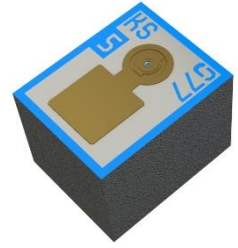


# OLI0608V.A1-795-E

## BIDOS® Core V

### Applications:

- Atomic Clock



### Features:

- Chip Technology: GaAs VCSEL
- IR Laser Wavelength: 795 nm
- Radiation Profile: Single Mode
- ESD: 250 V acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 1A)

### Ordering Information

Description	Operating Mode:	Ordering Code
OLI0608V.A1-795-E	$T_a = 75 \pm 5^\circ\text{C}$ ; $I_F = 1.4 \text{ mA}$ ; DC = 100%, 795nm	Q65113A7679

Note: OLI0608V.A1-795-E is a Vixar legacy qualified product.

Depending on the mode of operation, these devices emit highly concentrated visible and non-visible light which can be hazardous to the human eye. Products which incorporate these devices must follow the safety precautions given in the “Notes” section.

## Maximum Ratings

$T_a = 75^\circ\text{C}$

Parameter	Symbol		Values
Operation/Solder temperature	$T_S$	min.	$-20^\circ\text{C}$
DC = 100%		max.	$110^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	min.	$-40^\circ\text{C}$
		max.	$125^\circ\text{C}$
Forward current <small>to remain single mode</small>	$I_f$	max.	1.5 mA
Direct current operation; DC = 100%; $T_S = 75^\circ\text{C}$			
Forward Current	$I_f$	max.	3mA
Direct current operation; DC = 100%; $T_S = 75^\circ\text{C}$			
Reverse Voltage	Not designed for reverse operation		
ESD withstand voltage	$V_{\text{ESD}}$	max.	250 V
acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 1A)			

Note: Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device.

## Characteristics

$T_a = 75^\circ\text{C}$ ,  $I_F = 1.4 \text{ mA}$ ; DC = 100%

Parameter	Symbol		Values
Forward voltage	$V_F$	typ.	1.8 V
Output power	$\Phi$	typ.	0.13 mW
Threshold current	$I_{th}$	typ.	0.75 mA
Slope efficiency	SE	typ.	0.21 W / A
Single-mode Suppression Ratio	SMSR	min.	20 dB
Polarization Extinction Ratio <sup>5)</sup>	PER	min.	15 dB
Peak wavelength (vacuum)	$\lambda_{peak-v}$	min.	794.76 nm
		typ.	795 nm
		max.	795.28 nm
Spectral linewidth	$\Delta_{linewidth}$	max.	100 MHz
FM Modulation Bandwidth	Fm	min.	3.4 GHz
Temperature coefficient of wavelength	$TC_\lambda$	typ.	0.055 nm / K
Field of view at FWHM (50% of $\Phi_{max}$ )	$\phi_x$	typ.	12°
	$\phi_y$	typ.	12°
Field of view at $1/e^2$	$\phi_x$	typ.	20°
	$\phi_y$	typ.	20°

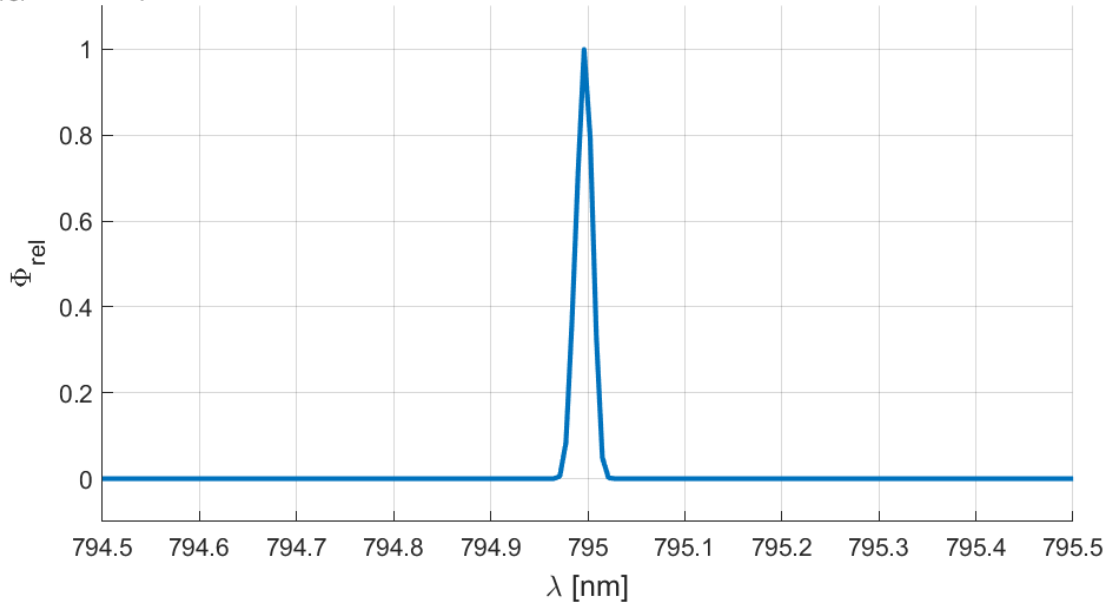
Note<sup>(1)</sup>: Wavelength, Output power and Voltage performance depends on operating conditions.

