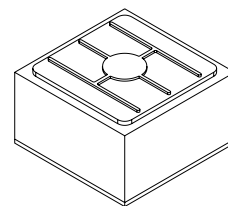


ODP1212TF.A1

OS-CORE® ThinGaAlP



Features:

- Polarity: n-side up
- Chip technology: Thinfilm
- Color: ● pure green
- Chipsize: 12 mil x 12 mil

Ordering Information

Type
ODP1212TF.A1-MM-MM-1-C

Ordering Code
Q65112A2135

DRAFT – For reference only. Subject to change without notice.

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min.	-40 °C
		max.	110 °C
Storage Temperature ¹⁾	T_{stg}	min.	-40 °C
		max.	110 °C
Recommended Die Storage Temperature ≤ 60% RH	$T_{stg\ die}$	max.	30 °C
Junction Temperature	T_j	max.	125 °C
Junction temperature for short time applications*	T_j	max.	150 °C
Forward Current $T_j = 25\text{ °C}$	I_F	min.	3 mA
		max.	70 mA
Forward Current Pulsed $t \leq 10\text{ }\mu\text{s}$; $D = 0.005$; $T_j = 25\text{ °C}$	$I_{F\ pulse}$	max.	100 mA
Reverse voltage ²⁾ $T_j = 25\text{ °C}$	V_R	max.	12 V

*The median lifetime (L70/B50) for $T_j = 150\text{ °C}$ is 100h.

Characteristics

$I_F = 50\text{ mA}$; $T_j = 25\text{ °C}$

Parameter	Symbol		Values
Dominant Wavelength ³⁾ $I_F = 50\text{ mA}$	λ_{dom}	min.	556.5 nm
		max.	576.5 nm
Forward Voltage ⁴⁾ $I_F = 50\text{ mA}$	V_F	min.	2.05 V
		typ.	2.30 V
		max.	2.65 V

Additional Information

Die bonding	Metalization frontside	Metalization backside
Adhesive bonding	Gold	Gold

Binning Table ⁵⁾³⁾ $I_F = 50 \text{ mA}$

Luminous Intensity Dominant Wavelength

I_v a. u.	λ_{dom} nm					
		556.5 - 559.0	559.0 - 562.0	562.0 - 565.0	565.0 - 567.5	567.5 - 571.0
45 - 50	A10	B10	C10	D10	E10	
50 - 57	A13	B13	C13	D13	E13	
57 - 64	A16	B16	C16	D16	E16	
64 - 72	A19	B19	C19	D19	E19	
72 - 80	A22	B22	C22	D22	E22	
80 - 90	A25	B25	C25	D25	E25	
90 - 100	A28	B28	C28	D28	E28	
100 - 114	A31	B31	C31	D31	E31	
114 - 128	A34	B34	C34	D34	E34	
128 - 144	A37	B37	C37	D37	E37	
144 - 160	A40	B40	C40	D40	E40	
160 - 180	A43	B43	C43	D43	E43	
180 - 200	A46	B46	C46	D46	E46	
200 - 225	A49	B49	C49	D49	E49	
225 - 250	A52	B52	C52	D52	E52	
250 - 285	A55	B55	C55	D55	E55	
285 - 320	A58	B58	C58	D58	E58	
320 - 360	A61	B61	C61	D61	E61	
360 - 400	A64	B64	C64	D64	E64	
400 - 450	A67	B67	C67	D67	E67	
450 - 500	A70	B70	C70	D70	E70	

