

Product Specs - 150mm 6inch 4H-type SiC Wafer 1.7kV

1. Wafer Specifications

No.	Characterization	Unit	Specification
1. Substrate Property			
1.1	*Poly-type	-	4H
1.2	*Substrate Dopant	-	Nitrogen
1.3	Substrate Resistivity	Ohm cm	0.015 ~ 0.025
1.4	*Surface	-	(0001) Silicon Face
1.5	Off-Orientation Toward <11-20>	°	4 ± 0.5
1.6	Diameter	mm	150 ± 0.2
1.7	Substrate Thickness	μm	350 ± 15
1.8	Primary Flat Orientation	°	<11-20> ± 0.5
1.9	*Primary Flat Length	mm	47.5 ± 1.5
1.10	Substrate Micropipe Density	cm ⁻²	≤ 0.2
2. Epitaxial Layer Properties			
2.1	Epi-Layer Thickness	All Measured Points Tolerance	μm 15 ± 8%
		Uniformity (σ/mean)	% ≤ 4
2.2	Epi-Layer Doping Concentration	*Dopant	- Nitrogen
		All Measured Points Tolerance	cm ⁻³ (5E15~ 5E16) ± 12%
		Uniformity (σ/mean)	% ≤ 5
2.3	Defects	Useable Area (2×2 mm ² Die, Killer Defects)	% ≥ 95
		Killer Defects include Micropipe, Downfall, Triangle, Comet, Carrot and Largepits	ea/cm ² ≤ 0.5
		Basal Plane Dislocation (BPD)	cm ⁻² ≤ 0.3
		Stacking Fault (SF)	cm ⁻² ≤ 1.0
		Scratch	- Total Cumulative Length ≤ 50 mm
		*Edge Chip or Crack	- none
2.4	Flatness	TTV	μm ≤ 10.0
		LTV-MAX	μm ≤ 3.0
		Bow	μm ± 25.0
		Warp	μm ≤ 30.0
2.5	Surface	Roughness (Ra, 10×10 μm ²)	nm < 0.3
2.6	*Metals Contamination	Na, Al, K, Ca, Ti, Cr, Mn, Fe, Co, Ni, Cu, Zn, Au, Ag, V, Hg, W	atoms/cm ² ≤ 5E10

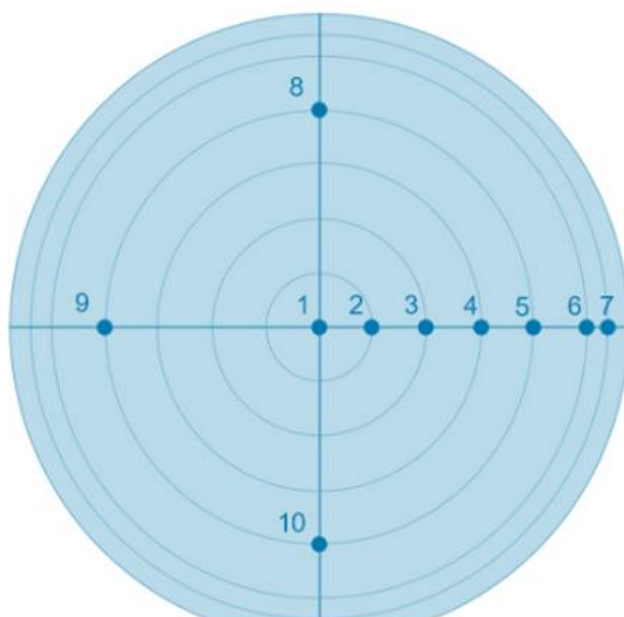
REMARKS:

- Defect scan is conducted with 3 mm edge exclusion.
- A typical buffer is grown with an average thickness of 1 μm and an average doping concentration of 1E18 cm⁻³. If required, the buffer structure can be customized.
- The shelf life of packaged product is one year, and the shelf life of unpacking product is three months (Class 100 room storage).

Product Specs - 150mm 6inch 4H-type SiC Wafer 1.7kV

2. Test Pattern

The MCV doping and FTIR thickness tests are conducted as the pattern of 10 points with 5 mm edge exclusion, as shown in Figure 1. The pitch of concentric circles is 13 mm, except for the edge circle.



10-point Test Pattern EE=5 mm		
Site#	X(mm)	Y(mm)
1	0	0
2	12.975	0
3	25.95	0
4	38.925	0
5	51.9	0
6	64.875	0
7	69.975	0
8	0	51.9
9	-51.9	0
10	0	-51.9

Alternative specifications upon request!