



GaN Broadband Power Amplifier

Solid State RF Amplifier

Aethercomm Model Number SSPA 0.225-2.000-50 is a high power, broadband, Gallium Nitride (GaN) amplifier that operates from 225 MHz to 2000 MHz minimum. It is designed for harsh environments such as munitions and high performance fighter aircraft. Power added efficiency in saturation is typically 40% across the band. Input VSWR is 2.0:1 maximum. Output VSWR is 2.0:1 typical. This unit is equipped with Aethercomm's proprietary DC switching circuitry that enables and disables the DC-DC circuitry in 1200 nSec typical for turn on and 2900 nSec for turn off time. Standard features include output short and open circuit protection, and reverse polarity protection. This power amplifier operates from a +28 Vdc power supply. Standby current is ~60 mA and the quiescent current is 1.25 amps without RF drive. This amplifier operates from -40C to +85C base plate temperature.

This SSPA is manufactured for broadband communication systems and electronic warfare systems. It is employed in high shock and vibration environments. Standard housing size is approximately 3.90(w) by 3.90(l) by 1.78(h) inches. For mounting and heat sink instructions, please contact the factory. An SMA female connector is standard on the RF input port. An SMA female connector is standard on the output port. DC and logic connections are accessible via a DSUB connector. A logic high or open circuit disables the amplifier to the Off state. A logic low or will enable the unit. Typical test data appears on page two of this data sheet at room temperature.

- **Operation Across 0.225-2.000 GHz min**
- **CW Operation**
- **50 Watts Output Power typ.**
- **28 Vdc Operation**
- **Small Compact Package**



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 0.225-2.000-50 Typical Performance @ 25°C

Freq (MHz)	Pout @ Psat (dBm)	Current @ Psat from a +28 Vdc Supply (Amps)	Total DC Power Dissipated (Watts)	Power Added Efficiency (%)	Small Signal Gain (dB)
225	44.9	2.4	67.2	45.7	47.0
250	44.8	2.5	67.2	44.5	51.3
300	45.6	3.2	70.0	52.1	49.4
350	45.8	3.5	89.6	42.1	45.1
400	46.0	3.8	98.0	40.9	42.9
450	45.1	3.5	106.4	30.8	42.1
500	46.0	3.7	98.0	41.0	41.2
600	47.2	4.7	103.6	50.5	41.1
700	48.3	5.7	131.6	51.1	40.7
800	48.3	5.9	159.6	42.2	41.9
900	48.5	6.2	165.2	40.8	42.7
1000	48.6	7.9	173.6	41.1	42.5
1100	48.9	7.8	221.2	32.8	40.8
1200	50.7	5.9	218.4	35.7	41.0
1300	50.8	8.4	165.2	71.8	40.9
1400	50.5	7.3	235.2	50.8	40.8
1500	50.6	7.9	204.4	55.5	41.6
1600	49.3	7.0	221.2	51.9	41.9
1700	49.1	5.1	196.0	42.9	41.2
1800	47.2	5.2	142.8	57.1	41.2
1900	46.8	4.5	145.6	35.6	38.0
2000	46.8	4.3	126.0	38.2	38.8