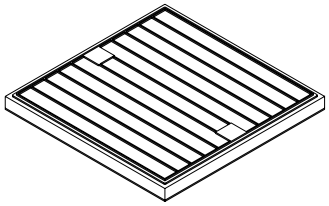
# ODH5656TF.A2

## OS-CORE® ThinGaAlP



## Features:

- Polarity: n-side up
- Chip technology: Thinfilm
- Color: ● hyper red
- Chipsize: 56 mil x 56 mil

## Ordering Information

| Type | Ordering Code |
|---|---|
| ODH5656TF.A2-MM-MM-1-C | Q65112A7320 |

## Maximum Ratings

| Parameter | Symbol | | Values |
|---|---|---|---|
| Operating Temperature | $T_{op}$ | min.<br>max. | -40 °C<br>125 °C |
| Storage Temperature [1] | $T_{stg}$ | min.<br>max. | -40 °C<br>125 °C |
| Recommended Die Storage Temperature<br>≤ 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<br>$T_J$ = 25 °C | $I_F$ | min.<br>max. | 100 mA<br>1000 mA |
| Forward Current Pulsed<br>t ≤ 10 µs; D = 0.005 ; $T_J$ = 25 °C | $I_{F\ pulse}$ | max. | 1500 mA |
| Reverse voltage [2] | $V_R$ | | Not designed for reverse operation |

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

## Characteristics

$I_F$ = 700 mA; $T_J$ = 25 °C

| Parameter | Symbol | | Values |
|---|---|---|---|
| Centroid Wavelength [3]<br>$I_F$ = 700 mA | $\lambda_{centroid}$ | min.<br>max. | 647 nm<br>665 nm |
| Forward Voltage [4]<br>$I_F$ = 700 mA | $V_F$ | min.<br>typ.<br>max. | 2.00 V<br>2.10 V<br>2.40 V |

## Additional Information

| Die bonding | Metalization frontside | Metalization backside |
|---|---|---|
| Adhesive bonding | Gold | Gold |

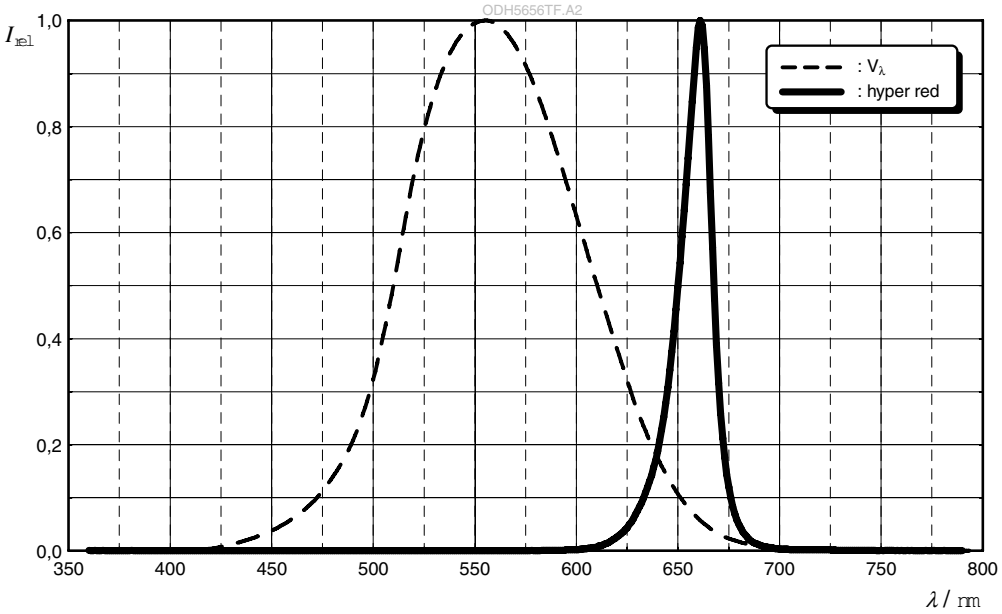
## Binning Table [5)3)]

$I_F$ = 700 mA

| Radiant Intensity $I_e$ a. u. | Centroid Wavelength $\lambda_{centroid}$ nm | | |
|---|---|---|---|
| | 647 - 653 | 653 - 659 | 659 - 665 |
| 200 - 215 | A10 | B10 | C10 |
| 215 - 220 | A13 | B13 | C13 |
| 220 - 225 | A16 | B16 | C16 |
| 225 - 230 | A19 | B19 | C19 |
| 230 - 235 | A22 | B22 | C22 |
| 235 - 240 | A25 | B25 | C25 |
| 240 - 250 | A28 | B28 | C28 |
| 250 - 265 | A31 | B31 | C31 |
| 265 - 280 | A34 | B34 | C34 |

