



AlN Single Crystal Substrate

AlN Single Crystal Substrate has the advantages of a wide bandgap, high breakdown electric field, high thermal conductivity, high electron saturation rate, and high radiation resistance. Nextgen Advanced Materials supplies AlN Single Crystal Substrate with high-quality and competitive price. With our strong R&D and manufacturing capability, we can do customization.

Product Description

You can rest assured to buy customized Nextgen AlN Single Crystal Substrate from us. AlN single crystal substrate is a wide bandgap semiconductor material with exceptional characteristics.

The band gap is 6.2eV and has a direct band gap. It is an important blue and ultraviolet light-emitting material with high thermal conductivity, high melting point, high resistivity, strong breakdown field and low dielectric coefficient. It is an excellent electronic material for high temperature, high frequency and high-power devices.

In view of the excellent physical properties of the above-mentioned AlN materials, AlN crystals are ideal substrates for GaN, AlGaN and AlN epitaxial materials. Compared with sapphire or SiC substrates.



Specification

Item	TGS-AlN-025B
Size (mm)	25.4 ± 0.5
Thickness (μm)	400 ± 50
Crystal form	2H
Crystal direction	{0001} ± 0.5 °

Surface polishing	aluminum surface: chemical polishing
RMS (nm)	Roughness of aluminum surface: $\leq 0.5\text{nm}$
RMS (nm)	Nitrogen side (back): $\leq 1.2\mu\text{m}$
Shape	Circular shape with locating edge
Quality grade	P (production)
HRXRD FWHM @ (0002) (arcsec)	≤ 300
HRXRD FWHM @ (10-02) (arcsec)	≤ 200
absorption coefficient @265nm (cm ⁻¹)	≤ 70
Edge removal area (mm)	1
Scratch	free
Collapse edge	none
Usable area	$\geq 80\%$
Main positioning edge orientation	{10-10} $\pm 5.0^\circ$
Orientation of secondary positioning	surface to aluminum: surface: rotate $90^\circ \pm 5^\circ$ clockwise along the direction of main positioning edge
	Nitrogen side: rotate $90^\circ \pm 5^\circ$ anticlockwise along the direction of the main positioning edge
TTV (μm)	≤ 30
Warpage (μm)	≤ 30
BOW (μm)	≤ 30
Crack	The crack is located at the edge of the wafer and $< 1\text{mm}$
Hexagonal hole	size $< 300\mu\text{m}$, and number ≤ 2