

Amplifier

Model **MPA-003020S47** **Rev.A**

0.38-2GHz Solid State Power Amplifier

-Frequency range: 0.38-2GHz -Psat: ≥ 47 dBm, Gain: ≥ 47 dB

-Built-in control, monitoring and protection circuits

◆ Product Description

The MPA-003020S47 is a 0.38-2GHz, saturated power ≥ 47 dBm high gain solid state 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, EMC testing and etc.

◆ Function

- Amplifying signal within 0.38-2GHz
- Over-VSWR, over-heating, over-current, over-voltage protection functions

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◆ Electrical Specifications

Frequency Range	GHz		0.38-2
Saturated Output Power	dBm	Typ./Min.	48/47@ Pin=0dBm
P1dB	dBm	Typ./Min.	46/45
Gain	dB	Typ./Min.	48/47@ Pin=0dBm
Gain Flatness	dB	Typ.	±1@ Pin=0dBm
Small Signal Gain	dB	Typ.	53@ Pin=-30dBm
Small Signal Gain Flatness	dB	Typ.	±2@ Pin=-30dBm
Isolation@ Disable Status	dB	Typ.	90
Input Power	dBm	Typ.	0
2 nd Harmonic Suppression	dBc	Typ./Max.	-25/-15@ Pout=47dBm
3 rd Harmonic Suppression	dBc	Typ./Max.	-25/-15@ Pout=47dBm
Spurious Suppression	dBc	Typ./Max.	-70/-65@ Pout=47dBm
Input VSWR	:1	Typ./Max.	1.5/2
Switching Time	us	Typ.	2@ 1kHz TTL, Pin=0dBm
Supply Voltage	V	Typ.	28
Power Consumption	W	Typ.	200@ Pin=0dBm

◆ Limits

Input Power	Pin≤10dBm (Input RF level without damage)
Load VSWR	VSWR≤3:1 (Pout=47dBm)
	Power off (VSWR≥5:1 and Pout≥37dBm)
Supply Voltage	Power off (Supply Voltage≥32V or Supply Voltage≤24V)
Supply Current	Power off (Supply Current≥16A)
Thermal Degradation	75°C

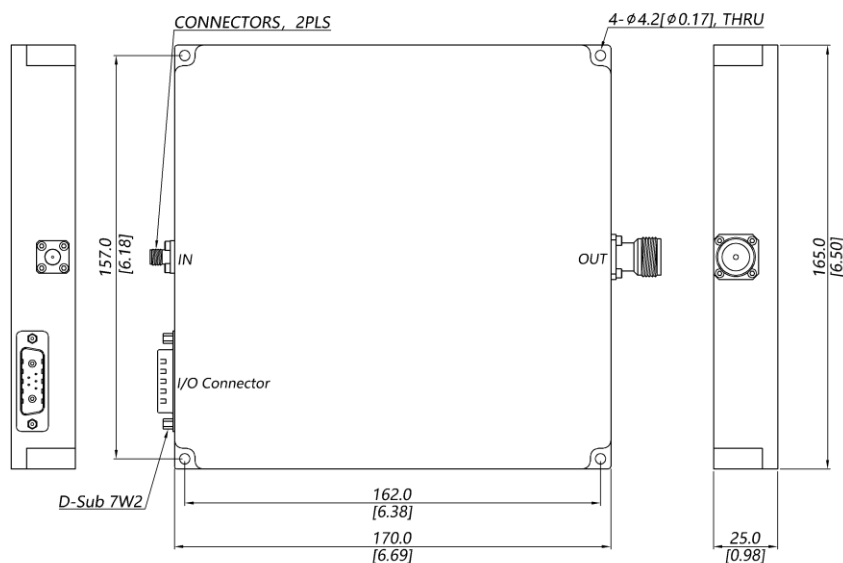
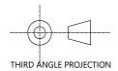
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Mechanical Specifications

RF Input Connector	SMA [F]	
RF Output Connector	TYPE N [F]	
Power supply Connector	D-Sub 7W2 [M]	
Control Connector	D-Sub 7W2 [M]	
Dimension	mm	170x165x25(LxWxH) (tolerance: ±0.5)
Weight	g	Max. 2000
Finishing	Alloy iridite	
Temperature	Operating: -10°C~+55°C; Storage: -40°C ~ +75°C	
Heat Dissipation ¹	External heat dissipation	
Environmental ²	N/A	

- Note: 1. Select heat dissipation conditions based on product temperature.
 2. Ititude, vibration and shock are designed with considerations, but without tests and experiments.

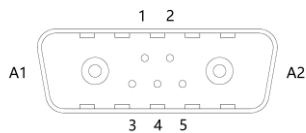
Outline Drawing



Amplifier

◆ Interface Connector Pin Out

D-Sub 7W2



A1.	GND	Ground
A2.	VDD	28 VDC
1.	Current Sensor	Analog voltage relative to IDD @ 100 mV per Ampere
2.	Temperature Sensor	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