Note<sup>(2)</sup>: Characteristics above are based on Vixar-ams OSRAM test condition. For more details on test condition and tolerance refer to Glossary note 2 and 4, on page 10.

Note<sup>(3)</sup>: V00193 performance acceptance criteria is based on Vixar-ams OSRAM wafer-level test results.

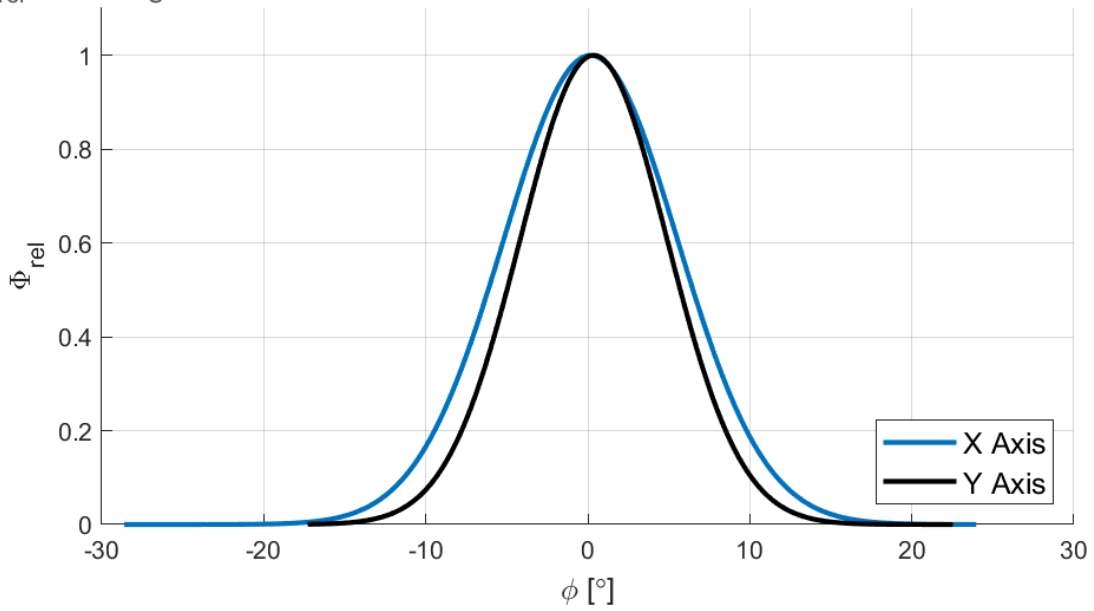
Relative Spectral Emission <sup>1)</sup>

