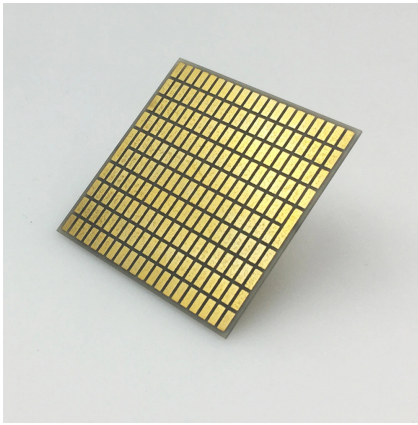




Gold-plated AlN DBC ceramic substrate with patterned pads

AlN DBC Substrates for Thermoelectric Modules

Product ID / SKU: FWM/CS-DBC-001

Material: Ceramic / Direct-Bonded Copper System

Product type: Ceramic Substrate

AlN DBC substrates for thermoelectric modules requiring thick copper, electrical insulation and efficient heat transfer.

95% AlN Substrate Properties

Property	95% AlN typical value	Condition / method
AlN content (%)	95	-
Density (g/cm ³)	≥3.3	-
Flexural strength (MPa)	≥400	-
Thermal conductivity (W/(m·K))	≥170	Room temperature
Relative permittivity	8-10	1 MHz; room temperature
Dielectric loss tangent	≤0.0003	1 MHz; room temperature
Dielectric strength (kV/mm)	17	-
Volume resistivity (Ω·cm)	≥10 ¹⁴	-

Typical Construction Parameters

Construction item	Typical configuration	Applicable condition
Ceramic base	Aluminum nitride (AlN)	Route dependent
Ceramic thickness	AlN: 0.25-1.50 mm	Matched ceramic / copper stack
Copper thickness	0.10-0.30 mm	Copper thickness and ceramic stack selected together
Line / space	Etched-pattern dependent	Copper thickness, etch profile and insulation clearance
Surface finish	Bare/protected Cu; selected Ni, Ni/Au or Ag	Assembly-process dependent
Bond / peel testing	Construction-specific test	Peel method, coupon geometry and acceptance criterion