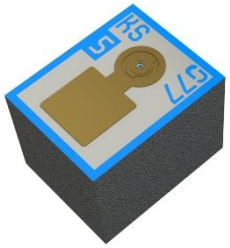
OLI0608V.A1-795



BIDOS® Core V

Applications:

- Atomic Clock
- Magnetometer

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
Group 1	T_a = 60±10°C; I_F = 1.4 mA; DC = 100%, 795nm	Q65113A6386
Group 2	T_a = 70±10°C; I_F = 1.4 mA; DC = 100%, 795nm	Q65113A7977
Group 3	T_a = 80±10°C; I_F = 1.4 mA; DC = 100%, 795nm	Q65113A7978
Group 4	T_a = 90±10°C; I_F = 1.4 mA; DC = 100%, 795nm	Q65113A7979
Group 5	T_a = 100±10°C; I_F = 1.4 mA; DC = 100%, 795nm	Q65113A7980

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°C

Parameter	Symbol		Values
Operation/Solder temperature	T_S	min.	-20 °C
DC = 100 %		max.	110 °C
Storage temperature	T_{stg}	min.	-40 °C
		max.	125 °C
Forward current to remain single mode	I_f	max.	1.5 mA
Direct current operation; DC = 100%; T_S = 75°C			
Forward Current	I_f	max.	3.0 mA
Direct current operation; DC = 100%; T_S = 75°C			
Reverse Voltage	Not designed for reverse operation		
ESD withstand voltage	V_{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.

