



JING CHENG MATERIAL CO., LTD.

6 inch Diameter 4H N-type Silicon Carbide Substrate Specification

Items	Prime Grade	Dummy Grade	Mechanical grade
Poly type	4H	4H	4H
Diameter	150 mm $\pm$ 0.25 mm	150 mm $\pm$ 0.25 mm	150 mm $\pm$ 0.5 mm
Surface Orientation Off-axis	4.0° toward <11-20> $\pm$ 0.5°	4.0° toward <11-20> $\pm$ 0.5°	4.0° toward <11-20> $\pm$ 0.5°
Primary Flat Orientation	<1-100> $\pm$ 5.0°	<1-100> $\pm$ 5.0°	<1-100> $\pm$ 5.0°
Primary Flat Length	47.5 mm $\pm$ 2.0 mm	47.5 mm $\pm$ 2.0 mm	47.5 mm $\pm$ 2.0 mm
TTV	$\leq$ 10 μ m	$\leq$ 15 μ m	$\leq$ 15 μ m
LTV (10*10mm,Max)	$\leq$ 5 μ m	$\leq$ 5 μ m	N/A
BOW (absolute value)	$\leq$ 30 μ m	$\leq$ 35 μ m	$\leq$ 45 μ m
WARP	$\leq$ 40 μ m	$\leq$ 40 μ m	$\leq$ 65 μ m
TED	3000 ea/cm ²	N/A	N/A
BPD	1500 ea/cm ²	N/A	N/A
TSD	400 ea/cm ²	N/A	N/A
Wafer Edge	Chamfer	Chamfer	Chamfer
Micropipe Density	$\leq$ 1 micropipes/cm ²	$\leq$ 10 micropipes/cm ²	N/A
Polytype areas by high-intensity light	None permitted	$\leq$ 10% area	N/A
Resistivity	0.015 $\Omega \cdot$ cm $\sim$ 0.025 $\Omega \cdot$ cm	0.015 $\Omega \cdot$ cm $\sim$ 0.028 $\Omega \cdot$ cm	$\leq$ 0.040 $\Omega \cdot$ cm
Thickness	350 μ m $\pm$ 25.0 μ m	350 μ m $\pm$ 25.0 μ m	350 μ m $\pm$ 25.0 μ m
Surface finish	Double Side Polish	Double Side Polish	Double Side Polish
Surface Roughness	CMP Si Face Ra $\leq$ 0.5 nm	CMP Si Face Ra $\leq$ 0.5 nm	N/A
Scratch (by CS8520)	Total length $\leq$ 75 mm	Total length $\leq$ 150 mm	N/A
Cracks by high-intensity light	None Permitted	None Permitted	None Permitted
Edge Chip /indents by diffuse lighting	None permitted	Qty2 < 1.0mm width and depth	N/A
Edge Exclusion	3mm	3mm	3mm