

TECHNICAL DATASHEET

AVBR1060H47

The AVBR1060H47 is a 50W high gain Solid State Broadband High Power Amplifier. This amplifier module 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 broadband jamming and EMC testing.

Features

1GHz-6GHz frequency range	Solid-state Class AB Broadband design
Psat 47dBm type	Instantaneous ultra-broadband
Power gain 47dB	Suitable for AM and Modulated Signal
50 ohm input/output impedance	Small and lightweight
Built-in control, monitoring and protection circuits	High reliability and ruggedness

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

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	1		6	GHz
Output Power CW	Psat	40	50		W
Power Gain @ Psat	Gp	46	47		dB
Power Gain Flatness @ Rated PSAT	ΔGp		± 1.8	± 2.2	dB
Input Power for Rated PSAT	P <sub>IN</sub>		0		dBm
Harmonics @ Pout = 30W	2 <sup>nd</sup> /3 <sup>rd</sup>		-20/-20	-12/-12	dBc
Noise Figure*	NF		12		dB
Spurious Signals@ Pout =30W	Spur		-70	-60	dBc
Input Return Loss	S11			-10	dB
Third Order Intercept Point					
2-Tone @ 40dBm/Tone, 100kHz Spacing	IP3		N/A		dBc
Operating Voltage	VDC	26	28	30	V
Current Consumption @ Pout= 40W~50W	IDD		7	8.5	A
Switching Time @ 1kHz TTL, PIN = -2dBm	TON/TOFF		2	5	μs

Note\*: Contact sales for update

MECHANICAL SPECIFICATIONS

Cooling External	Heat Sink Needed (Not Supplied)
Length* Width*Height[ mm ]	170*165*25
Weight[ Kg ]	1.8
RF Connector Input	SMA, Female
RF Connector Output	SMA, Female

Datasheet: REV A.7/ 03.24.2021

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## ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Module Operation Temperature	-20	65	°C
Storage Temperature Range	-25	70	°C
Relative-Humidity	N/A		
Altitude	N/A		
Vibration/Shock	N/A		

## LIMITS

Input RF drive level without damage	$P_{in} \leq 10$	dBm
Load VSWR @ POUT =30W	$VSWR \leq 5:1$ [Design To Meet]	N/A
Load VSWR @ POUT =50W	$VSWR \leq 3:1$ [Design To Meet]	N/A
Thermal Degradation	85°C Graceful Degradation	°C

## DC INTERFACE CONNECTOR – [Hybrid D-Sub 7-Pin, Male]

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:

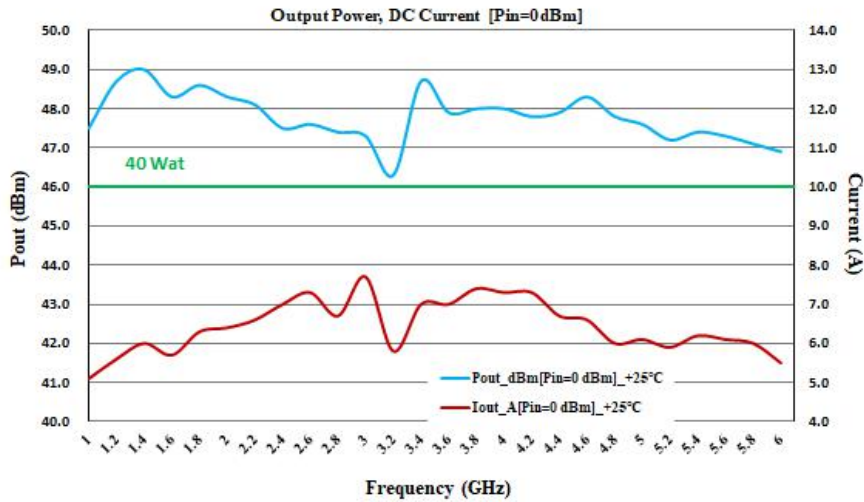
1. Values at +25°C, sea level.
2. ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
3. Heat Sink required for Proper Operation, Unit is cooled by conduction to heat sink.

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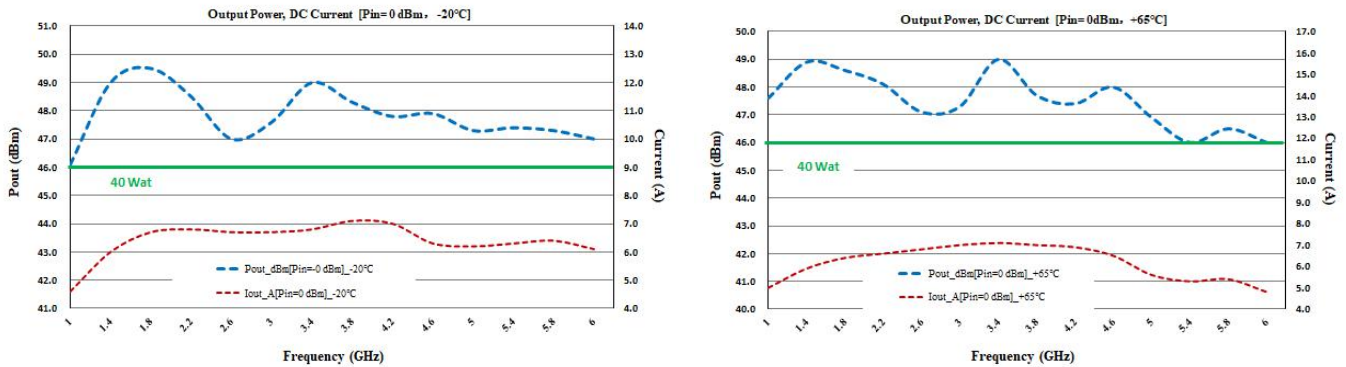
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TYPICAL PERFORMANCE DATA

