

6" SiC Epitaxial Capability

Item		Capability	Measurement Technique
1	Substrate		
1.1	Poly-type	4H	--
1.2	Diameter	6" (150mm)	--
1.3	Off Orientation	4deg off	--
1.4	Dopant	N-type	--
2	N2-doped 4H-SiC, Thickness: 5~30um, Doping Level: $1 \times 10^{15} \sim 3 \times 10^{16}$	Edge Exclusion: 5mm	
2.1	Thickness Uniformity	$\sigma/\text{mean} \leq 2\%$	FTIR (9 points)
2.2	Doping Uniformity	$\sigma/\text{mean} \leq 5\%$	CV (9 points)
3	Run-to-Run Variation (3 Continuous Runs)	Edge Exclusion: 5mm	
3.1	Mean Thickness of All Wafers	$\sigma/\text{mean} \leq 1\%$	FTIR, 3 continuous runs
3.2	Mean Doping of All Wafers	$\sigma/\text{mean} \leq 1.5\%$	CV, 3 continuous runs
4	Epi Defects		
4.1	Usable area(3*3 mm ²)	$\geq 98\%$	Lasertec SICA88
4.2	SSF	< 40ea	Lasertec SICA88
4.2	BPD	< 20ea	Lasertec SICA88
5	Surface Roughness	$R_a \leq 0.2\text{nm}$	AFM, 50um x 50um (3 points) [monitor]
6	Bow/Warp	$\pm 10\text{um}/<30\text{um}$	ADE9500