

OSRAM CT ELLN51.14

Datasheet

Published by **ams-OSRAM AG**

Tobelbader Strasse 30, 8141 Premstaetten, Austria

Phone +43 3136 500-0

ams-osram.com

© All rights reserved



Chip LED

CT ELLN51.14

Green (530 nm) Emitter



Applications

- Digital Diagnostic Devices
- Vital Sign Monitoring

Features

- Package: clear silicone
- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)
- SMT package
- Suitable for SMT assembly
- Available on tape and reel

Ordering Information

Type	Total radiant flux ¹⁾ typ. $I_F = 20 \text{ mA}; t_p = 20 \text{ ms}$ Φ_e	Ordering Code
CT ELLN51.14	14 mW	Q65113A7798

Maximum Ratings

$T_s = 25\text{ °C}$

Parameter	Symbol		Values
Operating temperature	T_{op}	min. max.	-40 °C 85 °C
Storage temperature	T_{stg}	min. max.	-40 °C 85 °C
Junction temperature	T_j	max.	100 °C
Forward current	I_F	max.	30 mA
Forward current pulsed $t_p \leq 50\ \mu\text{s}$; $D \leq 0.005$	$I_{F\ pulse}$	max.	0.75 A
Reverse voltage ²⁾	V_R	max.	5 V
Power consumption	P_{tot}	max.	90 mW
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)	V_{ESD}	max.	2 kV

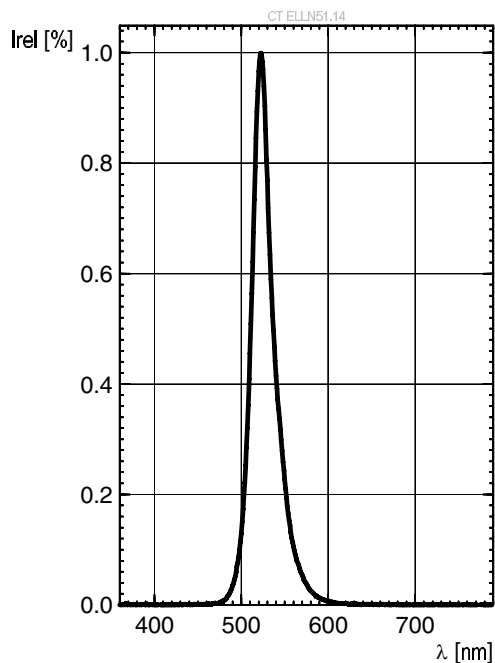
Characteristics

$I_F = 20 \text{ mA}$; $t_p = 20 \text{ ms}$; $T_S = 25 \text{ °C}$

Parameter	Symbol	Values
Peak wavelength	λ_{peak}	typ. 526 nm
Centroid wavelength ³⁾	$\lambda_{\text{centroid}}$	min. 522 nm
		typ. 530 nm
		max. 541 nm
Spectral bandwidth at 50% $I_{\text{rel,max}}$ (FWHM)	$\Delta\lambda$	typ. 32 nm
Half angle	φ	typ. 60 °
Dimensions of active chip area	L x W	typ. 0.5 x 0.5 mm x mm
Rise time (10% / 90%) $I_F = 100 \text{ mA}$; $R_L = 50 \text{ } \Omega$	t_r	typ. 59 ns
Fall time (10% / 90%) $I_F = 100 \text{ mA}$; $R_L = 50 \text{ } \Omega$	t_f	typ. 59 ns
Forward voltage ⁴⁾	V_F	min. 2.20 V
		typ. 2.40 V
		max. 2.80 V
Reverse current ²⁾ $V_R = 5 \text{ V}$	I_R	typ. 0.01 μA
		max. 10 μA
Total radiant flux ¹⁾⁵⁾ $I_F = 20 \text{ mA}$; $t_p = 20 \text{ ms}$	Φ_e	min. 11 mW
		typ. 14 mW
		max. 17.25 mW

