OSRAM GW KAFJB6.EM

Datasheet

ams **OSRAM**

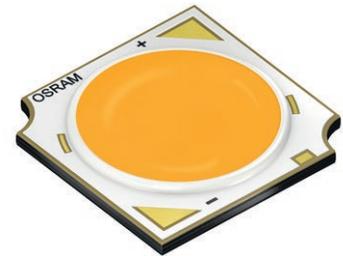## SOLERIQ® S 9

GW KAFJB6.EM

The SOLERIQ® S products were specifically designed for applications requiring large flux packages out of a compact area.

Applications

- Indoor Lighting

Features

- Package: Chip-on-Board

- Typ. Radiation: 120° (Lambertian emitter)

- Color temperature: 3000K - 6500K

- CRI: 80 (min.)

- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)

- Luminous Flux: typ. 1940 lm @ 3000 K, 85 °C

- Luminous efficacy: typ. 160 lm/W @ 3000 K, 85 °C

Ordering Information

Type	Color temperature	Luminous Flux [1] $I_F = 360$ mA Φ_V	Ordering Code
GW KAFJB6.EM-SPSS-30S3	3000 K	1800.0 ... 2400.0 lm	Q65113A1500
GW KAFJB6.EM-SPSS-40S3	4000 K	1800.0 ... 2400.0 lm	Q65113A1501
GW KAFJB6.EM-SPSS-50S3	5000 K	1800.0 ... 2400.0 lm	Q65113A1502
GW KAFJB6.EM-SPSS-57S3	5700 K	1800.0 ... 2400.0 lm	Q65113A1503
GW KAFJB6.EM-SPSS-65S3	6500 K	1800.0 ... 2400.0 lm	Q65113A1504

Maximum Ratings

| Parameter	Symbol		Values
Operating Temperature	T_{op}	min.	-40 °C
		max.	105 °C
Storage Temperature	T_{stg}	min.	-40 °C
		max.	105 °C
Junction Temperature	T_j	max.	125 °C
Forward Current $T_J = 85\ °C$	I_F	min.	40 mA
		max.	920 mA
Reverse voltage [2]	V_R		Not designed for reverse operation
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)	V_{ESD}		2 kV

Characteristics

I_F = 360 mA; T_J = 85 °C

Parameter	Symbol		Values
Viewing angle at 50% I_V	2φ	typ.	120 °
Forward Voltage [3] I_F = 360 mA	V_F	min. typ. max.	32.00 V 34.00 V 40.00 V
Reverse current [2]	I_R		Not designed for reverse operation
Color Rendering Index [4]	CRI	min.	80
Electrical thermal resistance junction/solderpoint with efficiency η_e = 48.2 %	$R_{thJS\ elec.}$	typ.	0.52 K / W

Brightness Groups

Group	Luminous Flux [1] $I_F = 360$ mA min. Φ_V	Luminous Flux [1] $I_F = 360$ mA max. Φ_V
SP	1800.0 lm	1940.0 lm
SQ	1940.0 lm	2100.0 lm
SR	2100.0 lm	2240.0 lm
SS	2240.0 lm	2400.0 lm

Chromaticity Coordinate Groups [5]

