



Aluminium Nitride Substrate PCAN1000S

Aluminium nitride is an exceptional material, high performance technical ceramic with high power electrical resistance and thermal conductivity enabling enhanced performance over standard alumina.

With a coefficient of thermal expansion matched to silicon, gallium arsenide and other semiconductor materials, aluminium nitride allows the assembly of high-density componentry with maximum efficiency.

PCAN1000S 170 W/(m·K) is our standard high thermal conductivity substrate material but other high-performance grades are available.

Aluminium nitride is available from Precision Ceramics in a wide range of thicknesses and finishes to suit your application from standard as a fired material to diamond ground, lapped or polished finishes on one or both sides.

High power applications requiring thicker material can also be catered for with thicknesses up to 2.5mm and we can laser machine components to your specification over the full range of material thicknesses and finishes.

Aluminium Nitride has a proven track record with thick and thin film coatings, direct bond copper or tungsten.

Precision Ceramics offers a full range of services in aluminium nitride and can supply components from small batch prototypes to production quantities.

Product Data

		PCAN1000S
Colour		Light Grey
Density, g/cm ³		>3.30
Thermal Conductivity, W/m·K		170±10
Heat Capacity @ RT, J/g·K		0.736
Thermal Expansion Coefficient, $\times 10^{-6}/^{\circ}\text{C}$ 40°C - 400°C		4.5 +/- 1
Volume Resistivity, Ohm-cm		>10 ¹³
Dielectric Constant @ 1MHz		8.4
Surface Roughness, Ra, μm	As-fired Lapped	0.6 0.4
Elastic Modulus, Gpa		320
Hardness, GPa		11
Application		High thermal conductivity, chip carriers/substrates

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