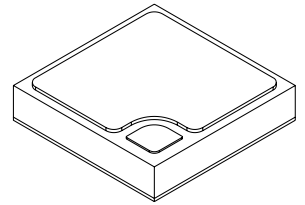


# ODB2020UX3.A1

## OS-CORE® UX:3



### Features:

- Polarity: p-side up
- Chip technology: UX:3
- Color: ● blue
- Chipsize: 20 mil x 20 mil

### Ordering Information

Type  
ODB2020UX3.A1-MM-MM-1-C

Ordering Code  
Q65111A5155

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## Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	$T_{op}$	min.	-40 °C
		max.	125 °C
Storage Temperature <sup>1)</sup>	$T_{stg}$	min.	-40 °C
		max.	125 °C
Recommended Die Storage Temperature ≤ 60% RH	$T_{stg\ die}$	max.	30 °C
Junction Temperature	$T_j$	max.	150 °C
Forward Current $T_j = 25\text{ °C}$	$I_F$	min.	5 mA
		max.	375 mA
Forward Current Pulsed $t \leq 10\text{ }\mu\text{s}$ ; $D = 0.005$ ; $T_j = 25\text{ °C}$	$I_{F\ pulse}$	max.	750 mA
ESD withstand voltage acc. ANSI/ESDA/JEDEC JS-001 (HBM, Class 0)	$V_{ESD}$	ESD sensitive device	
Reverse voltage <sup>2)</sup>	$V_R$	Not designed for reverse operation	

## Characteristics

$I_F = 140\text{ mA}$ ;  $T_j = 25\text{ °C}$

Parameter	Symbol		Values
Dominant Wavelength <sup>3)</sup> $I_F = 140\text{ mA}$	$\lambda_{dom}$	min.	440.0 nm
		max.	475.0 nm
Forward Voltage <sup>4)</sup> $I_F = 140\text{ mA}$	$V_F$	min.	2.75 V
		typ.	2.90 V
		max.	3.30 V

## Additional Information

Die bonding	Metalization frontside	Metalization backside
Adhesive bonding	Gold	Gold

## Binning Table <sup>5)3)</sup>

$I_F = 140 \text{ mA}$

Radiant Intensity $I_e$ a. u.	Dominant Wavelength				
	$\lambda_{\text{dom}}$ nm				
	440.0 - 442.5	442.5 - 445.0	445.0 - 447.5	447.5 - 450.0	450.0 - 452.5
56 - 64	A10	B10	C10	D10	E10
64 - 68	A13	B13	C13	D13	E13
68 - 72	A16	B16	C16	D16	E16
72 - 76	A19	B19	C19	D19	E19
76 - 80	A22	B22	C22	D22	E22
80 - 84	A25	B25	C25	D25	E25
84 - 88	A28	B28	C28	D28	E28

Radiant Intensity $I_e$ a. u.	Dominant Wavelength		
	$\lambda_{\text{dom}}$ nm		
	452.5 - 455.0	455.0 - 457.5	457.5 - 460.0
56 - 64	F10	G10	H10
64 - 68	F13	G13	H13
68 - 72	F16	G16	H16
72 - 76	F19	G19	H19
76 - 80	F22	G22	H22
80 - 84	F25	G25	H25
84 - 88	F28	G28	H28

## Correlation factor <sup>6)</sup>

Unit	Value	Condition
CF (mW/sr / a.u.)	0.9	chip to air
CF (mW / a.u.)	3.1	chip with silicone lens

