# OSRAM GW PLERA1.CM

# Datasheet

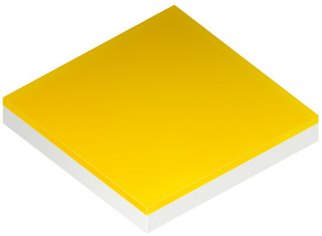
**Published by ams-OSRAM AG**
Tobelbader Strasse 30, 8141 Premstaetten, Austria
Phone +43 3136 500-0
ams-osram.com
© All rights reserved

OSRAM

## OSCONIQ™ C 1818

# GW PLERA1.CM

OSCONIQ™ C 1818 in a chip-scale-package footprint packs a powerful luminous flux & efficiency within a small footprint. The LEDs can be densely clustered and scalable to multiply for higher flux output.  It is an ideal solution for applications that require compact size and high power.



## Applications

- Entertainment
- Indoor lighting
- Outdoor & industrial lighting

## Features

- Typ. Radiation: 120° (Lambertian emitter)
- Color temperature: 2200K - 6500K
- CRI: 90 (min.), 92 (typ.), R9: 50 (min.)
- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)
- Luminous Flux: typ. 124 lm @ 4000 K, 85 °C
- Luminous efficacy: typ. 122 lm/W @ 4000 K, 85 °C

## Ordering Information

| Type | Color temperature | Luminous Flux [1] $I_F$ = 350 mA $\Phi_V$ | Ordering Code |
|---|---|---|---|
| GW PLERA1.CM-K7L7-XX510-1 | 2200 K | 80 ... 160 lm | Q65115A3969 |
| GW PLERA1.CM-K9L9-XX58-1 | 2700 K | 100 ... 180 lm | Q65115A3968 |
| GW PLERA1.CM-K9M1-XX57-1 | 3000 K | 100 ... 190 lm | Q65115A3970 |
| GW PLERA1.CM-LPM1-XX56-1 | 3500 K | 110 ... 190 lm | Q65115A3971 |
| GW PLERA1.CM-LPM1-XX55-1 | 4000 K | 110 ... 190 lm | Q65115A3972 |
| GW PLERA1.CM-LPM1-XX53-1 | 5000 K | 110 ... 190 lm | Q65115A3973 |
| GW PLERA1.CM-LPM1-XX52-1 | 5700 K | 110 ... 190 lm | Q65115A3966 |
| GW PLERA1.CM-LPM1-XX51-1 | 6500 K | 110 ... 190 lm | Q65115A3967 |

## Maximum Ratings

| Parameter | Symbol | | Values |
|---|---|---|---|
| Operating Temperature | $T_{op}$ | min.<br>max. | -40 °C<br>105 °C |
| Storage Temperature | $T_{stg}$ | min.<br>max. | -40 °C<br>105 °C |
| Junction Temperature | $T_j$ | max. | 135 °C |
| Forward Current<br>$T_J$ = 85 °C | $I_F$ | min.<br>max. | 25 mA<br>700 mA |
| Surge Current<br>t ≤ 10 µs; D = 0.005 ; $T_J$ = 85 °C | $I_{FS}$ | max. | 1000 mA |
| Reverse voltage [2)] | $V_R$ | | Not designed for reverse operation |
| ESD withstand voltage<br>acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2) | $V_{ESD}$ | | 2 kV |

## Characteristics

$I_F$ = 350 mA; $T_J$ = 85 °C

| Parameter | Symbol | | Values |
|---|---|---|---|
| Viewing angle at 50% $I_V$ | 2φ | typ. | 120 ° |
| Forward Voltage [3]<br>$I_F$ = 350 mA | $V_F$ | min.<br>typ.<br>max. | 2.60 V<br>2.90 V<br>3.00 V |
| Reverse current [2] | $I_R$ | | Not designed for reverse operation |
| Color Rendering Index [4] | CRI | min.<br>typ. | 90<br>92 |
| Color Rendering Index (R9) [4] | CRI (R9) | min. | 50 |
| Electrical thermal resistance junction/solderpoint with efficiency $\eta_e$ = 43.6 % | $R_{thJS\ elec.}$ | typ. | 6.3 K / W |

