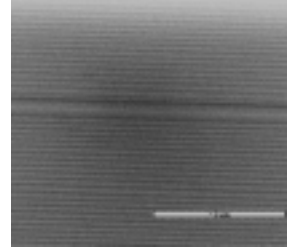


980nm VCSEL Epi Wafers

Standard Epi Structure for 980 nm Oxide and Ion-implant VCSELS

Target F-P wavelength	972~983 nm
Target PL wavelength	957~963 nm
Active layer	InGaAs/AlGaAs MQW
DBRs	AlGaAs/AlGaAs
Dopant	Si for n-type and C for p-type
Substrate	2 degree off n-GaAs



Epi Wafer Specifications

Item	Range	Comments
F-P wavelength	970~985 nm	Uniformity : ± 4.0 nm Run-to-run reproducibility : ± 0.5 % Over inner 65mm diameter of 3" wafer
PL wavelength	957~965 nm	Uniformity : ± 2.0 nm Over inner 65mm diameter of 3" wafer
Doping level		
* Cap layer	$> 5 \times 10^{19} \text{ cm}^{-3}$	Uniformity : ± 15 %
* p-DBR	$1 \sim 4 \times 10^{18} \text{ cm}^{-3}$	
* n-DBR	$1 \sim 3 \times 10^{18} \text{ cm}^{-3}$	
Defect density	$< 100 \text{ cm}^{-2}$	Smooth background surface

Substrate Specifications

Material	Orientation	Comments
VGF GaAs wafer Epi-ready	(100) 2 ± 0.5 degree Off toward (011)	
Doping	Flat spec.	EJ
Carrier con.	Major flat	(0-1-1), 22 ± 2 mm
Diameter	Minor flat	(0-11), 12 ± 1 mm
Thickness	EPD	$< 500 \text{ cm}^{-2}$

These specifications are subject to change without notice.

Notes:

- Epi structure is available upon customer's request.
- Tighter wavelength specifications are available on request.
- Our technological team have amassed a wealth of experience in the development of the epitaxy and processing of VCSELS.
If you have a specific application for a VCSEL, please call or e-mail.
One of our specialists will be happy to discuss your particular requirements.