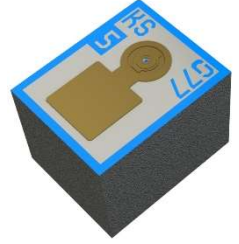


# OLI0608V.A1-895

## BIDOS® Core V



### Applications:

- Atomic Clock
- Magnetometer

### Features:

- Chip Technology: GaAs VCSEL
- IR Laser Wavelength: 894.6 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
Group 1	$T_a = 60 \pm 10^\circ\text{C}$ ; $I_F = 1.4 \text{ mA}$ ; DC = 100%, 894.6nm	Q65113A6387
Group 2	$T_a = 70 \pm 10^\circ\text{C}$ ; $I_F = 1.4 \text{ mA}$ ; DC = 100%, 894.6nm	Q65113A7968
Group 3	$T_a = 80 \pm 10^\circ\text{C}$ ; $I_F = 1.4 \text{ mA}$ ; DC = 100%, 894.6nm	Q65113A7969
Group 4	$T_a = 90 \pm 10^\circ\text{C}$ ; $I_F = 1.4 \text{ mA}$ ; DC = 100%, 894.6nm	Q65113A7970
Group 5	$T_a = 100 \pm 10^\circ\text{C}$ ; $I_F = 1.4 \text{ mA}$ ; DC = 100%, 894.6nm	Q65113A7971

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

$T_a = 80^\circ\text{C}$

Parameter	Symbol		Values
Operation/Solder temperature	$T_s$	min.	$-20^\circ\text{C}$
DC = 100 %		max.	$110^\circ\text{C}$
Storage temperature	$T_{stg}$	min.	$-40^\circ\text{C}$
		max.	$125^\circ\text{C}$
Forward current to remain single mode Direct current operation; DC = 100%; $T_s = 75^\circ\text{C}$	$I_f$	max.	1.5 mA
Forward Current Direct current operation; DC = 100%; $T_s = 75^\circ\text{C}$	$I_f$	max.	3.0 mA
Reverse Voltage	Not designed for reverse operation		
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 1A)	$V_{ESD}$	max.	250 V

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

## Characteristics

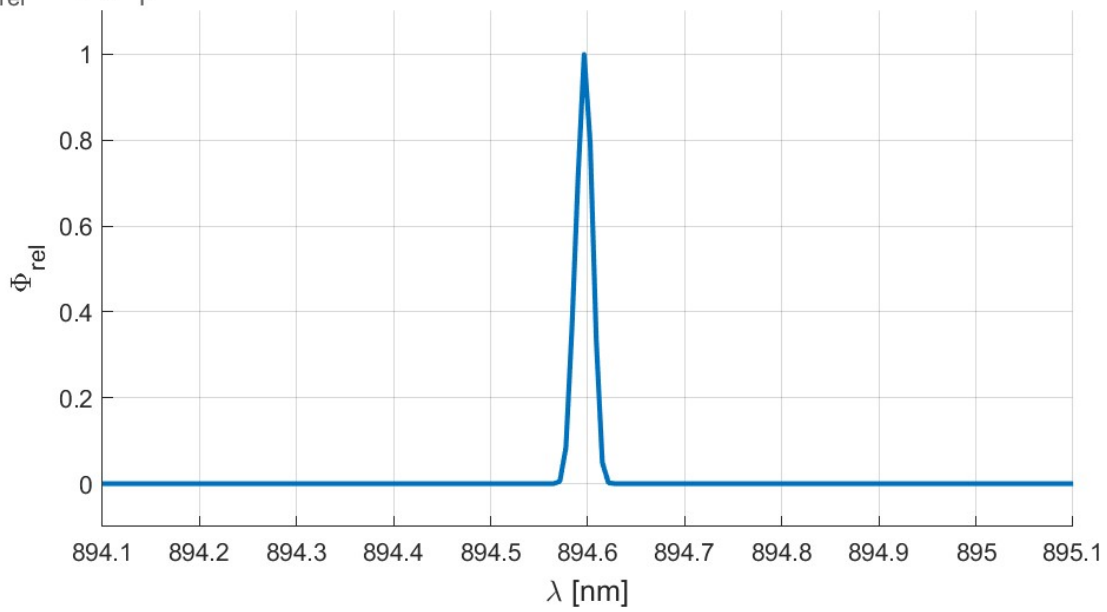
$T_a = 80^\circ\text{C}$ ,  $I_F = 1.4 \text{ mA}$ ; DC = 100% - Group 3

