

TECHNICAL DATASHEET

AVLR1650H53

The AVLR1650H53 is a 200W 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

1.4GHz-1.9GHz frequency range	Solid-state Class AB Broadband design
Psat 53dBm typ	Instantaneous ultra-broadband
Power gain 53dB	Suitable for CW, 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)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	1.4		1.9	GHz
Output Power CW P1dB	P <sub>1</sub>	150	200		W
Power Gain @ Psat	G <sub>p</sub>	52	53		dB
Power Gain Flatness @ Rated PSAT	ΔG <sub>p</sub>		± 1.5	± 2	dB
Input Power for Rated PSAT	P <sub>IN</sub>		0		dBm
Harmonics @ Pout =100W	2 <sup>nd</sup> /3 <sup>rd</sup>		-30		dBc
Noise Figure(If Needed, Please Contact)	NF		N/A		dB
Spurious Signals@ Pout =100W	Spur		-65	-60	dBc
Input Return Loss	S11		-20	-15	dB
Third Order Intercept Point 2-Tone @ 40dBm/Tone, 100kHz Spacing(If Needed, Please Contact)	IP3		N/A		dBc
Operating Voltage	VDC	26	28	30	V
Current Consumption @ Pout= 150W	IDD		15	20	A
Switching Time @ 1kHz TTL, PIN = -2dBm	TON/TOFF		1.5	2	μs

MECHANICAL SPECIFICATIONS

Cooling External Heat Sink Needed (Not Supplied)

Length*Width*Height[ mm ]	250*200*25
Weight[ Kg ]	2.3
RF Connector Input	SMA, Female
RF Connector Output	Type-N, Female

Datasheet: REVA.4/12.12.2019

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## ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Module Operation Temperature	-40	65	°C
Storage Temperature Range	-45	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 =150W[Design To Meet ]	$V_{SWR} \leq 5:1$	N/A
Thermal Degradation	90	°C

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

Pin #	Description	Specifications
A1	GND	Ground along with 28V <sub>DC</sub>
A2	VDD	28V <sub>DC</sub>
1	CURRENT SENSE	Analog voltage relative to I <sub>DD</sub> @ 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

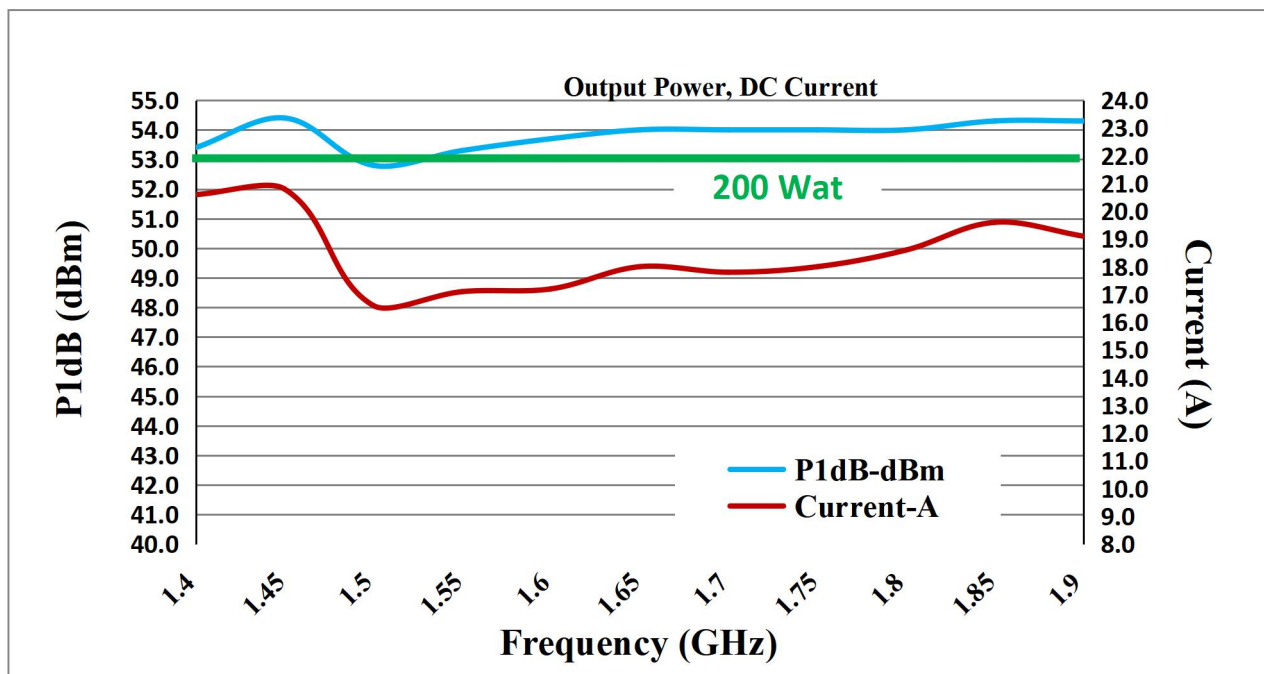
## PLOTTED AND OTHER DATA

Notes:

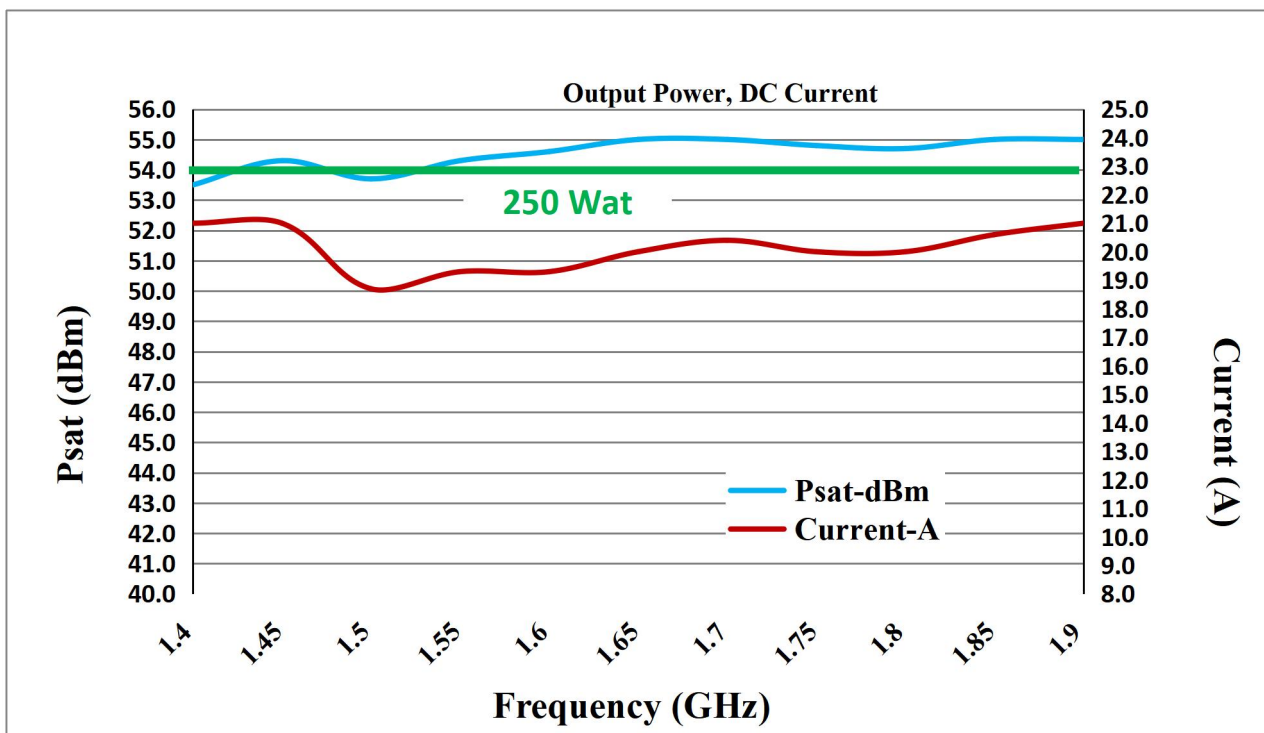
1. Values at +25°C, sea level.
2. ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
3. Heat Sink required for Proper Operation, Unit is cooled by conduction to heat sink.

