

Standard specifications of 100 mm Sn-doped β -Ga₂O₃ (001) substrate

Items		Specifications
Orientation		(001)
Dopant		Sn
Conductivity		n-type
Resistivity ($\Omega \cdot \text{cm}$)		0.007 ~ 0.042
Dimensions	Diameter (mm)	100 \pm 0.5
	Orientation flat width (mm)	32.5 \pm 2.5
	Index flat width (mm)	18.0 \pm 2.5
	Thickness (mm)	0.65 \pm 0.02
	Reference	Fig. 1
Offset angle (degree)		[010]:0 \pm 1
		[100]:0 \pm 1
FWHM (arcsec)		[010]:350 or less
		[100]:350 or less
Surface	Front	CMP
	Back	CMP

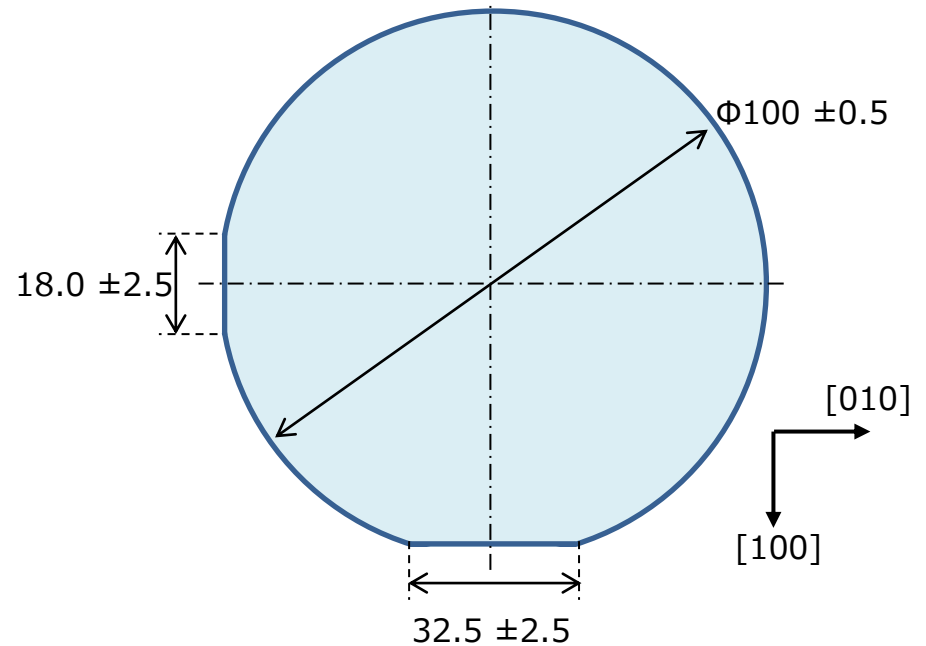


Fig. 1



Remarks

- 1 There are cases in which the opposite side of OF is chipped less than 18 mm.
- 2 There are cases in which the OF side is chipped less than 32.5 mm \pm 2.5 mm.
- 3 These products must be used for research and development purposes only.
- 4 The substrates must not be used as a seed crystal.
- 5 The specifications are subject to change without notice.

Standard specifications of 2 inch Sn-doped β -Ga₂O₃ (001) substrate

Items		Specifications
Orientation		(001)
Dopant		Sn
Conductivity		n-type
Resistivity ($\Omega \cdot \text{cm}$)		0.007 ~ 0.042
Dimensions	Diameter (mm)	50.8 \pm 0.3
	Orientation flat width (mm)	15.9 \pm 2.5
	Index flat width (mm)	8.0 \pm 2.5
	Thickness (mm)	0.65 \pm 0.02
	Reference	Fig. 2
Offset angle (degree)		[010]: 0 \pm 1
		[100]: 0 \pm 1
FWHM (arcsec)		[010]: 350 or less
		[100]: 350 or less
Surface	Front	CMP
	Back	CMP

