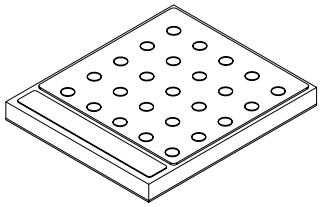
ODB4047UX3.A1

OS-CORE® UX:3



Features:

- Polarity: p-side up
- Chip technology: UX:3
- Color: • blue
- Chipsize: 40 mil x 47 mil

Ordering Information

Type	Ordering Code
ODB4047UX3.A1-MM-MM-1-C	Q65111A8548

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min. max.	-40 °C 135 °C
Storage Temperature [1)]	T_{stg}	min. max.	-40 °C 135 °C
Recommended Die Storage Temperature ≤ 60% RH	$T_{stg\ die}$	max.	30 °C
Junction Temperature	T_j	max.	150 °C
Junction temperature for short time applications*	T_j	max.	175 °C
Forward Current T_J = 25 °C	I_F	min. max.	20 mA 3000 mA
Forward Current Pulsed t ≤ 10 µs; D = 0.005 ; T_J = 25 °C	$I_{F\ pulse}$	max.	4000 mA
ESD withstand voltage acc. ANSI/ESDA/JEDEC JS-001 (HBM, Class 0)	V_{ESD}		ESD sensitive device
Reverse voltage [2)]	V_R		Not designed for reverse operation

*The median lifetime (L70/B50) for Tj =175°C is 100h.

Characteristics

I_F = 1000 mA; T_J = 25 °C

Parameter	Symbol		Values
Dominant Wavelength [3)] I_F = 1000 mA	λ_{dom}	min. max.	440.0 nm 465.0 nm
Forward Voltage [4)] I_F = 1000 mA	V_F	min. typ. max.	2.80 V 3.00 V 3.35 V

Additional Information

Die bonding	Metalization frontside	Metalization backside
Eutectic bonding	Gold	AuSn

Binning Table [5)3)]

I_F = 1000 mA

Radiant Intensity I_e a. u.	Dominant Wavelength λ_{dom} nm				
	440.0 - 442.5	442.5 - 445.0	445.0 - 447.5	447.5 - 450.0	450.0 - 452.5
230 - 250	A16	B16	C16	D16	E16
250 - 270	A19	B19	C19	D19	E19
270 - 290	A22	B22	C22	D22	E22
290 - 310	A25	B25	C25	D25	E25
310 - 330	A28	B28	C28	D28	E28
330 - 350	A31	B31	C31	D31	E31
350 - 370	A34	B34	C34	D34	E34

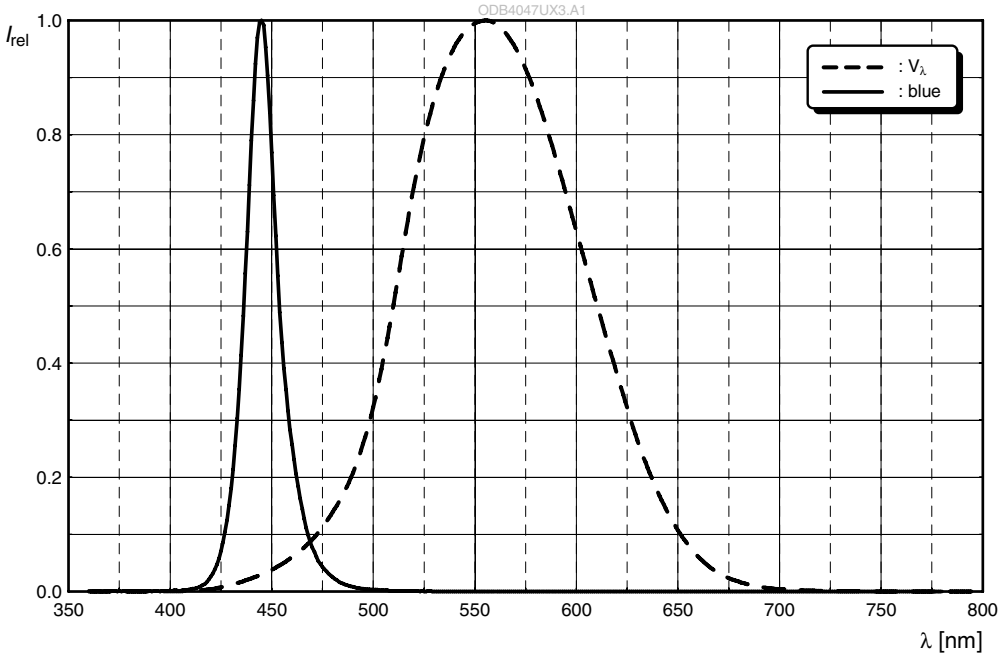
Radiant Intensity I_e a. u.	Dominant Wavelength λ_{dom} nm			
	452.5 - 455.0	455.0 - 457.5	457.5 - 460.0	460.0 - 465.0
230 - 250	F16	G16	H16	I16
250 - 270	F19	G19	H19	I19
270 - 290	F22	G22	H22	I22
290 - 310	F25	G25	H25	I25
310 - 330	F28	G28	H28	I28
330 - 350	F31	G31	H31	I31
350 - 370	F34	G34	H34	I34

