TECHNICAL DATESHEET ***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
Psat 53dBm typ
Power gain 53dB
50 ohm input/output impedance
Built-in control, monitoring and protection circuits
Solid-state Class AB Broadband design
Instantaneous ultra-broadband
Suitable for CW, and Modulated Signal
Small and lightweight
High reliability and ruggedness

ELECTRICAL SPECIFICATIONS(T=25℃,DC Voltage= 28V)

Description	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	1.4		1.9	GHz
Output Power CW P1dB	P_1	150	200		W
Power Gain @ Psat	Gp	52	53		dB
Power Gain Flatness @ Rated PSAT	ΔGp		±1.5	±2	dB
Input Power for Rated PSAT	P_{IN}		0		dBm
Harmonics @ Pout =100W	$2^{nd}/3^{rd}$		-30		dBc
Noise Figure(If Needed, Please Contact)	NF		N/A		dB
Spurious Signals@ Pout =100W	Spur		-65	-60	dBc
Input Return Loss	S_{11}		-20	-15	dB
Third Order Intercept Point 2-Tone @ 40dBm/Tone, 100kHz Spacing(If Needed, Please Contact)	IP3		N/A		dBc
Operating Voltage	V_{DC}	26	28	30	V
Current Consumption @ Pout= 150W	I_{DD}		15	20	A
Switching Time @ 1kHz TTL, P_{IN} = -2dBm	T_{ON}/T_{OFF}		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

ENVIRONMENTAL SPECIFICATIONS (Design to Meet)

Module Operation Temperature	-40	65	℃
Storage Temperature Range	-45	70	℃
Relative-Humidity	N/A		
Altitude	N/A		
Vibration/Shock	N/A		

LIMITS

Input RF drive level without damage	Pin≤10	dBm
Load VSWR @ POUT =150W[Design To Meet]	VSWR≤5:1	N/A
Thermal Degradation	90	℃

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

Pin #	Description	Specifications
A1	GND	Ground along with $28V_{DC}$
A2	VDD	$28V_{DC}$
1	CURRENT SENSE	Analog voltage relative to I_{DD} @ 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

