

OSRAM GW DASPA2.UC

Datasheet

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OSCONIQ® P 2226

GW DASPA2.UC

High-efficacy mid-power LED with long lifetimes also at high currents and high junction temperatures.



Applications

- Architecture
- Architecture / Garden Lighting (LED & Laser)
- Medical Illumination
- Photo Therapy

Features

- Package: SMT package
- Typ. Radiation: 120°
- Color temperature: 6500K - 7500K
- CRI: 60 (min.), 67 (typ.), R9: -50 (min.)
- ESD: 8 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 3B)
- Luminous Flux: typ. 42 lm @ 6500 K
- Luminous efficacy: typ. 150 lm/W @ 6500 K

Ordering Information

Type	Color temperature	Luminous Flux ¹⁾ $I_F = 100 \text{ mA}$ Φ_V	Ordering Code
GW DASPA2.UC-HTJR-5C8G-1	6500 K	39 ... 56 lm	Q65112A8367
GW DASPA2.UC-HTJR-GPHR-1	7500 K	39 ... 56 lm	Q65112A8374

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min.	-40 °C
		max.	120 °C
Storage Temperature	T_{stg}	min.	-40 °C
		max.	120 °C
Junction Temperature	T_j	max.	125 °C
Forward Current $T_j = 25\text{ °C}$	I_F	min.	30 mA
		max.	250 mA
Reverse current ²⁾	I_R	max.	200 mA
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 3B)	V_{ESD}		8 kV

Characteristics

$I_F = 100 \text{ mA}$; $T_J = 25 \text{ °C}$

Parameter	Symbol		Values
Viewing angle at 50% I_V	2ϕ	typ.	130 °
Forward Voltage ³⁾ $I_F = 100 \text{ mA}$	V_F	min.	2.60 V
		typ.	2.90 V
		max.	3.20 V
Reverse voltage ²⁾ $I_R = 5 \text{ mA}$	V_R	max.	1.2 V
Color Rendering Index ⁴⁾	CRI	min.	60
		typ.	67
Color Rendering Index (R9) ⁴⁾	CRI (R9)	min.	-50
Electrical thermal resistance junction/solderpoint with efficiency $\eta_e = 42 \text{ %}$	$R_{thJS \text{ elec.}}$	typ.	10 K / W

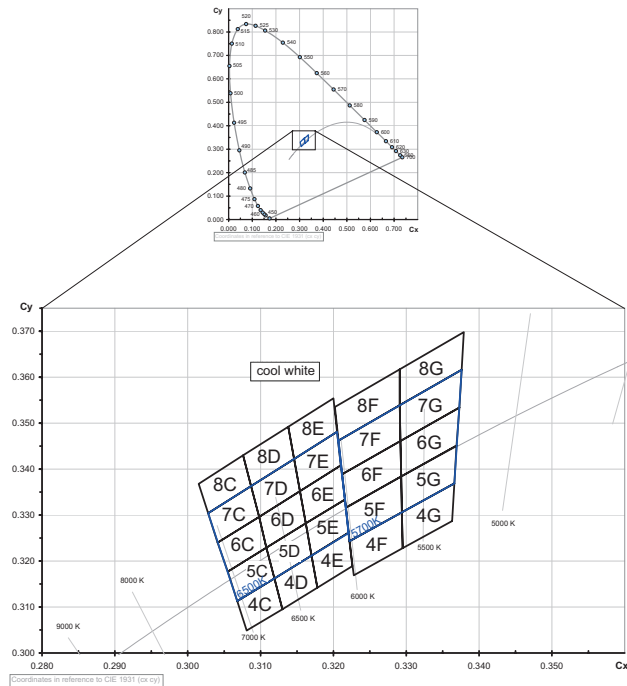
Brightness Groups

Group	Luminous Flux ¹⁾ $I_F = 100 \text{ mA}$ min. Φ_V	Luminous Flux ¹⁾ $I_F = 100 \text{ mA}$ max. Φ_V
HT	39 lm	42 lm
HU	42 lm	45 lm
JP	45 lm	48 lm
JQ	48 lm	52 lm
JR	52 lm	56 lm