Parameter	Symbol		Values
Forward voltage	$V_F$	typ.	1.78 V
Output power	$\Phi$	typ.	0.3 mW
Threshold current	$I_{th}$	typ.	0.61 mA
Slope efficiency	SE	typ.	0.37 W/A
Single-mode Suppression Ratio	SMSR	min.	20 dB
Polarization Extinction Ratio <sup>5)</sup>	PER	min.	15 dB
Peak wavelength	$\lambda_{peak}$	min.	894.1 nm
		typ.	894.6 nm
		max.	895.1 nm
Spectral linewidth	$\Delta\lambda_{linewidth}$	max.	100 MHz
FM Modulation Bandwidth	Fm	min.	4.6 GHz
Temperature coefficient of wavelength	$TC_\lambda$	typ.	0.06 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: Wavelength, Output power and Voltage changes based on operating temp.

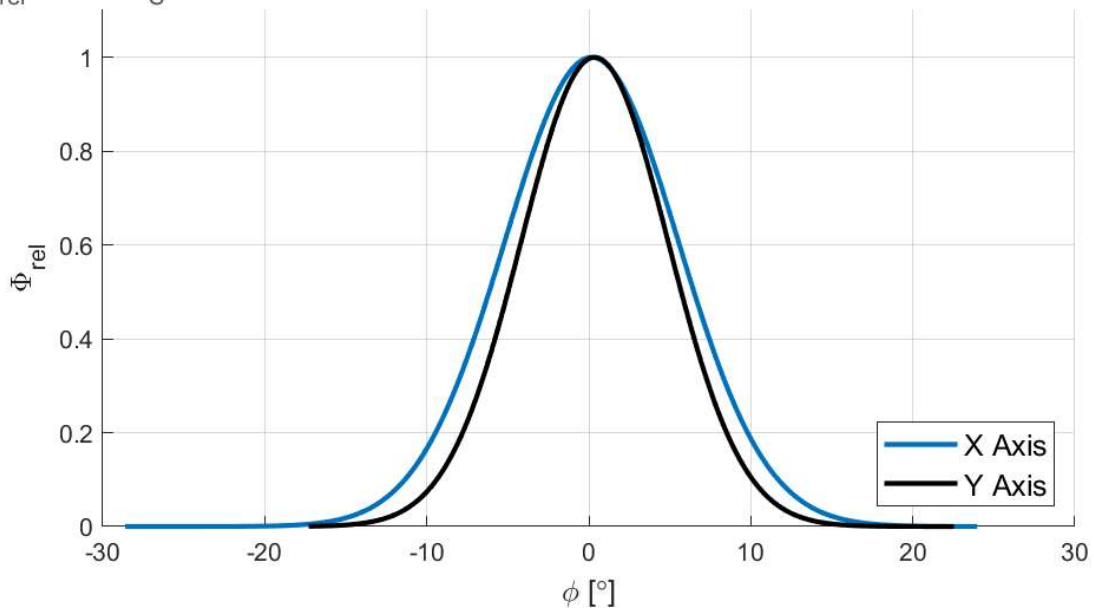
### Relative Spectral Emission <sup>1)</sup>