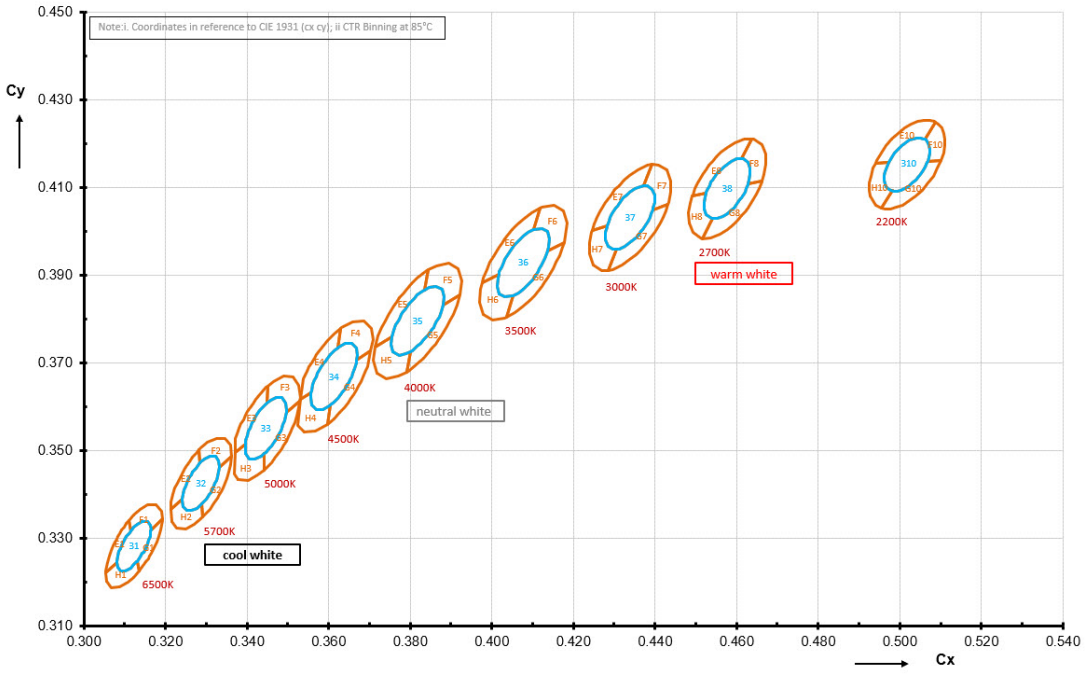
## Brightness Groups

| Group | Luminous Flux [1] $I_F$ = 350 mA min. $\Phi_V$ | Luminous Flux [1] $I_F$ = 350 mA max. $\Phi_V$ |
|---|---|---|
| K7 | 80 lm | 90 lm |
| K8 | 90 lm | 100 lm |
| K9 | 100 lm | 110 lm |
| LP | 110 lm | 120 lm |
| LQ | 120 lm | 130 lm |
| LR | 130 lm | 140 lm |
| LS | 140 lm | 150 lm |
| L7 | 150 lm | 160 lm |
| L8 | 160 lm | 170 lm |
| L9 | 170 lm | 180 lm |
| M1 | 180 lm | 190 lm |

## Forward Voltage Groups

| Group | Forward Voltage [3] $I_F$ = 350 mA min. $V_F$ | Forward Voltage [3] $I_F$ = 350 mA max. $V_F$ |
|---|---|---|
| K1 | 2.60 V | 2.70 V |
| K2 | 2.70 V | 2.80 V |
| L1 | 2.80 V | 2.90 V |
| L2 | 2.90 V | 3.00 V |

## Chromaticity Coordinate Groups [5)]



## Chromaticity Coordinate Groups

| CCT | Center Cx | Center Cy | 3step a | 3step b | 5step a | 5step b | Ø |
|---|---|---|---|---|---|---|---|
| 2200 K | 0.5020 | 0.4156 | 0.0072 | 0.004 | 0.012 | 0.0067 | 39.9 |
| 2700 K | 0.4577 | 0.4098 | 0.008 | 0.0041 | 0.0133 | 0.0068 | 54.1 |
| 3000 K | 0.4339 | 0.4032 | 0.0086 | 0.0042 | 0.0142 | 0.0069 | 53.7 |
| 3500 K | 0.4077 | 0.3929 | 0.0093 | 0.0042 | 0.0155 | 0.0069 | 53.9 |
| 4000 K | 0.3818 | 0.3796 | 0.0094 | 0.0041 | 0.0157 | 0.0068 | 53.4 |
| 5000 K | 0.3446 | 0.3551 | 0.0081 | 0.0035 | 0.0135 | 0.0059 | 59.8 |
| 5700 K | 0.3287 | 0.3425 | 0.0072 | 0.0032 | 0.0119 | 0.0052 | 58.8 |
| 6500 K | 0.3123 | 0.3282 | 0.0066 | 0.0027 | 0.011 | 0.0045 | 58.1 |

| | | 1 | | 2 | | 3 | | 4 | | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CCT | Group | Cx | Cy | Cx | Cy | Cx | Cy | Cx | Cy | Cx | Cy |
| 2200 K | E | 0.5088 | 0.4249 | 0.4941 | 0.4156 | 0.4973 | 0.4157 | 0.5061 | 0.4210 | | |
| | F | 0.5088 | 0.4249 | 0.5101 | 0.4161 | 0.5068 | 0.4160 | 0.5061 | 0.4210 | | |
| | G | 0.5101 | 0.4161 | 0.4955 | 0.4054 | 0.4981 | 0.4093 | 0.5068 | 0.4158 | | |
| | H | 0.4981 | 0.4093 | 0.4973 | 0.4157 | 0.4941 | 0.4156 | 0.4955 | 0.4054 | | |
| 2700 K | E | 0.4637 | 0.4212 | 0.4491 | 0.4081 | 0.4526 | 0.4088 | 0.4613 | 0.4166 | | |
| | F | 0.4637 | 0.4212 | 0.4663 | 0.4115 | 0.4628 | 0.4108 | 0.4613 | 0.4166 | | |
| | G | 0.4663 | 0.4115 | 0.4517 | 0.3984 | 0.4541 | 0.4030 | 0.4628 | 0.4108 | | |
| | H | 0.4541 | 0.4030 | 0.4526 | 0.4088 | 0.4491 | 0.4081 | 0.4517 | 0.3984 | | |
| 3000 K | E | 0.4393 | 0.4153 | 0.4246 | 0.4002 | 0.4283 | 0.4014 | 0.4371 | 0.4105 | | |
| | F | 0.4393 | 0.4153 | 0.4432 | 0.4062 | 0.4395 | 0.4050 | 0.4371 | 0.4105 | | |
| | G | 0.4432 | 0.4062 | 0.4285 | 0.3911 | 0.4307 | 0.3960 | 0.4395 | 0.4050 | | |
| | H | 0.4307 | 0.3960 | 0.4283 | 0.4014 | 0.4246 | 0.4002 | 0.4285 | 0.3911 | | |
| 3500 K | E | 0.4118 | 0.4054 | 0.3977 | 0.3883 | 0.4017 | 0.3902 | 0.4102 | 0.4004 | | |
| | F | 0.4118 | 0.4054 | 0.4177 | 0.3975 | 0.4137 | 0.3956 | 0.4102 | 0.4004 | | |
| | G | 0.4177 | 0.3975 | 0.4036 | 0.3804 | 0.4052 | 0.3854 | 0.4137 | 0.3956 | | |
| | H | 0.4052 | 0.3854 | 0.4017 | 0.3902 | 0.3977 | 0.3883 | 0.4036 | 0.3804 | | |
| 4000 K | E | 0.3845 | 0.3913 | 0.3714 | 0.3737 | 0.3756 | 0.3760 | 0.3834 | 0.3866 | | |
| | F | 0.3845 | 0.3913 | 0.3922 | 0.3855 | 0.3880 | 0.3832 | 0.3834 | 0.3866 | | |
| | G | 0.3922 | 0.3855 | 0.3791 | 0.3679 | 0.3802 | 0.3726 | 0.3880 | 0.3832 | | |
| | H | 0.3802 | 0.3726 | 0.3756 | 0.3760 | 0.3714 | 0.3737 | 0.3791 | 0.3679 | | |
| 5000 K | E | 0.3451 | 0.3648 | 0.3372 | 0.3528 | 0.3371 | 0.3496 | 0.3396 | 0.3514 | 0.3449 | 0.3609 |
| | F | 0.3451 | 0.3648 | 0.3530 | 0.3612 | 0.3496 | 0.3588 | 0.3449 | 0.3609 | | |
| | G | 0.3530 | 0.3612 | 0.3441 | 0.3454 | 0.3443 | 0.3493 | 0.3496 | 0.3588 | | |
| | H | 0.3443 | 0.3493 | 0.3396 | 0.3514 | 0.3371 | 0.3496 | 0.3369 | 0.3445 | 0.3441 | 0.3454 |
| 5700 K | E | 0.3283 | 0.3502 | 0.3212 | 0.3373 | 0.3213 | 0.3365 | 0.3242 | 0.3388 | 0.3284 | 0.3471 |
| | F | 0.3283 | 0.3502 | 0.3363 | 0.3486 | 0.3332 | 0.3462 | 0.3284 | 0.3471 | | |
| | G | 0.3363 | 0.3486 | 0.3291 | 0.3348 | 0.3290 | 0.3379 | 0.3332 | 0.3462 | | |
| | H | 0.3291 | 0.3348 | 0.3215 | 0.3337 | 0.3213 | 0.3365 | 0.3242 | 0.3388 | 0.3290 | 0.3379 |
| 6500 K | E | 0.3110 | 0.3340 | 0.3054 | 0.3220 | 0.3082 | 0.3245 | 0.3115 | 0.3317 | | |
| | F | 0.3110 | 0.3340 | 0.3192 | 0.3344 | 0.3165 | 0.3319 | 0.3115 | 0.3317 | | |
| | G | 0.3192 | 0.3344 | 0.3136 | 0.3224 | 0.3131 | 0.3247 | 0.3165 | 0.3319 | | |
| | H | 0.3136 | 0.3224 | 0.3054 | 0.3220 | 0.3082 | 0.3245 | 0.3131 | 0.3247 | | |