$\Phi_{rel} = f(\lambda); I_F = 1.4 \text{ mA}$

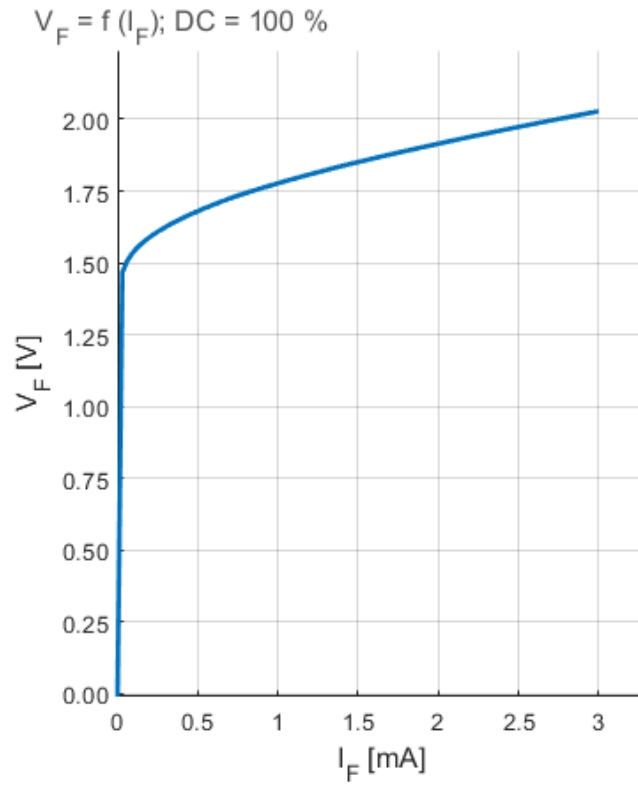


Radiation Characteristics <sup>1)</sup>

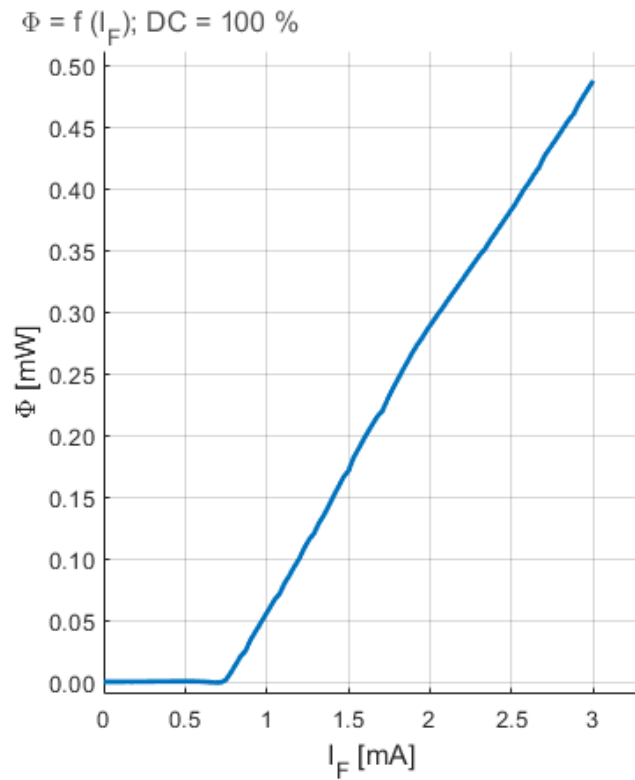
$\Phi_{rel} = f(\phi); T_S = 60 \text{ }^\circ\text{C}$



