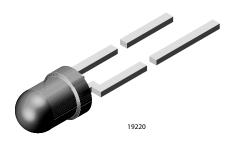


# High Efficiency LED in Ø 3 mm Tinted Diffused Package



#### **DESCRIPTION**

The TLHY44K1L2 series was developed for standard applications like general indicating and lighting purposes.

It is housed in a 3 mm tinted diffused plastic package. The wide viewing angle of this device provides a high on-off contrast.

The LED is categorized in luminous intensity groups and additionally in wavelength groups.

That allows users to assemble LEDs with uniform appearance.

#### PRODUCT GROUP AND PACKAGE DATA

Product group: LEDPackage: 3 mm

Product series: standard
Angle of half intensity: ± 30°

#### **FEATURES**

- Standard Ø 3 (T-1) package
- Small mechanical tolerances
- · Suitable for DC and high peak current
- · Wide viewing angle
- · Luminous intensity categorized
- Color categorized
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912





RoHS COMPLIANT

FREE GREEN (5-2008)

#### **APPLICATIONS**

- Status lights
- · Off / on indicator
- · Background illumination
- · Readout lights
- Maintenance lights
- · Legend light

PARTS TABLE														
PART	COLOR	LUMINOUS INTENSITY (mcd)		at I <sub>F</sub>	WAVELENGTH (nm)		at I <sub>F</sub>	FORWARD VOLTAGE (V)		at I <sub>F</sub>	TECHNOLOGY			
		MIN.	TYP.	MAX.	(IIIA)	MIN.	TYP.	MAX.	(IIIA)	MIN.	TYP.	MAX.	(11174)	
TLHY44K1L2	Yellow	7.1	ı	18	10	581	-	594	10	-	2.2	2.6	10	GaAsP on GaP

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) TLHY44K1L2						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Reverse voltage		V <sub>R</sub>	6	V		
DC forward current		I <sub>F</sub>	30	mA		
Surge forward current	t <sub>p</sub> ≤ 10 μs	I <sub>FSM</sub>	1	Α		
Junction temperature	·	T <sub>j</sub>	100	°C		
Power dissipation	T <sub>amb</sub> ≤ 60 °C	P <sub>V</sub>	100	mW		
Operating temperature range		T <sub>amb</sub>	-40 to +100	°C		
Storage temperature range		T <sub>stg</sub>	-55 to +100	°C		
Soldering temperature	$t \le 5$ s, 2 mm from body	T <sub>sd</sub>	260	°C		
Thermal resistance junction/ambient		R <sub>thJA</sub>	400	K/W		



OPTICAL AND ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25  ^{\circ}C$ , unless otherwise specified) TLHY44K1L2, YELLOW							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity (1)	I <sub>F</sub> = 10 mA	TLHY44K1L2	l <sub>V</sub>	7.1	-	18	mcd
Dominant wavelength	I <sub>F</sub> = 10 mA		$\lambda_{d}$	581	-	594	nm
Peak wavelength	I <sub>F</sub> = 10 mA		$\lambda_{p}$	-	585	-	nm
Angle of half intensity	I <sub>F</sub> = 10 mA		φ	-	± 30	-	deg
Forward voltage	I <sub>F</sub> = 10 mA		V <sub>F</sub>	-	2.2	2.6	V
Reverse voltage	I <sub>R</sub> = 10 μA		$V_R$	6	15	-	V
Junction capacitance	V <sub>R</sub> = 0 V, f = 1 MHz		C <sub>j</sub>	-	50	-	pF

#### Note

 $<sup>^{(1)}~</sup>$  In one packing unit  $I_{Vmin.}/I_{Vmax.} \leq 0.5$ 

LUMINOUS INTENSITY CLASSIFICATION						
GROUP	UP LIGHT INTENSITY (mcd)					
STANDARD	OPTIONAL	MIN.	MAX.			
К	1	7.1	9			
K	2	9	11.2			
	1	11.2	14.0			
L	2	14.0	18.0			

#### Note

 Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of ± 11 %.

The above type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each bag (there will be no mixing of two groups on each bag).

In order to ensure availability, single brightness groups will not be orderable.

In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped on any one bag.

In order to ensure availability, single wavelength groups will not be orderable.

COLOR CLASSIFICATION					
	DOM. WAVELENGTH (nm) YELLOW				
GROUP					
	MIN.	MAX.			
1	581	584			
2	583	586			
3	585	588			
4	587	590			
5	589	592			
6	591	594			

#### Note

Wavelengths are tested at a current pulse duration of 25 ms.

### TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

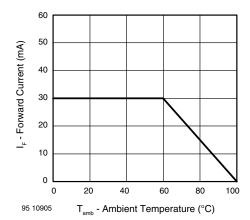


Fig. 1 - Forward Current vs. Ambient Temperature for InGaN

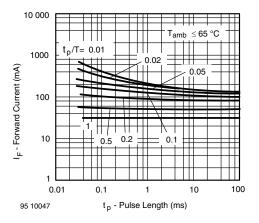


Fig. 2 - Forward Current vs. Pulse Length

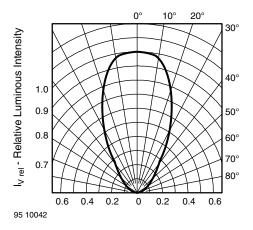


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

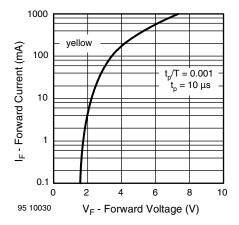


Fig. 4 - Forward Current vs. Forward Voltage

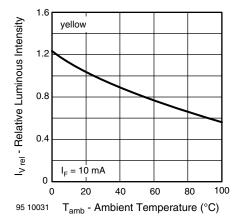


Fig. 5 - Relative Luminous Intensity vs. Ambient Temperature

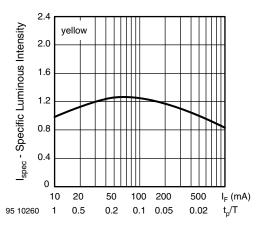


Fig. 6 - Relative Luminous Intensity vs. Forw. Current/Duty Cycle

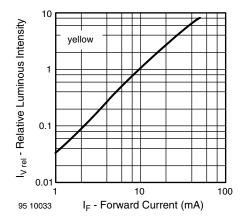


Fig. 7 - Relative Luminous Intensity vs. Forward Current

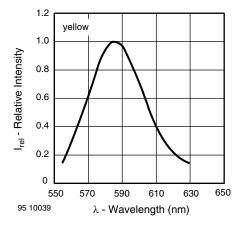
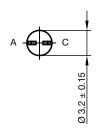
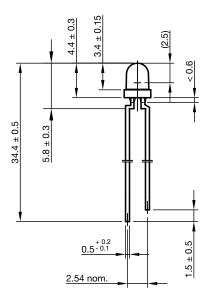


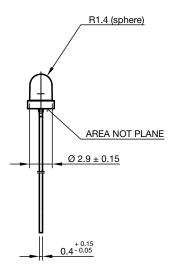
Fig. 8 - Relative Intensity vs. Wavelength

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### **PACKAGE DIMENSIONS** in millimeters







technical drawings according to DIN specifications

Drawing-No.: 6.544-5255.01-4

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