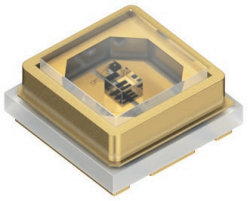
SU CULCN1.VC



OSLON® UV 3636

This compact UV-C LED is part of the OSLON UV series.
It allows a flexible design for any application which requires UV-C radiation for e.g. disinfection, purification, treatment or sensing.

Applications

- Equipment Illumination (e.g. Curing, Endoscope)
- Smoke/Dust/Particle Sensing
- UV-C Air Disinfection
- UV-C Surface Disinfection
- UV-C Water Disinfection

Features:

- Package: Ceramic package with integrated glass cover
- Chip technology: AlGaN based Flip chip
- Typ. Radiation: 120° (Lambertian emitter)
- Color: λ_{peak} = 275 nm (ultraviolet (UV-C))
- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM)
- Radiant Flux: typ. 13.5 mW
- Radiant Efficiency: typ. 2.4 %

Ordering Information

Type	Total radiant flux [1] I_F = 100 mA Φ_E	Ordering Code
SU CULCN1.VC-GAGD-67-0	10 ... 18 mW	Q65113A3141

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min. max.	-30 °C 60 °C
Storage Temperature	T_{stg}	min. max.	-40 °C 100 °C
Junction Temperature	T_j	max.	100 °C
Forward current T_S = 25 °C	I_F	min. max.	1 mA 200 mA
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM)	V_{ESD}		2 kV
Reverse voltage [2)]	V_R		Not designed for reverse operation

Characteristics

I_F = 100 mA; T_S = 25 °C

Parameter	Symbol		Values
Peak Wavelength [3]	λ_{peak}	min. typ. max.	270 nm 275 nm 280 nm
Viewing angle at 50% I_V	2φ	typ.	120 °
Forward Voltage [4] I_F = 100 mA	V_F	min. typ. max.	5.00 V 5.70 V 7.00 V
Reverse current [2]	I_R		Not designed for reverse operation
Real thermal resistance junction/solderpoint [5]	$R_{thJS\ real}$	typ.	15 K / W
Electrical thermal resistance junction/solderpoint with efficiency η_e = 2.4 %	$R_{thJS\ elec.}$	typ.	15 K / W

Brightness Groups

Group	Total radiant flux [1] I_F = 100 mA min. Φ_e	Total radiant flux [1] I_F = 100 mA max. Φ_e
GA	10 mW	12 mW
GB	12 mW	14 mW
GC	14 mW	16 mW
GD	16 mW	18 mW

Wavelength Groups

Group	Peak Wavelength [3] min. λ_{peak}	Peak Wavelength [3] max. λ_{peak}
6	270 nm	275 nm
7	275 nm	280 nm