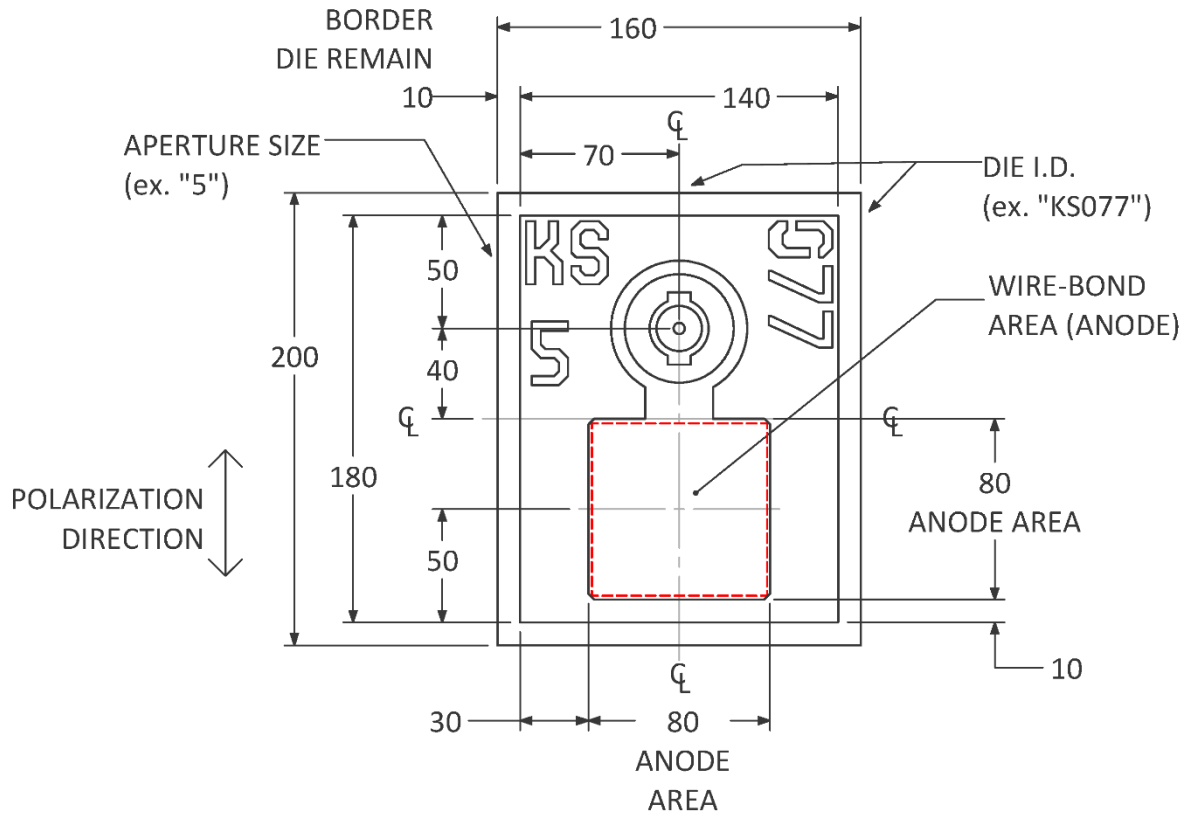
**Forward Voltage** <sup>1) 2)</sup>



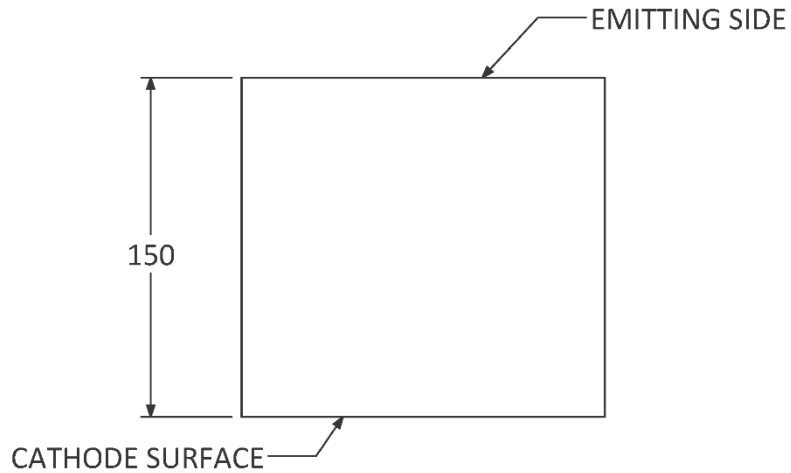
**Optical Output Power** <sup>1) 2)</sup>