Note: i. Coordinates in reference to CIE 1931 (cx cy), ii. CTR Binning at 85°C
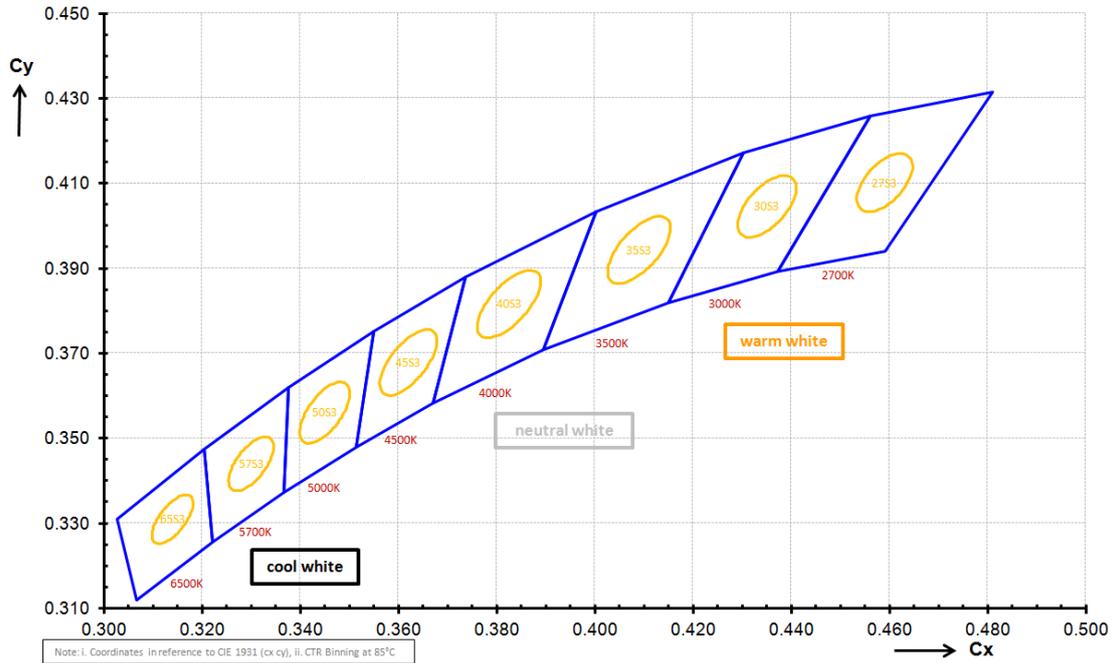
Chromaticity Coordinate Groups

Group	Cx	Cy	CCT	Group	Cx	Cy	CCT	Group	Cx	Cy	CCT
30S3	0.4387	0.4032	3000		0.4313	0.3961	3000	40S3	0.3866	0.3796	4000
	0.4339	0.4090	3000		0.4327	0.3967	3000		0.3818	0.3855	4000
	0.4330	0.4083	3000		0.4339	0.3974	3000		0.3809	0.3847	4000
	0.4323	0.4076	3000		0.4348	0.3981	3000		0.3802	0.3840	4000
	0.4317	0.4070	3000		0.4395	0.4053	3000		0.3796	0.3833	4000
	0.4312	0.4064	3000		0.4355	0.3988	3000		0.3792	0.3828	4000
	0.4308	0.4058	3000		0.4361	0.3994	3000		0.3787	0.3822	4000
	0.4303	0.4053	3000		0.4366	0.4000	3000		0.3783	0.3816	4000
	0.4299	0.4047	3000		0.4371	0.4006	3000		0.3779	0.3810	4000
	0.4295	0.4040	3000		0.4375	0.4011	3000		0.3775	0.3804	4000
	0.4291	0.4032	3000		0.4379	0.4018	3000		0.3770	0.3796	4000
	0.4391	0.4041	3000		0.4383	0.4024	3000		0.3871	0.3805	4000
	0.4287	0.4023	3000		0.4399	0.4066	3000		0.3765	0.3787	4000
	0.4283	0.4011	3000		0.4399	0.4082	3000		0.3760	0.3775	4000
	0.4279	0.3998	3000		0.4393	0.4097	3000		0.3756	0.3760	4000
	0.4279	0.3982	3000		0.4381	0.4104	3000		0.3753	0.3742	4000
	0.4285	0.3967	3000		0.4365	0.4103	3000		0.3758	0.3725	4000
	0.4297	0.3960	3000		0.4351	0.4097	3000		0.3772	0.3717	4000

Group	Cx	Cy	CCT
	0.3790	0.3720	4000
	0.3806	0.3729	4000
	0.3818	0.3738	4000
	0.3827	0.3745	4000
	0.3876	0.3817	4000
	0.3834	0.3752	4000
	0.3840	0.3759	4000
	0.3845	0.3764	4000
	0.3849	0.3770	4000
	0.3853	0.3776	4000
	0.3857	0.3782	4000
	0.3861	0.3788	4000
	0.3880	0.3832	4000
	0.3883	0.3850	4000
	0.3878	0.3867	4000
	0.3864	0.3875	4000
	0.3846	0.3872	4000
	0.3830	0.3863	4000
50S3	0.3485	0.3551	5000
	0.3446	0.3607	5000
	0.3438	0.3598	5000
	0.3431	0.3591	5000
	0.3427	0.3585	5000
	0.3422	0.3579	5000
	0.3419	0.3574	5000
	0.3416	0.3568	5000
	0.3413	0.3563	5000
	0.3410	0.3557	5000
	0.3407	0.3551	5000
	0.3488	0.3558	5000
	0.3404	0.3544	5000
	0.3401	0.3534	5000
	0.3397	0.3523	5000
	0.3395	0.3509	5000

