

CuX Stacks

Multilayer Piezo Actuator Stacks



Copper Inner Electrodes – superior humidity resistance & reliability



+20% Stroke – thanks to minimized inactive zones



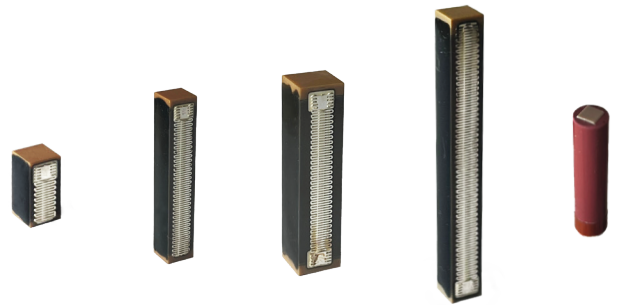
Lead-free Bonding – for use in high temperature environments up to 200°C



Up to 2.6 kN Force / 83 µm Stroke – in compact footprint



Fast delivery times – high volume



The CuX series provides compact, high-efficiency multilayer piezo actuator stacks designed for demanding industrial and scientific applications. Engineered using advanced piezoceramic (PZT) materials, these stacks offer rapid response times, exceptional durability, and precise displacement across a wide range of voltages.

Product Highlights

- Operating voltage up to 180 V.
- Tested up to 1 billion cycles of 83 Hz and 170°C.
- Stroke lengths up to 83 µm depending on stack size.
- Force generation up to 2.6 kN.
- Capable of operating in dynamic or static modes.
- Available in various standard sizes with customization options based on request.
- Available with wires by piezosystem jena.

Stacks (from left to right)

- CuX-S (P-520-00)
- CuX-M (P-522-00)
- CuX-L (P-542-00)
- CuX-XL (P-523-00)
- CuX-R (P-502-13)

Applications

- Nanopositioning solutions
- Semiconductor manufacturing
- Adhesives in production process
- Flow controllers
- Micro-dispensing valves

CuX Stacks

Technical Data

Unit		CuX Multilayer Piezo Actuator Stacks				
						
Stack name	-	CuX-S	CuX-M	CuX-L	CuX-XL	CuX-R
Part no	-	P-520-00	P-522-00	P-542-00	P-523-00	P-502-13
Material	-	Multilayer piezo actuator with copper (Cu) inner electrodes				
Stroke*	μm	16	55	55	83	47
Recommended preload	N	730		1320	730	320
Stack Surface Temperature	°C	-40...+160				
Curie Temperature	°C	340				
Voltage Range	V	-10...+180				
Capacitance**	μF	1.0	3.4	6.2	5.3	1.3
Stiffness	N/ μm	79	25	45	16	12
Blocking force	N	1400	1400	2600	1400	600
Resonant frequency	kHz	165	44	44	30	48
Dimensions (L x W x H)	mm	5.2x5.2x10 Passivated	5.2x5.2x30 Passivated	7.0x7.0x30 Passivated	5.2x5.2x45 Passivated	3.4x3.4x27 Leaded

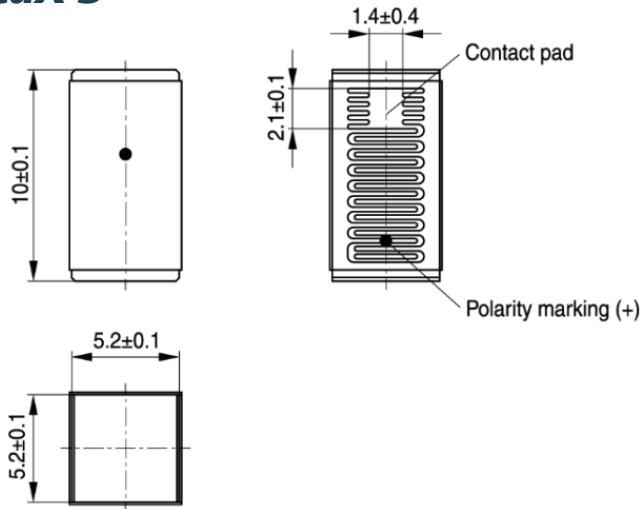
*) 1 N/μm stiffness of pre-load spring and dynamically measured after polarization

