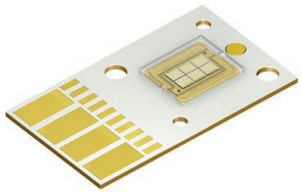
LE B P3W 01



OSRAM OSTAR® Projection Power

OSRAM OSTAR Projection Power is a high luminance LED for projection applications.

Applications

- Projection Home LED & Laser
- Projection Professional LED & Laser

Features:

- Package: OSTAR High Power Projection
- Chip technology: UX:3
- Typ. Radiation: 120° (Lambertian emitter)
- Color: λ_{dom} = 459 nm (● blue)
- Corrosion Robustness Class: 3B
- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)

Ordering Information

Type	Total radiant flux [1)] I_F = 36000 mA Φ_e	Ordering Code
LE B P3W 01-GZHZ-24	24000 ... 45000 mW	Q65112A4108
LE B P3W 01-GZHZ-VW	24000 ... 45000 mW	Q65112A4119

Not for new design

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min. max.	-40 °C 125 °C
Storage Temperature	T_{stg}	min. max.	-40 °C 125 °C
Junction Temperature	T_j	max.	150 °C
Forward Current T_J = 150 °C; all chips operated in parallel	I_F	min. max.	600 mA 30000 mA
Forward Current pulsed D = 0.25 ; f = 240 Hz; T_B = 25 °C; all chips operated in parallel	$I_{F\ pulse}$		48000 mA
Surge Current tp ≤ 10 µs; D = 0.1; T_J = 150 °C; all chips operated in parallel	I_{FS}	max.	60000 mA
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)	V_{ESD}		2 kV
Reverse current [2)]	I_R	max.	200 mA

Not for new design

Characteristics

T_{Board} = 25 °C; I_F = 36000 mA; f = 1000 Hz; t_{int} = 100 ms; D = 0.25; all chips operated in parallel

Parameter	Symbol		Values
Peak Wavelength	λ_{peak}	typ.	455 nm
Dominant Wavelength [3]	λ_{dom}	min. typ. max.	444 nm 459 nm 465 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	27 nm
Viewing angle at 50% I_V	2φ	typ.	120 °
Radiating surface	A_{color}	typ.	4.8 x 2.6 mm²
Partial Flux acc. CIE 127:2007 [4] I_F = 36000 mA	$\Phi_{E/V,\ 120°}$	typ.	0.82
Forward Voltage [5] I_F = 36000 mA; all chips operated in parallel	V_F	min. typ. max.	3.20 V 3.35 V 4.30 V
Deviation of forward voltage of all chips	V_F	max.	135 mV
Reverse voltage (ESD device)	$V_{R\ ESD}$	min.	45 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Real thermal resistance junction/board	$R_{thJB\ real}$	typ.	0.5
Electrical thermal resistance junction/board with efficiency η_e = 24 %	$R_{thJB\ elec.}$	typ.	0.38

Not for new design

Brightness Groups

Group	Total radiant flux [1] I_F = 36000 mA min. Φ_e	Total radiant flux [1] I_F = 36000 mA max. Φ_e
GZ	24000 mW	28000 mW
HX	28000 mW	33000 mW
HY	33000 mW	39000 mW
HZ	39000 mW	45000 mW

Wavelength Groups

Group	Dominant Wavelength [3] min. λ_{dom}	Dominant Wavelength [3] max. λ_{dom}
V	444 nm	448 nm
W	448 nm	452 nm
2	452 nm	456 nm
3	456 nm	460 nm
4	460 nm	465 nm