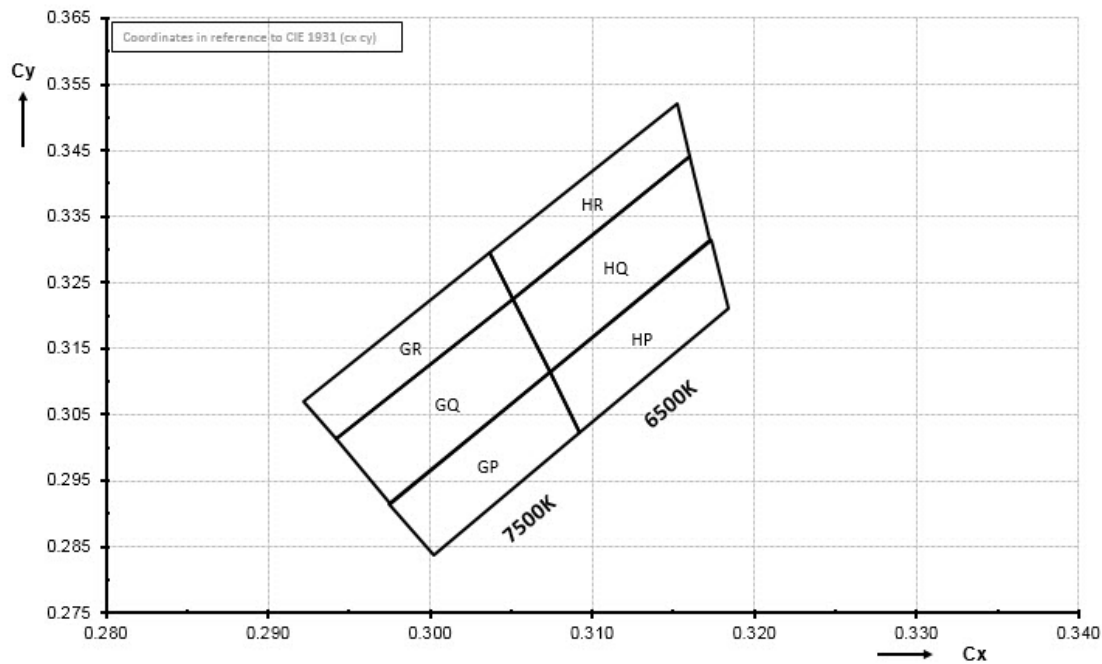
Forward Voltage Groups

Group	Forward Voltage ³⁾ $I_F = 100 \text{ mA}$ min. V_F	Forward Voltage ³⁾ $I_F = 100 \text{ mA}$ max. V_F
K	2.60 V	2.80 V
L	2.80 V	3.00 V
M	3.00 V	3.20 V

Chromaticity Coordinate Groups 5)



Chromaticity Coordinate Groups



Chromaticity Coordinate Groups

Group	Cx	Cy	CCT	Group	Cx	Cy	CCT	Group	Cx	Cy	CCT
7C	0.3041	0.3240	5C8G	8F	0.3206	0.3462	5C8G	6D	0.3108	0.3229	6500
	0.3028	0.3304	5C8G		0.3201	0.3534	5C8G		0.3098	0.3296	6500
	0.3087	0.3363	5C8G		0.3291	0.3617	5C8G		0.3154	0.3352	6500
	0.3098	0.3296	5C8G		0.3292	0.3539	5C8G		0.3162	0.3282	6500
7D	0.3098	0.3296	5C8G	8G	0.3292	0.3539	5C8G	6E	0.3162	0.3282	6500
	0.3087	0.3363	5C8G		0.3291	0.3617	5C8G		0.3154	0.3352	6500
	0.3146	0.3422	5C8G		0.3379	0.3698	5C8G		0.3210	0.3408	6500
	0.3154	0.3352	5C8G		0.3376	0.3616	5C8G		0.3216	0.3334	6500
7E	0.3154	0.3352	5C8G	5C	0.3068	0.3113	6500	6F	0.3217	0.3316	6500
	0.3146	0.3422	5C8G		0.3055	0.3177	6500		0.3212	0.3389	6500
	0.3205	0.3481	5C8G		0.3108	0.3229	6500		0.3292	0.3461	6500
	0.3210	0.3408	5C8G		0.3119	0.3162	6500		0.3293	0.3384	6500
7F	0.3212	0.3389	5C8G	5D	0.3119	0.3162	6500	6G	0.3293	0.3384	6500
	0.3206	0.3462	5C8G		0.3108	0.3229	6500		0.3292	0.3461	6500
	0.3292	0.3539	5C8G		0.3162	0.3282	6500		0.3373	0.3534	6500
	0.3292	0.3461	5C8G		0.3170	0.3212	6500		0.3369	0.3451	6500
7G	0.3292	0.3461	5C8G	5E	0.3170	0.3212	6500	GP	0.2975	0.2916	7500
	0.3292	0.3539	5C8G		0.3162	0.3282	6500		0.3074	0.3114	7500
	0.3376	0.3616	5C8G		0.3216	0.3334	6500		0.3092	0.3023	7500
	0.3373	0.3534	5C8G		0.3221	0.3262	6500		0.3002	0.2838	7500
8C	0.3028	0.3304	5C8G	5F	0.3222	0.3243	6500	GQ	0.2942	0.3013	7500
	0.3015	0.3368	5C8G		0.3217	0.3316	6500		0.3051	0.3226	7500
	0.3076	0.3430	5C8G		0.3293	0.3384	6500		0.3074	0.3114	7500
	0.3087	0.3363	5C8G		0.3294	0.3306	6500		0.2975	0.2916	7500
8D	0.3087	0.3363	5C8G	5G	0.3294	0.3306	6500	GR	0.2922	0.3071	7500
	0.3076	0.3430	5C8G		0.3293	0.3384	6500		0.3037	0.3295	7500
	0.3138	0.3492	5C8G		0.3369	0.3451	6500		0.3051	0.3226	7500
	0.3146	0.3422	5C8G		0.3366	0.3369	6500		0.2942	0.3013	7500
8E	0.3146	0.3422	5C8G	6C	0.3055	0.3177	6500	HP	0.3074	0.3114	7500
	0.3138	0.3492	5C8G		0.3041	0.3240	6500		0.3173	0.3315	7500
	0.3200	0.3554	5C8G		0.3098	0.3296	6500		0.3184	0.3211	7500
	0.3205	0.3481	5C8G		0.3108	0.3229	6500		0.3092	0.3023	7500

