LT E63C

Power TOPLED® Lens

PowerTOPLED with lens, a powerful member of the TOPLED family. Thanks to their high luminous efficacy, the LEDs are ideal for rear light clusters and indicators on vehicles and for display panels for traffic control systems.

Applications

- Electronic Equipment

Features:

- Package: white PLCC-4 package, colorless clear resin
- Chip technology: InGaN
- Typ. Radiation: 20°
- Color: λ_{dom} = 525 nm (● true green)
- Corrosion Robustness Class: 3B
- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)

Ordering Information

Type	Partial Flux [1] I_F = 30 mA E_v	Ordering Code
LT E63C-BADB-35-1	1800 ... 7100 lx	Q65110A1981

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min. max.	-40 °C 100 °C
Storage Temperature	T_{stg}	min. max.	-40 °C 100 °C
Junction Temperature	T_j	max.	125 °C
Forward current T_S = 25 °C	I_F	max.	30 mA
Surge Current t ≤ 10 µs; D = 0.005 ; T_S = 25 °C	I_{FS}	max.	400 mA
Reverse voltage [2)] T_S = 25 °C	V_R	max.	5 V
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)	V_{ESD}		2 kV

Characteristics

I_F = 30 mA; T_S = 25 °C

Parameter	Symbol		Values
Peak Wavelength	λ_{peak}	typ.	520 nm
Dominant Wavelength [3] I_F = 30 mA	λ_{dom}	min. typ. max.	516 nm 525 nm 534 nm
Spectral Bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	33 nm
Viewing angle at 50 % I_V	2φ	typ.	20 °
Forward Voltage [4] I_F = 30 mA	V_F	min. typ. max.	2.90 V 3.50 V 4.40 V
Reverse current [2] V_R = 5 V	I_R	typ. max.	0.01 µA 10 µA
Temperature Coefficient of Peak Wavelength -10°C ≤ T ≤ 100°C	$TC_{\lambda peak}$	typ.	0.04 nm / K
Real thermal resistance junction/ambient [5], [6]	$R_{thJA\ real}$	max.	350 K / W
Real thermal resistance junction/solderpoint [5]	$R_{thJS\ real}$	max.	180 K / W

Brightness Groups

Group	Partial Flux [1] I_F = 30 mA min. E_v	Partial Flux [1] I_F = 30 mA max. E_v	Luminous Flux [7] I_F = 30 mA typ. Φ_V
BA	1800 lx	2240 lx	1700 mlm
BB	2240 lx	2800 lx	2100 mlm
CA	2800 lx	3550 lx	2600 mlm
CB	3550 lx	4500 lx	3300 mlm
DA	4500 lx	5600 lx	4100 mlm
DB	5600 lx	7100 lx	5200 mlm

For test method of partial flux measurement see Application Note: AN014 Partial flux — Measurement reliability of lensed LEDs

Forward Voltage Groups

Group	Forward Voltage [4] I_F = 30 mA min. V_F	Forward Voltage [4] I_F = 30 mA max. V_F
2	2.90 V	3.30 V
3	3.30 V	3.80 V
4	3.80 V	4.40 V

Wavelength Groups

Group	Dominant Wavelength [3] I_F = 30 mA min. λ_{dom}	Dominant Wavelength [3] I_F = 30 mA max. λ_{dom}
3	516 nm	522 nm
4	522 nm	528 nm
5	528 nm	534 nm

