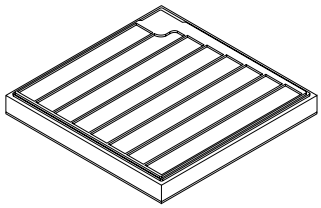
ODR3939TF.A5

OS-CORE® ThinGaAlP



Features:

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

Ordering Information

Type	Ordering Code
ODR3939TF.A5-MM-MM-1-C	Q65112A2137

Maximum Ratings

Parameter	Symbol		Values
Operating Temperature	T_{op}	min. max.	-40 °C 125 °C
Storage Temperature [1]	T_{stg}	min. max.	-40 °C 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 °C	I_F	min. max.	100 mA 1000 mA
Forward Current Pulsed t ≤ 10 µs; D = 0.005 ; T_J = 25 °C	$I_{F\ pulse}$	max.	2500 mA
Reverse voltage [2] T_J = 25 °C	V_R	max.	12 V

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

Characteristics

I_F = 350 mA; T_J = 25 °C

Parameter	Symbol		Values
Dominant Wavelength [3] I_F = 350 mA	λ_{dom}	min. max.	611.0 nm 640.0 nm
Forward Voltage [4] I_F = 350 mA	V_F	min. typ. max.	2.00 V 2.20 V 2.50 V

Additional Information

Die bonding	Metalization frontside	Metalization backside
Adhesive bonding	Gold	Gold

Brightness and Wavelength Groups [5)3)]

I_F = 350 mA

Luminous Intensity I_v a. u.	Dominant Wavelength λ_{dom} nm				
	611.0 - 613.0	613.0 - 615.0	615.0 - 618.5	618.5 - 622.5	622.5 - 626.0
9000 - 10000	A10	B10	C10	D10	E10
10000 - 11400	A13	B13	C13	D13	E13
11400 - 12000	A16	B16	C16	D16	E16
12000 - 12800	A19	B19	C19	D19	E19
12800 - 14400	A22	B22	C22	D22	E22
14400 - 16000	A25	B25	C25	D25	E25
16000 - 18000	A28	B28	C28	D28	E28
18000 - 20000	A31	B31	C31	D31	E31
20000 - 22500	A37	B37	C37	D37	E37
22500 - 25000	A40	B40	C40	D40	E40
25000 - 28500	A43	B43	C43	D43	E43

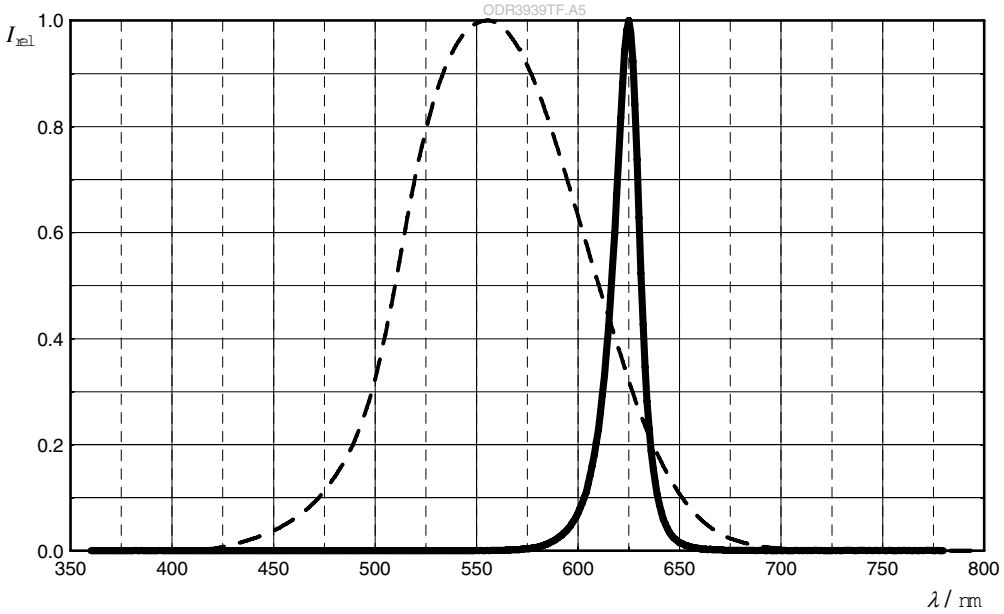
Luminous Intensity I_v a. u.	Dominant Wavelength λ_{dom} nm		
	626.0 - 629.0	629.0 - 632.5	632.5 - 640.0
9000 - 10000	F10	G10	H10
10000 - 11400	F13	G13	H13
11400 - 12000	F16	G16	H16
12000 - 12800	F19	G19	H19
12800 - 14400	F22	G22	H22
14400 - 16000	F25	G25	H25
16000 - 18000	F28	G28	H28
18000 - 20000	F31	G31	H31
20000 - 22500	F37	G37	H37
22500 - 25000	F40	G40	H40
25000 - 28500	F43	G43	H43

