

Gallium Antimonide

Epitaxy Ready Polished Wafers



Wafer Technology offers single crystals that are grown by a modified version of the liquid encapsulated Czochralski method from directionally frozen polycrystalline ingot.

MECHANICAL SPECIFICATIONS

Gallium Antimonide is supplied in polished wafer form. All slices are individually laser scribed with ingot and slice identity to ensure perfect traceability.

ORIENTATION SPECIFICATIONS

Surface orientations are offered to an accuracy of +/- 0.05 degrees using a triple axis X-Ray diffractometer system. Substrates can also be supplied with very precise misorientations in any direction from the growth plane. Higher index substrates of the type (n,1,1) where n = 1,2,3,4,5,6 etc and orientations such as (110) are also available. We also offer wafers with cut and/or cleaved flats.

SURFACE SPECIFICATIONS

All wafers are offered with high quality epitaxy-ready finishing. Surfaces are characterised by in-house, advanced optical metrology techniques which include Surfscan haze and particle monitoring, spectroscopic ellipsometry and grazing-incidence interferometry.

PACKAGING

Polished Wafers

Coin-style wafer shipper, individually sealed in two outer bags in inert atmosphere. Cassette shipments are available on request.

As-cut Wafers

Cassette shipment. (Glassine bag available on request).

'Process Trial' wafers

Coin-style wafer shipper, individually sealed in one outer bag.

If you do not see the specification you require, please call for details on +44 (0)1908 210444 or email sales@wafertech.co.uk

Wafer Specifications			
Diameter Slices	2"	3"	4"
Orientation	(100) ± 0.1°	(100) ± 0.1°	(100) ± 0.1°
Diameter (mm)	50.5 ± 0.5	76.2 ± 0.4	100.0 ± 0.5
Flat Option	EJ	EJ	EJ
Flat Tolerance	± 0.1°	± 0.1°	± 0.1°
Major Flat Length (mm)	16 ± 2	22 ± 2	32.5 ± 2.5
Minor Flat Length (mm)	8 ± 1	11 ± 1	18 ± 1
Thickness (µm)	500 ± 25	625 ± 25	1000 ± 25

Electrical and Dopant Specifications				
Dopant	Type	Carrier Concentration cm ⁻³	Mobility cm ² V ⁻¹ s ⁻¹	E.P.D. cm ⁻²
Undoped	p-type	≤ 2 × 10 ¹⁷	>500	2" ≤ 2000 3" ≤ 5000
Zinc	p-type	≥ 1 × 10 ¹⁸	450 - 200	2" ≤ 2000 3" ≤ 5000
Tellurium	n-type	(1-9) × 10 ¹⁷	3500 - 2000	2", 3" ≤ 1000 4" ≤ 2000
Low Tellurium	n-type	≤ 2 × 10 ¹⁷	3500 - 2000	2" ≤ 1000 3", 4" ≤ 2000
High Tellurium	n-type	≥ 5 × 10 ¹⁷	3500 - 2000	2", 3", 4" ≤ 500

Tighter electrical ranges are available on request.

Flatness Specifications				
Wafer Form		2"	3"	4"
Polish/ Etched	TTV (µm)	<8	<8	<10
	Bow (µm)	<8	<8	<10
	Warp (µm)	<12	<12	<15
Polish/ Polish	TTV (µm)	<5	<5	<5
	Bow (µm)	<5	<5	<5
	Warp (µm)	<8	<8	<10



WAFER TECHNOLOGY LTD

34 Maryland Road Tongwell Milton Keynes
Bucks MK15 8HJ United Kingdom
Tel: +44 (0)1908 210444 Fax: +44 (0)1908 210443
sales@wafertech.co.uk www.wafertech.co.uk



www.iqep.com
Wafer Technology Ltd is a subsidiary of IQE plc.



DS1307