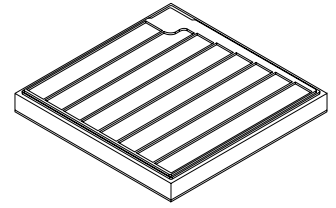


ODH3939TF.A4

OS-CORE® ThinGaAlP



Features:

- Polarity: n-side up
- Chip technology: Thinfilm
- Color: ● hyper red
- Chipsize: 39 mil x 39 mil

Ordering Information

Type
ODH3939TF.A4-MM-MM-1-C

Ordering Code
Q65112A5140

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min.	-40 °C
		max.	125 °C
Storage Temperature ¹⁾	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
Junction temperature for short time applications*	T_j	max.	175 °C
Forward Current $T_j = 25\text{ °C}$	I_F	min.	20 mA
		max.	1000 mA
Forward Current Pulsed $t \leq 10\text{ }\mu\text{s}$; $D = 0.005$; $T_j = 25\text{ °C}$	$I_{F\ pulse}$	max.	2500 mA
Reverse voltage ²⁾ $T_j = 25\text{ °C}$	V_R	max.	12 V

*The median lifetime (L70/B50) for $T_j = 175\text{ °C}$ is 100h.

Characteristics

$I_F = 350\text{ mA}$; $T_j = 25\text{ °C}$

Parameter	Symbol		Values
Centroid Wavelength ³⁾ $I_F = 350\text{ mA}$	$\lambda_{\text{centroid}}$	min.	647 nm
		max.	665 nm
Forward Voltage ⁴⁾ $I_F = 350\text{ mA}$	V_F	min.	1.85 V
		typ.	2.10 V
		max.	2.50 V

Additional Information

Die bonding	Metalization frontside	Metalization backside
Eutectic bonding	Gold	AuSn

Binning Table ⁵⁾³⁾

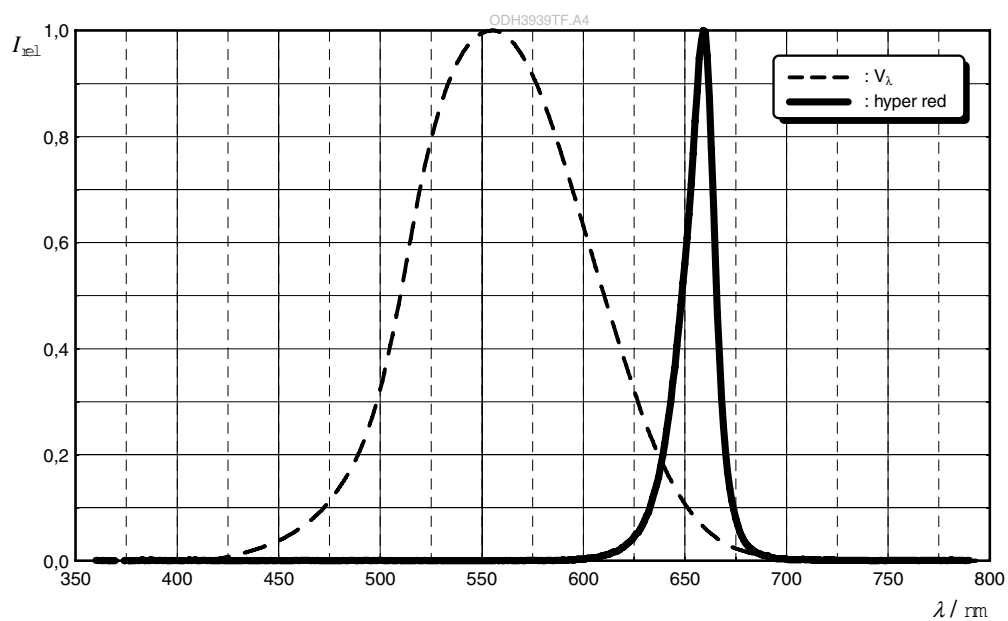
$I_F = 350 \text{ mA}$

Radiant Intensity I_e a. u.	Centroid Wavelength		
	$\lambda_{\text{centroid}}$ nm		
	647 - 653	653 - 659	659 - 665
100 - 108	A10	B10	C10
108 - 114	A13	B13	C13
114 - 118	A16	B16	C16
118 - 121	A19	B19	C19
121 - 128	A22	B22	C22
128 - 136	A25	B25	C25
136 - 152	A28	B28	C28