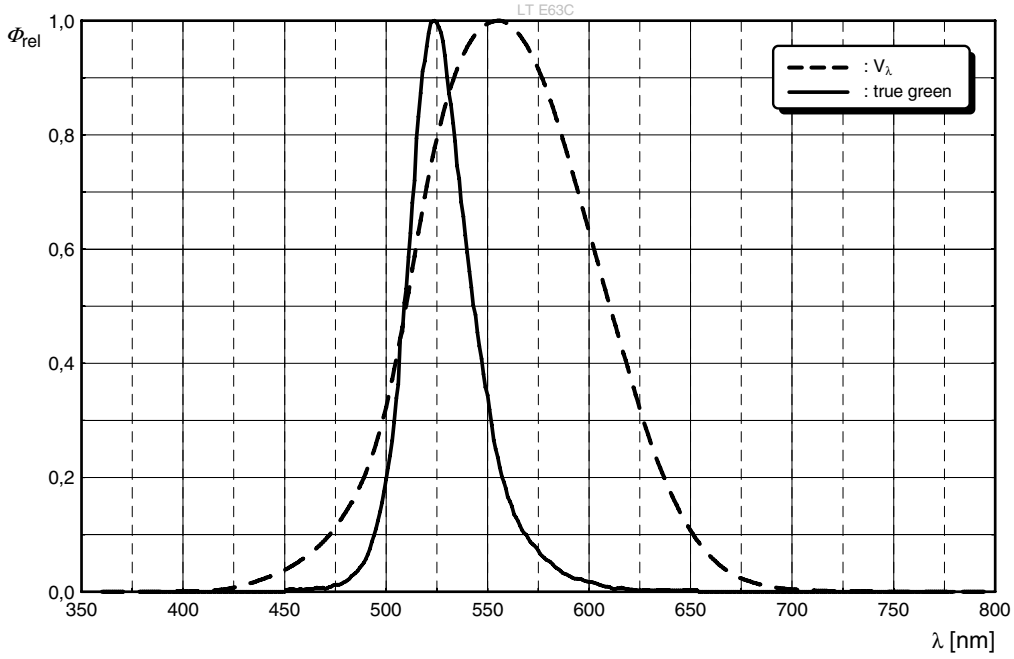
Group Name on Label

Example: BA-3-2

Brightness	Wavelength	Forward Voltage
BA	3	2

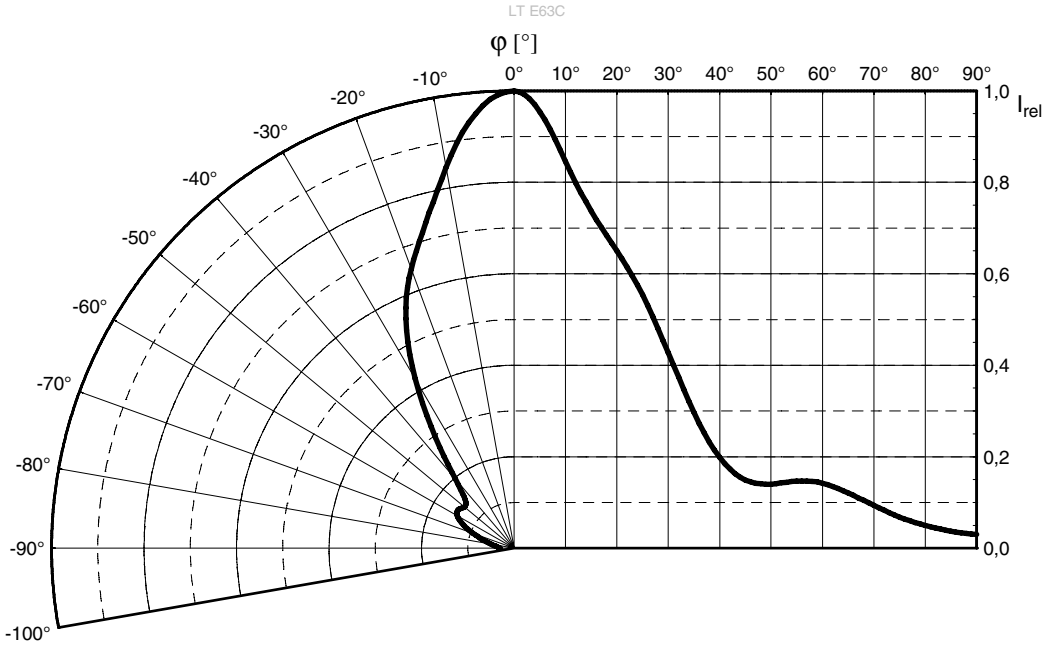
Relative Spectral Emission [7)]

$I_{rel} = f(\lambda)$; I_F = 30 mA; T_S = 25 °C



Radiation Characteristics [7)]

$I_{rel} = f(\phi)$; T_S = 25 °C



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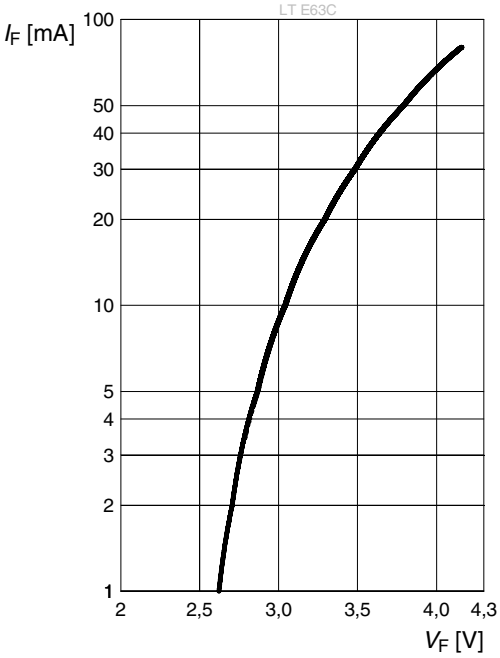
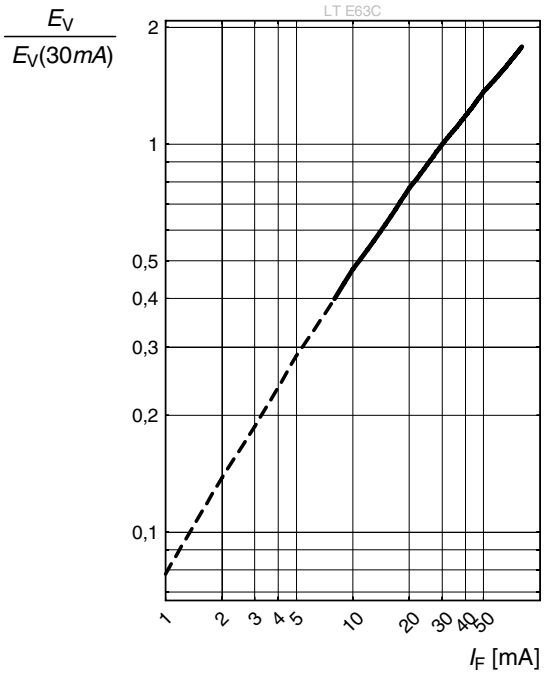
Forward current [7), 8)]