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

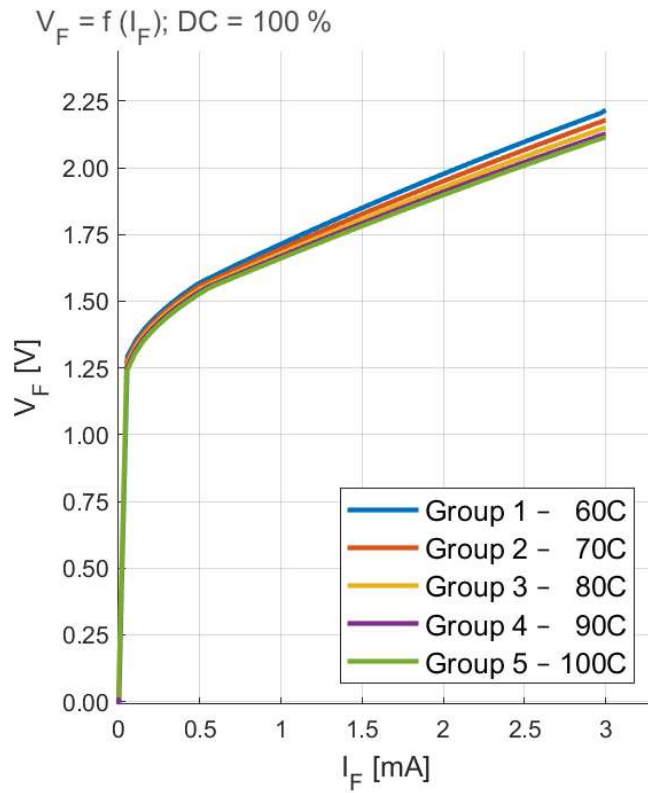


### Radiation Characteristics <sup>1)</sup>

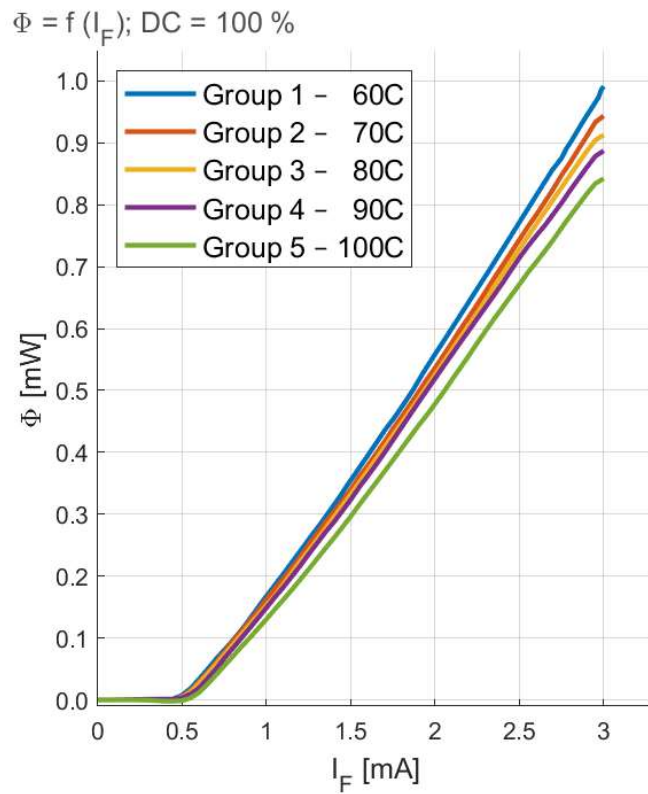
$$\Phi_{\text{rel}} = f(\phi); T_S = 60 \text{ }^\circ\text{C}$$