Group	Cx	Cy	CCT
	0.3397	0.3493	5000
	0.3406	0.3481	5000
	0.3420	0.3480	5000
	0.3435	0.3487	5000
	0.3446	0.3495	5000
	0.3454	0.3504	5000
	0.3491	0.3568	5000
	0.3461	0.3511	5000
	0.3465	0.3517	5000
	0.3470	0.3523	5000
	0.3473	0.3528	5000
	0.3476	0.3534	5000
	0.3479	0.3539	5000
	0.3482	0.3545	5000
	0.3495	0.3579	5000
	0.3497	0.3593	5000
	0.3495	0.3609	5000
	0.3486	0.3621	5000
	0.3472	0.3622	5000
	0.3457	0.3615	5000
57S3	0.3322	0.3425	5700
	0.3287	0.3474	5700
	0.3280	0.3467	5700
	0.3274	0.3460	5700
	0.3270	0.3455	5700
	0.3266	0.3450	5700
	0.3263	0.3445	5700
	0.3260	0.3441	5700
	0.3257	0.3436	5700
	0.3255	0.3431	5700
	0.3252	0.3425	5700
	0.3325	0.3432	5700
	0.3249	0.3418	5700
	0.3246	0.3410	5700

Group	Cx	Cy	CCT
	0.3243	0.3400	5700
	0.3242	0.3387	5700
	0.3243	0.3373	5700
	0.3252	0.3364	5700
	0.3264	0.3363	5700
	0.3277	0.3369	5700
	0.3287	0.3376	5700
	0.3294	0.3383	5700
	0.3328	0.3440	5700
	0.3300	0.3390	5700
	0.3304	0.3395	5700
	0.3308	0.3400	5700
	0.3311	0.3405	5700
	0.3314	0.3409	5700
	0.3317	0.3414	5700
	0.3319	0.3419	5700
	0.3331	0.3450	5700
	0.3332	0.3463	5700
	0.3331	0.3477	5700
	0.3323	0.3486	5700
	0.3310	0.3487	5700
	0.3297	0.3481	5700
65S3	0.3154	0.3282	6500
	0.3123	0.3324	6500
	0.3117	0.3318	6500
	0.3112	0.3313	6500
	0.3108	0.3308	6500
	0.3105	0.3303	6500
	0.3102	0.3299	6500
	0.3100	0.3295	6500
	0.3097	0.3291	6500
	0.3095	0.3287	6500
	0.3092	0.3282	6500
	0.3156	0.3288	6500

Group	Cx	Cy	CCT	Group	Cx	Cy	CCT	Group	Cx	Cy	CCT
	0.3090	0.3276	6500		0.3123	0.3240	6500		0.3149	0.3273	6500
	0.3087	0.3269	6500		0.3129	0.3246	6500		0.3151	0.3277	6500
	0.3084	0.3259	6500		0.3159	0.3295	6500		0.3162	0.3305	6500
	0.3082	0.3247	6500		0.3134	0.3251	6500		0.3164	0.3317	6500
	0.3083	0.3234	6500		0.3138	0.3256	6500		0.3163	0.3330	6500
	0.3090	0.3225	6500		0.3141	0.3261	6500		0.3156	0.3339	6500
	0.3103	0.3226	6500		0.3144	0.3265	6500		0.3143	0.3338	6500
	0.3114	0.3232	6500		0.3146	0.3269	6500		0.3132	0.3332	6500

