

Gallium-arsenide (GaAs) Semi-Insulating type Wafer

Our gallium-arsenide (GaAs) Semi-Insulating wafers are expected to be used in applications such as high-frequency mobile base stations and hall sensor for mobile phones.

Feature

- Single-crystal growth by VGF and LEC methods
- High-purity crystals
- High resistivity
- Low EPD (VGF)

Application Examples

- High-frequency mobile base stations
- Hall sensor for mobile phones

Characteristic introduction

		VGF-Semi-Insulating		LEC-Semi-Insulating	
Crystal growth method		VGF (Vertical Gradient Freezing) method		LEC (Liquid Encapsulated Czochralski) method	
Dopant, Conduction type		Semi-Insulating: Undoped (carbon controlled)		Semi-Insulating: Undoped (carbon controlled)	
Resistivity	(at 25°C) (Ω cm)	≥1E7 (adjustable within the above range)		≥1E7 (adjustable within the above range)	
Dislocation density	(cm ⁻²)	EPD average≤5,000		EPD average≤1E5	
Size		4 inches	3 inches	4 inches	3 inches
Orientation		1. (100)0°/2°off±0.3° 2. Upon request		1. (100)0°/2°off±0.3° 2. Upon request	
Diameter	(mm)	100.0±0.3	76.0±0.3 76.2±0.3	100.0±0.3	76.0±0.3 76.2±0.3
Thickness	(μm)	450/625 ±25	350/450 ±25	450/625 ±25	350/450 ±25
OF/IF length	OF (mm) IF (mm)	32.5±1.0 18.0±1.0	22.0±1.0 12.0±1.0	32.5±1.0 18.0±1.0	22.0±1.0 12.0±1.0
		(adjustable upon request)		(adjustable upon request)	
OF/IF orientation	OF position IF position	EJ (Dove-Tail): [OF] (0-1-1)±0.5° / [IF](0-11)±0.5° or SEMI US (V-Groove): [OF] (01-1)±0.5° / [IF](011)±0.5°		EJ (Dove-Tail): [OF] (0-1-1)±0.5° / [IF](0-11)±0.5° or SEMI US (V-Groove): [OF] (01-1)±0.5° / [IF](011)±0.5°	
Edge		Beveling		Beveling	
Flatness	TTV (μm)	≤10.0	≤10.0	≤10.0	≤10.0
	TIR (μm)	≤5.0	≤5.0	≤5.0	≤5.0
	Warp (μm)	≤10.0	≤10.0	≤10.0	≤10.0
Surface finish	Front surface	Mirror Polished		Mirror Polished	
	Back surface	Etching after Lapping (Mirror Polished is also available)		Etching after Lapping (Mirror Polished is also available)	
Surface treatment		Epi-ready		Epi-ready	
Laser marking		Option		Option	
Package		Cassette or Individual Container		Cassette or Individual Container	

