FLYSOLAR

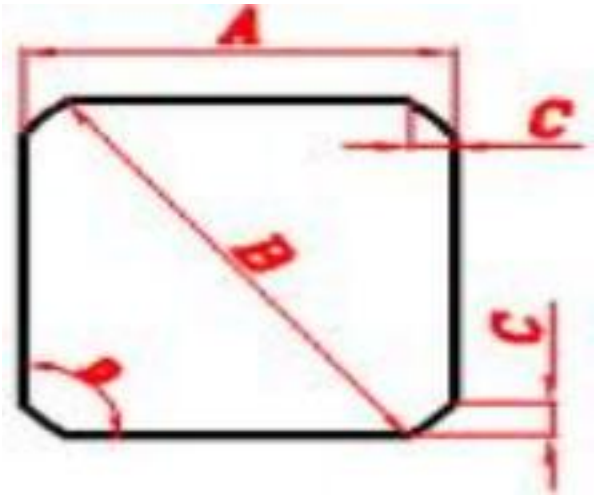
苏州斐尔西科技有限公司

Suzhou Fly Solar Technology Co.,Ltd

单晶（金刚线）硅片产品规格

Datasheet for mono wafers

产品外观 Product appearance



技术数据和设计 Technical Data

硅片尺寸 Wafer Dimention	156.75*156.75mm	158.75*158.75mm	166*166mm	182*182mm	210*210mm	
厚度 Thickness	(150/160/170/175/180) +20/-10μm	(150/160/**165**/170/175/180)+20/-10μm	(150/160/**165**/170/175/180) +20/- 10μm	(150/160/**165**/170/175/180) +20/- 10μm	(150/160/**165**/170/175/180) +20/-10μm	ASTM F533
TTV	≤27 μm	≤27 μm	≤27 μm	≤27 μm	≤30 μm	ASTM F533,F657
线痕 Line mark	≤ 13 μm	≤ 13μm	≤ 13μm	≤ 15μm	≤15μm	光学或粗糙度测试仪 CCD/SJ-201(301)
翘曲度 Warpage	≤ 40μm	≤ 40μm	≤ 40μm	≤ 40μm	≤ 40μm	ASTM F657

边宽 Width		156.75 ±0.25mm	158.75 ±0.25mm	166 ±0.25mm	182 ±0.25mm	210 ±0.25mm	游标卡尺或光学 Vernier Caliper/CCD
直角度 Right(Rectangular) Angle		90° ±0.2°	90° ±0.2°	90° ±0.2°	90° ±0.2°	90° ±0.2°	光学 CCD
倒角尺寸 Chamfer Size	弦长 Chord length	12.03±0.7mm	1.51±0.7mm	12.09±0.7	10.62±0.7mm	1.99±0.7mm	
	直角边 Square Edge	8.5±0.5mm	1.07±0.5mm	8.55mm±0.5mm	7.51±0.5mm	1.41±0.35mm	
	对角线 Diagonal	210±0.25mm	223mm±0.25mm	223mm±0.25mm	247±0.25mm	295±0.25mm	
隐裂 crack		无 Not allowed	无 Not allowed	无 Not allowed	无 Not allowed	无 Not allowed	NVCD (IR)
崩边 Edge Chip		崩边深度≤0.3 mm，长度≤0.5 mm；最多 **1 个/片**，不允许有“V”形缺口 Depth ≤ 0.3 mm ,Length ≤ 0.5 mm,Max **1 pieces/wafer**; V-shape crack unacceptable			崩边深度≤0.3 mm，长度≤0.5 mm；最多 2 个/片，不允许有“V”形缺口 Depth ≤ 0.3 mm ,Length ≤ 0.5 mm,Max 2 pieces/wafer; V-shape crack unacceptable		目视或光学 Visual/CCD
表面质量 Surface quality		表面无污点、无水渍、无缺口、无孔洞 No surface stains, water marks, breakage or hole allowed					目视或光学 Visual/CCD

材料特性 Material properties

生长方式 Crystal Growth Method	CZ	-
导电型号/掺杂剂 ConductivityType/ Dopant	P/Gallium	ASTM F42
氧含量 Oxygen Concentration	≤8.0×10^{17} atoms/cm³	ASTM F1188

碳含量 Carbon Concentration	≤5.0×10^{16} atoms/cm^3	ASTM F1391
晶向 Crystal orientation	<100>±3°	ASTM F26- 1987
位错密度 Dislocation Density	≤ 500/cm^2	ASTM F47-88

电学特性 Electrical properties

电阻率 Resistivity	[0.4~1.1]	hennecke system RESISTIVITY TESTER	可根据客户要求管控
少子寿命 Brick Lifetime	LT ≥50ps(BCT-400)	Sinton BCT-400	

尺寸名称及规格 Size and data

对角线(见图 B) Diagonal(Fig.B)	210±0.25mm	223±0.25mm	223±0.25mm	247±0.25mm	295±0.25mm
边长(见图 A) Width (Fig.A)	156.75±0.25mm	158.75±0.25mm	166 ±0.25mm	182 ±0.25mm	210 ±0.25mm
直角边(见图 C) Chamfer Cathetus (Fig.C)	8.5±0.5mm	1.07±0.5mm	8.55mm±0.5mm	7.51±0.5mm	1.41±0.35mm
垂直度(见图 D) Right Angle(Fig.D)	90°±0.2°	90°±0.2°	90°±0.2°	90°±0.2°	90°±0.2°