

General Description

The P300W2-20CP SSPA is a high power, broadband, solid state power amplifier housed in an EIA compatible 3U height rack mountable chassis. The amplifier incorporates a wide input range AC–DC power supply, fan–forced convective thermal management, and an internal driver amplifier. The amplifier is appropriate for high–power wide–band testing, communications, radar, or any application requiring capability for simultaneous power amplification of signals across the 2.0–20.0 GHz spectrum.

The P300W2-20CP incorporates high efficiency GaN MMICs, spatially combined in a compact structure to achieve robust, high performance power amplification across the 2.0–20.0 GHz frequency range.

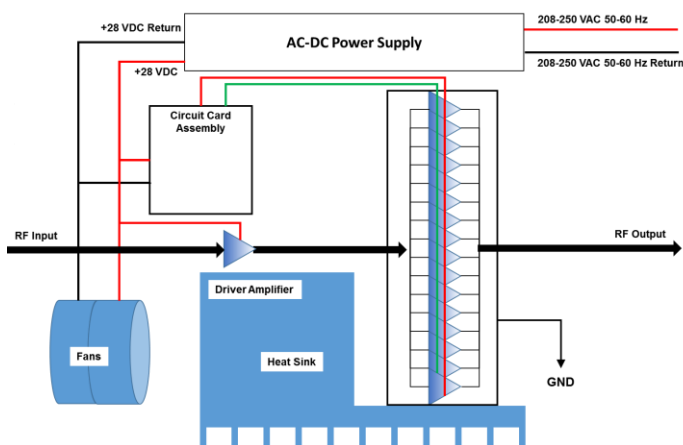


Product Features

- 2.0–20.0 GHz
- 300 Watts sat. power, 2 Spatiums power combined
- 62 dB small signal gain
- 54 dB nominal power gain
- 208–250 VAC 47–63 Hz AC input
- Forced air cooling
- Enclosure options: rack mount and waveguide output
- Interfaces: RS485 and Ethernet

Performance is typical across frequency. Please reference electrical specification table and data plots for more details.

Functional Block Diagram



Applications

- Radar
- EW
- Communications
- Test & Measurement
- EMI Testing

Ordering Information

Part No.	ECCN	Description
POL300W2-20CP	TBD	2–20GHz 300 Watt Amplifier

Absolute Maximum Ratings

Parameter	Rating
RF Input Power, CW, 50 Ω, T _{CASE} =25 °C	+5 dBm
Load VSWR	2.0:1
AC Current (208, 220, 250 VAC)	12, 10, 9 A
Storage Air Temperature	-40 to +85 °C
Operating Air Temperature	-40 to +40 °C

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability.

Recommended Operating Conditions

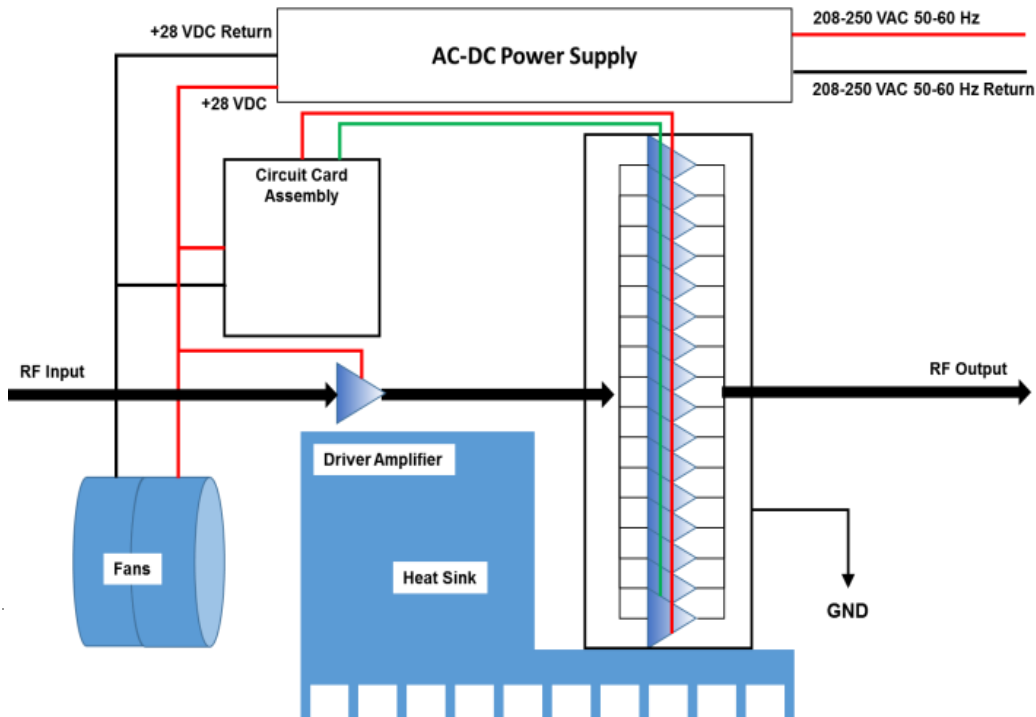
Parameter	Min	Typ	Max	Units
Voltage (V _{AC})	90	220	265	V _{RMS}
AC Frequency	47	60	63	Hz
Operating Air Temperature	0	25	50	°C
RF Input Power, CW		0		dBm

