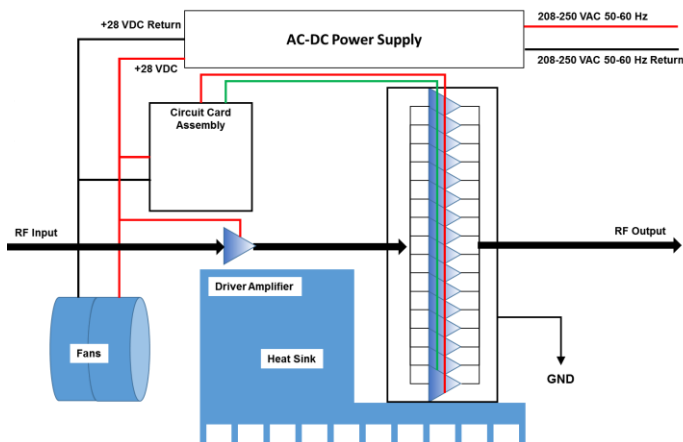


General Description

The P250W34-36CP 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 34.0–36.0 GHz spectrum.

The P250W34-36CP incorporates high efficiency GaN MMICs, spatially combined in a compact structure to achieve robust, high performance power amplification across the 34.0–36.0 GHz frequency range.

Functional Block Diagram



Product Features

- 34.0–36.0 GHz
- 250 Watts saturated output power @ 50% duty
- 62 dB small signal gain
- 54 dB nominal power gain
- 208–250 VAC 47–63 Hz AC input
- Side intake/rear exhaust convection cooling
- Built in PPG
- Liquid and air cooled options

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

Applications

- Radar
- Communications
- Test & Measurement
- EMI Testing

Ordering Information

Part No.	ECCN	Description
P250W34-36CP	TBD	34.0–36.0 GHz 250 Watt Amplifier

Absolute Maximum Ratings

Parameter	Rating
RF Input Power, CW, 50 Ω, T _{CASE} =25 °C	+10 dBm
Load VSWR	3.0:1
AC Current (120, 220, 250 VAC)	9.0, 4.5, 3.8 A
Storage Air Temperature	-30 to +75 °C
Operating Air Temperature	-5 to +55 °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 Specifications - Simulated

Please reference data plots for more details.

Parameter	Conditions ⁽¹⁾	Min	Typ	Max	Units
Operational Frequency Range		34.0		36.0	GHz
Output Power ($P_{IN} = 0$ dBm)	33.5 GHz		54.5		dBm
	34 GHz		55.0		dBm
	35 GHz		55.0		dBm
	36 GHz		55.0		dBm
	37 GHz		53.5		dBm
Power Gain ($P_{IN} = 0$ dBm)	33.5 GHz		54.5		dB
	34 GHz		55.0		dB
	35 GHz		55.0		dB
	36 GHz		55.0		dB
	37 GHz		53.5		dB
Small Signal Gain	33 GHz		62		dB
	34 GHz		68		dB
	35 GHz		68		
	36 GHz		64		dB
	37 GHz		62		dB
Small Signal Gain Flatness			See plot		dB
Input Return Loss (average)			TBM		dB
Non-Harmonic Spurious	$F_0 = 34 - 36$ GHz, $P_{IN} = 0$ dBm			-60	dBc
AC Input Power (average)			790	1000	W
AC Fuse	15A 250VAC 5x20mm Slow-Blow	Littelfuse 0218015.HXP or similar			

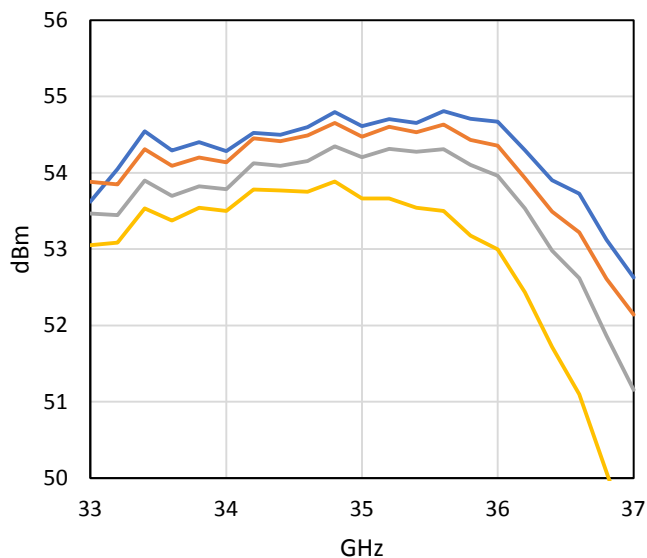
Notes:

1. Test conditions unless otherwise noted: $V_{AC} = 220$ V_{RMS}, 60 Hz, Air Temp = +25 °C, 50 Ω system.

Simulated Performance Plots

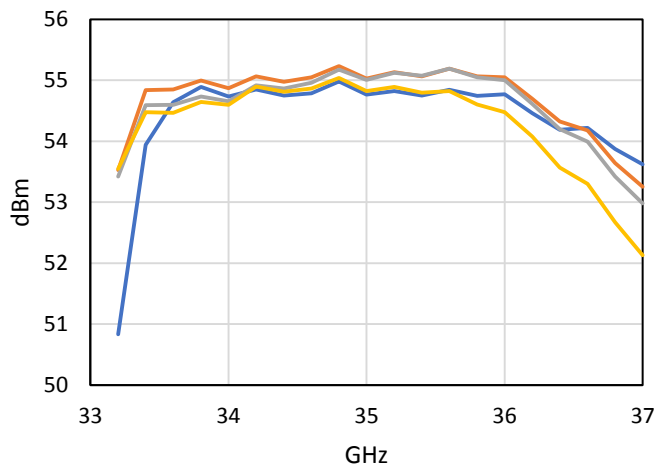
Test conditions unless otherwise noted: $V_{AC}=220$ VAC_{RMS}, Ambient Air Temp.=+25 °C, 50 Ohm system

