

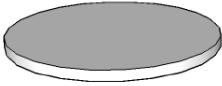
## Ceramic Standard Shapes and Tolerances

TRS Technologies offers thickness, shear, and radial poling for our parts.

With thickness mode ceramics, the part is poled through the thickness and electroded on the positive and negative surfaces. This mode is available for all part shapes.

With shear mode ceramics, the polarization direction is perpendicular to the electroded surfaces. We commonly supply shear mode plates and rings. Shear mode piezoelectrics offer increased sensitivity and minimize the pyroelectric effect.

We offer radial poled tubes and rings, including tubes with a wrap-around electrode.

Disc		Dimensional Range	Standard Tolerances	Fine Tolerances
	Diameter (mm)	1-75	±0.127	±0.025
	Thickness (mm)	0.1-20	±0.05	±0.009
	Metallization	Thick film silver, electroless Ni/Au, sputtered Cr/Au (500Å/2000Å), sputtered NiV. Others available on request.		
	Notes	Capability depends on aspect ratio. Size range, tolerances, and metallization tailored on request.		






Rod		Dimensional Range	Standard Tolerances	Fine Tolerances
	Diameter (mm)	1-75	±0.127	±0.025
	Thickness (mm)	0.1-20	±0.05	±0.009
	Metallization	Thick film silver, electroless Ni/Au, sputtered Cr/Au (500Å/2000Å), sputtered NiV. Others available on request.		
	Notes	Capability depends on aspect ratio. Size range, tolerances, and metallization tailored on request.		

Plate		Dimensional Range	Standard Tolerances	Fine Tolerances
	Length (mm)	0.25-100	±0.127	±0.025
	Width (mm)	0.25-80	±0.127	±0.025
	Thickness (mm)	0.1-20	±0.05	±0.009
	Metallization	Thick film silver, electroless Ni/Au, sputtered Cr/Au (500Å/2000Å), sputtered NiV. Others available on request.		
	Notes	Capability depends on aspect ratio. Size range, tolerances, and metallization tailored on request.		

<b>Rod</b>		Dimensional Range	Standard Tolerances	Fine Tolerances
	Length (mm)	0.25-100	±0.127	±0.025
	Width (mm)	0.25-80	±0.127	±0.025
	Thickness (mm)	0.1-20	±0.05	±0.009
	Metallization	Thick film silver, electroless Ni/Au, sputtered Cr/Au (500Å/2000Å), sputtered NiV. Others available on request		
	Notes	Capability depends on aspect ratio. Size range, tolerances, and metallization tailored on request.		

<b>Rings</b>		Dimensional Range	Standard Tolerances	Fine Tolerances
	Outer diameter (mm)	2-75	±0.127	±0.0127
	Inner diameter (mm)	1 min.	±0.127	±0.025
	Thickness (mm)	0.5-20	±0.05	±0.009
	Metallization	Thick film silver, electroless Ni/Au, sputtered Cr/Au (500Å/2000Å), sputtered NiV. Others available on request		
	Notes	Capability depends on aspect ratio. Size range, tolerances, and metallization tailored on request. Rings can be provided with thickness mode, shear mode, or radial plating. Rings can also be made as split rings.		

<b>Tubes</b>		Dimensional Range	Standard Tolerances	Fine Tolerances
	Outer diameter (mm)	2-75	±0.127	±0.0127
	Inner diameter (mm)	1 min.	±0.127	±0.025
	Thickness (mm)	0.5-20	±0.05	±0.009
	Metallization	Electroless Ni/Au. Others available on request.		
	Notes	Capability depends on aspect ratio. Size range, tolerances, and metallization tailored on request. Tubes can be plated thickness mode, shear mode, or radially. Tubes can be provided with a wrap-around electrode.		