CONNECTOR – [Hybrid D-Sub 7W2, Male\*2]

Pin #	Description	Specifications
A1	GND	Ground
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

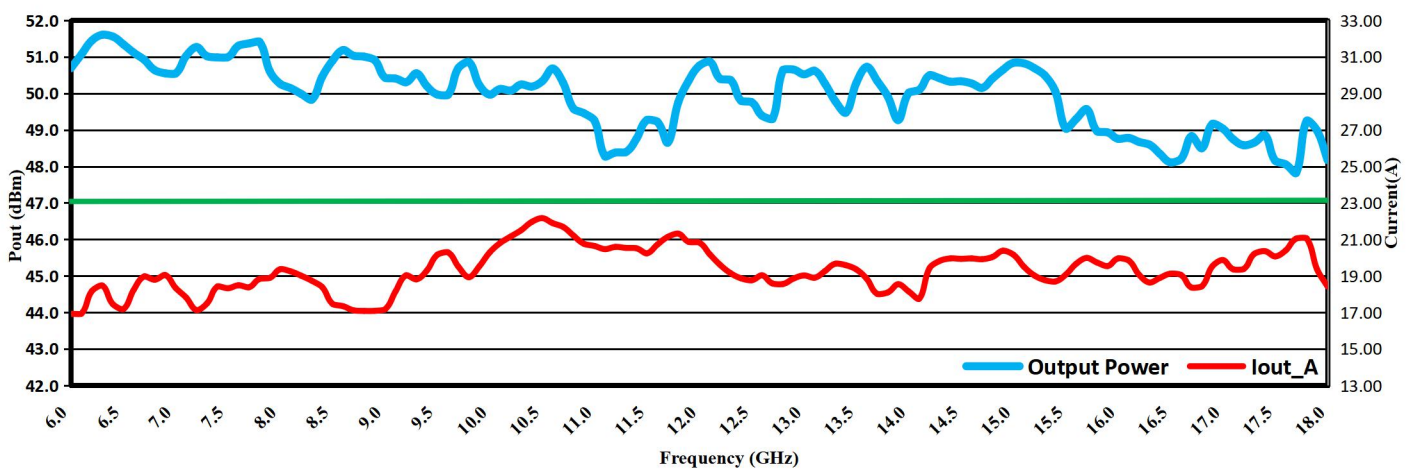
**PLOTTED AND OTHER DATA**

Notes:

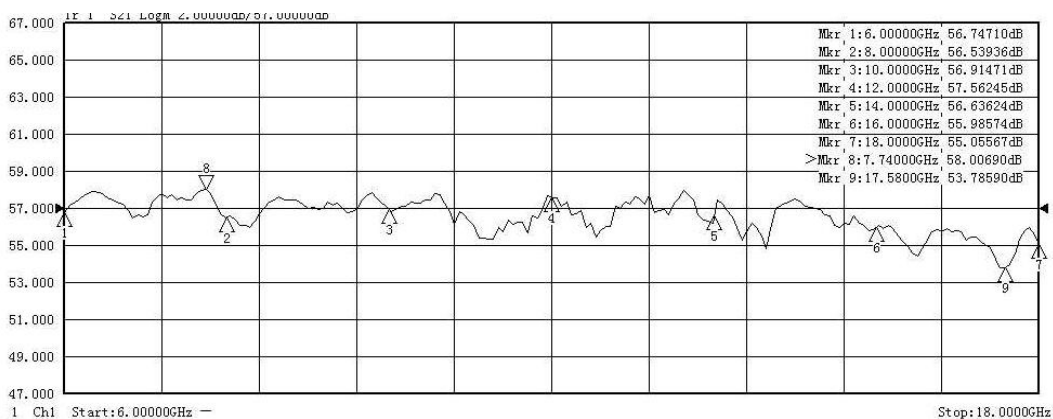
1. Values at +25°C, sea level.
2. Handle only in approved ESD Workstation.
3. Unit is cooled by air-forced condition.

**TYPICAL PERFORMANCE DATA [Ambient Temp:25°C, Load VSWR<1.2, Pin=0dBm]**

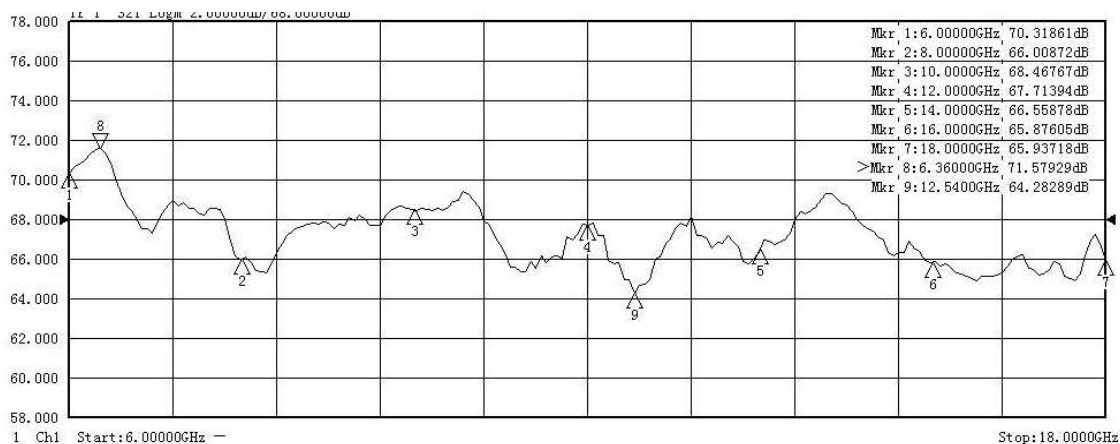
**Graph1: Output Power, Iout\_A( DC Voltage= 28V, CW&Pin= -7dBm, Load VSWR ≤ 1.2, T= +25°C)**



**Graph2: Power Gain (DC Voltage= 28V, Pin= -7dBm, Load VSWR ≤ 1.2, T= +25°C)**



Graph3: Small Signals Gain (DC Voltage= 28V, Pin= -30dBm, Load VSWR ≤ 1.2, T= +25 °C)



**OUTLINE DRAWING (mm)**