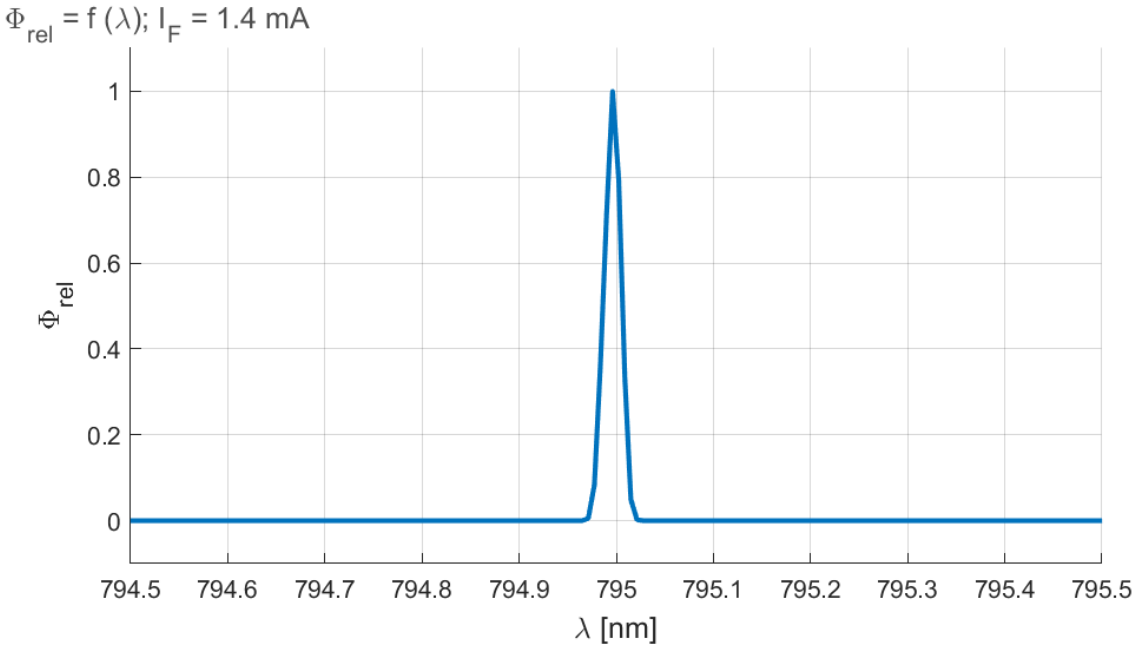
Characteristics

T_a = 80°C, I_F = 1.4 mA; DC = 100% - Group 3

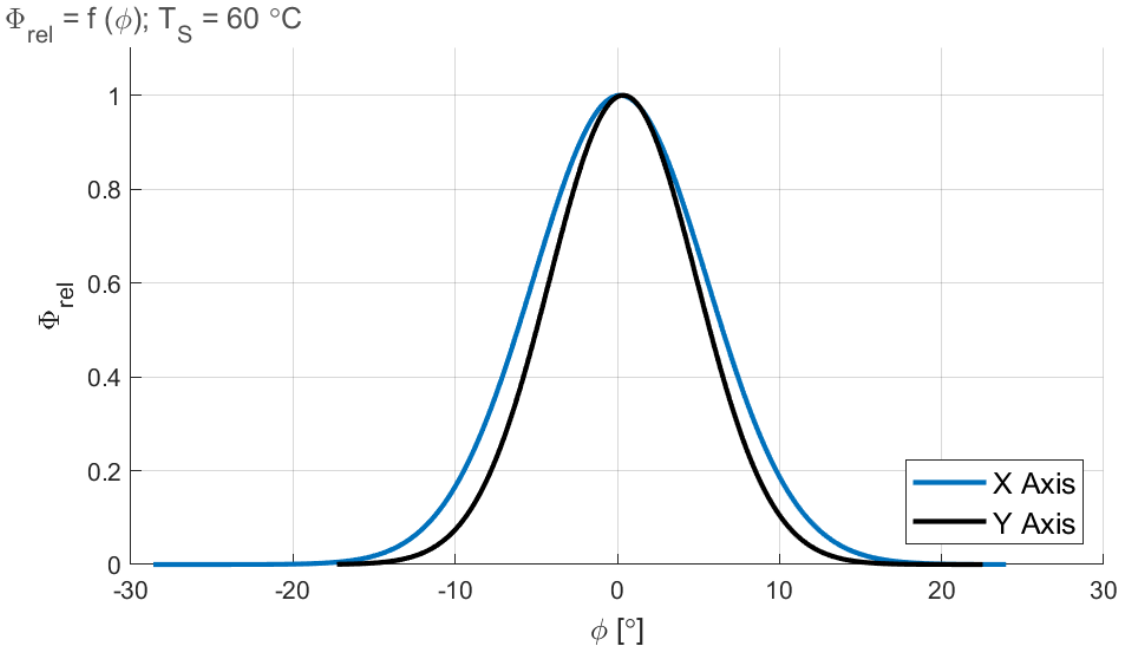
Parameter	Symbol		Values
Forward voltage	V_F	typ.	1.8 V
Output power	Φ	typ.	0.13 mW
Threshold current	I_{th}	typ.	0.75 mA
Slope efficiency	SE	typ.	0.21 W/A
Single-mode Suppression Ratio	SMSR	min.	20 dB
Polarization Extinction Ratio [5)]	PER	min.	15 dB
Peak wavelength	λ_{peak}	min.	794.5 nm
		typ.	795 nm
		max.	795.5 nm
Spectral linewidth	$\Lambda_{linewidth}$	max.	100 MHz
FM Modulation Bandwith	Fm	min.	3.4 GHz
Temperature coefficient of wavelength	TC_λ	typ.	0.055 nm /K
Field of view at FWHM (50% of Φ_{max})	ϕ_X	typ.	12°
	ϕ_Y	typ.	12°
Field of view at $1/e^2$	ϕ_X	typ.	20°
	ϕ_Y	typ.	20°

Note: Wavelength, Output power and Voltage changes based on operating temp.

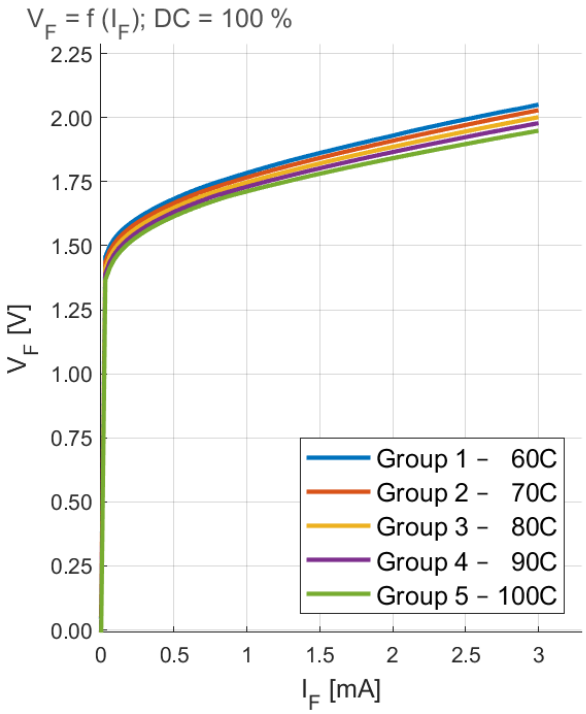
Relative Spectral Emission [1)]



