

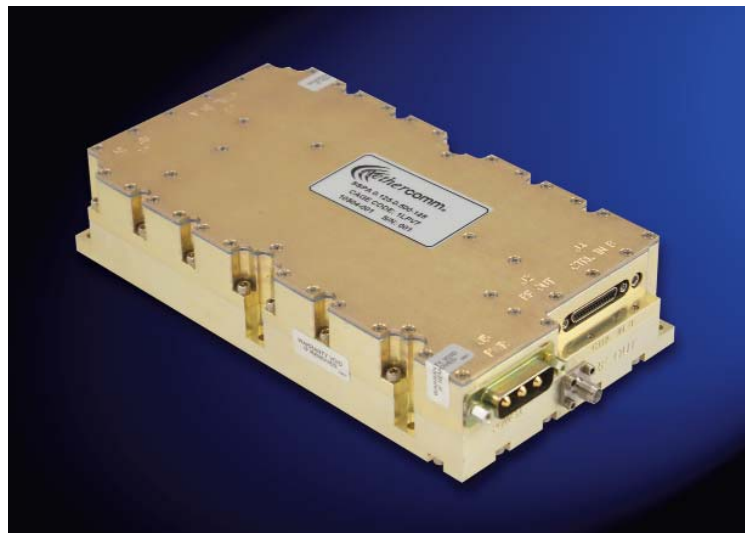


High Power, High Efficiency, GaN RF Module Solid State RF Amplifier

Aethercomm Model Number SSPA 0.125-0.500-125 is a high power, RF amplifier module that operates from 125 MHz to 500 MHz minimum and is packaged in a rugged and robust enclosure. The bandwidth of this module can be extended to 50 MHz on the low side and several hundred MHz on the high side. This PA is employed in systems that require high levels of RF energy with high power added efficiency. Typical output power is 125 watts across the band at the 3 dB compression point. Nominal input power is 0 dBm but any input power range can be amplified as the system offers a very large dynamic range. Input VSWR is 2.0:1 maximum. This amplifier is equipped with a noise quieting function that reduces the Tx noise power by 60 dB in less than 2.5 uSec. Typical system efficiency is 50 to 60% at P3dB. Standard features include reverse polarity protection, output short and open circuit protection, and over/under voltage protection. It is packaged in a modular housing that is approximately 4.00" (width) by 7.25" (length) by 1.50" (height). This is internal BIT for forward power and applied voltage. This RF transmit amplifier operates from a +32 Vdc power supply. This unit operates from -40C to +90C base plate temperature. Reverse isolation is greater than 70dB and each amplifier can be phase and amplitude matched over the band, unit to unit. The output of the amplifier module survives full reflected power from an open or short circuit at the output connector.

This high power RF module can be employed in high shock and vibration environments. An SMA female connector is standard on the RF input and output connectors. DC and logic connections are accessible via two separate DSUB connectors. Typical test data appears on page two of this data sheet at room

- **Gallium Nitride, High Power Amplifier**
- **Operation across 125 to 500 MHz Minimum**
- **CW, Pulsed or High PAR Stimulus**
- **50 to 60% Power Added Efficiency Typical**
- **32 Vdc Operation**
- **125+ Watts Forward Power at P3dB**
- **Small Compact Package**



temperature. For mounting and heat sink instructions, further test data or operation and logic and pin out requirements, please contact the factory.

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 0.125-0.500-125

SSPA 0.125-0.500-125 Typical Performance from 125 to 500 MHz
@ 25° C with a CW Input Stimulus with Vapplied = 32Vdc.

Freq (MHz)	Input Power (dBm)	Output Power at P3dB (dBm)	Gain at P3dB (dB)	Current at P3dB with V applied = 32 Vdc (Amps)	Power Added Efficiency at P3dB (%)
125	-1.0	51.2	52.2	8.66	47.6
150	0.0	52.0	52.0	9.18	53.7
175	0.0	51.3	51.3	8.77	48.0
200	-1.0	51.6	52.6	8.73	51.6
225	-2.0	51.6	53.6	8.75	51.4
250	-2.0	51.2	53.2	7.90	52.2
275	-2.0	51.7	53.7	7.49	61.7
300	-2.0	51.7	53.7	7.96	58.8
325	-2.0	51.8	53.8	8.34	58.8
350	0.0	51.8	51.8	7.96	59.2
375	1.0	51.8	50.8	7.96	59.2
400	1.0	51.9	50.9	8.19	59.2
425	0.0	51.8	51.8	7.82	60.4
450	-2.0	51.7	53.7	7.81	60.4
475	-2.0	51.6	53.6	8.16	56.7
500	0.0	51.0	51.0	7.66	51.4