Product Description

The MPA-020180S40 is a 2-18GHz, 10W Solid state high gain ultra-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 Test, measurement system, EMC and EW.

Features

- Frequency Range: 2-18GHz
- Output Power: 40dBm Min., 41.8dBm Typ.
- P1dB: 30dBm Min., 33dBm Typ.
- 50 ohm input/output impedance
- Built-in control, monitoring and protection circuits
- Solid-state Class AB broadband design
- High linearity, high efficiency
- Suitable for CW, Pulse and instantaneous bandwidth signal
- Better harmonics and Gain Flatness
- High reliability and ruggedness

Electrical Specification (T=25℃±3℃, DC Voltage=28V, Load VSWR ≤ 1.2)

Description	Min	Typ	Max	Unit
Operating Frequency	2		18	GHz
Output Power@ Pin=0 dBm	40	41.8		dBm
Output P1dB* CW	30	33		dBm
Gain @ Pin=0 dBm	40	41		dB
Gain Flatness @ Pin=0 dBm		±1.5	±2.5	dB
Input Power for Rated Psat	-3	0	6	dBm
Harmonics @ Pout =45±0.5dBm		-12		dBc
Spurious Signals @Pin=0dBm			-60	dBc
Input VSWR			2	dB
Operating Voltage	22	24	26	V
Current Consumption @ Pout= =46±0.5dBm		4	4.5	A
Switching Time @ 1kHz TTL, Pin = -2dBm		1	2	uS

Note*: Fundamental Power, Harmonics are excluded.

Environmental Specifications (Design Goal)

Operation Temperature*[1]	-20	65*[2]	℃
Storage Temperature Range	-25	70	℃
Relative-Humidity	N/A		
Altitude*	N/A		
Vibration/Shock*	N/A		

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

Notes *2: Altitude /Vibration are designed with considerations, but without tests and experiments.

Limits

Input RF Drive Level Without Damage	Pin≤10 dBm
Load VSWR @ Pout =39dBm	VSWR≤5:1 (Design Goal)
Load VSWR @ Pout =40dBm	VSWR≤3:1 (Design Goal)
Thermal Degradation	85℃ Graceful Degradation

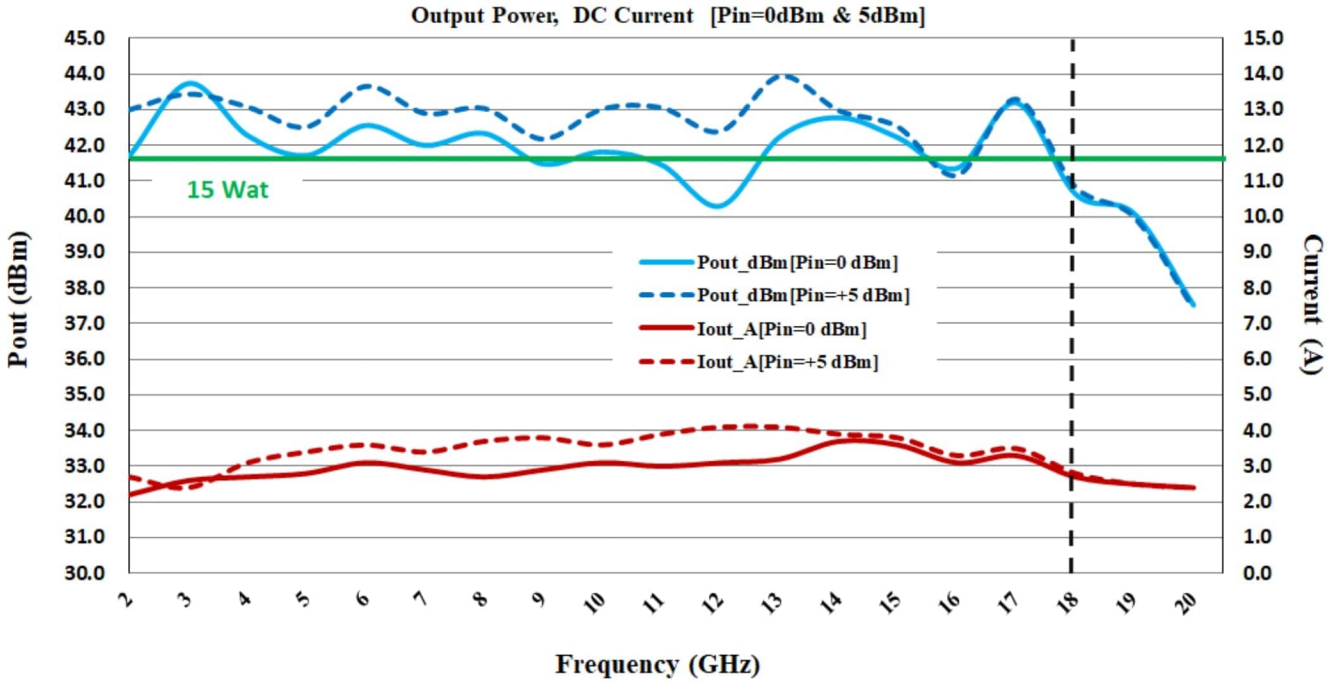
DC Interface Connector (Hybrid D-Sub 7-Pin, Male)

