

Lithium Tetraborate ($\text{Li}_2\text{B}_4\text{O}_7$)

Surface Acoustic Wave (SAW) Devices
 Bulk Acoustic Wave (BAW) Devices
 Leaky Surface Acoustic Wave Devices
 Piezoelectric Transducers
 Piezoelectric sensors

Crystal Properties	Crystal Class	Tetragonal
	Point Group	4mm
	Space Group	$I4_1cd$
	Lattice Parameter	a 0.9479, a 1.0280 nm
	Melting Point	917 °C
	Density	2.45 g/cm ³
	Hardness	6.00 Mohs
	Dielectric Constant	$\epsilon_{11}^S/\epsilon_0$ 9.32, $\epsilon_{33}^T/\epsilon_0$ 9.93
	Elastic Stiffness Coefficient	C_{11}^E 13.28, C_{44}^E 5.46 x 10 ¹¹ N/m ²
	Piezoelectric Strain Constant	d_{15} 8.19, d_{31} -2.56, d_{33} 19.22 x 10 ⁻¹¹ C/N

Typical SAW Properties		V_s (m/s)	K_s^2 (%)	TCV (10 ⁻⁶ / °C)	TCD (10 ⁻⁶ / °C)
	45° X-Z	3380	1.0		0
	X-Y	3542	1.0		0

Specifications	Boules	Typical Diameter	∅ 50 ± 2.0 mm
		Typical Length	60 mm
		Typical Orientation	[001] [110]
	Wafers	Typical Diameter	∅ 50 ± 0.5 mm
		Typical Thickness	0.2 ~ 0.5 mm
		Typical Orientation	[001] [110]
		Front Side Polish	0.25 ~ 0.016 μm
		Back Side Lapping	10 ~ 15 μm
		Flatness	≤ 20 μm
		Bow	≤ 20 μm