Group	Cx	Cy	CCT	Group	Cx	Cy	CCT
HQ	0.3051	0.3226	7500	HR	0.3037	0.3295	7500
	0.3160	0.3440	7500		0.3152	0.3520	7500
	0.3173	0.3315	7500		0.3160	0.3440	7500
	0.3074	0.3114	7500		0.3051	0.3226	7500

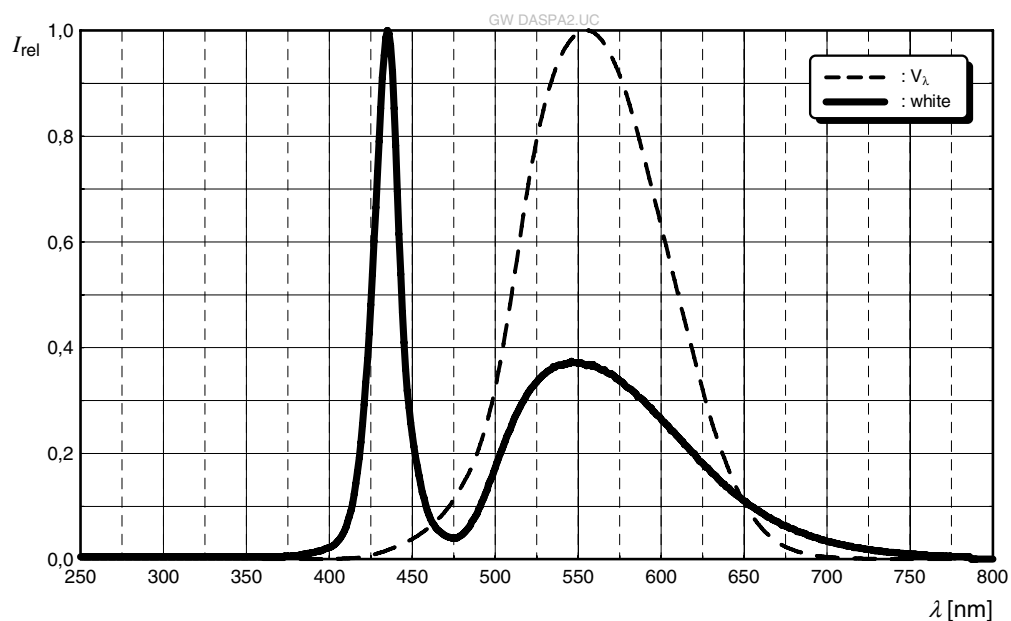
Group Name on Label

Example: HT-5C-K

Brightness	Color Chromaticity	Forward Voltage
HT	5C	K

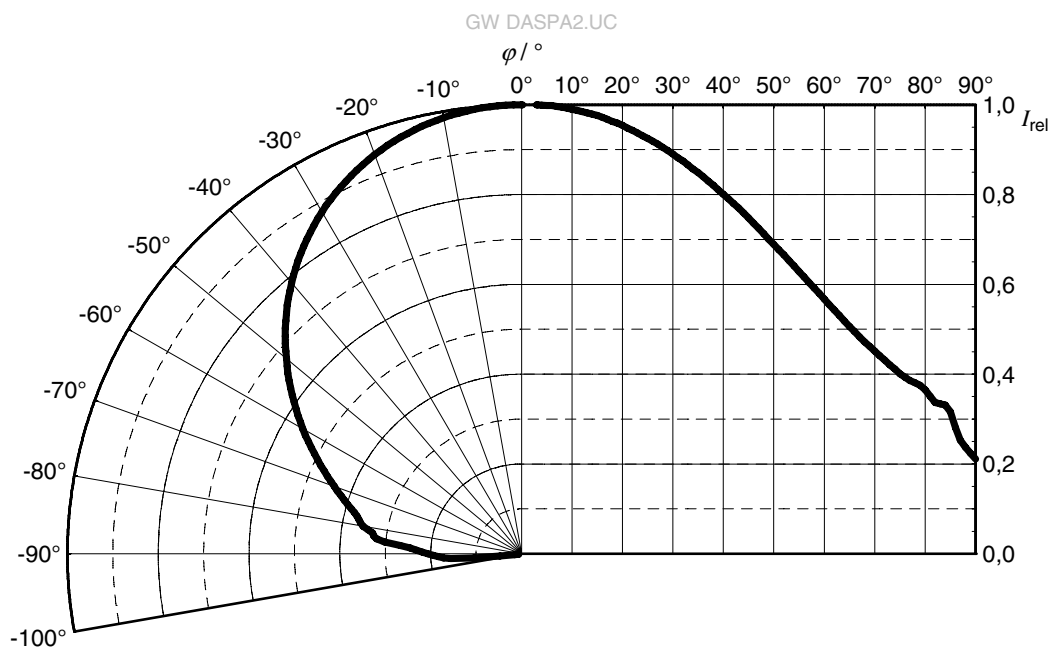
Relative Spectral Emission ⁶⁾

$I_{\text{rel}} = f(\lambda)$; $I_F = 100 \text{ mA}$; $T_J = 25 \text{ }^\circ\text{C}$



