

◆ Product Description

The MPA-007027S50 is a 0.7-2.7GHz, 100W 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: 0.7-2.7GHz	High efficiency, class AB design
Output Power.: 49dBm Min., 50dBm Typ.	Suitable for CW, Pulse and Wide instantaneous bandwidth signal
P1dB: 46.5dBm Min., 47.5dBm Typ.	Small and light weight
50 ohm input/output impedance	High reliability and ruggedness

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

Description	Min	Typ	Max	Unit
Operating Frequency	0.7		2.7	GHz
Output Power CW @ Pin = 0dBm	49	50		dBm
Output P1dB* CW	46.5	47.5		dBm
Gain @ Pin = 0dBm		50		dB
Gain Flatness @ Pin = 0dBm		±1.3	±1.6	dB
2 nd /3 rd Harmonics @ Psat		-20/-20	-15/-15	dBc
Input VSWR		1.3	1.5	/
Output VSWR		1.5	2	/
Spurious Signals@ Pin = 0dBm		-65	-60	dBc
IMD 3 2-Tone @ 40dBm/Tone, 10MHz Spacing*		-25	-22	dBc
Operating Voltage	24	26	28	V
Current Consumption @Pout= 80~100 W		12.5	15.5	Amp
Switching Time @ 1kHz, Pin = 0dBm		1	2	µs

Note*: 50MHz spacing available. Contact Sales for information..

◆ 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 -45~85°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)

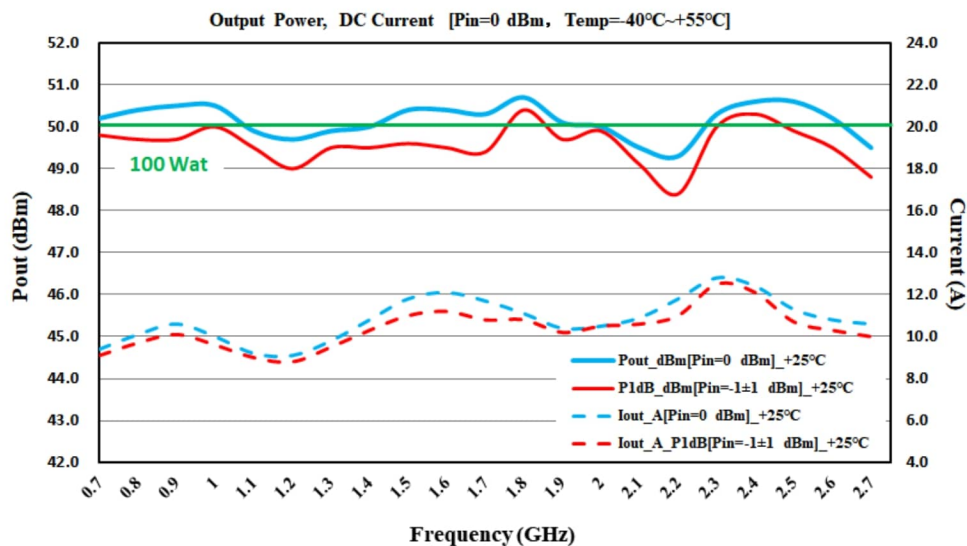
◆ DC Interface Connector (Hybrid D-Sub 7-Pin, Male)

Pin #	Description	Specifications
A1	GND	Ground
A2	VDD	26 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

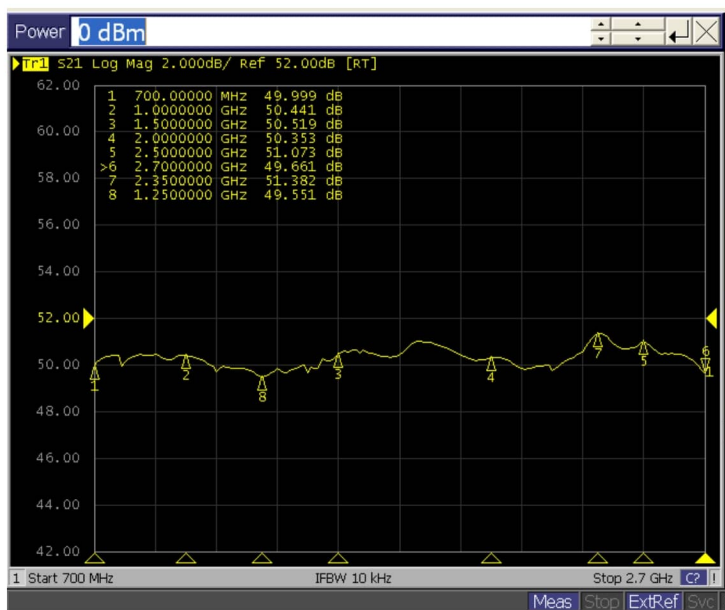
◆ Plotted and other Data

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.