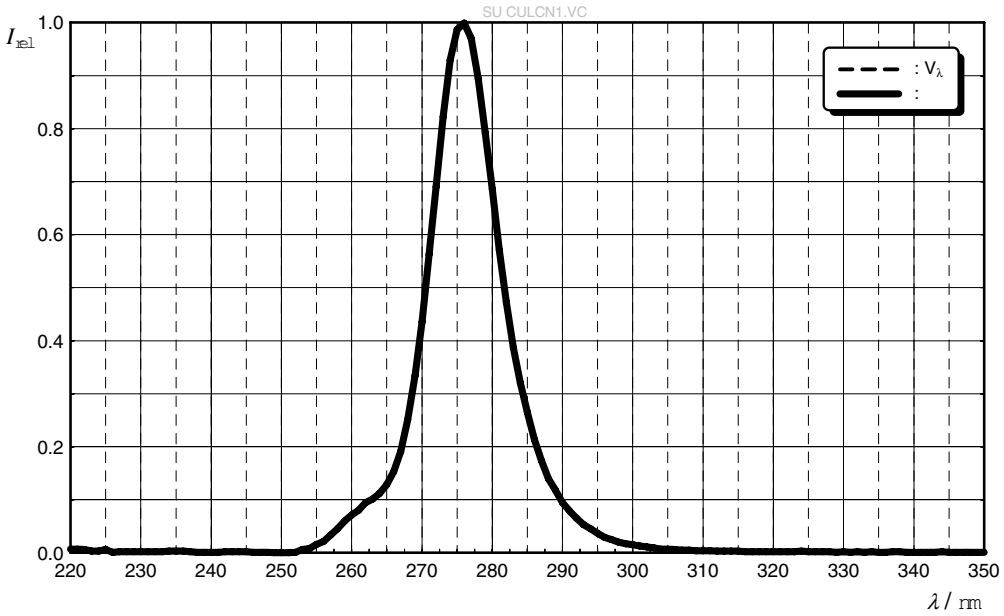
Group Name on Label

Example: GA-6

Brightness	Wavelength
GA	6

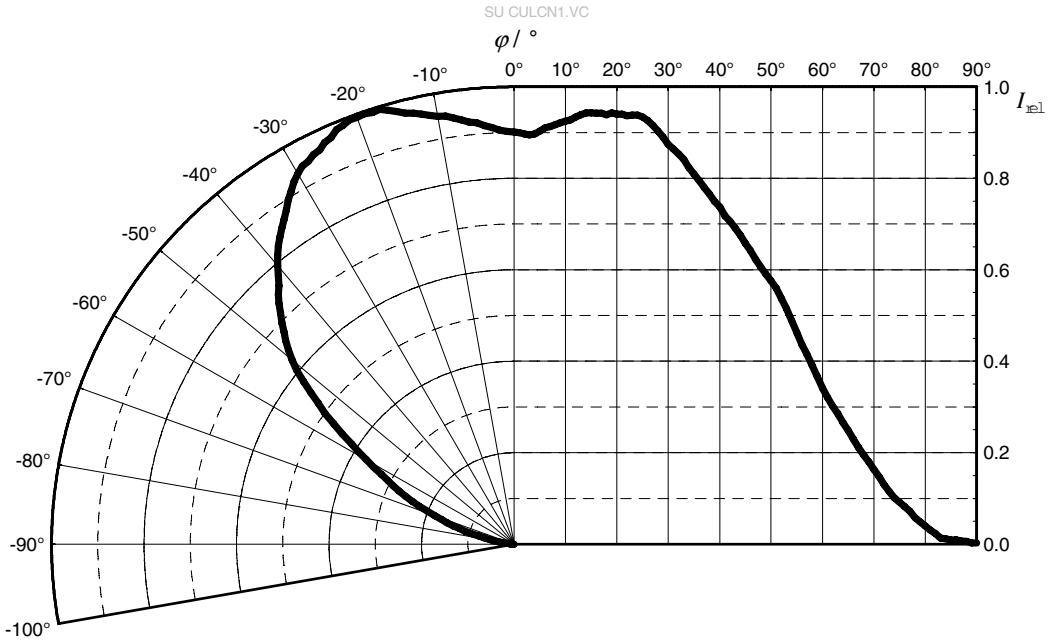
Relative Spectral Emission [6)]

$I_{rel} = f(\lambda)$; $I_F = 100$ mA; $T_S = 25$ °C



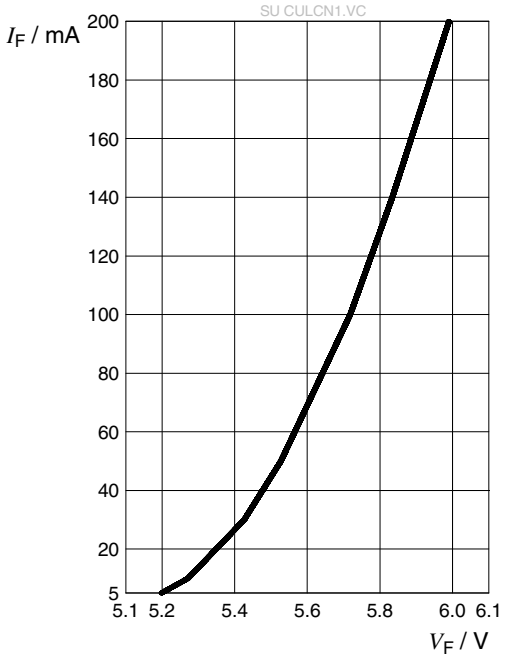
Radiation Characteristics [6)]

$I_{rel} = f(\phi)$; $T_S = 25$ °C



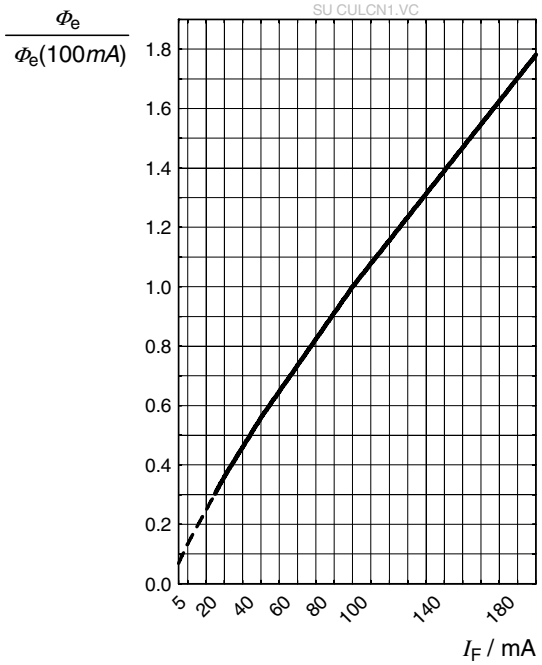
Forward current [6]

$I_F = f(V_F)$; T_S = 25 °C



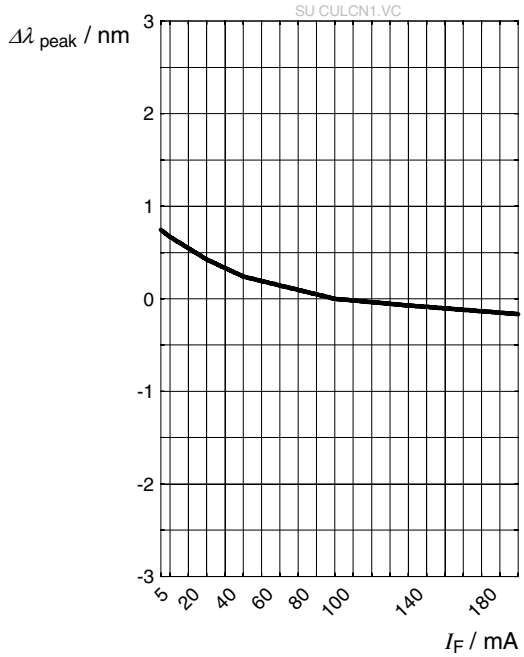
Relative Radiant Power [6], [7]