**) 25°C of 1 kHz after polarization

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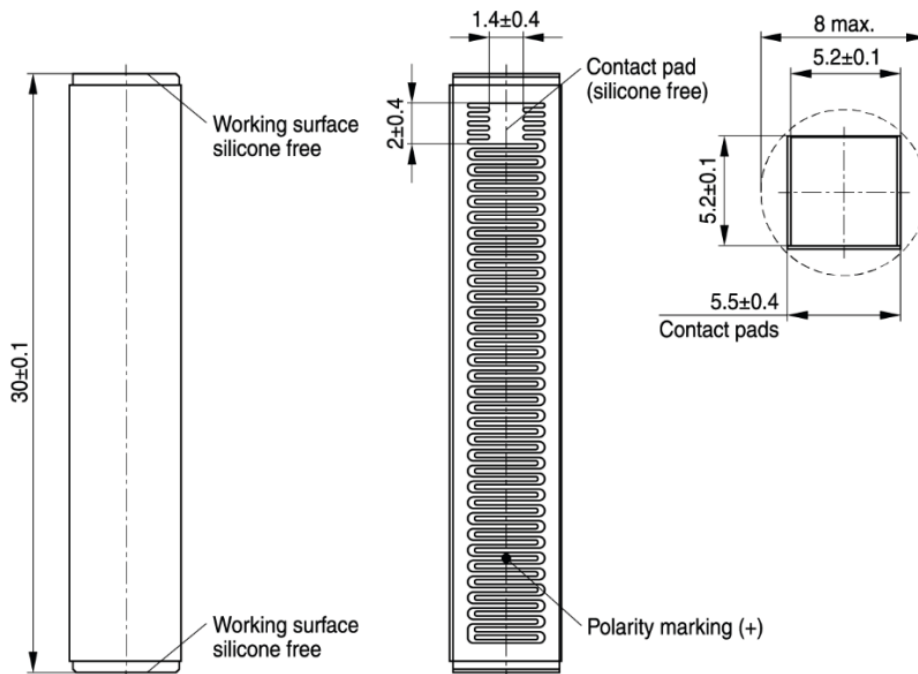
Technical Drawing

CuX-S



Dimensions given in mm.

CuX-M



Dimensions given in mm.

Rights reserved to change specifications as progress occurs without notice.

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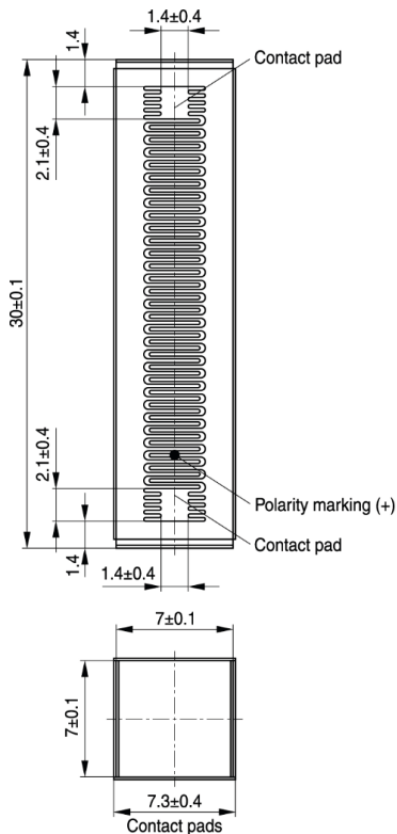
www.piezosystem.com

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Technical Drawing

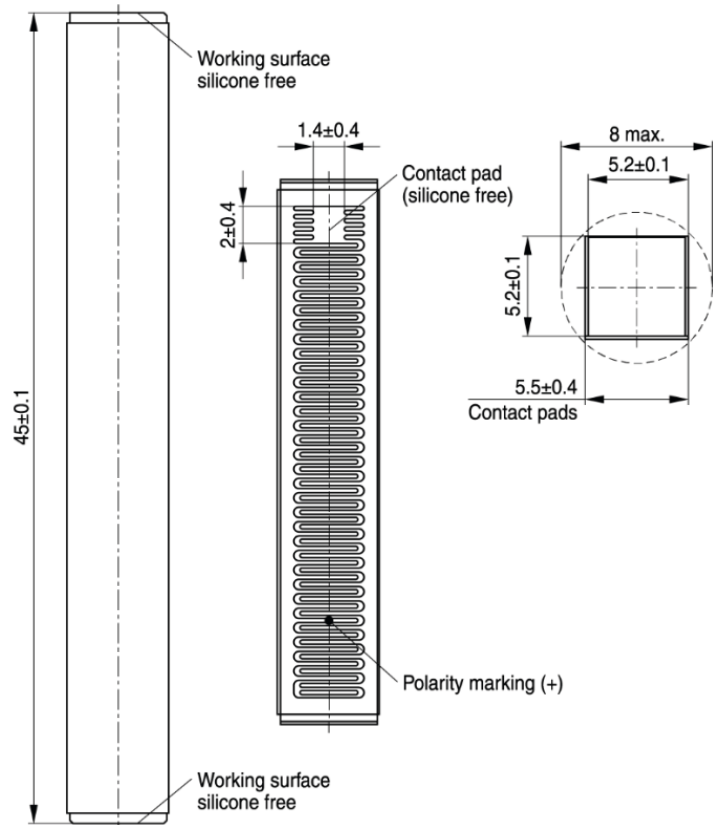
CuX-L

Dimensions given in mm.



CuX-XL

Dimensions given in mm.



CuX-R

Dimensions given in mm.



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