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## Langasite Wafers and Boules (La<sub>3</sub>Ga<sub>5</sub>SiO<sub>14</sub>)

- 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.

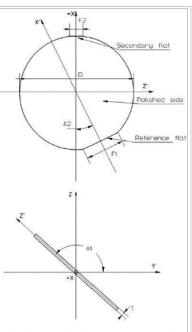
### **Langasite Wafer Specifications**

#### LGS 140-25-100/500

Langasite Wafer, YXIs /0	/140/25	Tolerance	+XI	
Cut, A1	138.5°	± 0.1°	^\ +11	
Cut, A2	26.7°	± 0.1°	Seco	ondary fl
Diameter D mm	100mm	±0.25mm		
Thickness T.mm	0.50mm	±0.03mm		LI.
Reference Flat F1,mm	32.0mm	±2.50mm		Z.
Secondary Flat F2, mm	11.0mm	±2.00mm	\ -	Polished
Surfa	ce		A2 \	
Front Surface Finish	Polished	Ra < 0.7 nm		Reference
Back Surface Finish	11 /	.4 pm < Ra < 6μm	FI	
Flatness	< '	10µm	1	
Front Surface Defects			z i	
Scratches, cracks, contamination, others (dimples, pits. orange peel)		defects by nspection	Z	
Chips			Al	
Edge chips Surface	Peripheral < 1 No chip	oth < 0.5mm: chord length .0mm s by visual pection		<b>Y</b>
Bevel	Round	ded Edge		

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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
Surfac	е	
Front Surface Finish	Polished I	Ra < 0.7 nm
Back Surface Finish		4 pm < Ra < 6µm
Flatness	< 1	Ι0μm
Front Surface	Defects	
Scratches, cracks, contamination, others (dimples, pits. orange peel)		defects by nspection
Chips		
Edge chips Surface	Peripheral < 1 No chips	oth < 0.5mm: chord length .0mm s by visual ection
Bevel	Round	ed Edge



# LGS 138.5-26.7-76/500

Langasite Wafer, YXIs /0/13	8.5/26.7 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 pm < Ra < 0.6 μm		
Flatness	< 10µm		
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	Round	led Edge	

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Langasite Wafer, YXIs /0/138	8.5/26.7	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 pm < Ra < 0.6μm	
Flatness	< 10µm	
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	Round	led Edge

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