Group Name on Label

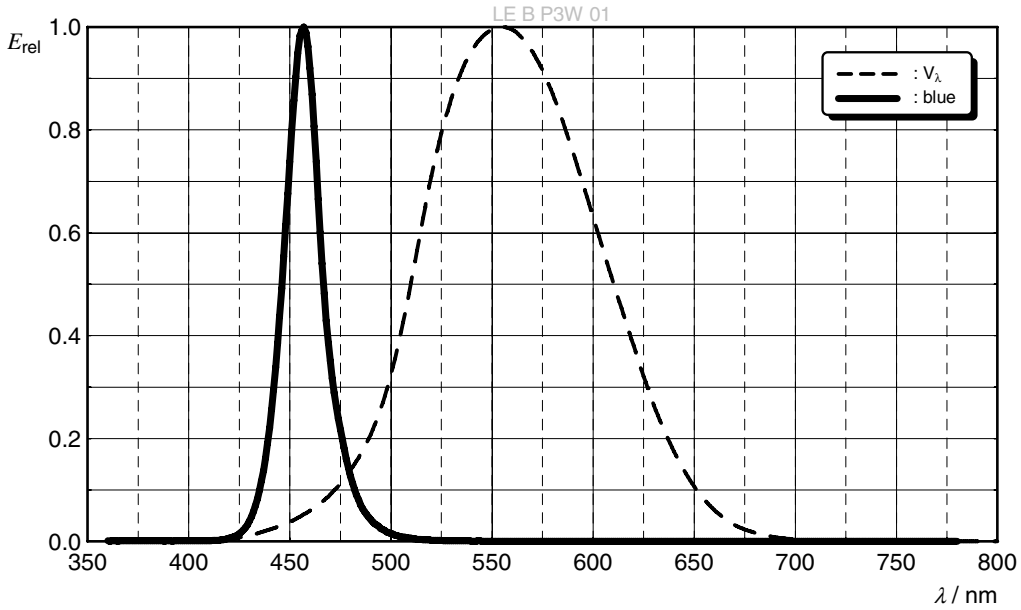
Example: GZ-2

Brightness	Wavelength
GZ	2

Not for new design

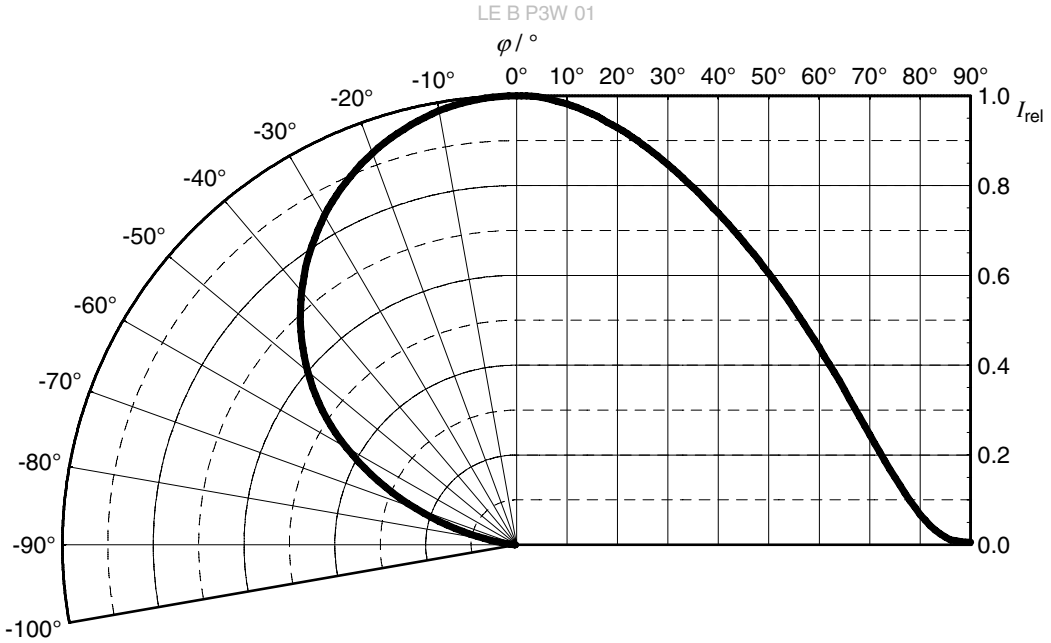
Relative Spectral Emission [4)]

$E_{rel} = f(\lambda)$; I_F = 36000 mA; T_J = 25 °C; all chips operated in parallel



Radiation Characteristics [4)]

$I_{rel} = f(\phi)$; T_J = 25 °C



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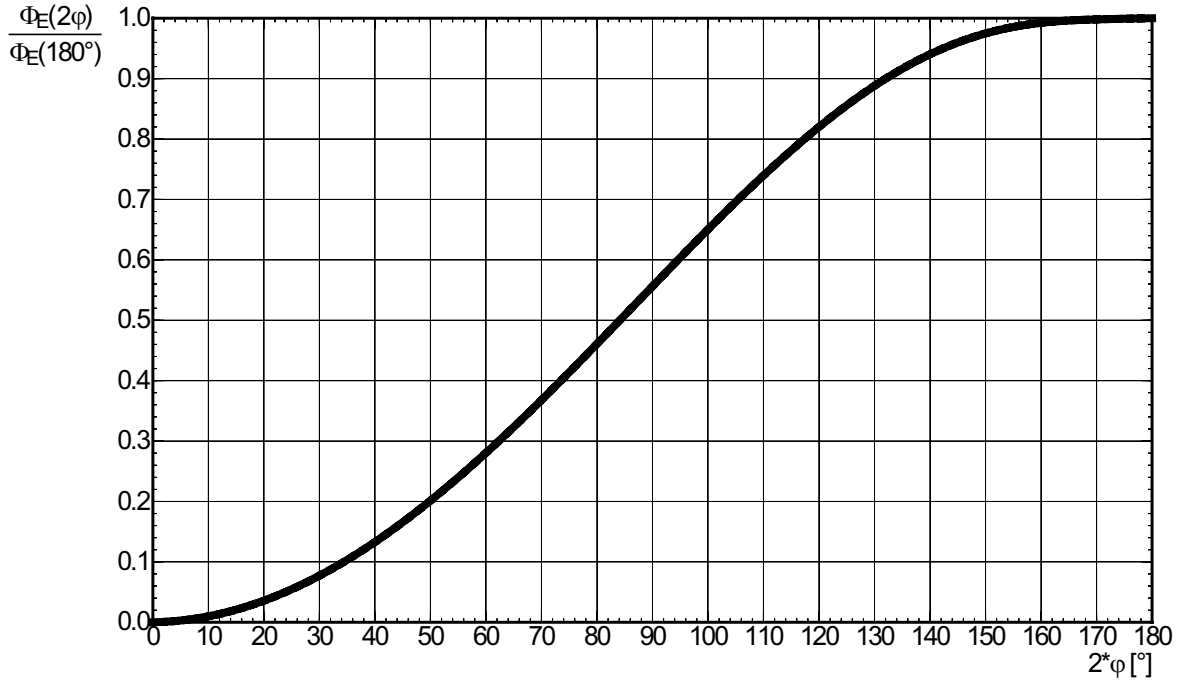
Relative Partial Flux [4)]