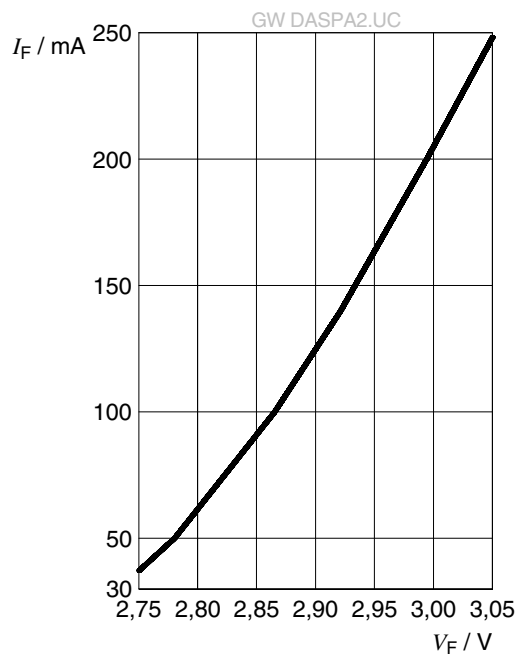
Radiation Characteristics ⁶⁾

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



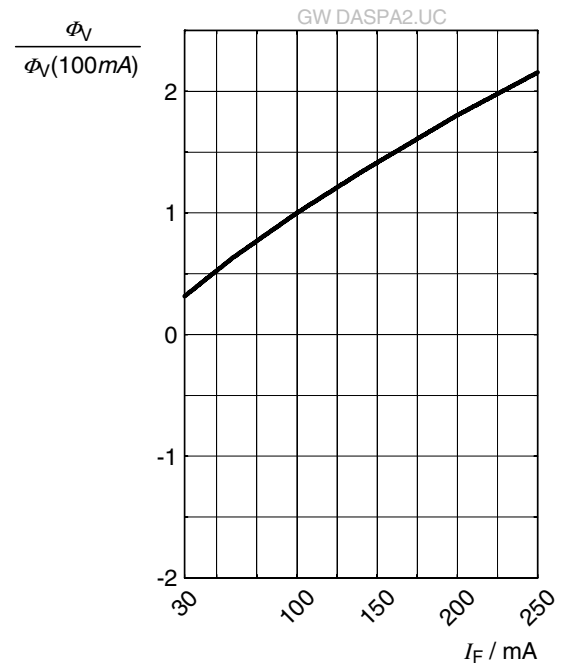
Forward current ^{6), 7)}

$$I_F = f(V_F); T_J = 25\text{ °C}$$



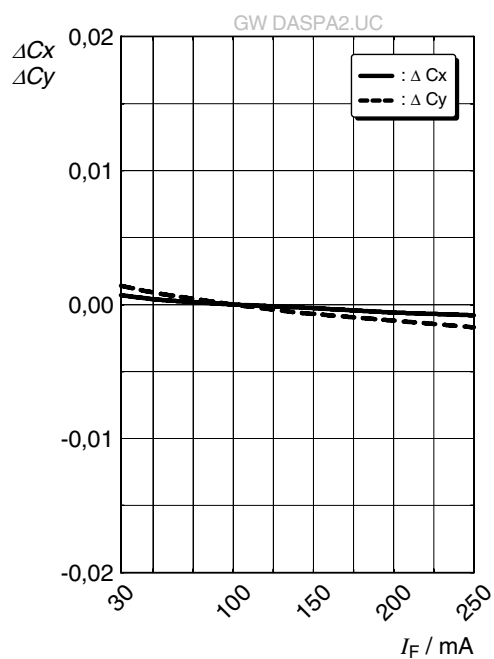
Relative Luminous Flux ^{6), 7)}

$$\Phi_V / \Phi_V(100\text{ mA}) = f(I_F); T_J = 25\text{ °C}$$



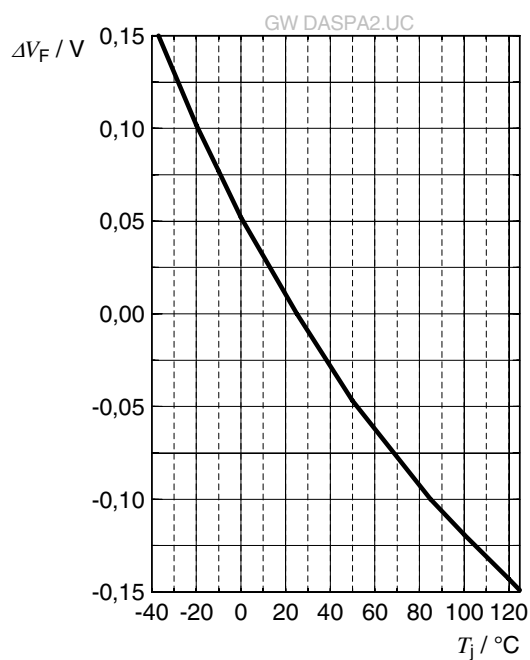
Chromaticity Coordinate Shift ⁶⁾

$$\Delta Cx, \Delta Cy = f(I_F); T_J = 25\text{ °C}$$



