

# WV Communications



## Model PA1033-001 – 4000W IFF Linear Power Amplifier

### DESCRIPTION

WV Communications' high power IFF power amplifier model number PA1033 is used to transmit IFF long Mode 5 and Mode S 112 bit interrogation pulses. Operating at Class AB this compact package generates 3,200W Minimum at 1dB compression Point (4,000 Watt / +66dBm Typical). The Amplifier has controlled response to 1090MHz (-2dB) enabling it to be used as Interrogator and Responder as necessary. Size is 9.50"X 6.87"X 4.40". The Amplifier is built around very high performance brazed Heatsink resulting in small air cooled package for easy thermal management.

A pulsed input of +10 dBm, nominal, produces an output level of +65dBm. Output harmonic levels are low for the amount of power delivered to the load. The second harmonic is -40dBc typical while all other harmonics are less than -70dBc. This unit operates off of a +34Vdc, +12Vdc, 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.

### SPECIFICATIONS

Operating Frequency Range:	1030-1090MHz
Operational Mode:	Class AB (Supports all IFF operation modes including Mode S & Mode 5)
RF Input Power:	-20 to +11dBm
RF Input VSWR:	1.5:1 Maximum
RF Input Modulation:	RF Pulse arbitrary Phase Modulation 15MHz at 3dB Maximum, AM at 30dB Maximum
RF Output Power Range:	1030MHz +53 to +66dBm (P1dB) Minimum 1090MHz +51 to +64dBm (P1dB) Minimum
RF Output Pulse Width:	32µS Maximum
RF Output VSWR:	1.5:1 Maximum (Ref 50Ω)
RF Output:	Will operate into 10:1 VSWR without damage (protected by output Isolator)
Small Signal Gain & Flatness:	55±1.5dB Maximum into 1.05:1 VSWR
Input and Output Impedance:	50Ω Nominal
Harmonic Signal Levels:	2 <sup>nd</sup> : -30dBc Maximum 3 <sup>rd</sup> : -50dBc Maximum 4 <sup>th</sup> : -65dBc Maximum 5 <sup>th</sup> : -70dBc Maximum 6 <sup>th</sup> : -75dBc Maximum 7 <sup>th</sup> : -80dBc Maximum 8 <sup>th</sup> -12 <sup>th</sup> : -90dBc Maximum
Cooling:	Forced air via integral front and rear panel openings
Fault Indications:	Thermal, MOD Gate DC Input Power below Threshold
Temperature:	Operating: -25 to +65°C Storage: -55 to +71°C
Humidity:	Operating: 10 - 90% (Non-Condensing) Storage: 5 - 95% (Non-Condensing)
Altitude:	MSL to 15,000 Ft
Input Power:	5 Vdc @ 0.2 Amp Maximum 12 Vdc @ 0.3 Amp Maximum 34 Vdc @ 8 Amps Maximum

