Lithium tantalate LT：

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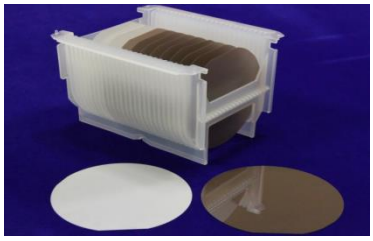

Lithium tantalate LiTaO3 crystal is an important multifunctional crystal material. The crystal has excellent piezoelectric, ferroelectric, acousto-optic and electro-optic effects , so it has become a basic material in the fields of surface acoustic wave SAW devices, optical communications, lasers and optoelectronics. Functional Materials. Polished LT wafers are widely used in the manufacture of electronic communication devices such as resonators, filters, transducers, etc., especially for the manufacture of high-frequency surface acoustic wave devices due to their good electromechanical coupling, temperature coefficient and other comprehensive properties, and are used in Mobile phones, walkie-talkies, satellite communications, aerospace and many other high-end communication fields.

main feature:

Curie temperature point 603±2℃; electromechanical coupling coefficient R15≥0.3 ; stable chemical and physical properties

typical application:

Surface acoustic wave filter, resonator Q switch, optical modulator, acousto-optic switch, laser frequency doubling, optical parametric oscillator, optical memory, high temperature and high frequency ultrasonic detector, infrared detector, optical pickup device, etc.

Material properties:

Crystal structure	Trigonal system
Lattice constant	a=5.154Å,c=13.783Å
density	7.45 g/ cm^3
melting point	1650℃
Curie temperature	603±2℃
Moh's hardness	5.5~6.0
Dielectric constant	es11/eo:39~43, es33/eo:42~43; et11/eo:51~54, et33/eo:43~46
Resistivity	1015wm
Thermal expansion coefficient	a1=a2=1.61×10^{-6} /℃, a3=4.1×10^{-6} /℃
Refractive index	n0=2.176, ne=2.180 @ 633mn
Electro-optic coefficient	R33=30.4
Pyroelectric coefficient	2.3×10^{-7} C/cm^2 /K
Through range	400nm-5000nm

Product parameters:

size	3", 4", 6" Ingots and Wafers (SAW/Optical)
doping	undoped or doped
Crystal rod length	≥50mm
Wafer Thickness	0.25, 0.35, 0.50(mm)
Tangential	Y42°/Y36°/X/Y/Z can be customized according to customer needs

surface treatment	Polished on one side, Polished on both sides
TTV	＜5μm
Warpage	≤40μm
Oriented Edge Width	32.0±2.0mm can be customized
polished surface	Roughness Ra≤1nm
Chamfer	0.1mm@45° or round edge