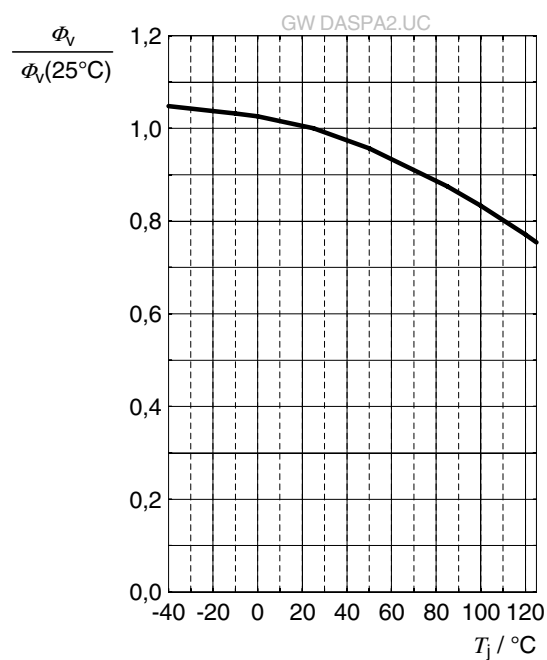
Forward Voltage ⁶⁾

$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 100 \text{ mA}$$



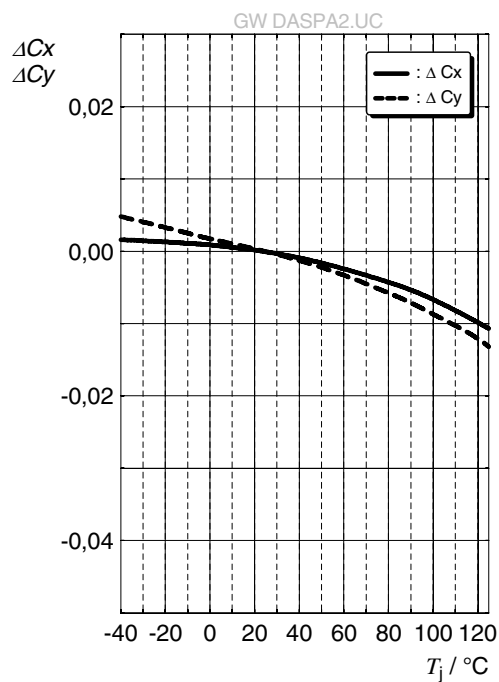
Relative Luminous Flux ⁶⁾

$$\Phi_V / \Phi_V(25^\circ\text{C}) = f(T_j); I_F = 100 \text{ mA}$$



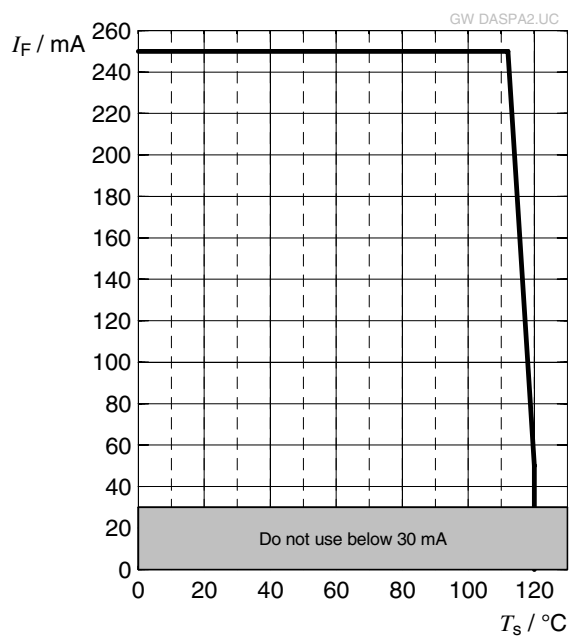
Chromaticity Coordinate Shift ⁶⁾

$$\Delta Cx, \Delta Cy = f(T_j); I_F = 100 \text{ mA}$$

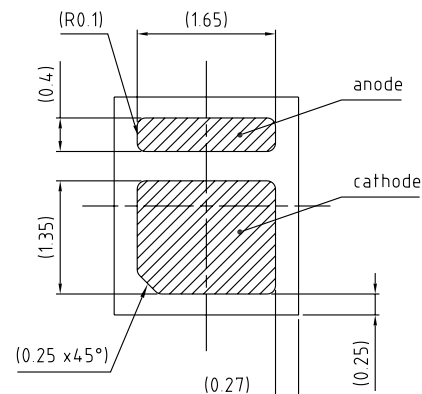
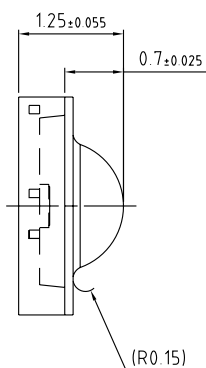
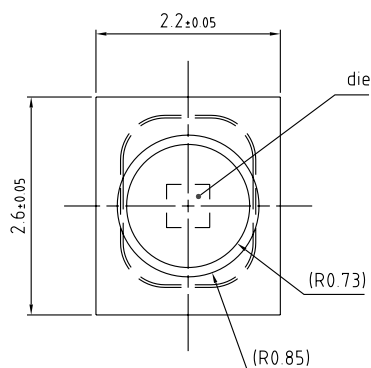