$\Phi_E/\Phi_E(100\ mA) = f(I_F)$; T_S = 25 °C



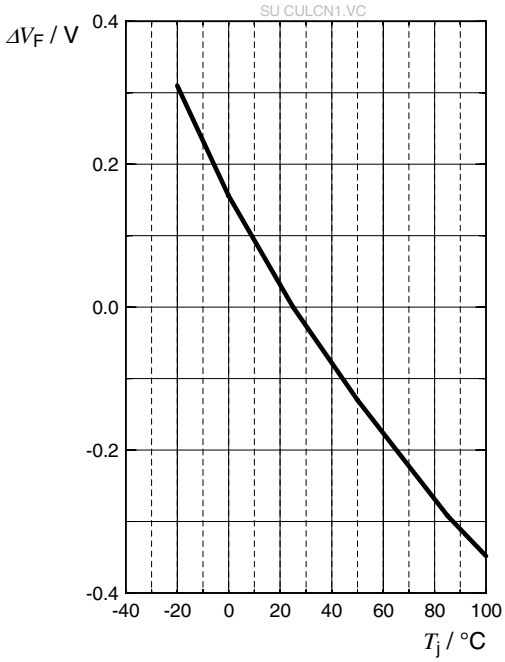
Peak Wavelength [6]

$\lambda_{peak} = f(T_j)$; I_F = 100 mA



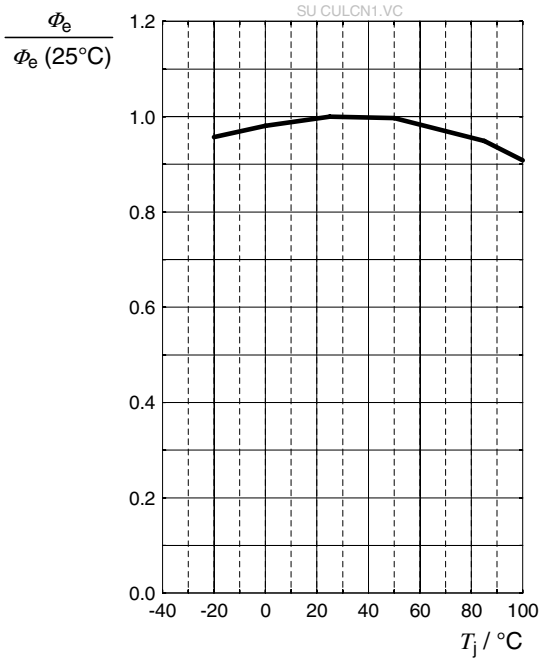
Forward Voltage [6)]

$\Delta V_F = V_F - V_F(25\ °C) = f(T_j);\ I_F = 100\ mA$



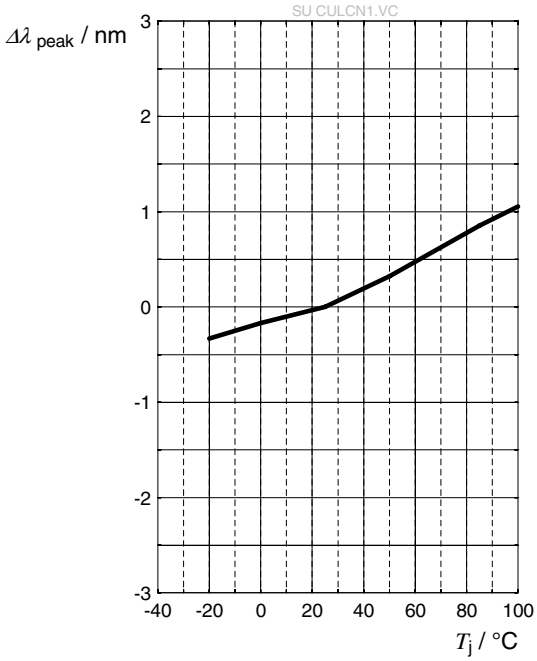
Relative Radiant Power [6)]

