

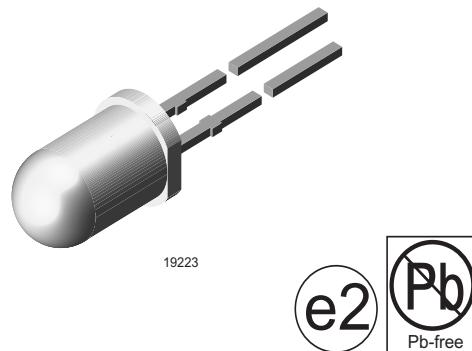
High Brightness LED, Ø 5 mm Untinted Non-Diffused

Description

The TLC.51.. series is a clear, non diffused 5 mm LED for high end applications where supreme luminous intensity required.

These lamps with clear untinted plastic case utilize the highly developed ultrabright AlInGaP (AS) and InGaN technologies.

The lens and the viewing angle is optimized to achieve best performance of light output and visibility.



Features

- Untinted non diffused lens
- Utilizing ultrabright AlInGaP, OMA technology
- High luminous intensity
- High operating temperature: T_j (chip junction temperature) up to 125 °C for AlInGaP devices
- Luminous intensity and color categorized for each packing unit
- ESD-withstand voltage: 2 kV acc. to MIL STD 883 D, Method 3015.7 for AlInGaP, 1 kV for InGaN
- Lead-free device

Applications

- Interior and exterior lighting
- Outdoor LED panels
- Instrumentation and front panel indicators
- Central high mounted stop lights (CHMSL) for motor vehicles
- Replaces incandescent lamps
- Traffic signals
- Light guide design

Parts Table

Part	Color, Luminous Intensity	Angle of Half Intensity (±φ)	Technology
TLCS5110	Red, $I_V > 20000$ mcd (typ.)	9 °	AlInGaP on Si

Absolute Maximum Ratings

$T_{amb} = 25$ °C, unless otherwise specified

TLCS511.

Parameter	Test condition	Symbol	Value	Unit
Reverse voltage		V_R	5	V
DC Forward current	$T_{amb} \leq 85$ °C	I_F	50	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 85$ °C	P_V	135	mW
Junction temperature		T_j	125	°C
Operating temperature range		T_{amb}	- 40 to + 100	°C
Storage temperature range		T_{stg}	- 40 to + 100	°C
Soldering temperature	$t \leq 5$ s, 2 mm from body	T_{sd}	260	°C
Thermal resistance junction/ambient		R_{thJA}	300	K/W

Optical and Electrical Characteristics

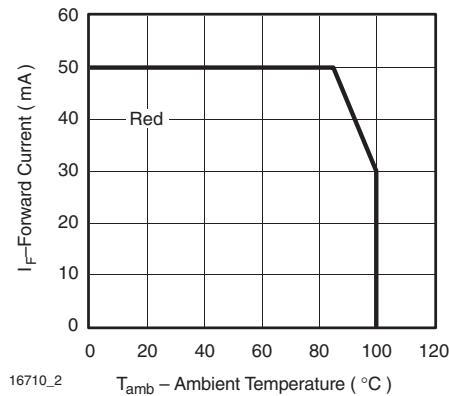
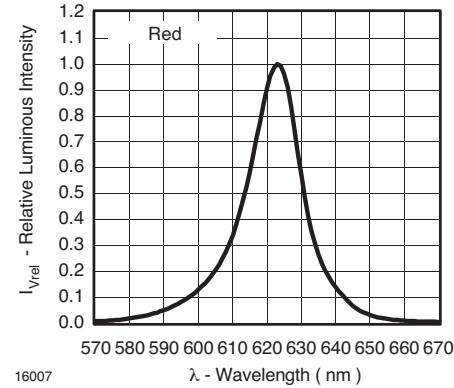
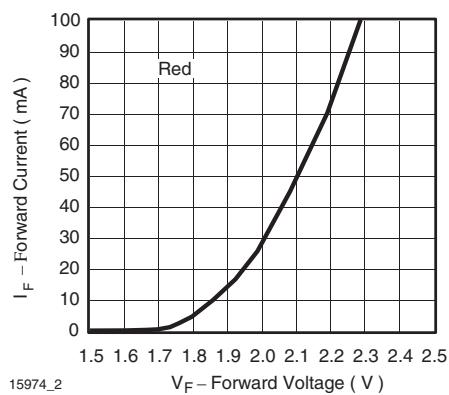
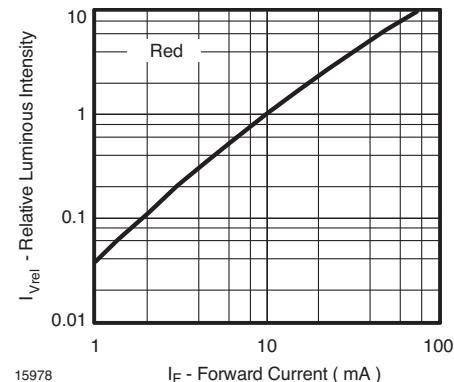
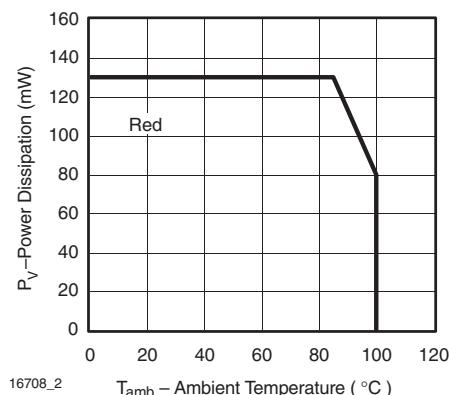
$T_{amb} = 25 \text{ }^{\circ}\text{C}$, unless otherwise specified

