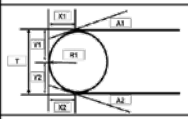
6inch N-Type SiC Substrate

Parameter	Unit	Specification Value				Remark
Grade		Production Grade for MOS	Production Grade for SBD	Research Grade	Dummy Grade	
Diameter	mm	150.0 ±0.25				
Thickness	μm	350 ± 25				
Dopant		Nitrogen				
Surface Orientation		4 °toward<11-20>± 0.25°			4 °toward<11-20>± 0.5°	
Primary Flat Orientation		<11-20>±1.0°			<11-20>±5.0°	
Primary Flat Length	mm	47.5±1.5				
Edge profile		 Angle A1/A2(°): 25±5 Length X1/X2(μm): 180±60				
Micropipe Density	cm²	≤ 0.1	≤ 0.2	≤ 1	≤ 5	
EPD	cm²	≤4800	≤6700	≤10000	NA	
BPD	cm²	≤800	≤1500	≤3000	NA	
TED	cm²	≤4000	≤5000	≤7000	NA	
TSD	cm²	≤50	≤200	≤1000	NA	
Bar stacking faults（2mm×2mm）		≤0.2%	≤0.5%	≤1%	NA	
Resistivity (ave)	Ω·cm	0.015-0.025			0.014-0.028	
TTV	μm	≤ 5	≤ 5	≤ 5	≤ 10	
Bow（absolute value）	μm	≤ 15	≤ 20	≤ 35	≤ 45	
Warp	μm	≤ 25	≤ 30	≤ 40	≤ 60	
LTV（max, 10mm×10mm）	μm	≤ 2	≤ 2	≤ 3	NA	
Surface Finish		Double side polish, Si epi-face CMP, C face optical polish				
Surface Metal Contamination	cm²	≤ 5E+10 atoms/cm²				<5E+10 atoms/cm² individually for Na, Mg, Al, K, Ca, Ti, Cr, Mn, Fe, Co, Ni, Cu,
Surface Roughness	nm	CMP Si Face Ra≤ 0.15 nm and C Face Ra≤ 0.2 nm			CMP Si Face Ra≤ 0.15 nm and C Face Ra≤ 5 nm	
Edge Chips（No EE）		None permitted				
Laser marking		As per SEMI Standard				
Polytype Area by polarized light		None permitted			Cumulative area < 10%	
Carbon Inclusion	%	≤ 0.1	≤ 0.2	≤0.5	NA	
Cracks by high-intensity light		None permitted			NA	
Scratches by high-intensity light		None permitted			NA	
Area Contamination by high-intensity light		None permitted			NA	
Packaging		Multi-wafer cassette or Single Wafer Container Inner packing: vacuum, outer packing: no damage, no air leakage				

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