

Ceramic Substrates for Thin Film Circuits

Product Features

- Al_2O_3 : $\geq 99.6\%$
- Size: 2~6 inch
- Thickness: 0.05~2mm, $\pm 2\%$
- Strict process controls and testing parameters
- Thin film microcircuits foundry service are available



Electrical Specs:

Item	Alumina (Al_2O_3 99.6%)	Aluminum Nitride (AlN)
Colour	White	Gray
Bulk Density	$\geq 3.88 \text{ g/cm}^3$	$\geq 3.30 \text{ g/cm}^3$
Water Absorption	0%	0%
Bending Strength(Three Point Bending Resistance)	$\geq 550 \text{ Mpa}$	$\geq 450 \text{ Mpa}$
Thermal Conductivity(25°C)	$\geq 30 \text{ W/m.k}$	$\geq 170 \text{ W/m.k}$ $\geq 200 \text{ W/m.k}$
Thermal Expansion Coefficient(25~300°C)	$7.2 \text{ ppm/}^\circ\text{C}$	$4.5 \text{ ppm/}^\circ\text{C}$
Dielectric Constant(@1MHz)	9.9	8.8
Dielectric Loss(@1MHz)	$\leq 1.0 \times 10^{-4}$	$\leq 1.0 \times 10^{-4}$
Volume Resistivity(25°C)	$> 10^{14} \Omega \cdot \text{cm}$	$> 10^{14} \Omega \cdot \text{cm}$
Dielectric Strength	$\geq 15 \text{ KV/mm}$	$\geq 15 \text{ KV/mm}$

Mechanical Specs:

Item	Alumina(Al_2O_3 99.6%)	Aluminum Nitride (AlN)
Typical Dimensions	50.8mm50.8mm、76.2mm*76.2mm、101.6mm*101.6mm、 Φ 101.6mm	
Maximum Outer Dimensions	$152.4\text{mm} \pm 0.3\text{mm}$	
Typical Thickness	0.127mm, 0.254mm, 0.381mm, 0.508mm, 0.635mm, 0.762mm, 1mm	
Roughness	50nm~80nm@ Instant burning $\leq 25\text{nm}$ @ Polishing substrates	50nm~80nm@ Instant burning $\leq 50\text{nm}$ @ Polishing substrates
Warpage	$\leq 0.3\%$ @ Instant burning, $\leq 0.1\%$ @ Polishing substrates	