

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	Continuous Wave
OutputP 1dB CW	P1dB	40	41.7		dBm	Continuous Wave
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	$^{\circ}C$	-20 ~ 85	T_C
Storage Temperature	$^{\circ}C$	-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

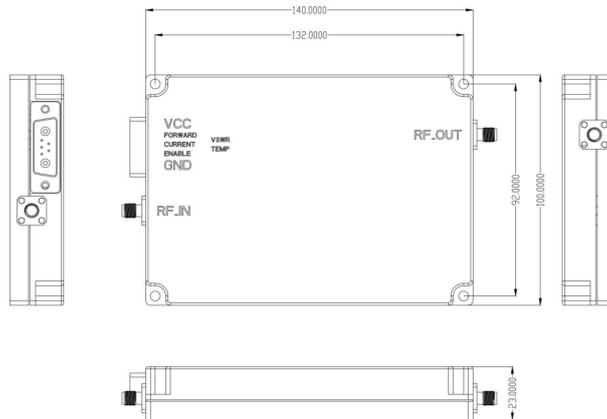
Frequency	Input Power	Power(dBm)	Current (A)	P1dB	2nd	IMD3
2500	4dBm	47.8	8.5	33	-12	-25
2550	4dBm	48.5	7.45	35	-7	
2600	4dBm	48.9	7.3	39	-5	-32
2650	4dBm	49.1	6.8	35	-8.5	
2700	4dBm	49.2	7.3	33	-11	-35
2750	4dBm	47.5	7.3	35	-14	
2800	4dBm	48.2	8.5	33	-12	-38
2850	4dBm	49.8	10	31	-9	
2900	4dBm	48.7	9.7	30	-22	-35
2950	4dBm	47.8	8.7	30	-20	
3000	4dBm	48	8.3	31	-15	-32
3050	4dBm	47.8	8.2	33	-16	
3100	4dBm	47.9	7.5	37	-11	
3150	4dBm	47.3	7.9	32	-15	
3200	4dBm	45.7	6	31	-20	
3250	4dBm	45.4	4.7	31	-24	
3300	4dBm	45	4.6	32	-20	
3350	4dBm	48.2	6.8	33	-21	
3400	4dBm	49.2	9.6	30	-21	
3450	4dBm	49	9.4	29	-22	

3500	4dBm	47.9	8.9	30	-21	
3550	4dBm	47.7	8.6	31		
3600	4dBm	47.2	8	33		
3650	4dBm	47	7.5	33		
3700	4dBm	46.8	7	31		
3750	4dBm	47.2	6.8	31		
3800	4dBm	47.6	6.1	31		
3850	4dBm	48.5	6.4	31		
3900	4dBm	48.5	5.6	31		
3950	4dBm	48.1	5.4	32		
4000	4dBm	47.7	5.4	34		
4050	4dBm	47.8	5.8	32		
4100	4dBm	47.8	6.4	31		
4150	4dBm	47.8	8.3	29		
4200	4dBm	47.3	7.9	30		
4250	4dBm	47.1	7.5	31		
4300	4dBm	47.4	7.8	31		
4350	4dBm	48	8	32		
4400	4dBm	48.5	7.9	32		
4450	4dBm	49.3	7.8	30		
4500	4dBm	47.9	7.9	31		
4550	4dBm	48.3	7.3	32		
4600	4dBm	48	6.6	32		
4650	4dBm	48.1	6.2	30		
4700	4dBm	47.8	6.2	30		
4750	4dBm	47.5	5.7	31		
4800	4dBm	47.2	5.6	31		
4850	4dBm	47.2	5.8	30		
4900	4dBm	47.6	5.9	32		
4950	4dBm	48	7	31		
5000	4dBm	49	7.7	32		
5050	4dBm	49.5	9.4	32		
5100	4dBm	49.9	9.3	31		
5150	4dBm	49.1	8.9	31		
5200	4dBm	49.2	8.2	34		
5250	4dBm	48.3	7.8	34		
5300	4dBm	48.6	7.8	33		
5350	4dBm	48.2	7.8	32		
5400	4dBm	48.4	7.5	33		
5450	4dBm	48	7.2	32		
5500	4dBm	48.2	7	32		
5550	4dBm	48.1	6.8	34		
5600	4dBm	48.8	7.4	31		
5650	4dBm	48.9	7	34		
5700	4dBm	49.2	6.7	33		
5750	4dBm	48.3	6.3	34		
5800	4dBm	48.3	6.6	34		
5850	4dBm	48.1	7.3	35		
5900	4dBm	48.3	7.5	36		

Wideband Amp Pallet

AMPB250060000-50W-GaN-Wideband-Amplifier

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 Logic High(3.3V) (Internally Pulled-Low)

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
AMPB250060000-50W	2025.04.01	2.5.4.1	-	Preliminary