Al_2O_3

Alumina Oxide (Al_2O_3) Crystal Substrate

DESCRIPTION

Al_2O_3 substrate is one of the most popular ceramic substrate which has excellent heat resistance, high mechnical strength, abrasion resistance and small dielectric loss. The surface of alumina substrate is quite smooth and low porosity, 99.6% alumina substrate is suitable for thin film device, 96% alumina substrate is suitable for thick film device application.
Alumina Oxide (Al_2O_3) is a readily available material with reasonable processing cost, possessing excellent mechanical, electrical, and wear properties. Alumina Substrates have a wide range of applications, including thin film and thick film microelectronic , high power and high frequency circuit RF/microwave components and capacitor or resistor. Furthermore, the porous alumina substrates are often used as sintering base with the thermal treatment of LTCC, piezo-ceramics, SOFC-electrolytes, dental ceramics and metallic materials to 1500℃.

FEATURE

- High corrosion resistance
- High abrasion resistance
- Good electrical isolation
- Very good gliding properties
- Good thermal conductivity and fire resistance
- Good mechanical strength
- Low warpage and camber

APPLICATION

- Thick and thin film chip resistors substrate and resistor arrays substrate
- High dissipated ceramic circuit board for LED
- Power module for the automotive industry
- RF modules

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Al_2O_3

PARAMETER

Physical Properties

Chemical formula	Al_2O_3
Color	white
Density	3.72g/cm^3
Thermal conductivity	22.3W/m·K
Thermal Expansion (x10^{-6}/℃)	8
Dielectric strength	14E6
Dielectric Constant (at 1MHZ)	9.5
Loss Tangent (x10^{-4}@1MHZ)	3
Volume Resistivity	>1E14 ohm-cm

Main Specification

Diameter	Ø 1" / Ø 2" / Ø 3" / Ø 4"
Square size	10 x 10 / 20 x 20 / 50 x 50 / 100 x 100 mm
Thickness	0.4 mm / 0.5 mm / 1 mm
Surface	As fired one side polished / two sides polished
Roughness	Ra <= 0.3μm