



Langasite

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Single Crystal Menu

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Langasite Wafers and Boules (La₃Ga₅SiO₁₄)

- Attractive piezo-electric coupling
- Excellent temperature stability
- Prototype material available

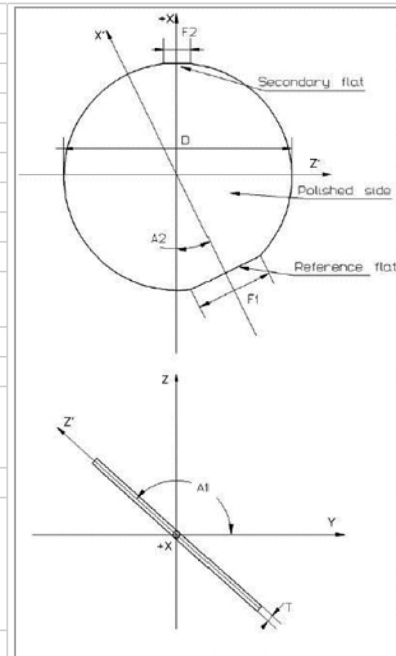
Langasite wafers are substrates fabricated from single crystal langasite suitable for use in surface acoustic wave applications. Such wafers are most commonly specified as 3" diameter with a reference flat. Wafer orientation is customer specified based on desired component performance characteristics. A high quality, low damage surface is prepared on one major (propagating) surface by polishing. The back side is usually lapped to a rougher finish to attenuate unwanted vibration modes.



Langasite Wafer Specifications

LGS 140-25-100/500

Langasite Wafer, YXIs /0/140/25		Tolerance
Cut, A1	138.5°	± 0.1°
Cut, A2	26.7°	± 0.1°
Diameter D mm	100mm	±0.25mm
Thickness T.mm	0.50mm	±0.03mm
Reference Flat F1,mm	32.0mm	±2.50mm
Secondary Flat F2, mm	11.0mm	±2.00mm
Surface		
Front Surface Finish	Polished Ra < 0.7 nm	
Back Surface Finish	Lapped, 0.4 μm < Ra < 0.6 μm	
Flatness	< 10 μm	
Front Surface Defects		
Scratches, cracks, contamination, others (dimples, pits, orange peel)	No such defects by visual inspection	
Chips		
Edge chips Surface	Radial depth < 0.5mm: Peripheral chord length < 1.0mm No chips by visual inspection	
Bevel	Rounded Edge	



Langasite Wafer, YXIs /0/140/25		Tolerance
Cut, A1	140°	± 0.1°
Cut, A2	25°	± 0.1°
Diameter D mm	76mm	±0.25mm
Thickness T.mm	0.50mm	±0.03mm
Reference Flat F1,mm	22.0mm	±2.50mm
Secondary Flat F2, mm	11.0mm	±2.00mm
Surface		
Front Surface Finish	Polished Ra < 0.7 nm	
Back Surface Finish	Lapped, 0.4 μm < Ra < 0.6 μm	
Flatness	< 10 μm	
Front Surface Defects		
Scratches, cracks, contamination, others (dimples, pits, orange peel)	No such defects by visual inspection	
Chips		
Edge chips Surface	Radial depth < 0.5mm: Peripheral chord length < 1.0mm No chips by visual inspection	
Bevel	Rounded Edge	

LGS 138.5-26.7-76/500

Langasite Wafer, YXIs /0/138.5/26.7		Tolerance
Cut, A1	138.5°	± 0.1°
Cut, A2	26.7°	± 0.1°
Diameter D mm	100mm	±0.25mm
Thickness T.mm	0.50mm	±0.03mm
Reference Flat F1,mm	22.0mm	±2.50mm
Secondary Flat F2, mm	11.0mm	±2.00mm
Surface		
Front Surface Finish	Polished Ra < 0.7 nm	
Back Surface Finish	Lapped, 0.4 μm < Ra < 0.6 μm	
Flatness	< 10 μm	
Front Surface Defects		
Scratches, cracks, contamination, others (dimples, pits, orange peel)	No such defects by visual inspection	
Chips		
Edge chips Surface	Radial depth < 0.5mm: Peripheral chord length < 1.0mm No chips by visual inspection	
Bevel	Rounded Edge	

Langasite Wafer, YXIs /0/138.5/26.7		Tolerance
Cut, A1	138.5°	± 0.1°
Cut, A2	26.7°	± 0.1°
Diameter D mm	76mm	±0.25mm
Thickness T.mm	0.50mm	±0.03mm
Reference Flat F1, mm	32.0mm	±2.50mm
Secondary Flat F2, mm	11.0mm	±2.00mm
Surface		
Front Surface Finish	Polished Ra < 0.7 nm	
Back Surface Finish	Lapped, 0.4 μm < Ra < 0.6 μm	
Flatness	< 10 μm	
Front Surface Defects		
Scratches, cracks, contamination, others (dimples, pits, orange peel)	No such defects by visual inspection	
Chips		
Edge chips Surface	Radial depth < 0.5mm: Peripheral chord length < 1.0mm No chips by visual inspection	
Bevel	Rounded Edge	