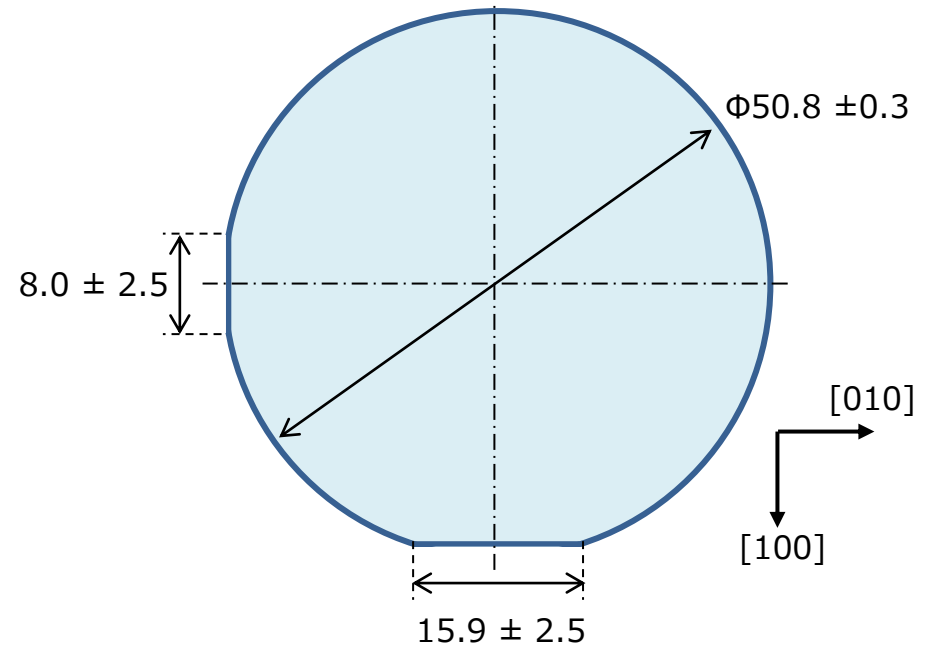


Fig.2

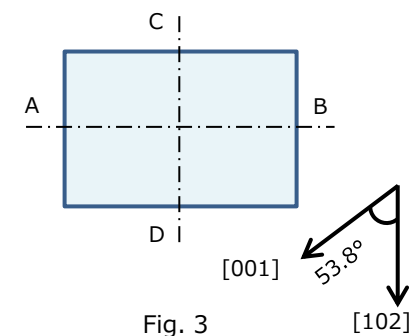
Remarks

- 1 There are cases in which the opposite side of OF is chipped less than 8 mm.
- 2 There are cases in which the OF side is chipped less than 15.9 mm \pm 2.5 mm.
- 3 These products must be used for research and development purposes only.
- 4 The substrates must not be used as a seed crystal.
- 5 The specifications are subject to change without notice.



Standard specifications of 10×15 mm² β-Ga₂O₃ (010) substrates

Items		Specifications		
Orientation		(010)		
Dopant		Sn	Undoped	Fe
Conductivity		n-type	n-type	Insulating ($> 10^{10}\Omega \cdot \text{cm}$)
Nd-Na (cm ⁻³)		$1 \times 10^{18} \sim 9 \times 10^{18}$	$\leq 9 \times 10^{17}$	-
Dimensions	A-B (mm)	15 ±0.3	15 ±0.3	15 ±0.3
	C-D (mm)	10 ±0.3	10 ±0.3	10 ±0.3
	Thickness (mm)	0.5 ±0.02	0.5 ±0.02	0.5 ±0.02
	Reference	Fig. 3	Fig. 3	Fig. 3
Offset angle (degree)	⊥[102]:0 ±1	⊥[102]:0 ±1	⊥[102]:0 ±1	⊥[102]:0 ±1
	[102]:0 ±1	[102]:0 ±1	[102]:0 ±1	[102]:0 ±1
FWHM (arcsec)	⊥[102]:150 or less	⊥[102]:150 or less	⊥[102]:150 or less	⊥[102]:150 or less
	[102]:150 or less	[102]:150 or less	[102]:150 or less	[102]:150 or less
Surface	Front	CMP	CMP	CMP
	Back	Grinding	Grinding	Grinding



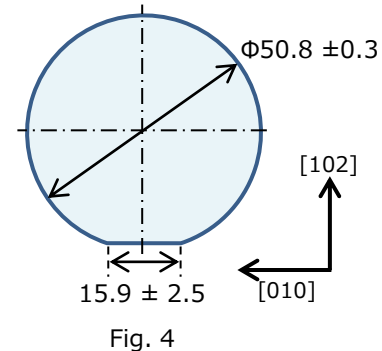
Remarks

- 1 These products must be used for research and development purposes only.
- 2 The substrates must not be used as a seed crystal.
- 3 The specifications are subject to change without notice.



Standard specifications of 2 inch β -Ga₂O₃ ($\bar{2}01$) substrates

Items		Specifications		
Orientation		$(\bar{2}01)$		
Dopant		Sn	Undoped	Fe
Conductivity		n-type	n-type	Insulating ($> 10^{10}\Omega \cdot \text{cm}$)
Nd-Na (cm^{-3})		$1 \times 10^{18} \sim 2 \times 10^{19}$	$\leq 9 \times 10^{17}$	-
Dimensions	Diameter (mm)	50.8 ± 0.3	50.8 ± 0.3	50.8 ± 0.3
	Orientation flat width (mm)	15.9 ± 2.5	15.9 ± 2.5	15.9 ± 2.5
	Thickness (mm)	0.68 ± 0.02	0.68 ± 0.02	0.68 ± 0.02
	Reference	Fig. 4	Fig. 4	Fig. 4
Offset angle (degree)	[010]:	0 ± 0.4	0 ± 0.4	0 ± 1
	[102]:	-0.7 ± 0.4	-0.7 ± 0.4	-0.7 ± 1
FWHM (arcsec)	[010]:	150 or less	150 or less	150 or less
	[102]:	150 or less	150 or less	150 or less
Surface	Front	CMP	CMP	CMP
	Back	Grinding	Grinding	Grinding



Remarks

- 1 There are cases in which the opposite side of OF is chipped less than 8 mm.
- 2 There are cases in which the OF side is chipped less than 15.9 mm ± 2.5 mm.
- 3 These products must be used for research and development purposes only.
- 4 The substrates must not be used as a seed crystal.
- 5 The specifications are subject to change without notice.

