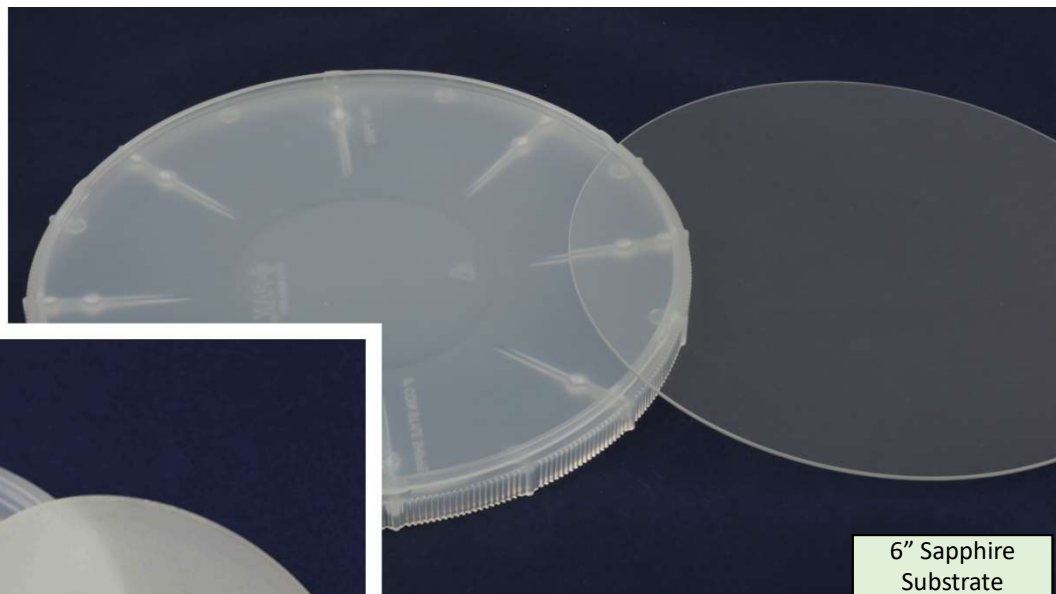
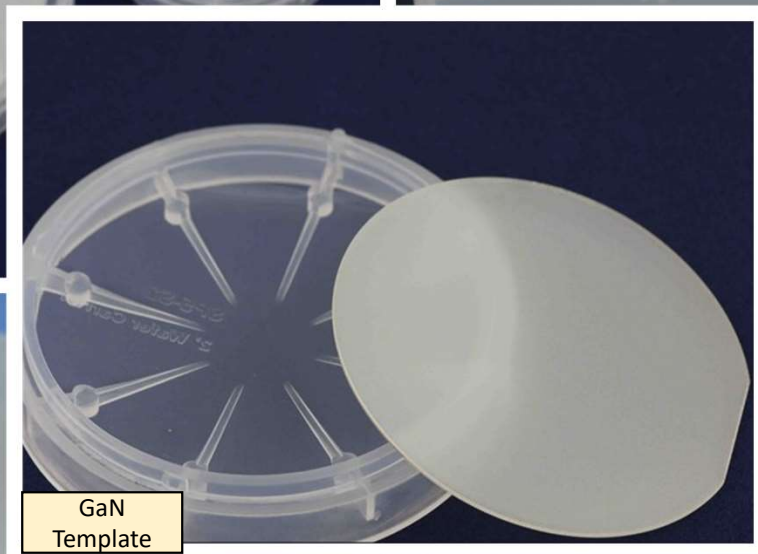