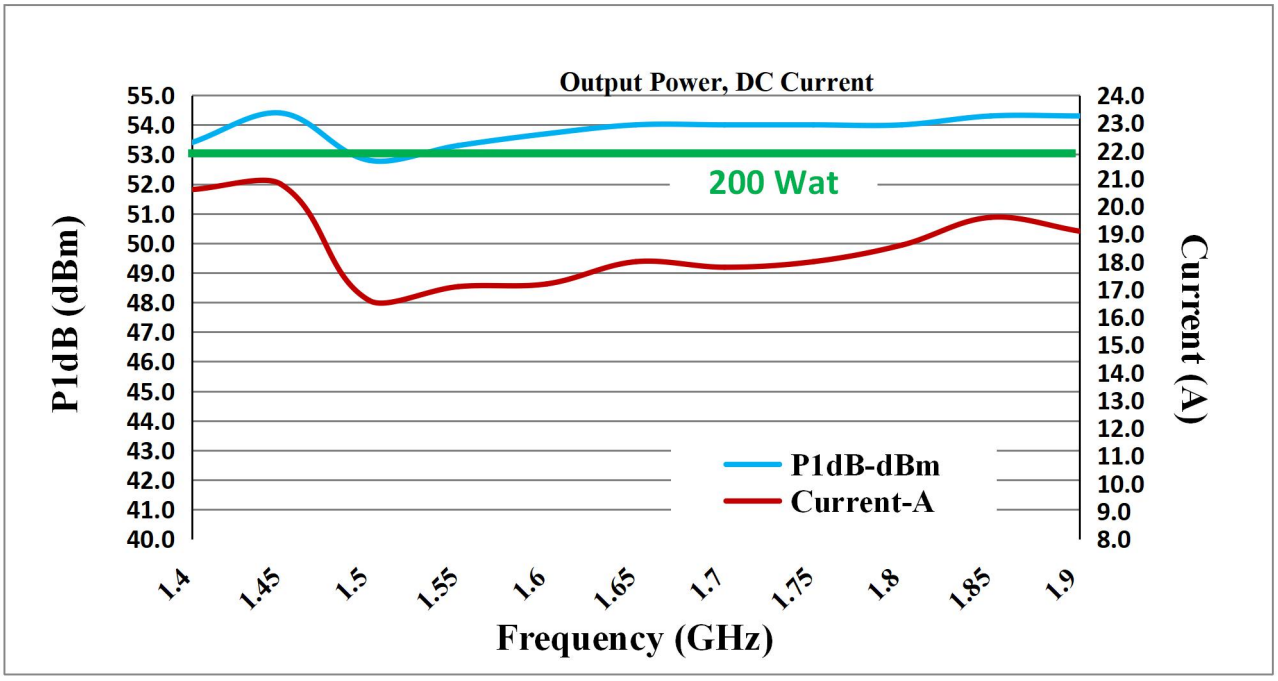
PLOTTED AND OTHER DATA

Notes:

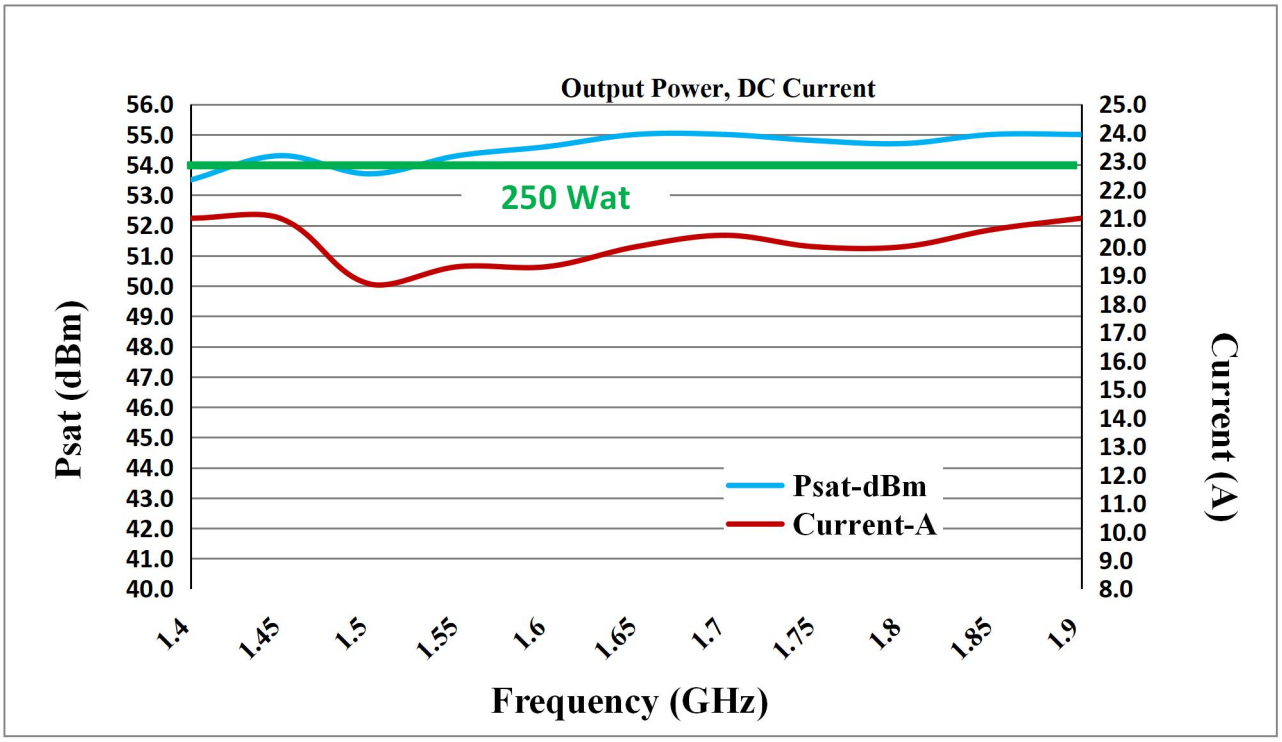
1. Values at +25℃,sea level.
2. ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
3. Heat Sink required for Proper Operation, Unit is cooled by conduction to heat sink.