Correlation Factor [6)]

Unit	Value	Condition
CF (mcd / a.u.)	0.9	chip to air
CF (mlm / a.u.)	4	chip with silicone lens

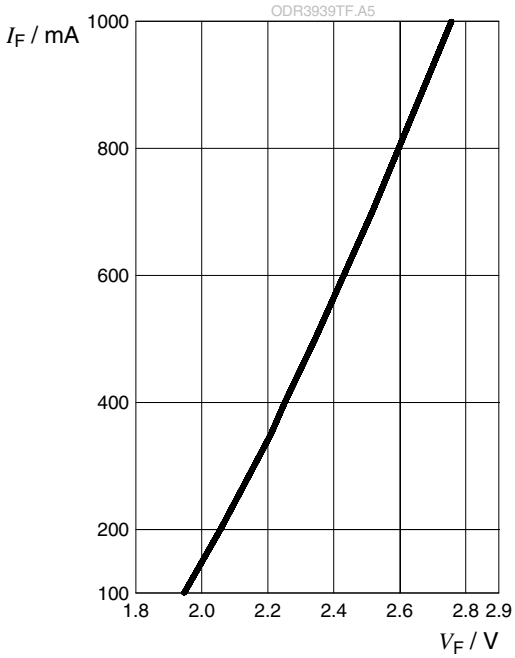
Relative Spectral Emission [7)]

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



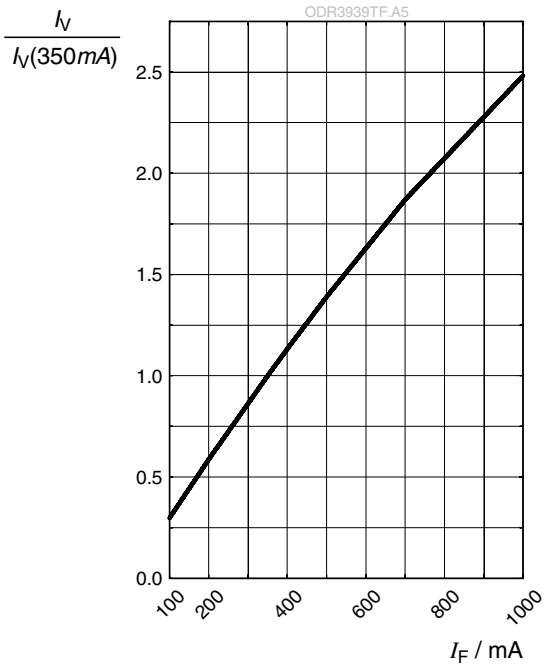
Forward current [7)]

$I_F = f(V_F)$; T_S = 25 °C



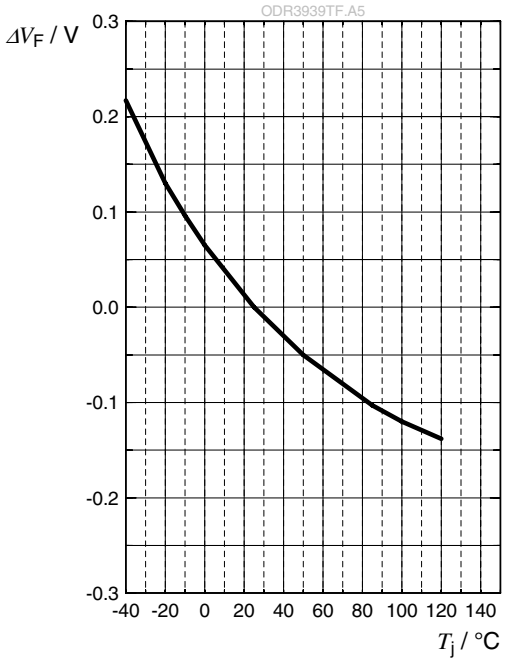
Relative Luminous Intensity [7), 8)]

