

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

Items		Specifications
Orientation		(001)
Dopant		Sn
Conductivity		n-type
Nd-Na (cm ⁻³)		$1 \times 10^{18} \sim 2 \times 10^{19}$
Dimensions	Diameter (mm)	100 ±0.5
	Orientation flat width (mm)	32.5 ±2.5
	Index flat width (mm)	18.0 ±2.5
	Thickness (mm)	0.65 ±0.02
	Reference	Fig. 1
Offset angle (degree)		[010]:0 ±1
		[100]:0 ±1
FWHM (arcsec)		[010]:350 or less
		[100]:350 or less
Surface	Front	CMP
	Back	CMP

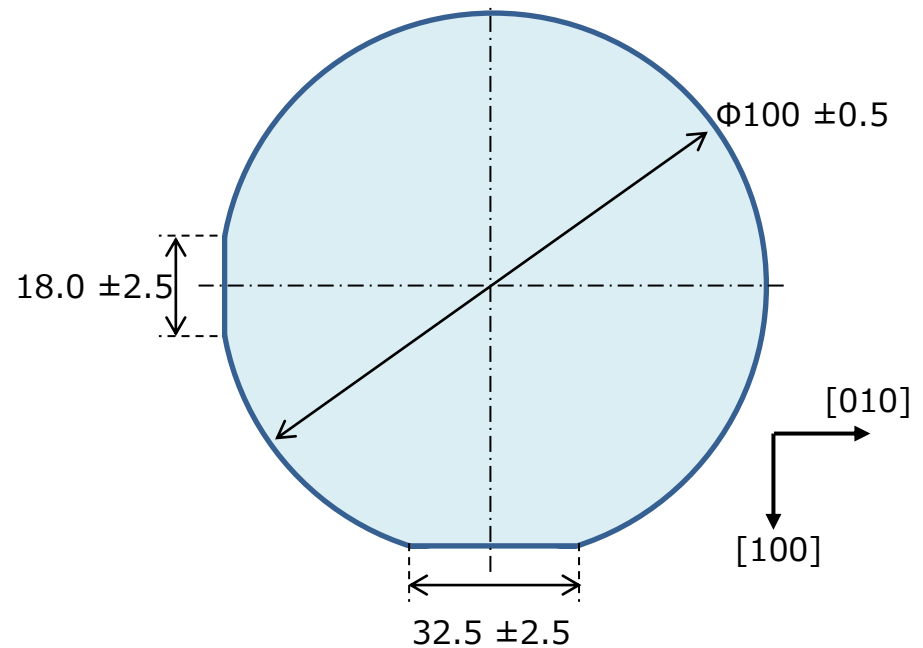


Fig. 1



Remarks

- 1 There are cases in which the other side of OF is chipped (a maximum of around IF width).
- 2 These products must be used for research and development purposes only.
- 3 The substrates must not be used as a seed crystal.
- 4 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
N_d-N_a (cm ⁻³)		$1 \times 10^{18} \sim 2 \times 10^{19}$
Dimensions	Diameter (mm)	50.8 ± 0.3
	Orientation flat width (mm)	15.9 ± 2.5
	Index flat width (mm)	8.0 ± 2.5
	Thickness (mm)	0.65 ± 0.02
	Reference	Fig. 2
Offset angle (degree)	[010]:	0 ± 1
	[100]:	0 ± 1
FWHM (arcsec)	[010]:	350 or less
	[100]:	350 or less
Surface	Front	CMP
	Back	CMP

