

Lithium Tantalate (LiTaO₃)

Surface Acoustic Wave (SAW) Devices
 Bulk Acoustic Wave (BAW) Devices
 Leay Surface Acoustic Wave Devices
 Piezoelectric Transducers (PET)
 Piezoelectric sensors (PES)

Crystal Properties	Crystal Class	Trigonal
	Point Group	3m
	Space Group	R3c
	Lattice Parameter	a 0.5154, c 1.3781 nm
	Melting Point	1650 °C
	Density	7.46 g/cm ³
	Curie Temp	~607 °C
	Hardness	5.50 Mohs
	Dielectric Constant	$\epsilon_{11}^S/\epsilon_0$ 51.7, $\epsilon_{33}^T/\epsilon_0$ 44.5
	Elastic Stiffness Coefficient	C_{11}^E 2.33, C_{33}^E 2.77 x 10 ¹¹ N/m ²
Piezoelectric Strain Constant	d_{22} 2.4, d_{33} 0.8 x 10 ⁻¹¹ C/N	

Typical SAW Properties		V _s (m/s)	K _s ² (%)	TCV (10 ⁻⁶ /°C)	TCD (10 ⁻⁶ /°C)
	X-112°Y	3295	0.75	-16.5	22.3
	Y-Z	3230	0.66		35

Specifications	Boules	Typical Diameter	∅ 40 ± 2 / ∅ 50 ± 2 / ∅ 76.2 ± 2 mm
		Typical Length	≤100 / ≤80 / ≤80 mm
		Typical Orientation	36° Y, X, Z
	Wafers	Typical Diameter	∅ 42.0 ± 0.5 / ∅ 50 ± 0.5 / ∅ 76.2 ± 0.5 mm
		Typical Thickness	0.2 ~ 0.5 mm
		Typical Orientation	36° Y, X, Z
		Ref. Flat Orientation	X
		Ref. Flat Width	22 ± 2 mm
		Front Side Polish	0.25 ~ 0.016 µm
		Back Side Lapping	7 ~ 15
		Flatness	≤15 µm
	Bow	≤15, ≤20, ≤25 µm	
	Slices (Rect.)	Typical Size	≤100x45x1.5 mm
Typical Orientation		36° Y, X, Z	

