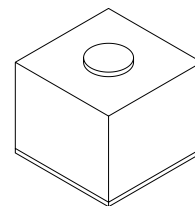


# ODT0909TG.A1

## OS-CORE® ThinGaN



### Features:

- Polarity: n-side up
- Chip technology: ThinGaN
- Color: ● true green
- Chipsize: 9 mil x 9 mil

### Ordering Information

Type  
ODT0909TG.A1-MM-MM-1-C

Ordering Code  
Q65112A2087

---

## Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	$T_{op}$	min.	-40 °C
		max.	110 °C
Storage Temperature <sup>1)</sup>	$T_{stg}$	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.	2 mA
		max.	30 mA
Forward Current Pulsed $t \leq 10\text{ }\mu\text{s}$ ; $D = 0.005$ ; $T_j = 25\text{ °C}$	$I_{F\ pulse}$	max.	300 mA
Reverse voltage <sup>2)</sup> $T_j = 25\text{ °C}$	$V_R$	max.	5 V
ESD withstand voltage acc. ANSI/ESDA/JEDEC JS-001 (HBM, Class 0)	$V_{ESD}$	ESD sensitive device	

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

## Characteristics

$I_F = 10\text{ mA}$ ;  $T_j = 25\text{ °C}$

Parameter	Symbol		Values
Dominant Wavelength <sup>3)</sup> $I_F = 10\text{ mA}$	$\lambda_{dom}$	min.	515 nm
		max.	545 nm
Forward Voltage <sup>4)</sup> $I_F = 10\text{ mA}$	$V_F$	min.	2.75 V
		typ.	3.10 V
		max.	3.40 V

## Additional Information

Die bonding	Metalization frontside	Metalization backside
Adhesive bonding	Gold	Gold

**Binning Table <sup>5)3)</sup>** $I_F = 10 \text{ mA}$ 

Luminous Intensity Dominant Wavelength

$I_v$ a. u.	$\lambda_{\text{dom}}$ nm				
	515 - 520	520 - 525	525 - 530	530 - 535	535 - 540
250 - 320	A10	B10	C10	D10	E10
320 - 400	A13	B13	C13	D13	E13
400 - 500	A16	B16	C16	D16	E16
500 - 640	A19	B19	C19	D19	E19
640 - 820	A22	B22	C22	D22	E22

