

4" SiC Epitaxial Specification

Item		Specification	Measurement Technique
1	Substrate		
1.1	Poly-type	4H	--
1.2	Diameter	4" (100mm)	--
1.3	Off Orientation	4deg off	--
1.4	Dopant	N-type	--
2	N2-doped 4H-SiC, Thickness: 5um, Doping Level: 1x10¹⁶	Edge Exclusion: 3mm	
2.1	Thickness Uniformity	$\sigma/\text{mean} \leq 5\%$	FTIR (21 points)
2.2	Doping Uniformity	$\sigma/\text{mean} \leq 10\%$	CV (21 points)
3	Wafer-to-Wafer Variation (Minimum Load of 5 Wafers)	Edge Exclusion: 3mm	
3.1	Mean Thickness of All Wafers	$\sigma/\text{mean} \leq 5\%$	FTIR, from each wafer average
3.2	Mean Doping of All Wafers	$\sigma/\text{mean} \leq 10\%$	CV, from each wafer average
4	Run-to-Run Variation (3 Continuous Runs)	Edge Exclusion: 3mm	
4.1	Mean Thickness of All Wafers	$\sigma/\text{mean} \leq 5\%$	FTIR, 3 continuous runs
4.2	Mean Doping of All Wafers	$\sigma/\text{mean} \leq 10\%$	CV, 3 continuous runs
5	Epi Defects		
5.1	Total Killer Defects	$< 2.0/\text{cm}^2$	Candela CS920
5.2	Total Scratch Length	$(0.3\mu\text{m}) < 50\text{mm}$	Candela CS920
6	Surface Roughness	$R_a \leq 0.3\text{nm}$	AFM, 5um x 5um (3 points) [NOTE-1]

[NOTE-1] AFM: monitor