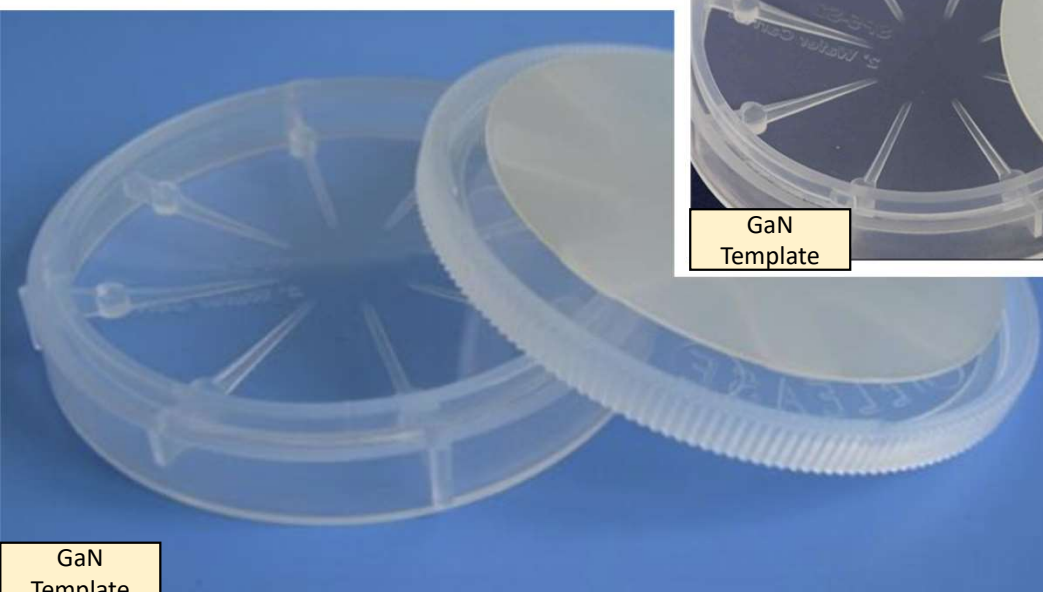
GaN
Substrate



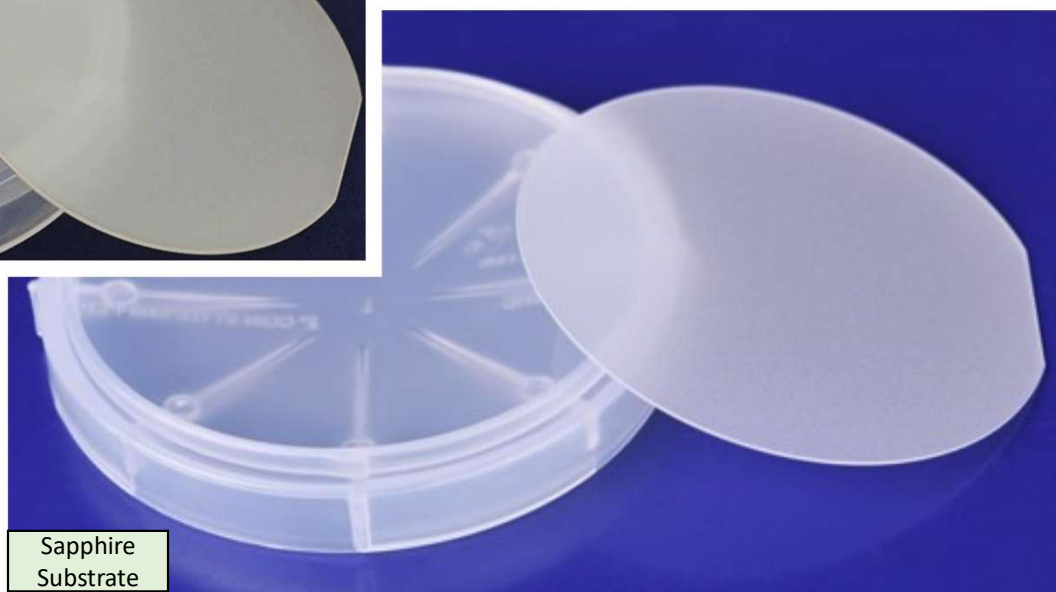
6" Sapphire
Substrate



GaN
Template



GaN
Template



Sapphire
Substrate

2inch Cplane Patterned Sapphire Substrate (PSS)



2inch Cplane Patterned Sapphire Substrate (PSS) 

Patterned Sapphire Substrates (PSS) is micro-patterned sapphire substrate used for GaN based light emitting diodes(LEDs). The PSS reduces the dislocation density in the GaN layer, enhances the light extraction efficiency and increase LEDs' brightness.

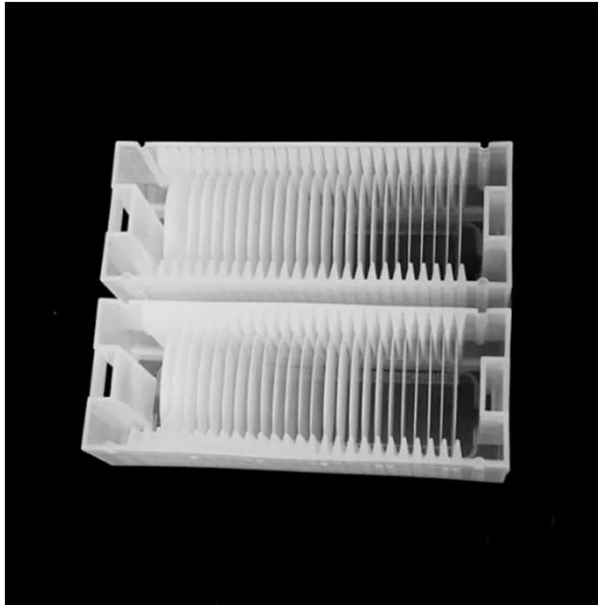
2inch Cplane Patterned Sapphire Substrate (PSS)

