

# Strip Bending Piezo Ceramic Actuators

(unimorph and bimorph actuator)

A **bimorph** is a cantilever used for actuation or sensing which consists of two active layers. It can also have a passive layer between the two active layers. In contrast, a piezoelectric unimorph has only one active (i.e. piezoelectric) layer and one passive (i.e. non-piezoelectric) layer. Bending will occur when a DC voltage is applied to the part,

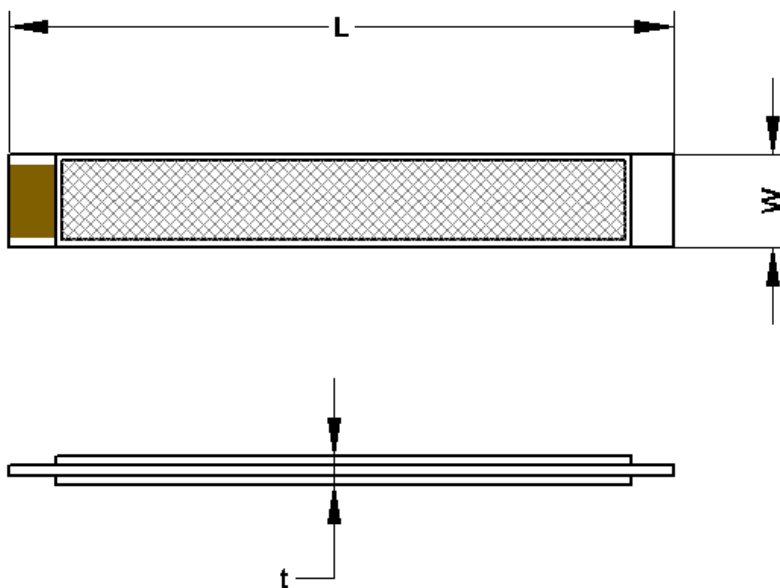
## Features:

Small in size, Low power consumption, Large displacement and force, Fast responds, Very reliable, long life.

## Applications:

1. Needle selection mechanism for Weft machines.
2. Jacquard Combo for Weave machines.
3. Braille reader with coding actuator.
4. Fast Valve controls.
5. Optical systems, i.e. shutter controllers.
6. Intelligent Locks, Inkjet printer, Fiber optical scanner and etc.

## Structure of the Actuator:





### Specifications:

Part Number	Dimensions L×W×T [mm]	Bi-directional Displacement [1Hz,mm]	Bending Force [mN]	Current Leakage [ $\mu$ A]	Capacitance [1V,100Hz,nF]
QDTE60-20-0.53-1	60×20×0.53	$\geq 0.75$ (@96V)	$\geq 300$	$\leq 0.6$	270-450
QDTE56-7.2-0.76-1	56×7.2×0.76	$1.2 \leq S \leq 1.7$ (@180V)	$\geq 20$	$\leq 0.5$	36-54
QDTE52-7.0-0.82-1	52×7.0×0.82	$\geq 0.9$ (@190V)	$\geq 300$	$\leq 0.5$	36-54
QDTE52-7.0-0.77-1	52×7.0×0.77	$\geq 1.2$ (@190V)	$\geq 300$	$\leq 0.5$	40-62

- Notes: (1). The above specifications are for references only, please confirm with our Engineer before ordering.  
(2). Custom parts available, please inquire with your requirements.

### Recommended Operative Conditions:

Operating Temperature Range:  $-10^{\circ}\text{C} - +60^{\circ}\text{C}$  ( $14^{\circ}\text{F} - 140^{\circ}\text{F}$ )

Operating Humidity Range:  $\leq 70\%$

QDTE60-20-0.53-1 can be driven by 48-50VDC @ 1Hz-130Hz for either direction

QDTE52-7.0-0.82/0.77-1 can be driven by 170-200VDC @ 1Hz-30Hz for one direction only.

### Typical Applications:

Weft Machine (Jacquard Machines)



High Speed Jacquard Wrap Knitting Machines