## Binning Table <sup>5)3)</sup>

$I_F = 140 \text{ mA}$

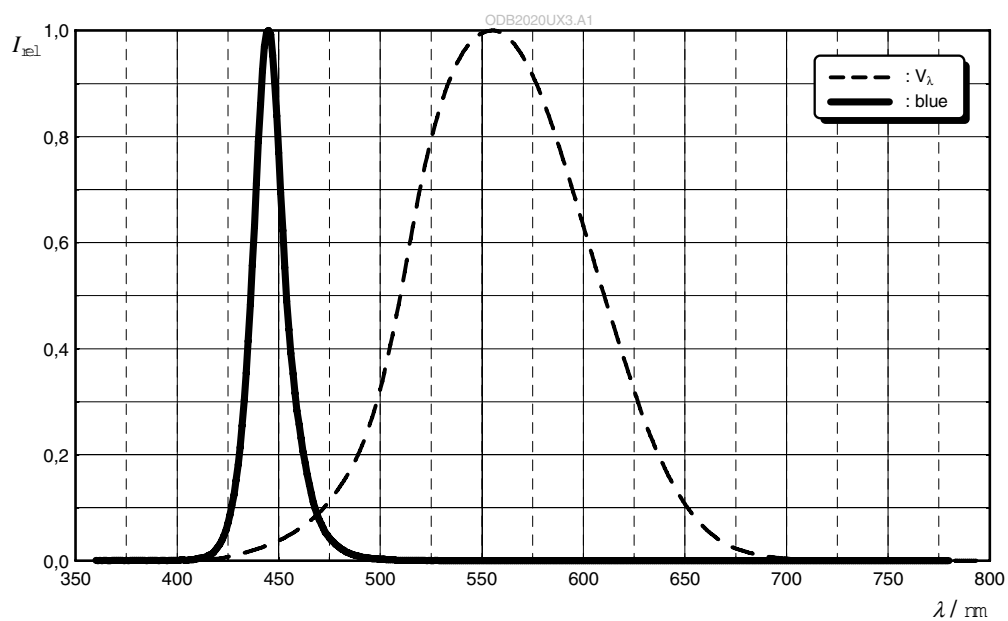
Luminous Intensity $I_v$ a. u.	Dominant Wavelength $\lambda_{\text{dom}}$ nm		
	460.0 - 465.0	465.0 - 470.0	470.0 - 475.0
2170 - 2450	I10	J10	K10
2450 - 2720	I13	J13	K13
2720 - 2990	I16	J16	K16
2990 - 3270	I19	J19	K19
3270 - 3540	I22	J22	K22
3540 - 3810	I25	J25	K25

## Correlation factor <sup>6)</sup>

Unit	Value	Condition
CF (mcd / a.u.)	1.04	chip to air
CF (mlm / a.u.)	3.65	chip with silicone lens

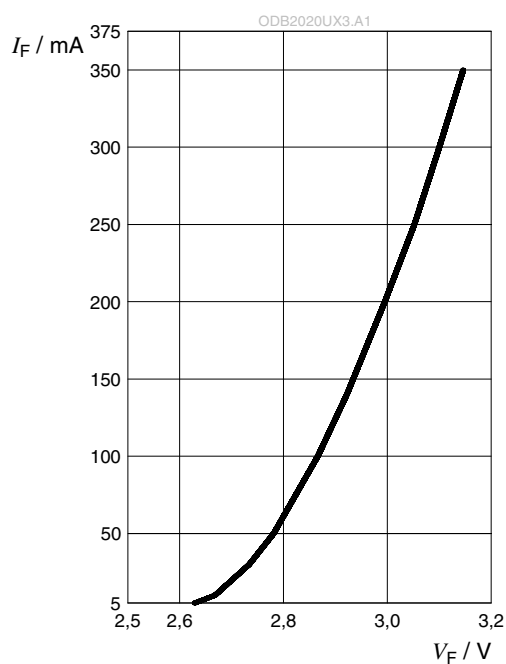
## Relative Spectral Emission <sup>7)</sup>

$I_{\text{rel}} = f(\lambda); I_F = 140 \text{ mA}; T_J = 25 \text{ }^\circ\text{C}$



