



## IFF High Power Pulsed Amplifier

### Solid State High Power RF Amplifier

This data sheet is an example of a high power IFF power amplifier designed and fabricated by Aethercomm. The model number of this amplifier is SSPA 1.03-4000.

This high power amplifier is used to transmit IFF long Mode S 112 bit interrogation pulses. The volume of this amplifier is extremely small for a 4000 watt amplifier. The length of the unit is 9.500 inches, the width is 6.875 inches and the height is 4.400 inches. The center of the unit is a brazed mesh heat sink that has air blown across it for thermal management.

This IFF power amplifier has a nominal input pulsed drive of +10dBm to achieve a +65dBm output power level. Output harmonic levels are low for the amount of power delivered to the load. The second harmonic is -37dBc typical while all other harmonics are less than -60dBc. This unit operates off of a +34Vdc supply, a +12Vdc supply and a +5Vdc supply. The maximum current on the +34Vdc supply is 6.0 amps under normal operating conditions. Input and output return loss is -20dB typical.

There are numerous self protect features on this amplifier. There is a duty cycle limiter on the amplifier that will shut down the unit when the duty cycle exceeds a predetermined limit. There is also a pulse

#### Typical Performance at Room Temperature at L Band

Parameter	Min	Typ	Max
Peak Output Power (Watts)	3200	4000	5000
Pulsed One dB Compression Point (dBm)	55.0	56.0	-
Input/Output Return Loss (dB)	-	-20.0	-14.0
Harmonics (dBc)	-	-70	-30
Non Harmonic Spurs (dBc)	< -100	< -90	< -80
+34Vdc Current at Nominal Operating Conditions (Amps)	-	5.0	6.0
Pulse Droop (dB)	-	0.30	0.50
DC Blanking Time of Tx PA's (nSec)	-	700	1000
Saturated Gain (dB)	55.0	56.5	57.0

- **4000 Watts Peak Output Power**
- **Long Mode S Transmitter System**
- **+34Vdc Operation**
- **Airborne Platforms Fast and Slow Movers**



width monitor to protect the HPA in case the pulse width exceeds a predetermined level. The output has an isolator for protection and all the supplies are protected from over voltage and over current.

This amplifier is for capability purposes only. Please contact the factor with any questions you may have. Aethercomm designs and manufactures high power pulsed and CW amplifiers for military applications.

*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.*