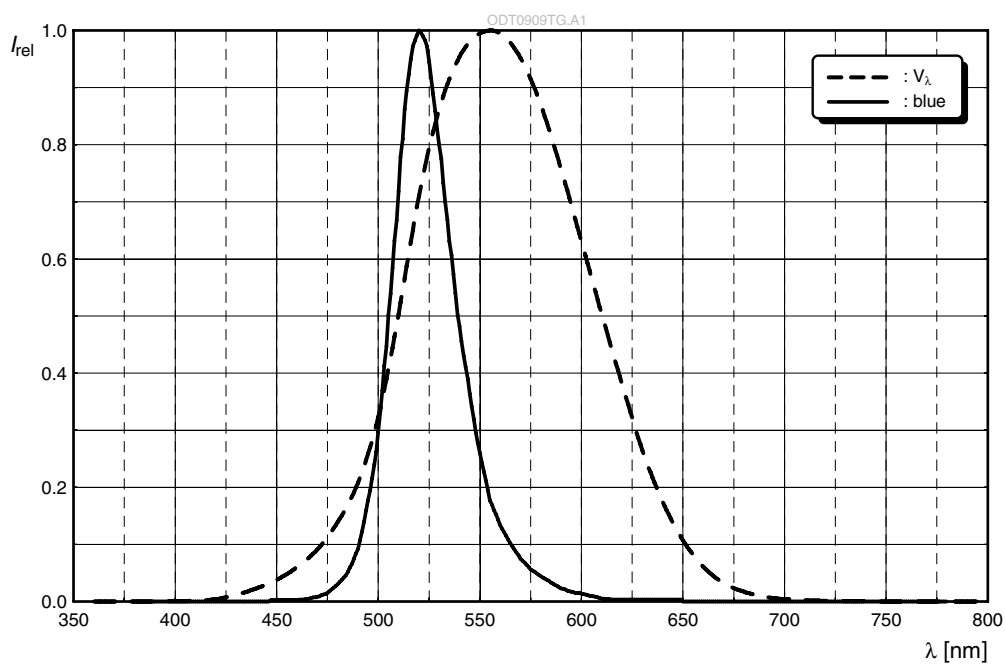
Luminous Intensity

 $I_v$   
a. u.

Dominant Wavelength

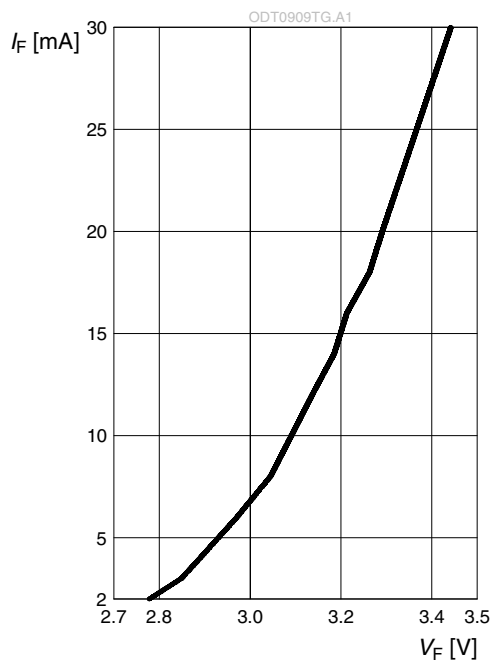
 $\lambda_{\text{dom}}$   
nm  
540 - 545

