

TECHNICAL DATASHEET

AVBR60180H50

The AVBR60180H50 is a 100W 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

6GHz-18GHz frequency range	Solid-state Class AB Broadband design
Psat 50dBm type	Instantaneous ultra broadband
Small signal gain 50dB	Suitable for CW, and Pulse
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	6		18	GHz
Output Power CW @ Pin=0 dBm	Psat	80	100		W
Power Gain @ Pin=0 dBm	Gp	49	50		dB
Power Gain Flatness @ Pin=0 dBm	ΔGp		± 2	± 3	dB
Input Power for Rated PSAT	P <sub>IN</sub>	-2	0	+2	dBm
Harmonics @ Pin=0 dBm	2 <sup>nd</sup> /3 <sup>rd</sup>		-15	-10	dBc
Spurious Signals@ Pin=0 dBm	Spur			-60	dBc
Input Return Loss	S11			-10	dB
Third Order Intercept Point					
2-Tone @ 40dBm/Tone, 100kHz Spacing	IP3		N/A		dBm
Operating Voltage	VDC	26	28	30	V
Quiescent Current @Enable= +3.3V	IDQ		24		A
Current Consumption @Pout= 80~100 W	IDD		40	50	A
Switching Time @ 1kHz TTL, PIN = 0 dBm	TON/TOFF		1	2	μs

MECHANICAL SPECIFICATIONS

Cooling External Heat-Sink Needed (Not Supplied)	
Length* Width*Height[ mm ]	340*340*40
Weight[ Kg ]	7
RF Connector Input	SMA, Female
RF Connector Output	N, Female

## ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Module Operation Temperature* <sup>1</sup>	-20	65* <sup>2</sup>	°C
Storage Temperature Range	-45	85	°C
Relative-Humidity		95	%
Altitude * <sup>3</sup>	N/A		
Vibration/Shock * <sup>3</sup>	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 ≤ 10	dBm
Load VSWR @ POUT = 50W	VSWR ≤ 5:1 [Design To Meet]	N/A
Load VSWR @ POUT = 80W	VSWR ≤ 3:1 [Design To Meet]	N/A
Thermal Degradation	90°C @ heat-sink [recovery@<60°C]	°C

## DC INTERFACE CONNECTOR – [Hybrid D-Sub 9W4, Male]

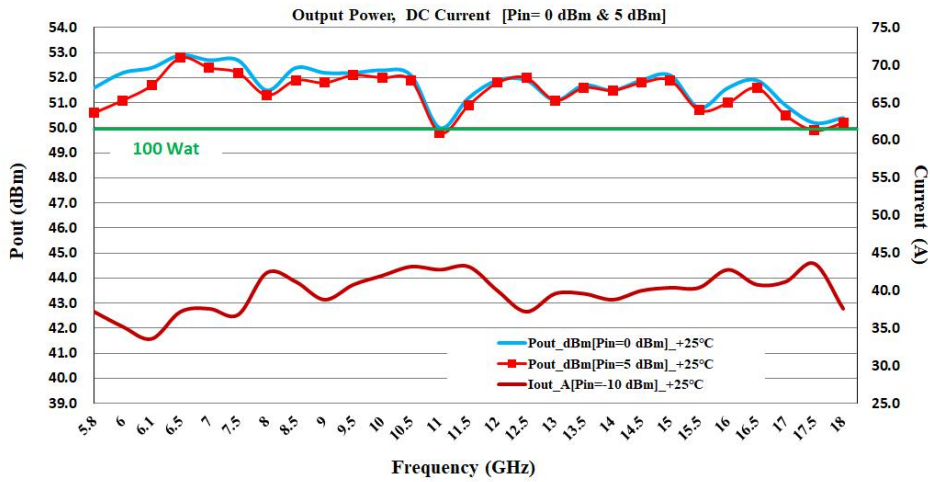
Pin #	Description	Specifications
A1	VDD	28VDC
A2	VDD	28VDC
A3	GND	Ground
A4	GND	Ground
1	CURRENT SENSE	Analog voltage relative to IDD @ 100mV per Ampere
2	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
3	ENABLE	Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low)
4	GND	Ground
5	N/C	No Connection

