



Gallium Nitride Broadband Power Amplifier

Solid State RF Amplifier

Aethercomm Model Number SSPA 0.1-1.0-300 is a high power, broadband, Gallium Nitride (GaN) RF amplifier that operates from 100 MHz to 1000 MHz. This PA is ideal for broadband military platforms as well as commercial applications because it is robust and offers high power over an extremely large bandwidth with decent power added efficiency. This amplifier operates with a base plate temperature of -40C to +80C. It is packaged in a modular housing that is approximately 5.25" (width) by 10.15" (long) by 1.97" (height). The weight of this unit is 8.5 pounds maximum. This amplifier has a typical saturated output power of 250-300 watts at room temperature, across the majority of the band, while the power at 1000 MHz dips toward 200 watts. Noise figure at room temperature is 5.0 dB typical. The power flatness across the band is typically ± 1.0 dB. Input and output VSWR is 2.0:1 typical. This PA operates from a MIL-STD-461 aircraft power supply or and input voltage from 18-36Vdc.

This SSPA includes an external DC blanking command that enables and disables the module in 20.0 μ Sec maximum. A logic low or open circuit disables the amplifier. Logic high will enable the amplifier. Standard features include over/under voltage protection and reverse polarity protection. There is a self protect over temperature feature that allows the PA to continue to transmit even when the over temperature alarm is present with no damage to the unit. The output is fully protected from an open or short circuit presented to this port with no damage. Input and output RF connectors are TNC-F. DC and command voltages are accessible via a DSUB connector. Contact the factory with any questions you may have. Summary test data is found on sheet two of this data sheet at room temperature.

- **Gallium Nitride Broadband Power Amplifier**
- **Operation from 100 MHz to 1000 MHz min**
- **Large Signal Gain 50-54 dB at ambient typical**
- **250-300 Watts PSat typical**



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 0.1-1.0-300 Performance at Room Temperature from a 28Vdc Power Supply

Freq (MHz)	Pin for Psat (dBm)	Psat (dBm)	Psat (Watts)	Current (Amps)	PAE (%)	Small Signal Gain (dB)
100	1	54.9	309.0	24.2	45.7	59.4
160	-2	54.5	279.9	19.0	52.6	63.3
200	-3	54.1	258.2	19.5	47.3	63.6
250	1	54.5	279.9	23.4	42.8	61.0
300	0	54.6	290.4	22.3	46.5	60.0
350	2	54.2	264.2	22.0	42.9	58.8
400	6	54.5	281.2	25.2	39.8	57.3
450	4	52.4	174.2	26.7	23.3	56.5
500	5	55.3	339.6	36.0	33.7	56.0
550	6	55.7	367.3	34.0	38.6	56.0
600	9	55.4	346.7	38.3	32.4	55.0
650	8	55.3	338.8	38.7	31.3	54.9
700	8	55.5	354.8	41.7	30.4	55.0
750	5	55.6	363.1	33.4	38.9	58.3
800	5	55.0	316.2	33.8	33.4	60.0
880	4	54.9	309.0	32.8	33.6	58.0
900	4	54.8	302.0	31.0	34.8	58.0
950	2	53.0	199.5	24.6	29.0	57.5
1000	1	53.2	182.0	22.4	29.0	58.0