Detailed specification:

Crystal Material	99.996%,high purity, monocrystalline Al ₂ O ₃
Grade	Prime
Orientation	Cplane to Mplane
Diameter	2 inch
Patterned Spec	Diameter: $2.7 \pm 0.15 \mu\text{m}$; Spacing: $0.3 \pm 0.15 \mu\text{m}$; Depth: $1.75 \pm 0.15 \mu\text{m}$
Pattern type	3 μm pitch, Cone Type
Thickness	430 \pm 15 μm
Surface	SSP or DSP
TTV/BOW/WARP	$\leq 10 \mu\text{m}$
Package	Class 100 clean room cleaning, vacuum packaging; 25 pieces in one cassette packaging or individual packaging

Aplane, Mplane, Rplane Sapphire Substrate

- Aplane, Mplane, Rplane Sapphire Substrate
- The material is grown and orientated, and substrates are fabricated and polished to an extremely smooth damage free Epi-Ready surface on one or both sides of the wafer. A variety of wafer orientations (Cplane, Mplane, Aplane, Rplane) and sizes up to 8"(2inch to 8inch) diameter are available.



Crystal Materials	99.996%, High Purity, Monocrystalline Al_2O_3		
Diameter	50.8 mm \pm 0.1 mm		
Thickness	430 μm \pm 25 μm		
Orientation	A-plane (11-20) \pm 0.2°	M-Plane (1-100) \pm 0.2°	R-Plane (1-102) \pm 0.2°
Primary flat Orientation	C-plane (0001) \pm 0.2°	A-plane (11-20) \pm 0.2°	Cplane projection to R-plane CCW 45 \pm 1°
Primary flat length	16.0 mm \pm 1.0 mm		
Front Surface	Epi-polished, Ra < 0.3 nm (by AFM)		
Back Surface	Fine ground, Ra = 0.5 μm to 1.2 μm (SSP)		Epi-polished, Ra < 0.2 nm (by AFM) (DSP)
TTV	< 8 μm		
LTV	< 8 μm		
BOW	< 8 μm		
Cleaning/ packaging	Class 100 clean room cleaning no scratch,dig and crack and vacuum packaging derived nitrogen, 25 pieces in one cassette packaging		

Detailed specification:

Crystal Material	99.996% of Al ₂ O ₃ , High Purity, Monocrystalline, Al ₂ O ₃		
Crystal quality	Inclusions, block marks, twins, Color, micro-bubbles and dispersal centers are non-existent		
Diameter	2 inch	4 inch	6 inch
	50.8±0.1mm	100±0.2mm	150.0±0.2 mm
Thickness	430±25μm	650±20μm	1200±25μm
Orientation	C- plane (0001) to M-plane (1-100) 0.2°±0.1°		
Primary flat Orientation	A-plane (1 1-2 0) ± 0.2°		
Primary flat length	16.0±1.0mm	32.0±1.0 mm	50±1.0 mm
TTV	≤10μm	≤20μm	≤25μm
LTV	≤10μm	≤20μm	≤25μm
BOW	≤10μm	≤20μm	≤25μm
WARP	≤10μm	≤20μm	≤25μm
Front Surface	Epi-Polished (Ra< 0.2nm)		
Back Surface	Fine ground (Ra=0.5 to 1.2 μm), Epi-Polished (Ra< 0.2nm)		
Cleaning/packaging	Class 100 clean room cleaning, vacuum packaging derived nitrogen		
Note	Sapphire substrates of all kinds of specifications are available according to your specific requirement		

2inch To 8inch Sapphire Substrate

Sapphire Substrate is a kind of widely used single crystal substrate material. It is the first choice substrate in the current blue, violet, white light-emitting diode (LED) and blue laser (LD) industry (gallium nitride film needs to be epitaxial on the sapphire substrate first), and it is also an important superconducting film substrate.



2~12 Inch CZ Silicon Wafers



Silicon wafer is an important material for making integrated circuits. Various semiconductor devices can be made through photolithography and ion implantation of silicon wafers.

silicon wafers have been widely used in aerospace, industry, agriculture and national defense, and even sneaked into every family.



Product Description	
Products Specifications:	
Growth Method	CZ
Type(doping)	P-type (B doped) or N-type (P doped)
Orientation	(100) or (111)
Diameter	2inch~12inch
Thickness	200~1500 μm
Surface	5SP or 10SP
TTV&BOW	≤15 μm
Resistivity	0~300ohm.cm
Cleaning/ packaging	Vacuum packaging, 25 pieces in one cassette packaging
Stock situation	your required specification can be sent to us for checking