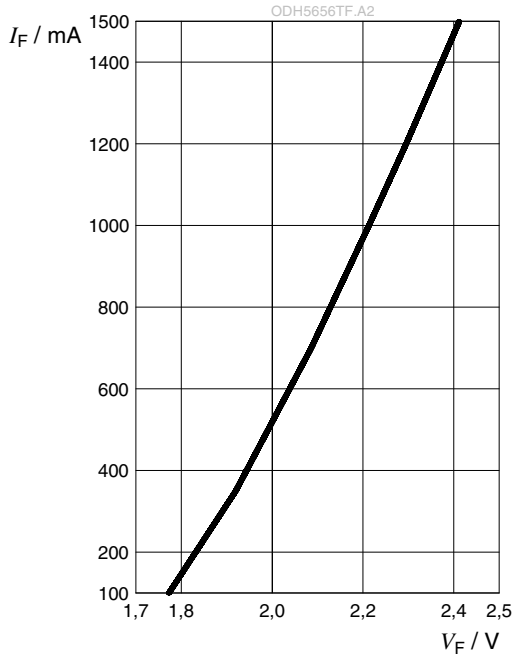
## Relative Spectral Emission [6)]

$I_{rel} = f(\lambda)$; $I_F$ = 700 mA; $T_S$ = 25 °C



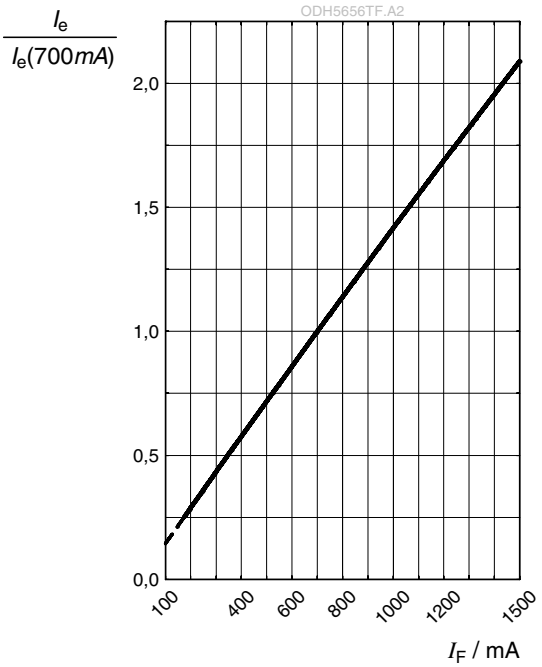
## Forward current 6), 7)

