

P型G12R单晶硅片产品规格书

P-Type Monocrystalline Wafer Specification



项目 (Property)	标准 (Specification)	检测方法 (Inspection Method)
材料特性		
Material Properties		
生长方式	直拉法	
Growth Method	CZ	
掺杂剂	镓	硅材料测试仪 (Silicon material tester (ASTM F43))
Dopant	Gallium	
表面晶像	< 100 > ±3°	X射线衍射仪 (X-ray Diffraction Method (ASTM F26-1987))
Surface Orientation		
位错密度	≤500pcs/cm²	择优化学腐蚀法 (Preferential Etch Techniques (ASTM F47-88))
Etch pit Density/ Dislocation Density		
切割方式	电镀金刚线切割	
Cutting Method	DW	
电学特性		
Electrical Properties		
电阻率	0.40~1.10 Ω · cm	硅材料测试仪 SSRPT (Silicon material tester (ASTM F43))
Resistivity		
少子寿命	≥70 μs	微波光电导衰减法 BCT-400 Semilab μ-PCD (ASTM F28-90)
Minority Carrier Lifetime		
间隙氧含量	≤7.5×10 ¹⁷ atoms/cm ³ (Top)	傅里叶变换红外光谱仪 (FTIR(ASTM F121-83))
Oxygen Concentration [Oi]		
替位碳含量	≤5.0×10 ¹⁶ atoms/cm ³ (Bottom)	傅里叶变换红外光谱仪 (FTIR(ASTM F121-83))
Carbon Concentration [Cs]		
几何尺寸		
Geometry		
直线段的垂直度	90° ±0.15°	硅片自动检测设备 (Wafer Inspection System)
Angle Between Adjacent Sides		
厚度	120~150 μm 硅片平均厚度 (Average Thickness): +20 μm/ - 10 μm	硅片自动检测设备 (Wafer Inspection System)
Thickness		
总厚度变化	≤30 μm	硅片自动检测设备 (Wafer Inspection System)
TTV (Total Thickness Variation)		
表面质量		
Appearance		
隐裂/裂痕	无	硅片自动检测设备 (Wafer Inspection System)
Micro Cracks		
缺口	不可有	硅片自动检测设备 (Wafer Inspection System)
Chip	Not Allowed	
穿孔	不可有	硅片自动检测设备 (Wafer Inspection System)
Holes	Not Allowed	
线痕	≤10 μm	硅片自动检测设备 (Wafer Inspection System)
Saw Marks		
翘曲度	≤50 μm	硅片自动检测设备 (Wafer Inspection System)
Warp		
黑芯/黑角	无	硅片自动检测设备 (Wafer Inspection System)
硅片尺寸示意图		边距 (Wafer Side Length) A: 182.2±0.15mm. 边距 (Wafer Side Length) D: 210±0.15mm 对角线 (Wafer Side Length) B: 272±0.25mm 弧长投影 (Arc Length Projection) C: 6.16±0.7mm
Wafer Size Pattern		