

8英寸导电型碳化硅衬底规格

200mm N-Type SiC Substrate Specification

参数Parameter	单位Unit	具体规格Specification Value				备注Remark
等级Grade		Production Grade for MOS	Production Grade for SBD	Research Grade	Dummy Grade	
直径 Diameter	mm	200±0.2		200±0.5		
厚度 Thickness	μm	350±25\500±25		350±40\500±40		
晶型 Polytype		4H-SiC				
表面取向 Surface Orientation		4.0° toward<11 $\bar{2}0$ >±0.5°			N/A	
掺杂 Dopant		Nitrogen				
电阻率 Resistivity	Ω·cm	0.017~0.028	0.015~0.028	0.01~0.030	N/A	
Notch 取向 Primary Flat rientation		<1 $\bar{1}00$ >±1.0°		<1 $\bar{1}00$ >±5.0°	N/A	
Notch	mm	1-1.5mm		0.5-2.0mm		
次定位边长度 Secondary Flat Length		None				
局部厚度偏差 LTV-Max	μm	≤2	≤3	≤4	≤5	10mm*10mm
总厚度偏差 TTV	μm	≤5	≤8	≤10	≤10	
弯曲度 BOW	μm	0±15	0±15	0±20	0±30	
翘曲度 Warp	μm	≤25	≤30	≤35	≤60	
微管密度 Micropipe Density	cm ⁻²	≤0.2	≤0.5	≤1	≤5	
刃位错 TED	cm ⁻²	<2000	<6000	<8000	<10000	KOH etching
基面位错 BPD	cm ⁻²	<600	<1000	<2000	<3000	KOH etching
螺位错 TSD	cm ⁻²	<200	<500	<1000	<3000	KOH etching
层错 BSF/SF	% area	<1%		<5%	N/A	2m*2m grid

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等级Grade		Production Grade for MOS1	Production Grade for SBD	Research Grade	Dummy Grade	
表面金属污染 Metal Contamination	atoms/cm ²	<1E11		<1E12		K/Ca/Ti/V/Cr/Mn/Fe/Ni/Cu/Zn/Al/Na/Hg
背面划痕 Back Scratch by high intensity light		None		N/A		By high-intensity Light unaided eye
表面粗糙度 Surface Roughness	nm	C-face:mirror polished,Ra<3.0				AFM@5μm*5μm
		Si-face: CMP,Ra<0.2				
多型 Foreign Polytypes*		None		Only allowed within 3mm edge exclusion area	Only allowed within 5mm edge exclusion area	
多晶 Polycrystal*		None		Only allowed within 3mm edge exclusion area	Only allowed within 5mm edge exclusion area	
空洞 Hex Plates by High Intensity Light*		None		Only allowed within 3mm edge exclusion area	Only allowed within 5mm edge exclusion area	By high-intensity light unaided eye
针孔 Pinholes	number	None		1 allowed	N/A	
裂纹 Cracks*	number	None		Only allowed within 3mm edge exclusion area	Only allowed within 3mm edge exclusion area	
崩边 EdgeChips	number	None		2 allowed,<1.0mm width & depth		
Si 面划痕 Scratch on Si face	mm	Cumulative scratch length <50	Cumulative scratch length <100	Cumulative scratch length <150	Cumulative scratch length <250	CS8520 or SiCA88
沾污 Stain (both faces)		None				

*Defects limits apply to entire wafer surface including the edge exclusion area.
Product with other specifications can be customized.