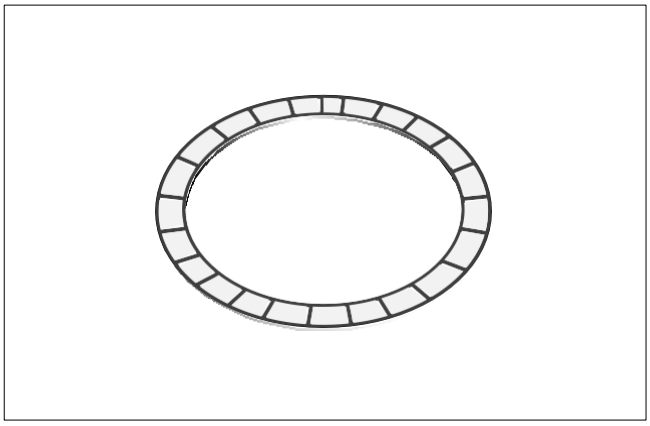
■Piezoelectric Elements for ultrasonic motors



●Features

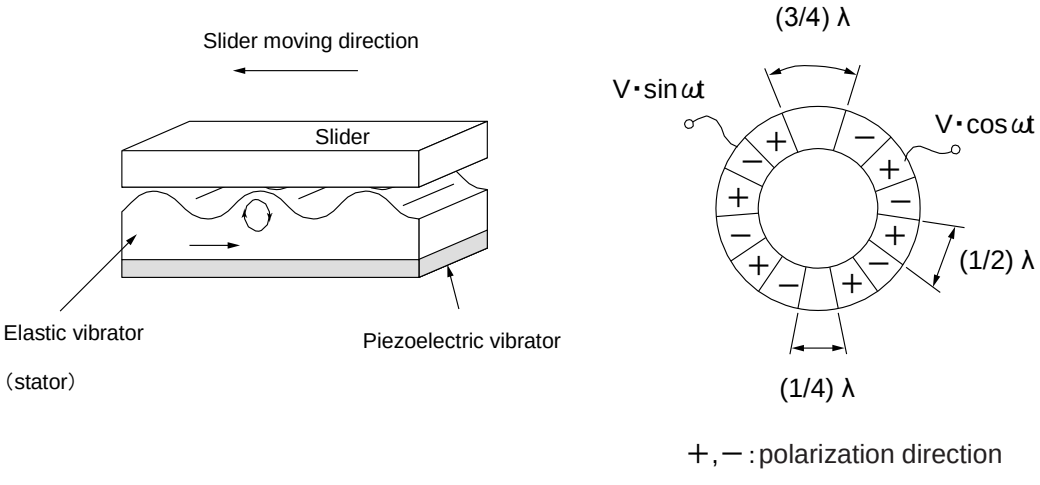
・High torque without gears at high and low speed.
・Excellent response characteristics.
・Large holding torque.
・Does not generate magnetic field.
・Simple structure.

●Applications

・Lens actuator for automatic focusing of camera.
・Posture control device for medical equipment.
・Turn table for video camera.

●Operating principle

The operation principle of ultrasonic motor is shown in the figure below. High-order curling vibration is generated on the surface of the “elastic vibrator (stator)” and travelling waves are made by excitation of “piezoelectric vibrator”. And crimping the “slider” to stator with certain pressure will cause the “slider” to propagate on the stator by the friction between them. Driving force of ultrasonic motor is obtained by travelling-wave type elastic curling wave. This type of motor is named as a “traveling- wave ultrasonic motor”. To generate elastic curling wave on the elastic annular plate, adhere the “piezoelectric vibrator” beneath the elastic annular plate and exploit the expanding and contracting move. Elastic curling waves are generated on the elastic annular plate, by sectional expanding and contracting move when AC voltage is applied to the polarized “Piezoelectric vibrator” beneath the elastic annular plate.



Principle of traveling-wave ultrasonic motors

●About RoHS

This product complies with the revised RoHS Directive (2011/65 / EU) and the revised Directive (EU) 2015/863 of Appendix Annex II.

However, lead is contained in the glass in the piezoelectric ceramic plate and Ag electrode (Exemption No. 7 (C)-I).