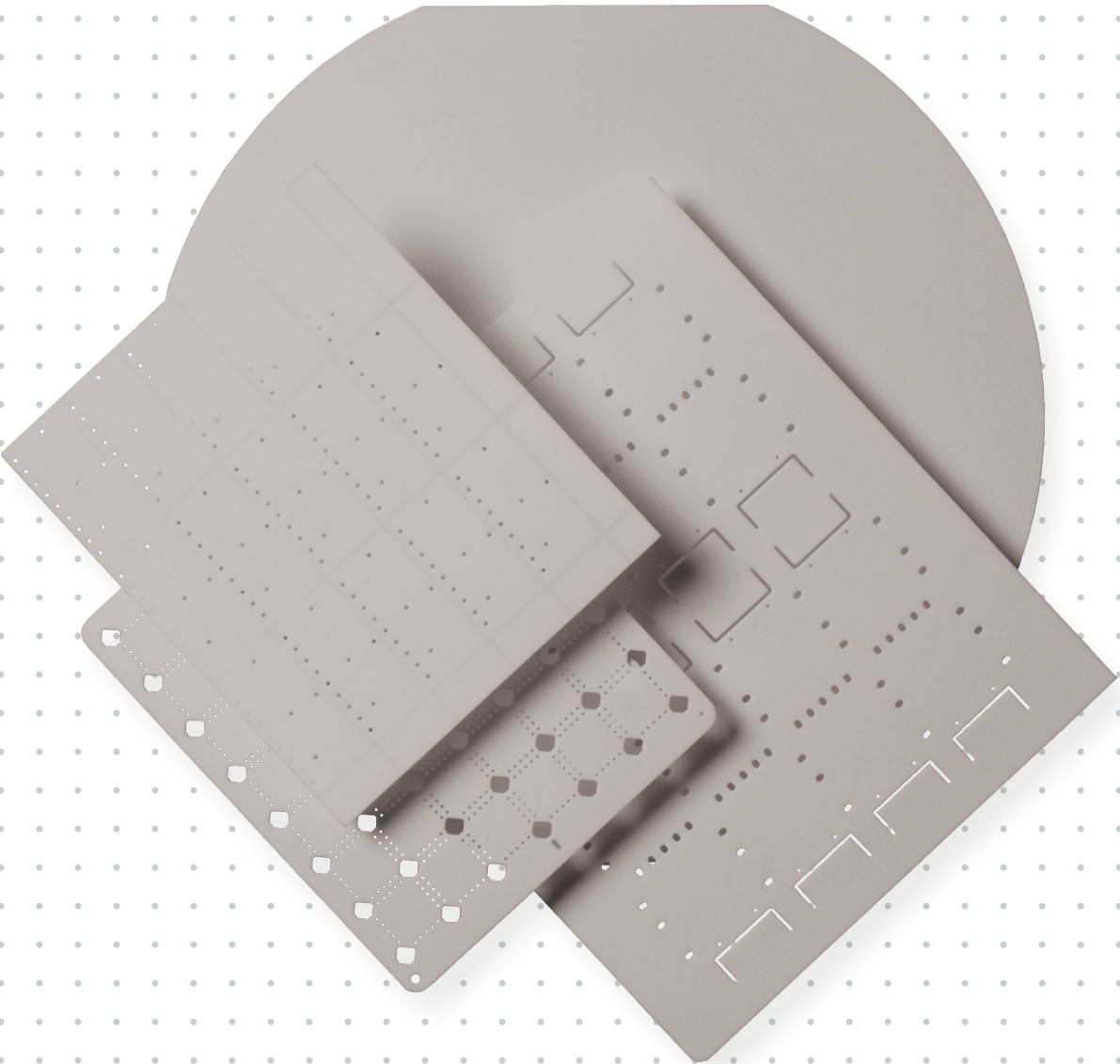




Aluminum Nitride Substrates

AIN-170



Aluminum Nitride High-Thermal-Conductivity Substrates for Superior Performance



MATERIAL PROPERTY	UNITS	TEST METHODS	ALN-170
Thermal Conductivity 25° C	W/(m K)	ASTM E1461	≥ 170
Nominal Density	g/cm ³	ASTM C373	3.31
Surface Finish	As-fired (Ra)	Profilometer	5.08 μm
	Lapped	Radius Stylus;	≤ 25 (≤ 0.6)
	Polished	2,540 μm	≤ 25 (≤ 0.6)
		Cutoff ANSI/ASME B46.1	≤ 2 (≤ 0.05)
Flexural Strength	MPa	ASTM-F394 (Bi-Axial Method)	> 350
CTE - 25° - 400° C	10 ⁻⁶ /°C	ASTM C372	4.4
Dielectric Strength (60 cycles AC avg. RMS), 0.635mm thick	Kv/mm (room temp)	ASTM-D149	≥ 15
Dielectric Constant (Relative Permittivity), 1 MHz	@ 25° C	ASTM D150	9
Dissipation Factor (Loss Tangent) 1MHz	@ 25° C	ASTM D150	0.002
Volume Resistivity, 25° C	ohm-cm	ASTM D257	> 10 ¹⁴

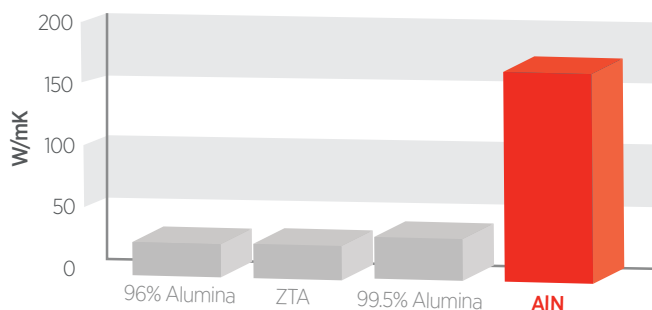
Aluminum Nitride Advantages

- High heat dissipation with thermal conductivity of 170 W/m K
- Non-toxic alternative to BeO
- Thermal expansion coefficient similar to Si, GaN, and GaAs semiconductors
- High dielectric strength

Setting the Standard – for Over Four Decades!

CoorsTek developed the standards for thick-film and thin-film substrates and continues to lead the market with innovative materials, manufacturing, and secondary processes. Customers rely on us for cost-effective solutions delivered on time.