Correlation factor [6)]

Unit	Value	Condition
CF (mW/sr / a.u.)	1.6	chip to air
CF (mW / a.u.)	5.5	chip with silicone lens

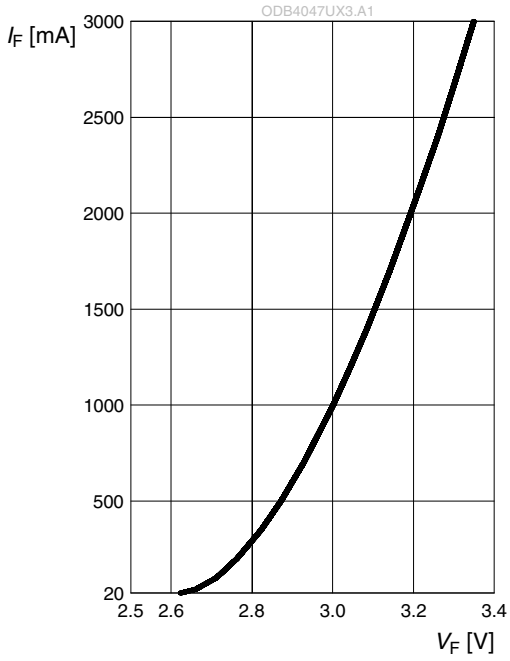
Relative Spectral Emission [7)]

$I_{rel} = f(\lambda)$; I_F = 1000 mA; T_J = 25 °C



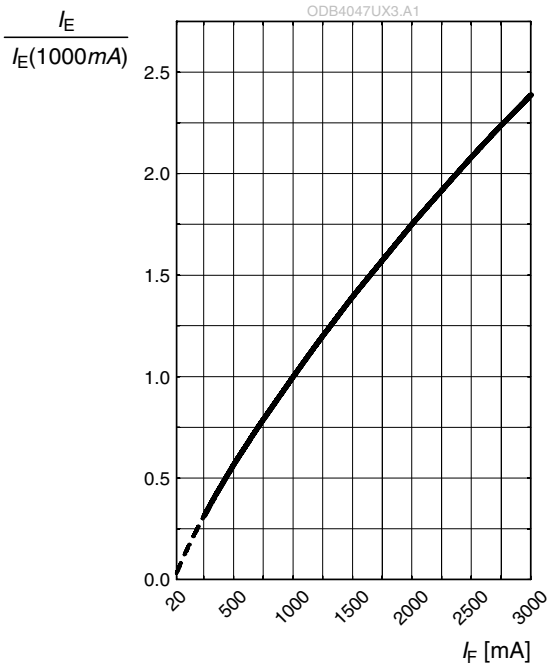
Forward current [7), 8)]