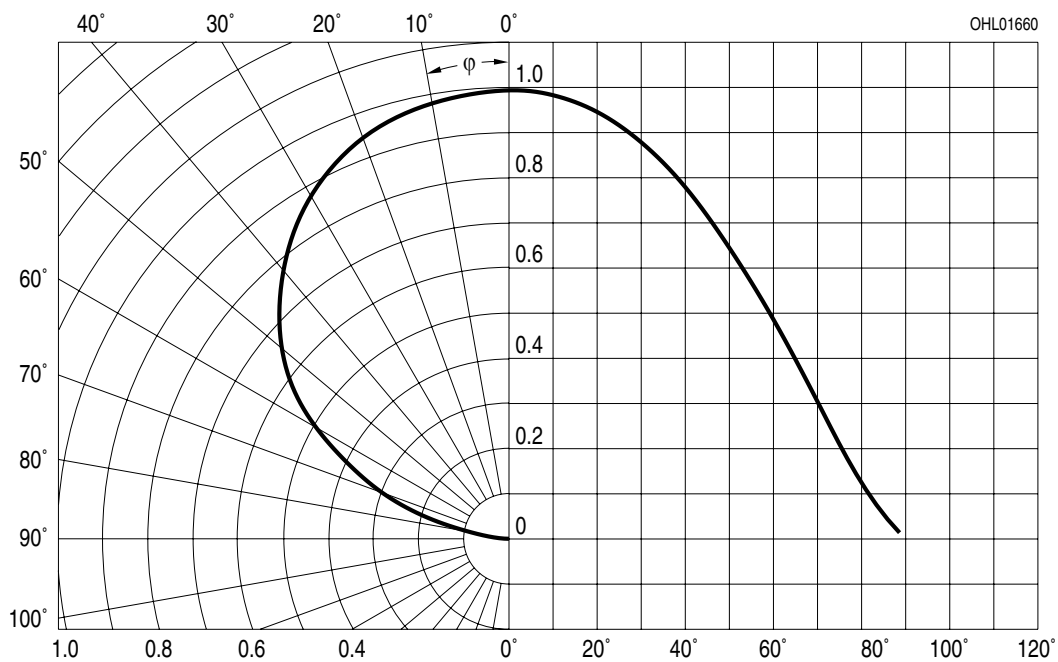
Relative Spectral Emission ^{6), 7)}

$I_{e,rel} = f(\lambda); I_F = 20 \text{ mA}; t_p = 20 \text{ ms}$



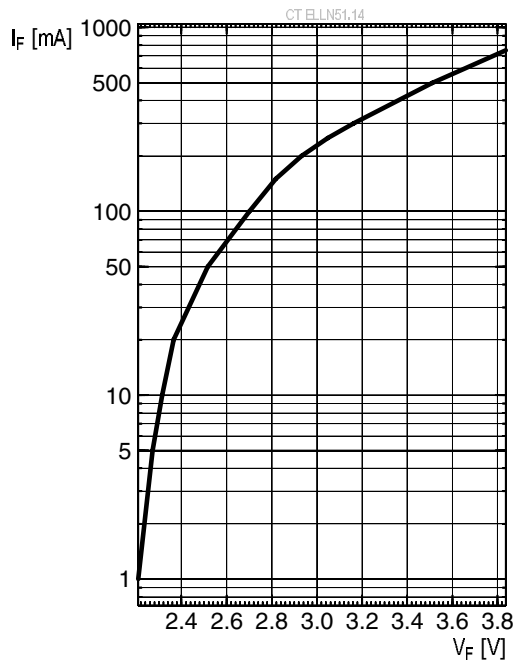
Radiation Characteristics ^{6), 7)}

$I_{rel} = f(\varphi); T_S = 25 \text{ }^\circ\text{C}$



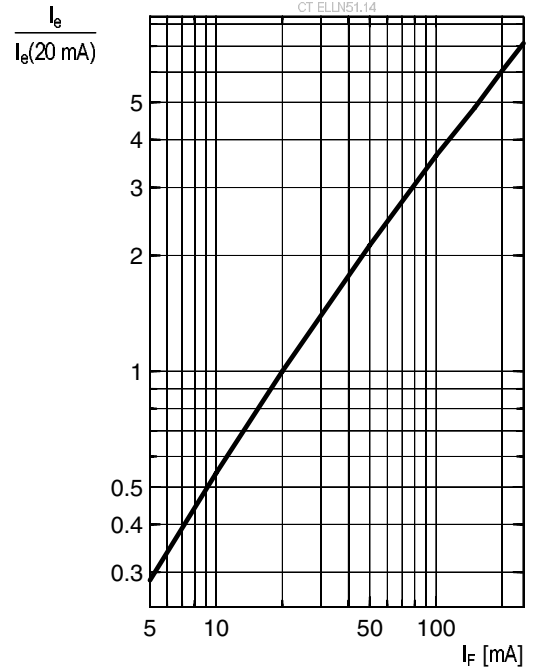
Forward current ^{6), 7)}

$I_F = f(V_F)$; single pulse; $t_p = 100 \mu s$