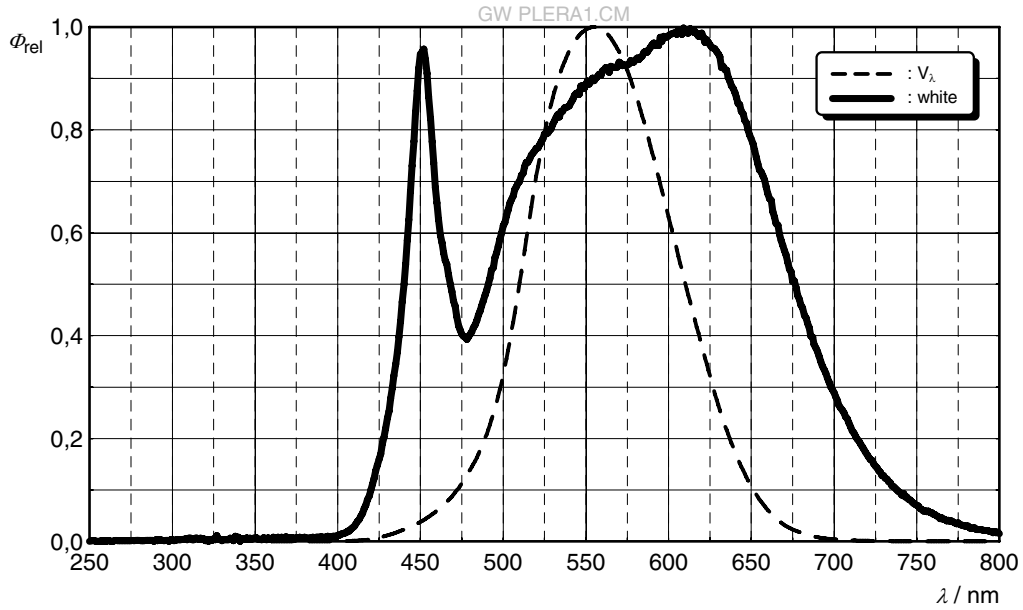
## Group Name on Label

**Example: K7-35-K1**

| Brightness | Color Chromaticity | Forward Voltage |
|---|---|---|
| K7 | 35 | K1 |

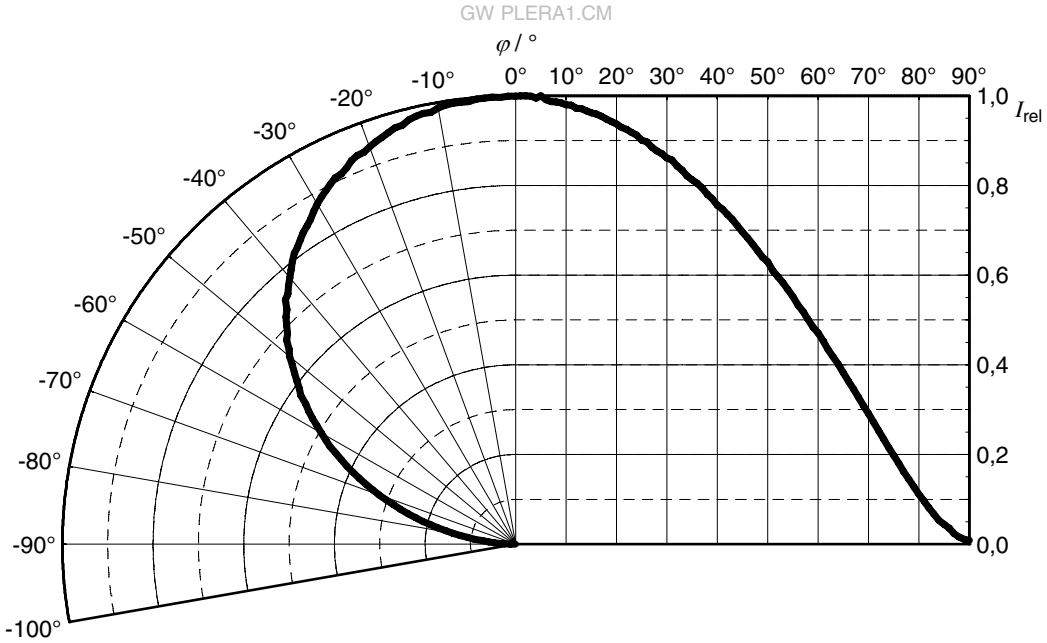
## Relative Spectral Emission [6)]

