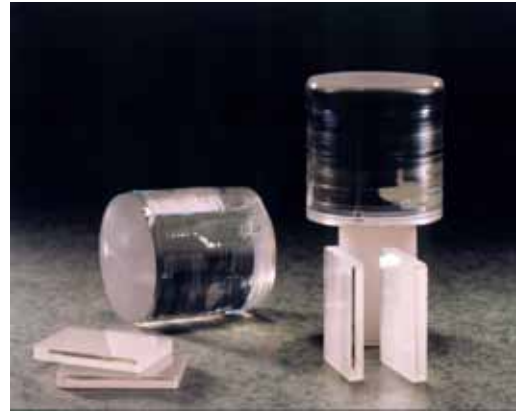


Lithium Tantalum(LiTaO₃)

Description

Lithium tantalate(LiTaO₃) has good piezoelectric, ferroelectric and acoustooptic effect, and is widely used in optic communication, laser and optical electronics fields as the ideal material of SAW device.



Specification A

Crystal class	Trigonal
Point group	3m
Space group	R3C
Lattine parameter (nm)	a=0.5154 c=1.3781
Melting point(°C)	1650
Density (g/cm3)	7.46
Curie temp.(°C)	605+1
Hardness (Mohs)	5.5
Dielectric constant	ϵ_{11}/ϵ_0 51.7 ϵ_{33}/ϵ_0 44.5
Piezoelctric strain constant ($\times 10^{-11}c/n$)	d ₂₂ 2.4 d ₃₃ 0.8
Elastic stiffness constant($\times 10^{11}c/n$)	C ₁₁ E 2.33 C ₃₃ E 2.77
Thermal capacity(J/k.mol)	100

Specification B

Parameter	Wafer				Rectangular slice	
Typical dimension	φ40.0	φ50.8	φ76.2	φ100	45×2	20×2
Typical length	≤150	≤100	≤80	≤50	100	120
Typical orientation	X, Z, 360 Y, 420 Y, 1280 Y, 410 Y				Z	
Typical thickness	0.2 ~ 1.0					
Ref. Flat orientation	X, 112.2 O Y					
Ref. Flat width	16+2	18+2	22+2	32+2		
Front side polishing	0.016 ~ 0.001					
Back side lapping	0.3 ~ 10					
Flatness	≤10		≤10 ≤15			
Bow	≤20	≤40	≤50			