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

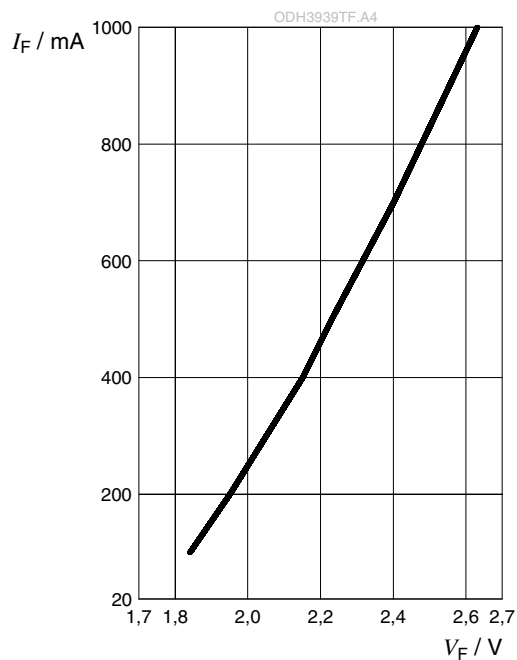
Relative Spectral Emission ⁶⁾

$I_{\text{rel}} = f(\lambda)$; $I_F = 350 \text{ mA}$; $T_S = 25 \text{ °C}$

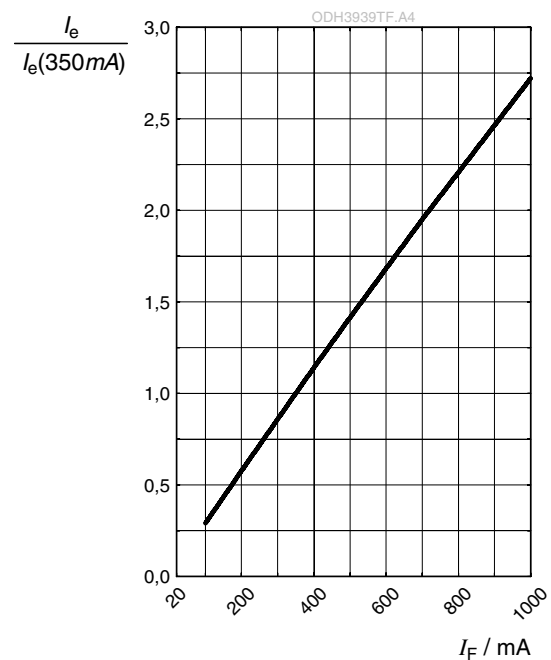


Forward current ^{6), 7)}

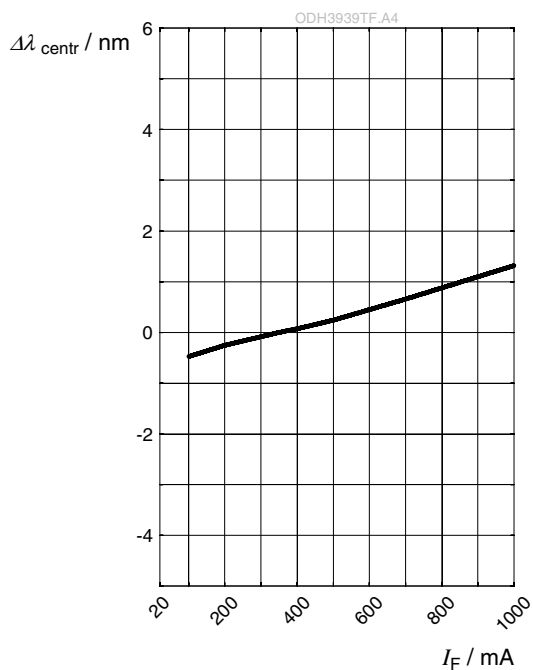
$$I_F = f(V_F); T_S = 25\text{ °C}$$

**Relative Radiant Intensity** ^{6), 7)}

$$I_E/I_E(350\text{ mA}) = f(I_F); T_S = 25\text{ °C}$$

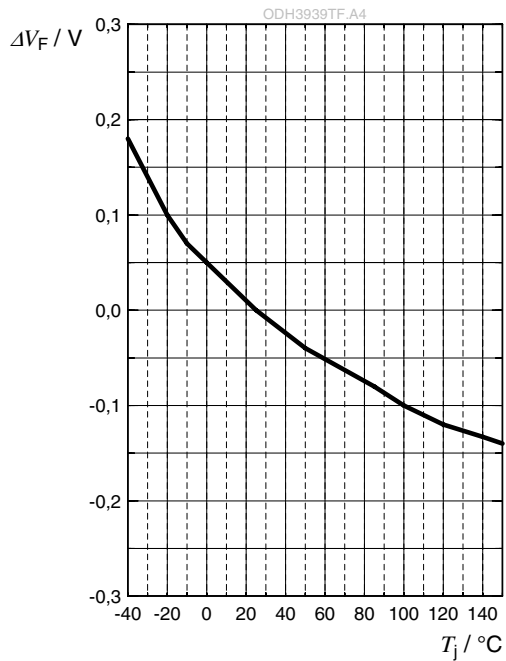
**Centroid Wavelength** ⁶⁾

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

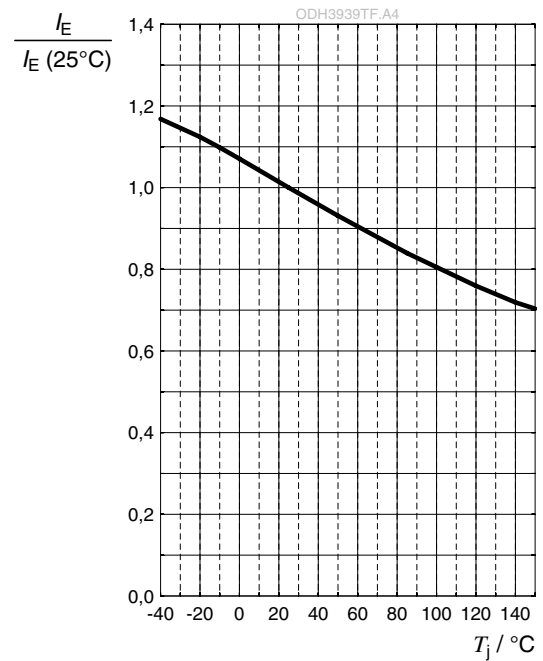


Forward Voltage ⁶⁾

