

## Piezo Chip Actuator - Round



### Features

- AC lifetime:  $10^9$  cycles
- Compact structure
- Microsecond-level response
- Vacuum compatible up to  $10^{-6}$  Pa
- Sub-nanometer resolution
- Curie temperature:  $230^{\circ}\text{C}$
- Operating voltage:  $-20$  to  $+150\text{V}$

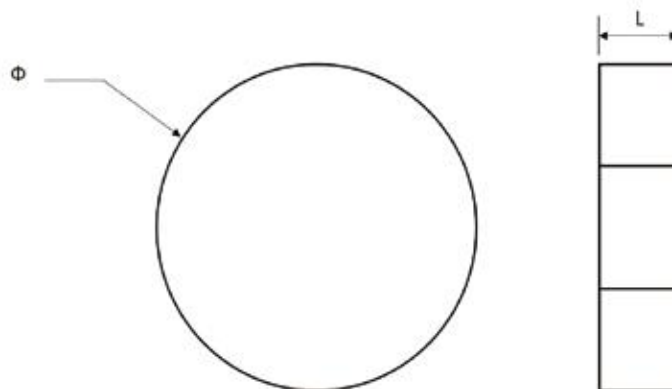
### Description

The Piezo Chip Actuator consists of multiple ceramic layers and electrode layers stacked and intersected internally, with external electrodes printed on both sides to lead out the internal electrodes. Through precision grinding processes, the height tolerance of each piezoelectric ceramic is controlled to be smaller than  $\pm 5\mu\text{m}$ . The company has achieved seamless integration from piezoelectric ceramic powder to the finished actuator, and mass production has been implemented. Currently, the products are applied in the fields of nanoscale positioning, precision manufacturing, and dispensing valve technology.

### Applications

- Industrial automation
- Life Science
- Scientific research
- Micro-jetting
- Laser tuning

### Interface Definition



General dimension, Unit: mm

## Technical Specifications

	PAA-D5-2W	PAA-D8-2W	Unit	Tolerance
Active axes	Z	Z		
Max. displacement	2.5	3.3	μm	
Displacement hysteresis	<15%	<15%		Max. value
Load capacity	310	720	N	Max. value
Holding force	780	1800	N	
<b>Electrical properties</b>				
Operating voltage	-20~150	-20~150	V	±15%
Resonant frequency	360	220	kHz	Max. value
Resonant impedance	150	100	mΩ	±15%
Antiresonant frequency	470	300	kHz	Max. value
Dielectric loss	<2.0%	<2.0%		
Electrical capacitance	150	800	nF	±15%
<b>Miscellaneous</b>				
Operating temperature range	-25~130	-25~130	°C	
Electrode	Silver	Silver		
Cable length	75	75	mm	±5 mm
Curie temperature	230	230	°C	
<b>Dimensions</b>				
∅	5	8	mm	±0.1 mm
L	2	2	mm	±5 μm

\*Displacement test: drive voltage range 0 to 150V, tolerance ±20%

\*\*Thrust test: drive voltage range 0 to 150V

\*\*\*Capacitance test conditions: ambient temperature environment, 1V<sub>pp</sub>, 1kHz, tolerance ±20%

Optional soldering of standard wiring harness available, length 75mm, AWG32, PTFE insulation, followed by 'W' in the product code

Other specifications can be customized on request

## Customization Information

### Piezo Chip Actuator - Round

Option	Description
PAA-D5-2	Piezo Chip Actuator - Round, diameter 5mm, effective travel 2.5μm, without wire
PAA-D5-2W	Piezo Chip Actuator - Round, diameter 5mm, effective travel 2.5μm, with wires
PAA-D8-2	Piezo Chip Actuator - Round, diameter 8mm, effective travel 3.3μm, without wire
PAA-D8-2W	Piezo Chip Actuator - Round, diameter 8mm, effective travel 3.3μm, with wires