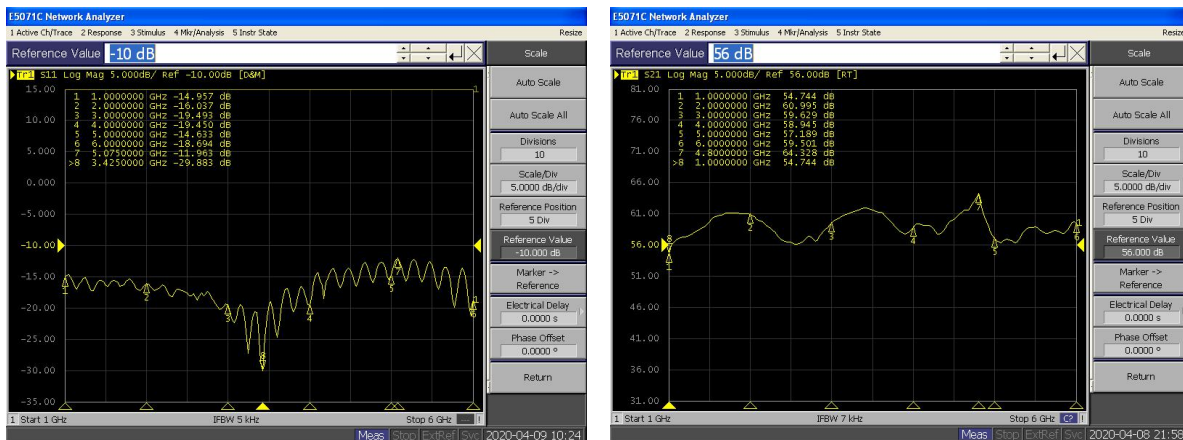
Graph1: Output Power (PSAT\_dBm), (Normal temp. +25±3°C, Load VSWR ≤ 1.2)



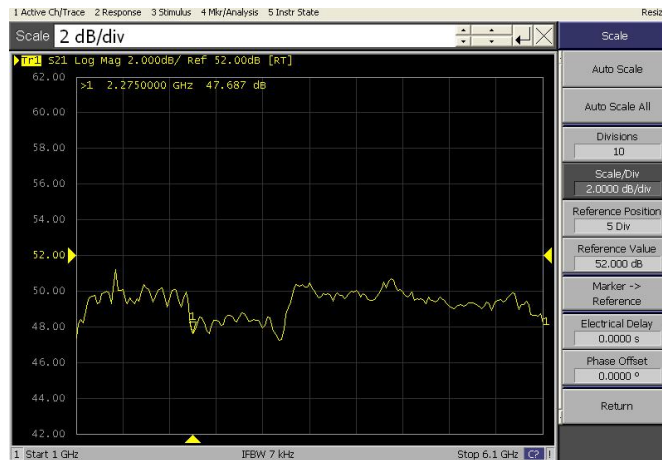
Graph2: Output Power (PSAT\_dBm), (Low temp. -20±3°C & High temp. +60±3°C)



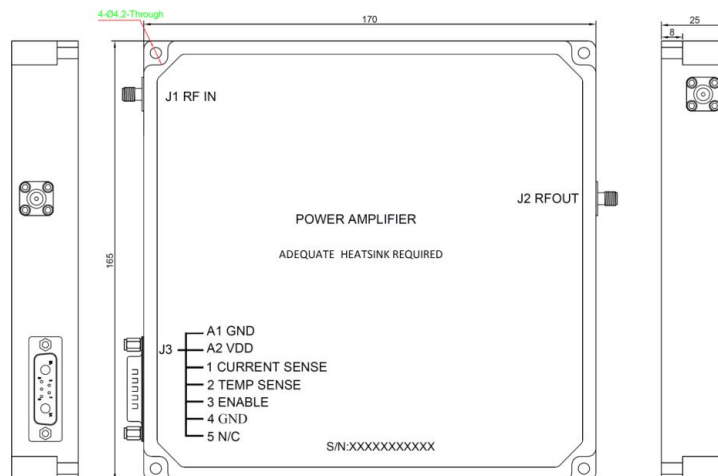
Graph3: Input Return Loss & Small signal gain @ Pin=-30 dBm: (Ambient temp. +25±3°C, DC Voltage=28V, Load VSWR ≤ 1.2)



Graph4: Power gain@ Pin= 0 dBm: (Ambient temp. +25±3°C, DC Voltage= 28V, Load VSWR ≤ 1.2)



OUTLINE DRAWING [mm]



Side View [3D]