Electrical specifications are measured at specified test conditions. Specifications are not guaranteed over all recommended operating conditions.

Electrical Specification - 300W, 2 to 20GHz (Dual Spatium Magic Combining)

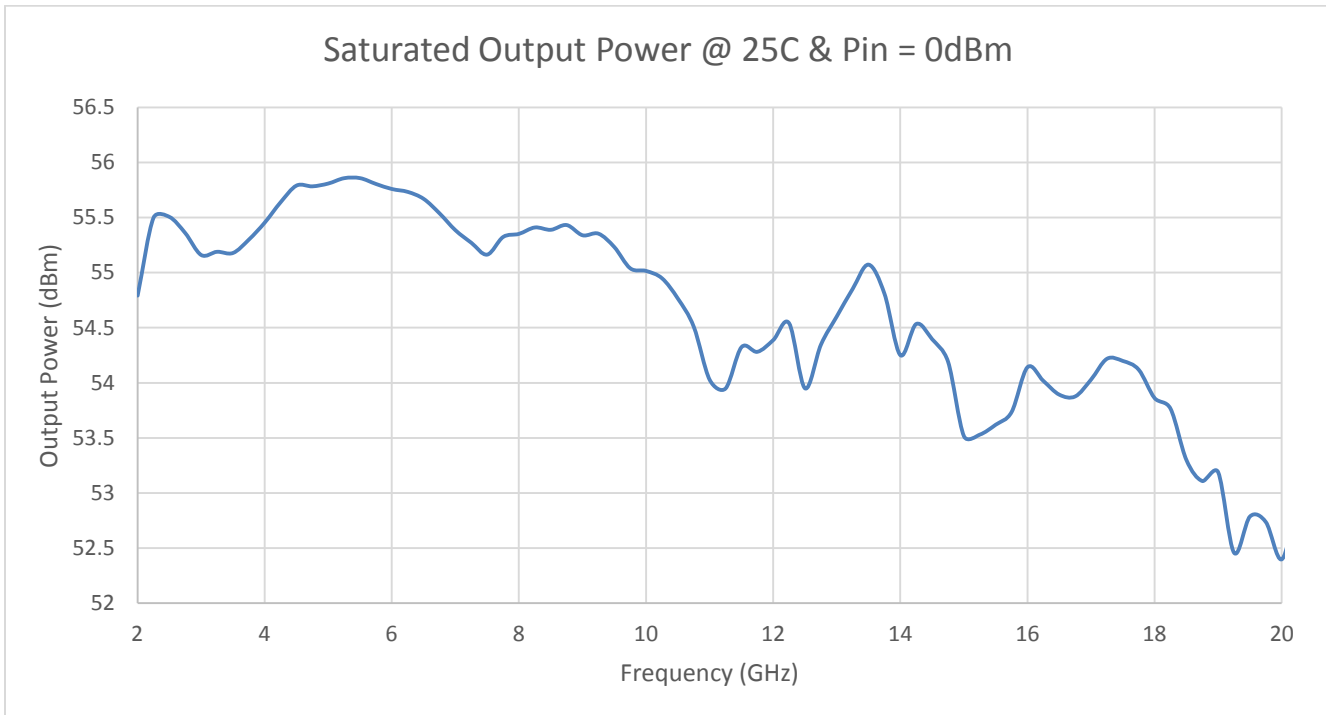
Parameter	Conditions	Min	Typ	Max	Units
Operational Frequency Range		2		20	GHz
Output Power (P _{IN} = 0 dBm)	2 GHz		54.7		dBm
	10 GHz		55.0		dBm
	20 GHz		52.4		dBm
Power Added Eff. (P _{IN} = 0 dBm)	2 GHz		33.9		%
	10 GHz		22.5		%
	20 GHz		13.1		%
Power Gain (P _{IN} = 0 dBm)	2 GHz		54.7		dB
	10 GHz		55.0		dB
	20 GHz		52.4		dB
Small Signal Gain	2 GHz		62		dB
	10 GHz		60		dB
	20 GHz		58		dB
Input Return Loss	2GHz to 20GHz		2:1 max		VSWR
Output 2 nd Harmonic (P _{IN} = 35 dBm)			NA		dBc
Output 3 rd Harmonic (P _{IN} = 35 dBm)			NA		dBc
Unit Weight	Rack Mount Enclosure		25		kg
Unit Weight	Rack Mount Enclosure		25		kg

