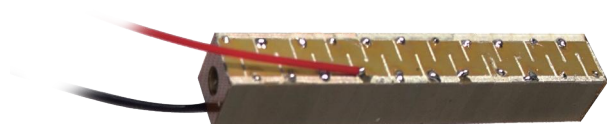


Square Piezoceramic Stack Actuator with Center Hole



Features

- AC life span of 10^9 cycles
- Compact structure
- Microsecond response
- Sub-nanometer resolution
- Drive voltage -20 to +150V
- High Curie temperature of 230°C
- The through-hole in the middle facilitates heat dissipation

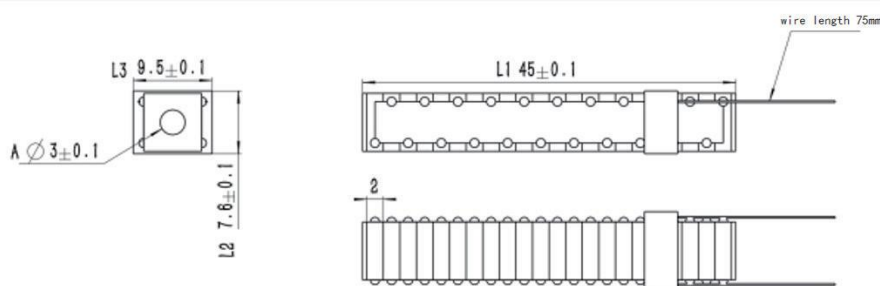
Description

The square stack with center hole is composed of square perforated single-piece piezoelectric ceramic actuators, which are electrically connected in parallel and mechanically connected in series through external electrodes and copper foils. Compared with conventional square stacks, it has through-holes inside, which results in better thermal dissipation and facilitates the installation of various supporting components.

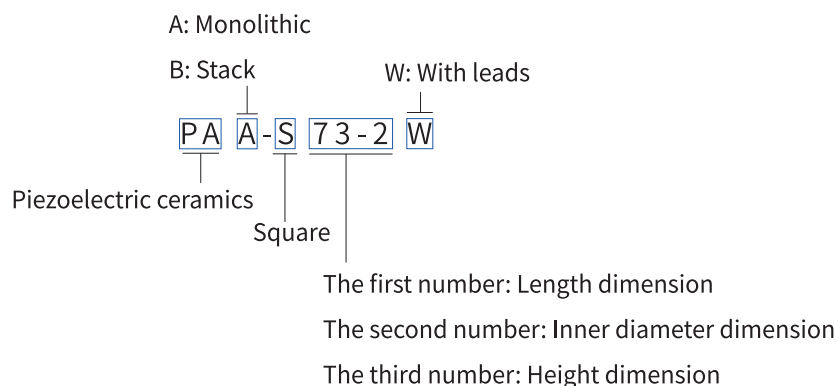
Applications

- Scientific research
- Precision optical adjustment equipment
- Industrial automation
- Semiconductor equipment
- Precision motion control
- Precision inspection equipment

Interface Definition



Model Interpretation



Technical Specifications

	PAB-S73-9W	PAB-S73-18W	PAB-S73-36W	PAB-S73-45W	Unit	Tolerance
Active axes	Z	Z	Z	Z		
Max. displacement	11	23.0	44.0	57.0	μm	±15%
Displacement hysteresis	<15%	<15%	<15%	<15%		
Blocking force	1600	1600	1600	1600	N	150V
Operating voltage	0~150	0~150	0~150	0~150	V	
Resonant frequency	130	100	38	28	kHz	Max. value
Resonant impedance	66	70	76	78	mΩ	
Anti-resonant frequency	160	120	44	34.6	kHz	Max. value
Dielectric loss	2.08	1.99	1.9	2.05		
Electrical capacitance	2.1	5	10	10.3	nF	±15%
Operating temperature range	-25~130	-25~130	-25~130	-25~130	°C	
Curie temperature	230	230°C	230°C	230	°C	
Electrode	Silver	Silver	Silver	Silver		
Cable length	75	75	75	75	mm	±5 mm
Dimensions						
A	7	7	7	7	mm	±0.1 mm
B	7	7	7	7	mm	±0.1 mm
Φ	3.0	3.0	3.0	3.0	mm	±0.1 mm
L	9	18	36	45	mm	±0.05 mm
MTTF	16			8	year	

Customization Information

Depending on the different application scenarios of the square perforated piezoceramic stack actuator, we can offer product customization in terms of performance parameters and structural shape.

- **Drive Voltage:** Different drive voltages can meet various displacement requirements. Common options include 50V, 75V, 100V, 120V, and 150V. Other special maximum drive voltages can also be customized flexibly according to customer requirements.
- **Output Displacement:** The output displacement is primarily determined by the length of the device. YG offers a maximum displacement stroke of up to 200 μ m.
- **Operating Frequency:** The long-term operating frequency of the stack depends on factors such as the resonant frequency of the device and the drive voltage. YiNGUAN can flexibly design according to customer requirements, with the highest drive frequency of the stack reaching up to 30kHz. For ultra-high-frequency application scenarios, we can also provide a drive frequency as high as 100kHz.
- **Dimensions:** The inner diameter, outer diameter, and height of the square perforated stack can be customized flexibly according to customer requirements. In terms of length and width, the minimum available size is 5mm, and the maximum is 10mm. For the inner diameter, the minimum available size is 1mm, and the maximum is 5 mm. In the height direction, customization up to a maximum of 90mm is supported.
- **Wiring Harness:** Under the condition of meeting the AWG usage standards, the wiring harness is optional. For convenient connection of the positive and negative electrode wires, the soldering point position can be selected within the allowable error range of performance variation.