$I_F = f(V_F)$; T_S = 25 °C



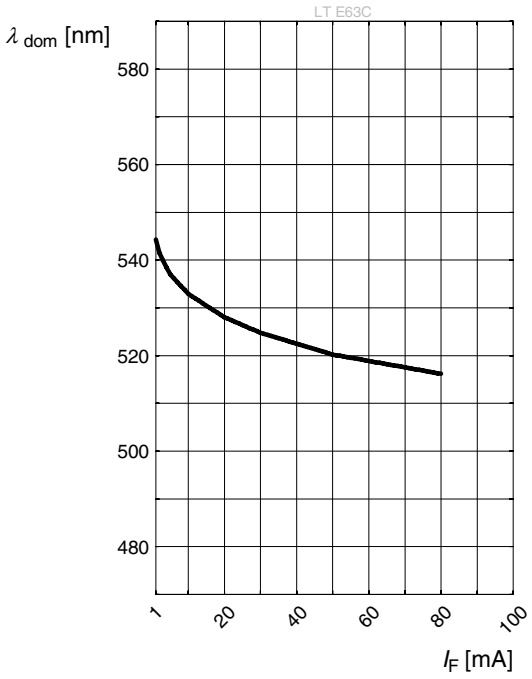
Relative Partial Flux [7), 8)]

$E_v/E_v(30\ mA) = f(I_F)$; T_S = 25 °C



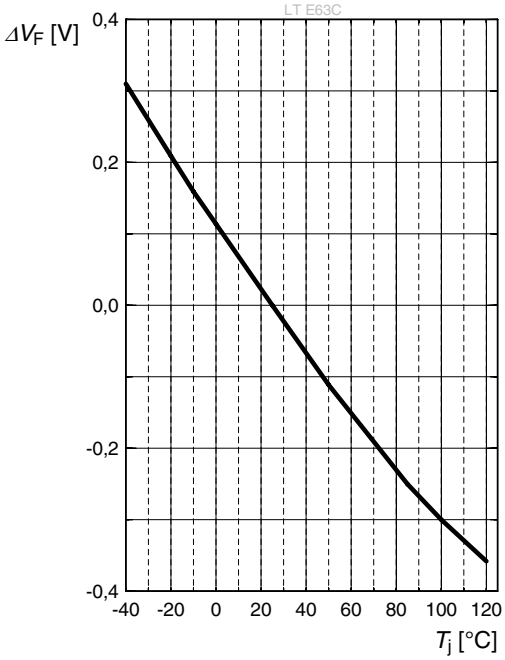
Dominant Wavelength [7)]

$\lambda_{dom} = f(I_F)$; T_S = 25 °C



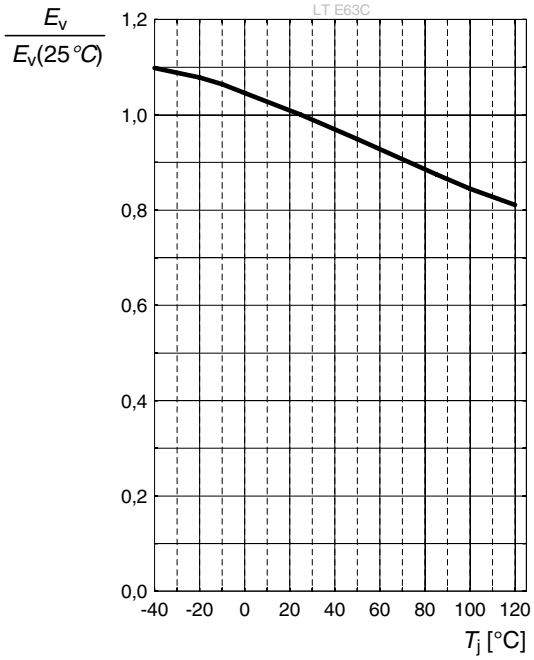
Forward Voltage [7)]

$\Delta V_F = V_F - V_F(25\ °C) = f(T_j);\ I_F = 30\ mA$



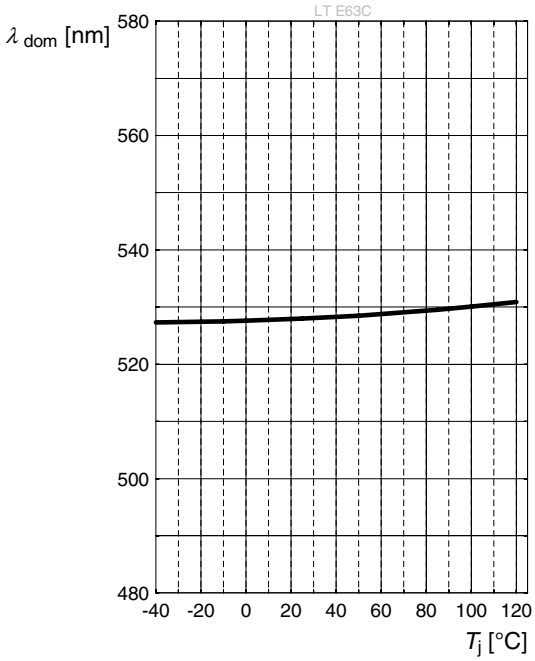
Relative Partial Flux [7)]