Group Name on Label

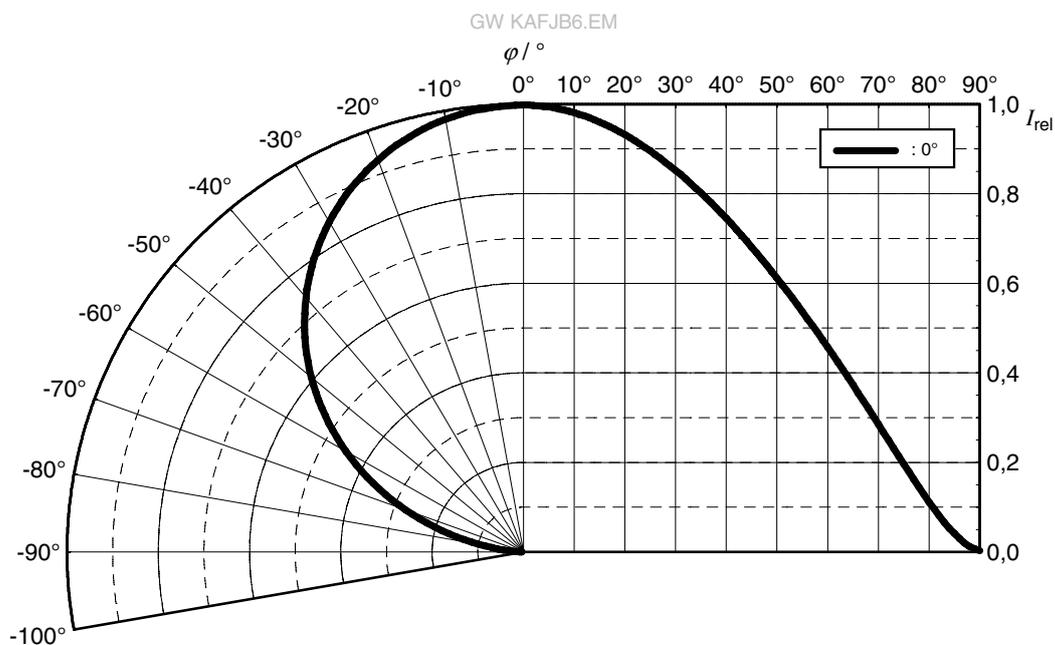**Example: SP-30S3**

Brightness	Color Chromaticity
SP	30S3

Relative Spectral Emission [6]

$\Phi_{rel} = f(\lambda)$; $I_F = 360$ mA; $T_J = 85$ °C
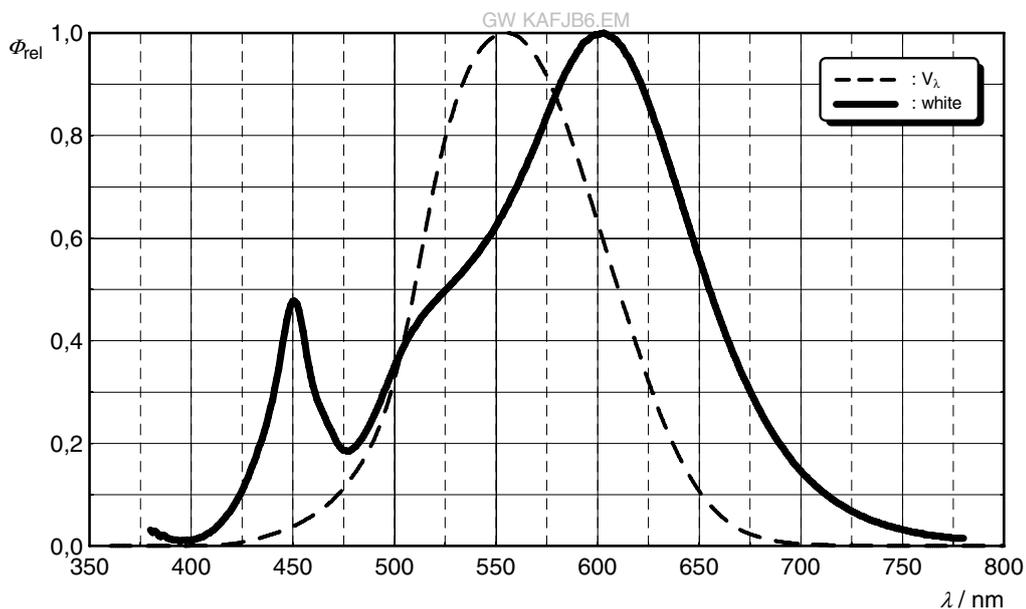
Radiation Characteristics [6]

