

◆ Product Description

The MPA-008030S51 is a 0.8-3GHz, 120W solid state high gain broadband high power amplifier with state-of-art GaN design technology. It has higher saturated output power while keeping higher P1dB and better linearity, and can adapt to a variety of different signal modes such as continuous wave, pulse, wide instantaneous bandwidth signal, high-order modulation signal and etc. It is designed for applications, such as 5G/LTE, Test, EMC, EW and GNSS/GPS applications.

◆ Features

Frequency Range: 0.8-3GHz	Solid-state Class AB broadband design
Out Power.: 50dBm Min., 50.8dBm Typ.	High power, high efficiency
Gain: 50dB Min., 51dB Typ.	Suitable for CW, and pulse signal
50 ohm input/output impedance	Small and light weight
Built-in control, monitoring and protection circuits	High reliability and ruggedness

◆ Electrical Specification (T=25°C, DC Voltage =28V, CW, Load VSWR≤1.2)

Description	Min	Typ	Max	Unit
Operating Frequency	0.8		3	GHz
Output Psat Power CW @ Pin = 0dBm	100	120		W
Output P1dB* CW	40	50		W
Gain @ Pin = 0dBm	50	51		dB
Gain Flatness @ Pin = 0dBm		±1	±1.5	dB
Input Power for Rated Psat	-2	0	2	dBm
2 nd /3 rd Harmonics @ Psat		-20/-25	-15/-18	dBc
Noise Figure		8	10	dB
Spurious Signals@ Pin = 0dBm		-70	-65	dBc
Input VSWR		1.2	1.5	/
Third Order Intercept Point 2-Tone @ 40dBm/Tone, 1MHz Spacing*		+54		dBc
Operating Voltage	26	28	30	V
Current Consumption @Pout= 100~120 W		12.5	16	A
Switching Time @ 1kHz TTL, Pin = 0dBm		2	3	µs

Note*: IP3 or IMD3 data, please contact sales.

◆ Environmental Specifications (Design Goal)

Operation Temperature*1	-20	65*2	°C
Storage Temperature Range	-25	70	°C
Relative-Humidity		95	%
Altitude*3	N/A		
Vibration/Shock*3	N/A		

Notes *1: Operation Temperature can be extended to -45~80°C. Contact Sales for update.

Notes *2: External Heatsink is required.

Notes *3: Altitude /Vibration are designed with considerations, but without tests and experiments.

◆ Limits

Input RF Drive Level Without Damage	Pin ≤ 10 dBm
Load VSWR @ Pin=-5dBm	VSWR ≤ 5:1 (Design Goal)
Load VSWR @ Pin=0dBm	VSWR ≤ 3:1 (Design Goal)
Thermal Degradation	Surface 90°C ± 5°C (recovery @ 60°C)

◆ DC Interface Connector (Hybrid D-Sub 7-Pin, Male)

Pin #	Description	Specifications
A1	GND	Ground
A2	VDD	28 VDC
1	CURRENT SENSE	Analog voltage relative to IDD @ 100 mV per Ampere
2	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
3	ENABLE	Amplifier Disable: TTL Logic High (3.3 V), Internally pull down
4	GND	Ground
5	N/C	No Connection

◆ Plotted and other Data

Notes:

1. All specifications are guaranteed at +25° C. Customer is responsible for providing adequate heat sinking for sufficient heat dissipation.
2. ESD Sensitive Material, transport material in approved ESD bags. Handle only in approved ESD Workstation.