$E_v/E_v(25\ °C) = f(T_j);\ I_F = 30\ mA$



Dominant Wavelength [7)]

$\lambda_{dom} = f(T_j);\ I_F = 30\ mA$



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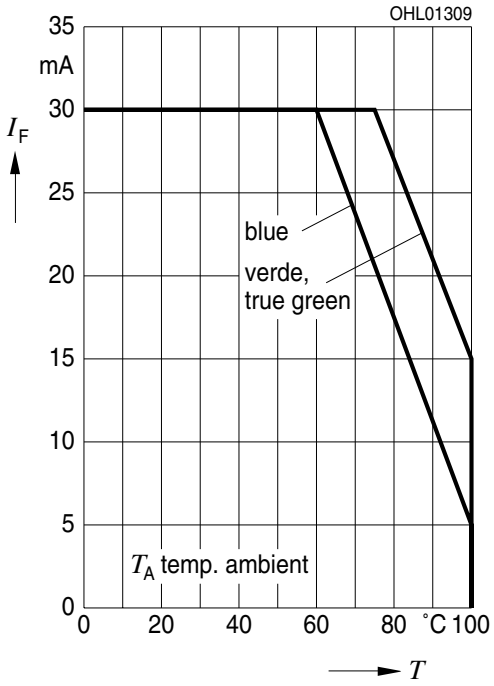
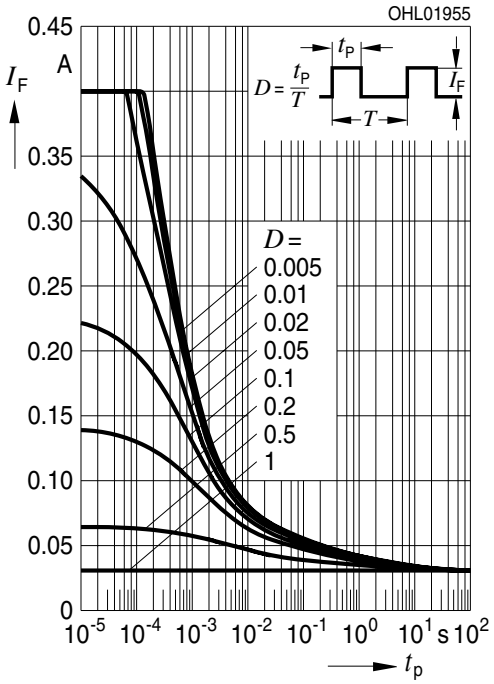
Max. Permissible Forward Current

