

# 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
Nd-Na (cm <sup>-3</sup> )		$1 \times 10^{18} \sim 2 \times 10^{19}$
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

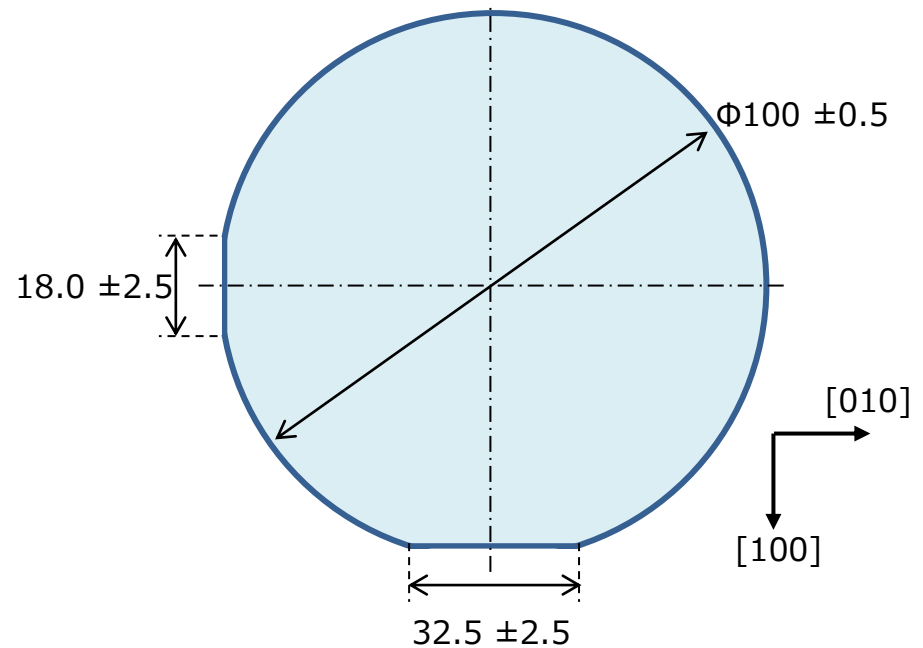


Fig. 1



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 $\beta$ -Ga<sub>2</sub>O<sub>3</sub> (001) substrate

Items		Specifications
Orientation		(001)
Dopant		Sn
Conductivity		n-type
$N_d-N_a$ (cm <sup>-3</sup> )		$1 \times 10^{18} \sim 2 \times 10^{19}$
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

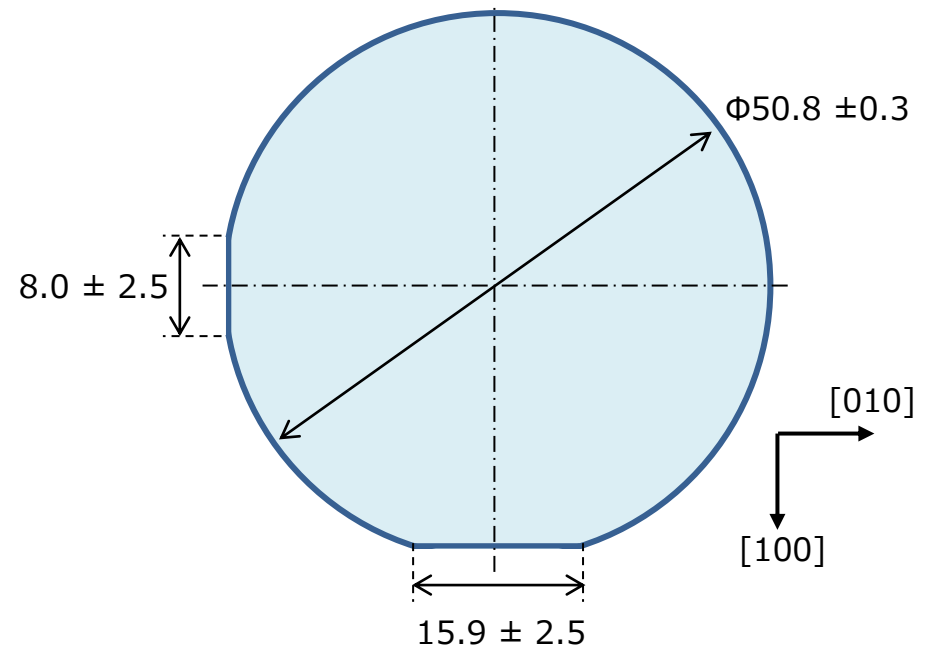


Fig.2

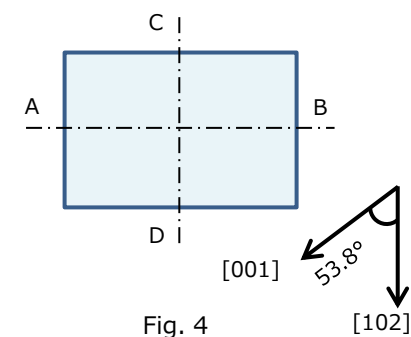


Remarks

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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> )		$1 \times 10^{18} \sim 9 \times 10^{18}$	$\leq 9 \times 10^{17}$	-
Dimensions	A-B (mm)	$15 \pm 0.3$	$15 \pm 0.3$	$15 \pm 0.3$
	C-D (mm)	$10 \pm 0.3$	$10 \pm 0.3$	$10 \pm 0.3$
	Thickness (mm)	$0.5 \pm 0.02$	$0.5 \pm 0.02$	$0.5 \pm 0.02$
	Reference	Fig. 4	Fig. 4	Fig. 4
Offset angle (degree)	$\perp[102]:0 \pm 1$	$\perp[102]:0 \pm 1$	$\perp[102]:0 \pm 1$	$\perp[102]:0 \pm 1$
	$[102]:0 \pm 1$	$[102]:0 \pm 1$	$[102]:0 \pm 1$	$[102]:0 \pm 1$
FWHM (arcsec)	$\perp[102]:150$ or less	$\perp[102]:150$ or less	$\perp[102]:150$ or less	$\perp[102]:150$ 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



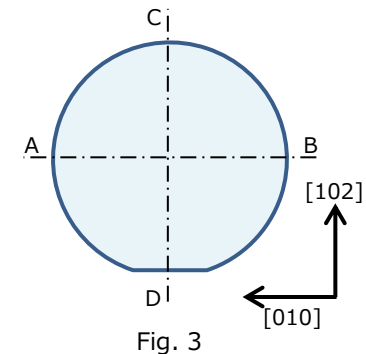
## Remarks

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# Standard specifications of 2 inch $\beta$ -Ga<sub>2</sub>O<sub>3</sub> ( $\bar{2}01$ ) 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 ( $\text{cm}^{-3}$ )		$1 \times 10^{18} \sim 2 \times 10^{19}$	$\leq 9 \times 10^{17}$	-
Dimensions	A-B (mm)	$50.8 \pm 0.3$	$50.8 \pm 0.3$	$50.8 \pm 0.3$
	C-D (mm)	$49.5 \pm 0.3$	$49.5 \pm 0.3$	$49.5 \pm 0.3$
	Thickness (mm)	$0.68 \pm 0.02$	$0.68 \pm 0.02$	$0.68 \pm 0.02$
	Reference	Fig. 3	Fig. 3	Fig. 3
Offset angle (degree)	[010]:	$0 \pm 0.4$	$0 \pm 0.4$	$0 \pm 1$
	[102]:	$-0.7 \pm 0.4$	$-0.7 \pm 0.4$	$-0.7 \pm 1$
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

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