

Technical data sheet Al₂O₃ (substrate)

Chemical composition		96% Al ₂ O ₃
Color		white
Medium grain size d₅₀	µm	3-5
Surface roughness Ra	µm	0.6 max
Bulk density	kg/m ³	3780
Water absorption capacity	%	0
Bending strength - 4-point method (40 x 4 x 3 mm ³) - dual-ring method (0.63 mm substrate thickness)	Mpa Mpa	400 500
Modulus of elasticity	Gpa	340
Thermal conductivity 20-100 °C	W/m°K	24
Specific heat	J/kg°K	800
Coefficient of linear expansion 20-300 °C 20-500 °C 20-1000 °C	10 ⁻⁶ /°K	6.8 7.3 8.0
Dielectric constant - 1 Mhz - 1 Ghz		9.8 ± 10% 10.0 ± 10%
Dielectric loss factor (1Mhz)	10 ⁻³	0.3
Breakdown voltage - 1mm substrate thickness - 0.63 mm substrate thickness - 0.25mm substrate thickness	KV/mm	15 20 28
Volume resistivity - 20 °C - 200 °C - 400 °C - 600 °C	Ohm x cm	10 ⁻¹³ 10 ⁻¹² 10 ⁻¹¹ 10 ⁻⁸