

Data Sheet

AN 985 (Mac-AN985W)

Description

Aluminium nitride ceramic of **98.5% AlN** content.

Widely used in the electronics industry for substrates and heat sinks, where it offers significant advantages over metals, polymeric materials, and many ceramics.

Prime Features:

- Excellent thermal conductivity
- Low coefficient of thermal expansion
- Good electrical insulator
- Good dielectric properties
- Accepts bonding with copper foil for high current duties
- Impervious to plating chemicals
- Non-toxic

Specifications

- Quality Assurance to ISO 9002

Typical Applications:

- Heat sink modules for high powered laser diodes and similar components
- High power rectifiers
- Microwave substrates
- High power hybrids

Production Capabilities:

- Advanced powder forming, CNC grinding and laser machining
- Precision machining to close tolerances
- High strength bonding with copper foil by high temperature brazing in vacuum
- Prototype, batch and volume production

Physical Properties

Colour	Gray	
Bulk Density (fired)	3.3 Mg/m ³	0.12 lb/in ³
Grain Size	7µm	
Porosity (apparent)	0 (fully dense) % nominal	
Flexural Strength	285 MPa	41,000 lb/in ²
Young's Modulus (ASTM C623 Mod)	310 GPa	45 M.lb/in ²
Shear Modulus (ASTM C623 Mod)	132 GPa	19 M.lb/in ²
Poisson's ratio (ASTM C623 Mod)	0.21	
Thermal Conductivity	175 W/m.K	
Thermal Expansion Coefficient	3.6 @RT-400C, 10 ⁻⁶ /C	2.0 @750°F, 10 ⁻⁶ /°F
Dielectric Constant (ASTM D150 & D257 Mod), K ¹	8.8 @1kHz	
Volume Resistivity (ASTM D150 & D257 Mod)	> 10 ¹³ @RT ohm.cm	

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We design and manufacture products for demanding applications in a variety of markets using a comprehensive range of advanced ceramic, glass, precious metal, piezoelectric and dielectric materials. We utilise core competences of applications engineering and superior materials technology, together with state of the art fully integrated manufacturing processes to offer precision ceramic components, ceramic-to-metal assemblies and special coatings for use in a variety of applications.