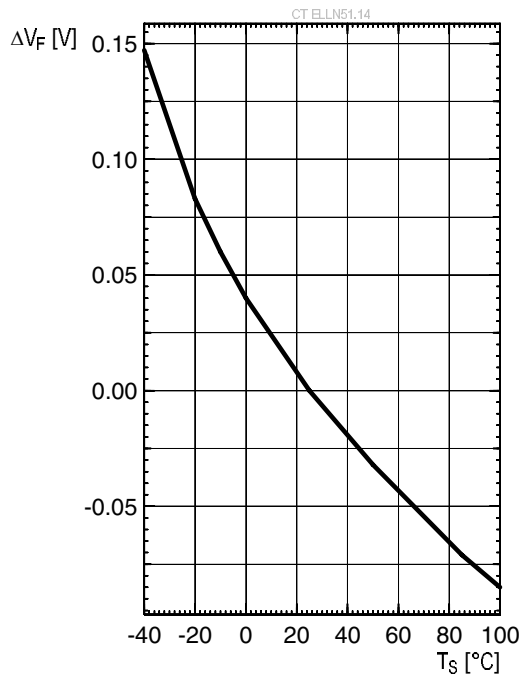
Relative Radiant Intensity ^{6), 7)}

$I_e/I_e(20mA) = f(I_F)$; single pulse; $t_p = 100 \mu s$



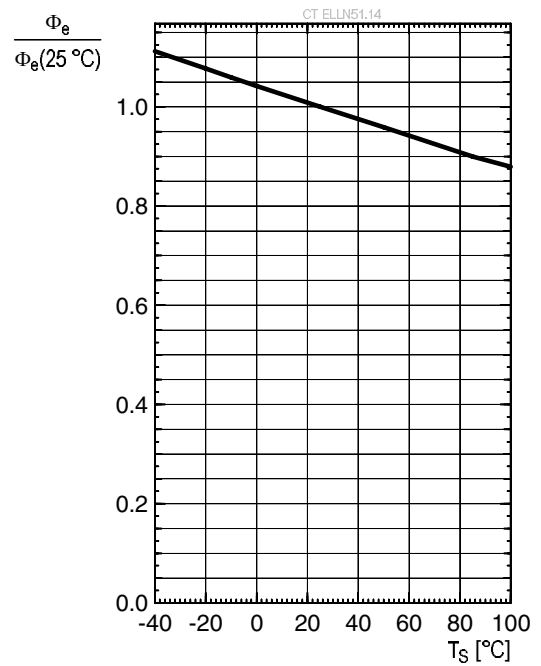
Relative Forward Voltage ⁶⁾

$$V_F = f(T_S); I_F = 20\text{mA}; t_p = 100\mu\text{s}$$



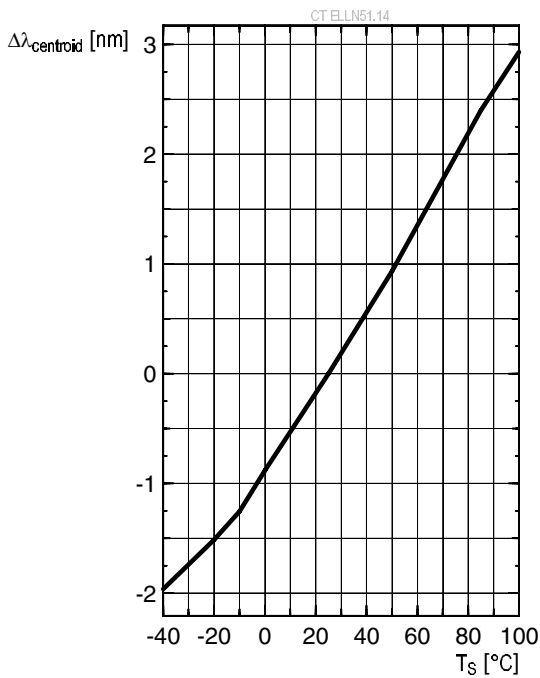
Relative Total Radiant Flux ⁶⁾

$$\Phi_{\text{rel}} = f(T_S); I_F = 20\text{mA}; t_p = 100\mu\text{s}$$



