

**LOW COST - PIEZO LINEAR AMPLIFIER**  
**±180VP / ±30MA**



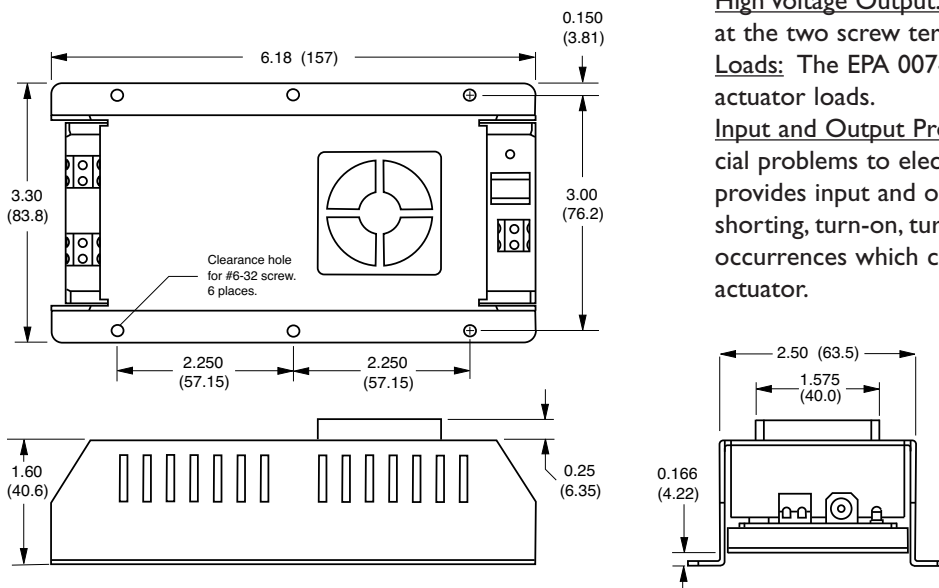
**NOTE ON PIEZO LOADS**

To estimate the peak current (Ip) requirement of a piezo actuator, solve the appropriate equation:

Sine wave  $I_p = 2 \pi f C V_p$   
 Triangle wave  $I_p = 4 f C V_p$   
 Square wave  $I_p = C dV / dt$

Where Ip is the peak current in Amperes, f is the maximum operating frequency in Hertz, C is the capacitance of the piezo device in Farads, dt is the square wave rise time, and Vp is maximum peak drive voltage. The amplifier must be able to supply Vp, Ip and f simultaneously.

**DIMENSIONS**



**DESCRIPTION**

The EPA-007-012 is a compact, high voltage, non-inverting, linear amplifier with an integral high voltage power supply. It is designed to be small in size and convenient for both bench top experimentation and OEM installation. It requires only a single 15 VDC power input (provided), yet will accept +/- 10V ground referenced input and produce +/- 180V ground referenced output.

It is designed to be used as a high voltage drive source for various piezoelectric actuating devices and servo applications in the DC to 1500 Hz frequency range.

**FEATURES**

**Input Power:** For bench top experimentation, where minimum setup time and flexibility of amplifier location are real advantages, an AC adapter is provided for DC input power. A 115VAC/60Hz to 15VDC is included with the EPA-007-012. A 100-240VAC/50-60Hz (Universal Adapter) is included with the EPA-007-012B. For this model, one end of the power cord plugs into the adapter and the customer supplies the plug for the other end. For OEM or permanent installation, an auxiliary DC input is provided consisting of a set of screw terminals.

**Signal Input:** Input to the amplifier is made by connecting wires to the screw terminal connector on the I/O panel at one end of the unit. This is a ground referenced ±10V peak low voltage input.

**High Voltage Output:** Output from the amplifier appears at the two screw terminals on the I/O panel.

**Loads:** The EPA 007-012 is designed for driving piezo actuator loads.

**Input and Output Protection:** Piezo loads present special problems to electronic drivers. The EPA-007-012 provides input and output protection to take care of all shorting, turn-on, turn-off, and load generated voltage occurrences which can damage either the amp or your actuator.

**ORDERING INFORMATION**

Amplifier (with 115VAC/60Hz Input Adapter)  
 Amplifier (with Universal Input Adapter)

**PART NO.**

EPA-007-012  
 EPA-007-012B

**1 pc.**

\$899  
 \$949

**5 pc.**

\$839  
 \$889

**25 pc.**

\$749  
 \$789

**100 pc.**

\$699  
 \$734



SPECIFICATIONS

EPA-007-012 PIEZO LINEAR AMPLIFIER

ELECTRICAL

|                                 |                                                                                                        |
|---------------------------------|--------------------------------------------------------------------------------------------------------|
| Amplifier Polarity              | Non-inverting type, output in phase with input                                                         |
| Maximum Output Voltage          | ±180 volts peak                                                                                        |
| Maximum Output Current          | ±30 mA peak continuous                                                                                 |
| Output Power                    | 5.4 watts peak                                                                                         |
| Open Circuit Frequency Response | Flat within ± 15% from 0 to 1,500 Hz                                                                   |
| Voltage Gain                    | Fixed gain, 20X, ±5%                                                                                   |
| Maximum Input Voltage           | ±10 volts peak                                                                                         |
| Maximum DC Component            | ±10 volts DC                                                                                           |
| Input Coupling                  | DC coupled                                                                                             |
| Input Impedance                 | 10K ohm                                                                                                |
| Output Coupling                 | DC coupled                                                                                             |
| Output Ripple                   | Typically <35 mV rms, with input shorted                                                               |
| Permissible Loads               | Piezo, capacitive, resistive (not recommended for purely inductive loads)                              |
| Power Source                    | +13VDC to + 18VDC, 750 mA                                                                              |
| Current Draw                    | 400 mA no load; 700 mA full load                                                                       |
| Circuit Protection              | Simple circuit limit, ~30 mA                                                                           |
| Short Circuit Endurance         | Indefinite                                                                                             |
| Cooling                         | Internal brushless DC fan                                                                              |
| Isolation                       | Ground terminals for signal input, High voltage output, and 15VDC power input are electrically common. |

MECHANICAL

|            |                           |
|------------|---------------------------|
| Weight     | 256 g (0.56 lb)           |
| Dimensions | 157mm L x 84mm D x 46mm H |

ROHS

ROHS Compliant

Peak Output Voltage versus Frequency for Various Capacitive Loads  
Sinusoidal Waveforms @ = 25 °C