THERMAL CONDUCTIVITY



In-House Advanced Machining Processes

CoorsTek provides all the advanced services you need to shorten lead times and improve component quality and performance including:

- Laser machining
- Lapping
- Polishing
- Laser etching



CoorsTek exclusive OpX manufacturing and quality system



Certified Environment-Safe Ceramics



Quick-Turn Prototyping and Manufacturing

The chart is intended to illustrate typical properties. Property values vary with method of manufacture, size, and shape of part. Data contained herein is not to be construed as absolute and does not constitute a representation or warranty for which CoorsTek assumes legal responsibility. CoorsTek Aluminum Nitride substrates meet the requirements of the European Union (EU) Directive on Restriction of Hazardous Substances (RoHS). The EU Directive on RoHS specifies that an electronic product or component may not contain a listed substance except as specifically provided in the directive. CoorsTek, and Amazing Solutions are registered trademarks of CoorsTek, Inc. OpX is a trademark of CoorsTek, Inc.



Americas

+1 303 271 7100 tel
+1 855 929 7100 toll free in USA
coorstek.com
info@coorstek.com

Europe

+49 160 530 3768
infoeurope@coorstek.com

Japan

+81 81 3 5437 8411
japaninfo@coorstek.com

China

+86 21 6232 1125
info_shanghai@coorstek.com

Korea

+82 31 613 2946
koreainfo@coorstek.com