$\Phi_E/\Phi_E(25\ °C) = f(T_j);\ I_F = 100\ mA$



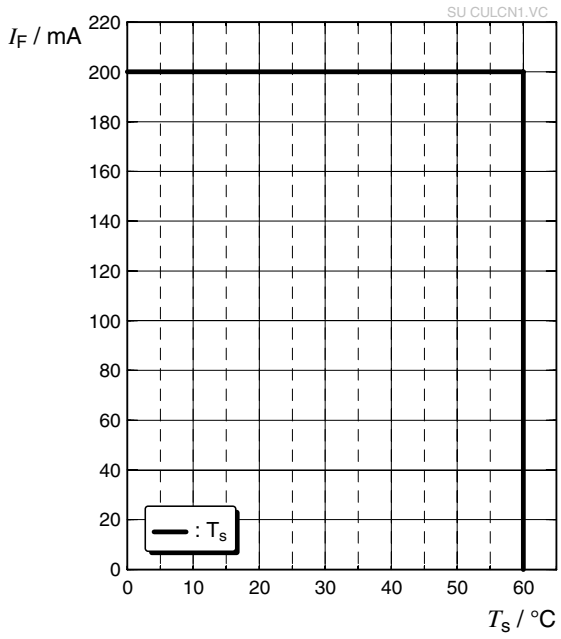
Peak Wavelength [6)]