250 - 320	F10
320 - 400	F13
400 - 500	F16
500 - 640	F19
640 - 820	F22

**Relative Spectral Emission** <sup>6)</sup> $I_{\text{rel}} = f(\lambda); I_F = 10 \text{ mA}; T_S = 25 \text{ °C}$ 

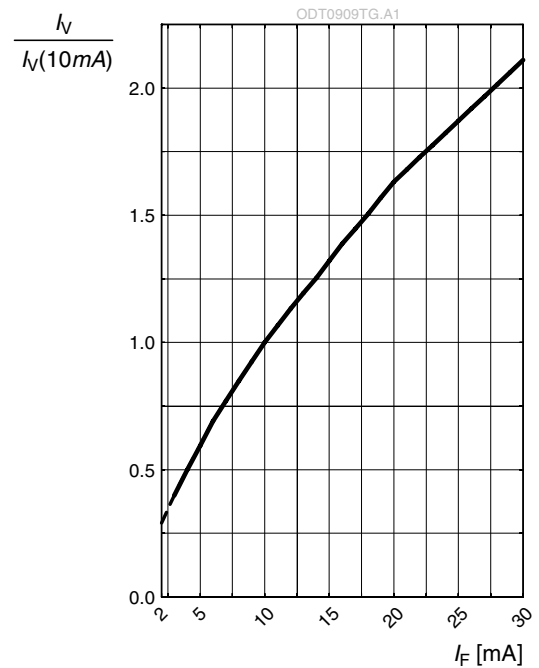
## Forward current <sup>6), 7)</sup>

$$I_F = f(V_F); T_S = 25^\circ\text{C}$$



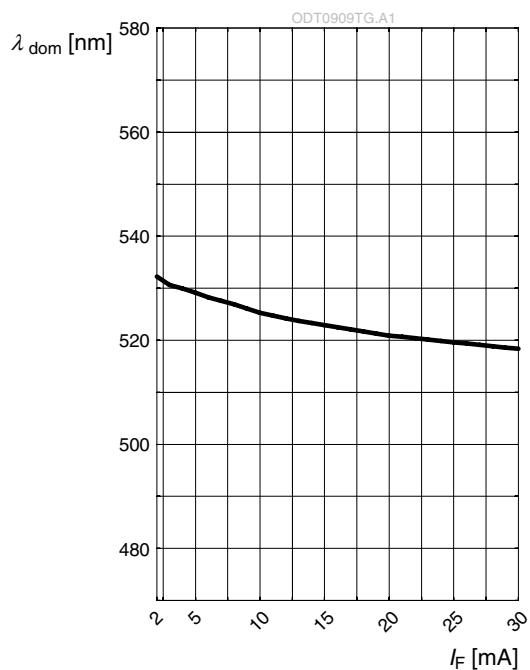
## Relative Luminous Intensity <sup>6), 7)</sup>