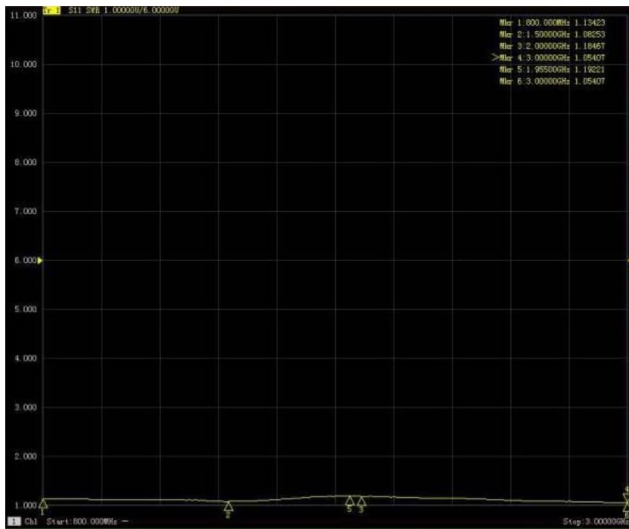
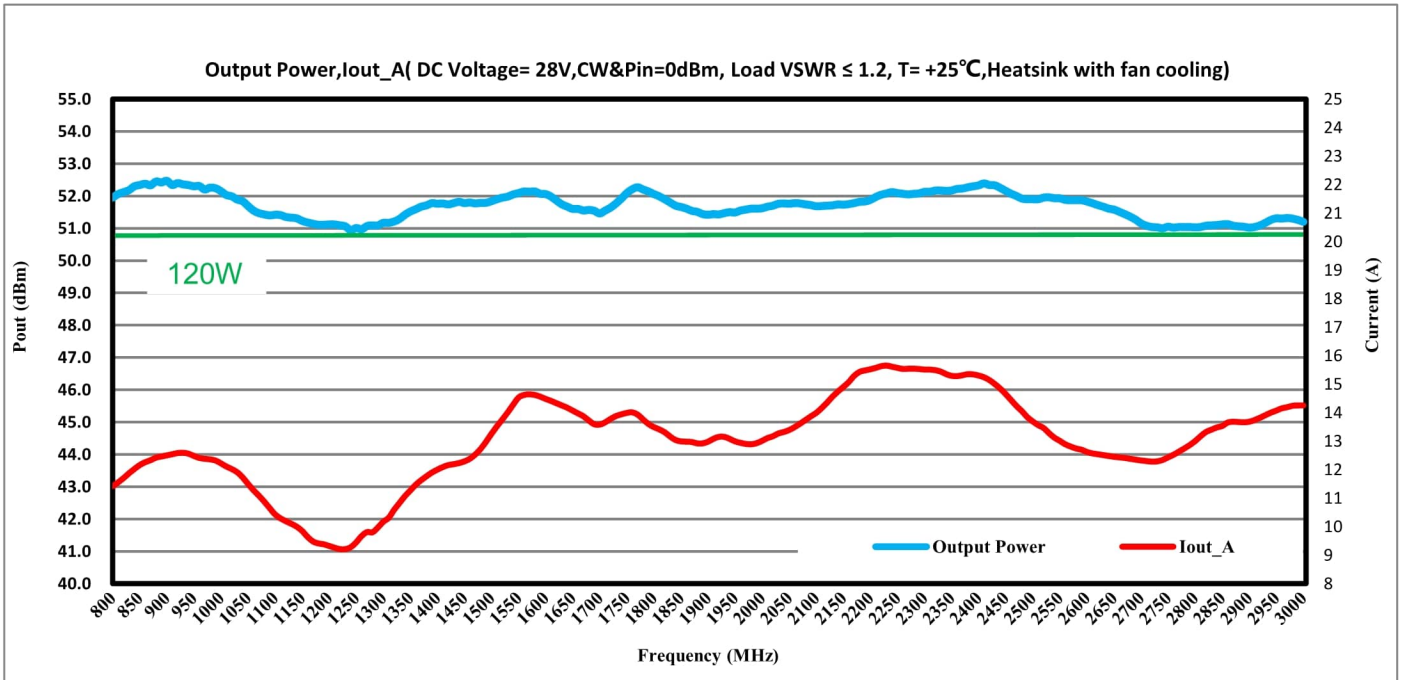


Figure left: Small signal S11 (Pin=-25dBm, Load VSWR≤1.2, 25°C), for reference only.

