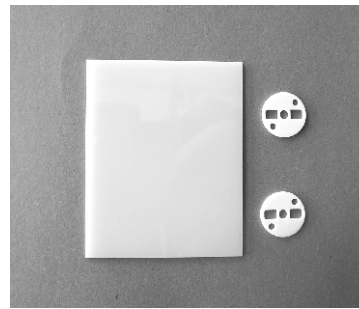


2) 99.6 Al₂O₃ ceramic substrates

99.6% Al₂O₃ ceramic substrates are mostly used in Thin-Film Circuits, Large Scale Integrated Circuits, Power Hybrid ICs.

Benefits:

- Small medium grain size, high density and hardness.
- High smooth and flat surface.
- Low dielectric loss and high stabilization.



99.6 Al₂O₃ CERAMIC SUBSTRATES MATERIAL PROPERTIES

PROPERTY	TESTING CONDITIONS	UNITS	VALUE
COLOR			WHITE
APPEARANCE			COMPACT
DENSITY		g/cm ³	≥3.8
WATER ABSORPTION		%	0
MEDIUM GRAIN SIZE		μm	2
HARDNESS	LOADED 4.9N	GPa	≥16.2
BENDING STRENGTH		MPa	≥343
COEFFICIENT OF LINER EXPANSION	20~500°C	1×10 ⁻⁶ mm/°C	6.5 - 7.5
	20~800°C		6.5 - 8.2
THERMAL CONDUCTIVITY	20°C	W/(m·K)	≥ 25.1
SPECIFIC HEAT		kJ/(kg·K)	≥ 0.8
DIELECTRIC STRENGTH		KV/mm	≥ 12
VOLUME RESISTIVITY	20°C	Ω·cm	≥ 10 ¹⁴
	300°C		≥ 10 ¹¹
	500°C		10 ⁹
DIELECTRIC CONSTANT	1MHz		9.5 - 10.5
DIELECTRIC LOSS (TAN DELTA)	1MHz		≤210 ⁻⁴
SURFACE ROUGHNESS		μm	≤0.2