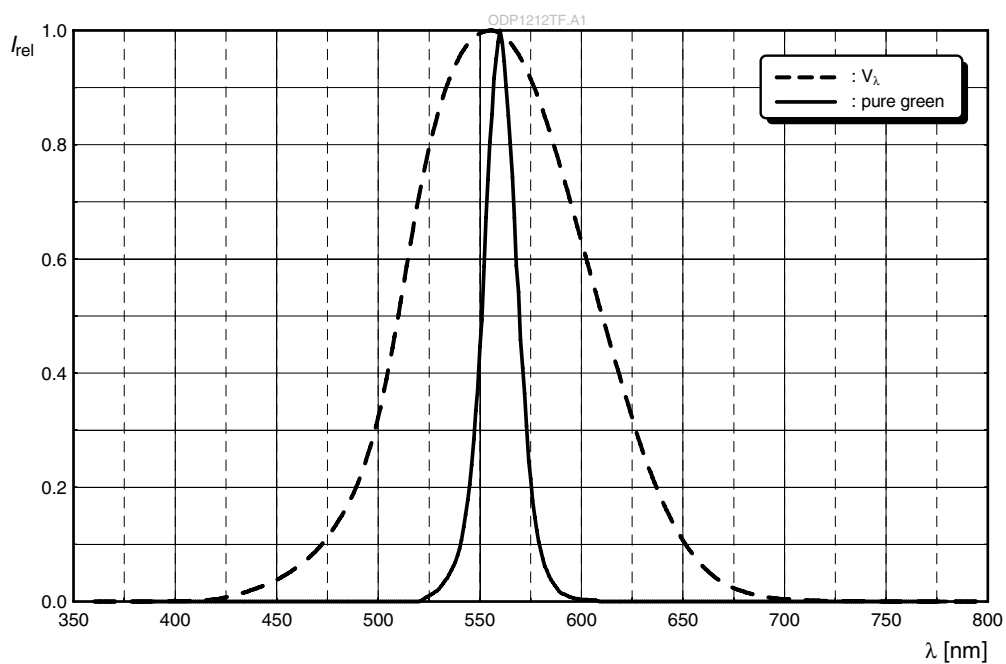
Luminous Intensity I_v a. u.	Dominant Wavelength λ_{dom} nm	
	571.0 - 574.0	574.0 - 576.5
45 - 50	F10	G10
50 - 57	F13	G13
57 - 64	F16	G16
64 - 72	F19	G19
72 - 80	F22	G22
80 - 90	F25	G25
90 - 100	F28	G28
100 - 114	F31	G31
114 - 128	F34	G34
128 - 144	F37	G37
144 - 160	F40	G40
160 - 180	F43	G43
180 - 200	F46	G46
200 - 225	F49	G49
225 - 250	F52	G52
250 - 285	F55	G55
285 - 320	F58	G58
320 - 360	F61	G61
360 - 400	F64	G64
400 - 450	F67	G67
450 - 500	F70	G70

Correlation factor ⁶⁾

Unit	Value	Condition
CF (mcd / a.u.)	1.18	chip to air
CF (mlm / a.u.)	6.5	chip with silicone lens

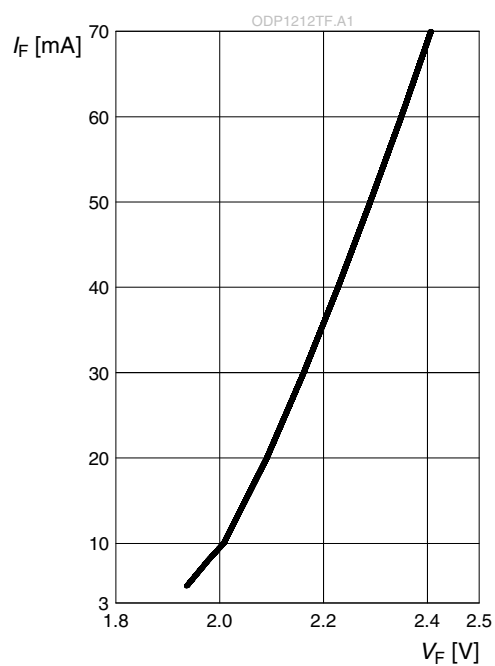
Relative Spectral Emission ⁷⁾

$I_{\text{rel}} = f(\lambda)$; $I_F = 50 \text{ mA}$; $T_S = 25 \text{ °C}$

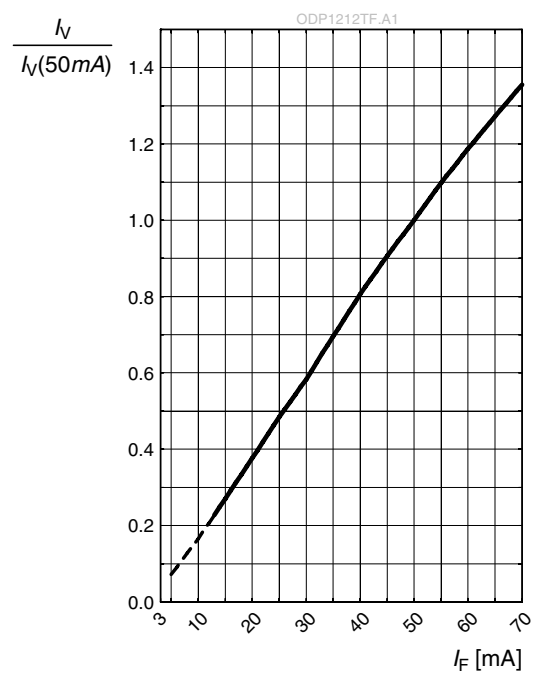


Forward current 7), 8)