$I_F = f(T)$



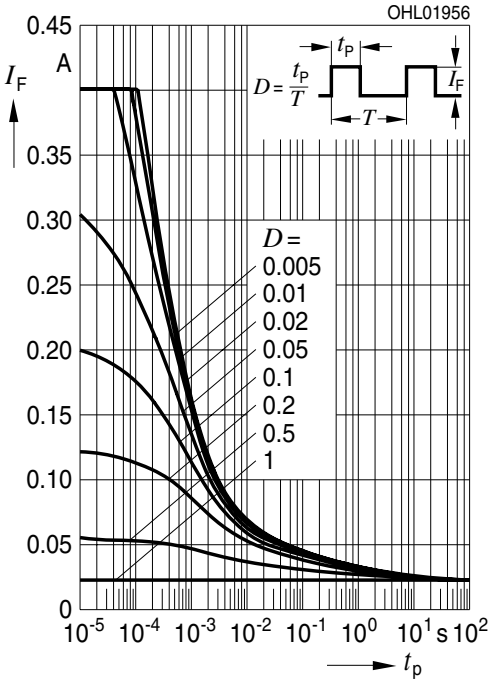
Permissible Pulse Handling Capability

$I_F = f(t_p)$; D: Duty cycle; T_S = 25 °C



Permissible Pulse Handling Capability

$I_F = f(t_p)$; D: Duty cycle; T_S = 85 °C



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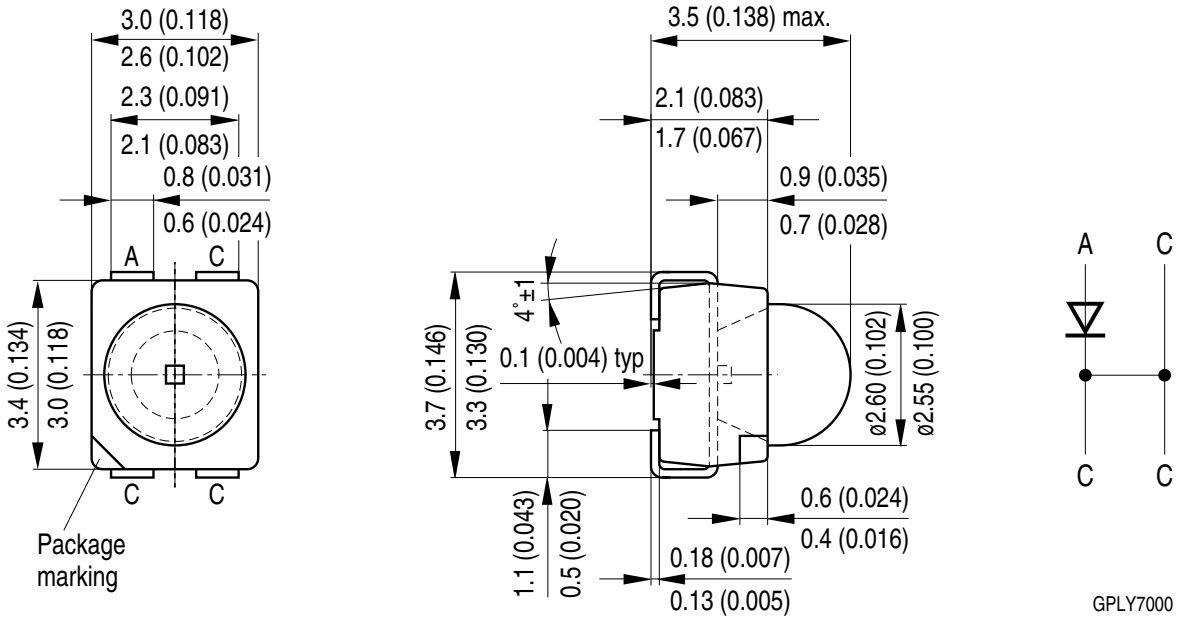
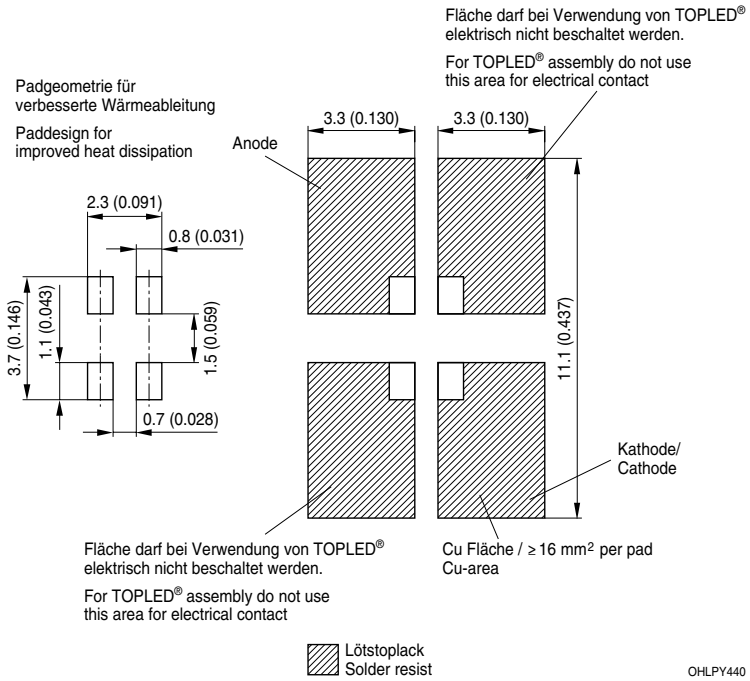
Dimensional Drawing [9)]



Approximate Weight:	38.0 mg
Package marking:	Cathode
Corrosion test:	Class: 3B Test condition: 40°C / 90 % RH / 15 ppm H_2S / 14 days (stricter then IEC 60068-2-43)

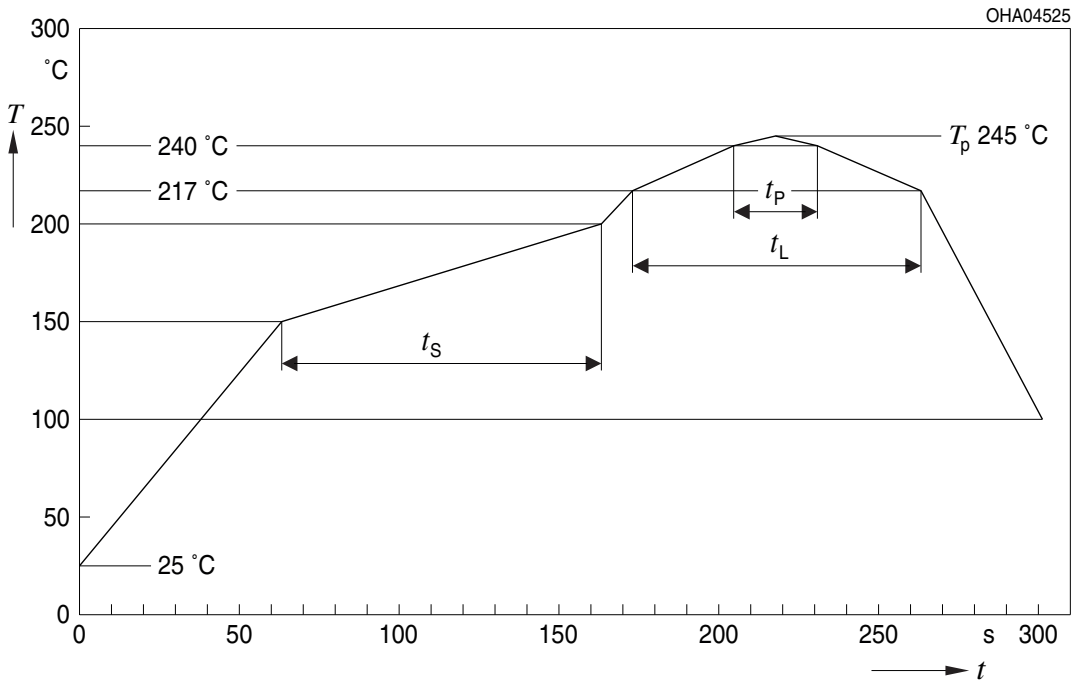
Recommended Solder Pad [9)]



