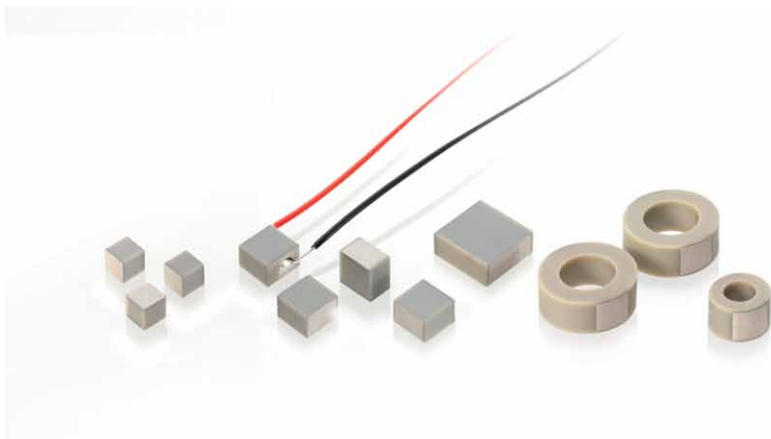


# PICMA<sup>®</sup> Chip Actuators

MINIATURE MULTILAYER PIEZO ACTUATORS



## PLOxx • PDOxx

- Superior lifetime
- Ultra-compact:  
From 2 × 2 × 2 mm
- Ideal for dynamic operation
- Microsecond response
- Sub-nanometer resolution
- Large choice of designs

### Piezo linear actuator with PICMA<sup>®</sup> multilayer technology

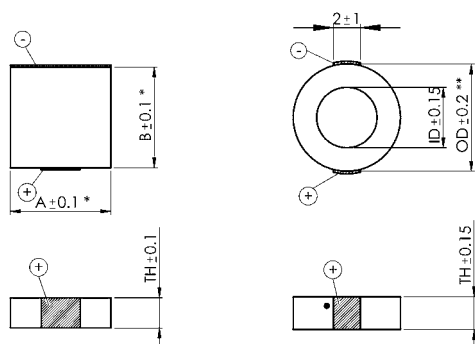
Operating voltage -20 to 100 V. Ceramic insulation, polymer-free. Humidity resistance. UHV-compatible to 10<sup>-9</sup> hPa, no outgassing, high bakeout temperature. Versions with rectangular or annular cross-section

#### Available options

PTFE-insulated wire leads. Various geometric shapes, inner hole. Precision-ground ceramic end plates

#### Fields of application

Research and industry. For laser tuning, micro-dispensing, life science



PICMA<sup>®</sup> Chip miniature piezo actuator, A, B, TH see table. Tolerances A, B for PL022, PL033 ±0.10 mm, for PL055 ±0.15 mm, for PL088 ±0.20 mm. Tolerance OD for PD080 ±0.30 mm

#### Suitable drivers

- E-610 Piezo Amplifier / Controller
- E-617 High-Power Piezo Amplifier
- E-831 Piezo Driver

Order Number*	Dimensions A × B × TH [mm]	Displacement** [μm] ±20% (0 – 100 V)	Blocking force [N] (0 – 100 V)	Electrical capacitance [nF] ±20%	Axial resonant frequency [kHz]
PL022.30	2 × 2 × 2	2.2	>120	25	600
PL033.30	3 × 3 × 2	2.2	>300	85	600
PL055.30	5 × 5 × 2	2.2	>500	250	600
PL088.30	10 × 10 × 2	2.2	>2000	1100	600

Order Number*	Dimensions OD × ID × TH [mm]	Displacement [μm] ±20% (0 – 100 V)	Blocking force [N] (0 – 100 V)	Electrical capacitance [nF] ±20%	Axial resonant frequency [kHz]
PD050.30	5 × 2.5 × 2.45	2.0	>400	110	500
PD080.30	8 × 4.5 × 2.45	2.0	>1000	300	500

\* Optionally equipped with 100 mm PTFE-insulated wire leads, AWG 32 (Ø 0.49 mm); change order number extension to 1 (e. g. PL022.31).

\*\* The values refer to the free component and can be lower when glued on. Piezo ceramic type: PIC 252.

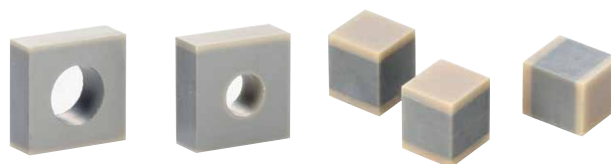
Standard connections: Solderable contacts.

Recommended preload for dynamic operation: 15 MPa.

Maximum preload for constant force: 30 MPa.

Axial resonant frequency at 1 V<sub>pp</sub>, unloaded, unclamped. The value is halved for unilateral clamping. Lateral resonant frequencies can be lower than the axial one, depending on the installation situation. Capacitance at 1 V<sub>pp</sub>, 1 kHz, RT. Operating voltage: -20 to 100 V. Operating temperature range: -40 to 150°C.

Ask about custom designs!



On request PICMA<sup>®</sup> Chip piezo actuators can be manufactured with ceramic-insulated inner hole (left) or with precision-ground ceramic end plates (right)