FRONTGRADE Aethercomm

Super Broadband, 20 Watt, 20-40 GHz, GaN

SSPA 20-40-20

Aethercomm Model Number SSPA 20-40-20 is a high power, Gallium Nitride (GaN), super broadband, solid state power amplifier that operates from 20GHz to 40GHz. It is packaged in an enclosure that is optimized for high altitude operation along with high performance shock and vibration. Nominal output power is 20 watts typical. Full output power is achieved at an input power of 0 dBm. Input VSWR is 1.5:1 maximum and output VSWR is 2.0:1 typically. This SSPA can be blanked on and off in less than 10uSec. Standard features include overtemp protection, reverse polarity protection, and over/under voltage protection. The amplifier is conduction cooled through the baseplate with an operational temperature range from -20°C to +65°C. This SSPA has a temperature shut off that triggers at +70°C to +75°C.

This high power SSPA is employed in high shock and vibration environments and can be used on board many different types of airborne platforms. Power flatness is ±1.0 dB . The housing volume is approximately 5.0" (w) by 7.0" (l) by 1.5" (h) and the power amplifier weighs <5.0 lbs. DC and logic connections are accessible via D-Sub connectors. The RF input connector is a K type female. The RF output flange is a WRD180 waveguide. Typical transmit test data appears on page two of this data sheet at room temperature. For mounting, test data, operation and logic, and pin out requirements, please contact the factory.

- **GaN Technology**
- **Operation from 20 GHz to 40 GHz**
- **20 Watts Typical Forward Power**
- **28Vdc Prime Power Input**

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

Aethercomm, Inc.

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SSPA 20-40-20 Basic Performance Parameters

Operating Frequency (MHz)	20-40 GHz minimum
RF Output Power (watts)	20 typical
RF Input Power for Rated Output Power (dBm)	0 dBm typical
Small Signal Gain (dB)	50 typical
Operating Voltage (VDC)	28Vdc ±3%
Power Consumption	350W maximum
Dimensions (inches)	~5.0" (w) by 7.0"(l) by 1.5" (h) excluding connectors
Weight (lbs.)	5 lbs. maximum

Typical Performance from 2-18 GHz at 25°C Baseplate Temperature at 28Vdc

Frequency (GHz)	Pin (dBm)	Pout (dBm)	DC Power (Watts)
20	0	43.1	305.7
22	0	43.9	312.2
24	0	44.2	314.4
26	0	44.2	316.2
28	0	44.1	309.4
30	0	44.1	324.0
32	0	43.2	304.2
34	0	43.4	314.3
36	0	43.9	319.2
38	0	43.0	288.9
40	0	43.1	305.6

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