$I_F = f(V_F)$; $T_S$ = 25 °C



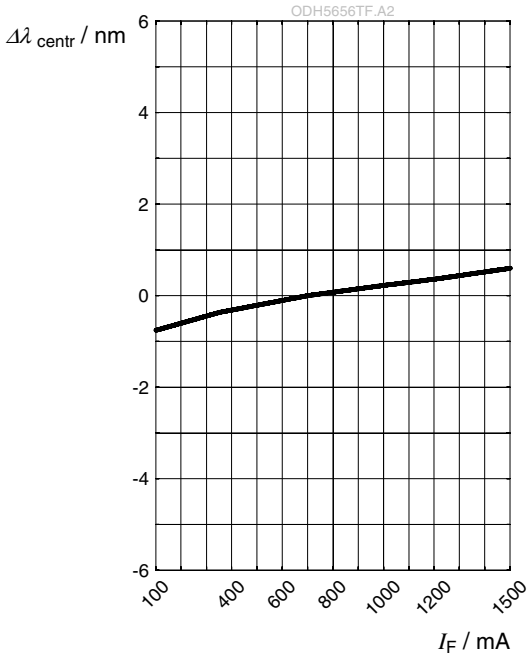

## Relative Radiant Intensity 6), 7)

$I_E/I_E(700\ mA) = f(I_F)$; $T_S$ = 25 °C



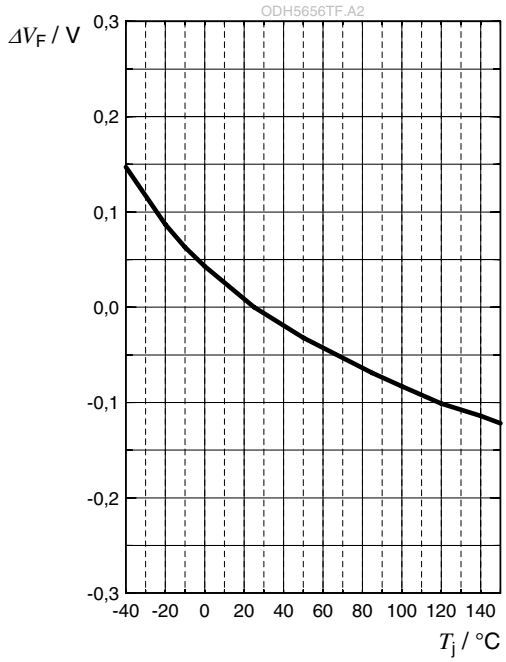

## Centroid Wavelength 6)

$\Delta\lambda_{centr} = f(I_F)$; $T_S$ = 25 °C



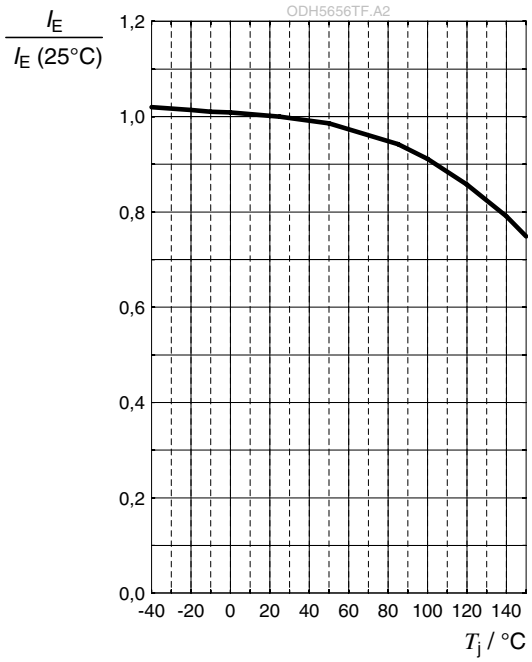
## Forward Voltage [6)]

$\Delta V_F = V_F - V_F(25\ °C) = f(T_j);\ I_F = 700\ mA$



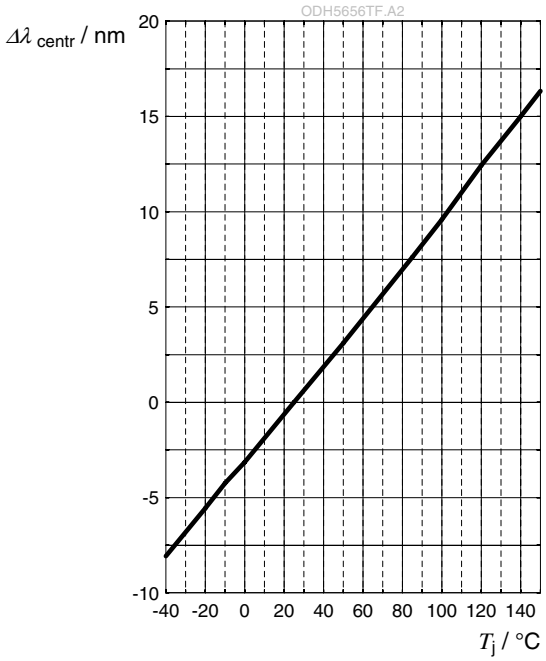

## Relative Radiant Intensity [6)]

$I_E/I_E(25\ °C) = f(T_j);\ I_F = 700\ mA$

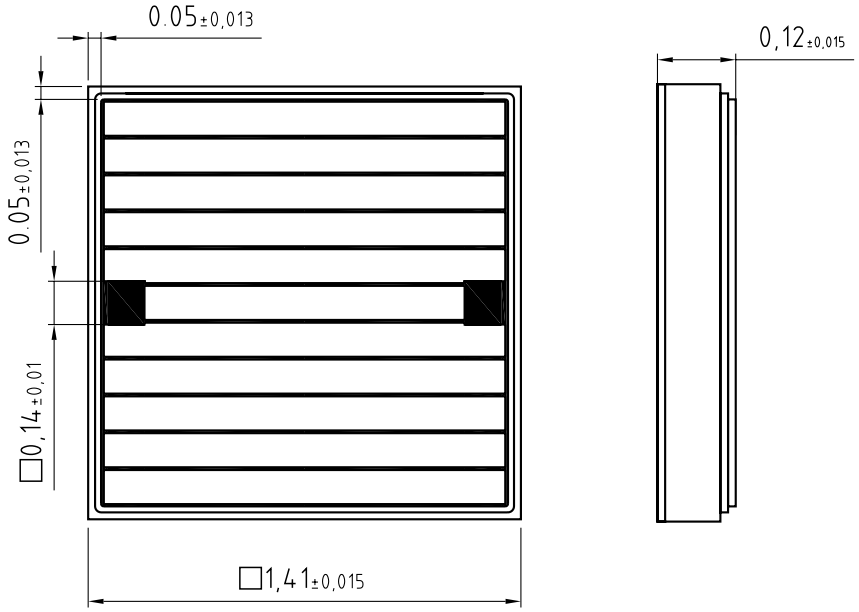



## Centroid Wavelength [6)]

$\Delta\lambda_{centr} = \lambda_{centr} - \lambda_{centr}(25\ °C) = f(T_j);\ I_F = 700\ mA$



## Dimensional Drawing [8)]

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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) **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 ±0.1 and dimensions are specified in mm.



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