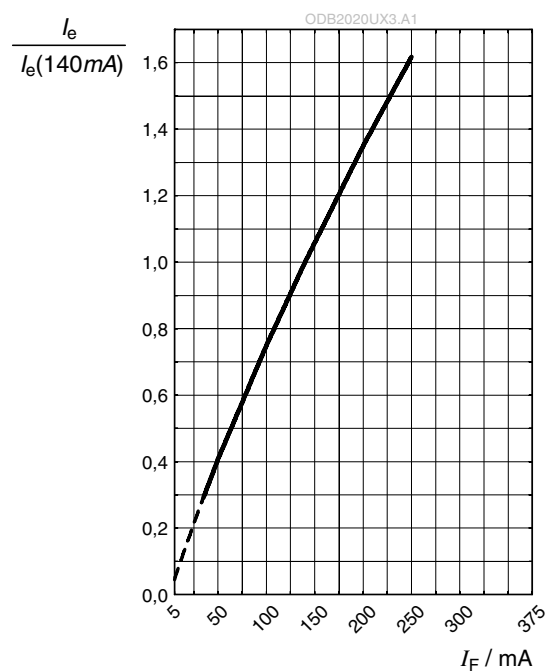
## Forward current <sup>7), 8)</sup>

$$I_F = f(V_F); T_J = 25\text{ °C}$$



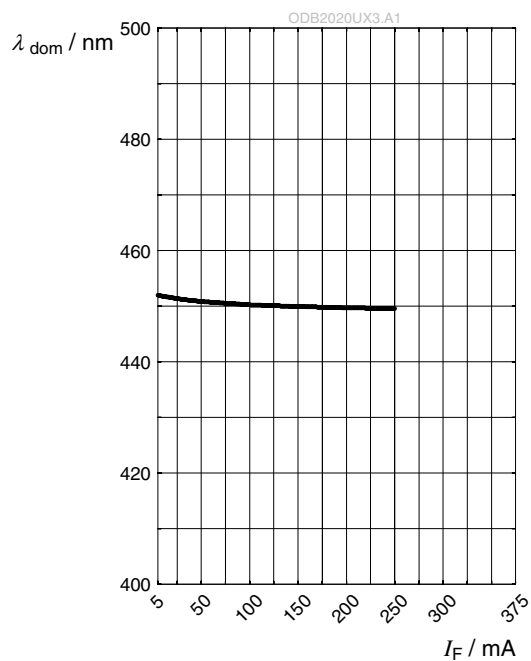
## Relative Radiant Intensity <sup>7), 8)</sup>