Output Power & P1dB & Current (CW, Load VSWR ≤1.2, 25°C)



Gain S21 (Pin=0dBm, CW, Load ≤ 1.2 , 25°C)

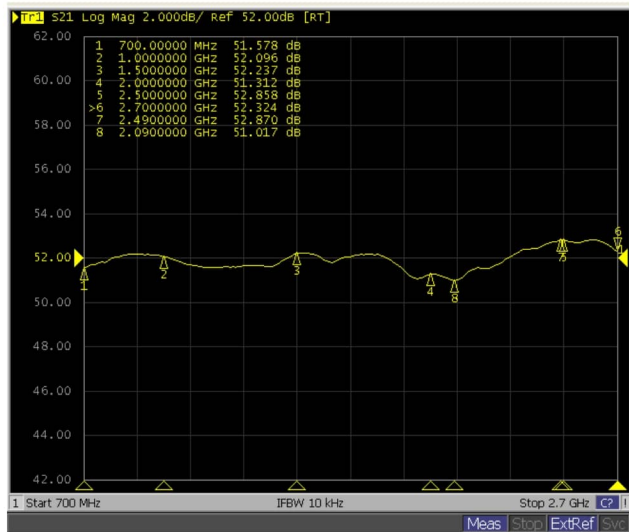


Figure left: Small signal S21 (Pin=-30dBm, CW, Load VSWR ≤ 1.2 , 25°C)

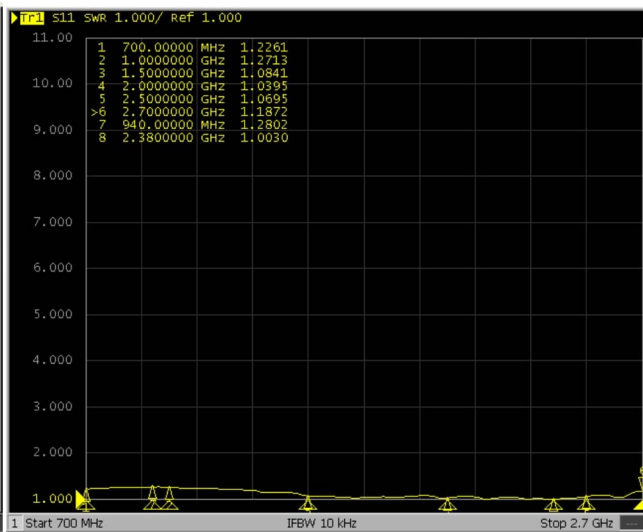
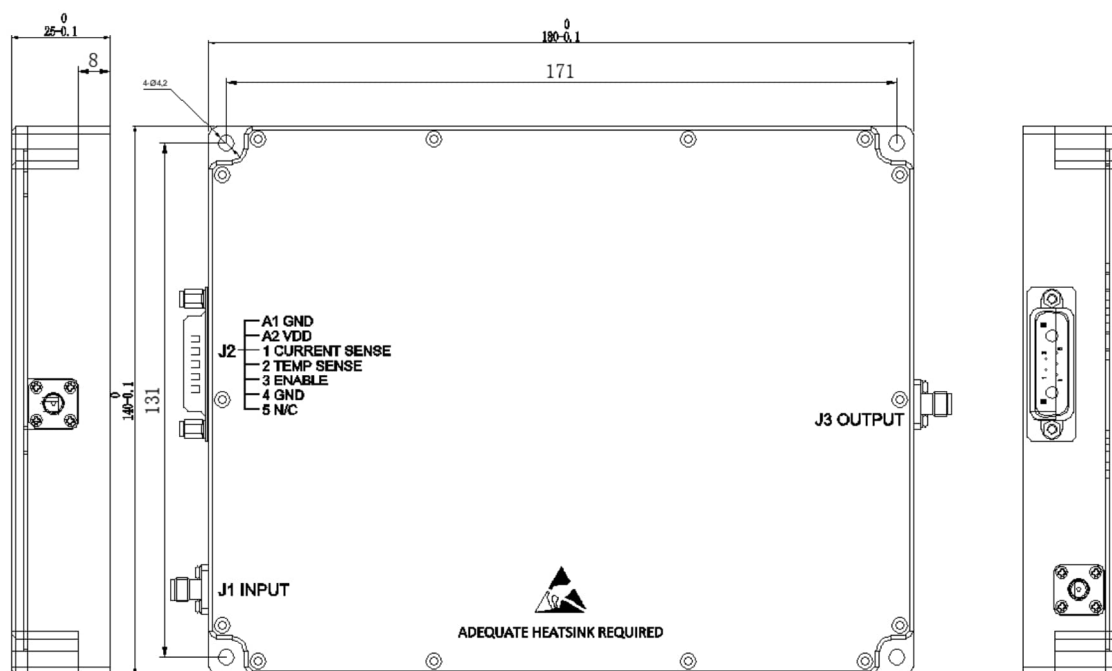


Figure right: VSWR S11 (Pin=-30dBm, CW, Load VSWR ≤ 1.2 , 25°C)

◆ Outline Drawings (mm)



◆ Mechanical Definition

Dimensions (B,H,D) mm	180 x 25 x 140
Weight (Kg)	1.6
RF-Input Connector/J1	SMA Female
RF-Output Connector/J2	SMA Female
DC Interface Connector/J3	D-Sub, 7W2 Male