$$I_V/I_V(10\text{ mA}) = f(I_F); T_S = 25^\circ\text{C}$$



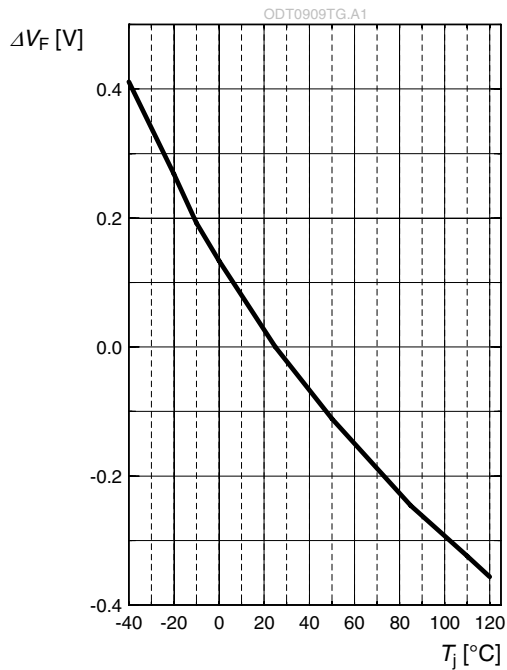
## Dominant Wavelength <sup>6)</sup>

$$\lambda_{\text{dom}} = f(I_F); T_S = 25^\circ\text{C}$$



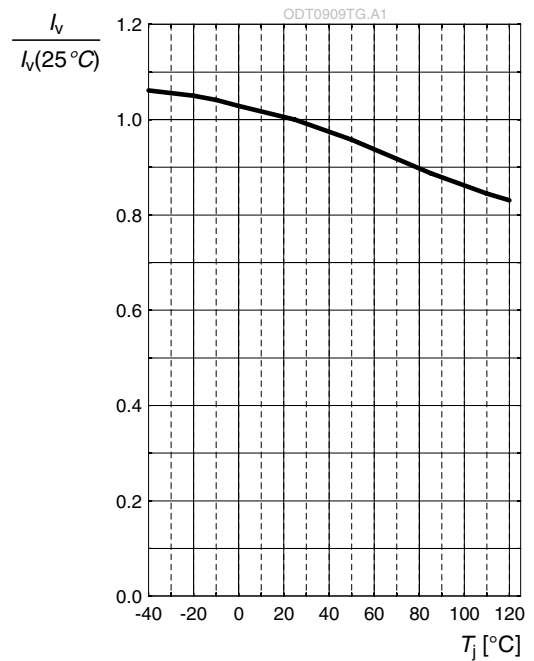
## Forward Voltage <sup>6)</sup>

$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 10 \text{ mA}$$



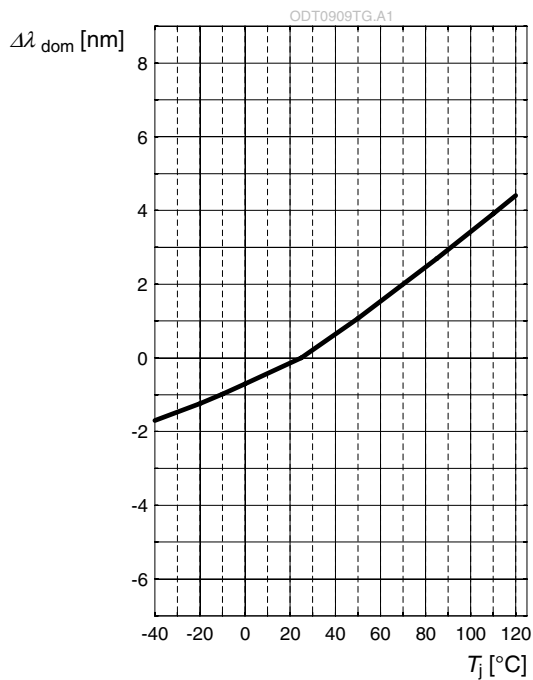
## Relative Luminous Intensity <sup>6)</sup>

$$I_V/I_V(25^\circ\text{C}) = f(T_j); I_F = 10 \text{ mA}$$

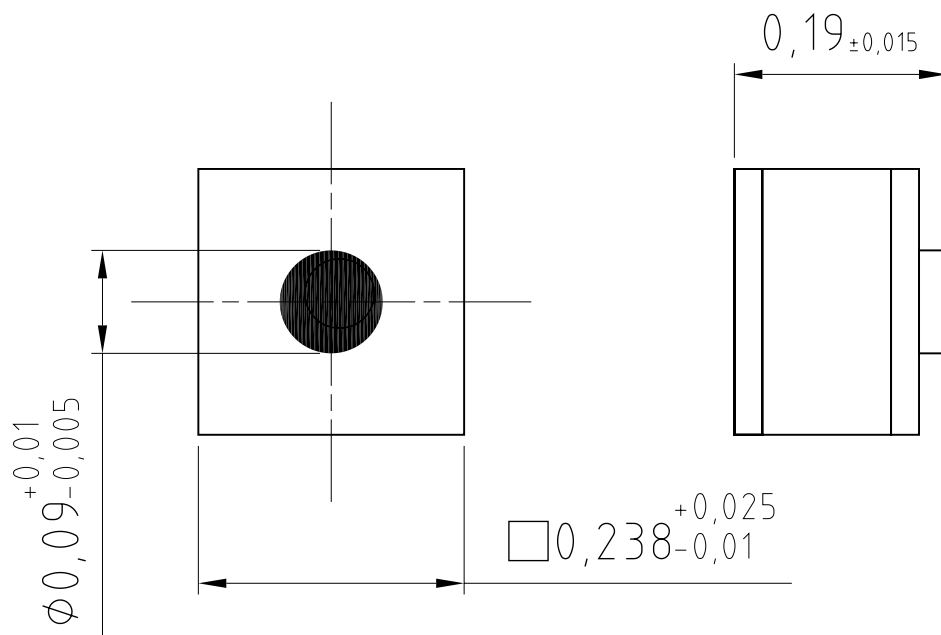


## Dominant Wavelength <sup>6)</sup>

$$\Delta \lambda_{\text{dom}} = \lambda_{\text{dom}} - \lambda_{\text{dom}}(25^\circ\text{C}) = f(T_j); I_F = 10 \text{ mA}$$



## Dimensional Drawing <sup>8)</sup>



ODT0909TG.A1

---

## Disclaimer

OSRAM OS assumes no liability whatsoever for any use of this document or its content by recipient including, but not limited to, for any design in activities based on this preliminary draft version. OSRAM OS may e.g. decide at its sole discretion to stop developing and/or finalising the underlying design at any time.

### 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.

For information on the types in question please contact our Sales Organization.

If printed or downloaded, please find the latest version in 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.

### Product safety devices/applications or medical devices/applications

OSRAM OS components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.

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.



## 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  $\pm 1$  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) **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.
- 7) **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.
- 8) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with  $\pm 0.1$  and dimensions are specified in mm.