$I_F = f(V_F)$; T_J = 25 °C



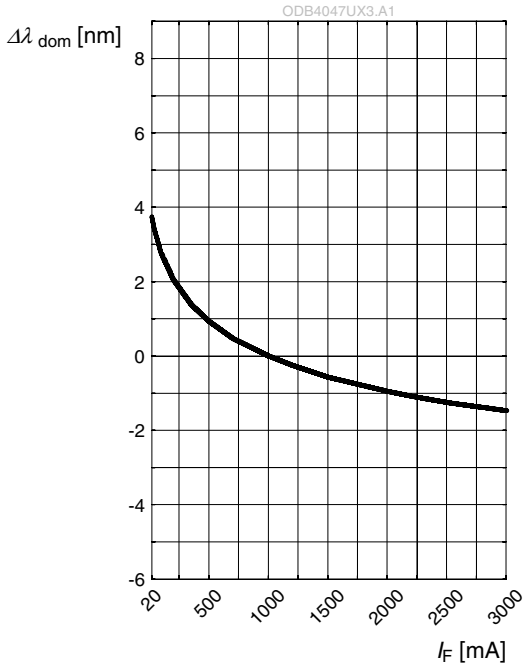
Relative Radiant Intensity [7), 8)]

$I_E/I_E(1000\ mA) = f(I_F)$; T_J = 25 °C



Dominant Wavelength [7)]

$\Delta\lambda_{dom} = f(I_F)$; T_J = 25 °C



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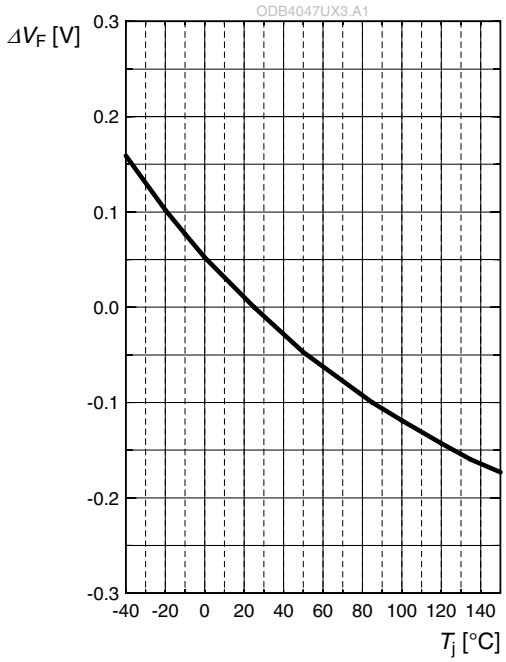
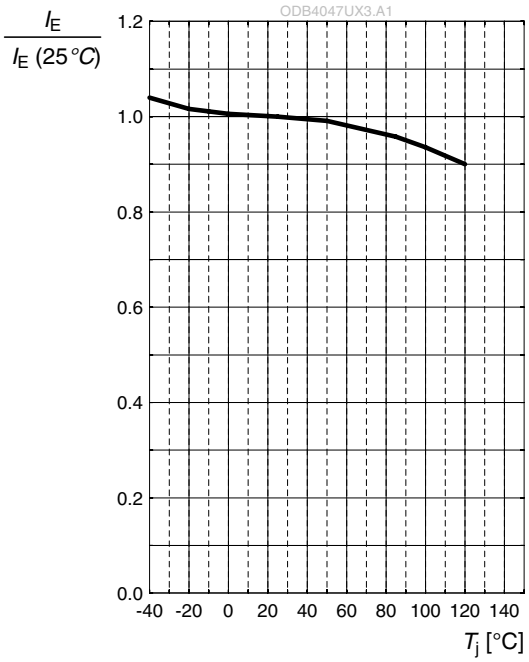
Forward Voltage [7)]

$\Delta V_F = V_F - V_F(25\ °C) = f(T_j);\ I_F = 1000\ mA$



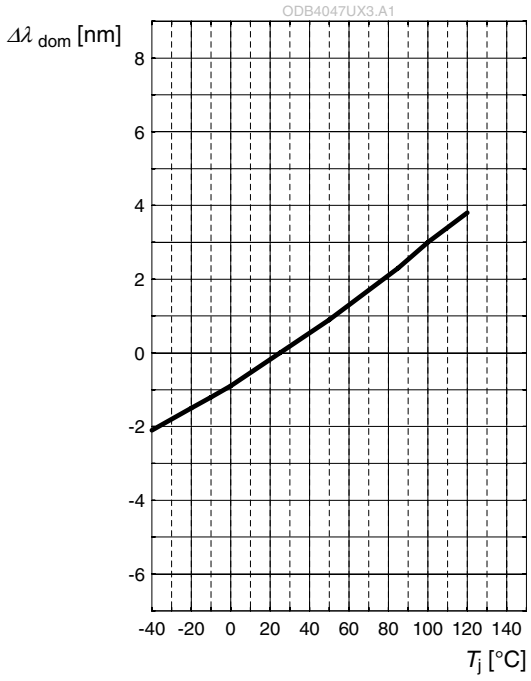
Relative Radiant Intensity [7)]

