

Lithium Niobate Crystal (LiNbO₃)

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 0.5148, c 1.3863 nm
	Melting Point	1250 °C
	Density	4.64 g/cm ³
	Curie Temp	1160 °C
	Hardness	5.00 Mohs
	Dielectric Constant	$\epsilon_{11}^S/\epsilon_0$ 85, $\epsilon_{33}^T/\epsilon_0$ 29.5
	Elastic Stiffness Coefficient	C_{11}^E 2.04, C_{44}^E 2.46 x 10 ¹¹ N/m ²
Piezoelectric Strain Constant	d_{22} 2.04, 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)
	127.86° Y-X	3970	5.5	-60	78
	Y-X	3485	4.3	-85	95

Specifications	Boules	Typical Diameter	∅ 40 ± 2 / ∅ 50 ± 2 / ∅ 76 ± 2 mm
		Typical Length	≤300 / ≤150 / ≤100 mm
		Typical Orientation	127.86° Y, 64° Y, Y, Z
		Ref. Flat Orientation	X or Y
	Wafers	Typical Diameter	∅ 40.0 / ∅ 50.8 / ∅ 76.2 / ∅ 101.6 mm
		Typical Thickness	0.2 ~ 1.0 mm
		Typical Orientation	X, Y, Z, 127.86° Y, 64° Y, 135° Y
		Ref. Flat Orientation	X or Y
		Ref. Flat Width	16 ± 2, 18 ± 2, 22 ± 2, 32 ± 2 mm
		Front Polish	0.016 ~ 0.001 µm
		Back Lapping	0.3 ~ 10
		Flatness	≤10, ≤10, ≤15, ≤15 µm
	Bow	≤20, ≤20, ≤40, ≤50 µm	
	Slices (Rect.)	Typical Size	300x35x2 / 150x45x2 mm
Typical Orientation		Z / X, Y, Z, 127.86° Y, 64° Y, 135° Y	