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

Reflow Soldering Profile

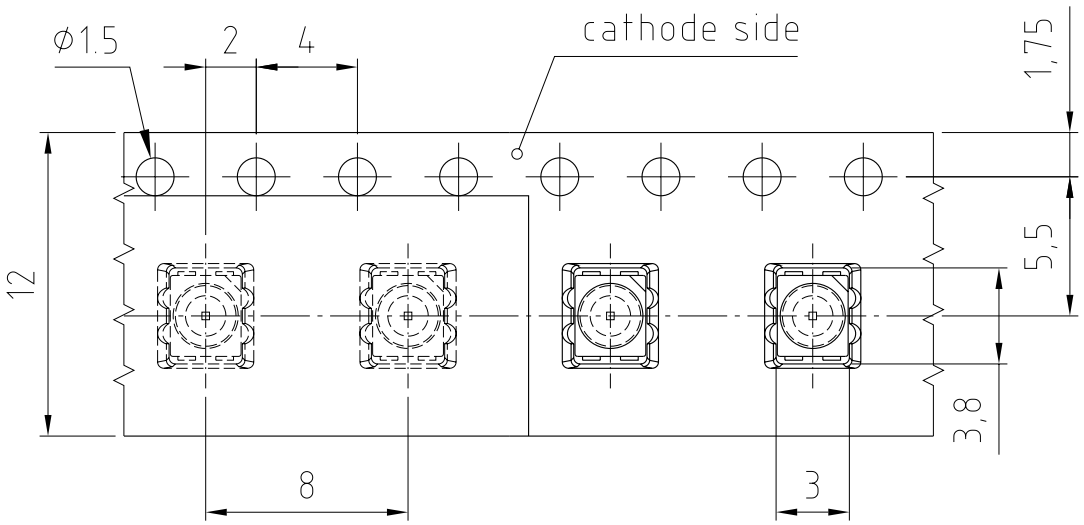
Product complies to MSL Level 2 acc. to JEDEC J-STD-020E



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		°C
Time above liquidus temperature	t_L		80	100	s
Peak temperature	T_P		245	250	°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	4	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 [9)]



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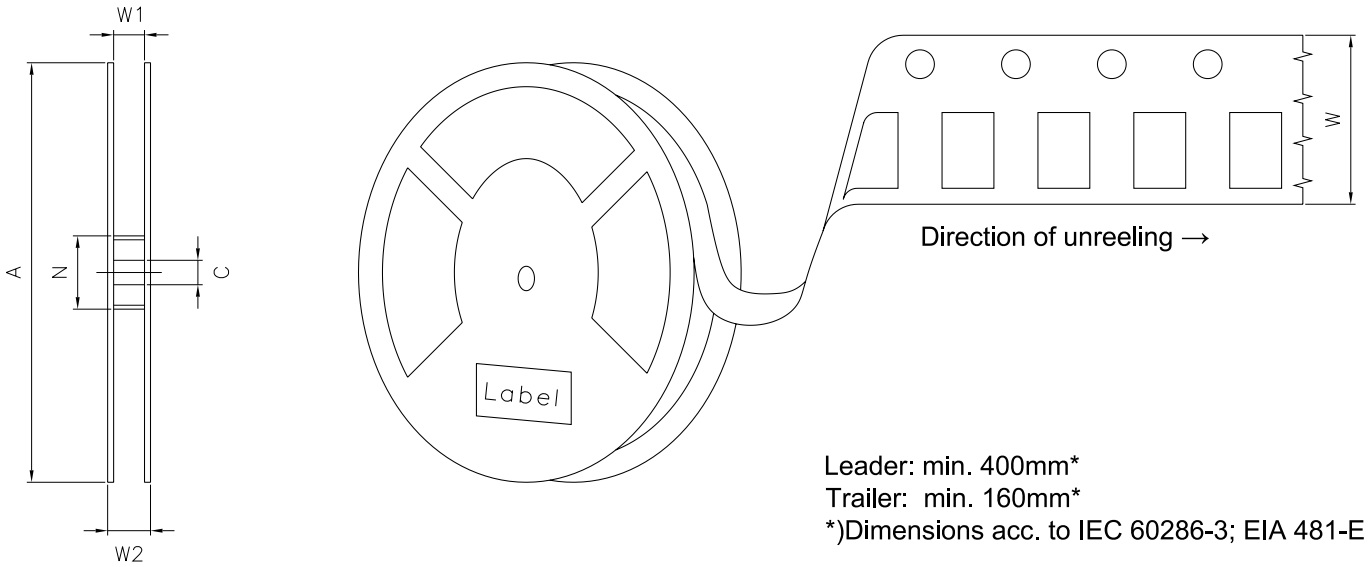
Tape and Reel [10)]

