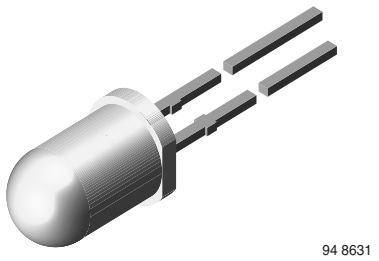
High Intensity LED, ∅ 5 mm Untinted Non-Diffused

Description

The TLCY5210 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, OMA technology.

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



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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
- Lead (Pb)-free device

Applications

Interior and exterior lighting
Outdoor LED panels
Instrumentation and front panel indicators
Replaces incandescent lamps
Traffic signals
Light guide design

Parts Table

Part	Color, Luminous Intensity	Angle of Half Intensity (±φ)	Technology
TLCY5210	Yellow, I_V > 3200 mcd	15 °	AlInGaP on Si

Absolute Maximum Ratings

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

TLCY5210

Parameter	Test condition	Part	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}	0.1	A
Power dissipation			P_V	150	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 ≤ 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 °C, unless otherwise specified

Yellow

TLCY5210

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Luminous intensity [1]	I_F = 50 mA	TLCY5210	I_V	3200			mcd
Dominant wavelength	I_F = 50 mA		λ_d	585	591	597	nm
Peak wavelength	I_F = 50 mA		λ_p		593		nm
Spectral bandwidth at 50 % I_{rel} max	I_F = 50 mA		$\Delta\lambda$		17		nm
Angle of half intensity	I_F = 50 mA		φ		± 15		deg
Forward voltage	I_F = 50 mA		V_F		2.2	3.0	V
Reverse voltage	I_R = 10 µA		V_R	5			V

Luminous Intensity Classification

Group	Light Intensity (mcd) / Luminous Flux [mlm]	
	min	max
HH	2400	4800
II	3200	6400
KK	4300	8600
LL	5750	11500
MM	7500	15000
NN	10000	20000
PP	13500	27000
QQ	18000	36000
RR	24000	48000
SS	32000	64000
TT	43000	86000
UU	57500	115000