$I_{rel} = f(\phi)$; $T_J = 85$ °C

Forward current [6]

$I_F = f(V_F)$; $T_J = 85 °C$
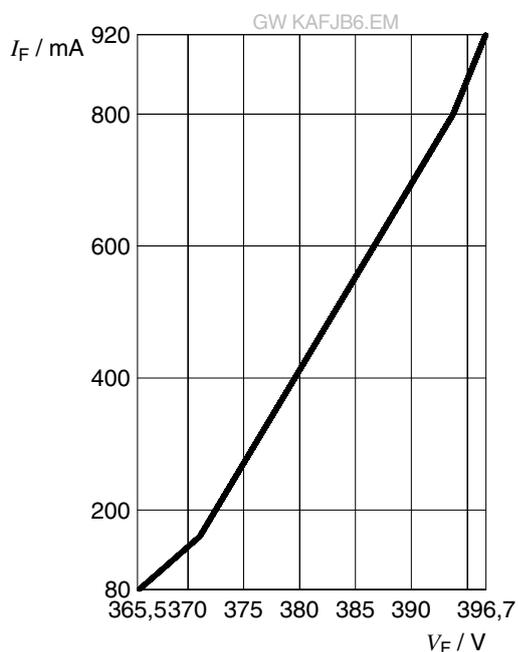
Relative Luminous Flux [6], [7]

$\Phi_V/\Phi_V(360\ mA) = f(I_F)$; $T_J = 85 °C$
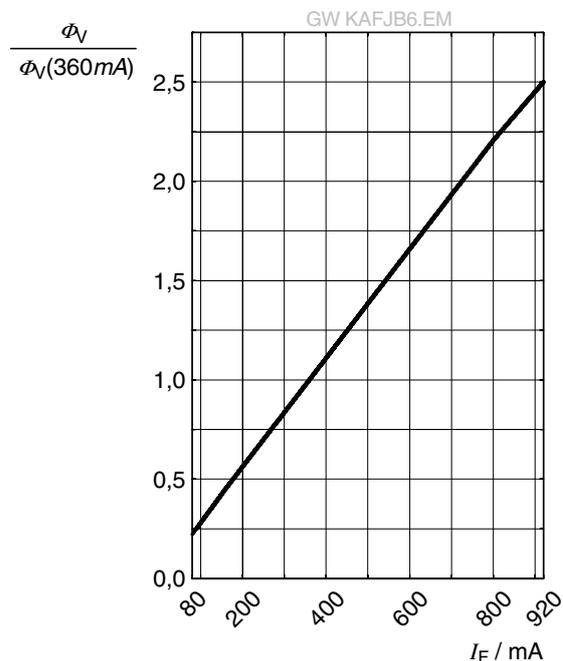
Chromaticity Coordinate Shift [6]
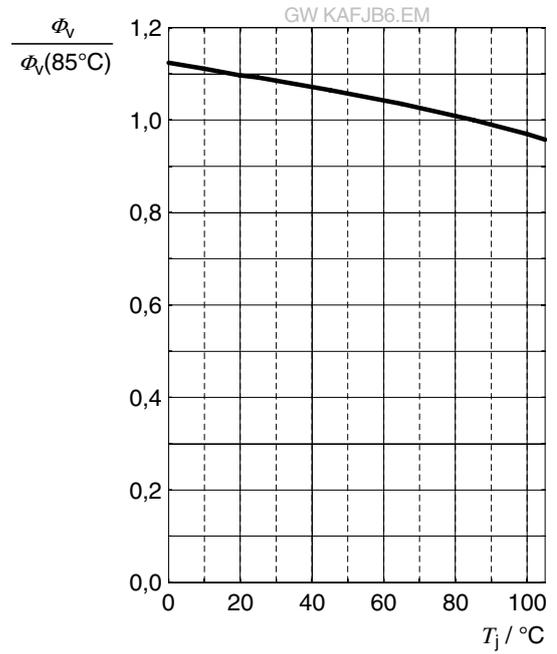
ΔCx, $\Delta Cy = f(I_F)$; $T_J = 85 °C$
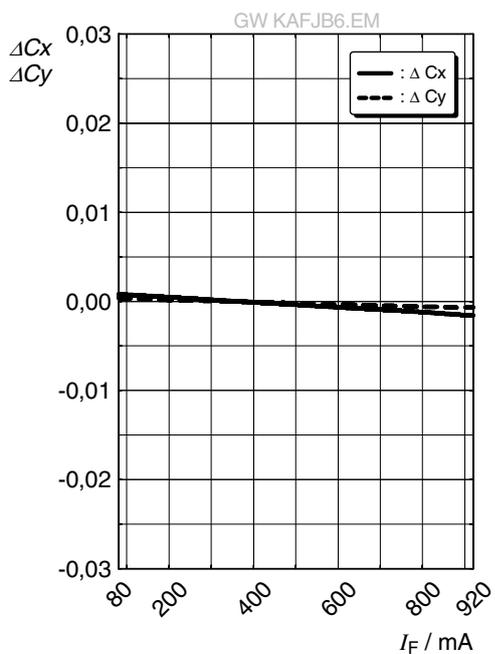
Forward Voltage [6]

