OSRAM OLI0608V.A3-940-A

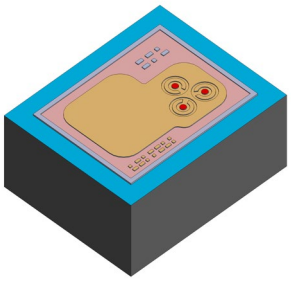
Datasheet

Published by ams-OSRAM AG
Tobelbader Strasse 30, 8141 Premstaetten, Austria
Phone +43 3136 500-0
ams-osram.com

OS-CORE®

OLI0608V.A3-940-A

Infrared VCSEL



Features

- Chipsize: 6 mil x 8 mil
- Wavelength 940nm
- Target application: Mobile Proximity Sensing

Ordering Information

Type	Optical output power typ. I_F = 15 mA; t_p = 100 µs; D = 0.01 ; T_A = 25 °C P_{opt}	Ordering Code
OLI0608V.A3-940-A	12 mW	Q65113A7406

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 = 25 °C

Parameter	Symbol		Values
Operating temperature	T_{op}	min. max.	-40 °C 85 °C
Storage temperature	T_{stg}	min. max.	-40 °C 100 °C
Forward current	I_F	max.	25 mA
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM)	V_{ESD}	max.	350 V
Reverse voltage [1]	V_R		Not designed for reverse operation

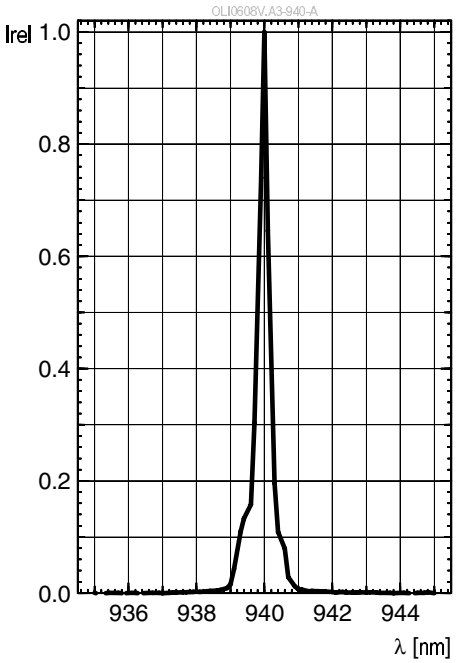
Characteristics

I_F = 15 mA; t_p = 100 µs; D = 0.01 ; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength [2]	λ_{peak}	min. typ. max.	930 nm 940 nm 950 nm
Spectral bandwidth at 50% $I_{e,rel,max}$	$\Delta\lambda$	typ.	1 nm
Optical output power [3] I_F = 15 mA; t_p = 100 µs; D = 0.01 ; T_A = 25 °C	P_{opt}	min. typ. max.	10 mW 12 mW 15 mW
Beam divergence (1/e²) - 0°	Θ	typ.	21 °
Beam divergence (1/e²) - 90°	Θ	typ.	21 °
Beam divergence (FWHM) - 0°	Θ	typ.	16 °
Beam divergence (FWHM) - 90°	Θ	typ.	16 °
Slope efficiency	η	typ.	0.85 W / A
Power conversion efficiency	η_{tot}	typ.	40 %
Threshold current	I_{th}	typ.	1.3 mA
Forward voltage [4]	V_F	min. typ. max.	1.80 V 1.90 V 2.05 V
Temperature coefficient of wavelength	TC_λ	typ.	0.07 nm / K

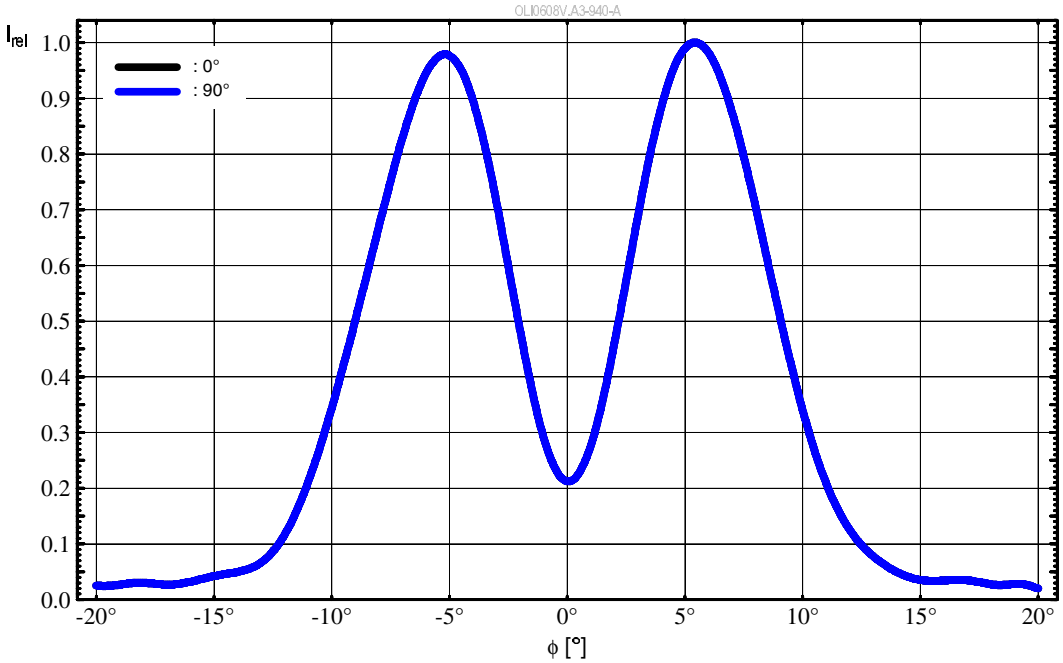
Relative Spectral Emission [5], [6]

