

TECHNICAL DATASHEET

AVBR0727U50

The AVBR0727U50 is a 100W 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, or EMC testing situation.

Features

0.7GHz-2.7GHz frequency range	Solid-state Class AB Broadband design
Psat 50dBm Typ	Instantaneous ultra-broadband
Power gain 50dB	Suitable for Modulated Signals Test
50 ohm input/output impedance	Better harmonics and Gain Flatness
Built-in control, monitoring and protection circuits	High reliability and ruggedness

ELECTRICAL SPECIFICATIONS(T=25°C, AC Voltage= 220V, 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	49	50		dBm
Output P1dB* CW	P1dB	48	49		dBm
Power Gain @ Rated Psat	Gp		50		dB
Power Gain Flatness @ Rated Psat	ΔGp		± 1.3	± 1.6	dB
Harmonics @ Pout =50 ± 0.5dBm	2 nd /3 rd		-20/-20	-12/-15	dBc
Noise Figure	NF		8	10	dB
Spurious Signals @ Pin= 0 dBm	Spur			-60	dBc
Small Signal Flatness	Gs		± 1.5	± 2	dB
Isolation[Disable Status]	Iso		90		dB
Input VSWR	VSWR_IN		1.3	1.5	/
Output VSWR	VSWR_OUT		1.5		/
Third Order Intercept Point					
2-Tone @ 41dBm/Tone, 1MHz Space(If Needed, Please Contact)	IP3		+55		dBm
Supply Voltage (47~61Hz) /Single-Phase	VAC	180	220/50Hz	260	V
Power Consumption @ Pout =50 ± 0.5dBm	PC		520	600	W

Note*: Fundamental Power, Harmonics are excluded.

MECHANICAL SPECIFICATIONS

Cooling External Heat Sink Needed (Not Supplied)	
Length*Width*Height mm	482.6 x 132.5 x 506 (3U)
Weight[Kg]	13
RF Connector Input	Type N, Female

Datasheet: REV A.2/06.23.2020

Unique Amplifier With Innovation

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RF Connector Output	Type N, Female
DC Connector RS-232	Dsub-9, Male
AC Connector	3 WIRE A/C Power Entry

ENVIRONMENTAL SPECIFICATIONS(Design to meet)

Module Operation Temperature* ¹	-10	55	°C
Storage Temperature Range	-25	75	°C
Relative-Humidity		95	%
Altitude* ²	N/A		
Vibration/Shock* ²	N/A		

Notes *1: Module Operation Temperature can be extended to -20~65 °C, Contact Sales for update.

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

LIMITS

Pin<15 dBm (Input RF level without damage)	Load VSWR<1.5:1 (50 Ohm)
Pin=-3 dBm	Load open or short for up to 10 minutes.
Pin=0 dBm	Load VSWR<3:1 for continuous operation
Thermal Degradation	70 °C

DC INTERFACE CONNECTOR [D-Sub 9-Pin, Female]

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

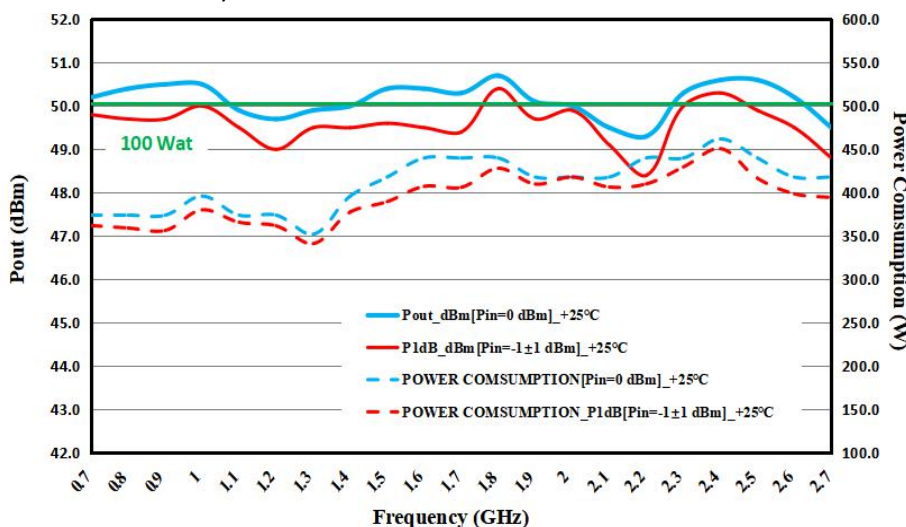
PLOTTED AND OTHER DATA

Notes:

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

TYPICAL PERFORMANCE DATA

Graph1: Output Power, Power Consumption@ Pin=0 dBm & P1dB Power (Ambient temp. +25 ± 2 °C ,AC Voltage= 220V, Load VSWR ≤ 1.2)

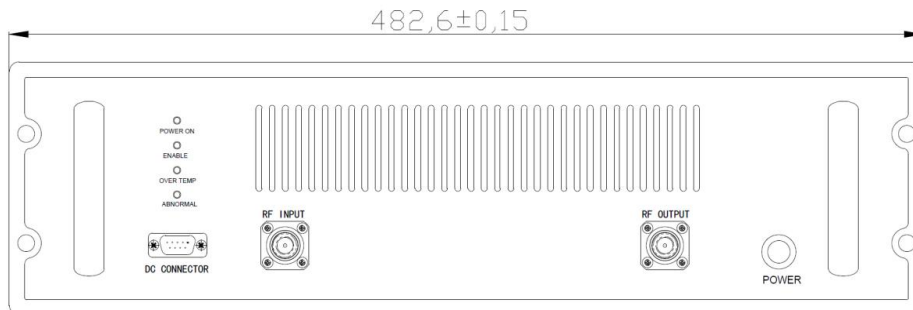


Graph2: Power Gain @ Pin=0 dBm (Ambient temp. +25 ± 2 °C , AC Voltage= 220V, Load VSWR ≤ 1.2)

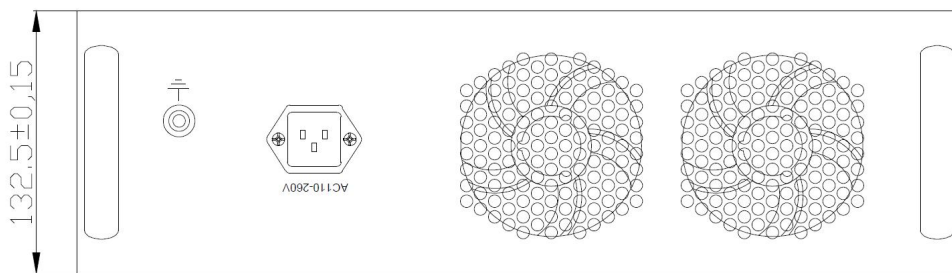


Detailed Outline Dimensions (mm)

Front View:



Rear View:



Side View:

