

TECHNICAL DATASHEET

AVBR2060H47

The AVBR2060H47 is a 50W high gain Solid State Broadband High Power Amplifier. This amplifier module utilizes the latest high power RF GaN transistors to improve the overall efficiency and built-in control and monitoring, over-reflection protection functions to ensure high reliability. This amplifier is suitable for broadband jamming and EMC testing, Phased array systems.

Features

- 2 GHz-6GHz frequency range
- Psat 47dBm Min, 47.4dBm Typ.
- Fast Switching time <500nS.
- High Average Efficiency around 35%.
- Built-in control, monitoring and protection circuits
- Solid-state Class AB Broadband design
- Instantaneous ultra-broadband
- Suitable for CW, and Pulse
- Small and light weight
- Great Gain/Phase Consistency

ELECTRICAL SPECIFICATIONS(T=25°C,DC Voltage= 28V, Load VSWR ≤ 1.2)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	2		6	GHz
Output Power CW@ Psat	Psat	50	55		W
Output P1dB CW	P1dB	10	20		W
Power Gain @ Pin=0 dBm	Gp	47	48		dB
Power Gain Flatness @ Pin=0 dBm	ΔGp		±1.0	±1.5	dB
Input Power for Rated	P _{IN}	-3	0	3	dBm
Harmonics @ Pout = 30W	2 nd /3 rd		-20/40	-15/20	dBc
Spurious Signals@ Pin=0 dBm	Spur		-60		dBc
Input Return Loss	S11		-15	-12	dB
Third Order Intercept Point					
2-Tone @ 40dBm/Tone, 1MHz Spacing	IP3	50	51		dBm
Operating Voltage	VDC	26	28	30	V
Current Consumption @ Pout=50~60W	IDD		6.5	8.0	A
PAE Efficiency @Psat	Effi	25	35		%
Module to Module Gain Tracking @Pin=0dBm	Δ GT			± 1.0	dB
Module to Module Phase Tracking @Pin=0dBm	Δ PT			± 15	Deg
Switching Time @ 1kHz TTL, Pin=0 dBm	TON/TOFF			500	ns

MECHANICAL SPECIFICATIONS

- Cooling External
- Length* Width*Height[mm]
- Weight[Kg]
- RF Connector Input
- RF Connector Output
- Heat Sink Needed (Not Supplied)
- 160*100*25
- 1.0
- SMA, Female
- SMA, Female

Datasheet: REV A.3/ 04.14.2021

Unique Amplifier With Innovation

ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Module Operation Temperature* ¹	-20	65* ²	°C
Storage Temperature Range	-45	85	°C
Relative-Humidity		95	%
Altitude * ³	N/A		
Vibration/Shock * ³	N/A		

Notes *1: Module Operation Temperature can be extended to -45~85°C, Contact Sales for update.

Notes *2: Should Supply Adequate Heat Dissipation, Enough Fan and Heat-Sink is necessary during the Temp Test.

Notes *3: Altitude /Vibration are designed with considerations, but without tests and experiments.

LIMITS

Input RF drive level without damage	$Pin \leq 10$ (VSWR $\leq 2:1$) [Design To Meet]	dBm
Load VSWR @ Pin= -5 dBm	VSWR $\leq 5:1$ [Design To Meet]	N/A
Load VSWR @ POUT =50~55W	VSWR $\leq 3:1$ [Design To Meet]	N/A
Over Reflection Power Protection	P_reflect among 20W~40W	N/A
Thermal Degradation	90°C Graceful Degradation(recovery at 60°C)	°C

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

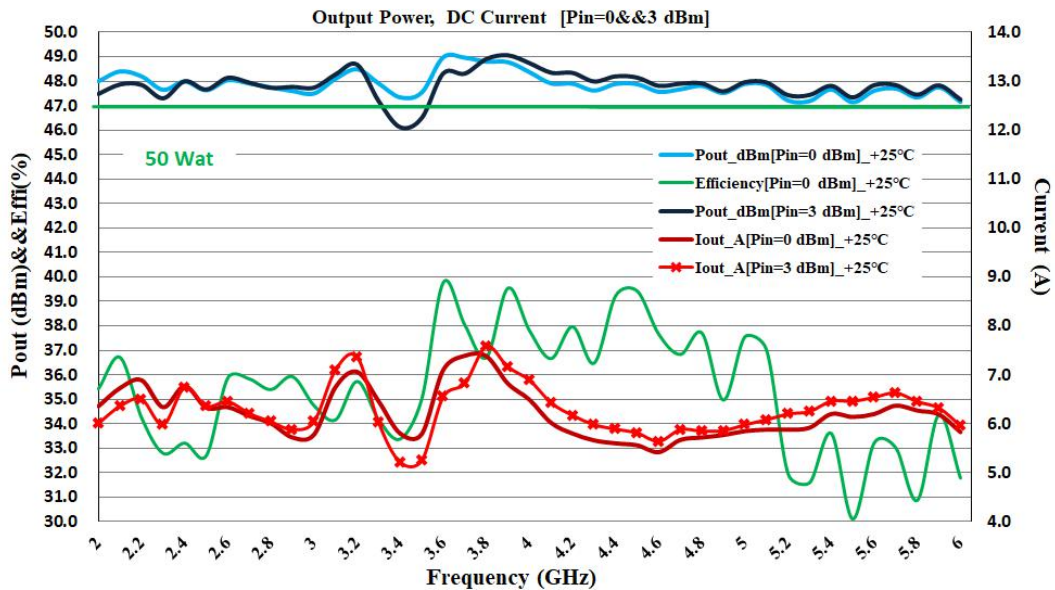
Pin #	Description	Specifications
1~3	VDD	28VDC
4~6	GND	Ground
7	CURRENT SENSOR	Analog voltage relative to IDD @ 100mV per Ampere
8	TEMP SENSOR	Analog voltage relative to Module's Temperature @ 10 mV/°C
9	ENABLE	Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low)

PLOTTED AND OTHER DATA

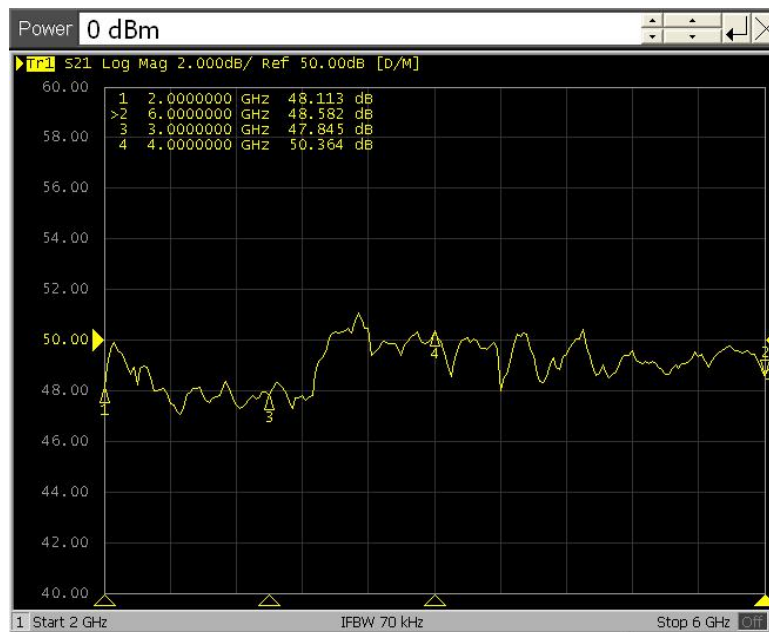
Notes:

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.

Measurements Report:



TYPICAL PERFORMANCE DATA [Load VSWR ≤ 1.2], (Normal temp. +25±3°C)



Power gain @ Pin=0 dBm: (Ambient temp. +25±3°C, DC Voltage= 28V, Load VSWR ≤ 1.2)

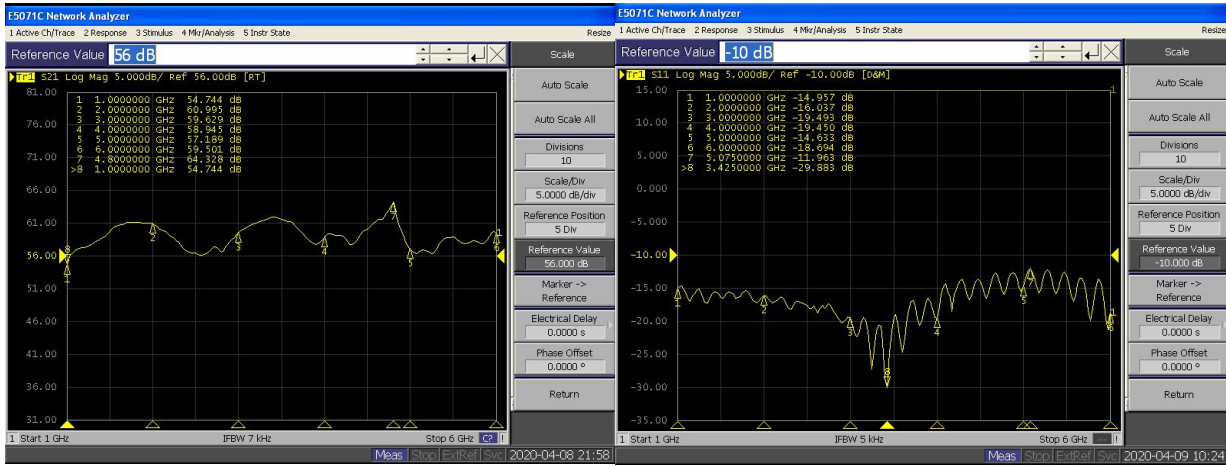
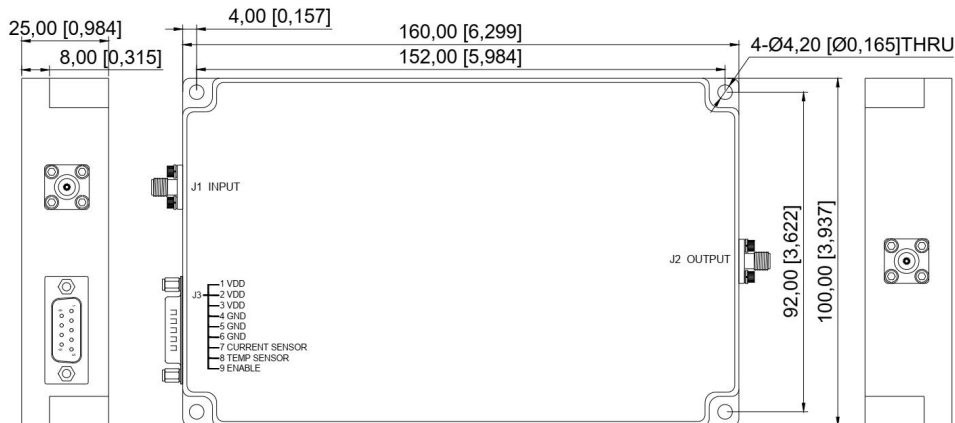


Figure Left: Small signal gain @ Pin=-30 dBm (Ambient temp. +25±3°C, DC Voltage= 28V, Load VSWR ≤ 1)

Figure Right: Input Return Loss @ Pin=-30 dBm (Ambient temp. +25±3°C, DC Voltage= 28V, Load VSWR ≤ 1.2)

OUTLINE DRAWING [mm]



Product View

