Standard specifications of 2 inch / 100 mm Sn-doped β-Ga_2O_3 (001) substrates

Items		Specifications	
Orientation		(001)	
Dopant		Sn	
Conductivity		n-type	
Resistivity (Ω·cm)		0.007–0.042	
Dimensions	Size	2 inch	100 mm
	Diameter (mm)	50.8 ± 0.3	100 ± 0.5
	Orientation flat width (mm)	15.9 ± 2.5	32.5 ± 2.5
	Index flat width (mm)	8.0 ± 2.5	18.0 ± 2.5
	Thickness (mm)	0.65 ± 0.02	
	Reference	Fig. 1	
Offset angle (degree)		[010] : 0 ± 1	
		[100] : 0 ± 1	
XRD FWHM (arcsec)		[010] : ≤ 50	
		[100] : ≤ 50	
Surface	Front	CMP	
	Back	CMP	

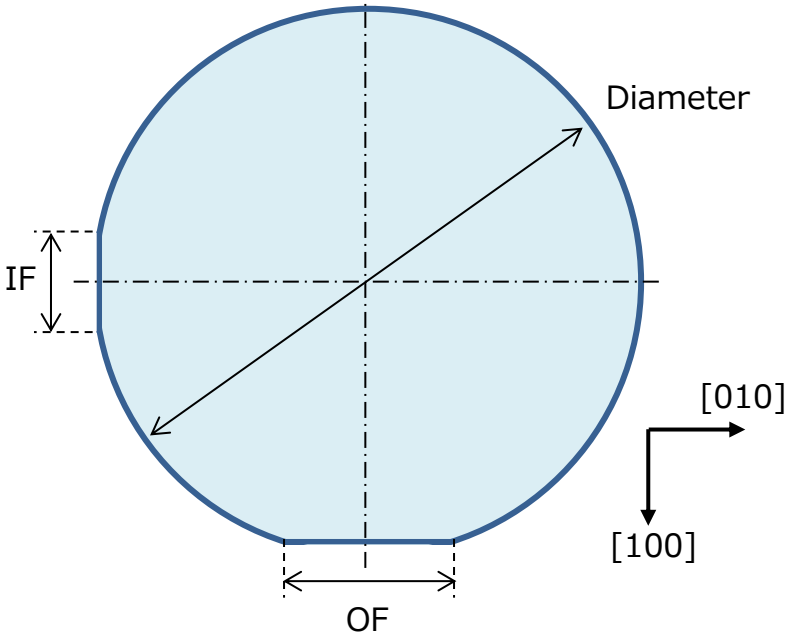

Fig.1

Remarks
1 Chipping may occur within the following limits:
2-inch: <8 mm (opposite OF), <15.9 ± 2.5 mm (OF side); 100 mm: <18 mm (opposite OF), <32.5 ± 2.5 mm (OF side).
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.

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Standard specifications of 10×15 mm² β-Ga_2O_3 (010) substrates

Items		Specifications		
Orientation		(010)		
Dopant		Sn	Undoped	Fe
Conductivity		n-type	n-type	Insulating ($>10^{10}\Omega \cdot cm$)
N_d-N_a (cm^{-3})		1×10^{18}–9×10^{18}	$\leq 9\times10^{17}$	-
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. 2	Fig. 2	Fig. 2
Offset angle (degree)		⊥[102] : 0 ± 1	⊥[102] : 0 ± 1	⊥[102] : 0 ± 1
		[102] : 0 ± 1	[102] : 0 ± 1	[102] : 0 ± 1
XRD FWHM (arcsec)		⊥[102] : ≤ 150	⊥[102] : ≤ 150	⊥[102] : ≤ 150
		[102] : ≤ 150	[102] : ≤ 150	[102] : ≤ 150
Surface	Front	CMP	CMP	CMP
	Back	Grinding	Grinding	Grinding

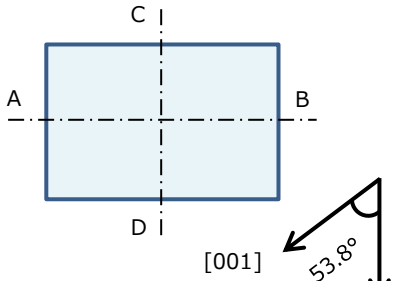

Fig. 2

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.

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Standard specifications of β-Ga_2O_3 (100) substrates

Items		Specifications		
Orientation		(100)		
Dopant		Sn	Undoped	Fe
Conductivity		n-type	n-type	Insulating ($>10^{10}\Omega \cdot cm$)
N_d-N_a (cm^{-3})		1×10^{18}–9×10^{18}	$\leq 9\times10^{17}$	-
Dimensions	A-B (mm)	Approx. 20	Approx. 20	Approx. 20
	C-D (mm)	Approx. 10	Approx. 10	Approx. 10
	Thickness (mm)	≤ 1	≤ 1	≤ 1
	Reference	Fig. 3	Fig. 3	Fig. 3
XRD FWHM (arcsec)		≤ 150	≤ 150	≤ 150
Surface	Front	Cleaving	Cleaving	Cleaving
	Back	Cleaving	Cleaving	Cleaving

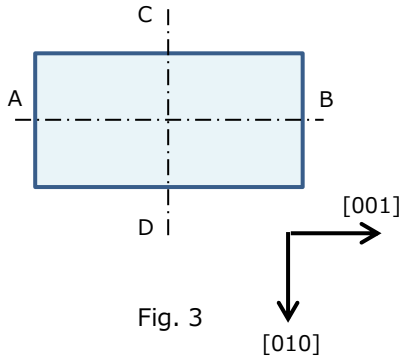

Fig. 3

Remarks

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Standard specifications of 10×15 mm² β-Ga_2O_3 (011) substrates

Items		Specifications	
Orientation		(011)	
Dopant		Sn	Fe
Conductivity		n-type	Insulating (>10^{10}Ω・cm)
N_d-N_a (cm^{-3})		2×10^{18}–2×10^{19}	-
Dimensions	A-B (mm)	15 ± 0.3	15 ± 0.3
	C-D (mm)	10 ± 0.3	10 ± 0.3
	Thickness (mm)	0.5 ± 0.02	0.5 ± 0.02
	Reference	Fig. 4	Fig. 4
Offset angle (degree)		[100]: 0 ± 1	[100]: 0 ± 1
		⊥[100]: 0 ± 1	⊥[100]: 0 ± 1
XRD FWHM (arcsec)		[100]: ≤ 150	[100]: ≤ 150
		⊥[100]: ≤ 150	⊥[100]: ≤ 150
Surface	Front	CMP	CMP
	Back	Grinding	Grinding

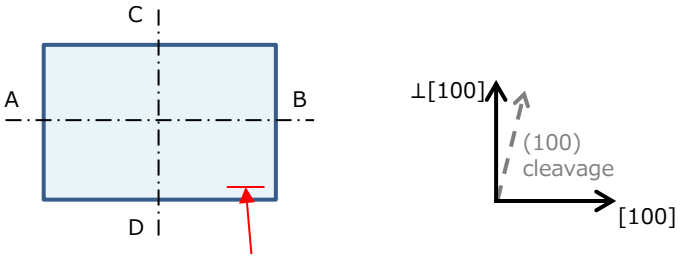

Fig. 4

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.

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