$I_E/I_E(25\ °C) = f(T_j);\ I_F = 1000\ mA$

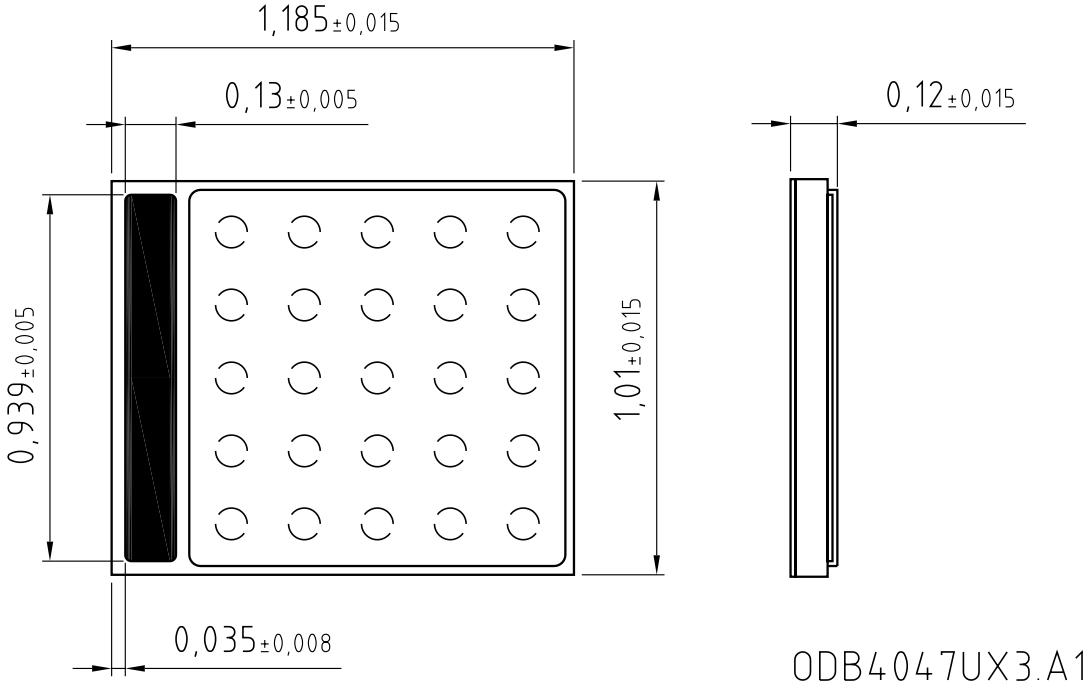


Dominant Wavelength [7)]

$\Delta\lambda_{dom} = \lambda_{dom} - \lambda_{dom}(25\ °C) = f(T_j);\ I_F = 1000\ mA$



Dimensional Drawing [9)]



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Glossary

1) **Shelf life:** Temperature refer solely to storage of finished LED product (Not valid for chip on die sheet).

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

3) **Wavelength:** The wavelength is measured at a current pulse of typically 10 ms and with an internal reproducibility of ± 1 nm (with a coverage factor of k = 3).

4) **Forward Voltage:** The forward voltage is measured during a current pulse of typically 5 ms and with an internal reproducibility of ± 0.1 V (with a coverage factor of k = 3).

5) **Brightness:** Brightness values are measured during a current pulse of typically 10 ms and with an internal reproducibility of ± 8 % (with a coverage factor of k = 3).

6) **Correlation Factor:** The exemplary correlation factor (CF) was estimated by sample build of the chip in a reference package and describes the exemplary correlation between the chip brightness measured in arbitrary units (a.u.) and the brightness in a reference package: CF = I/Φ(package) / I(chip). This factor is purely given as an indication of possible package brightness values. It may vary for different packages due to influences of geometries, reflectivity/refractive index of package materials or other material properties.

7) **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.

8) **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.

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

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