



High Power, Broadband, SSPA

SSPA 2.0-6.0-250

Aethercomm's Model Number SSPA 2.0-6.0-250 solid state power amplifier that delivers high power over greater than an octave bandwidth, 2.0 to 6.0 GHz. Packaged in an enclosure optimized for high altitude operation and strengthened for high performance shock and vibration environments, it provides a nominal output power of 250 watts and attains 300 watts of saturated power. This broadband GaN SSPA is designed to be employed in systems where high power and medium efficiency and linearity are required across a large bandwidth. It's designed and tested to withstand MIL-STD-810 shock and vibration requirements. The nominal composite CW power efficiency is approximately 20-36% at room temperature. Typical small signal gain is 70 dB and standard features include reverse polarity protection, over-temperature protection, and over/under voltage protection. Input and output VSWR is specified at 2.0:1 maximum and a discrete blanking control line is included with a 10 uSec maximum turn on/off time.

Performance is specified from -40°C to +85°C base plate temperature. The SSPA 2.0-6.0-250 is approximately 8.0" X 13.5" X 2.37" and weighs ~15 lbs. DC and logic connections are accessible via Combo-D connectors. The RF input connector is an SMA female and 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.

- **Operation from 2.0 to 6.0 GHz**
- **Composite PAE of 36% across the BW**
- **GaN Technology**
- **Ground to Airborne**



Aethercomm designs and manufactures high performance, high power CW and pulsed SSPA's for commercial, military and satellite communications customers.

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 2.0-6.0-250 Typical Performance from 2000 to 6000 MHz @ 25°C with a CW Input Stimulus

Frequency (MHz)	Small Signal Gain (dB)	Input Return Loss (dB)	Input Power for PSat (dBm)	Saturated Output Power (dBm)	Current (Amps)	Power Gain (dB)	2nd Harm (dBc)	DC Power from a +28Vdc Supply (Watts)
2000	79.2	15.2	0.0	54.5	29.0	54.5	-17.3	812.0
2200	79.0	14.0	0.0	56.0	34.8	56.0	-17.0	974.4
2400	78.6	13.5	0.0	55.8	36.5	55.8	-15.2	1022.0
2600	77.9	14.0	0.0	56.0	39.8	56.0	-14.8	1114.4
2800	78.3	14.2	0.0	55.9	39.5	55.9	-14.7	1106.0
3000	79.1	15.3	0.0	55.4	38.5	55.4	-17.2	1078.0
3200	79.0	17.0	0.0	55.7	36.8	55.7	-20.6	1030.4
3400	78.4	18.6	0.0	55.2	44.6	55.2	-27.5	1248.8
3600	78.2	23.0	0.0	56.8	44.0	56.8	-32.5	1232.0
3800	77.5	27.0	0.0	57.0	44.3	57.0	-47.0	1240.4
4000	78.0	34.0	0.0	56.6	43.4	56.6	-50.3	1215.2
4200	77.7	31.0	0.0	56.0	44.1	56.0	-53.0	1234.8
4400	77.3	26.0	0.0	55.8	47.0	55.8	-57.7	1316.0
4600	77.4	25.0	0.0	55.5	49.6	55.5	-56.0	1388.8
4800	76.3	25.0	0.0	54.8	52.3	54.8	-60.0	1464.4
5000	76.0	25.0	0.0	55.0	54.6	55.0	-64.0	1528.8
5200	74.9	26.0	0.0	56.0	52.5	56.0	-68.0	1470.0
5400	74.3	26.0	0.0	55.5	49.8	55.5	-69.0	1394.4
5600	72.6	28.0	0.0	55.5	47.6	55.5	-69.0	1332.8
5800	71.8	28.0	0.0	55.0	43.3	55.0	-69.0	1212.4
6000	70.8	29.0	0.0	53.8	48.7	53.8	-65.0	1363.6