

# Standard specifications of 100 mm Sn-doped $\beta$ -Ga<sub>2</sub>O<sub>3</sub> (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]:50 or less
		[100]:50 or less
Surface	Front	CMP
	Back	CMP

## Remarks

- 1 The edge exclusion width is 3 mm.
- 2 The opposite side of the OF may be chipped <18 mm, and the OF side <32.5  $\pm$  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.

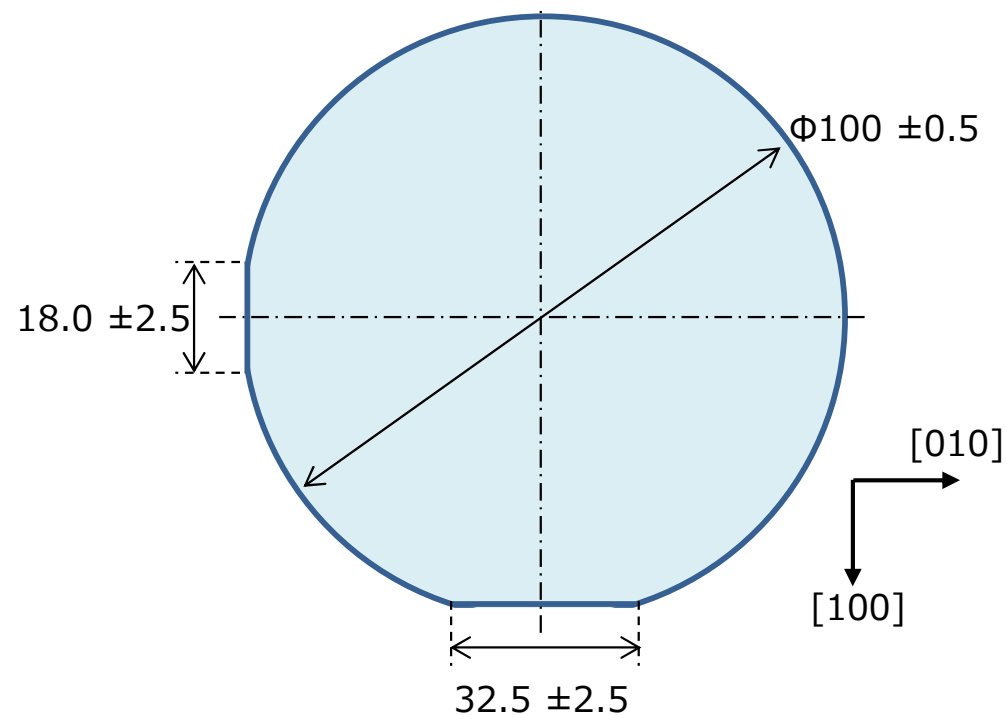


Fig. 1



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# Standard specifications of 2 inch Sn-doped $\beta$ -Ga<sub>2</sub>O<sub>3</sub> (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]: 50 or less
		[100]: 50 or less
Surface	Front	CMP
	Back	CMP

## Remarks

- 1 The edge exclusion width is 3 mm.
- 2 The opposite side of the OF may be chipped <8 mm, and the OF side <15.9  $\pm$  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.

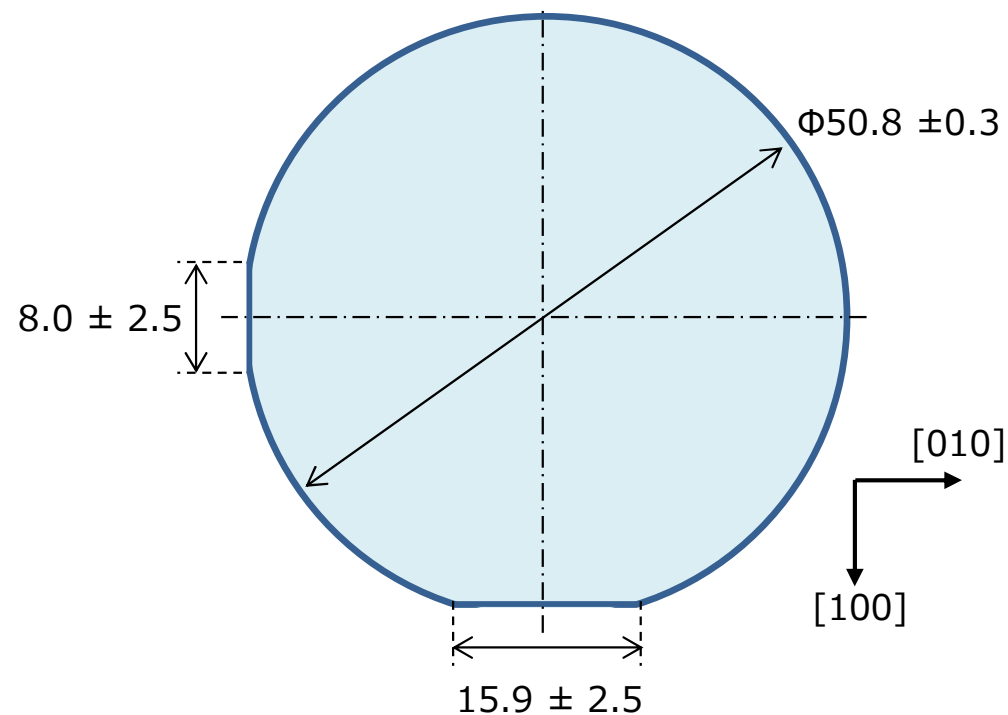


Fig.2



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# Standard specifications of 10×15 mm<sup>2</sup> β-Ga<sub>2</sub>O<sub>3</sub> (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 <sup>-3</sup> )		$1 \times 10^{18} - 9 \times 10^{18}$	$\leq 9 \times 10^{17}$	-
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
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
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.