$\Phi_{rel} = f(\lambda)$; $I_F$ = 350 mA; $T_J$ = 85 °C



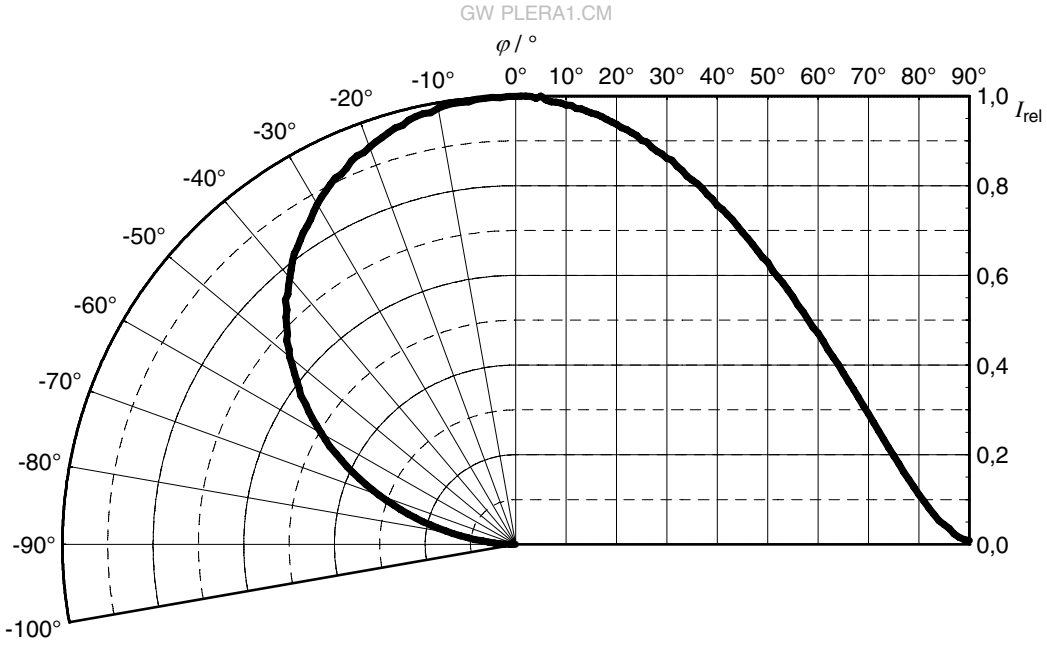

## Radiation Characteristics [6)]

$I_{rel} = f(\varphi)$; $T_J$ = 85 °C



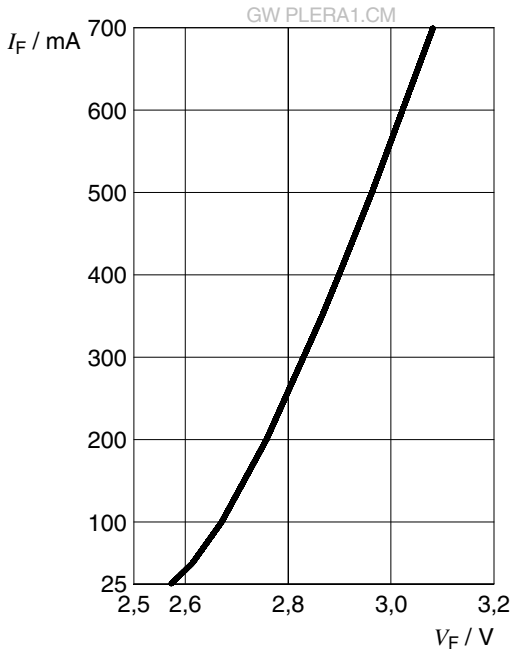
## Radiation Characteristics [6)]

$I_{rel} = f(\varphi)$; $T_J = 85$ °C



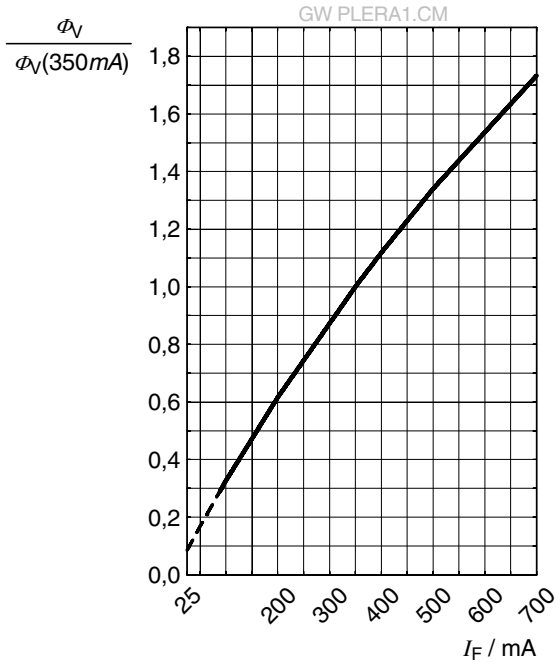
## Forward current [6]

