

GaN Free -Standing Wafer

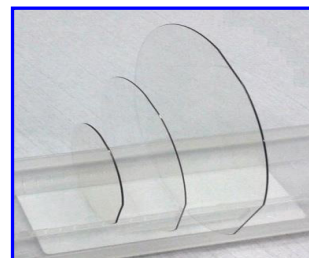


Specification				
Diameter	50.8~100			mm
Orientation	C-axis(0001) $\pm 0.5^\circ$			degree
Type / Dopant	N / Si	N / Undoped	SI / Fe	
Resistivity	< 0.05	< 0.5	> 10^6	$\Omega \cdot \text{cm}$
Dislocation Density	< 9×10^6	< 9×10^6	$(0.1 \sim 3) \times 10^6$	cm^{-2}
Thickness	400 ± 25			μm
TTV	$\Phi 50.8\text{mm}$: <15, $\Phi 100\text{mm}$: <30 or Customized			μm
Surface	CMP / Optical Polish			

GaN Templates Wafer

Specification				
Diameter	50.8~150			mm
Orientation	C-axis(0001) $\pm 0.5^\circ$			degree
Type	P / Mg	N / Si	N / Undoped	
Resistivity	~ 10	< 0.05	< 0.5	$\Omega \cdot \text{cm}$
Thickness	4.5 or Customized			μm
Dislocation Density	> 6×10^{16}	< 5×10^8		cm^{-2}

GaN Epitaxial Wafer



Specification					
Substrate	Silicon	HR Silicon	SiC	Sapphire	Unit
Diameter	50.8 ~ 200	150 ~ 200	50.8 ~ 100		mm
Epi-layer thickness	>3	~2	0.5~3		μm
Crystalline AlGaN/GaN HEMT	<800" (002) & <2000" (102)	<700" (002) & <1350" (102)	<250" (2μm GaN)	<400" (2um GaN)	
Composition AlGaN/GaN HEMT	$Al_xGa_{1-x}N$ ($0 < x < 0.5$)				
AlGaN Barrier thickness	2~50				nm
AlN spacer*	0.2-2				nm
Surface morphology (5x5μm ²)	RMS<0.5				nm
Bow	<50				μm
2DEG	>9 X10 ¹² (25nm Al _{0.25} GaN)		>8X10 ¹² (25nm Al _{0.25} GaN)		/cm ²
Electron mobility (cm ² /Vs)	>1500	>1800	>2000	>1500	cm ² /Vs
Sheet resistance	<400(25nm Al _{0.25} GaN)				Ω/□
Buffer resistivity	>10 ⁵				Ω.cm