

Aluminum nitride(AIN)

High performance ceramic materials

Mechanical properties	Unit	Aluminum nitride
Density	g/cm ³	3.34
Vickers hardness	HV	1100
Bending strength	MPa	400
Compressive strength	MPa	2500
Toughness	MPa·m ^{1/2}	3.5
Elastic modulus	GPa	310
Poisson's ratio	—	0.22
Young's modulus	GPa	330

Thermal performance	Unit	Aluminum nitride
Thermal conductivity	W/ (m · K)	179.2
Maximum service temperature	°C (carrying idler)	1350
Specific heat	J/(kg · K)	720
Thermal Shock	°C(Put into water)	350
CTE(30°C~300°C, ppm/°C)	1 x 10 ⁻⁶ /°C	4.06
CTE(30°C~500°C, ppm/°C)	1 x 10 ⁻⁶ /°C	4.85

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Electrical characteristics	Unit	Aluminum nitride
Dielectric constant	1MHz	7.40
Dielectric loss	1MHz	1.6x10 ⁻⁴
Breakdown voltage	kV/mm	18
Dielectric strength	kV/mm	≥20
Volume resistivity @ 25 ° C	Ω · cm	2.1x10 ¹⁶

Note: This value is for reference only and may vary slightly depending on the batch conditions.

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