Red

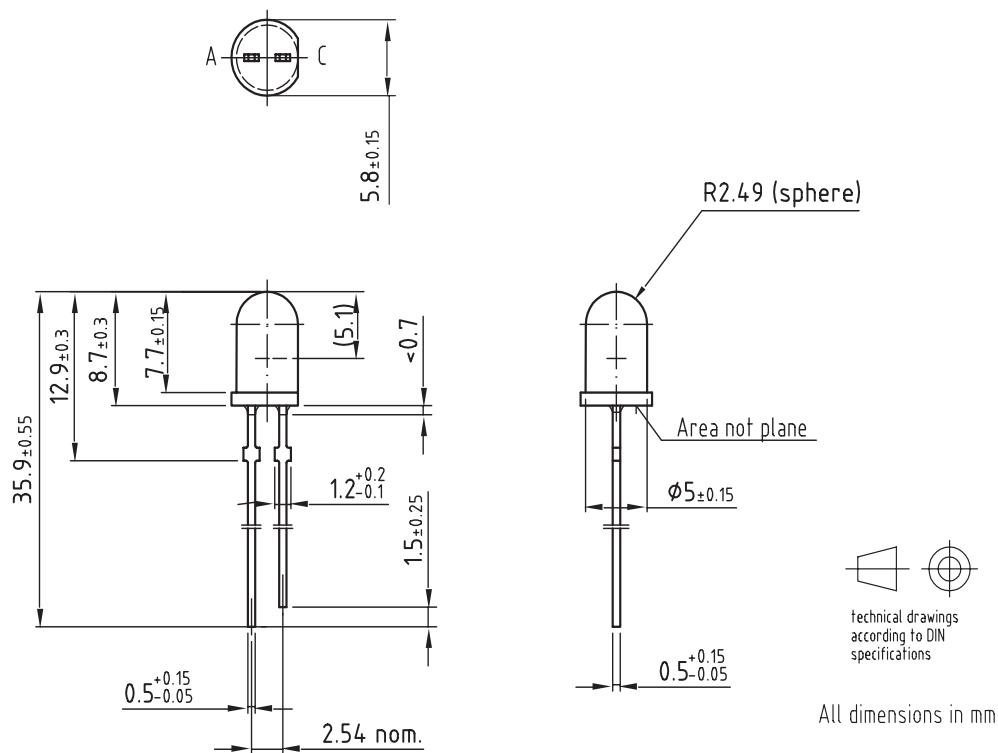
TLCS5110

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Luminous intensity ¹⁾	$I_F = 50 \text{ mA}$	TLCS5110	I_V	7500	20000		mcd
Dominant wavelength	$I_F = 50 \text{ mA}$		λ_d	620	625	630	nm
Peak wavelength	$I_F = 50 \text{ mA}$		λ_p		632		nm
Spectral bandwidth at 50 % $I_{rel\ max}$	$I_F = 50 \text{ mA}$		$\Delta\lambda$		18		nm
Angle of half intensity	$I_F = 50 \text{ mA}$		φ		± 9		deg
Forward voltage	$I_F = 50 \text{ mA}$		V_F		2.1	2.7	V
Reverse voltage	$I_R = 10 \text{ } \mu\text{A}$		V_R	5			V
Temperature coefficient of V_F	$I_F = 50 \text{ mA}$		TC_{VF}		- 3.5		mV/K
Temperature coefficient of λ_d	$I_F = 50 \text{ mA}$		$TC\lambda_d$		0.05		nm/K

¹⁾ in one Packing Unit $I_{Vmax}/I_{Vmin} \leq 2.0$

Typical Characteristics (T_{amb} = 25 °C unless otherwise specified)


Package Dimensions in mm



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9612121

All dimensions in mm

Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design
and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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