CeramTec

MATERIAL DATA

MACHINERY

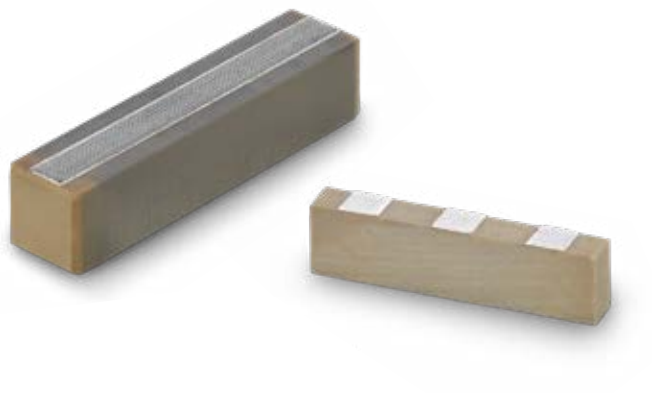
Advanced Ceramic Solutions for
High-Precision Processes

Monolithic Multilayer Actuators

THE CERAMIC EXPERTS

High-Precision Monolithic Multilayer Actuators

Monolithic multilayer actuators are advanced piezoceramic components composed of multiple thin ceramic layers fused into a compact, monolithic block. This design enables precise and dynamic movement while minimizing space requirements.



Key product features include:

- Compact design: ideal for applications with limited installation space
- Robust ceramic technology: durable and reliable operation even under demanding conditions
- High power density: multilayer structure delivers maximum displacement at low operating voltage
- Fast response times: perfect for high-precision positioning and control processes

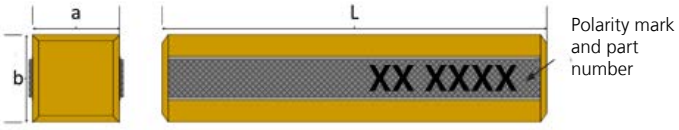
Exemplary applications:

- Fine positioning
- Dosing systems
- Fast valve activation & valve control
- Metrology
- Vibration generation / vibration damping

Technical Data

Ceramic dimensions		
a mm +/-0,1"	**b** mm +/-0,1"	**L** mm +/-0,1"
5	5	5-30
7	7	10-30
10	10	10-30

Technical data for common geometries						
a mm +/-0,1"	**b** mm +/-0,1"	**L** mm +/-0,1"	**S3** ∫µm +/-10%"	**FB** N +/-10%"	**C** nF +/-10%"	**fr** kHz +/-10%"
5	5	5	5	850	140	228
7	7	30	40	1900	2000	38
10	10	20	26	4000	2700	57



Application limit values

Voltage:	50 to 200 V max.
Load:	100 MPa max.
Temperature:	-40 to 130°C max. @ dynamic conditions
Humidity:	70% rH @ dynamic conditions

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