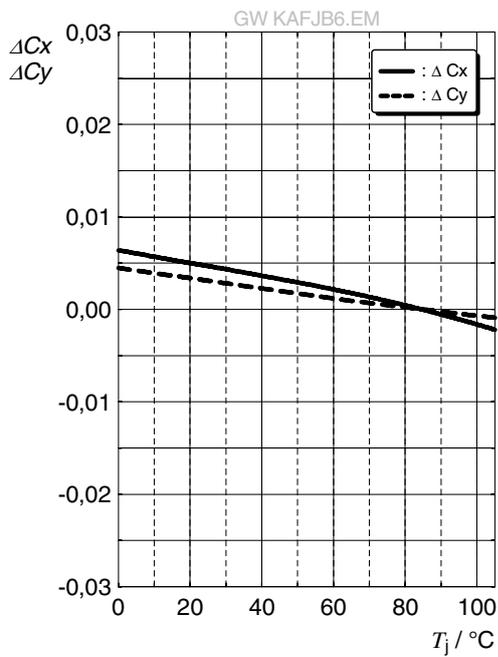$\Delta V_F = V_F - V_F(85\ ^\circ C) = f(T_j);\ I_F = 360\ mA$
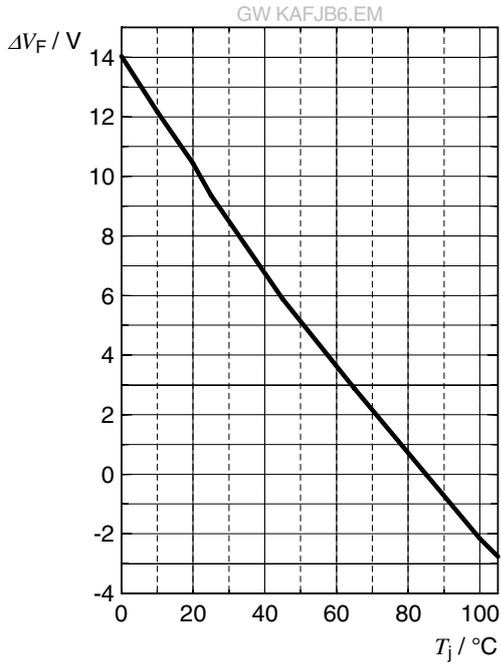
Relative Luminous Flux [6]

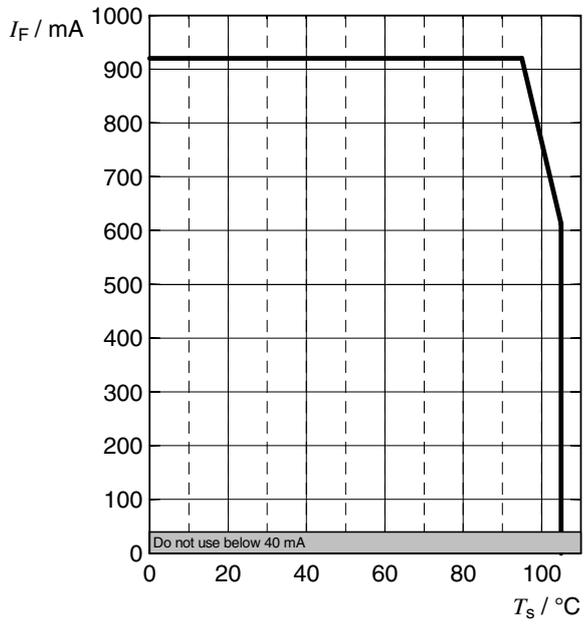$\Phi_v/\Phi_v(85\ ^\circ C) = f(T_j);\ I_F = 360\ mA$