$I_F = f(V_F)$; $T_J$ = 85 °C



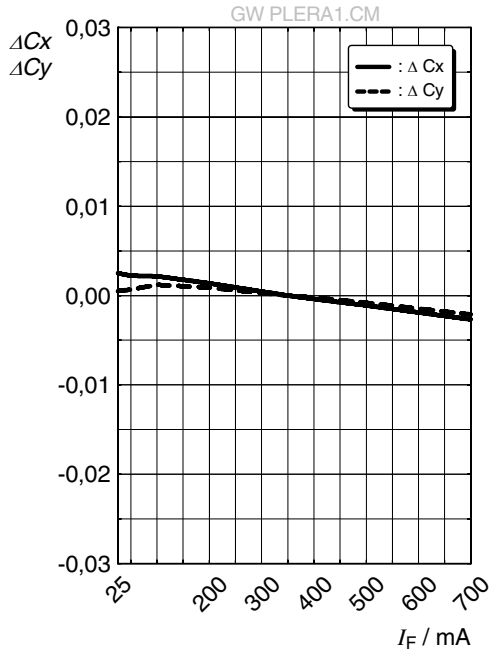

## Relative Luminous Flux [6], [7]

$\Phi_v/\Phi_v(350\ mA) = f(I_F)$; $T_J$ = 85 °C



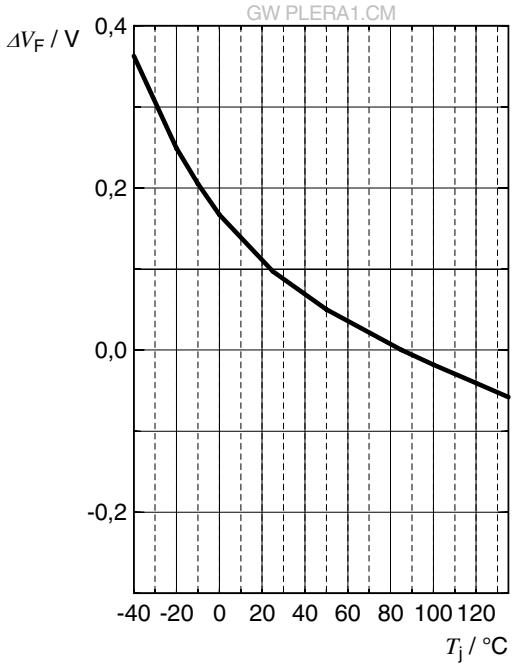

## Chromaticity Coordinate Shift [6]

Cx, Cy = $f(I_F)$; $T_J$ = 85 °C



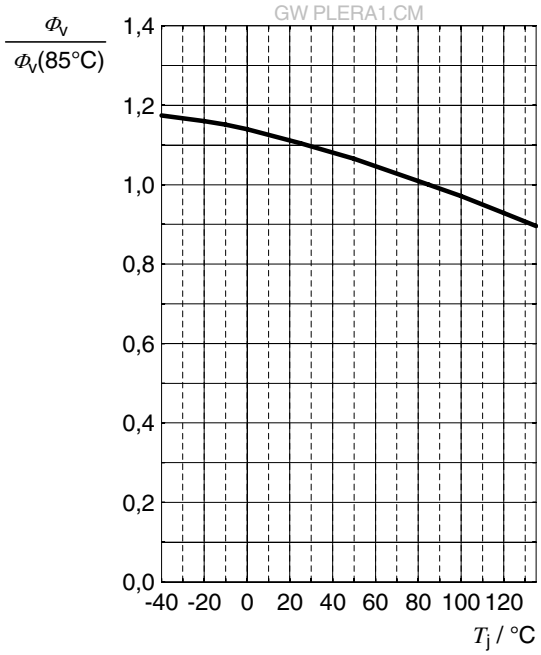
## Forward Voltage [6)]

