

6 inch Diameter N-type 4H SiC Substrate Specifications

Property	Unit	P	R	D
Diameter	mm	150±0.2		150±0.5
Thickness	μm	350±25		350±30
Surface Orientation		4.0° toward<11'20>±0.5°		4.0° toward<11'20>±1°
Resistivity	Ω·cm	0.015~0.025		0.010~0.030
Primary Flat Orientation		{10 $\bar{1}0$ }±1.0°		{10 $\bar{1}0$ }±5.0°
Primary Flat Length	mm	47.5±1.5		47.5±2.0
Secondary Flat Length		None		
LTV-Max	μm	≤3		≤5
TTV	μm	≤8		≤15
BOW	μm	0±15		0±30
Warp	μm	≤25		≤45
TED	cm ⁻²	< 6000		< 10000
BPD	cm ⁻²	< 1000	< 1500	< 3000
TSD	cm ⁻²	< 500		
BSF/SF	%area	< 1%	< 5%	N/A
Metal Contamination	atoms/cm ²	<1E12		N/A
Back Scratch by high intensity light		None		N/A
Surface Roughness	nm	C-face: polish Ra<3.0 Si-face: CMP Ra<0.2		C-face: polish Ra<5.0 Si-face: CMP Ra<0.3
Foreign Polytypes*		None	None,edge exclusion 3mm	None,edge exclusion 5mm
Polycrystal*		None	None,edge exclusion 3mm	None,edge exclusion 5mm
Hex Plates by High Intensity Light*		None	None,edge exclusion 3mm	None,edge exclusion 5mm
Micropipe Density	cm ⁻²	≤0.5	≤1	≤50
Pinholes	number	None	1 allowed	N/A
FWHM(0004)	arcsec	Maximum≤ 80	Maximum≤ 100	N/A
Cracks*	number	None	None,edge exclusion 3mm	None,edge exclusion 5mm
Edge Chips	number	None	2 allowed, <1.0mm width & depth	
Visible Scratch#	mm	None		

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Microcosmic Scratch#	mm	Total length≤100	Total length≤100 Total length≤250	Total length≤250
Surface Contamination				
*Defects limits apply to entire wafer surface except for the edge exclusion area. #The defects should be checked on Si face only. Product with other specifications can be customized.				