$\lambda_{peak} = f(T_j);\ I_F = 100\ mA$

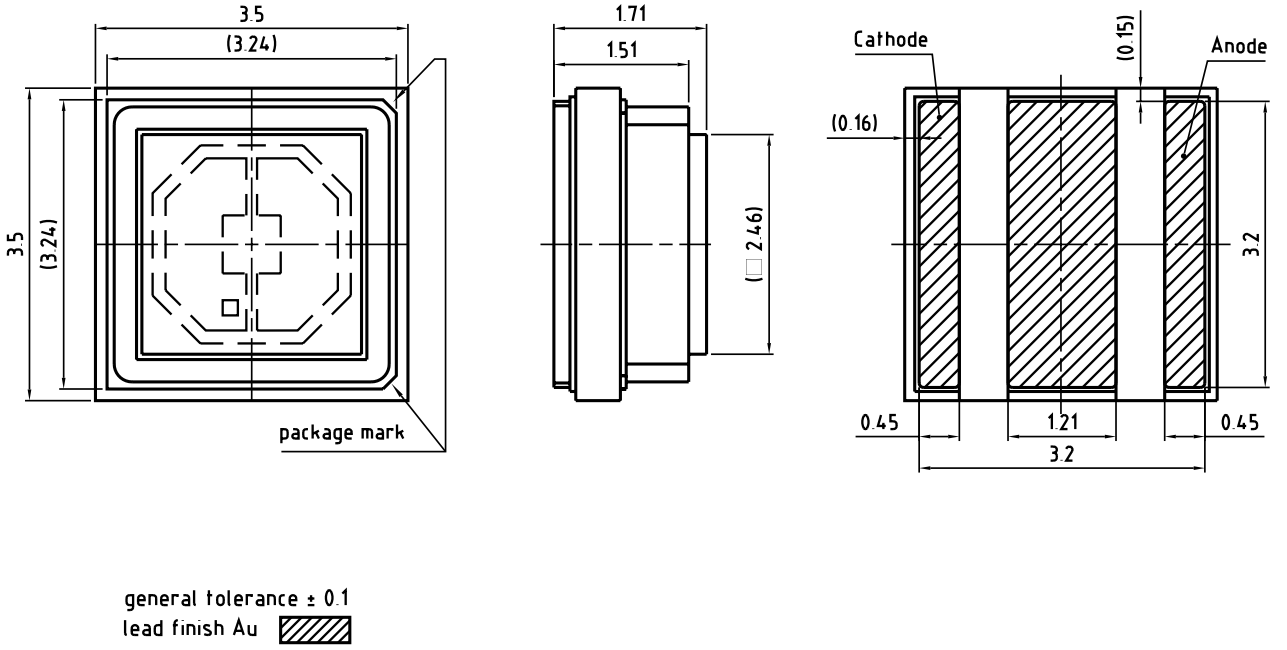


Max. Permissible Forward Current

$I_F = f(T)$



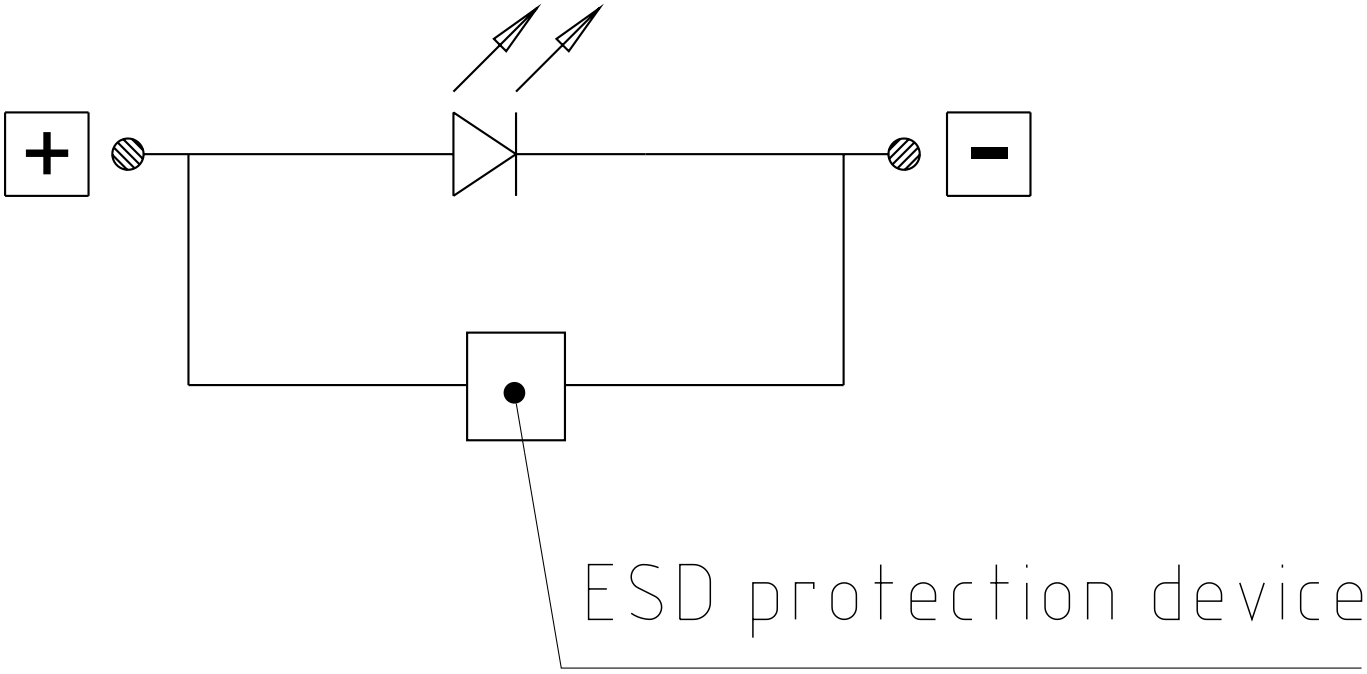
Dimensional Drawing [8)]