TYPICAL PERFORMANCE DATA

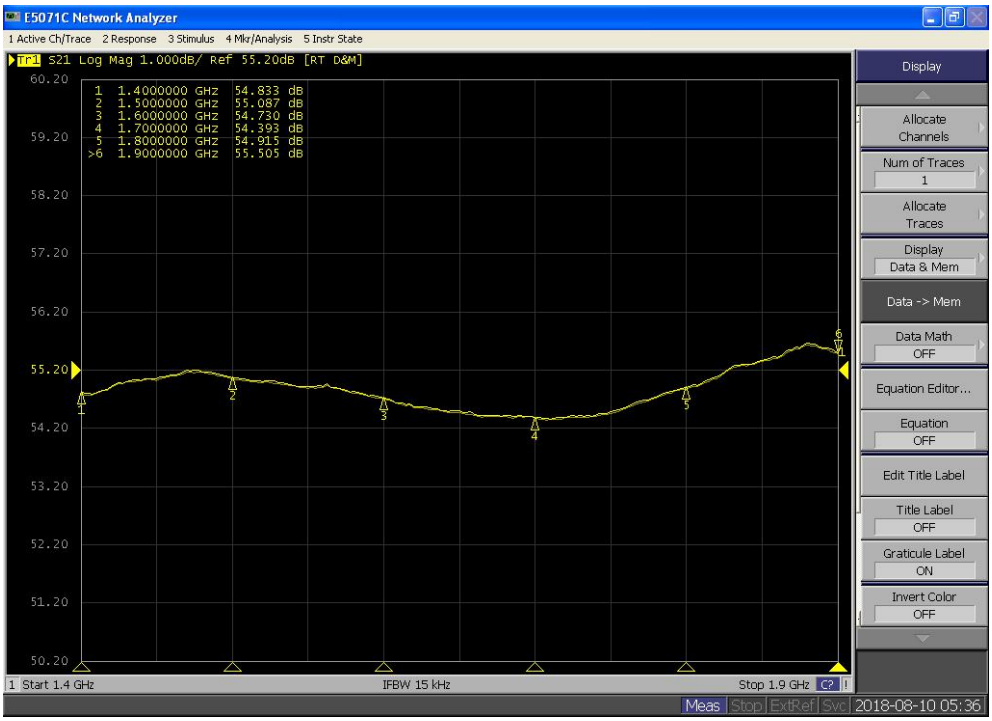
Graph1: Output Power(P1dB) (Normal temp. +25±3℃, Load VSWR<1.3)



