

TECHNICAL DATESHEET

AVBR020180H41

The AVBR020180H41 is a 15W high gain Solid State Linear 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 Linear System and high power combination.

Features

2GHz-18GHz frequency range	Solid-state Class AB Broadband design
Psat 41.7 dBm type	Instantaneous ultra-broadband
Power gain 41 dB	Suitable for AM, and FM
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)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	2		18	GHz
Output Power CW PSAT	PSAT		15		W
Power Gain @ Psat	Gp		36		dB
Power Gain Flatness @ Rated PSAT	ΔGp		± 1.5	± 2.5	dB
Input Power for Rated PSAT	PIN		0	6	dBm
Harmonics @ Pout =6W	2 <sup>nd</sup>		-12		dBc
Noise Figure(If Needed, Please Contact)	NF		N/A		dB
Spurious Signals@ Pout =6W	Spur		-60		dBc
Input Return Loss	S11			-10	dB
Third Order Intercept Point 2-Tone @ 33dBm/Tone, 100kHz Spacing(If Needed, Please Contact)	IP3		N/A		dBc
Operating Voltage	VDC	24	28	30	V
Current Consumption @ Pout= 10~15 W	IDD		3.5	4.5	A
Current Quiescent ON/OFF	IDQ		2.2/0.1		A
Switching Time @ 1kHz TTL, PIN = 0dBm	TON/TOFF		1	2	μs

MECHANICAL SPECIFICATIONS

Cooling External Heat Sink Needed (Not Supplied)	
Length*Width*Height[ mm ]	160*140*25
Weight[ Kg ]	1
RF Connector Input	SMA, Female
RF Connector Output	SMA, Female

Datasheet: REV A.2/11.07.2018

Unique Amplifier With Innovation



## 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	Pin ≤ 12	dBm
Load VSWR @ POUT =8W	VSWR ≤ 5:1 (Design to Meet)	N/A
Thermal Degradation	90	°C

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

Pin #	Description	Specifications
6,7	GND	Ground along with 28V <sub>DC</sub>
8,9	VDD	28V <sub>DC</sub>
1	CURRENT SENSOR	Analog voltage relative to I <sub>DD</sub> @ 100mV per Ampere
2	TEMP SENSOR	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

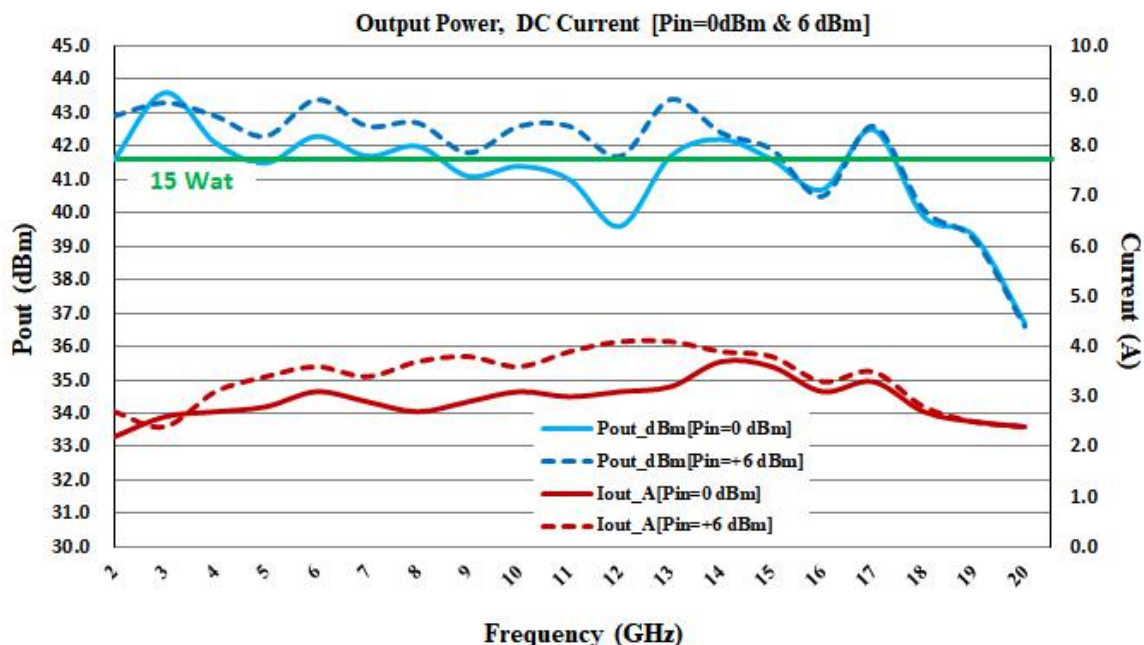
Notes:

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 –For Reference Only

Graph1: Output Power, DC Current @ Pin=0 & Pin=+6dBm (Ambient temp. +25±3°C, LOAD VSWR ≤ 1.3)