Max. Permissible Forward Current

$$I_F = f(T)$$



Dimensional Drawing ⁸⁾



general tolerance ± 0.1

lead finish Au 

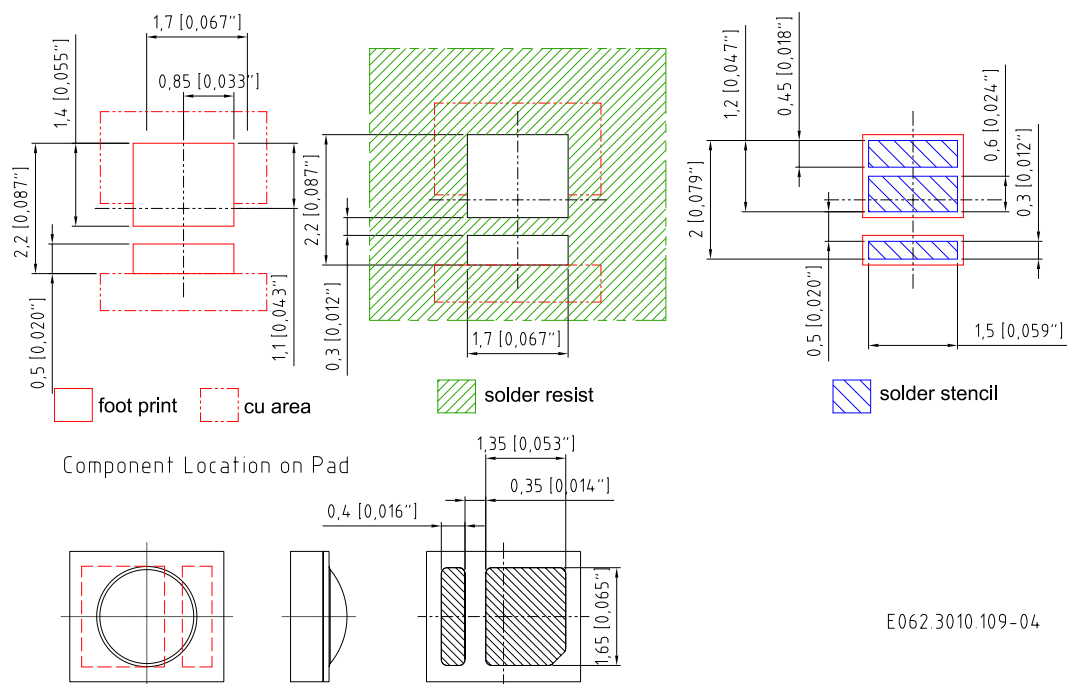
C67062-A0184-A1.-04

Further Information:

Approximate Weight: 13.0 mg

ESD advice: The device is protected by ESD device which is connected in parallel to the Chip.

Recommended Solder Pad ⁸⁾

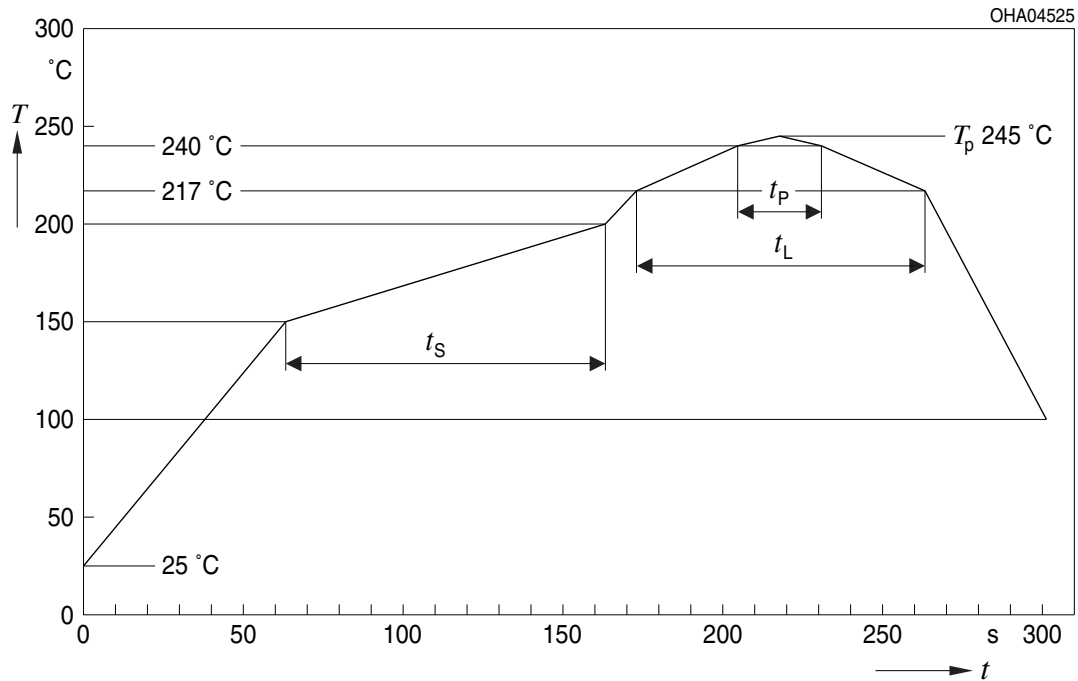


E062.3010.109-04

For superior solder joint connectivity results we recommend soldering under standard nitrogen atmosphere. Package not suitable for ultra sonic cleaning.