general tolerance ± 0.1
lead finish Au

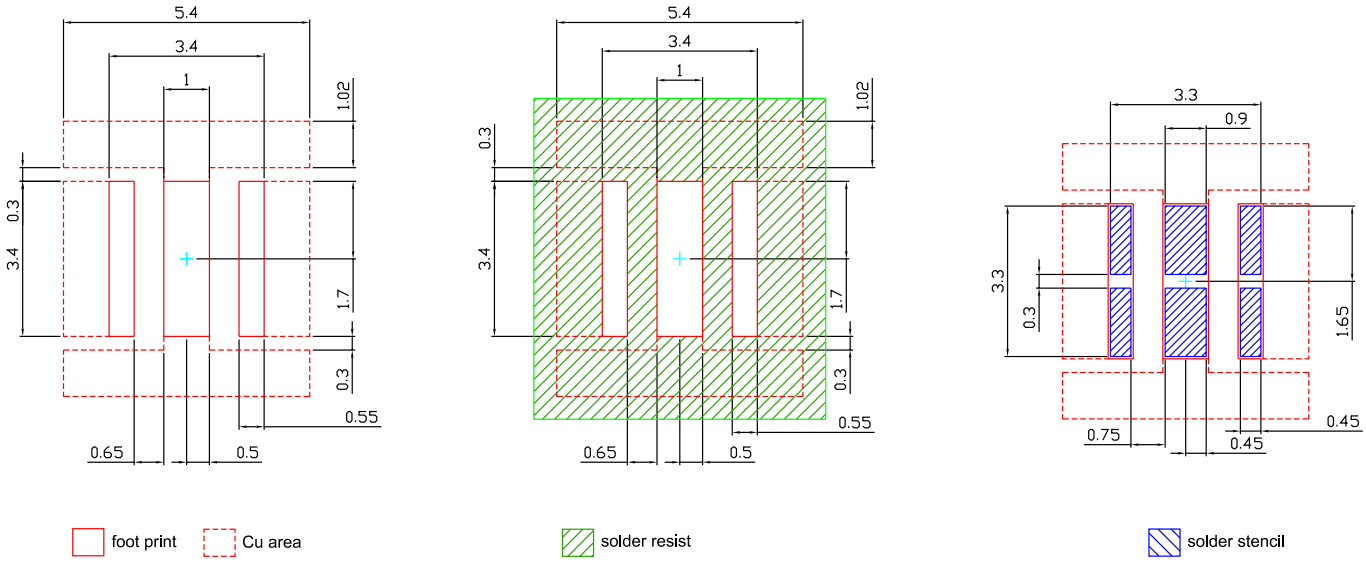
C67062-A0411-A1-01

Electrical Internal Circuit



OSRAM
Opto Semiconductors

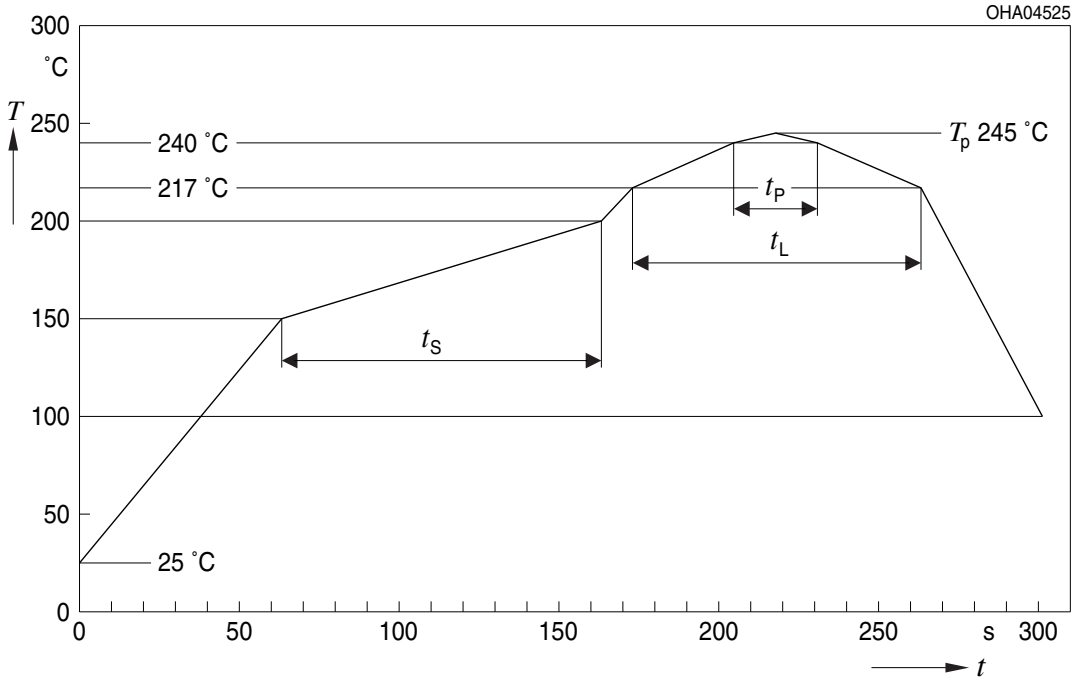
Recommended Solder Pad [8)]



For superior solder joint connectivity results we recommend soldering under standard nitrogen atmosphere. Further information can be found in our Application Note: “Handling and Processing Details for Ceramic LEDs”. Package not suitable for any kind of wet cleaning or ultrasonic cleaning.

Reflow Soldering Profile

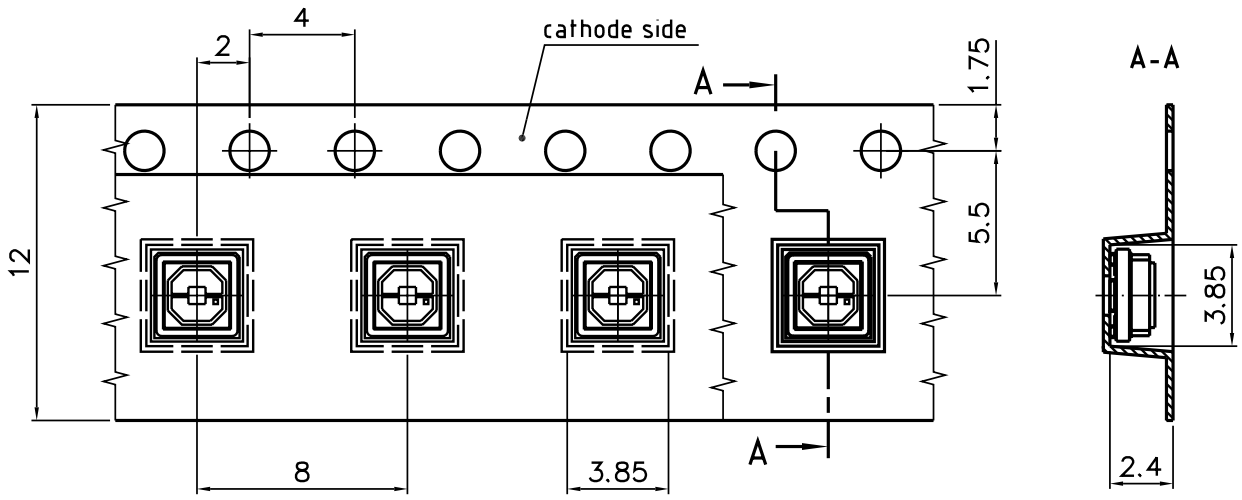
Product complies to MSL Level 3 acc. to JEDEC J-STD-020E



Profile Feature	Symbol	Pb-Free (SnAgCu) Assembly			Unit
		Minimum	Recommendation	Maximum	
Ramp-up rate to preheat*) 25 °C to 150 °C			2	3	K/s
Time t_S T_{Smin} to T_{Smax}	t_S	60	100	120	s
Ramp-up rate to peak*) T_{Smax} to T_P			2	3	K/s
Liquidus temperature	T_L		217		°C
Time above liquidus temperature	t_L		80	100	s
Peak temperature	T_P		245	260	°C
Time within 5 °C of the specified peak temperature T_P - 5 K	t_P	10	20	30	s
Ramp-down rate* T_P to 100 °C			3	6	K/s
Time 25 °C to T_P				480	s