$I_v/I_v(350\ mA) = f(I_F)$; T_S = 25 °C



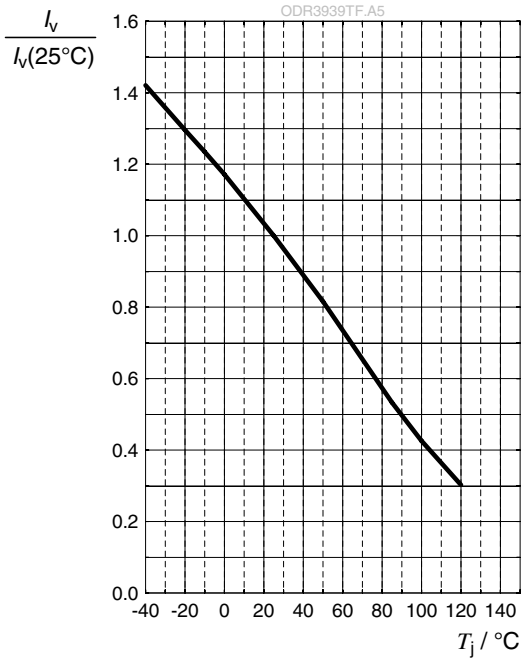
Forward Voltage [7)]

$\Delta V_F = V_F - V_F(25\ °C) = f(T_j);\ I_F = 350\ mA$



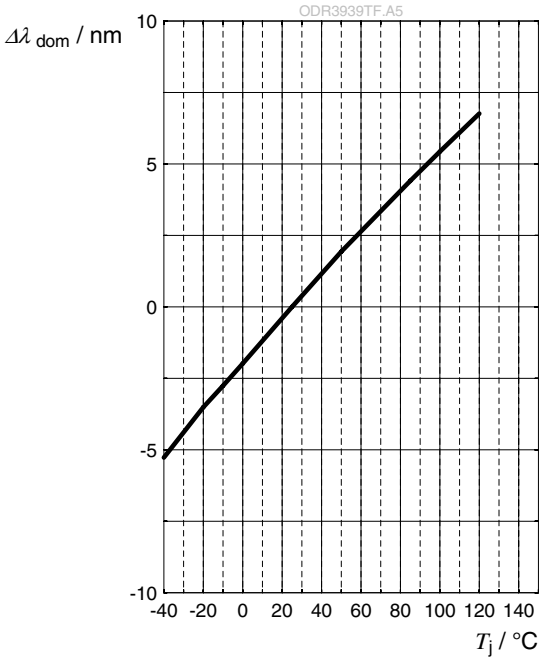
Relative Luminous Intensity [7)]

$I_v/I_v(25\ °C) = f(T_j);\ I_F = 350\ mA$

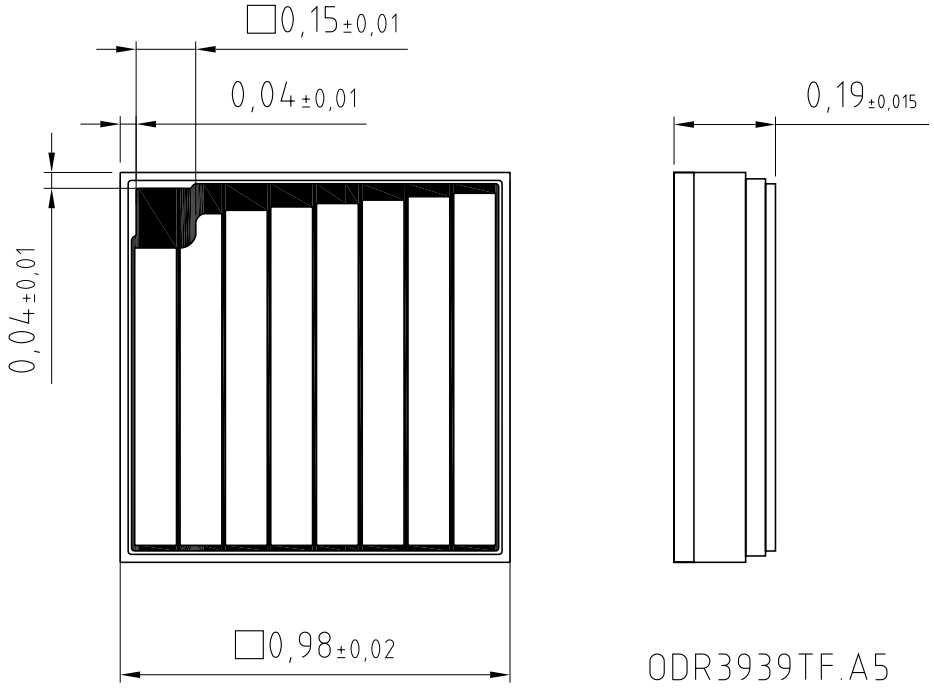


Dominant Wavelength [7)]

$\Delta\lambda_{dom} = \lambda_{dom} - \lambda_{dom}(25\ °C) = f(T_j);\ I_F = 350\ mA$



Dimensional Drawing [9)]



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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/Φ(package) / I(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.

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