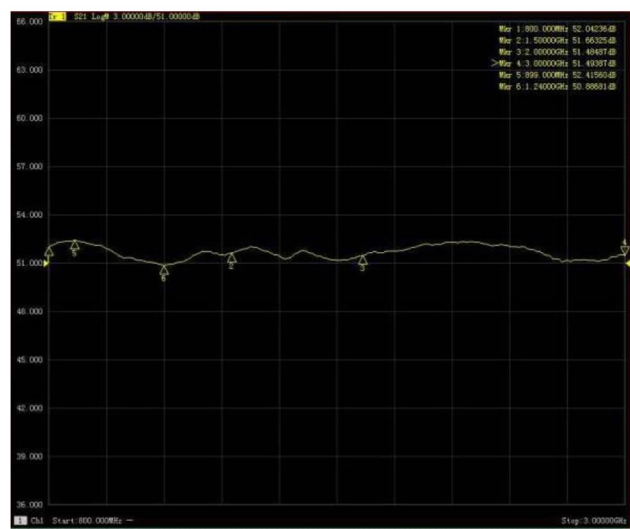
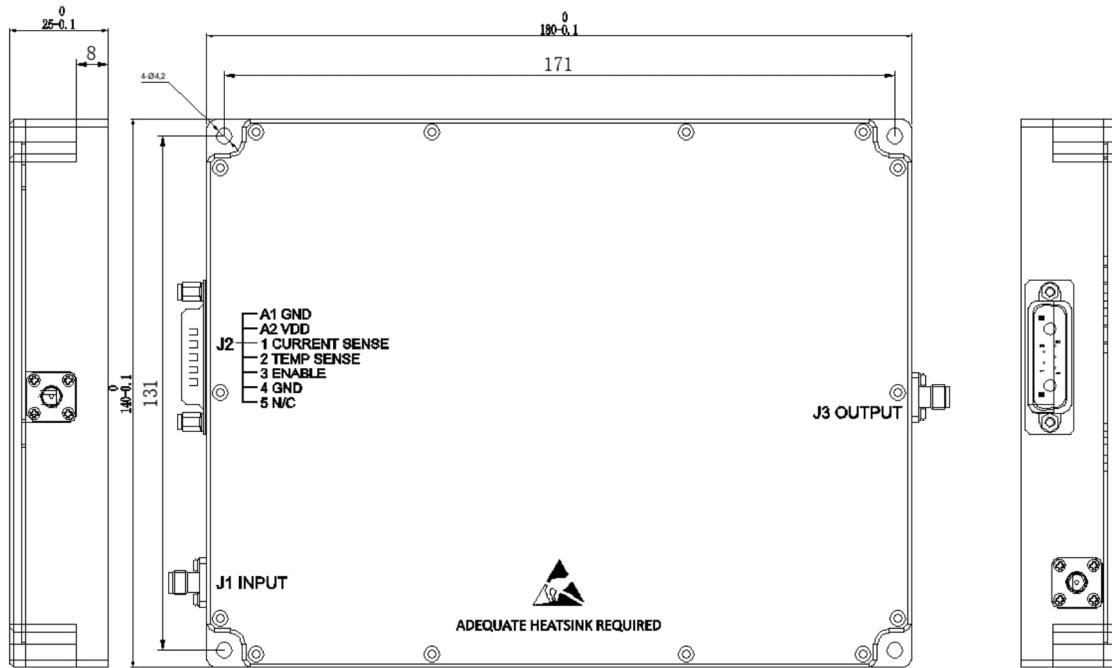


Figure right: Gain S21 (Pin=0dBm, Load VSWR≤1.2, 25°C), for reference only.

◆ Outline Drawings (mm)



◆ Mechanical Definition

Dimensions (B,H,D) mm	180 x 25 x 140
Weight (Kg)	1.8
RF-Input	SMA Female
RF-Output	N Female