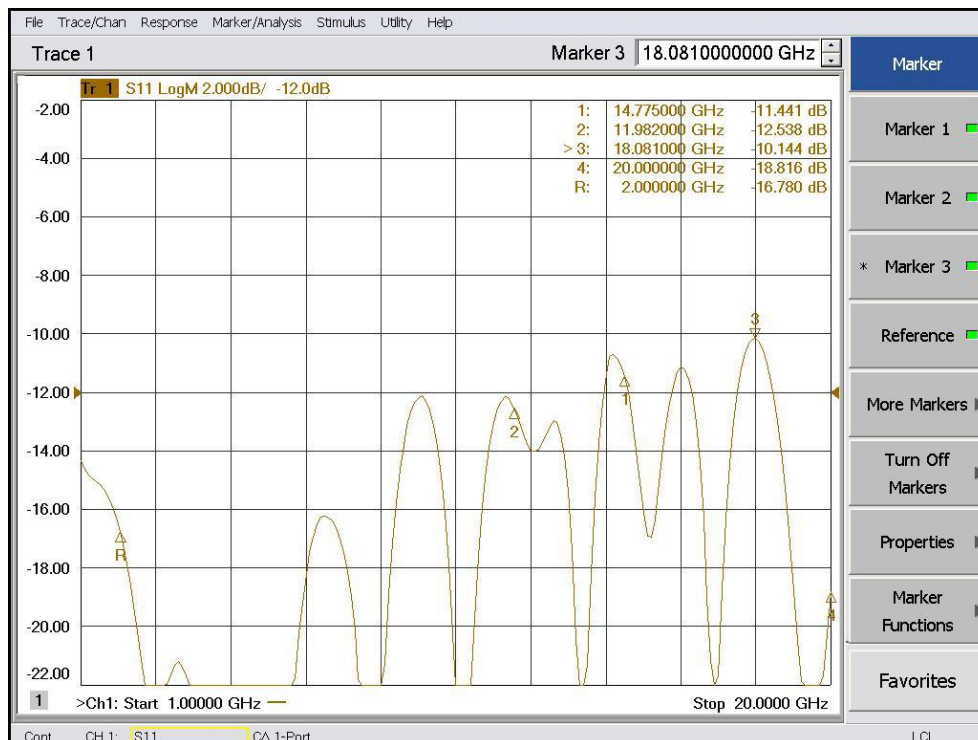
Graph2: Power Gain @ Pin=0 dBm (Ambient temp. +25±3°C, LOAD VSWR ≤ 1.3)



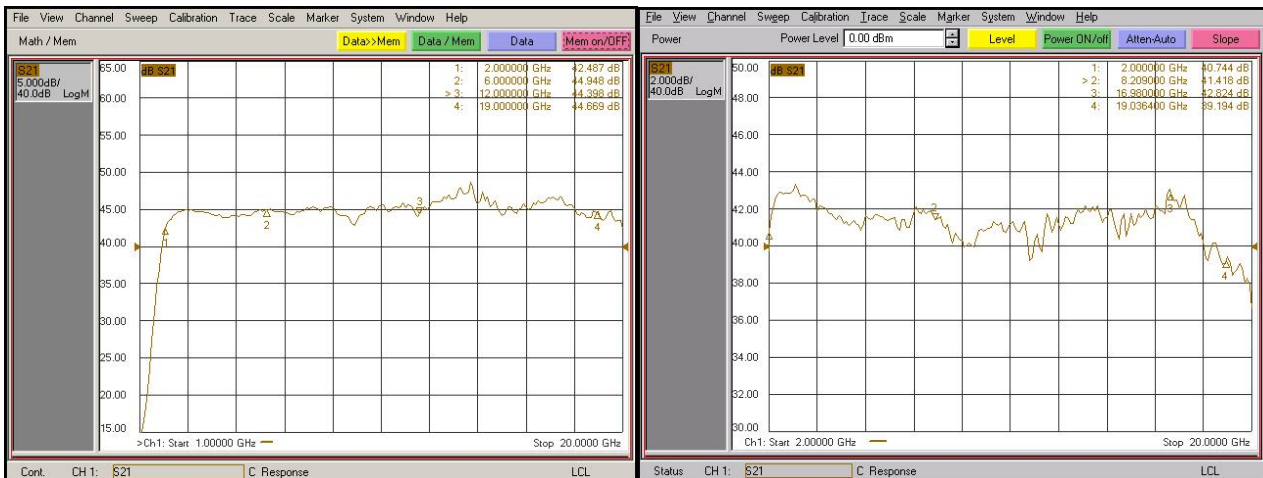
Graph3: Small signal gain @ Pin=-20dBm (Ambient temp. +25±3°C, LOAD VSWR ≤ 1.3)



Graph4: Input Return Loss @ Pin=0 dBm: (Ambient temp. +25±3°C, LOAD VSWR ≤ 1.3)



Graph5: Power Gain@ Pin=0 dBm (Ambient temp. -20±3°C-Left, Ambient temp. +60±3°C-Right)



OUTLINE DRAWING(mm)

