

TECHNICAL DATASHEET

AVBR60180U45

The AVBR60180U45 is a 30W high gain 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 system applications, Communication Modulated Signal Test (LTE&& 5G), or EMC testing situation.

Features

6GHz-18GHz frequency range	Solid-state Class AB Broadband design
Psat 44.7dBm Typ, 43dBm Min	Ultra-broadband Instantaneous Bandwidth
P1dB 43dBm Typ, 40.0dBm Min	Suitable for pulse or CW applications
50 ohm input/output impedance	Small and lightweight
Built-in control, monitoring and protection circuits	High reliability and ruggedness

ELECTRICAL SPECIFICATIONS(T=25°C ± 3°C, VAC=220V, CW, Load VSWR<1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	6		18	GHz
Output Power CW* @Pin= -10dBm	Psat	43	44.7		dBm
Output P1dB* CW	P1dB	40.0	43		dBm
Power Gain @Pin= -10dBm	Gp		53		dB
Power Gain Flatness @Pin=-10dBm	ΔGp		± 1.5	± 2.5	dB
Harmonics @Pin=-10dBm	2 nd /3 rd		-20/-30	-12/-12	dBc
Noise Figure	NF		N/A		dB
Spurious Signals@Pin= -10dBm	Spur		-65	-60	dBc
Small Signal Gain @Pin= -30 dBm	Gss		58		dB
Small Signal Flatness @Pin= -30 dBm	ΔGs		± 3	± 4	dB
Isolation[Disable Status]	Iso		90		dB
Input VSWR	VSWR_IN		1.6	2	/
Output VSWR	VSWR_OUT		2.2		/
Third Intermodulation Third Order 2-Tone @ 33dBm/Tone, 10MHz**	IMD3		-25	-22	dBc
Supply Voltage (47~61Hz) /Single-Phase	VAC	180	220/50Hz	260	V
Power Consumption @ Pout =44~45dBm	PC		500	600	W

Note*: Fundamental Power, Harmonics are excluded.

Note:** 100MHz Data is Available, please contact sales for further information.

MECHANICAL SPECIFICATIONS

Length*Width*Height[mm]	482.6 x 132.5 x 506 (3U)
Weight[Kg]	25

Datasheet: REVA.2/07.26.2021

Unique Amplifier With Innovation

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RF Connector Input	Type N, Female
RF Connector Output	Type N, Female
RF Connector Forward Coupler (Optional)	Type N, Female
DC Connector RS-232	Dsub-9, Male
AC Connector	3 WIRE A/C Power Entry

ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

System Operation Temperature* ¹	-10	45	°C
Storage Temperature Range	-25	75	°C
Relative-Humidity		95	%
Altitude* ²	N/A		
Vibration/Shock* ²	N/A		

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

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

LIMITS

Pin<10dBm (Input RF level without damage)	Load VSWR<1.5:1 (50 Ohm)
Pin=-20dBm	Load open or short for up to 10 minutes.
Pin=-10dBm	Load VSWR<3:1 for continuous operation
Thermal Degradation	55 °C

DC INTERFACE CONNECTOR –RS-232[D-Sub 9-Pin, Male]

Pin #	Description	Specifications
1	GND	Ground
2	SHUTDOWN	Amplifier Disable: TTL Logic High (3.3V) (Internally Pulled-Low)
3	Temperature Alarm	Abnormal: Logic High (3.3V) (Internally Pulled-Low)
4	Fan Alarm	Abnormal: Logic High (3.3V) (Internally Pulled-Low)
5	Power Amplifier Alarm	Abnormal: Logic High (3.3V) (Internally Pulled-Low)
6~9	N/C	No electrical connected, Reserved

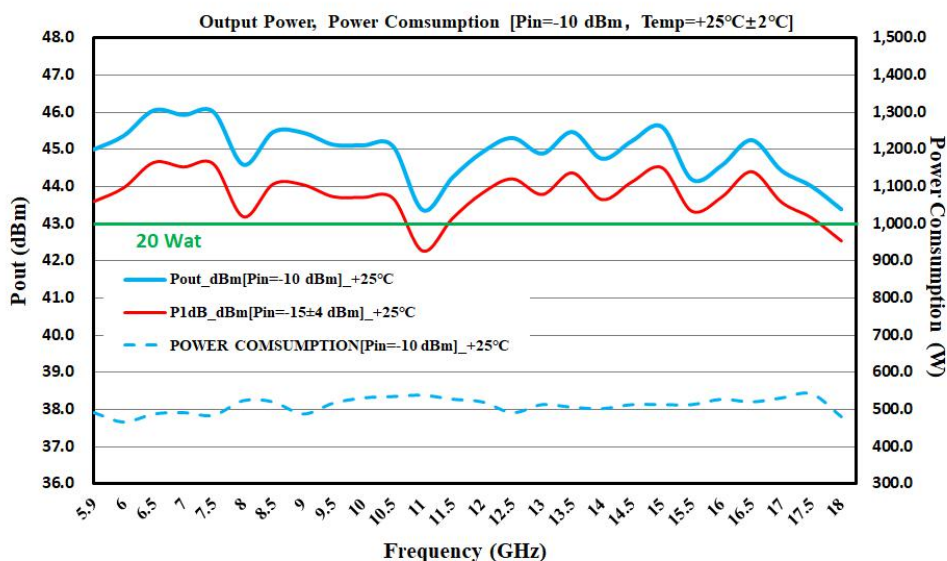
Front Panel LED Indicators

Description	Specifications
POWER ON	GREEN: AC-220V is POWER ON status
ENABLE	GREEN: Front Panel Button is ON status
OVER TEMP	RED: Temperature is over-limited, Amplifier shutdown
ABNORMAL	RED: Amplifier is abnormal, Connect D-Sub 9 to debug

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.



Pout@ Pin=0dBm && P1dB [CW, Load VSWR≤1.2, 25°C], For Reference Only (Shipped Products)



Figure left: Power Gain S21@ Pin=-10dBm (Ambient temp. +25±2°C, Load VSWR ≤ 1.2), For Reference Only(Shipped Products)

Figure right: Small signal gain @Pin=-30dBm (Ambient temp. +25±2°C, Load VSWR ≤ 1.2), For Reference Only(Shipped Products)

Rack Mounted System -Detailed Outline Dimensions (mm)-Standard Case Style-A3U2