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

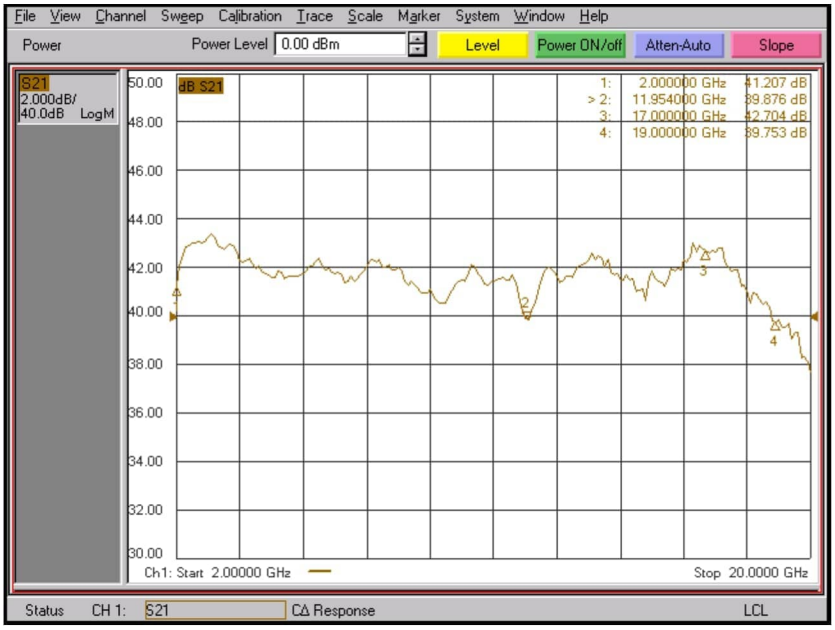
Plotted and other Data

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.

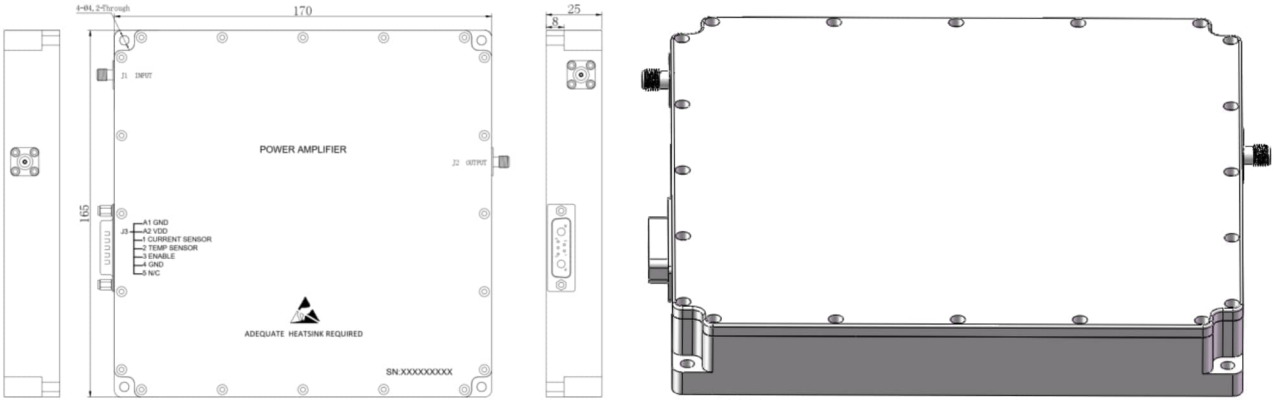


Graph1: Output Power, DC Current @ Pin=0 & Pin=+5dBm (Ambient temp. +25±3℃, LOAD VSWR≦1.3)



Graph2: Gain @ Pin=0 dBm (Ambient temp. +25±3℃, LOAD VSWR≦1.3)

Referential Outline Drawings (mm)



Mechanical Definition.

Dimensions (B,H,D) mm	160 x 25 x 140
Weight (Kg)	1
RF-Input	SMA Female
RF-Output	SMA Female