## PLOTTED AND OTHER DATA

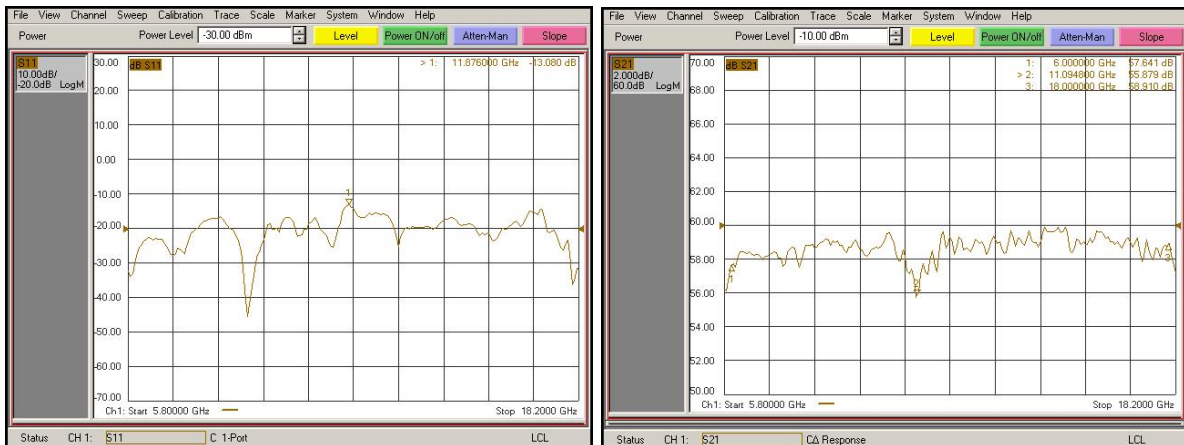
Notes:

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.

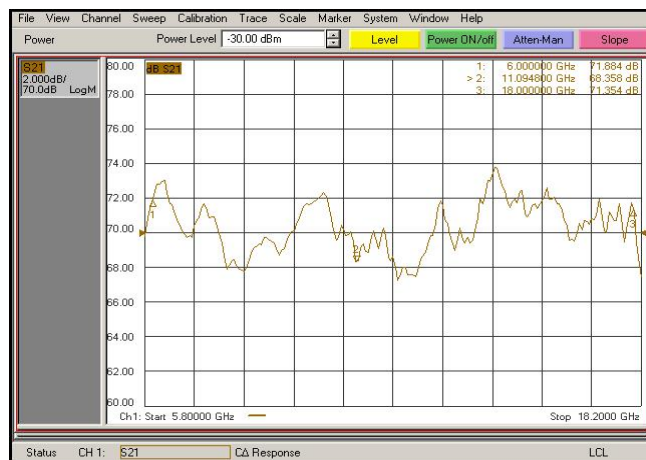
TYPICAL PERFORMANCE DATA [Load VSWR ≤ 1.2], (Normal temp. +25±3°C, Heat-Sink with Fan Cooling)



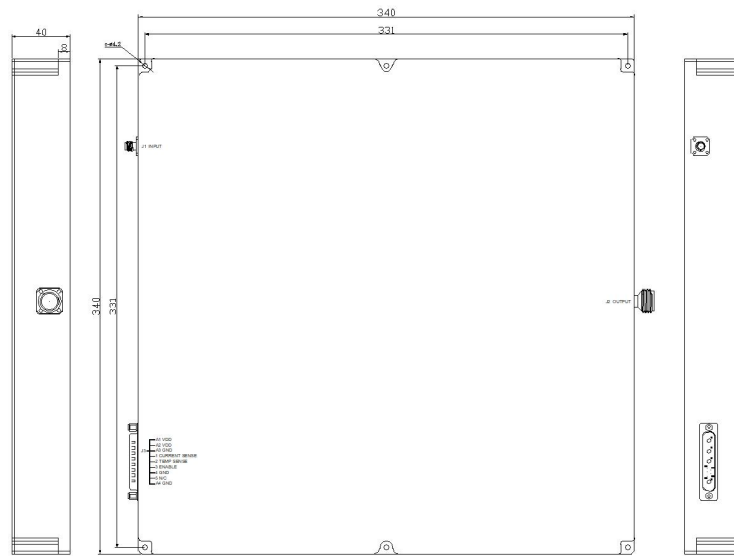
Input Return Loss, S11 Curve Test, Pin=-30dBm; S21 Curve Test (Power Gain), Pin=-10dBm [Load VSWR ≤ 1.2]



S21 Curve Test, Pin=-30dBm [Load VSWR ≤ 1.2], For Reference Only



OUTLINE DRAWING [mm]



Side View [3D]