Block Diagram and Description

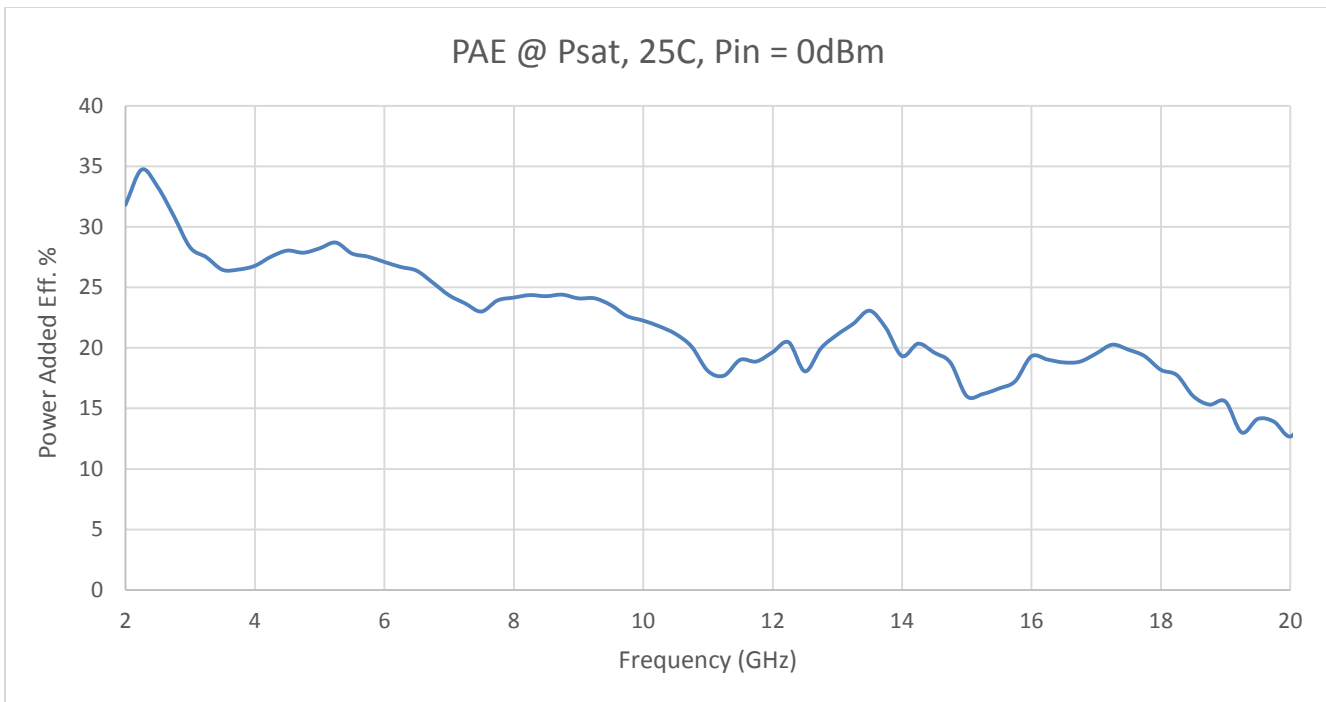


I/O Port	Label	Description
RF In	N/A	SMA Female RF Input
RF Out	N/A	Waveguide
208-250 VAC	N/A	IEC 320-Standard Sheet C13 straight female connector with Retaining Clip