24V, 10% Duty



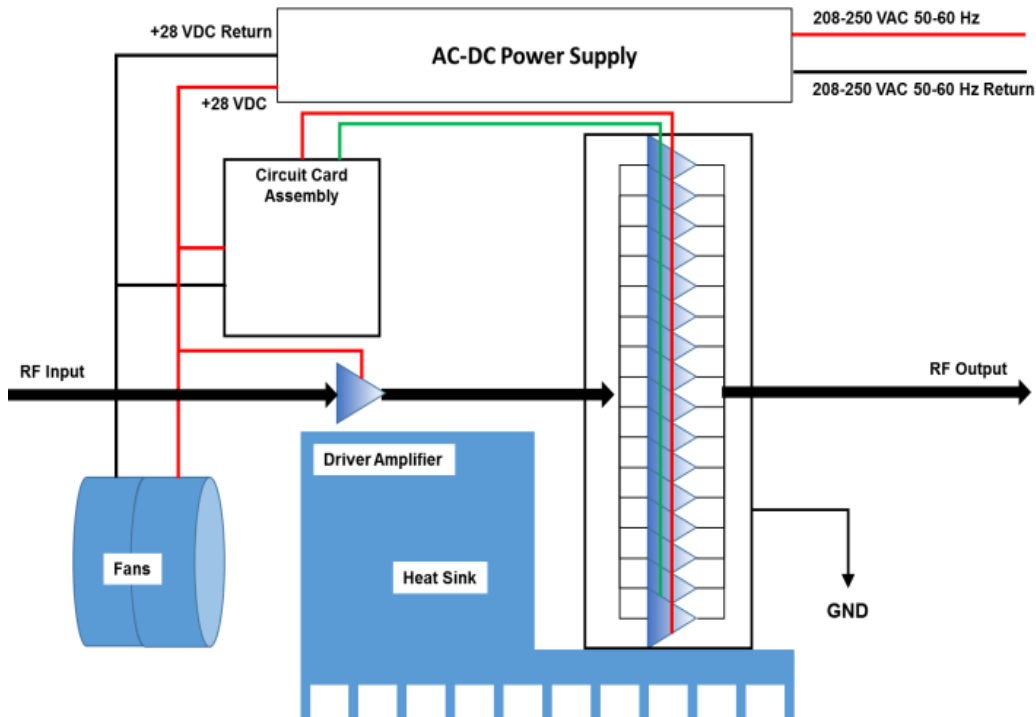
— -40 Pout — 25 Pout — 50 Pout — 75 Pout

28V, 10% duty



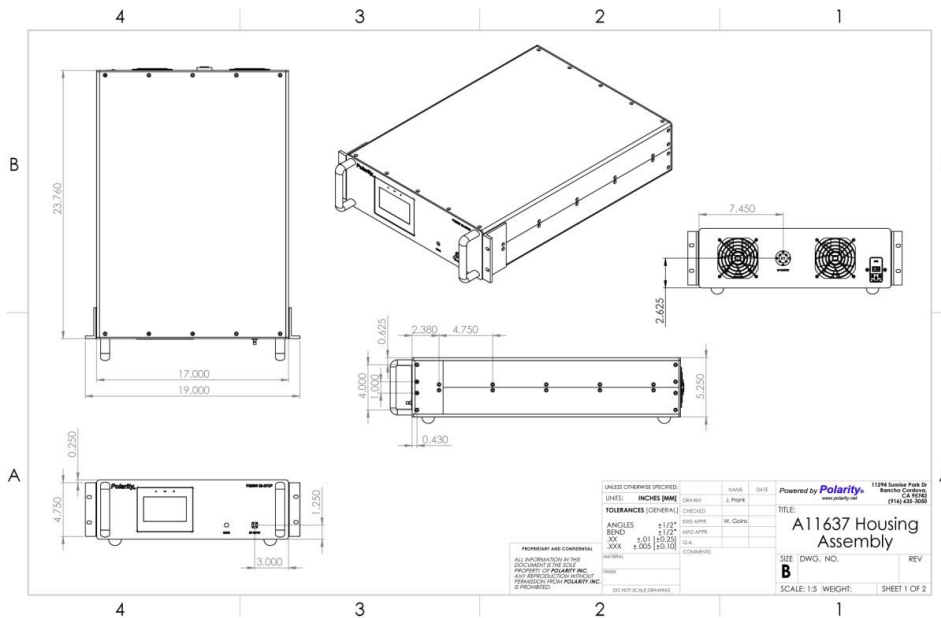
— -40 Pout — 25 Pout — 50 Pout — 75 Pout

Block Diagram and Description



I/O Port	Label	Description
RF In	N/A	2.92 mm (F) RF Input
RF Out	N/A	WR28 High Power RF Output Waveguide
208-250 VAC	N/A	IEC 320-Standard Sheet C13 straight female connector with Retaining Clip

Package Marking and Dimensions



Handling Precautions



Caution!
ESD-Sensitive Device

Contact Information

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

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Email: sales@polarity.net

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