SiC Epi Wafer Spec

No.	Properties	Spec 1 (1200V MOSFET)	Remarks	Spec 2 (650V MOSFET)	Remarks
1	Diameter	150mm±0.25mm		150mm±0.25mm	
2	Thickness	350um±25um		350um±25um	
3	Primary Flat length	47.5mm±1.5mm		47.5mm±1.5mm	
4	Surface orientation	4 degree towards <11-20>±0.5°		4 degree towards <11-20>±0.5°	
5	Orthogonal orientation	±5 degree		±5 degree	
6	Surface finish	Si CMP epi ready, C face optical polish		Si CMP epi ready, C face optical polish	
7	Resistivity	0.015-0.028 Ohm·cm		0.015-0.028 Ohm·cm	
8	Micropipe density	⩽1/cm2		⩽1/cm2	
9	Buffer	0.5um±20%; n 1E18/cm3±20%	Default setting	0.5um±20%; n 1E18/cm3±20%	Default setting
10	Epi 1: Target epi thickness	10um ±6%	Max. deviation of thickness=6% (10pts radial test pattern EE=5mm)	5um ±10%	Max. deviation of thickness=10% (10pts radial test pattern EE=5mm)
11	Epi 1: n-doping level	1E16/cm3 ±12%	Max. deviation of doping conc.=12% (10pts radial test pattern EE=5mm)	1E16/cm3 ±12%	Max. deviation of doping conc.=12% (10pts radial test pattern EE=5mm)
12	Usable area(5mmx5mm EE=3mm) Surface defects including carrots, comets, downfall, triangles & Micropipes.	⩾80%		⩾80%	
13	Surface roughness	⩽1nm		⩽1nm	
14	Post epi warp	⩽40um		⩽40um	
15	Post epi Bow	±25um		±25um	
16	Post TTV	⩽12um		⩽12um	
17	Post LTV max	⩽5um		⩽5um	
18	Edge chips	none>0.5mm for depth & width		none>0.5mm for depth & width	
19	Scratches cumulative lengths	⩽150mm		⩽150mm	
20	Metals contaminations (Al, Ca, Co, Cr, Cu, Fe, Hg, K, Ni, Mn, Na, Ti)	⩽1E11 atoms/cm2mm		⩽1E11 atoms/cm2mm	