

A-310

High Voltage, High power Amplifier/ Piezo Driver



The A-310 piezo Driver/Piezo Amplifier is a high Voltage, fast Piezo Driver / Linear Amplifier for high power applications. It was especially designed as a Linear Amplifier / Driver for high capacitance PIEZO Electric Actuators (also known as "Piezo Amplifier"), stacks, piezo sheets, bimorph elements and other devices. The Piezo Driver / Piezo Amplifier is based on a high voltage, high frequency and high current MOSFET amplifier which is capable of driving up to $\pm 100V$ (200V ptp) at $\pm 2.5A$ at frequencies from DC to 250 kHz.

The A-310 amplifier is available in 2 configurations:

1. Single amplifier $\pm 100V$ output, $\pm 2.5A$ output current, DC- 250KHz. Frequency Bandwidth.
2. Dual amplifier - 2 independent amplifiers with independent inputs and outputs, $\pm 100V$ outputs, $\pm 1.2 A$ output current capability, DC-250 KHz.

Frequency bandwidth. By connecting 2 amplifiers in inverting, differential connection to a floating load, up to $\pm 200V$ @ $\pm 1.2A$ can be delivered to the load (240W peak or 120W RMS). The amplifier section is very stable and has a very low electrical noise - Compare Our Specifications!

This High speed Amplifier / Driver can be used for Various applications requesting high frequency, High Voltage and fast response as: Plasma Driver and Plasma Actuation, driver for piezo manipulator, Optical Switching devices, closed loop feedback systems, vibration control, structural damping analysis, Flow actuation and control etc.

Technical Specifications:

Size	Standard 19" rack enclosure, 4U height
Weight	24 Kg.
Amplifier Section	
Max. Input Voltage	± 12 V
Max. Output Voltage	± 100 V (200Vptp)
Max. Current	±2.5A (+/-1.2A in dual amp configuration)
Bandwidth	Into 1 KΩ resistive load
	DC to 250 kHz (-3 dB)
Output Power	250 Watt Peak
DC Gain	10 (up to 50 optional)
Coupling	Input & Output: Direct DC Coupling
DC Offset	Adjustable to ±10 Volts + On/Off Switch
Input Impedance	10 KΩ
Slew Rate	150V/ μSec
Output Impedance	1Ω
Output Noise (input shorted, 250 KHz. Bandwidth)	6 mV PTP max. (1.3 mV RMS max.)
Variable Gain Option	0-10X or 0 - 20X or 0-40X available. Consult factory for this option.
AC Input	
Line Input Voltage	110/120 V, 60 Hz or 220/230 V, 50/60 Hz. Preset on factory
Line Input Current	6 A peak (@220VAC)

Features:

- High frequency amplifier - DC-250KHz.
- Very Low Electrical Noise-<5mVptp
- Low Distortion <0.01% @ (DC-1KHz)
- High Slew rate- 150 Volts/microsecond.

Applications:

2 amplifiers can be connected in series or in parallel in order to double the Output Voltage or Output Current. Series connection (+/- 400V into a floating load = 800V ptp).

Calculating the estimated current needed to drive your load:
 $I_{peak}(A) = 2 \pi F C V_{peak}$ (for a Sine Wave)
 $I_{peak}(A) = 4 F C V_{peak}$ (for a triangular wave)
 $I_{peak}(A) = C dV / dt$ (for a square wave or sharp rise time)

F=Maximum frequency (Hz.)

$\pi=3.1415927$

C=Capacitance in Farads

V_{peak}=Maximum Voltage you need to drive your Load.

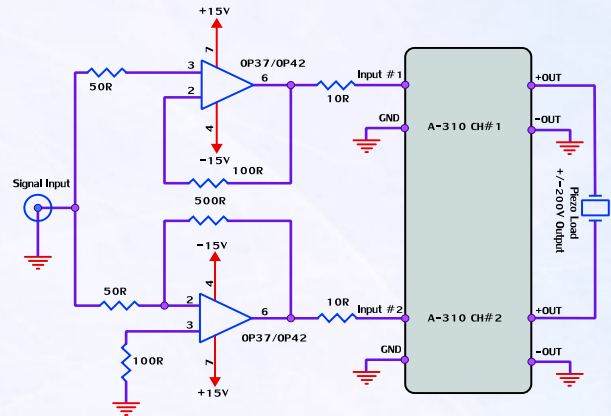
For Resistive Load:

$I = V_{peak}/R$

where R is the resistance of your load in Ohms.

The current, Voltage and Frequency must be less or equal to the amplifier's specifications.

This amplifier is NOT SUITABLE for driving pure inductive loads (i.e. speakers, solenoids, electromagnets etc.)



Connecting 2 Amplifiers in opposite phase to double output voltage

