

シリコンカーバイドウエハー (SiC Wafer)  
2 インチ N型 4H-SiC ウエハー



SUBSTRATE PROPERTY	Ultra Grade	Production Grade	Research Grade	Dummy Grade
Diameter	50.8 mm ± 0.38 mm			
Surface Orientation	on-axis: {0001} ± 0.2° ; off-axis: 4° toward <11-20> ± 0.5°			
Primary Flat Orientation	<11-20> ± 5.0°			
Secondary Flat Orientation	90.0° CW from Primary ± 5.0°, silicon face up			
Primary Flat Length	16.0 mm ± 1.65 mm			
Secondary Flat Length	8.0 mm ± 1.65 mm			
Wafer Edge	Chamfer			
Micropipe Density	≤1 micropipes/ cm <sup>2</sup>	≤5 micropipes/ cm <sup>2</sup>	≤10 micropipes/ cm <sup>2</sup>	≤50 micropipes/ cm <sup>2</sup>
Resistivity	0.015 Ω·cm ~ 0.030 Ω·cm			( area 75%) 0.015Ω·cm ~ 0.030 Ω·cm
Thickness	on-axis : 500.0 μm ± 25.0 μm off- axis : 350.0 μm ± 25.0 μm			on-axis : 500.0 μm ± 50.0 μm off- axis : 350.0 μm ± 50.0 μm
TTV	≤10 μm			≤15 μm
Bow ( absolute value)	≤10 μm			≤15 μm
Warp	≤35 μm			≤45μm
Surface Finish	Double Side Polish, Si Face CMP ( chemical polishing )			
Surface Roughness	CMP Si Face Ra≤0.5 nm			N/A
Cracks by high -intensity light	None permitted			
Edge chips/indents by diffuse lighting	None permitted	None permitted	Qty.2 < 1.0 mm width and depth	Qty.2 < 1.0 mm width and depth
Total usable area	≥90%	≥90%	≥80%	N/A

\*The other specifications can be customized according to customer 's requirements



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シリコンカーバイドウエハー (SiC Wafer)  
3 インチ N型 4H-SiC ウエハー



SUBSTRATE PROPERTY	Ultra Grade	Production Grade	Research Grade	Dummy Grade
Diameter	76.2 mm ± 0.38 mm			
Surface Orientation	on-axis: {0001} ± 0.2° ; off-axis: 4° toward <11-20> ± 0.5°			
Primary Flat Orientation	<11-20> ± 5.0°			
Secondary Flat Orientation	90.0° CW from Primary ± 5.0°, silicon face up			
Primary Flat Length	22.0 mm ± 2.0 mm			
Secondary Flat Length	11.0 mm ± 1.5mm			
Wafer Edge	Chamfer			
Micropipe Density	≤1 micropipes/ cm <sup>2</sup>	≤5 micropipes/ cm <sup>2</sup>	≤10 micropipes/ cm <sup>2</sup>	≤50 micropipes/ cm <sup>2</sup>
Resistivity	0.015 Ω-cm ~0.030 Ω-cm			( area 75%) 0.015Ω-cm ~0.030 Ω-cm
Thickness	on-axis : 500.0 μm ± 25.0 μm off- axis : 350.0 μm ± 25.0 μm			on-axis : 500.0 μm ± 50.0 μm off- axis : 350.0 μm ± 50.0 μm
TTV	≤10 μm			≤15 μm
Bow ( absolute value)	≤15 μm			≤25 μm
Warp	≤35 μm			≤45 μm
Surface Finish	Double Side Polish, Si Face CMP ( chemical polishing)			
Surface Roughness	CMP Si Face Ra≤0.5 nm			N/A
Cracks by high -intensity light	None permitted			
Edge chips/indents by diffuse lighting	None permitted	None permitted	Qty.2 <1.0 mm width and depth	Qty.2 <1.0 mm width and depth
Total usable area	>90%	>90%	>80%	N/A

\*The other specifications can be customized according to customer 's requirements



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シリコンカーバイドウエハー (SiC Wafer)  
4 インチ N型 4H-SiC ウエハー



SUBSTRATE PROPERTY	Ultra Grade	Production Grade	Research Grade	Dummy Grade
Diameter	100.0 mm + 0.0/-0.5 mm			
Surface Orientation	on-axis: {0001} ± 0.2° ; 4° off -axis: toward <11 -20> ± 0.5°			
Primary Flat Orientation	<11-20> ± 5.0°			
Secondary Flat Orientation	90.0° CW from Primary ± 5.0°, silicon face up			
Primary Flat Length	32.5 mm ± 2.0 mm			
Secondary Flat Length	18.0 mm ± 2.0 mm			
Wafer Edge	Chamfer			
Micropipe Density	≤1 micropipes/ cm <sup>2</sup>	≤5 micropipes/ cm <sup>2</sup>	≤10 micropipes/ cm <sup>2</sup>	≤50 micropipes/ cm <sup>2</sup>
Resistivity	0.015 Ω-cm ~ 0.030 Ω-cm			( area 75%) 0.015Ω-cm ~ 0.030 Ω-cm
Thickness	on-axis : 500.0 μm ± 25.0 μm off-axis : 350.0 μm ± 25.0 μm			on-axis : 500.0 μm ± 50.0 μm off-axis : 350.0 μm ± 50.0 μm
TTV	≤ 10 μm			≤ 15 μm
Bow ( absolute value)	≤ 25 μm			≤ 30 μm
Warp	≤ 45 μm			≤ 60 μm
Surface Finish	Double Side Polish, Si Face CMP ( chemical polishing )			
Surface Roughness	CMP Si Face Ra≤0.5 nm			N/A
Cracks by high -intensity light	None permitted			
Edge chips/indents by diffuse lighting	None permitted	None permitted	Qty.2 < 1.0 mm width and depth	Qty.2 < 1.0 mm width and depth
Total usable area	≥90%	≥90%	≥80%	N/A

\*The other specifications can be customized according to customer 's requirements



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