$$I_E/I_E(140\text{ mA}) = f(I_F); T_J = 25\text{ °C}$$



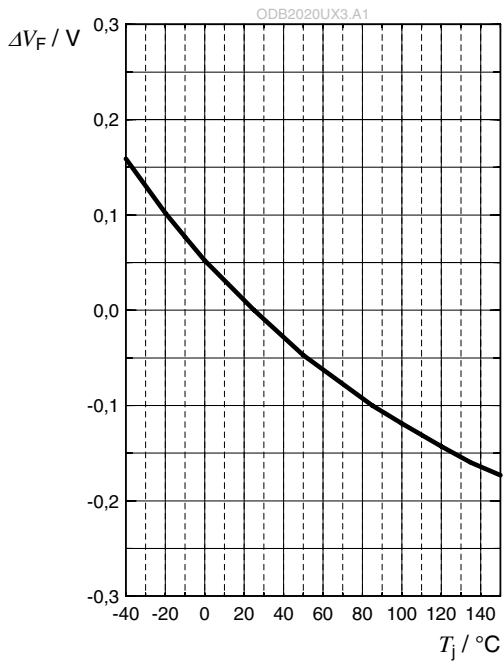
## Dominant Wavelength <sup>7)</sup>

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



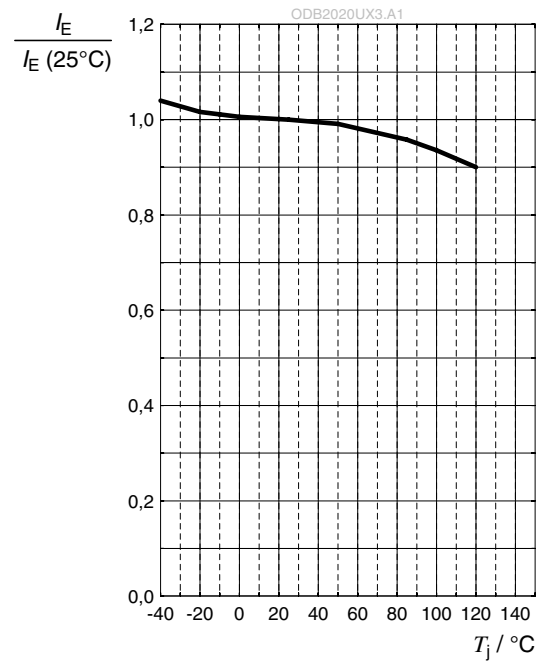
## Forward Voltage <sup>7)</sup>

$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 140\text{ mA}$$



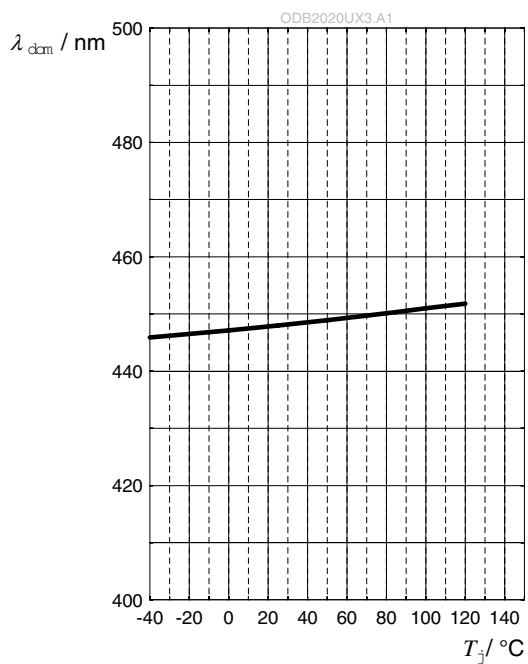
## Relative Radiant Intensity <sup>7)</sup>

$$I_E / I_E(25^\circ\text{C}) = f(T_j); I_F = 140\text{ mA}$$

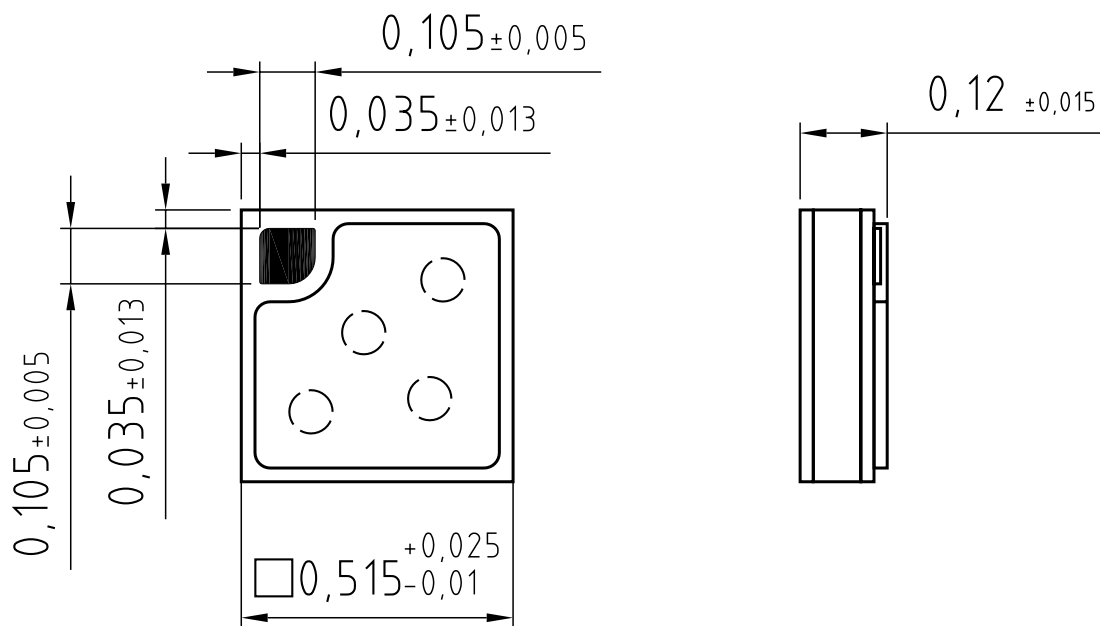


## Dominant Wavelength <sup>7)</sup>

$$\lambda_{\text{dom}} = f(T_j); I_F = 140\text{ mA}$$



## Dimensional Drawing <sup>9)</sup>



ODB2020UX3.A1



## Disclaimer

### Disclaimer

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

### 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.

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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  $\pm 1$  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  $\pm 0.1$  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  $\pm 8$  % (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:  $CF = I/\Phi(\text{package}) / I(\text{chip})$ . 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  $\pm 0.1$  and dimensions are specified in mm.

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