Reflow Soldering Profile

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

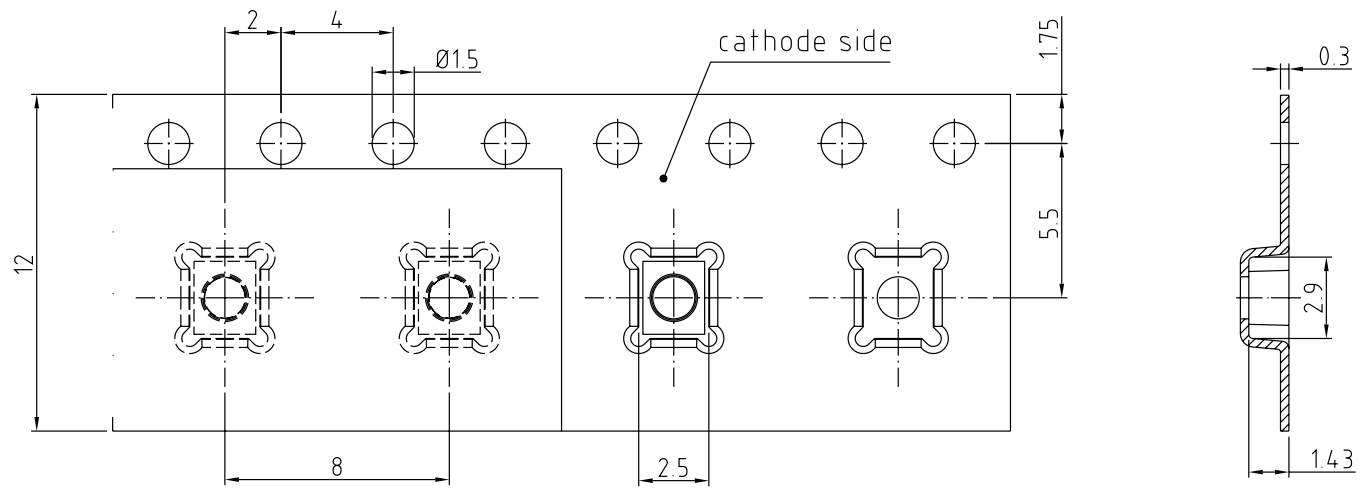


Profile Feature	Symbol	Pb-Free (SnAgCu) Assembly			Unit
		Minimum	Recommendation	Maximum	
Ramp-up rate to preheat ^{*)} 25°C to 150°C			2	3	K/s
Time t_s T_{Smin} to T_{Smax}	t_s	60	100	120	s
Ramp-up rate to peak ^{*)} T_{Smax} to T_p			2	3	K/s
Liquidus temperature	T_L		217		$^{\circ}\text{C}$
Time above liquidus temperature	t_L		80	100	s
Peak temperature	T_p		245	260	$^{\circ}\text{C}$
Time within 5°C of the specified peak temperature $T_p - 5\text{ K}$	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

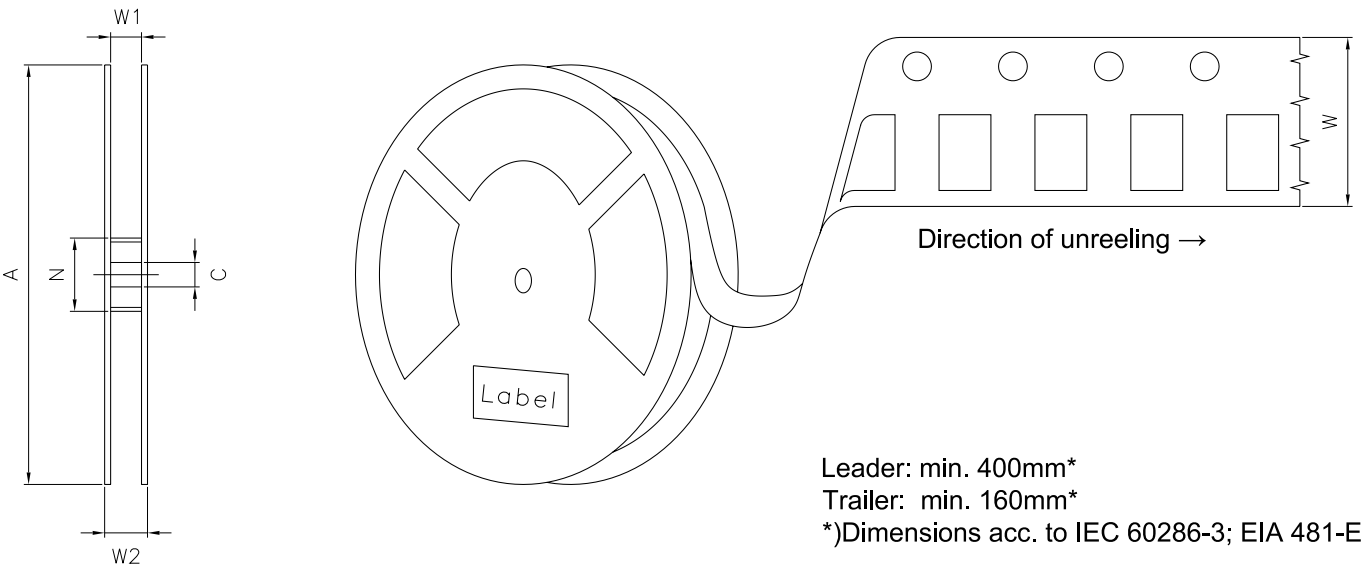
* slope calculation DT/Dt : Dt max. 5 s; fulfillment for the whole T-range