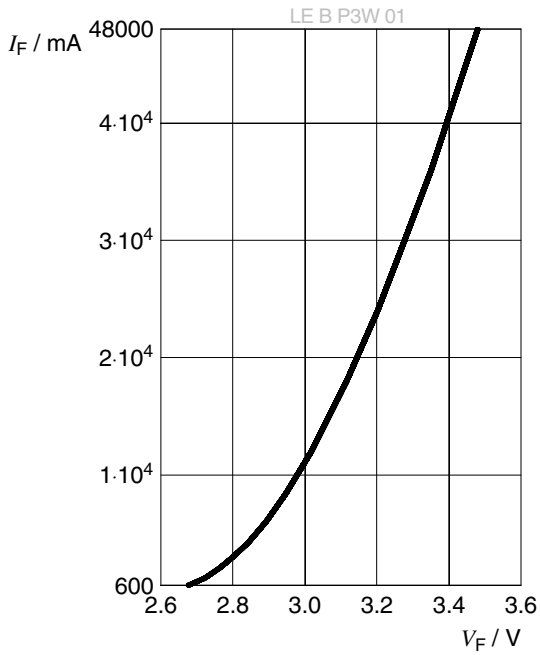
$\Phi_E(2\varphi)/\Phi_E(180°) = f(\varphi)$; T_J = 25 °C



Not for new design

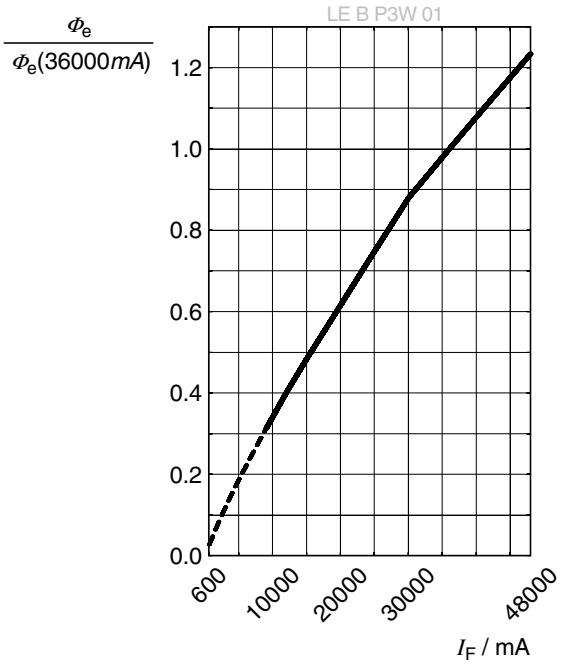
Forward current [4), 6)]

$I_F = f(V_F)$; $T_J = 25$ °C;
all chips operated in parallel



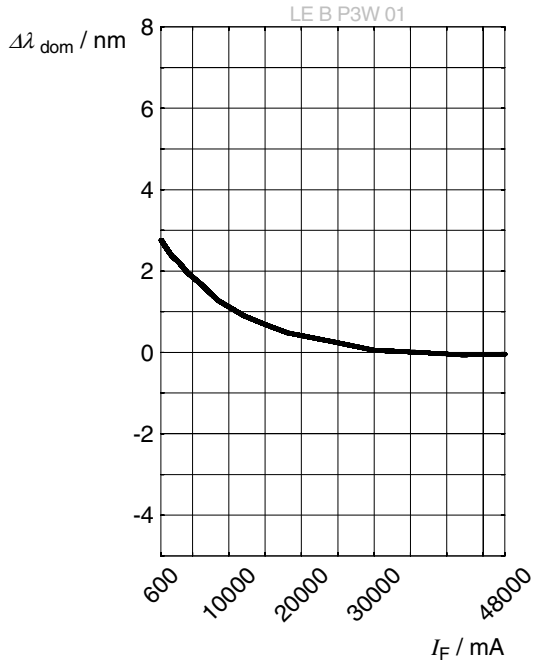
Relative Radiant Power [4), 6)]

$\Phi_E/\Phi_E(36000\ mA) = f(I_F)$; $T_J = 25$ °C;
all chips operated in parallel



Dominant Wavelength [4)]