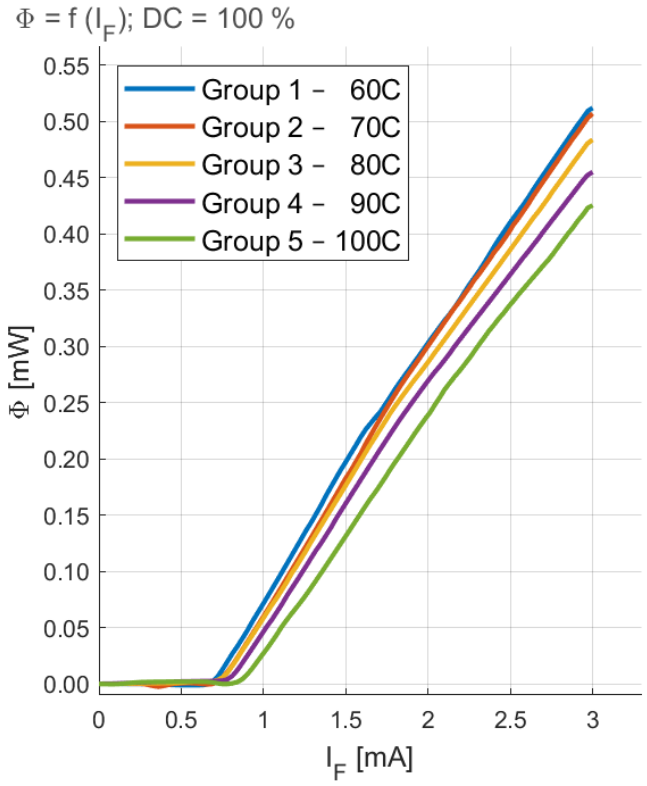
Radiation Characteristics [1)]



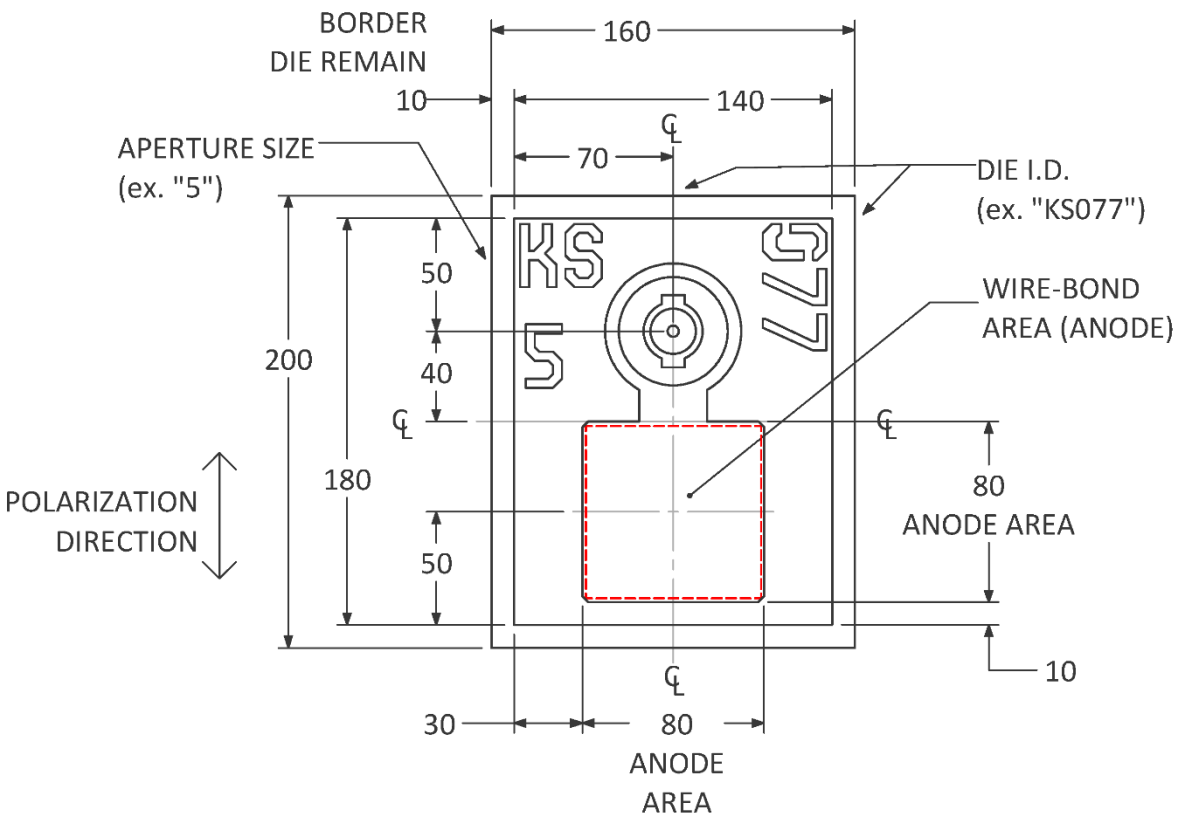
Forward Voltage [1) 2)]