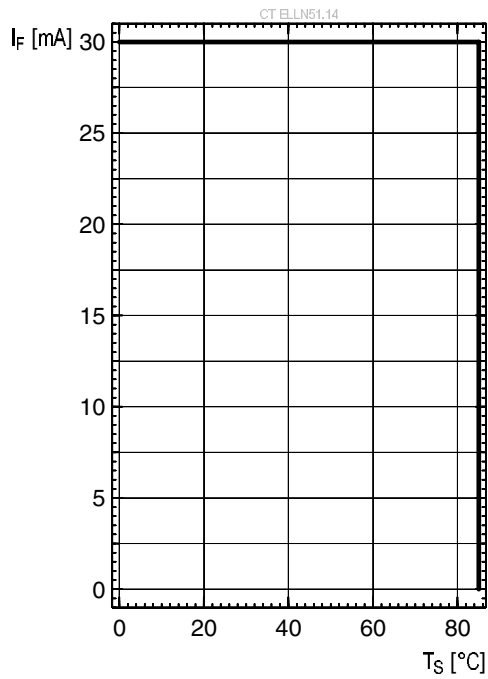
Relative Centroid Wavelength ⁶⁾

$$\lambda_{\text{centroid}} = f(T_S); I_F = 20\text{mA}; t_p = 20\text{ms}; f = 1\text{MHz}$$



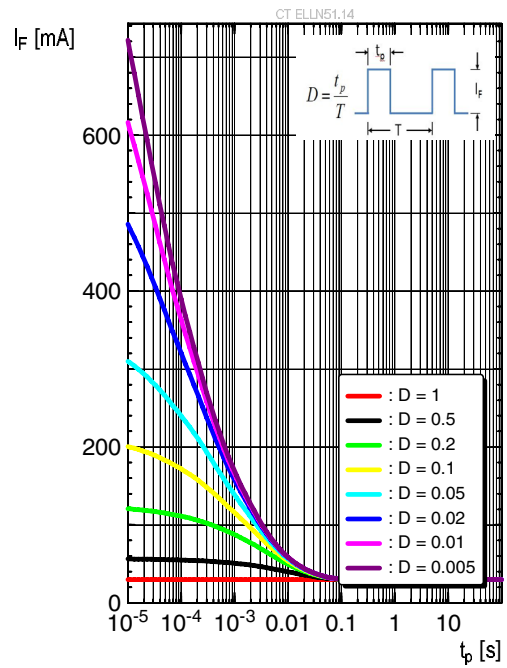
Max. Permissible Forward Current

$$I_F = f(T_S)$$

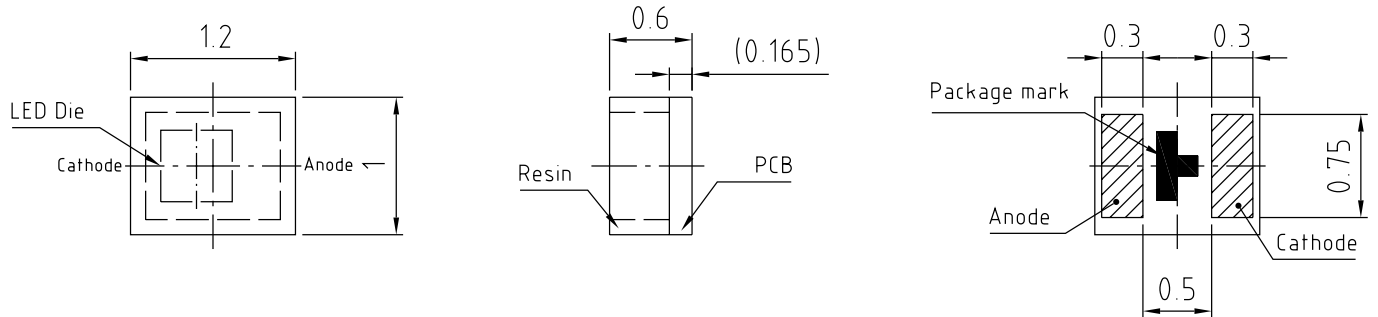


Permissible Pulse Handling Capability

$$I_F = f(t_p); \text{ duty cycle } D = \text{parameter}; T_S = 85^\circ\text{C}$$