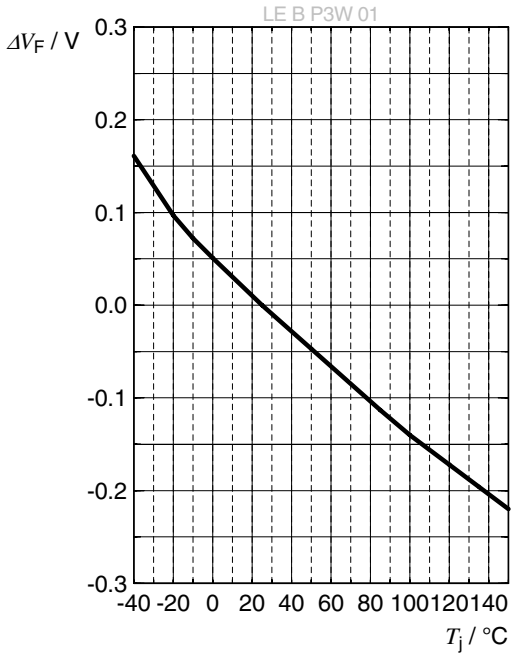
$\Delta\lambda_{dom} = f(I_F)$; $T_J = 25$ °C;
all chips operated in parallel



Not for new design

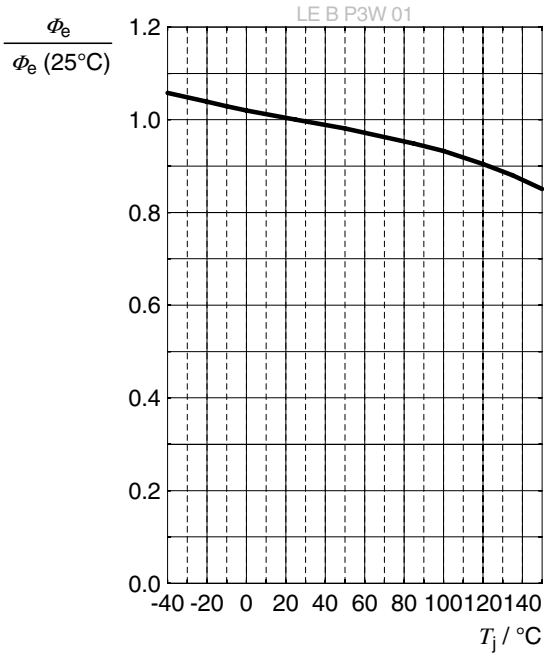
Forward Voltage [4)]

$\Delta V_F = V_F - V_F(25\ °C) = f(T_J)$; I_F = 36000 mA;
all chips operated in parallel



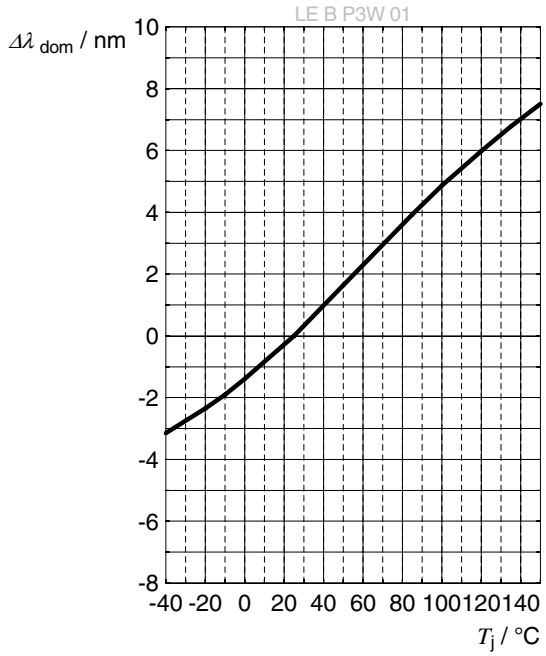
Relative Radiant Power [4)]

$\Phi_E/\Phi_E(25\ °C) = f(T_J)$; I_F = 36000 mA;
all chips operated in parallel



Dominant Wavelength [4)]

$\Delta\lambda_{dom} = \lambda_{dom} - \lambda_{dom}(25\ °C) = f(T_J)$; I_F = 36000 mA;
all chips operated in parallel



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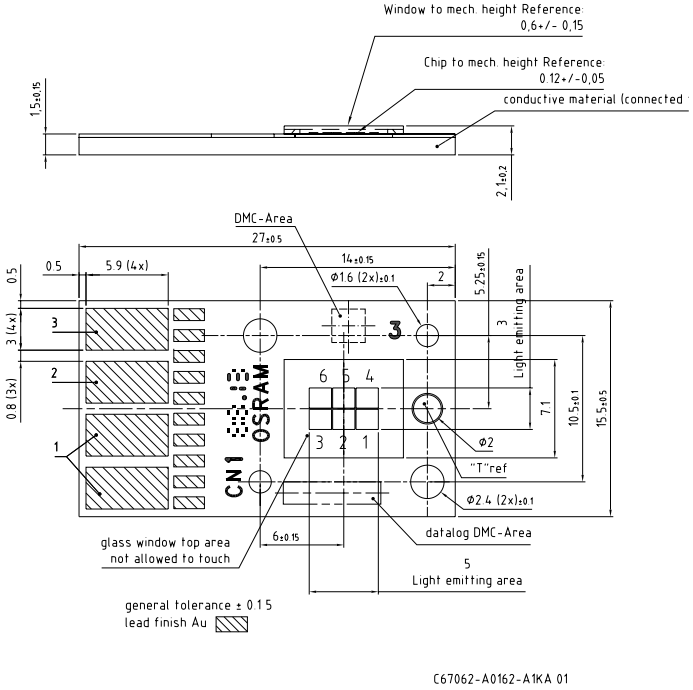
Dimensional Drawing [7)]



