Piezoelectric Actuator

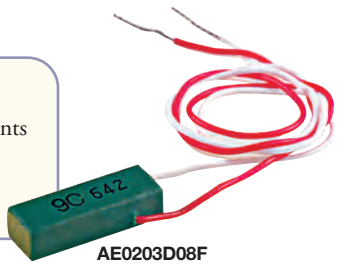
The PE4 incorporates one of our piezoelectric stacks (ITEM# AE0505D16F) and a manual 3/16" x 100 leadscrew. The manual adjuster has better than 1 µm resolution, which complements the 15 µm range of the piezo stack. When the PE4 is combined with our MDT694A driver (see page 566), translation on the order of 10 nm is achievable.

ITEM#	$	£	€	RMB	DESCRIPTION
PE4	$ 479.60	£ 332.50	€ 425,80	¥ 4,049.80	Piezoelectric Actuator, 4 mm of Coarse/15 µm of Fine Travel

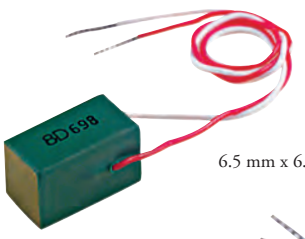
Piezoelectric Actuators

NEW versions

Operating Precautions
- Do Not Use in Highly Flammable Enviroments
- Always Ensure Proper Drive Polarity (Red +)
- Do Not Exceed 85 °C



AE0203D08F
3.5 mm x 4.5 mm x 10 mm



AE0505D08F
6.5 mm x 6.5 mm x 10 mm

AE0203D04F
3.5 mm x 4.5 mm x 5 mm

AE0505D16F
6.5 mm x 6.5 mm x 20 mm

These piezoelectric actuators transform electrical energy into precisely controlled mechanical displacements. They are ideal for applications requiring rapid, precise positional changes on the nanometer or micrometer scale. A room-temperature epoxy, such as F120 on page 367, is the recommended method for making connections to these piezoelectric stacks. When mounting, avoid bending forces and center the mechanical load on the piezoelectric end faces. If the actuator is incorporated into a design that calls for a preload, it is recommended that the preload not exceed 50% of the specified clamping force, which is 45 lbs for AE0203 models and 190 lbs for AE0505 models.

- **Fast Response Time:** 3x Resonant Frequency
- **Drive Voltage:** 0 - 150 VDC
- **Operating Temperature Range:** -25 to 85 °C
- **Recommended Drivers:** MDT693A, MDT694A, TPZ001, and BPC20X Series (See Page 562)

MDT693A

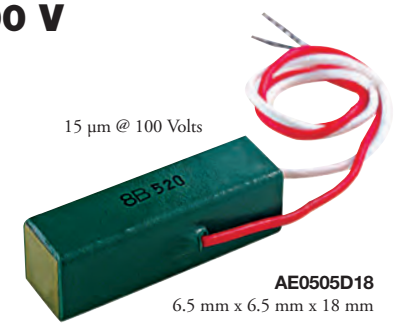
ITEM#	$	£	€	RMB	DISPLACEMENT @ 150 V	DISPLACEMENT @ 100 V	CAPACITANCE @ 1 kHz, 1 V RMS	RESONANT FREQUENCY
AE0203D04F	$ 72.80	£ 50.50	€ 64,70	¥ 614.80	4.6 ± 1.5 µm	3.0 ± 1.5 µm	0.09 µF	261 kHz
AE0203D08F	$ 79.80	£ 55.40	€ 70,90	¥ 673.90	9.1 ± 1.5 µm	6.1 ± 1.5 µm	0.18 µF	138 kHz
AE0505D08F	$ 130.80	£ 90.70	€ 116,20	¥ 1,104.50	9.1 ± 1.5 µm	6.1 ± 1.5 µm	0.75 µF	138 kHz
AE0505D16F	$ 153.30	£ 106.30	€ 136,20	¥ 1,294.50	17.4 ± 2.0 µm	11.6 ± 2.0 µm	1.40 µF	69 kHz

Low-Voltage Actuator, Full Displacement at 100 V

Operating Precautions
- Do Not Use in Highly Flammable Enviroments
- Always Ensure Proper Drive Polarity (Red +)
- Do Not Exceed 85 °C

This low-voltage actuator transforms electrical energy into precisely controlled mechanical displacements. The maximum displacement of 15 µm is achieved at the maximum input voltage (100 V).

When mounting, avoid bending forces by centering the mechanical load on the piezoelectric end faces. If the actuator is incorporated into a design that calls for a preload, it is recommended that the preload not exceed 95 lbs.



AE0505D18
6.5 mm x 6.5 mm x 18 mm

Applying a Drive Voltage in Excess of the 100 V can Cause the Actuator to Fail

ITEM#	$	£	€	RMB	DISPLACEMENT @ 100 V	CLAMPING FORCE	CAPACITANCE @ 1 kHz, 1 V RMS	RESONANT FREQUENCY
AE0505D18	$ 100.00	£ 69.40	€ 88,80	¥ 844.50	15 µm ± 10%	190 lbs	1.6 µF	69 kHz