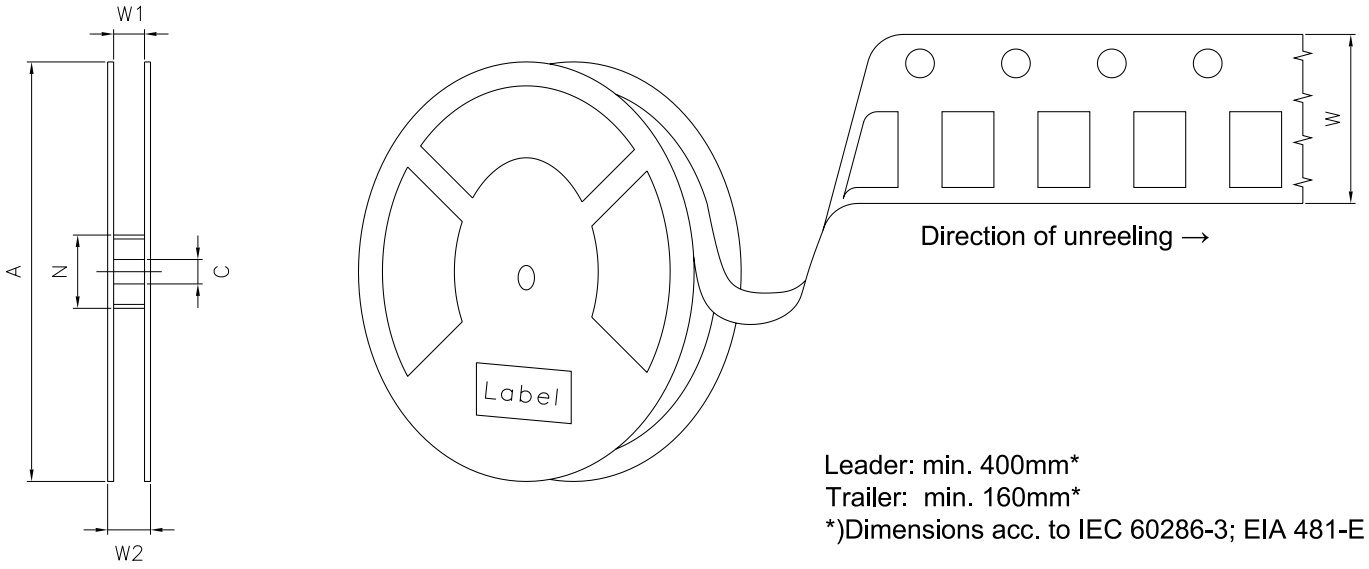
All temperatures refer to the center of the package, measured on the top of the component
* slope calculation DT/Dt: Dt max. 5 s; fulfillment for the whole T-range

Taping [8)]



C67062–A0411–B2–01

Tape and Reel [9)]

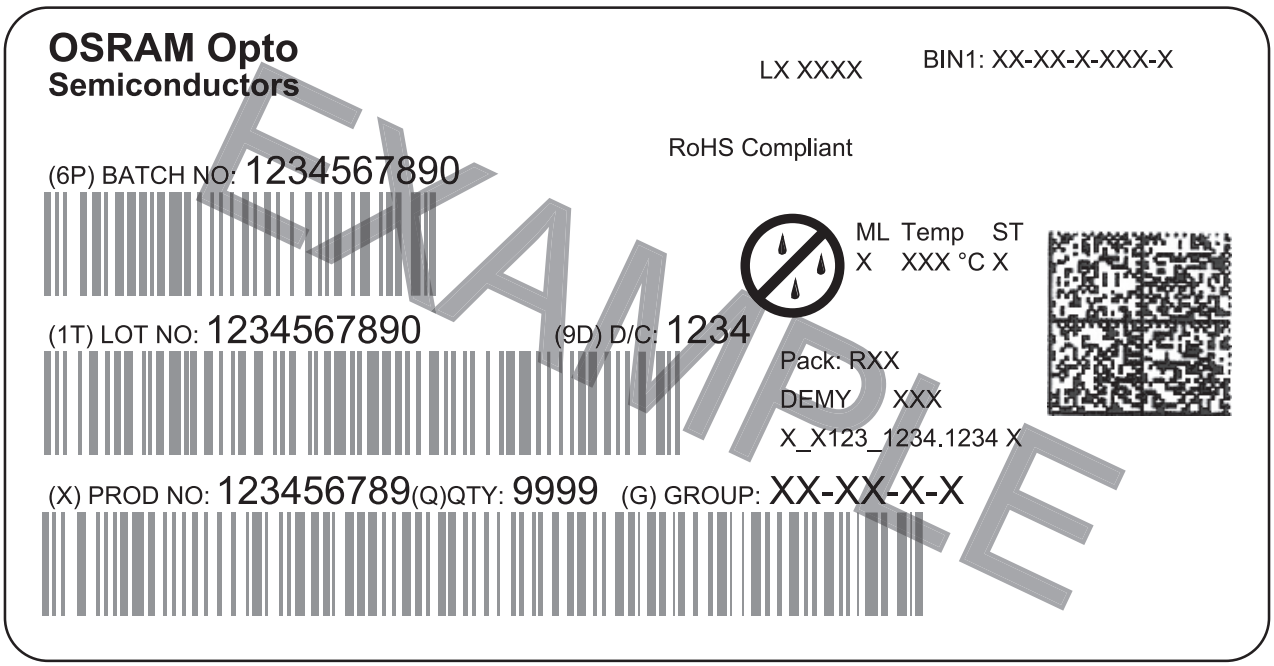


Leader: min. 400mm*
Trailer: min. 160mm*
*)Dimensions acc. to IEC 60286-3; EIA 481-E