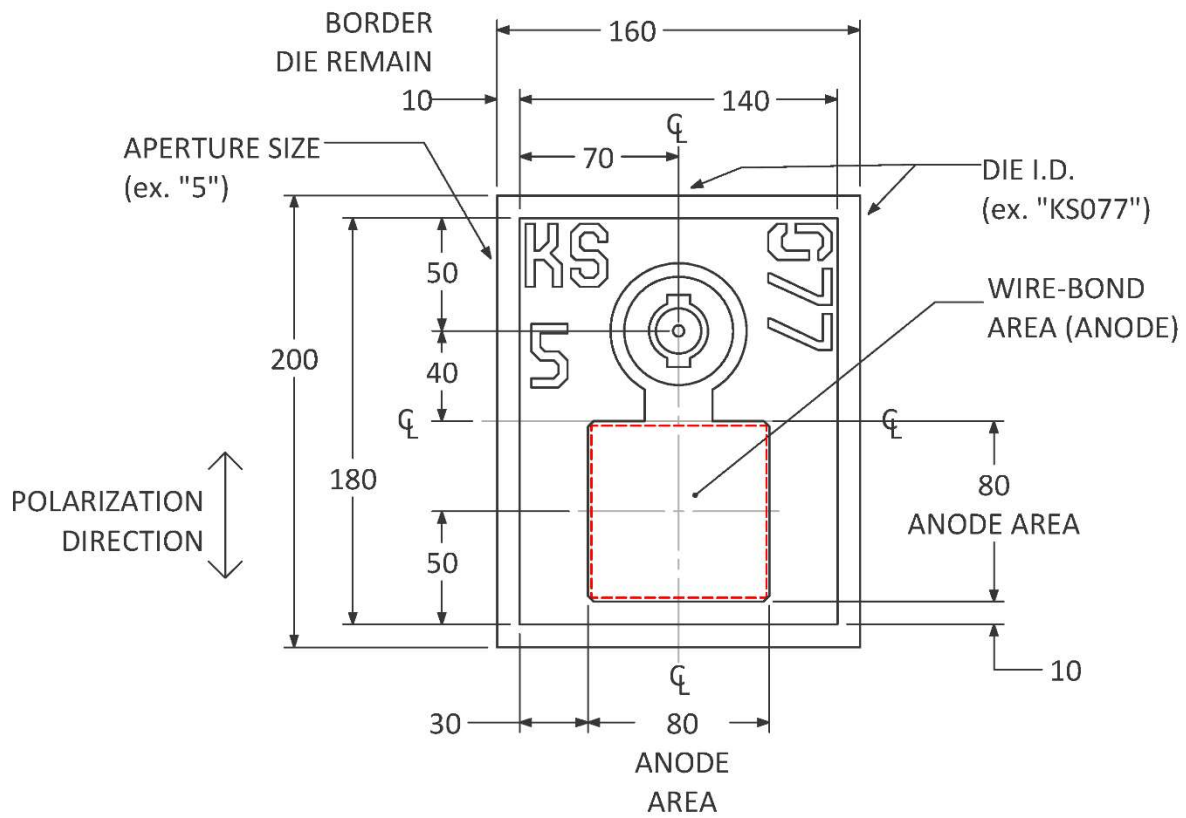
**Forward Voltage** <sup>1) 2)</sup>



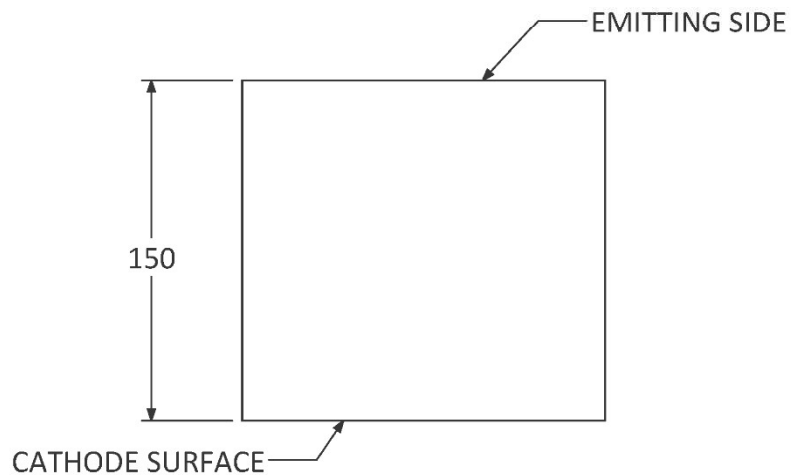
**Optical Output Power** <sup>1) 2)</sup>



