

GaAs Substrate Wafers

Gallium Arsenide (GaAs) is a semiconductor material with various exceptional properties such as direct band gap, high electron mobility, high frequency with less noise, and high conversion efficiency. As a result, the compound is an important fundamental material in the optoelectronic and microelectronic industries. In the optoelectronics field, GaAs is used in the manufacturing of LED (Light Emitting Diode), LD (Laser Diode), photovoltaic devices, etc. In the microelectronics field, GaAs is used in manufacturing of MESFET (metal semiconductor field-effect transistor), HEMT (High Electron Mobility Transistor), HBT (Heterojunction Bipolar Transistor), IC, Hall element, etc.

Item	Unit	LD Applications Specifications	LED Applications Specifications	Microelectronics Specifications
Conduct Type		n-type	p-type/n-type	-
Crystal Growth Method		VGF	VGF	VGF
Dopant		Si	Zn/Si	Undoped
Diameter	inch	2", 3", 4" and 6"	2", 3", 4" and 6"	2", 3", 4" and 6"
Wafer Orientation*		(100)±0.1°	(100)±0.5°	(100)±0.5°
OF/IF		US or EJ	US or EJ	US,EJ or notch
Carrier Concentration	/cm ³	(0.4-2.5) × 10 ¹⁸	(0.5-5) × 10 ¹⁹ (0.4-4) × 10 ¹⁸	
Resistivity(at RT)	ohm.cm	(1.2-9.9) × 10 ⁻³	(1.2-9.9) × 10 ⁻³	> 10 ⁷
Mobility	cm ² /v.s	>1500	50-120 / >1000	>4000
Etch Pit Density (EPD)	/cm ²	< 500	< 5000	<5000
Laser Marking		Upon request	Upon request	Upon request
Thickness*	µm	(350-650)±25	(350-650)±25	(350-650)±25
TTV(P/P)	µm	≤5	≤5	≤4
TTV(P/E)	µm	≤10	≤10	≤10
Warp	µm	≤10	≤10	≤10
Surface	Side1	Polished	Polished	Polished
	Side2	Polished/Etched	Polished/Etched	Polished/Etched
Epi-ready		Yes	Yes	Yes
Package		Cassette or single wafer container	Cassette or single wafer container	Cassette or single wafer container

* Wafer Orientation and Thickness are available upon request

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