C67062-A0162-A1KA 01

Further Information:

Approximate Weight: 5,000.0 mg

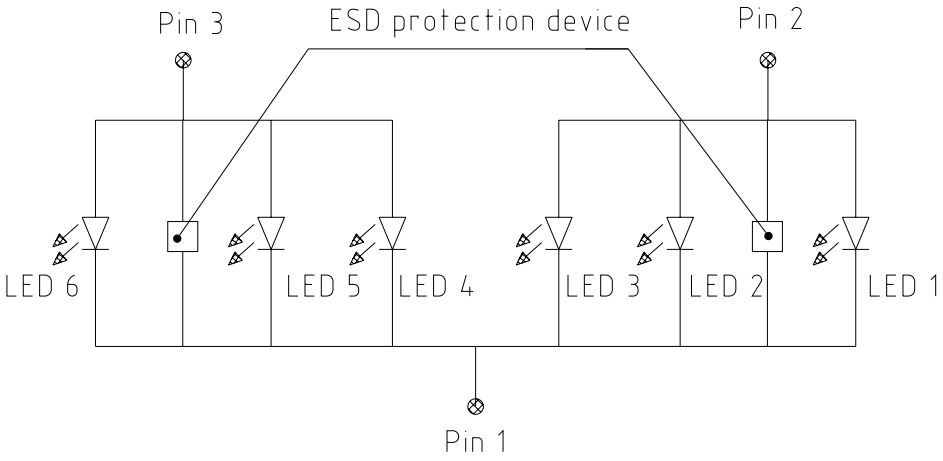
Corrosion test: Class: 3B
Test condition: 40°C / 90 % RH / 15 ppm H_2S / 14 days (stricter than IEC 60068-2-43)

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

Notes: Package not suitable for any kind of wet cleaning or ultrasonic cleaning.

Not for new design

Electrical Internal Circuit

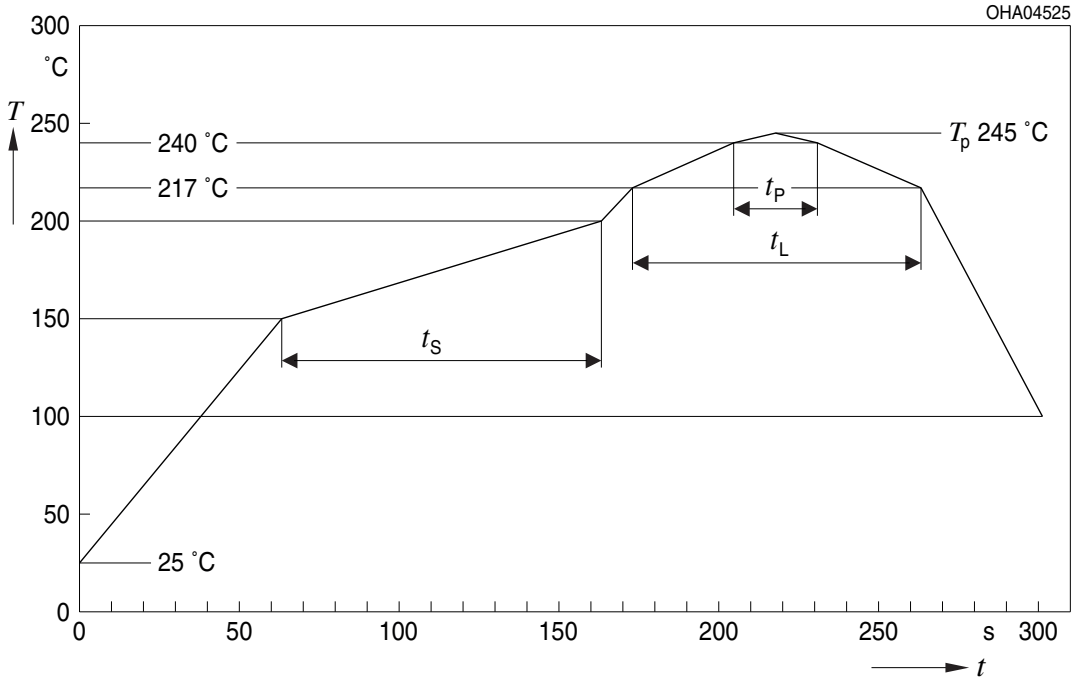


1: cathode
2: anode Chip 1, 2 and 3
3: anode Chip 4, 5 and 6

Not for new design

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		°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