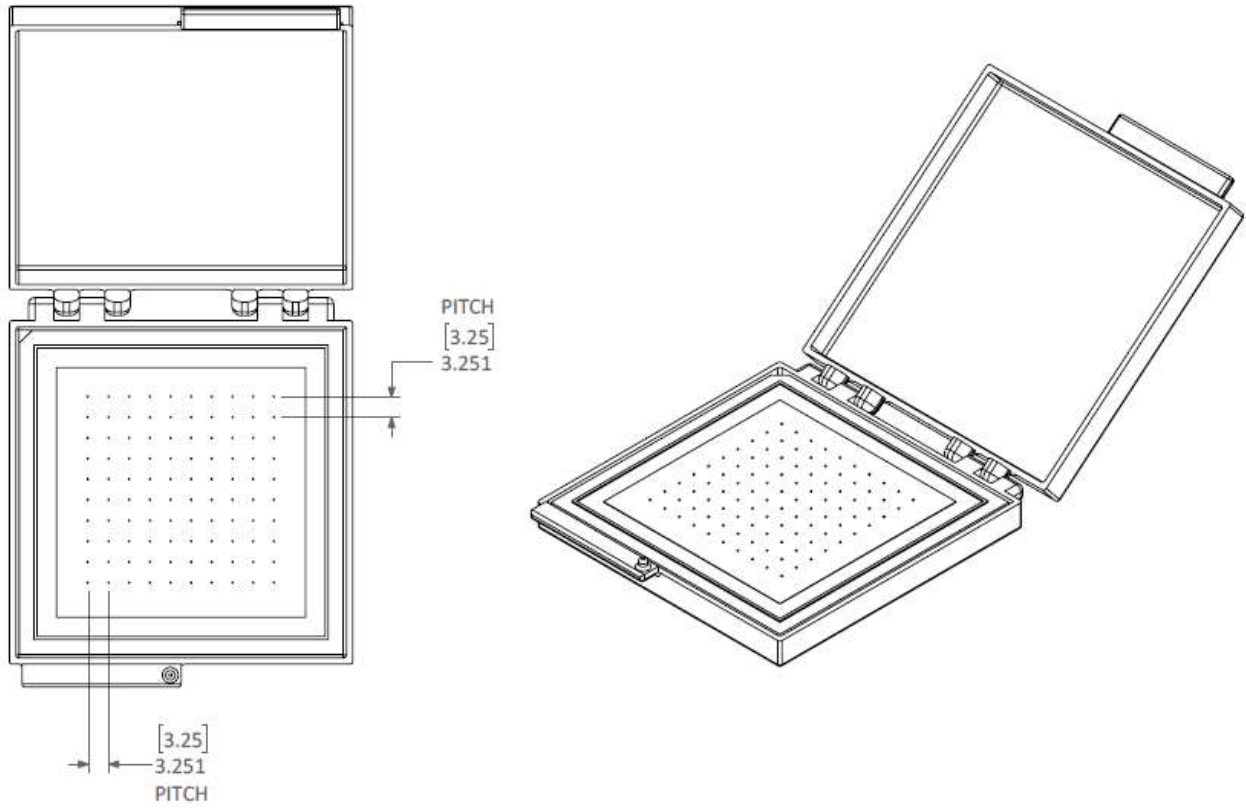
Dimension Drawings <sup>3)</sup>



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



## Packaging



Pieces per Gel-Pak

100

## 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 visit [www.osram-os.com/appnotes](http://www.osram-os.com/appnotes)



## Disclaimer

OSRAM OS assumes no liability whatsoever for any use of this document or its content by recipient including, but not limited to, for any design in activities based on this preliminary draft version. OSRAM OS may e.g. decide at its sole discretion to stop developing and/or finalizing the underlying design at any time.

### Attention please!

The information describes the type of component and shall not be considered as assured characteristics. Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances.

For information on the types in question please contact our Sales Organization.

If printed or downloaded, please find the latest version on the OSRAM OS website.

### Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office.

By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

### Product safety devices/applications or medical devices/applications

OSRAM OS components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.

In case Buyer – or Customer supplied by Buyer– considers using OSRAM OS components in product safety devices/applications or medical devices/applications, Buyer and/or Customer has to inform the local sales partner of OSRAM OS immediately and OSRAM OS and Buyer and /or Customer will analyze and coordinate the customer-specific request between OSRAM OS and Buyer and/or Customer.

## 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
1.1	March 2 <sup>nd</sup> , 2023	Release of Datasheet
1.2	January 30 <sup>th</sup> , 2024	Update Ordering Code for each Group.

Published by OSRAM Opto Semiconductors GmbH EU RoHS and China RoHS compliant product  
Leibnizstraße 4, D-93055 Regensburg  
www.osram-os.com © All Rights Reserved.

此产品符合欧盟 RoHS 指令的要求；  
按照中国的相关法规和标准，不含有毒有害物质或元素。