Dimensional Drawing ⁸⁾



general tolerance ± 0.1

lead finish Au 

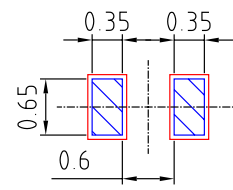
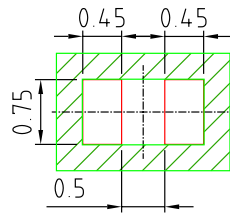
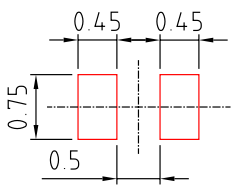
C67062-A0482-A1-01

Further Information:

Approximate Weight: 1.2 mg


Pin	Description
1	Cathode
2	Anode

Recommended Solder Pad ⁸⁾

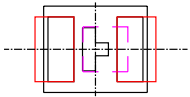


 foot print

 solder resist

 solder stencil
recommended stencil
thickness 120µm, type 4
solder paste

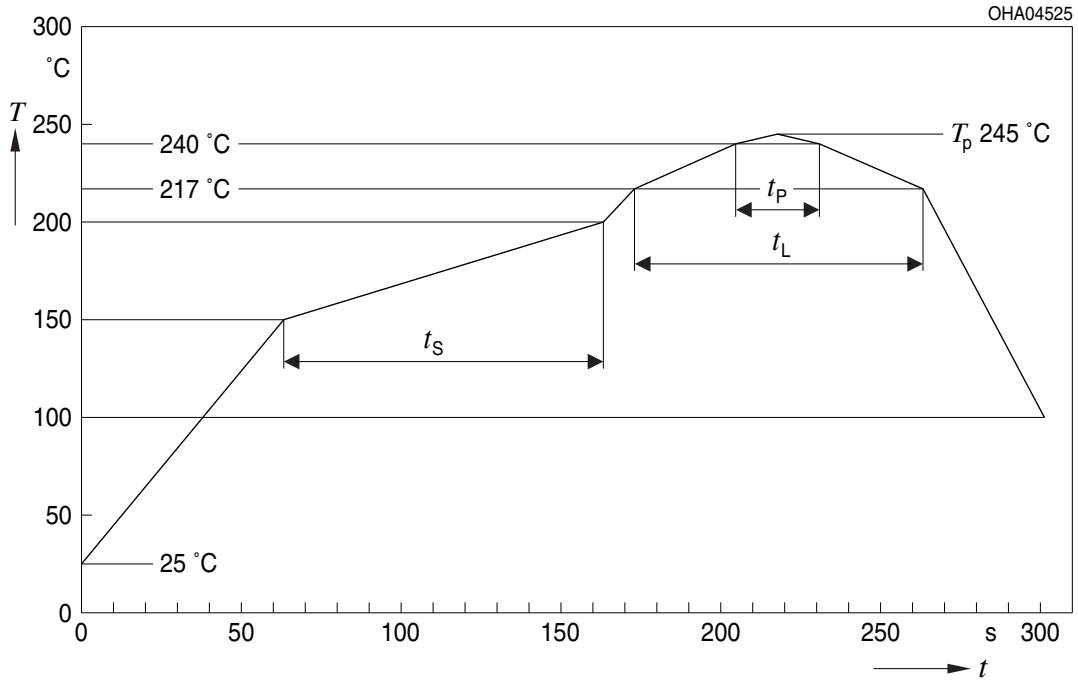
Component Location on Pad



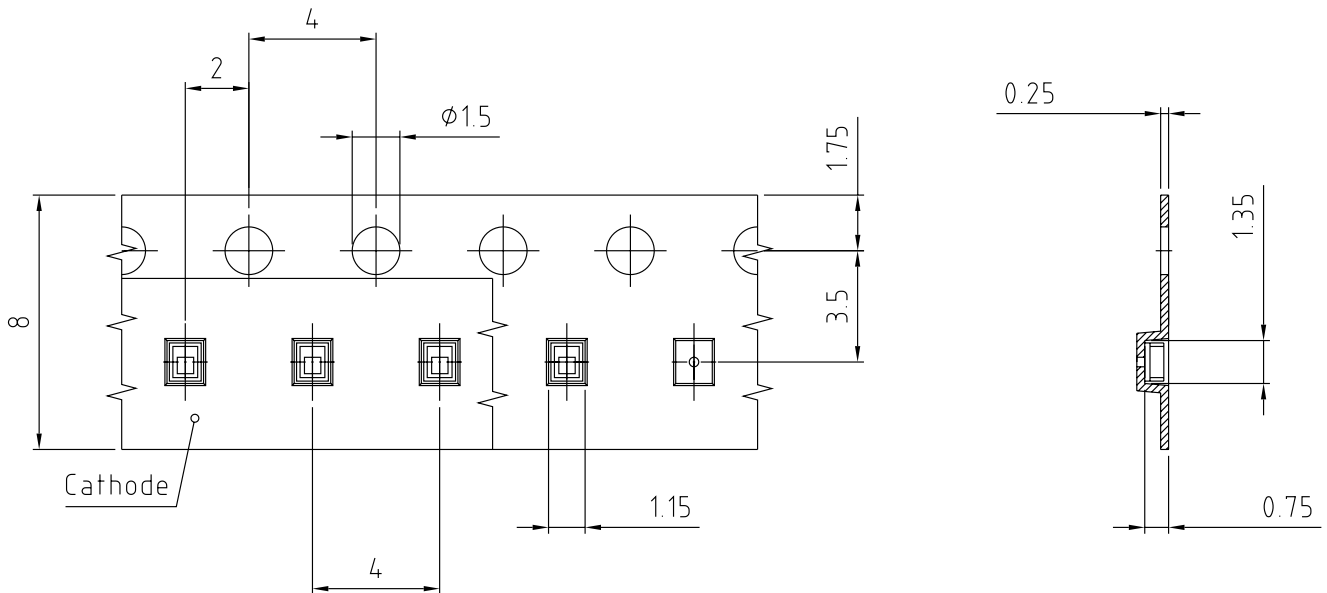
E067.0346.30-01

Reflow Soldering Profile

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

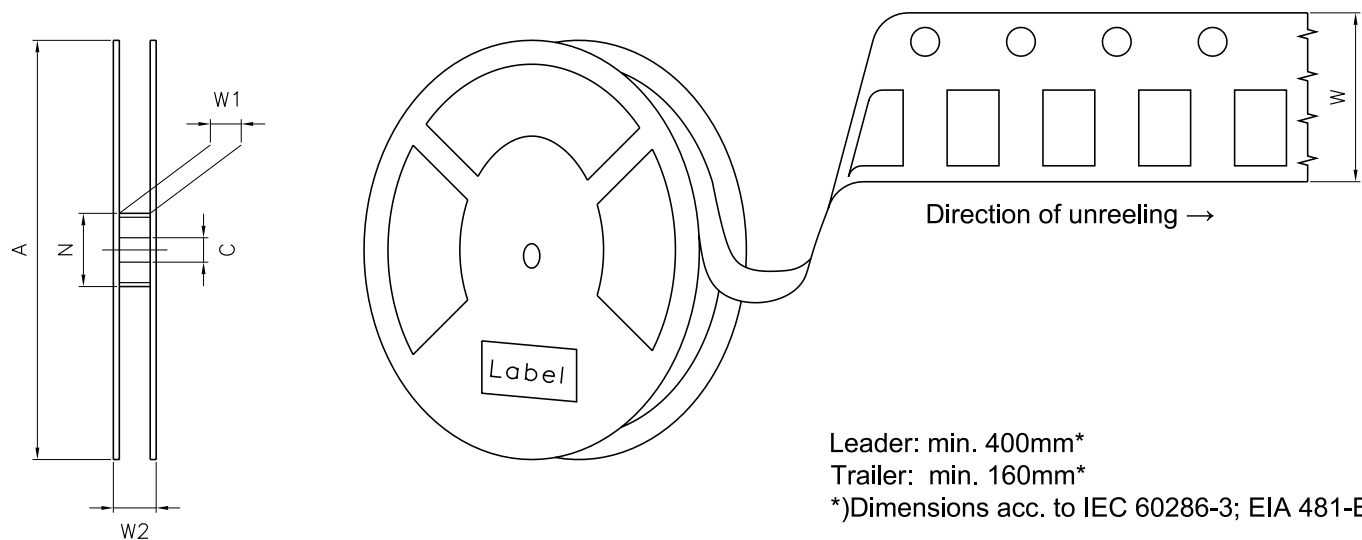


Taping ⁸⁾



C67062-A0482-B1-01

Tape and Reel ⁹⁾



Barcode-Product-Label (BPL)