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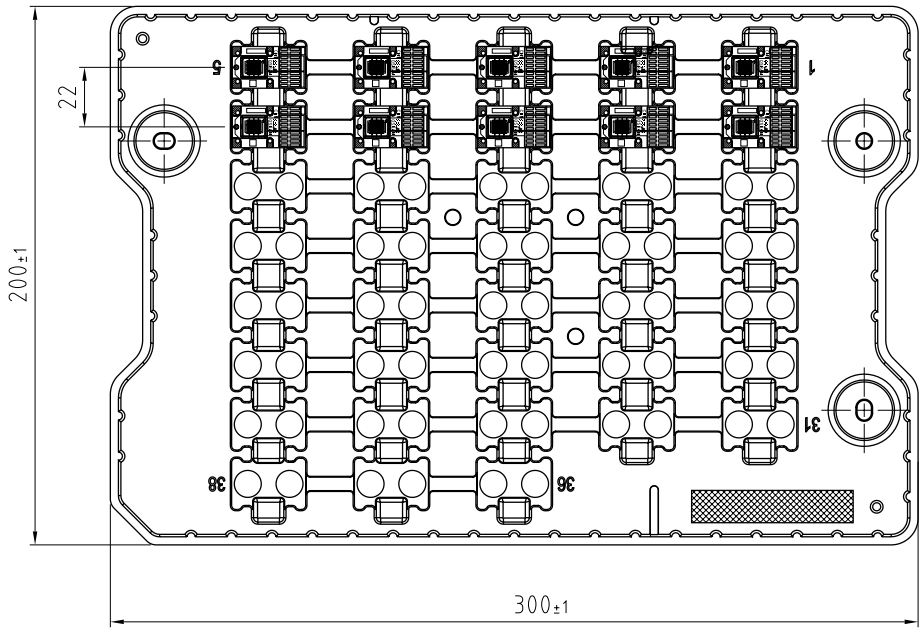
Taping [7)]



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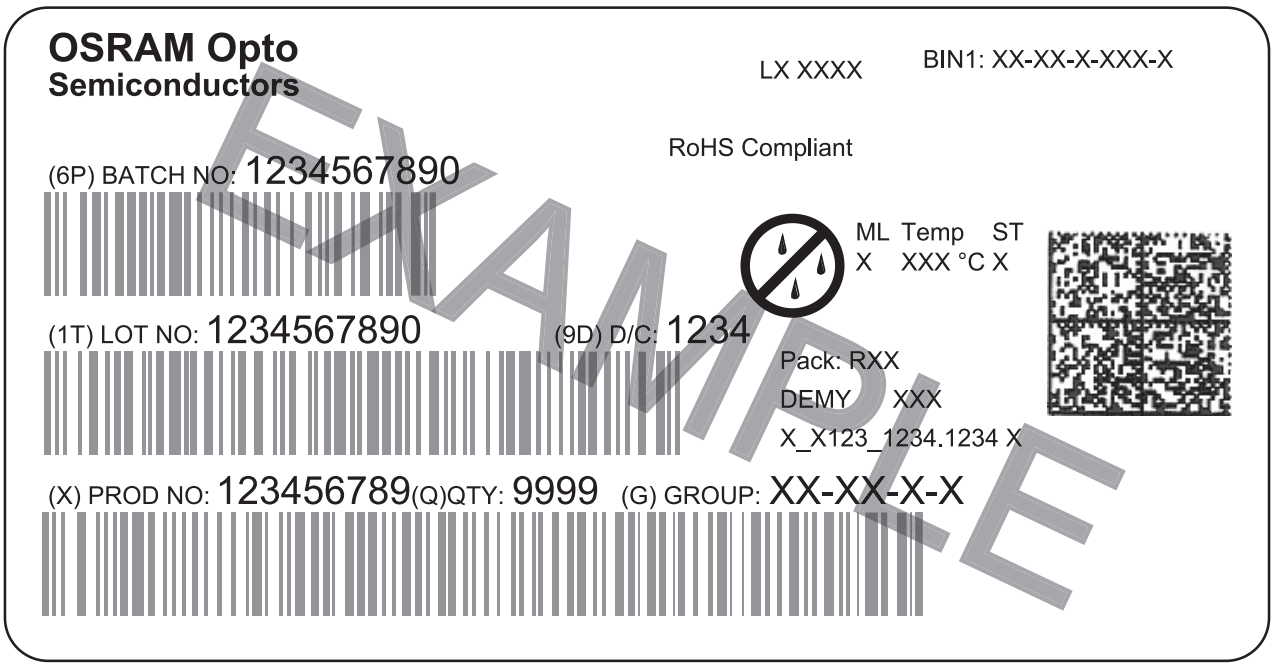
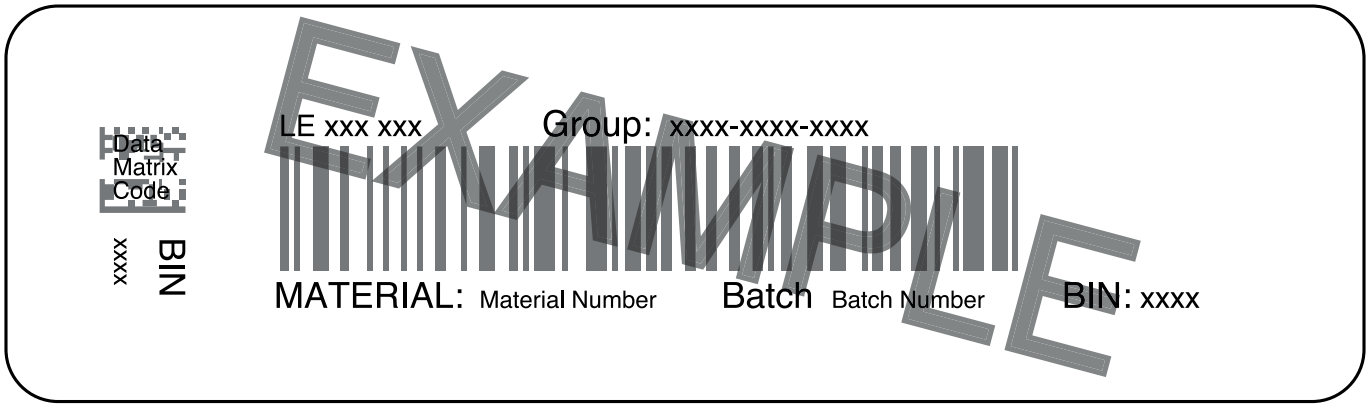
Barcode-Product-Label (BPL)