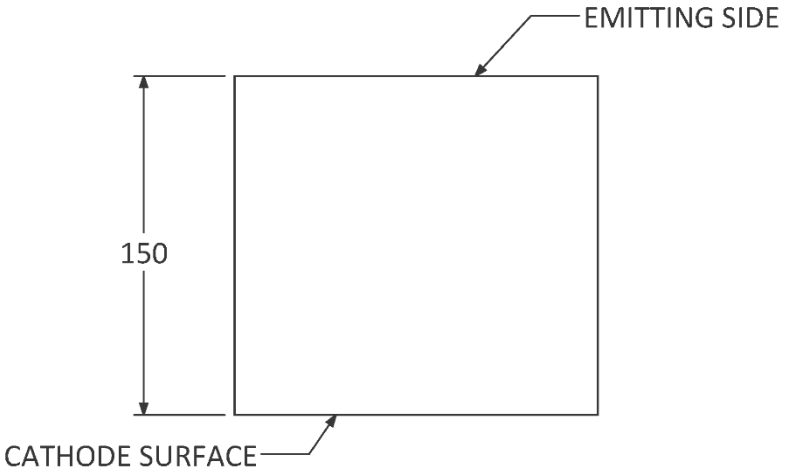
Optical Output Power [1) 2)]



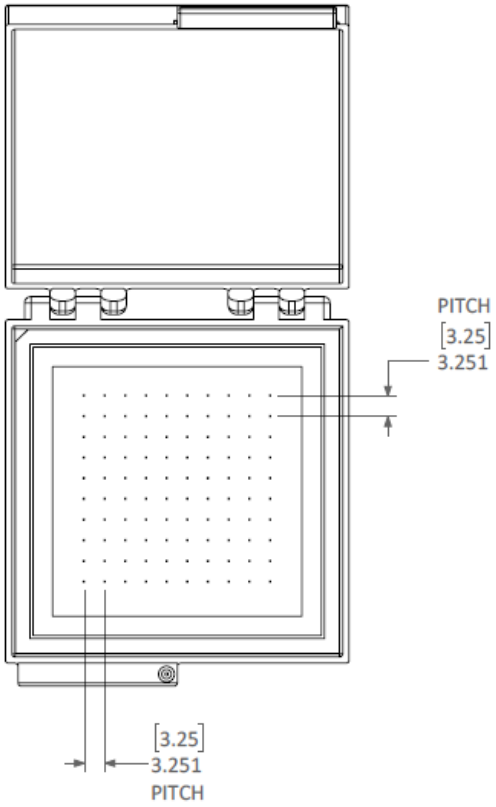
Dimension Drawings [3)]

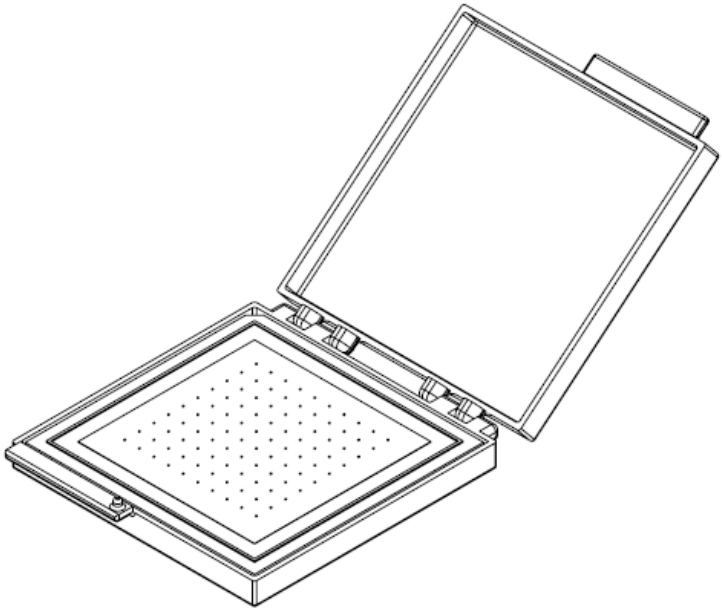


DASHED LINES (WIRE-BOND AREA) ARE NOT VISIBLE ON ACTUAL DIE



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

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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°C ± 2°C
3) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with ±0.1 and dimensions are specified in mm.
4) **Wavelength:** The wavelength is measured at continuous wave, with resolution of ±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 2nd, 2023	Release of Datasheet
1.2	January 30th, 2024	Update Ordering Code for each Group.

Published by OSRAM Opto Semiconductors GmbH
Leibnizstraße 4, D-93055 Regensburg

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