TYPICAL PERFORMANCE DATA

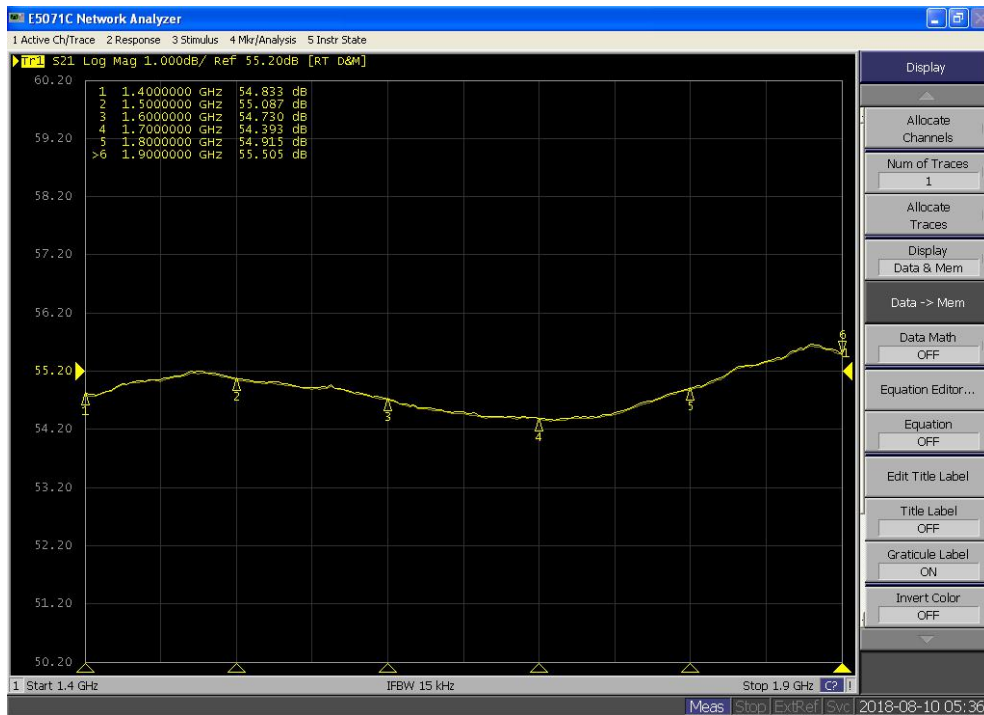
Graph1: Output Power(P1dB) (Normal temp. +25±3°C, Load VSWR<1.3)



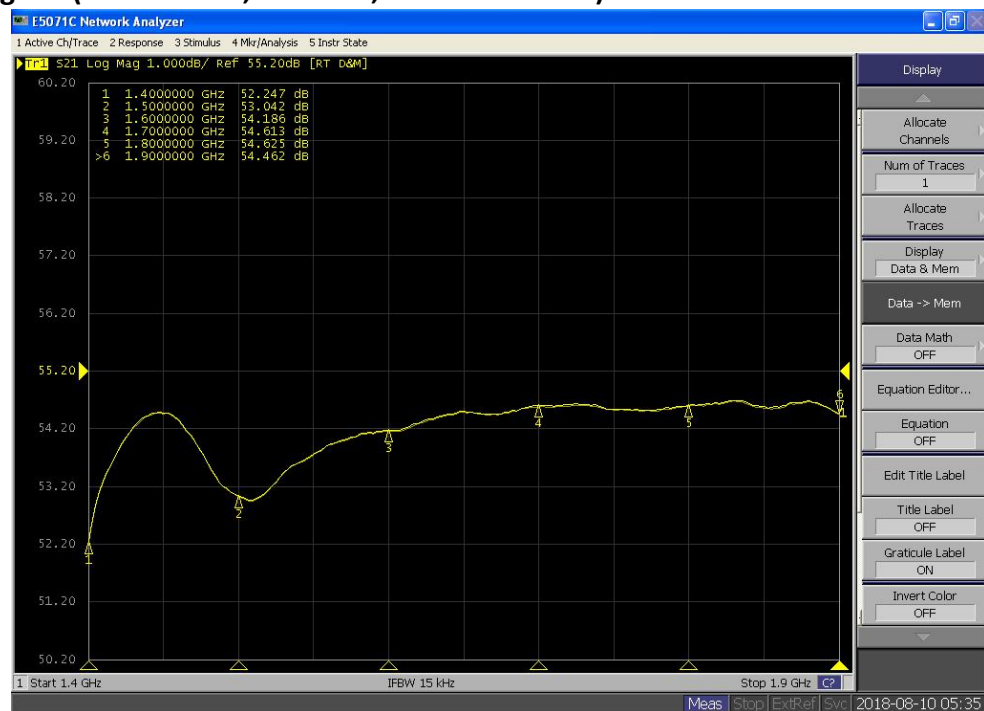
Graph2: Output Power@ Psat (Normal temp. +25±3°C, Load VSWR<1.3)



