Gallium Arsenide

Epitaxy Ready Polished Wafers

Wafer Technology offers single crystal Gallium Arsenide grown at low pressure from high purity polycrystalline Gallium Arsenide in a vertical temperature gradient (VGF-Vertical Gradient Freeze).

MECHANICAL SPECIFICATIONS

Gallium Arsenide can be supplied in as-cut, etched or polished wafer forms. 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"
Orientation	(100) ± 0.1°	(100) ± 0.1°
Diameter (mm)	50.5 ± 0.5	76.2 ± 0.4
Flat Option	EJ	EJ
Flat Tolerance	± 0.5°	± 0.5°
Major Flat Length (mm)	16 ± 2	22 ± 2
Minor Flat Length (mm)	8 ± 1	11 ± 1
Thickness (µm)	350 ± 25 or 500 ± 25	625 ± 25

Electrical and Doping Specifications

Dopant	Type	Resistivity Ω cm	Carrier Concentration cm^{-3}	Mobility $cm^2 V^{-1} s^{-1}$	E.P.D. cm^{-2}
Undoped	Semi-Insulating	$\geq 10^7$	Not specified	≥5000	2" ≤2000 3" ≤5000
Zinc	p-type	Not specified	5×10^{18} - 5×10^{19}	Not specified	2" ≤3000 3" ≤5000
Mid Silicon	n-type	Not specified	$(1\text{-}10) \times 10^{17}$	≥2000	2" ≤1500
High Silicon	n-type	Not specified	$(1\text{-}5) \times 10^{18}$	Not specified	2"&3" Grade 1 ≤100 Grade 2 ≤500

Tighter electrical ranges are available on request.

Flatness Specifications

Wafer Form		2"	3"
Polish/Etched	TTV (µm)	<10	<10
	Bow (µm)	<10	<10
	Warp (µm)	<10	<10
Polish/Polish	TTV (µm)	<3	<5
	Bow (µm)	<3	<5
	Warp (µm)	<10	<10

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