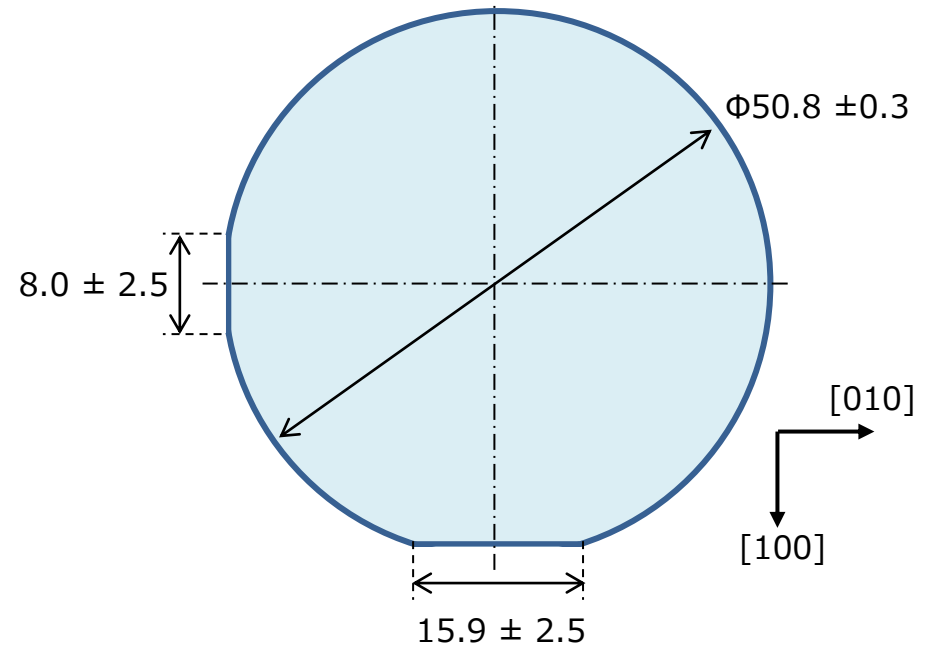


Fig.2

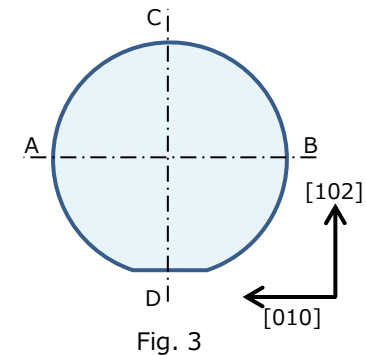


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Standard specifications of 2 inch β -Ga₂O₃ ($\bar{2}01$) substrates

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	A-B (mm)	50.8 ± 0.3	50.8 ± 0.3	50.8 ± 0.3
	C-D (mm)	49.5 ± 0.3	49.5 ± 0.3	49.5 ± 0.3
	Thickness (mm)	0.68 ± 0.02	0.68 ± 0.02	0.68 ± 0.02
	Reference	Fig. 3	Fig. 3	Fig. 3
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



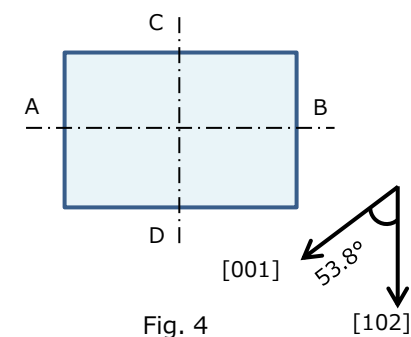
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Standard specifications of 10×15 mm² β-Ga₂O₃ (010) substrates

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. 4	Fig. 4	Fig. 4
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

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- 2 The substrates must not be used as a seed crystal.
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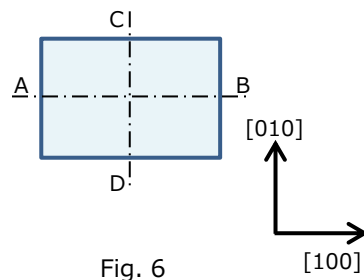
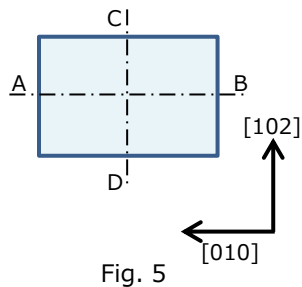


Standard specifications of 10×15 mm² β-Ga₂O₃ ($\bar{2}01$) and (001) substrates

Notification of EOL product

10×15 mm² ($\bar{2}01$) and (001) substrates are scheduled to be discontinued. Last time buy PO (non-cancelable): by Dec. 31, 2023.

Items		Specifications					
Orientation		$(\bar{2}01)$			(001)		
Dopant		Sn	Undoped	Fe	Sn	Undoped	Fe
Conductivity		n-type	n-type	Insulating ($> 10^{10}\Omega \cdot \text{cm}$)	n-type	n-type	Insulating ($> 10^{10}\Omega \cdot \text{cm}$)
Na-Na (cm ⁻³)		$1 \times 10^{18} \sim 2 \times 10^{19}$	$\leq 9 \times 10^{17}$	-	$1 \times 10^{18} \sim 2 \times 10^{19}$	$\leq 9 \times 10^{17}$	-
Dimensions	A-B (mm)	15 ±0.3	15 ±0.3	15 ±0.3	15 ±0.3	15 ±0.3	15 ±0.3
	C-D (mm)	10 ±0.3	10 ±0.3	10 ±0.3	10 ±0.3	10 ±0.3	10 ±0.3
	Thickness (mm)	0.68 ±0.02	0.68 ±0.02	0.68 ±0.02	0.65 ±0.02	0.65 ±0.02	0.65 ±0.02
	Reference	Fig. 5	Fig. 5	Fig. 5	Fig. 6	Fig. 6	Fig. 6
Offset angle (degree)	[010]: 0 ±0.4	[010]: 0 ±0.4	[010]: 0 ±1	[010]: 0 ±1	[010]: 0 ±1	[010]: 0 ±1	[010]: 0 ±1
	[102]: -0.7 ±0.4	[102]: -0.7 ±0.4	[102]: -0.7 ±1	[100]: 0 ±1	[100]: 0 ±1	[100]: 0 ±1	[100]: 0 ±1
FWHM (arcsec)	[010]: 150 or less	[010]: 150 or less	[010]: 150 or less	[010]: 150 or less	[010]: 150 or less	[010]: 150 or less	[010]: 150 or less
	[102]: 150 or less	[102]: 150 or less	[102]: 150 or less	[100]: 150 or less	[100]: 150 or less	[100]: 150 or less	[100]: 150 or less
Surface	Front	CMP	CMP	CMP	CMP	CMP	CMP
	Back	Grinding	Grinding	Grinding	CMP	Grinding	Grinding



Remarks

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