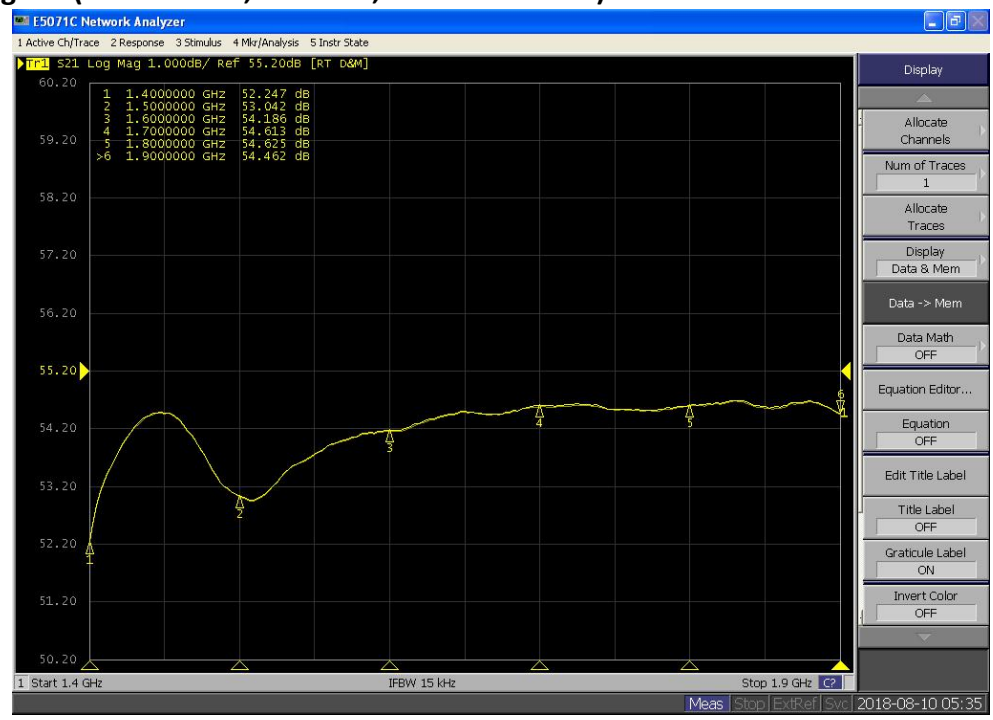
Graph2:Output Power@ Psat (Normal temp. +25±3℃, Load VSWR<1.3)



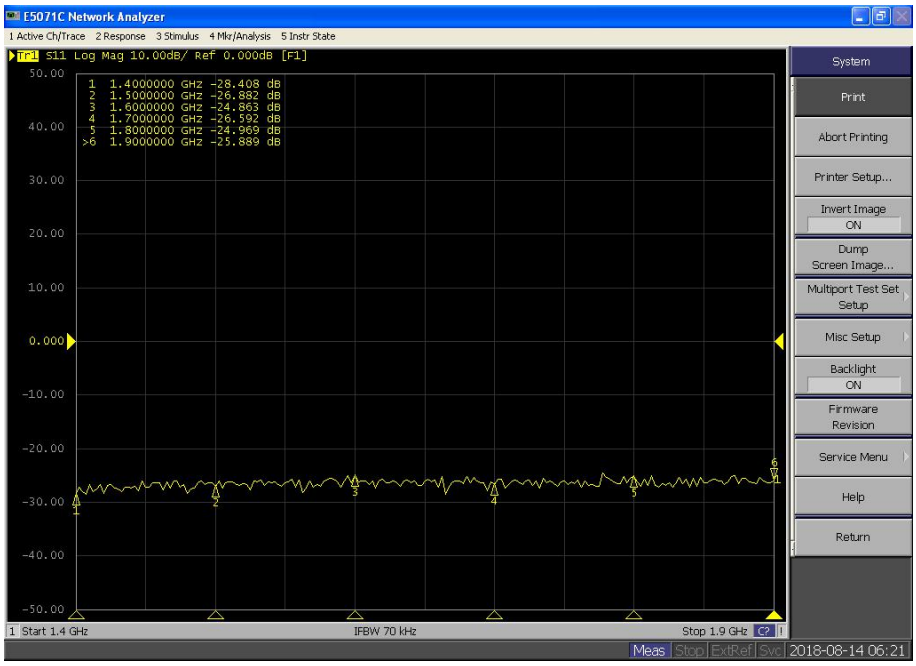
Graph3:Small signal gain :(Pin=-30dBm, +25±3℃, Load VSWR<1.3)



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



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



OUTLINE DRAWING (mm)