$\Delta V_F = V_F - V_F(85\ °C) = f(T_j);\ I_F = 350\ mA$



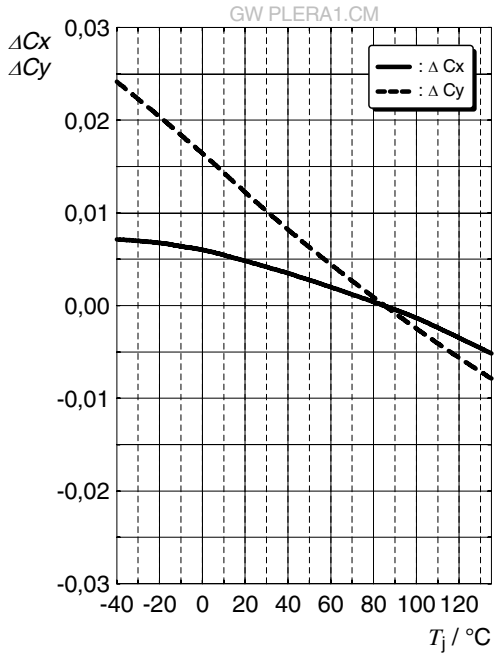

## Relative Luminous Flux [6)]

$\Phi_v/\Phi_v(85\ °C) = f(T_j);\ I_F = 350\ mA$



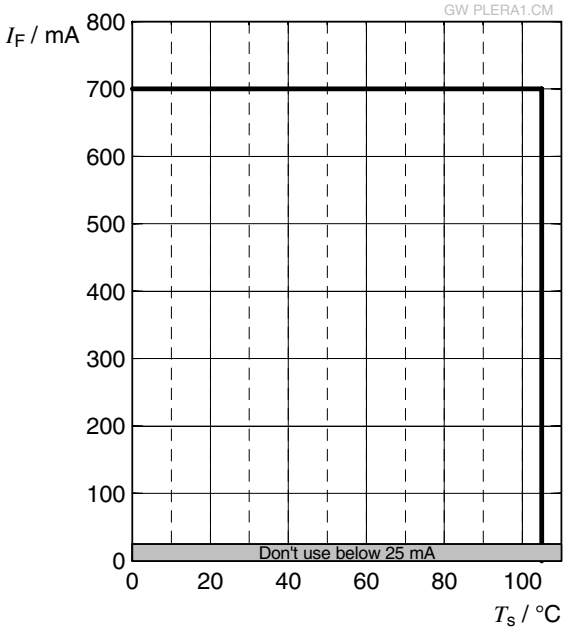

## Chromaticity Coordinate Shift [6)]

Cx, Cy = f($T_j$); $I_F$ = 350 mA

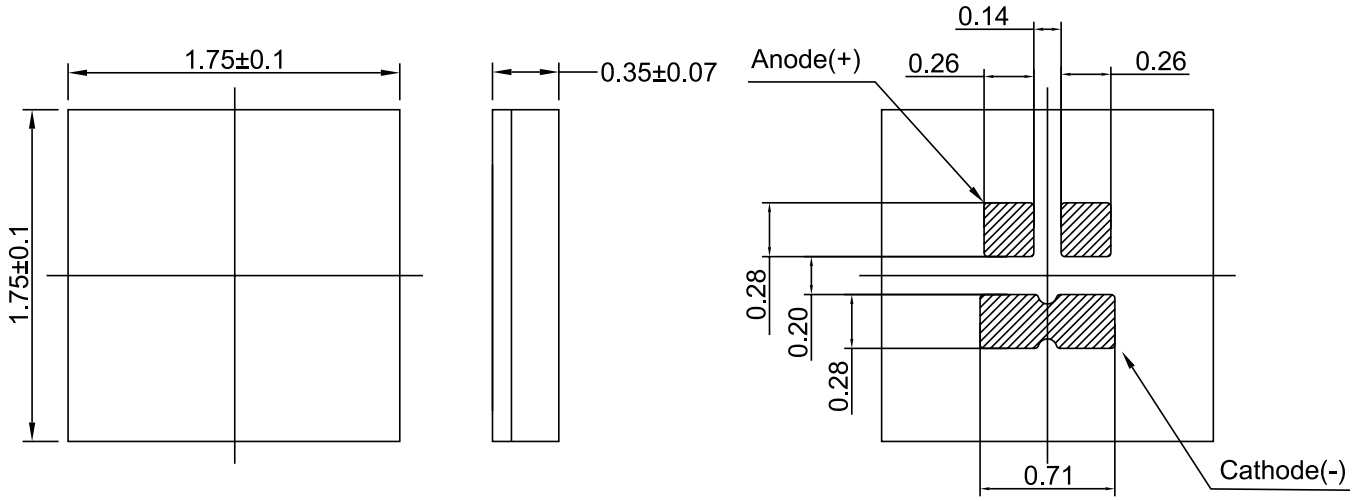


## Max. Permissible Forward Current [8)]

$I_F = f(T)$



## Dimensional Drawing [9)]




general tolerance ±0.1
lead finish Au

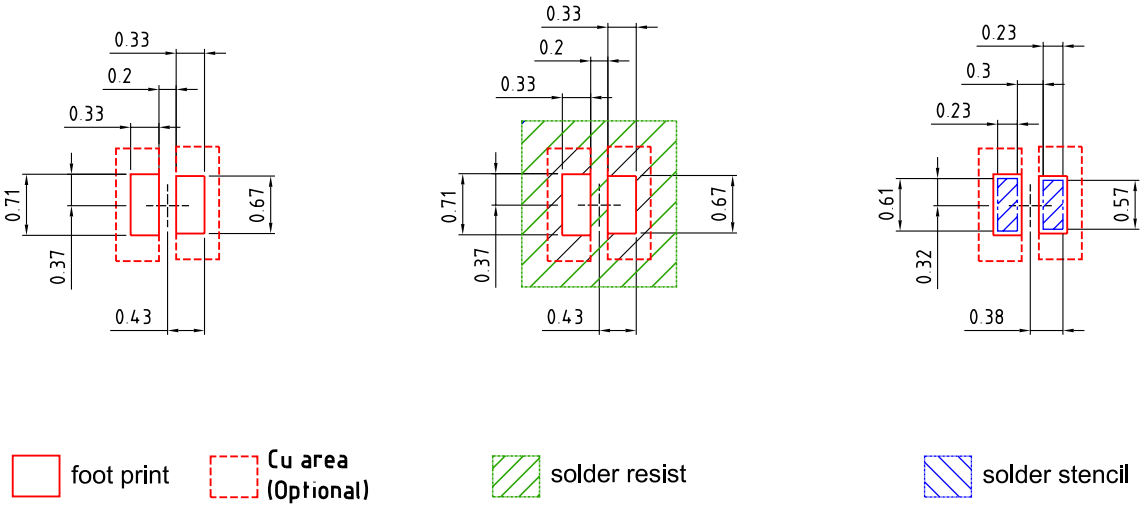
C69062-A0072-A1-01

## Further Information:

**Approximate Weight:** 2.6 mg

**Package marking:** Cathode

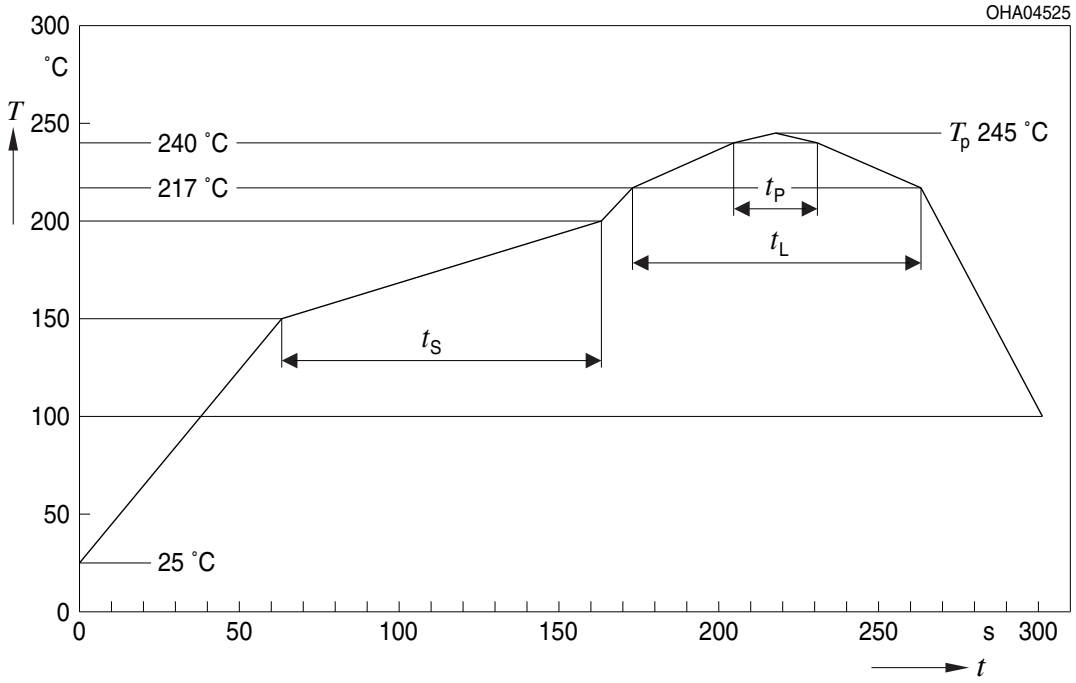
## Recommended Solder Pad 9)