Reel Dimensions

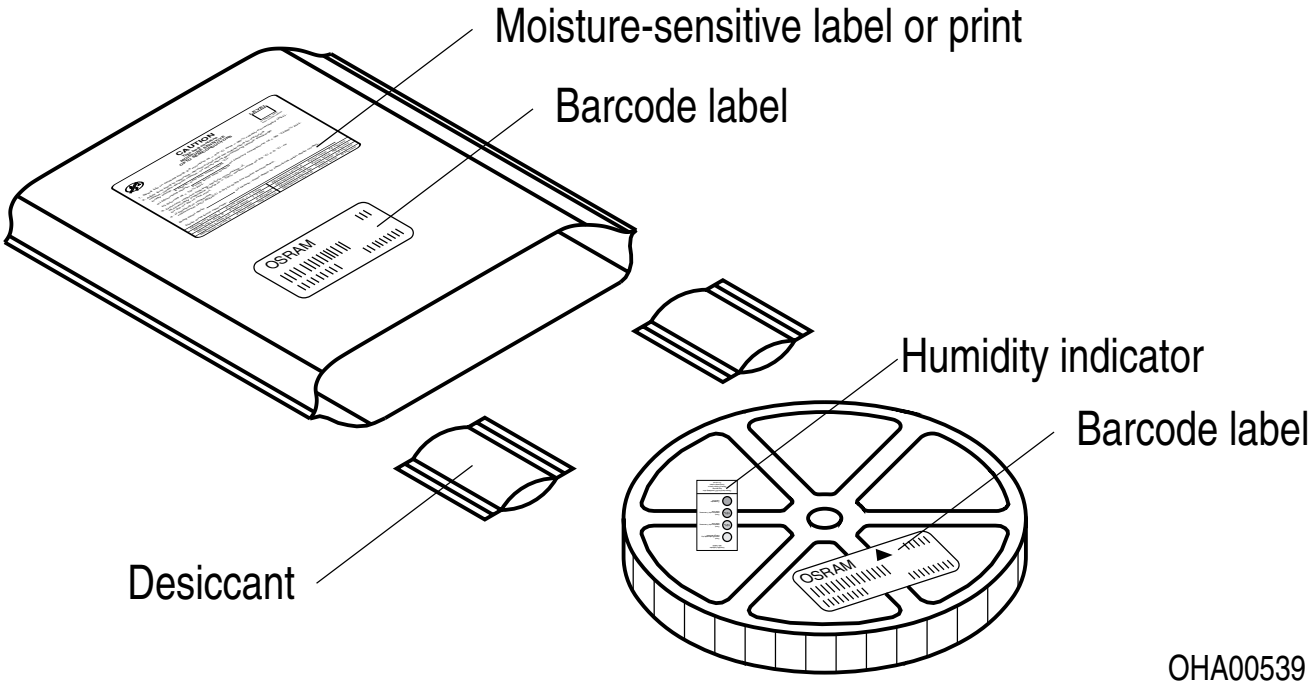
A	W	N_{min}	W_1	$W_{2\,max}$	Pieces per PU
180 mm	12 + 0.3 / - 0.1 mm	60 mm	12.4 + 2 mm	18.4 mm	500

Barcode-Product-Label (BPL)



OHA04563

Dry Packing Process and Materials [8)]



OHA00539

Moisture-sensitive product is packed in a dry bag containing desiccant and a humidity card according JEDEC-STD-033.

Notes

The evaluation of eye safety occurs according to the standard IEC 62471:2006 (photo biological safety of lamps and lamp systems). Within the risk grouping system of this IEC standard, the device specified in this data sheet falls into high risk group – RG3. WARNING - UV emitted from this product. Avoid eye and skin contact to unshielded product.

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.

Changes to the content of this datasheet may occur without further notification. JEDEC 46C constitutes the guideline of the change management for the device specified in this document.

Based on very short life cycle times in chip technology this component is subject to frequent adaption to the latest chip technology.

For further application related information please visit www.osram-os.com/appnotes

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 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 and functional 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.
OSRAM OS products are not qualified at module and system level for such application.

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) **Brightness:** Brightness groups are tested at a current pulse duration of 10 ms and a tolerance of ±10 %.

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

3) **Peak Wavelength:** Wavelengths are tested at a current pulse duration of 10 ms and a tolerance of ±3 nm.

4) **Forward Voltage:** Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ±0.1 V.

5) **Thermal Resistance:** Rth max is based on statistic values (6σ).

6) **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.

7) **Characteristic curve:** In the range where the line of the graph is broken, you must expect higher differences between single devices within one packing unit.

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

9) **Tape and Reel:** All dimensions and tolerances are specified acc. IEC 60286-3 and specified in mm.

Revision History

Version	Date	Change
1.0	2021-05-25	Initial Version
1.1	2021-08-06	Characteristics

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

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。