Chromaticity Coordinate Shift [6]

$\Delta Cx,\ \Delta Cy = f(T_j);\ I_F = 360\ mA$
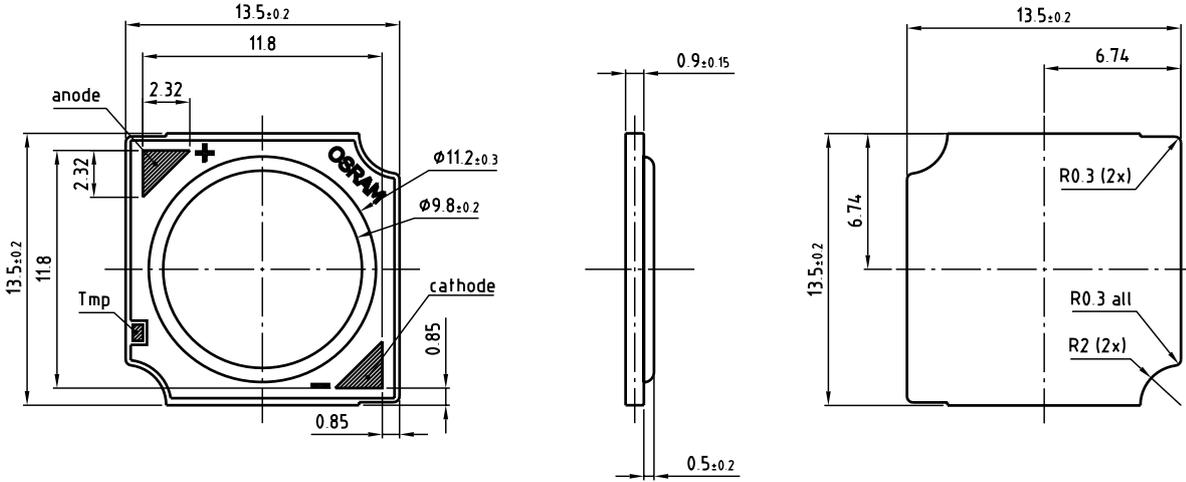
Max. Permissible Forward Current [8]

$I_F = f(T)$

Dimensional Drawing [9]
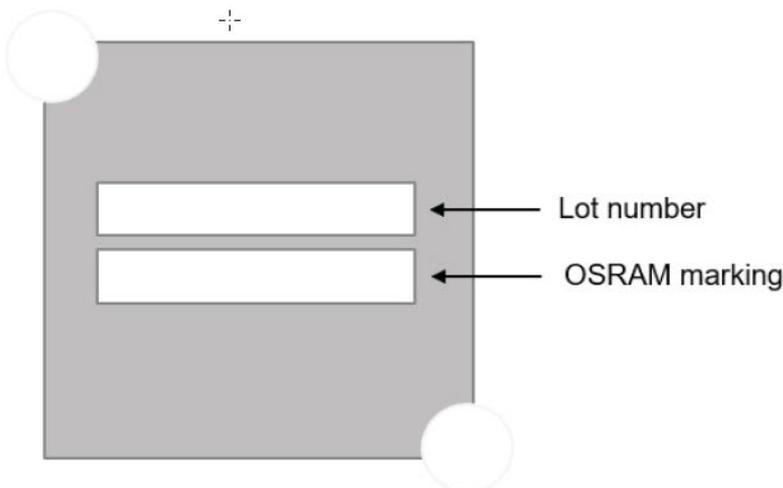

general tolerance ± 0.1
lead finish Au

C67062-A0325-A1.-02

Dimensional Drawing [9]