E067.0346.40 -01

## Reflow Soldering Profile

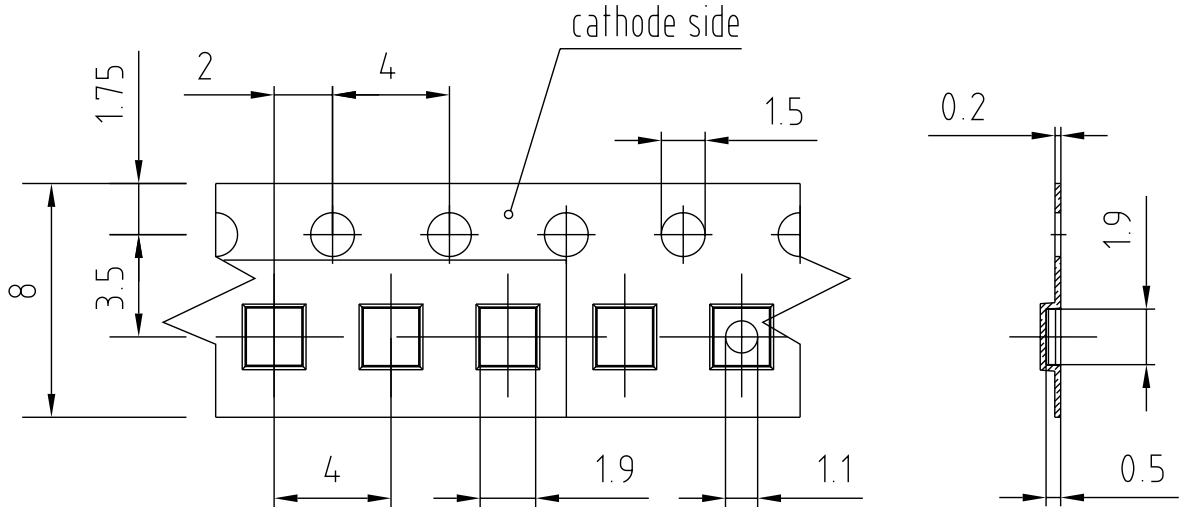
Product complies to MSL Level 2 acc. to JEDEC J-STD-020E




| Profile Feature | Symbol | Pb-Free (SnAgCu) Assembly | | | Unit |
|---|---|---|---|---|---|
| | | Minimum | Recommendation | Maximum | |
| Ramp-up rate to preheat*)<br>25 °C to 150 °C | | | 2 | 3 | K/s |
| Time $t_S$<br>$T_{Smin}$ to $T_{Smax}$ | $t_S$ | 60 | 100 | 120 | s |
| Ramp-up rate to peak*)<br>$T_{Smax}$ 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*<br>$T_P$ to 100 °C | | | 3 | 6 | K/s |
| Time<br>25 °C to $T_P$ | | | | 480 | s |

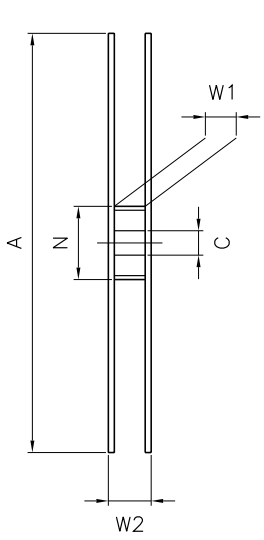
All temperatures refer to the center of the package, measured on the top of the component
* slope calculation DT/Dt: Dt max. 5 s; fulfillment for the whole T-range

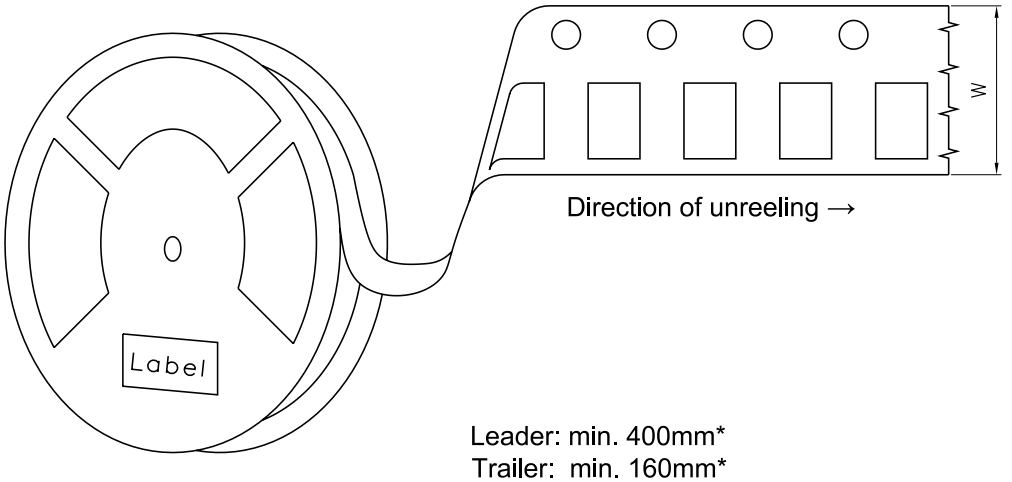
## Taping [9)]