OSRAM LX XXXX BIN1: XX-XX-X-XXX-X

RoHS Compliant

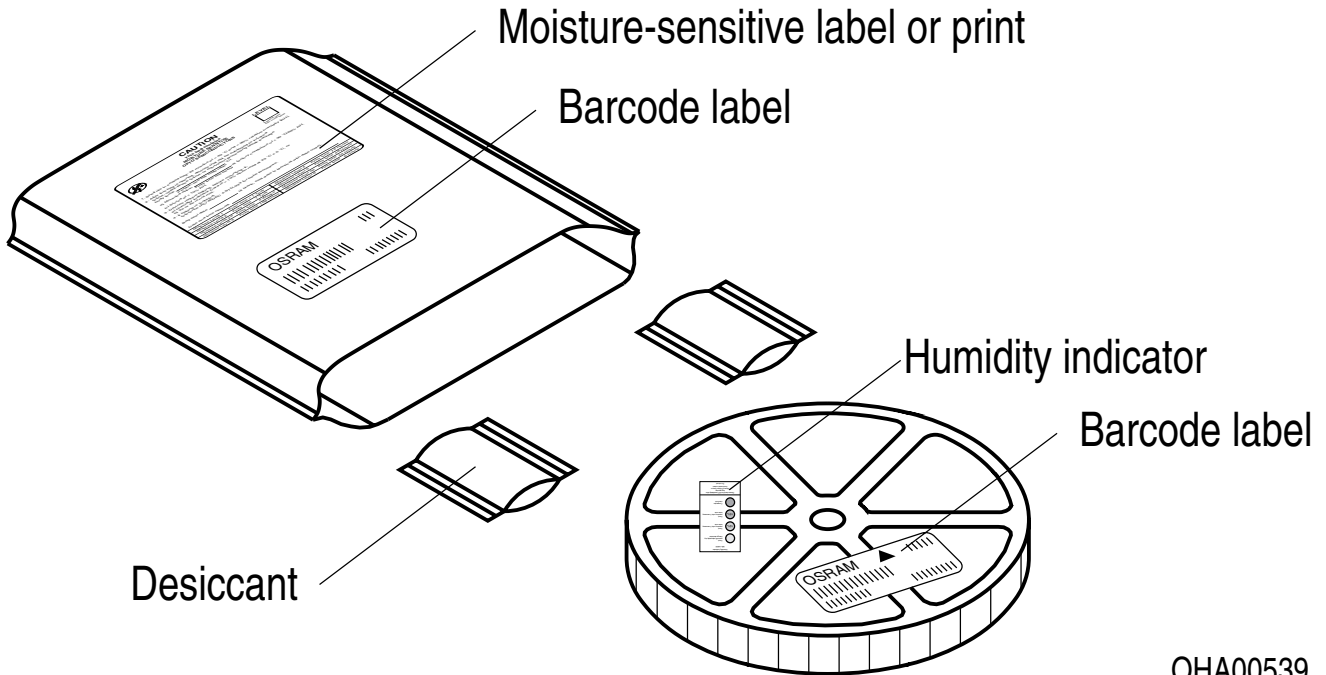
(6P) BATCH NO: 1234567890 ML Temp ST
X XXX °C X

(1T) LOT NO: 1234567890 (9D) D/C: 1234 Pack: RXX
DEMY. XXX
X_X123_1234.1234 X

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

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 **exempt risk group - Exempt**.

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 <https://ams-osram.com/support/application-notes>

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) **Total radiant flux:** Measured with integrating sphere.
- 2) **Reverse Operation:** This product is intended to be operated applying a forward current within the specified range. Applying any continuous reverse bias or forward bias below the voltage range of light emission shall be avoided because it may cause migration which can change the electro-optical characteristics or damage the LED.
- 3) **Wavelength:** The wavelengths are measured with a tolerance of ± 1 nm.
- 4) **Forward Voltage:** The forward voltages are measured with a tolerance of ± 0.1 V.
- 5) **Brightness:** The brightness values are measured with a tolerance of $\pm 11\%$.
- 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) **Testing temperature:** TA = 25°C (unless otherwise specified)
- 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	2025-03-24	Initial Version



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

© All rights reserved

am 

OSRAM