

Product Features

- Frequency from 700 ~2700MHz
- Class AB GaN design
- Instantaneous wide bandwidth
- 50 Ohm Input/Output impedance
- Small size and Light weight
- High reliability and Ruggedness

Description

The AMPB7002700-50W GaN Wideband Amplifier is designed for general purpose. Operating frequency range is from 700~2700MHz. Gallium Nitride on SiC Technology is used and attached on a copper sub carrier. Improved thermal handling by patented technology.

Electrical Specifications @ $V_{DC}=32V$, $T_C=50^{\circ}C$, 50Ω System

Description	Symbol	Min	Typ	Max	Unit	Remark
Operating Frequency	BW	2.5		6.0	GHz	
Input Power	Pin		0		dBm	
Output Power CW	Psat	47			dBm	ContinuousWave
Output P1dB CW	P1dB	40	41.7		dBm	ContinuousWave
Power Gain	Gp	47	48	49	dBm	@ Pin=0dBm
Power Gain Flatness	Gp		± 1.0		dB	@ Pin=0dBm
Harmonics	2nd/3rd	-20/-40	-15/-20		dBc	@ Pin=0dBm
Spurious Suppression	Spur		-60		dBc	@ Pout=45dBm
Input Return Loss	S11		-15		dB	
Third Order Intercept Point	IMD3		-25		dBc	@ 40dBm/Tone, 1MHz Spacing
Operating Voltage	Vdc	26	28	30	V	
Current Consumption	A		7.5	8.5	A	@ Pout=50~60W
Switching Time	TON/TOFF		2	5	us	@ 1kHz TTL, Pin=0 dBm
Max Input Power	PinMax		10		dBm	
Load VSWR	VSWR		5:1			@ POUT=30W
Load VSWR	VSWR		3:1			@ POUT=50W

Environmental Specifications

PARAMETER	UNIT	RATING	SYMBOL
Operating Case Temperature	°C	-20 ~ 85	T _C
Storage Temperature	°C	-40 ~ 105	T _{STG}
Relative Humidity(Non-condensing)	RH	95	%

Operating Voltages

PARAMETER	UNIT	NOMINAL VOLTAGE	VOLTAGE ACCURACY	SYMBOL
Operating Voltage	V	32	± 2%	V _{DC}
HPA Enable Voltage	V	-		
Current Monitor Voltage	V	Output Voltage 1V@10A(0.1V/1A)		
Temp Monitor Voltage	V	Output Voltage 0.75V@25°C (1°C/0.01V)		

Mechanical Specifications

PARAMETER	UNIT	TYP
Mass	kg	0.5
Dimension	mm	140*100*23(Without Connectors)
RF Connector	-	SMA Female : RF Input
		SMA Female : RF Output
DC Connector	-	Through core capacitor, Male : Supply
Cooling		External Heat-sink Required

Power Test result

Frequency	Input Power (dBm)	Power(dBm)	Current (A)	P1dB	2nd	3rd	IMD3
Requirement		> 47	< 8.5A	41.7	20	40	-25
5900	0	48.1	8.9	47	56	50.7	30.1
5925	0	47.8	9	46.8	60	60	30
5950	0	48	9.2	46.9	60	60	30.2
5975	0	48	9.2	46.9	60	60	30.3
6000	0	48	9.1	46.5	60	60	30.4
6025	0	47.7	9	46.5	60	60	30
6050	0	48.2	8.9	47.1	50	45	31
6075	0	48.5	8.8	47.2	50	43	30
6100	0	47.9	8.7	47	50	40	30

Wideband Amp Pallet

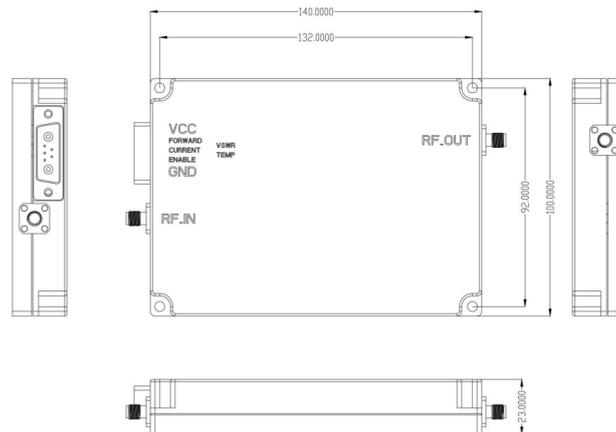
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6125	0	47.8	8.5	46.8	50	40	28
6150	0	47.7	8.5	46.8	50	39	28.3
6175	0	47.4	8.1	46.5	50	43	27.4
6200	0	47.6	8.2	46.8	50	45	26.6
6225	0	47.6	7.9	46.8	50	35	27
6250	0	48.1	7.6	47	50	33.8	27.5
6275	0	48.1	7.3	47	50	32	27.3
6300	0	48.5	7.5	47.2	50	32.7	27.2
6325	0	48.1	6.9	47	50	36	28
6350	0	47.4	7	46.2	45	40	27.4
6375	0	47.7	7.4	46.5	45	38	28
6400	0	47.5	7.3	46.5	45	40	28.2
6425	0	47.9	7.2	46.5	44	42	28
6450	0	47.9	7.3	46.5	39	50	28.3
6475	0	47.5	7.3	46.3	35	50	29
6500	0	47.7	7.3	46.4	33	45	30
6525	0	47.9	7.2	46.8	31	45	30.4
6550	0	47.5	7.2	46.4	32	45	31
6575	0	47.3	7.1	46.5	32	50	31
6600	0	47.2	7	46.7	31	50	31
6625	0	47.1	6.9	46.4	26	50	30.8
6650	0	47.2	6.7	46.4	25	50	30.7
6675	0	47.2	6.8	46.3	30	50	30
6700	0	47.2	6.6	46.3	31	48	28.7
6725	0	47	6.4	46.3	34	50	27.4
6750	0	47	6.5	46.3	34	50	26.3
6775	0	47	6.7	46.3	33	50	26
6800	0	46.9	6.7	46.2	31	50	25.7
6825	0	46.7	6.6	46.2	40	50	27
6850	0	47	6.5	46.5	41	50	26.7
6875	0	47.2	6.4	46.5	42	50	27
6900	0	47.1	6.5	46.2	45	42	28.2
6925	0	47.2	6.5	46.3	50	40	28.3
6950	0	47.1	6.4	46.3	50	45	28.5
6975	0	47	6.4	46.3	45	45	30
7000	0	47	6.4	46.2	45	45	34

Wideband Amp Pallet

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Outline Drawing



Side View[3D]



Pin Description

Pin No	Description	Pin No	Description
A1 ~ A2	VDD	1~2	28Vdc
A3 ~ A4	GND	3~4	Ground
A5	VSWR	5	reverse detection and protection
A6	detection	6	forward power detection
A7	Current Sensor	7	Analog voltage relative to IDD@100mV per Ampere
A8	Temp Sensor	8	Analog voltage relative to Module's Temperature@10mV/°C GND
A9	ENABLE	9	Amplifier Enable:TTL LogicHigh(3.3V) (Internally Pulled-Low)

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
AMPB7002700-50W	2025.03.01	2.5.3.1	-	Preliminary