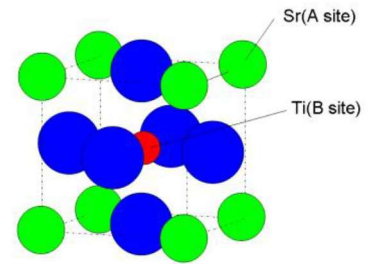


SrTiO₃(Strontium Titanate) Substrate

We produce optimal SrTiO₃ substrates for epitaxial thin-film growth to make the fruits of your work excellent.

【Features】

- High quality and high purity single crystal
- Optimal substrates for epitaxial thin-film growth
- High quality surface without affected layer
- Available in a variety of Nb doping concentrations
- Integrated production : From the crystal to the substrate

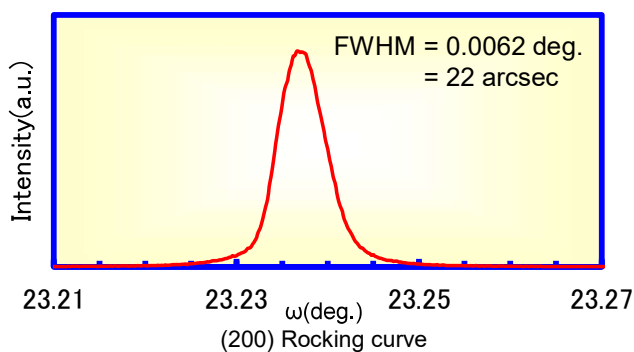


SrTiO₃ Structure



【Characteristics】

Crystal system	Cubic
Crystal structure	Perovskite
Space group	Pm3m
Lattice constant	a = 0.3905 nm
Melting point	2080 °C
Density	5.122 g/cm ³ (20°C)
Dielectric constant	310 (27 °C, 1MHz)
Thermal expansion	11.1 × 10 ⁻⁶ /°C (r.t. ~ 1000°C)
Phase transition	110K (tetragonal ↔ cubic)
Refractive index	2.407 (at 589 nm)



【Standard Specs】

	STO	Nb:STO	
Purity	≥ 99.98%		
Nb concentration	0	0.05wt% (0.1at%)	0.5wt% (1.0at%)
Resistivity	> 10 ⁷ Ω·cm	7~10 × 10 ⁻² Ω·cm	3~7 × 10 ⁻³ Ω·cm
Career density	—	1~2 × 10 ¹⁹ cm ⁻³	1~2 × 10 ²⁰ cm ⁻³
Split Angle	≤ 0.1°		
Orientation	(100), (110), (111) Tolerance ± 0.5°		
Size	10 × 10 × 0.5 mm, 15 × 15 × 0.5 mm Outer size tolerance: ± 0.1 mm Thickness tolerance: ± 0.05 mm		
Polishing	One-side / Both-side		
STEP	Available for (100)		—
Surface roughness	Ra ≤ 1.0 nm, Rmax ≤ 5.0 nm		
Flatness	10 × 10 × 0.5 mm : ≤ λ, 15 × 15 × 0.5 mm : ≤ 1.5λ (λ = 632.8 nm)		

If you are looking for other specs, please contact us.

All figures in graph and table are typical data (not guaranteed).

SrTiO₃ Model list

Doping	Size (mm)	Polishing	Surface treatment	Orientation		
				(100)	(110)	(111)
None	10x10x0.5	One-side	Normal	○	○	○
	"	Both-side	"	○	△	△
	"	One-side	STEP	○	—	—
	"	Both-side	"	○	—	—
	15x15x0.5	One-side	Normal	○	△	△
	"	Both-side	"	△	△	△
	"	One-side	STEP	○	—	—
Nb:0.05wt%	10x10x0.5	One-side	Normal	○	△	△
	"	Both-side	"	△	△	△
	"	One-side	STEP	○	—	—
	15x15x0.5	One-side	Normal	○	△	△
	"	Both-side	"	△	△	△
	"	One-side	STEP	○	—	—
Nb:0.5wt%	10x10x0.5	One-side	Normal	○	△	△
	"	Both-side	"	△	△	△
	15x15x0.5	One-side	"	○	△	△
	"	Both-side	"	△	△	△

If you are looking for different sizes, offset angle type and others, please contact us.

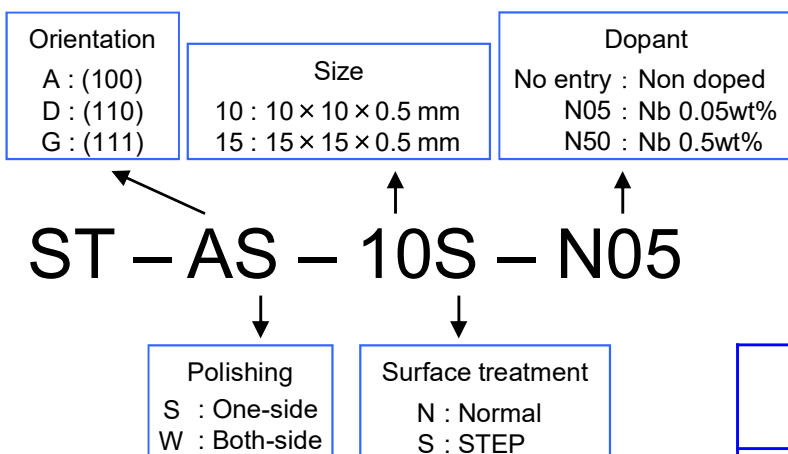
*Minimum order for STEP model, made-to-order model and special model : 5pcs

○ : Standard

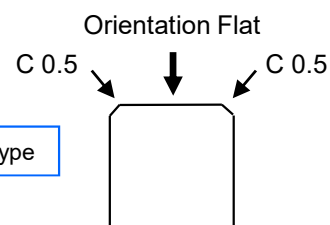
△ : Made-to-order

Model Number

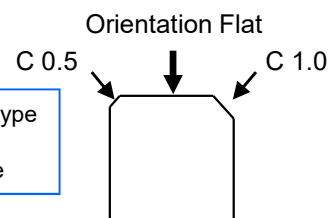
Orientation Flat



One-side polished type



Both-side polished type & Offset angle type



Substrate Orientation	Orientation Flat
(100)	(010)
(110)	(100)
(110)	(110)

<Visual check note>

We pass over the following:

(a) Chips within 0.2mm from the circumference of substrates

(b) Chips on the edge strip under 1/2 size of substrate thickness

(c) Scratches and blemish on the back side of single-side polished substrates