



GaN Broadband Power Amplifier

Solid State RF Amplifier

Aethercomm Model Number SSPA 1.5-3.0-200 is a high power, broadband, Gallium Nitride (GaN) RF amplifier that operates from 1.5 to 3.0 GHz. This PA is ideal for broadband military platforms as well as commercial applications because it is robust and offers high power over an octave bandwidth. This amplifier operates with a base plate temperature of 85C. It is packaged in a modular housing that is approximately 9.3" (w) by 12.0" (l) by 1.55" (h). This amplifier has a typical PSat of 200 watts at room temperature. Noise figure at room temperature is 10.0 dB typical. This amplifier offers a typical gain of 65 dB with a typical gain flatness of ± 2.0 dB up to 2.8 GHz. The gain rolls off slightly up to 3.0 GHz. Input and Output VSWR is 2.0:1 maximum. Class AB quiescent current is ~4.0 amps typical employing a +36 Vdc supply. This PA operates from a +36 Vdc input voltage. Typical harmonic values can be found on the next page of this data sheet.

This SSPA includes an external DC blanking command that enables and disables the module in 3600 nSec typical. A logic high enables the amplifier. A logic low or open circuit will disable the unit. Standard features include over/under voltage protection and reverse polarity protection. The output is fully protected from an open or short circuit presented to this port with no damage. The input RF connector is SMA female. The output RF connector is a type N female. DC and command voltages are accessible via a DSUB connector. Contact the factory with any questions you may have or connector pin outs. This amplifier operates from -40C to +85C base plate. Summary test data is found on sheet two of this data sheet at room temperature.

- **Gallium Nitride Broadband Power Amplifier**
- **Operation from 1.5 GHz to 3.0 GHz min**
- **Small Signal Gain 65 dB typical**
- **200 Watts PSat typ**



This is an example of an Aethercomm standard product. Aethercomm designs and manufactures high performance, high power CW or pulsed SSPA's for commercial, military and satellite communications customer.

Aethercomm Inc. reserves the right to make changes without further notice. Aethercomm recommends that before these items herein are specified into a system or critical application that the performance characteristics be verified by contacting the factory.

SSPA 1.5-3.0-200

SSPA 1.5-3.0-200 Typical Performance @ 25°C

Freq (MHz)	Small Signal Gain (dB)	PSat (dBm)	Pin at PSat (dBm)	Current @ PSat from a 36 Vdc Supply (Amps)	2nd Harmonic at P1dB-10 dB (dBc)	3rd Harmonic at P1dB-10 dB (dBc)
1.500	68.2	53.1	-10.9	24.2	-13.5	-35.2
1.686	67.9	54.0	-8.9	26.9	-17.8	-20.7
1.871	67.6	54.5	-8.9	26.9	-25.1	-11.5
2.057	67.2	53.7	-7.9	27.3	-28.2	-33.0
2.243	66.6	54.0	-7.4	27.8	-32.3	-26.3
2.429	66.6	54.1	-6.4	26.4	-19.3	-41.5
2.614	67.5	53.3	-8.4	22.3	-23.2	-60.0
2.800	66.7	53.7	-6.4	23.1	-22.0	-60.0
2.900	64.7	53.3	-3.4	22.7	-28.2	-58.5
3.000	62.2	52.3	-3.4	19.9	-43.3	-51.7