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

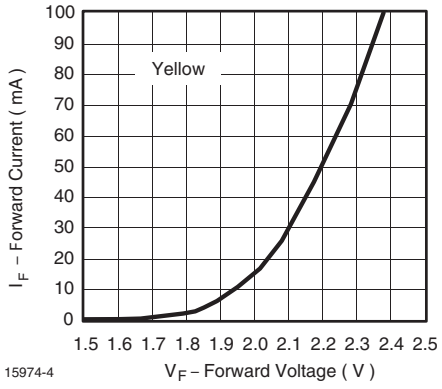


Figure 1. Forward Current vs. Forward Voltage

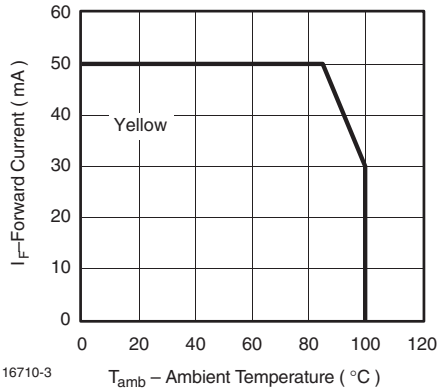


Figure 2. Forward Current vs. Ambient Temperature

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

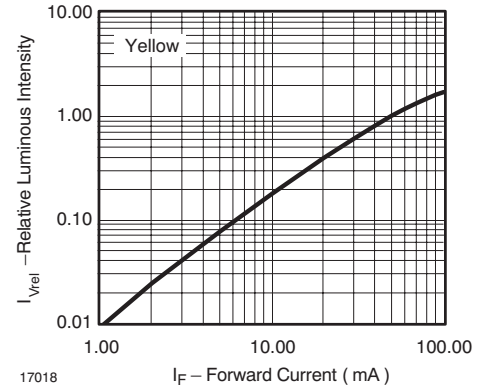


Figure 3. Relative Luminous Intensity vs. Forward Current

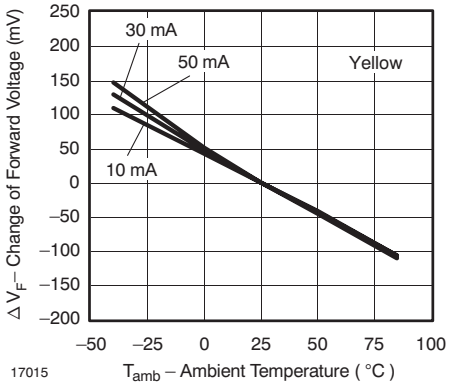


Figure 6. Forward Voltage vs. Ambient Temperature

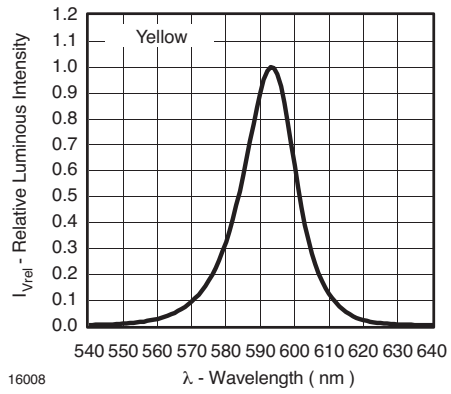


Figure 4. Relative Intensity vs. Wavelength

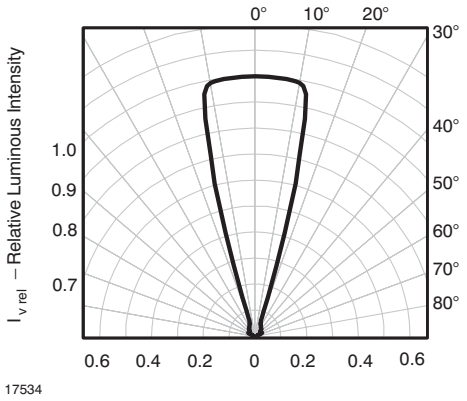


Figure 7. Relative Luminous Intensity

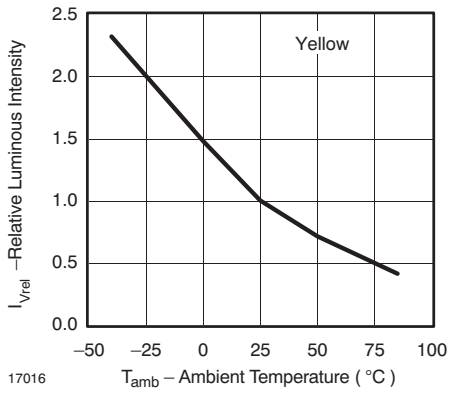


Figure 5. Relative Luminous Intensity vs. Amb. Temperature

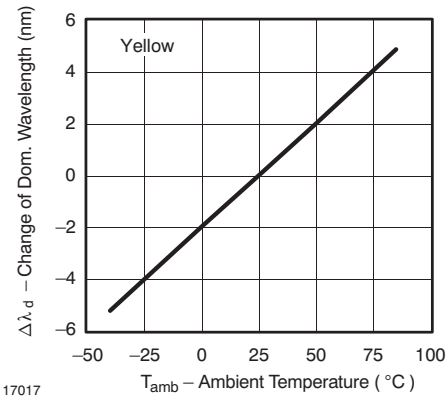
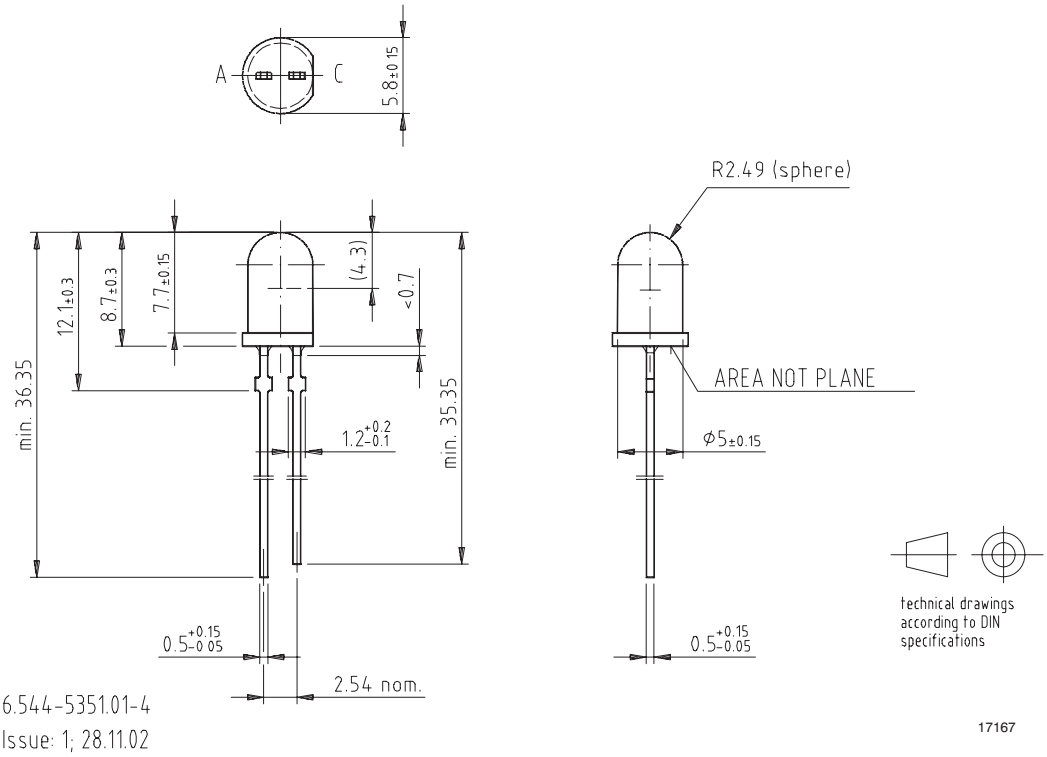


Figure 8. Change of Dominant Wavelength vs. Ambient Temperature

Package 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.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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