C69062-A3260-B4 -01

## Tape and Reel [10)]



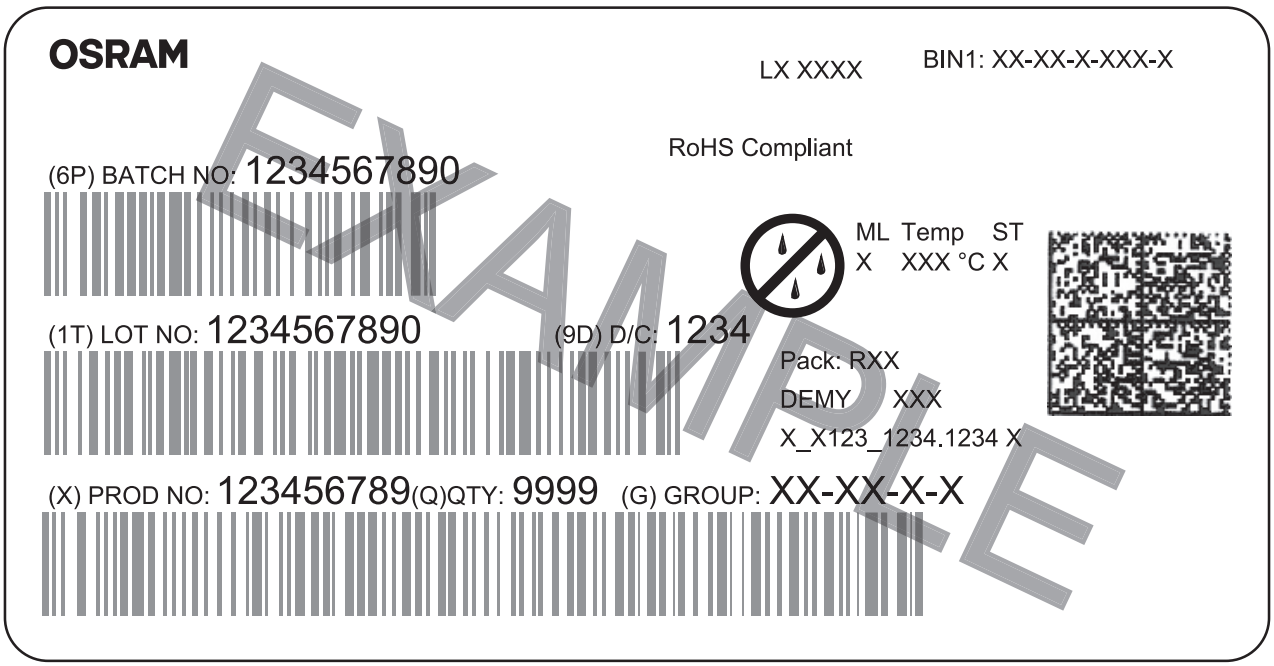




Leader: min. 400mm*
Trailer: min. 160mm*
*)Dimensions acc. to IEC 60286-3; EIA 481-E

## Reel Dimensions

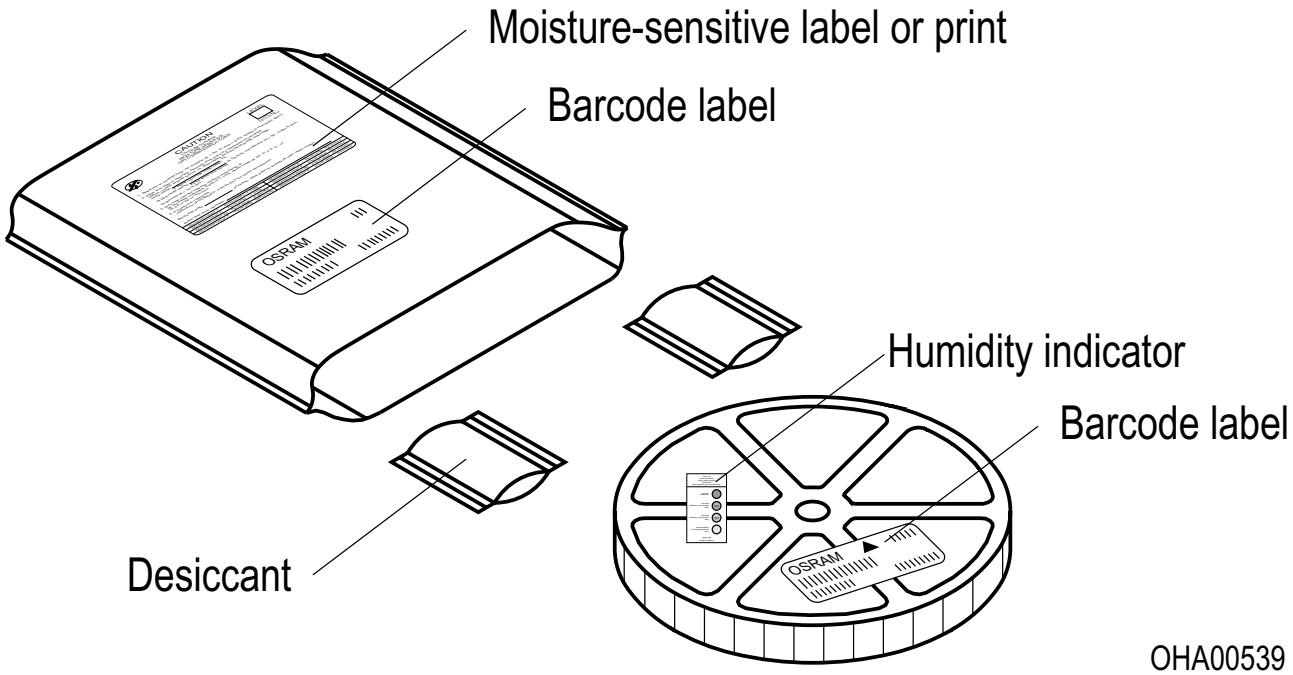
| A | W | $N_{min}$ | $W_1$ | $W_{2\,max}$ | Pieces per PU |
|---|---|---|---|---|---|
| 180 mm | 8 + 0.3 / - 0.1 mm | 60 mm | 8.4 + 2 mm | 14.4 mm | 5000 |

## Barcode-Product-Label (BPL)




OHA04563

## Dry Packing Process and Materials [9)]




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 fall into the class **moderate risk (exposure time 0.25 s)**. Under real circumstances (for exposure time, conditions of the eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. When looking at bright light sources (e.g. headlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment, and even accidents, depending on the situation.

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.

This device is designed for specific/recommended applications only. Please consult OSRAM Opto Semiconductors Sales Staff in advance for detailed information on other non-recommended applications (e.g. automotive).

Change management for this component is aligned with the requirements of the lighting market.

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) **Brightness:** Brightness values are measured during a current pulse of typically 10 ms, with a tolerance of +/- 7%.

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

3) **Forward Voltage:** The Forward voltage is measured during a current pulse duration of typically 1 ms with a tolerance of ± 0.05V .

4) **Color reproduction index:** Color reproduction index values (CRI-RA) are measured during a current pulse of typically 10 ms and with a tolerance of ±2.

5) **Chromaticity coordinate groups:** Chromaticity coordinate groups are measured during a current pulse duration of typically 10ms with a tolerance of ±0.005.

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

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

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

## Revision History

| Version | Date | Change |
|---|---|---|
| 1.0 | 2026-05-22 | Initial Version |
| 1.1 | 2026-06-09 | Brightness Groups |

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