

E-835 DuraAct™ Piezo Driver Module Bipolar Operation for Piezoelectric Patch Transducers



- OEM Module for DuraAct™ Piezoelectric Patch Transducers
- Peak Power to 30 W
- Output Voltage Range -100 to +250 V
- High Bandwidth >4 kHz
- Compact: 87 x 50 x 21 mm
- Can be Used to Drive PicaShear™ Piezo Shear Actuators

The powerful, cost-effective E-835 OEM piezo amplifier module is designed for driving the P-876 DuraAct™ piezo patch transducers. It provides a peak output power of 30 W with a peak current of 120 mA in the semi-bipolar voltage range (-100 V/+250 V). The continuous output power is rated at 3 W.

This compact piezo amplifier module supplies adequate power for a broad range of DuraAct™ patch transducer applications, e.g. active vibration damping, structure monitoring and stabilization.

Voltage-Controlled Piezo Operation

The E-835 piezo driver module provides precision control for DuraAct™ Patch Transducers both in static and dynamic operation. Its output voltage is determined by an external analog signal in the -4 to +10 V-range applied to the respective input.

Operation / Contents of Delivery

The required electrical power can be supplied by a commercial 12 V-power supply (not included). An integrated DC/DC converter provides the piezo voltage and other voltages

Ordering Information

E-835.00
OEM Piezo Amplifier for DuraAct™ Patch Transducer

Ask about custom designs!

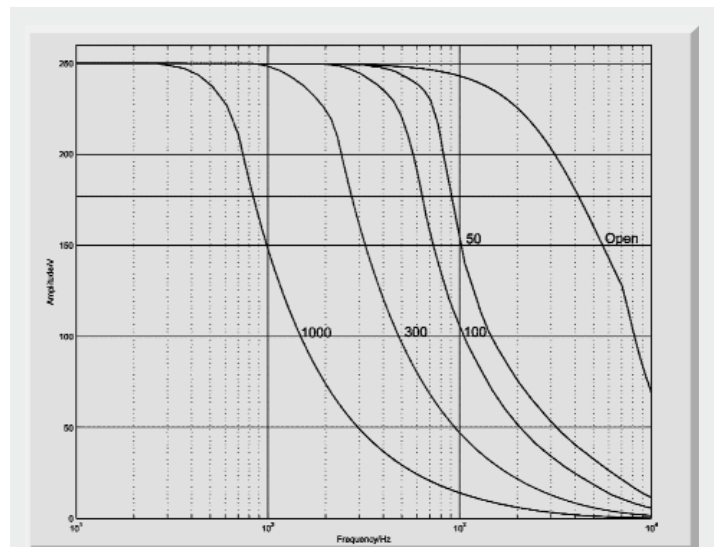
required internally. All inputs and outputs are on solder pads.

The E-835 piezo amplifier module is also suitable for operating PICA™ Shear piezo actuators at about 60 % of the nominal maximum displacement.

Read the general considerations on piezo amplifiers.

Adaptive Structures with Piezo Patch Transducers

P-876 DuraAct™ patch transducers combine the actuator and sensor functionality of piezoceramic materials. Used as a bender or contraction actuators, they provide high deflection with high force and precision. Other possible DuraAct™ operation modes are as high-dynamics sensor (e.g. for structural health monitoring) or as energy harvesters (see p. 1-96).



E-835.00: frequency response with various PZT loads (250 V, open-loop), capacitance is measured in nF

Technical Data

Model	E-835.00
Function	Power amplifier for DuraAct™ piezo patch transducers
Channels	1
Amplifier	
Input voltage	-4 to 10 V
Output voltage	-100 to 250 V
Peak output power	30 W (<15 ms)
Average output power	3 W
Peak current	120 mA (<15 ms)
Average current	40 mA
Current limitation	Short-circuit-proof
Voltage gain	25
Amplifier bandwidth, small signal	4.2 kHz (60 nF)
Amplifier bandwidth, large signal	4.2 kHz (unloaded); 500 Hz (60 nF)
Ripple, noise, 20 MHz	2 mV _{pp}
Output impedance	33 Ω
Amplifier resolution	<10 mV
Input impedance	100 kΩ
Interfaces and operation	
Piezo voltage	Soldering pads
Control input	Soldering pads
Piezo voltage monitor	Soldering pad, 1:100
Miscellaneous	
Operating temperature range	+5 °C to +50 °C (10 % derated over 40 °C)
Overheat protection	Deactivation at 100 °C
Dimensions	87 x 50 x 21 mm
Mass	67 g
Operating voltage	12 V / 1.7 A; 5.5 mm – barrel connector
Max. power consumption	20 W

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