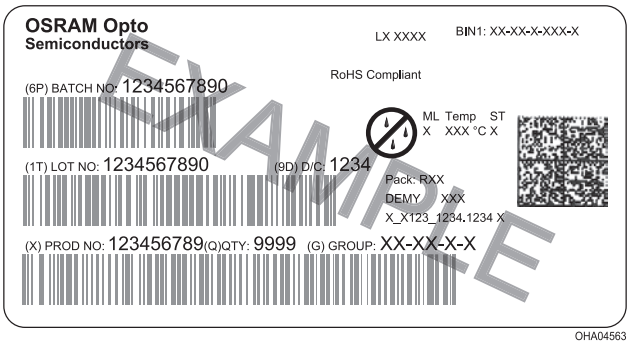


Leader: min. 400mm*
Trailer: min. 160mm*
*)Dimensions acc. to IEC 60286-3; EIA 481-E

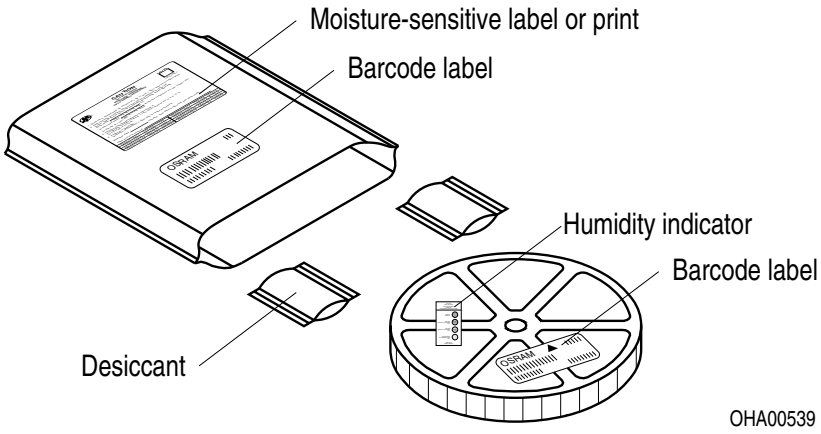
Reel dimensions [mm]

A	W	N_{min}	W_1	$W_{2\,max}$	Pieces per PU
330 mm	12 + 0.3 / - 0.1	60	12.4 + 2	18.4	2000

Barcode-Product-Label (BPL)

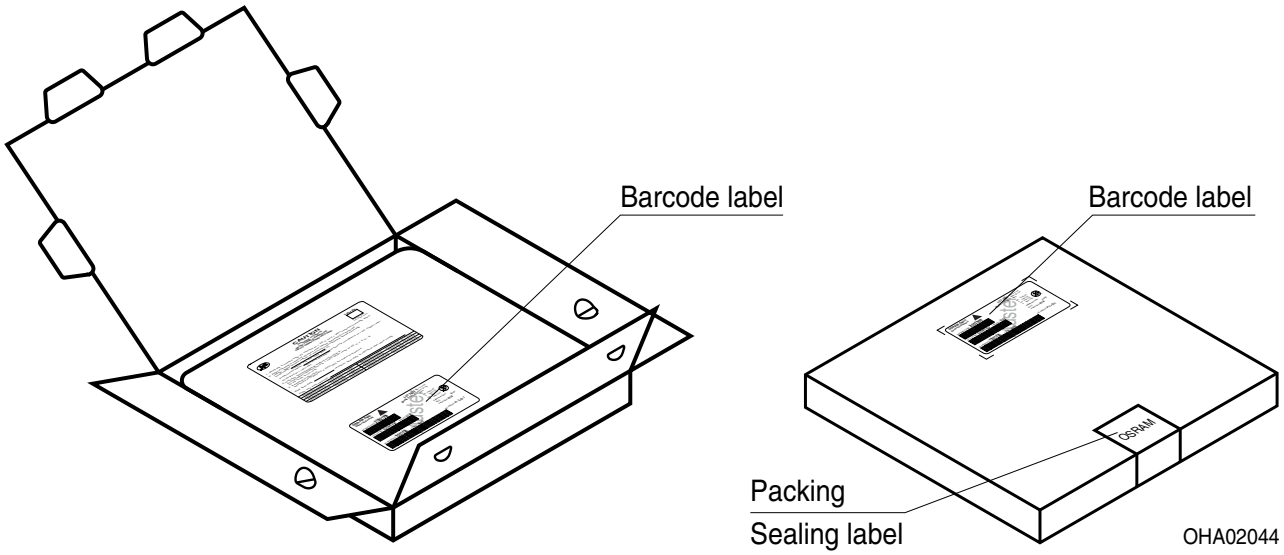


Dry Packing Process and Materials [9)]



Moisture-sensitive product is packed in a dry bag containing desiccant and a humidity card according JEDEC-STD-033.