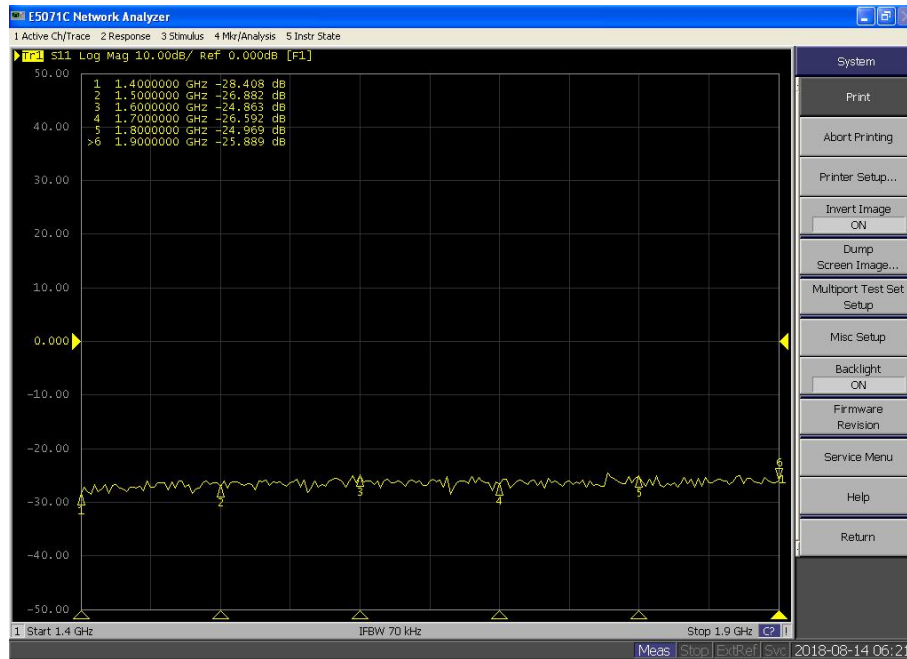
Graph3:Small signal gain :(Pin=-30dBm, +25±3°C, Load VSWR<1.3)



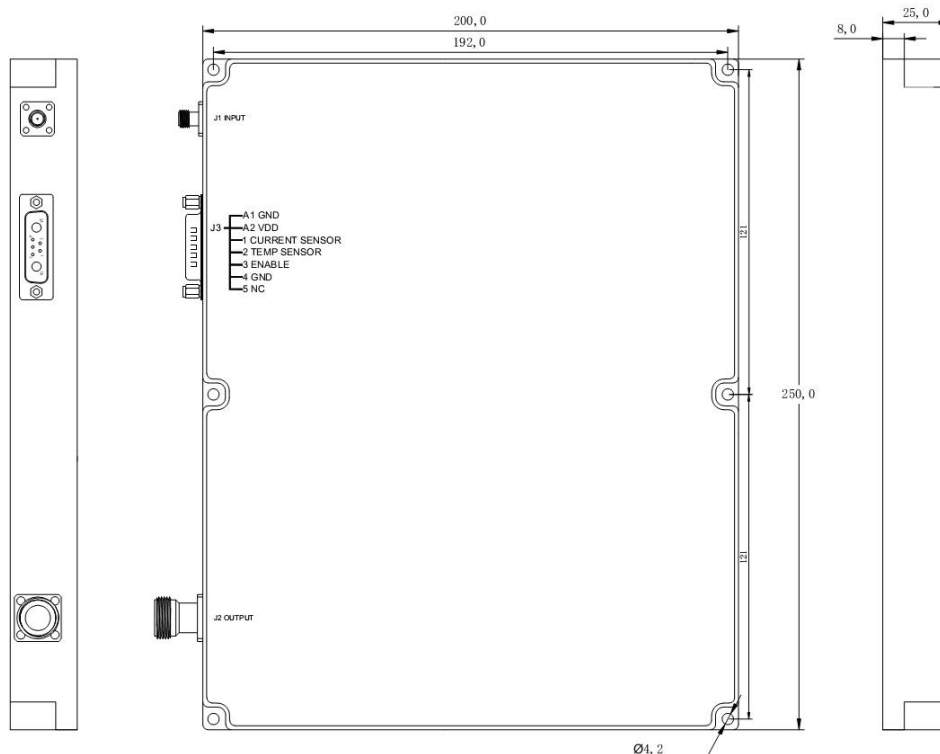
Graph4:Power gain: (Pin=-30dBm, +25±3°C, Load VSWR<1.3)



Graph5:Input Return Loss: (Pin=-30dBm, +25±3 °C, Load VSWR<1.3)



OUTLINE DRAWING (mm)



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