Taping ⁸⁾



C67062-A0022-B1-10

Tape and Reel ⁹⁾



Reel Dimensions

A	W	N _{min}	W ₁	W _{2max}	Pieces per PU
180 mm	12 + 0.3 / - 0.1 mm	60 mm	12.4 + 2 mm	18.4 mm	1200

Barcode-Product-Label (BPL)

**OSRAM Opto
Semiconductors**

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

RoHS Compliant

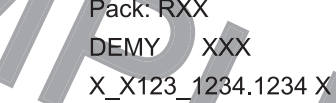
(6P) BATCH NO: 1234567890



(1T) LOT NO: 1234567890



(9D) D/C: 1234



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



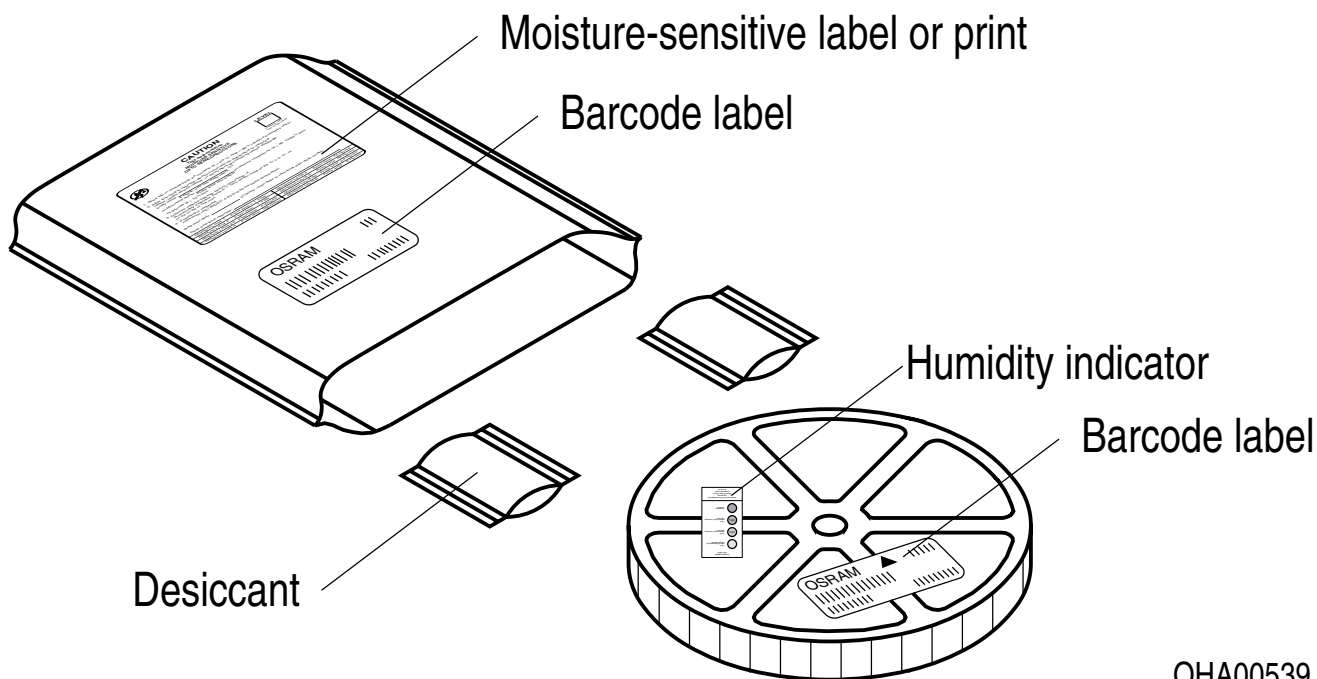

ML Temp ST
X XXX °C X



Pack: RXX
DEMY XXX
X_X123_1234.1234 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 fall into the class **exempt group (exposure time 10000 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 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 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:** 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) **Forward Voltage:** The Forward voltage is measured during a current pulse duration of typically 1 ms with a tolerance of $\pm 0.05V$.
- 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 coordinates are measured during a current pulse of typically 25 ms, with an internal reproducibility of ± 0.005 and an expanded uncertainty of ± 0.01 (acc. to GUM with a coverage factor of $k = 3$).
- 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
1.3	2019-12-02	New Layout Taping Schematic Transportation Box Dimensions of Transportation Box
1.4	2020-11-23	Applications
1.5	2021-06-21	Features Electro - Optical Characteristics (Diagrams)
1.6	2022-02-18	Tape and Reel Chromaticity Coordinate Groups New Layout



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。

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