$$I_F = f(V_F); T_S = 25\text{ °C}$$

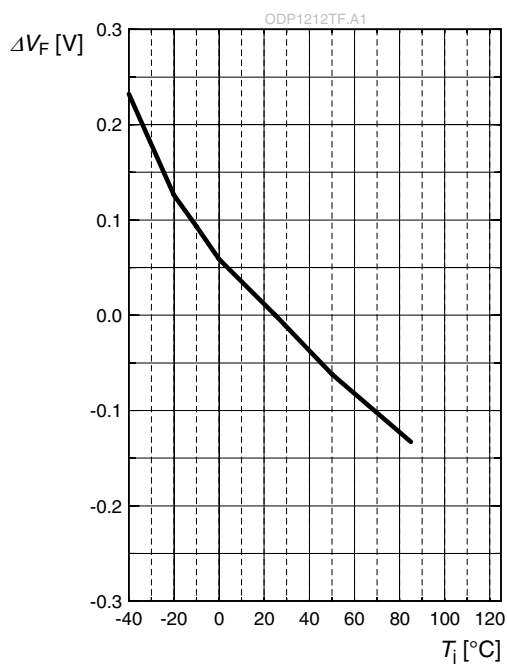
**Relative Luminous Intensity** 7), 8)

$$I_V/I_V(50\text{ mA}) = f(I_F); T_S = 25\text{ °C}$$

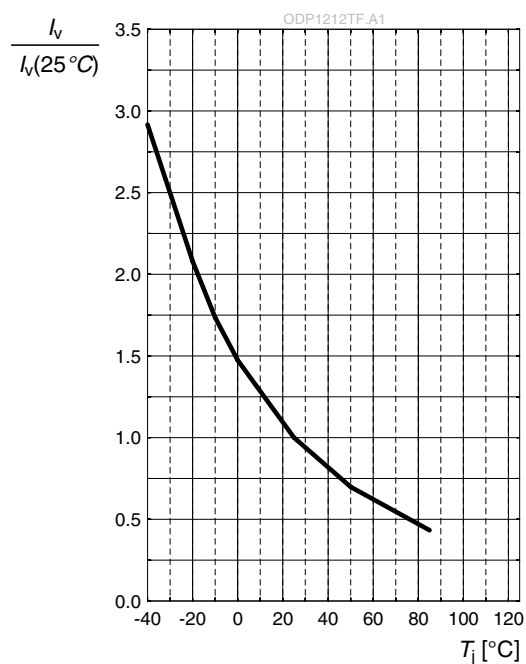


Forward Voltage ⁷⁾

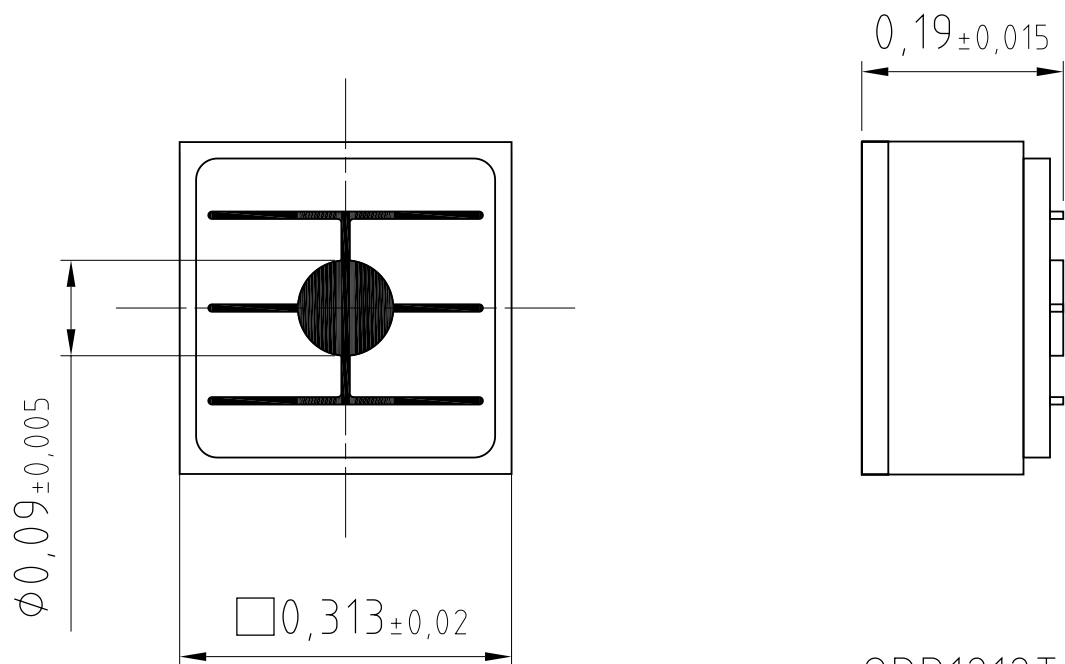
$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 50\text{ mA}$$

**Relative Luminous Intensity** ⁷⁾

$$I_V/I_V(25^\circ\text{C}) = f(T_j); I_F = 50\text{ mA}$$



Dimensional Drawing ⁹⁾



ODP1212TF.A1

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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:** 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 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: $CF = I/\Phi(\text{package}) / I(\text{chip})$. 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 ± 0.1 and dimensions are specified in mm.