OHA04563

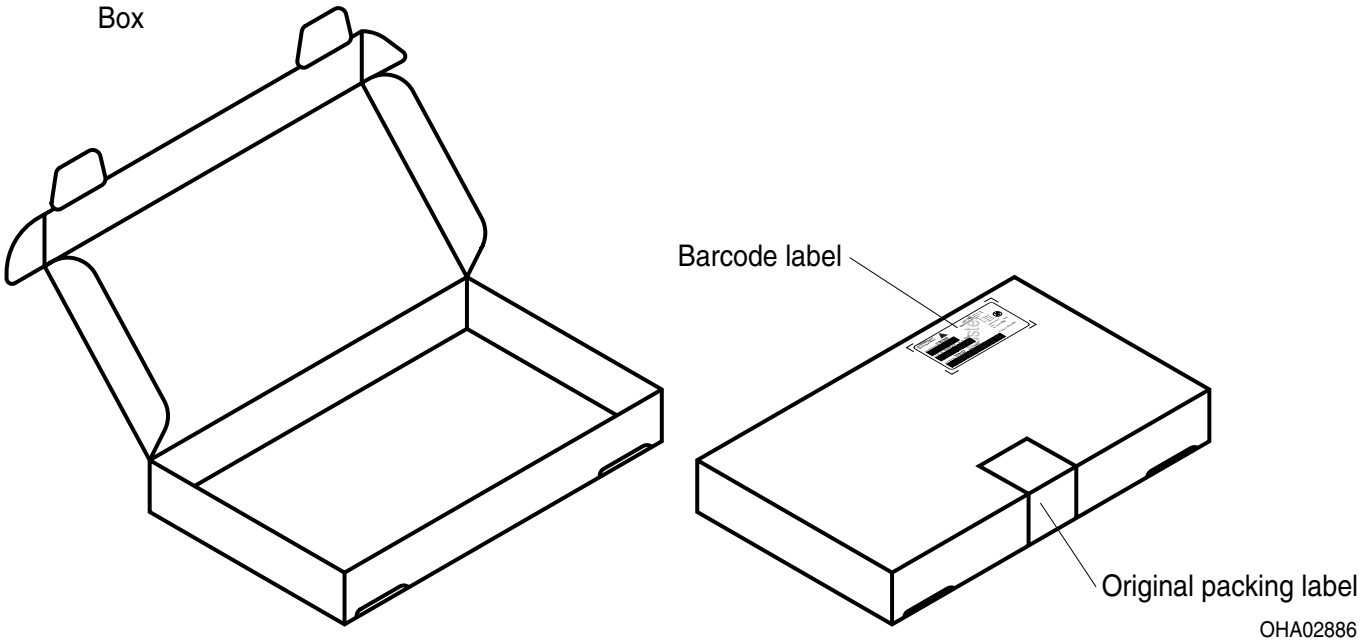
Barcode-Tray-Label (BTL)



OHA02684_1

Not for new design

Schematic Transportation Box [7)]



Dimensions of Transportation Box

Width	Length	Height
333 ± 5 mm	218 ±5 mm	28 ± 5 mm
337 ± 5 mm	218 ±5 mm	63 ± 5 mm

