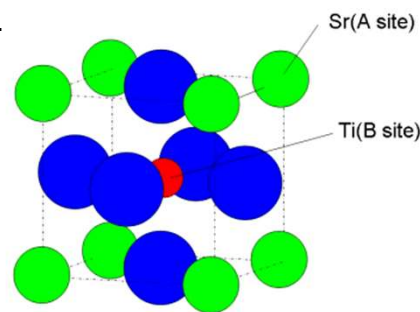


SrTiO₃(Strontium Titanate) Substrate

SrTiO₃ substrates composed of cubic crystals with a perovskite structure offer stable crystallinity and surface quality. Electrical conductivity can also be introduced through doping, making them suitable for applications such as electrical measurements.

【Features】

- High-quality, high-purity crystals
- Stable surface quality (compatible with STEP substrates)
- Conductive substrates can also be achieved by doping with Nb
- Suitable for optical applications due to their transparency

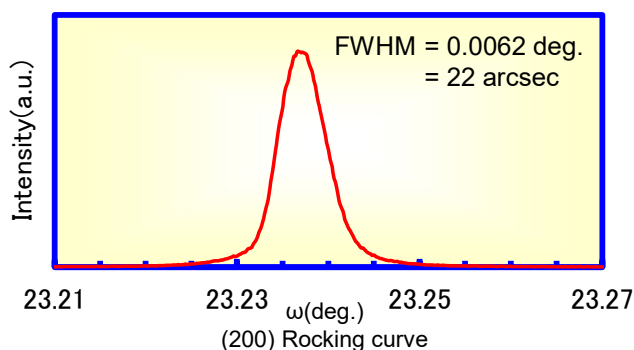


SrTiO₃ Structure



【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 Specifications】



Detail site

	SrTiO3	Nb:SrTiO3	
Purity	≥99.98%		
Nb concentration	0	0.05wt% (0.1at%)	0.5wt% (1.0at%)
Resistivity	$>10^7\ \Omega\cdot\text{cm}$	$7\sim10\times10^{-2}\ \Omega\cdot\text{cm}$	$3\sim7\times10^{-3}\ \Omega\cdot\text{cm}$
Career density	—	$1\sim2\times10^{19}\text{ cm}^{-3}$	$1\sim2\times10^{20}\text{ cm}^{-3}$
Split Angle	$\leq0.1^\circ$		
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	"	△	△	△

★:Planned inventory

○:Standard

△:Made-to-order

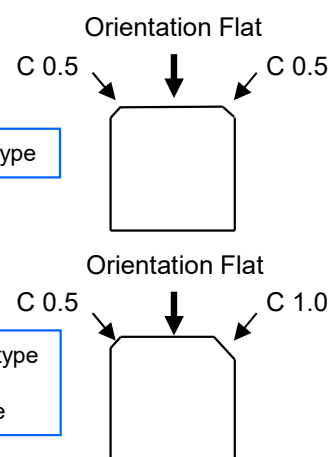
Planned inventory: Production is regularly managed to ensure prompt delivery.

(Please note that specifications may change without prior notice.)

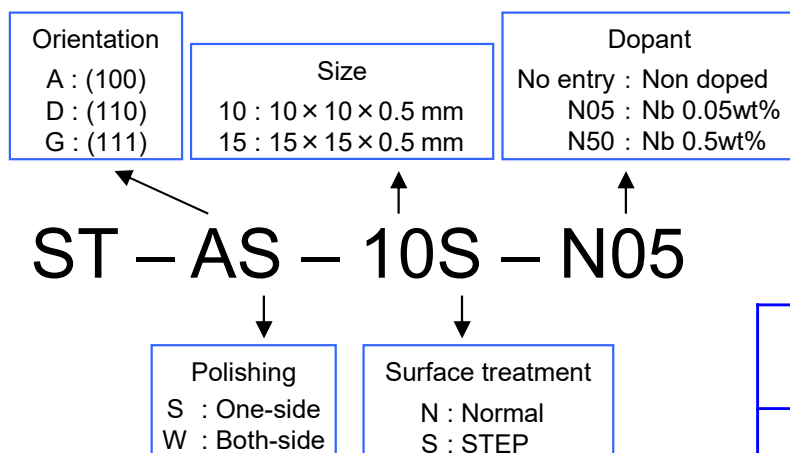
We also accept orders for different sizes and off-spec substrates.

Please contact us for details.

Orientation Flat



Model Number



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

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