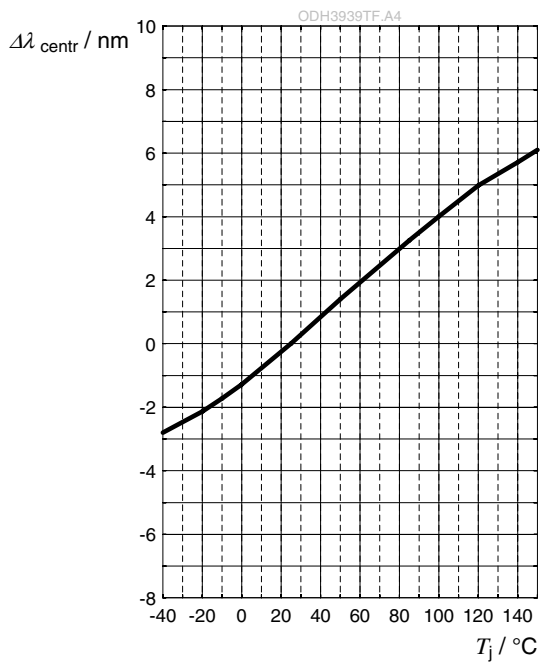
$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 350\text{ mA}$$

**Relative Radiant Intensity** ⁶⁾

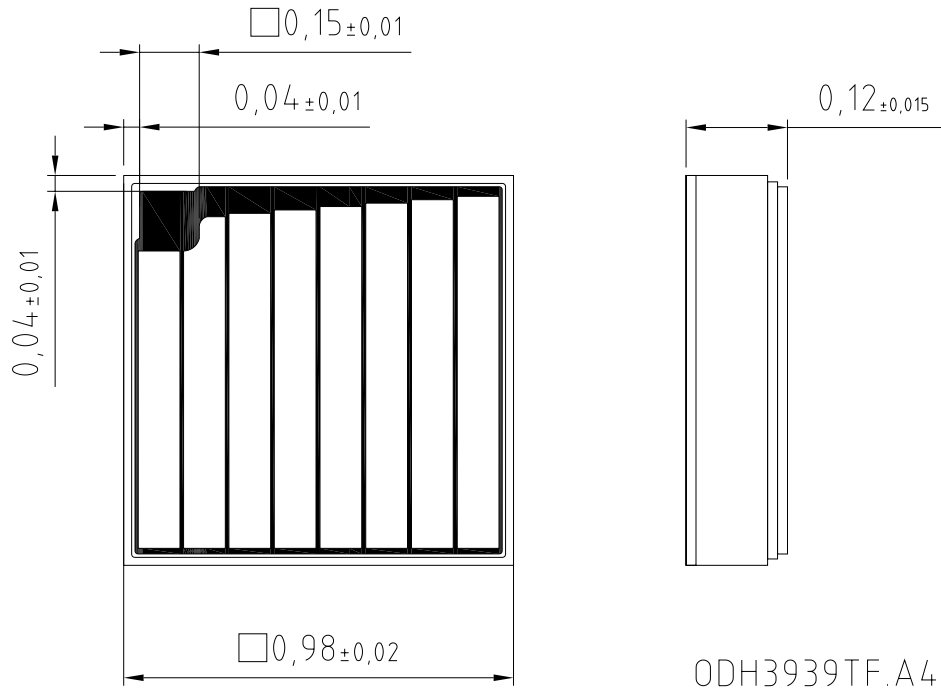
$$I_E / I_E(25^\circ\text{C}) = f(T_j); I_F = 350\text{ mA}$$

**Centroid Wavelength** ⁶⁾

$$\Delta \lambda_{\text{centr}} = \lambda_{\text{centr}} - \lambda_{\text{centr}}(25^\circ\text{C}) = f(T_j); I_F = 350\text{ mA}$$



Dimensional Drawing ⁸⁾



ODH3939TF.A4

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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) **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.