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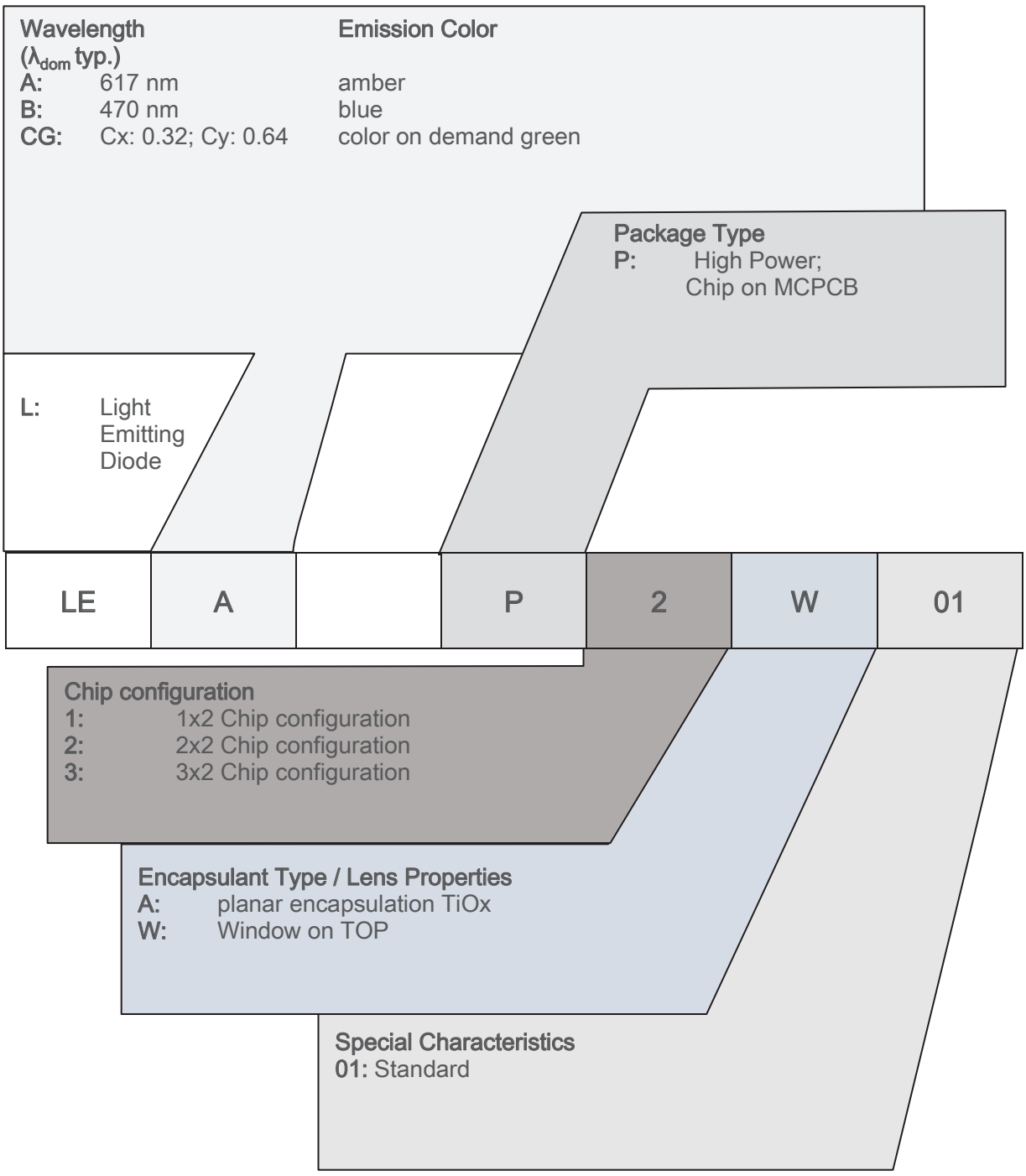
Type Designation System



Not for new design

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 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.

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

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Disclaimer

Attention please!
The information describes the type of component and shall not be considered as assured characteristics.
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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.

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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.

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Glossary

1) **Brightness:** Brightness values are measured during a pulse train of 100 ms with a pulse width of 250 µs and a frequencey of 1 kHz, with an internal reproducibility of +/- 8 % and an expanded uncertainty of +/- 11 % (acc. to GUM with a coverage factor of k = 3). The peak brightness is calculated according to the pulse duration and frequency.

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 wavelength is measured during a pulse train of 100 ms with a pulse width of 250 µs and a frequencey of 1 kHz , with an internal reproducibility of ± 0,5 nm and an expanded uncertainty of ± 1 nm (acc. to GUM with a coverage factor of k=3).

4) **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.

5) **Forward Voltage:** The forward voltage is measured during a pulse of typical 250 µs, with an internal reproducibility of +/- 0,05 V and an expanded uncertainty of +/- 0,1 V (acc. to GUM with a coverage factor of k=3).

6) **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.

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

Not for new design

Revision History

Version	Date	Change
1.2	2018-12-03	New Layout
1.3	2019-09-05	Tray
1.4	2020-06-30	Not for new design

Not for new design

Not for new design

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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。

Стандарт Электрон Связь

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