LARGAN | TAC
大立光電集團 台灣應用晶體股份有限公司

TAC 6” SiC 4H N-Type Epi Specification

	650 V	1200 V
I. Substrate Specifications		
Doping	n-type Nitrogen	n-type Nitrogen
Resistivity	0.015-0.025 ohm · cm	0.015-0.025 ohm · cm
Diameter	150.0±0.2 mm	150.0±0.2 mm
Surface Orientation	4˚toward<11-20> ± 0.2˚	4˚toward<11-20> ± 0.2˚
Primary Flat Orientation	<11-20> ± 5 ˚	<11-20> ± 5 ˚
Secondary Flat Orientation	None	None
Primary Flat Length	47.5 ± 1.5 mm	47.5 ± 1.5 mm
Secondary Flat Length	None	None
Surface Finish	Double Side Polish, Si Face CMP	Double Side Polish, Si Face CMP
Thickness	350 um ± 25 um	350 um ± 25 um
II. Buffer Layer Specification		
Doping	n-type Nitrogen	n-type Nitrogen
Thickness	0.5 ~ 1 um	0.5 ~ 1 um
Doping concentration	$1x10^{18}cm^3$	$1x10^{18}cm^3$
III. Epitaxy Layer Specifiction		
Doping	n-type Nitrogen	n-type Nitrogen
Thickness	5 ± 10% um	11 ± 10% um
Thickness uniformity	≤ 8%	≤ 8%
Doping concentration	$1x10^{16}$ ± 15% cm^3	$7x10^{15}$ ± 15% cm^3
Doping uniformity	6% σ /mean	6% σ /mean
Total usable area	≥95% (2mmx2mm)	≥95% (2mmx2mm)
Killer defect density	1 cm^2	1 cm^2
Post-epi Bow	≤30 um	≤30 um
Post-epi Warp	≤45 um	≤45 um
Post-epi TTV	≤7 um	≤7 um
Post-epi LTV	≤ 3 (10mmx10mm) um	≤ 3 (10mmx10mm) um
Surface Roughness	Si-face Ra≤0.5 nm	Si-face Ra≤0.5 nm
Metal Impurities	$1x10^{11}$ atoms/ cm^2	$1x10^{11}$ atoms/ cm^2
Scratch	Cumulative length ≤75 mm	Cumulative length ≤75 mm

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LARGAN | TAC
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TAC 6” SiC 4H N-Type Epi Specification

	1700 V	
I. Substrate Specifications		
Doping	n-type Nitrogen	
Resistivity	0.015-0.025 ohm · cm	
Diameter	150.0±0.2 mm	
Surface Orientation	4°toward<11-20> ± 0.2°	
Primary Flat Orientation	<11-20> ± 5 °	
Secondary Flat Orientation	None	
Primary Flat Length	47.5 ± 1.5 mm	
Secondary Flat Length	None	
Surface Finish	Double Side Polish, Si Face CMP	
Thickness	350 um ± 25 um	
II. Buffer Layer Specification		
Doping	n-type Nitrogen	
Thickness	0.5 ~ 1 um	
Doping concentration	1x10^{18}cm^{3}	
III. Epitaxy Layer Specifiction		
Doping	n-type Nitrogen	
Thickness	15 ± 10% um	
Thickness uniformity	≤ 8%	
Doping concentration	5x10^{15} ± 15% cm^{3}	
Doping uniformity	6% σ /mean	
Total usable area	≥94% (2mmx2mm)	
Killer defect density	1 cm^{2}	
Post-epi Bow	≤30 um	
Post-epi Warp	≤45 um	
Post-epi TTV	≤7 um	
Post-epi LTV	≤ 3 (10mmx10mm) um	
Surface Roughness	Si-face Ra≤0.5 nm	
Metal Impurities	1x10^{11} atoms/ cm^{2}	
Scratch	Cumulative length ≤75 mm