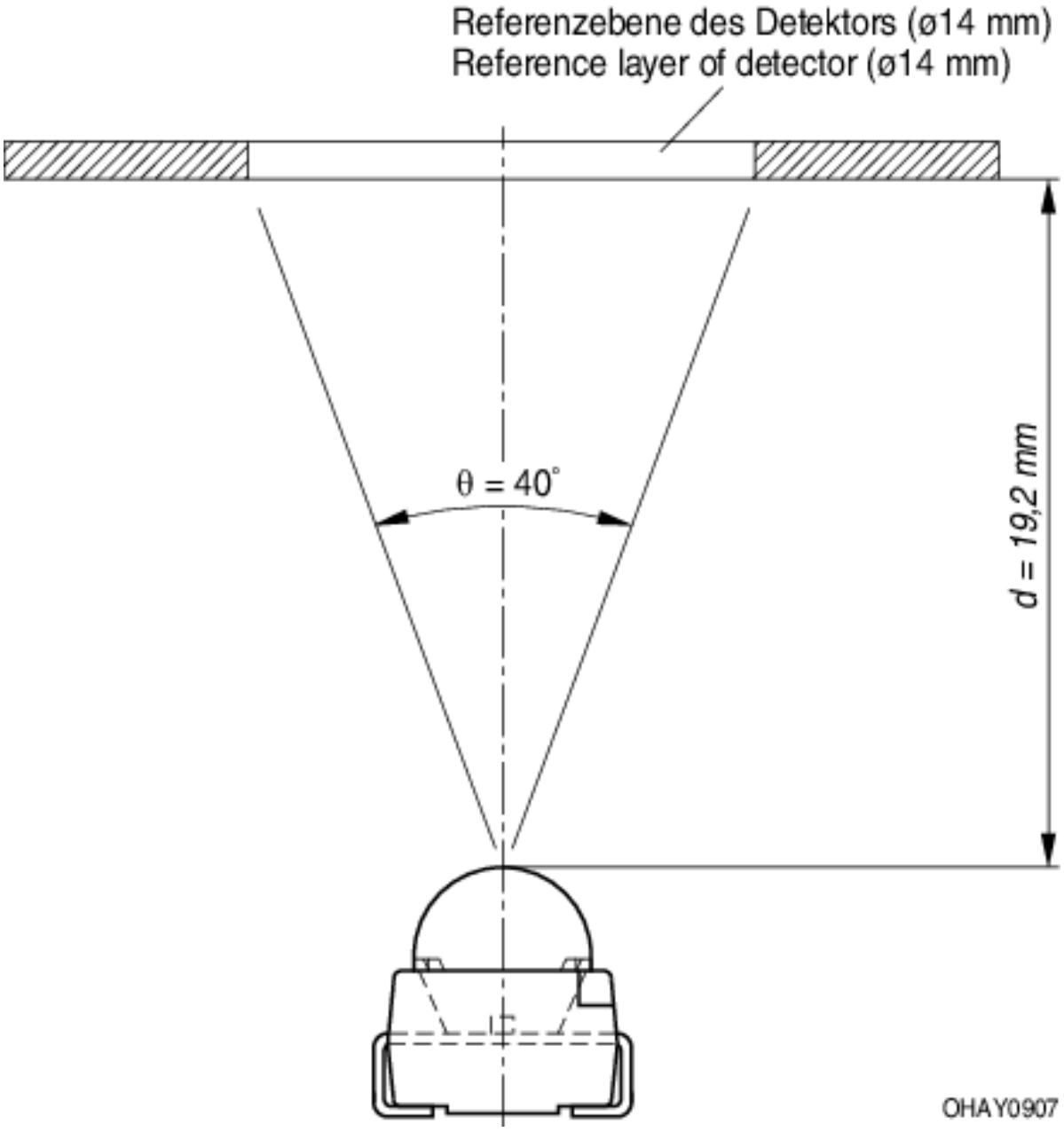
Transportation Packing and Materials [9)]



Dimensions of transportation box in mm

Width	Length	Height
349 ± 5 mm	349 ± 5 mm	33 ± 5 mm

Schematic test method for partial flux measurement



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 LED specified in this data sheet fall into the class **exempt group (exposure time 10000 s)**. Under real circumstances (for exposure time, 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. As is also true when viewing other 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 LED 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 LED exposure to aggressive substances during storage, production, and use. LEDs 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 informations please visit www.osram-os.com/appnotes

Disclaimer

Disclaimer
Language english will prevail in case of any discrepancies or deviations between the two language wordings.

Attention please!
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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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Glossary

1) **Brightness**: Brightness values are measured during a current pulse of typically 25 ms, with an internal reproducibility of ±8 % and an expanded uncertainty of ±11 % (acc. to GUM with a coverage factor of k = 3).

2) **Reverse Operation**: Reverse Operation of 10 hours is permissible in total. Continuous reverse operation is not allowed.

3) **Wavelength**: The wavelength is measured at a current pulse of typically 25 ms, 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) **Forward Voltage**: The forward voltage is measured during a current pulse of typically 8 ms, 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).

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

6) **Thermal Resistance**: RthJA results from mounting on PC board FR 4 (pad size 16 mm² per pad)

7) **Typical Values**: Due to the special conditions of the manufacturing processes of LED, 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.

8) **Characteristic curve**: In the range where the line of the graph is broken, you must expect higher differences between single LEDs within one packing unit.

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.

Published by OSRAM Opto Semiconductors GmbH
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EU RoHS and China RoHS compliant product

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按照中国的相关法规和标准，不含有毒有害物质或元素。

LifeElectronics
Живое партнерство

ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

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- *Подбор аналогов.*
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- *Оценку стоимости проекта по компонентам.*
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