Dimension Drawings <sup>3)</sup>



DASHED LINES (WIRE-BOND AREA) ARE NOT VISIBLE ON ACTUAL DIE



## Barcode-Product-Label (BPL)

**OSRAM Opto Semiconductors** LX XXXX BIN1: XX-XX-X-XXX-X

RoHS Compliant






(6P) BATCH NO: 1234567890

(1T) LOT NO: 1234567890 (9D) D/C: 1234

(X) PROD NO: 123456789 (Q) QTY: 9999 (G) GROUP: XX-XX-X-X

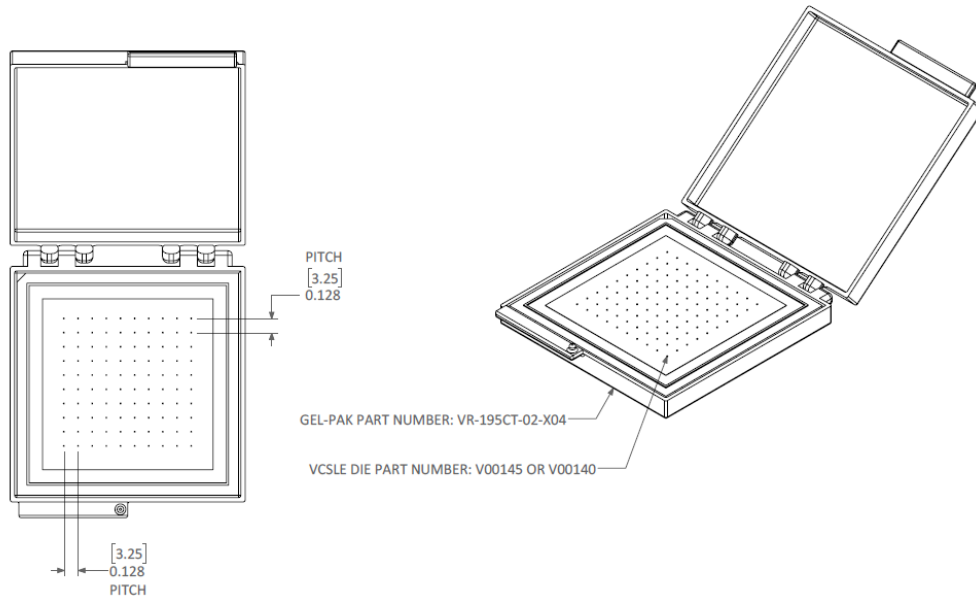
ML Temp ST  
X XXX °C X

Pack: RXX  
DEMY XXX  
X\_X123\_1234.1234 X



OHA04563

## Packaging



Pieces per Gel-Pak

100

## Shipping Information

Document similar to below to be provided electronically with every shipment. Document provided will include entire group performance data per wafer and not specific to only dies delivered.

Shipment Date	Sales Order	Purchase Order	Part Number	Wafer ID	Die ID	Wavelength (85°C)	Vacuum Wavelength (75°C)

**Definition of Wavelength columns:**

**Wavelength (85°C):** Wavelength at wafer-level data.

**Vacuum Wavelength (75°C):** The calculated wavelength value when operating at 75°C (customer's temperature) based on the Temperature coefficient in Characteristics Table on page 3.



## Notes

Depending on the mode of operation, these devices emit highly concentrated visible and non-visible light which can be hazardous to the human eye. Products which incorporate these devices must follow the safety precautions given in IEC 60825-1.

Subcomponents of this device contain, in addition to other substances, metal filled materials including silver. Metal filled materials can be affected by environments that contain traces of aggressive substances. Therefore, we recommend that customers minimize device exposure to aggressive substances during storage, production, and use. Devices that showed visible discoloration when tested using the described tests above did show no performance deviations within failure limits during the stated test duration. Respective failure limits are described in the IEC60810.

For further application related information please <http://vixarinc.com/vcSEL-technology/application-notes>

## Glossary

- 1) **Typical Values:** Due to the special conditions of the manufacturing processes of semiconductor devices, the typical data or calculated correlations of technical parameters can only reflect statistical figures. These do not necessarily correspond to the actual parameters of each single product, which could differ from the typical data and calculated correlations or the typical characteristic line. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.
- 2) **Testing temperature:**  $TA = 85^{\circ}\text{C} \pm 2^{\circ}\text{C}$
- 3) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with  $\pm 0.1$  and dimensions are specified in mm.
- 4) **Wavelength:** The wavelength is measured at continuous wave, with resolution of  $\pm 0.1$  nm.
- 5) **Polarization:** The Polarization Extinction Ratio can be degraded under conditions of die stress induced by mounting or packaging.

## Revision History

Version	Date	Change
1.0	August 10 - 2022	Release
1.1	December 4 – 2023	Update Ordering Code, Product Number and Barcode-Product-Label (BPL).



COMPLIES WITH IEC 60825-1, 3<sup>rd</sup> EDITION MAY 2014.  
COMPLIES WITH 21 CFR 1040.10 AND 1040-10.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER  
NOTICE NO.50 DATED 27 MAY 2001.