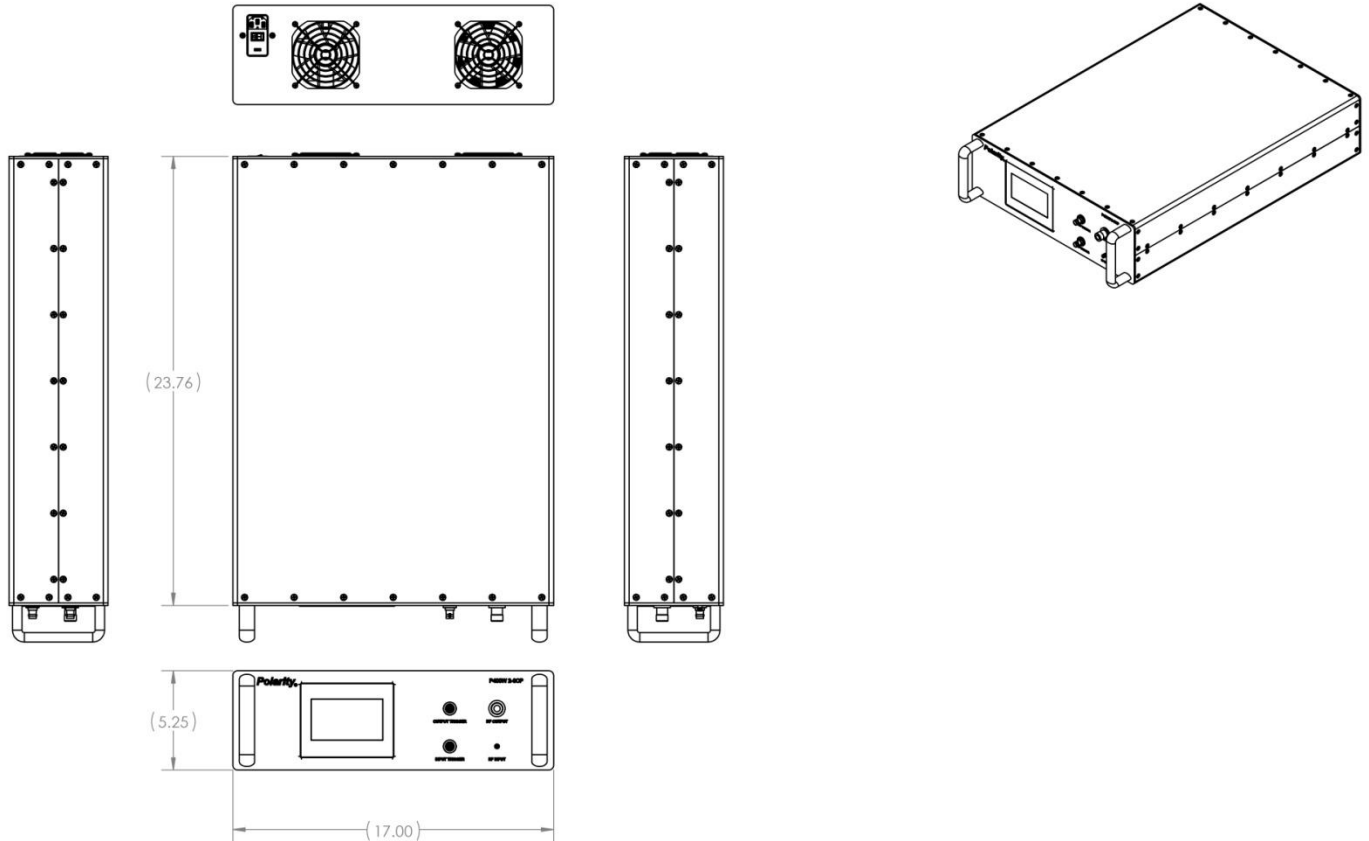
Performance Plots - Large Signal - Dual Spatium Power Combined



Performance Plots - PAE - Dual Spatium Power Combined



Package Marking and Dimensions



Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:



For technical questions and application information: **Email:** sales@polarity.net