$I_{e,rel} = f(\lambda)$; I_F = 15mA; t_p = 100µs; D = 0.01



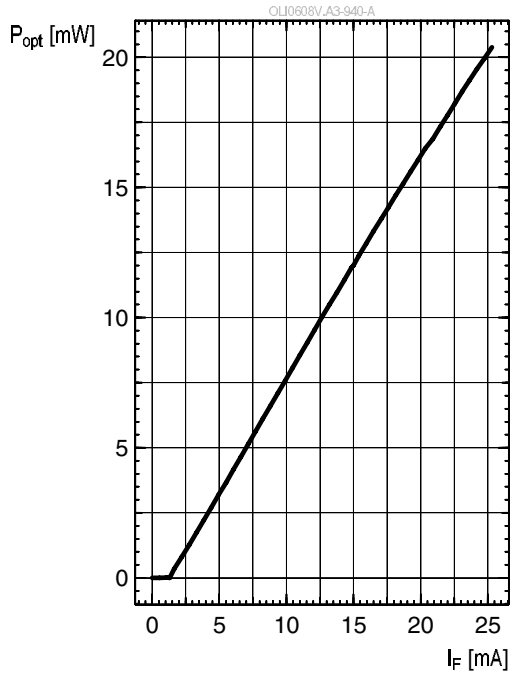
Radiation Characteristics [5], [6]

$I_{e,rel} = f(\varphi)$



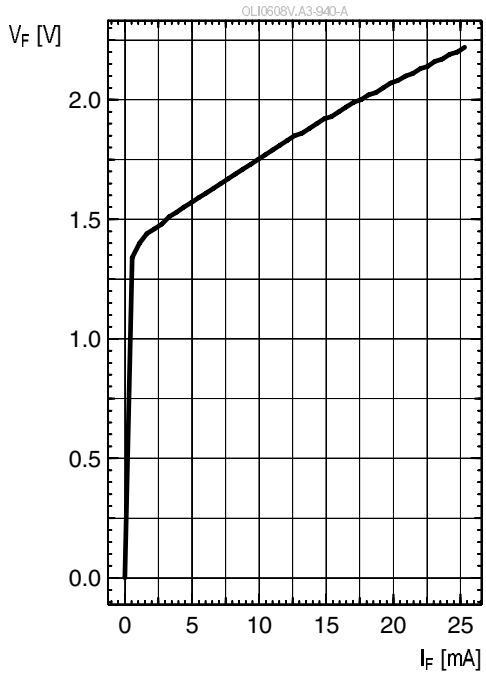
Optical Output Power [5], [6]

$P_{opt} = f(I_F)$; t_p = 100 µs; D = 0.01

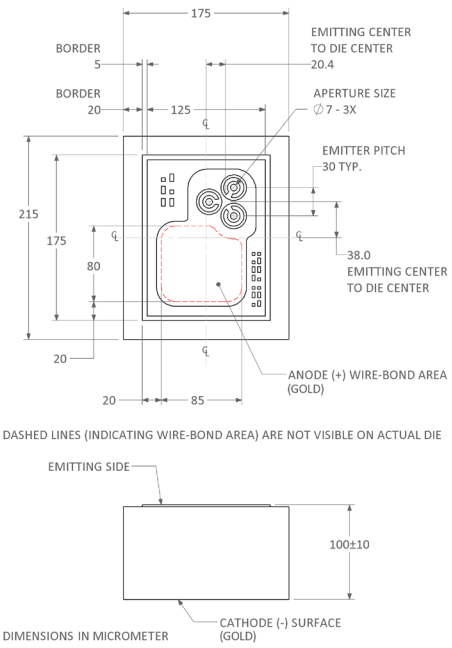


Forward Voltage [5], [6]

$V_F = f(I_F)$; t_p = 100 µs; D = 0.01



Dimensional Drawing [7)]



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 have to 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.

Disclaimer

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 our 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 and functional safety devices/applications or medical devices/applications

Our components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.
Our products are not qualified at module and system level for such application.

In case buyer – or customer supplied by buyer – considers using our components in product safety devices/ applications or medical devices/applications, buyer and/or customer has to inform our local sales partner immediately and we and buyer and /or customer will analyze and coordinate the customer-specific request between us and buyer and/or customer.

Glossary

1) **Reverse Operation:** Not designed for reverse operation. Continuous reverse operation can cause migration and damage of the device.

2) **Wavelength:** The wavelengths are measured with a tolerance of ±1 nm.

3) **Brightness:** The brightness values are measured with a tolerance of ±11%.

4) **Forward Voltage:** The forward voltages are measured with a tolerance of ±0.1 V.

5) **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.

6) **Testing temperature:** TA = 25°C (unless otherwise specified)

7) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with ±0.1 and dimensions are specified in mm.

EU RoHS and China RoHS compliant product
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。

Published by ams-OSRAM AG
Tobelbader Strasse 30, 8141 Premstaetten, Austria
Phone +43 3136 500-0
ams-osram.com