# Amplifier

## Model MPA-020180S41-H Rev.A

2-18GHz Solid State Power Amplifier

-Frequency range: 2-18GHz -Small Signal Gain: 57dB Typ.

-Psat: 41dBm Typ. -Impedance: 50Ω

### Product Description

The MPA-020180S41-H is a 2-18GHz, saturated power ≥40dBm 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 radar, communication, EMC testing and etc.

### Function

- Amplifying signal within 2-18GHz
- Over-heating protection
- Over-current protection



# Amplifier

## Electrical Specifications (Test Conditions: Voltage=28V, Temp.=25°C, Signal Mode: CW)

| | | | |
|---|---|---|---|
| Frequency Range | GHz | | 2-18 |
| Saturated Output Power | dBm | Typ./Min. | 41/40 |
| P1dB | dBm | Typ./Min. | 39/37 |
| Gain | dB | Typ./Min. | 46/45@ Pin=-5dBm |
| Gain Flatness | dB | Typ. | ±1.5@ Pin=0dBm |
| Small Signal Gain | dB | Typ. | 57@ Pin=-30dBm |
| Small Signal Gain Flatness | dB | Typ. | ±2.5@ Pin=-30dBm |
| Isolation@ Disable Status | dB | Typ./Min. | 110/90 |
| 2nd Harmonic Suppression | dBc | Typ./Max. | -25/-15@ Pout=40dBm |
| 3rd Harmonic Suppression | dBc | Typ./Max. | -25/-15@ Pout=40dBm |
| Spurious Suppression | dBc | Typ./Max. | -70/-65@ Pout=40dBm |
| Input VSWR | :1 | Typ./Max. | 1.5/2 |
| Supply Voltage | VDC | Typ. | +28 |
| Power Consumption | W | Max. | 150 |

## Limits

| | |
|---|---|
| Input RF Power | ≤10dBm |
| Load VSWR | ≤5:1 |
| Supply Voltage | +28V±2V |
| Over-current protection | ≥10A |

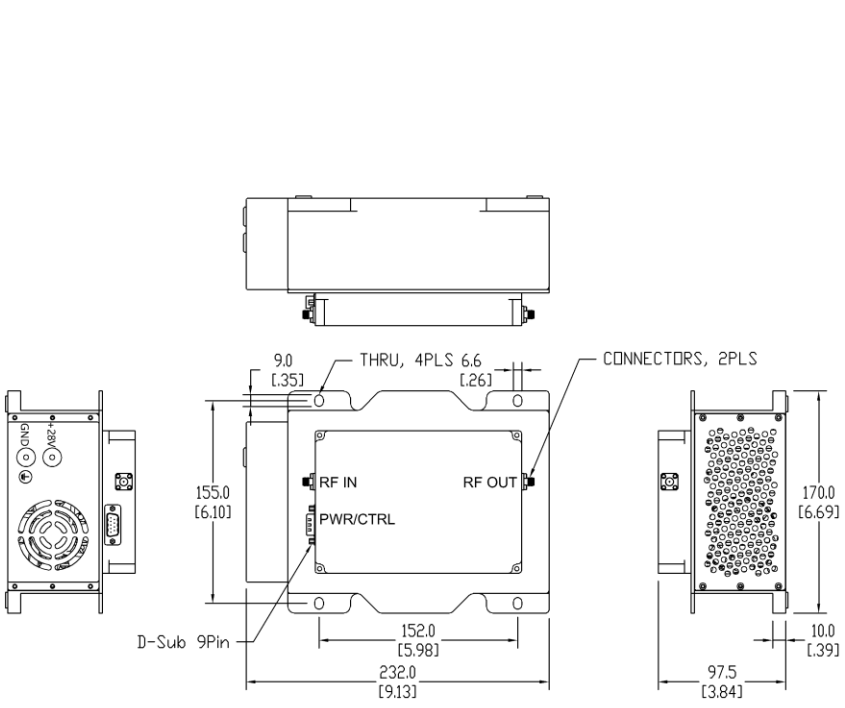
# Amplifier

## Mechanical Specifications

| | | | |
|---|---|---|---|
| RF Input Connector | | | SMA [F] |
| RF Output Connector | | | SMA [F] |
| Power supply Connector | | | D-Sub 9Pin |
| Control Connector | | | D-Sub 9Pin |
| Dimension [1] | mm | | 232.0x170.0x97.5 (LxWxH) |
| Weight | g | Max. | 3400 |
| Finishing | | | Alloy iridite |
| Temperature | | | Operating: -20℃~+70℃; Storage: -55℃ ~ +85℃ |
| Heat Dissipation | | | Air cooling |

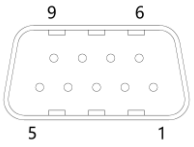
Note: 1. Unless otherwise specified, Decimal tolerance: LWH ±1; other ±0.5

## Outline Drawing



# Amplifier

## Interface Connector Pin Out




D-Sub 7W2

| | | |
|---|---|---|
| 1. | Current Sensor | Current sense analog output (1) |
| 2. | Temperature Sensor | Temperature sense analog output (2) |
| 3. | Enable ON/OFF | Input logic high enables the amplifier, low disables the amplifier (default disabled) (3) |
| 4. | GND | Ground |
| 5. | RUN | Output high under normal condition, output low under fault condition |
| 6. | VDD | +28VDC |
| 7. | VDD | +28VDC |
| 8. | GND | Power ground |
| 9. | GND | Power ground |

Note (1) V_out=0.1V/A×I, when I=5A: V_out=0.1V/A×5A=0.5V

(2) V_out=0.5V+(0.01V/℃×T), when T=25℃: V_out=0.5V+0.01V/℃×25℃=0.75V

(3) High level: 2.4-3.3V, low level: 0-0.8V

## Accessories List

| | QTY. | Accessories |
|---|---|---|
| 1. | 1 | Amplifier Power Cord |
| 2. | 1 | Fan Power Cord |

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## Typical Graph