Marking on backside of COB device

Lot number

OSRAM marking

Marking Nomenclature

Suffix

CCT

CRI

Generation

Wattage Class

LES, Light Emitting Surface
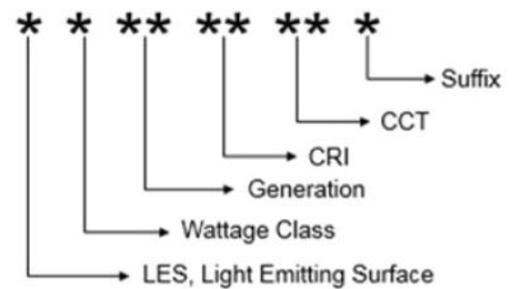
Further Information:

Approximate Weight: 507.6 mg

OSRAM

Tray [9)]

50 pieces per tray

50PCS

CG12K

200±15

10

10

200±15

A

A

A-A

X 1:1

3x R10

3

8±0.1

12.5±0.5

9.5±0.5

14.85±0.5

13±0.5

13±0.5
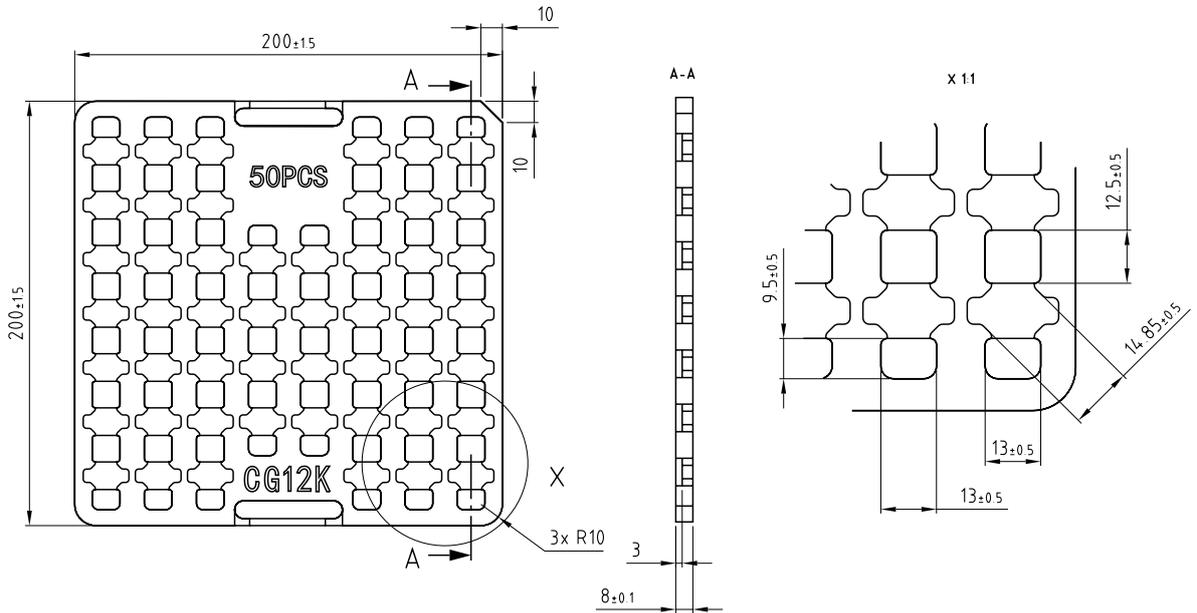
C67062-A0359-X1-02

Barcode-Product-Label (BPL)

OSRAM

LX XXXX

BIN1: XX-XX-X-XXX-X

RoHS Compliant

(6P) BATCH NO: 1234567890

(1T) LOT NO: 1234567890

(9D) D/C: 1234

ML Temp ST
X   XXX °C X

Pack: RXX
DEMY   XXX
X_X123_1234.1234 X

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

EXAMPLE

OHA04563

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.

Revision History

Version	Date	Change
1.0	2020-09-14	Initial Version
1.0	2020-09-23	Initial Version
1.0	2020-10-01	Initial Version
1.1	2022-10-03	New Layout Applications
1.2	2023-02-07	Ordering Information
1.3	2023-04-11	Tray
1.4	2023-07-11	Characteristics

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。