

# N-Type 4H-SiC 4 inch Wafer



Property	Production Grade+	Production Grade	Research Grade	Dummy Grade
Diameter	100.0 mm + 0.0/-0.5mm			
Surface Orientation	4.0° toward $\langle 11\bar{2}0 \rangle \pm 0.5^\circ$			
Primary Flat Orientation	$\{10\bar{1}0\} \pm 5.0^\circ$			
Secondary Flat Orientation	90.0° CW from orientation flat $\pm 5^\circ$ , silicon face up			
Primary Flat Length	32.5 mm $\pm$ 2.0 mm			
Secondary Flat Length	18.0 mm $\pm$ 2.0 mm			
Micropipe Densities	$\leq 1$ cm <sup>-2</sup>	$\leq 5$ cm <sup>-2</sup>	$\leq 10$ cm <sup>-2</sup>	$\leq 50$ cm <sup>-2</sup>
Resistivity	0.015-0.028 $\Omega \cdot \text{cm}$			$\leq 0.03 \Omega \cdot \text{cm}$
Thickness	350.0 $\mu\text{m} \pm 25.0 \mu\text{m}$			
TTV	$\leq 10 \mu\text{m}$			$\leq 15 \mu\text{m}$
Bow	$\leq 25 \mu\text{m}$			$\leq 30 \mu\text{m}$
Warp	$\leq 45 \mu\text{m}$			
Surface Roughness	CMP Si Face Ra < 0.3 nm (10 $\mu\text{m} \times 10 \mu\text{m}$ )			CMP Si Face Ra < 0.5 nm (10 $\mu\text{m} \times 10 \mu\text{m}$ )
Edge Chips/Indents by Diffuse Lighting	None permitted		Qty.2 < 1.0mm width & depth	