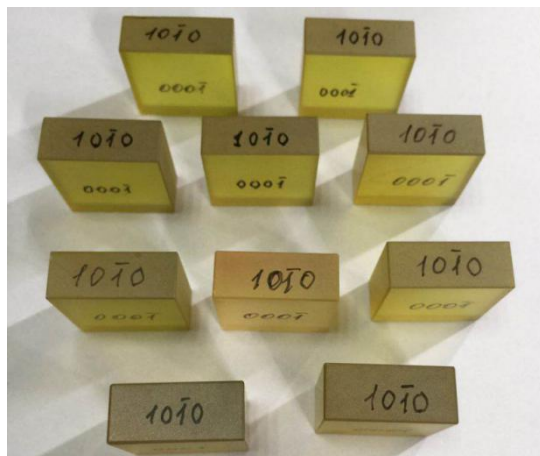


Zinc Oxide (ZnO)

Zinc oxide (ZnO) is a good substrate for GaN thin film. It has large exciton binding energy of 60 meV and a bandwidth of 3.73 eV at room temperature, making it a luminescent material for ultraviolet and visible light. Due to the transparency in the visible region, the large electromechanical coupling coefficient and the properties of adsorption and desorption of gas molecules on its surface, it is expected to be used in energy limiters with high peak energy, GaN substrates with large size and high quality, and wireless communications which beyond 5GHz in the future, high electric field equipment, high temperature and high energy electronic devices etc.



PARAMETERS

Crystal Structure	Hexagonal
Lattice Constant	a=3.252Å c=5.313 Å
Density	5.7 (g/cm ³)
Growth Method	Hydrothermal
Mhos Hardness	4 (mohs)
Melting Point	1975°C
Thermal Expansion	//a 6.5 x 10 ⁻⁶ /K //c 3.7 x 10 ⁻⁶ /K
Heat Capacity	0.125 cal /gm
Thermal-Electric Constant	1200 mv/K@ 300 °C
Thermal Conductivity	0.006 cal/cmK
Transmittance	0.4-0.6 um > 50% at 2mm
Orientation	<0001>、<11-20>、<10-10>±0.5°
Dimension	25×25×0.5mm、10×10×0.5mm、10×5×0.5mm、5×5×0.5mm According to customer needs, substrates with special orientation and size can be customized.
Surface Roughness	Ra<5Å (5×5μm) Atomic Particle Microscopy (AFM) test report can be provided.
Polishing	One side or two sides
Package	Class 100 clean bag, Class 1000 super clean room