



High Powered, Broadband, SSPA

SSPA 6.0-12.0-100

Aethercomm Model Number SSPA 6.0-12.0-100 is a high power, Gallium Nitride (GaN) solid state power amplifier that operates from 6.0 to 12.0 GHz. It is packaged in an enclosure that is optimized for high altitude operation along with high performance shock and vibration. Nominal output power is 100 watts minimum. Typical small signal gain is 53-55 dB. The composite power added efficiency with a CW input is 14-16% at Pout maximum. Input VSWR is 1.5:1 maximum and output VSWR is 2.0:1 maximum. This SSPA can be blanked on and off in less than 10 uSec. Standard features include reverse polarity protection, output short and open circuit protection, and over/under voltage protection. Temperature is monitored and reported by this module along with other health parameters. This power amplifier module operates from -40°C to +85°C base plate temperature.

This high power SSPA can be employed in high shock and vibration environments and can be used on board many different types of airborne platforms. It is designed and tested to withstand MIL-STD-810 high shock and vibration requirements. Noise figure at room temperature is <12 dB and power flatness is ±1 dB. Input power is 0 dBm for rated power. The housing volume is approximately 5" (w) X 9" (l) X 2.0" (h) and the power amplifier weighs ~5 lbs. DC and logic connections are accessible via DSUB connectors. The RF input connector is an SMA female. The RF output connector is a type N female. Typical transmit test data appears on page two of this data sheet at room temperature. For mounting and heat sink instructions, further test data or operation and logic and pin out requirements, please contact the factory. Aethercomm designs

- **GaN Technology**
- **Operation from 6.0 GHz to 12.0 GHz**
- **100 Watts minimum output powers**
- **Composite PAE of ~15% at Pout max**
- **28 Vdc Operation**



and manufactures high performance, high power CW or pulsed SSPA's for commercial, military and satellite applications.

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 6.0-12.0-100 Typical SSPA Performance from 6.0 to 12.0 GHz at 25°C Base

Operating Frequency (GHz)	6.0-12.0
RF Output Power (watts)	100 Minimum
RF Input Power (dBm)	0
Small Signal Gain (dB)	3-5 dB above power gain
Output Load VSWR	2.0:1 for rated performance
Operating Voltage (VDC)	28
DC Current (Amps)	30 Amps Maximum
Power Flatness (dB)	±1 dB
Dimensions (inches)	5" (w) by 10" (l) by 2" (h) excluding connectors
Weight (lbs.)	5 maximum

Frequency (MHz)	Pin (dBm)	Pout (dBm)	Currents at 28 Volts (Amperes)
6000	0	51.4	29
7000	0	51.2	27.5
8000	0	50.9	25.9
9000	0	51	27
10000	0	51.1	29
11000	0	51.3	29.2
12000	0	51.1	28.1