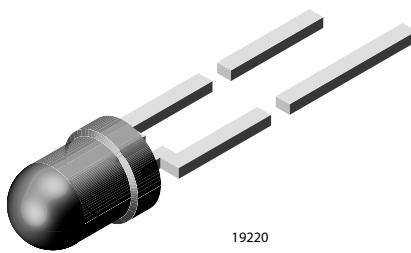


High Efficiency LED in Ø 3 mm Tinted Diffused Package



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.

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
HALOGEN FREE
GREEN
(5-2008)

APPLICATIONS

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

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm
- Product series: standard
- Angle of half intensity: $\pm 30^\circ$

PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I_F (mA)	WAVELENGTH (nm)			at I_F (mA)	FORWARD VOLTAGE (V)			at I_F (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLHY44K1L2	Yellow	7.1	-	18	10	581	-	594	10	-	2.2	2.6	10	GaAsP on GaP

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified) **TLHY44K1L2**

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC forward current		I_F	30	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	I_{FSM}	1	A
Junction temperature		T_j	100	°C
Power dissipation	$T_{amb} \leq 60^\circ\text{C}$	P_V	100	mW
Operating temperature range		T_{amb}	-40 to +100	°C
Storage temperature range		T_{stg}	-55 to +100	°C
Soldering temperature	$t \leq 5 \text{ s}$, 2 mm from body	T_{sd}	260	°C
Thermal resistance junction/ambient		R_{thJA}	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⁾	$I_F = 10 \text{ mA}$	TLHY44K1L2	I_V	7.1	-	18	mcd
Dominant wavelength	$I_F = 10 \text{ mA}$		λ_d	581	-	594	nm
Peak wavelength	$I_F = 10 \text{ mA}$		λ_p	-	585	-	nm
Angle of half intensity	$I_F = 10 \text{ mA}$		ϕ	-	± 30	-	deg
Forward voltage	$I_F = 10 \text{ mA}$		V_F	-	2.2	2.6	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	15	-	V
Junction capacitance	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$		C_j	-	50	-	pF

Note

⁽¹⁾ In one packing unit $I_{Vmin}/I_{Vmax} \leq 0.5$

LUMINOUS INTENSITY CLASSIFICATION

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

Note

- Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of $\pm 11\%$.

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

GROUP	DOM. WAVELENGTH (nm)	
	YELLOW	
	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.

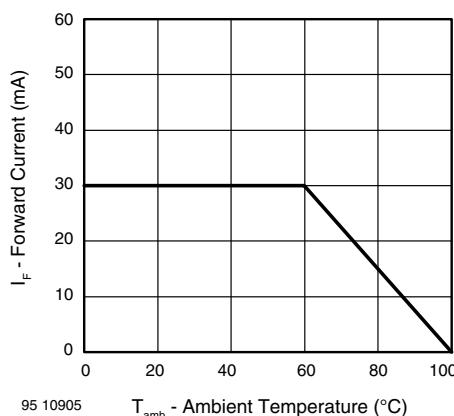
TYPICAL CHARACTERISTICS ($T_{amb} = 25^\circ C$, unless otherwise specified)


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

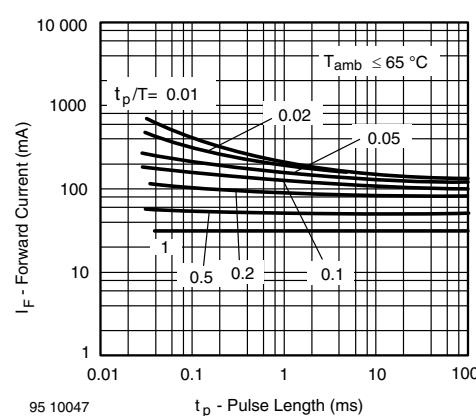


Fig. 2 - Forward Current vs. Pulse Length

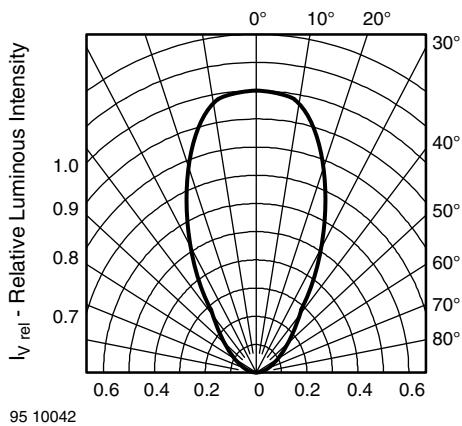


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

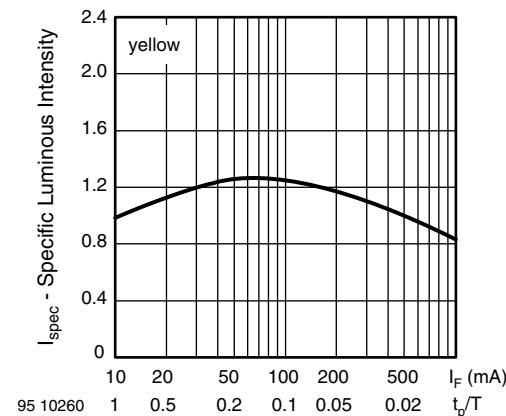


Fig. 6 - Relative Luminous Intensity vs. Forw. Current/Duty Cycle

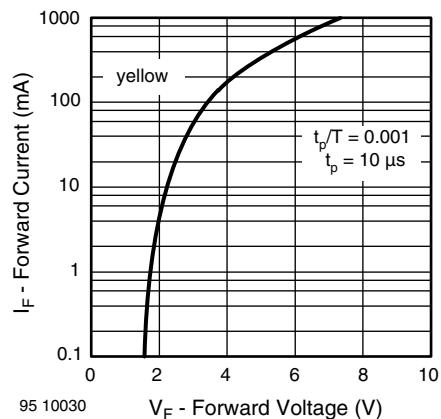


Fig. 4 - Forward Current vs. Forward Voltage

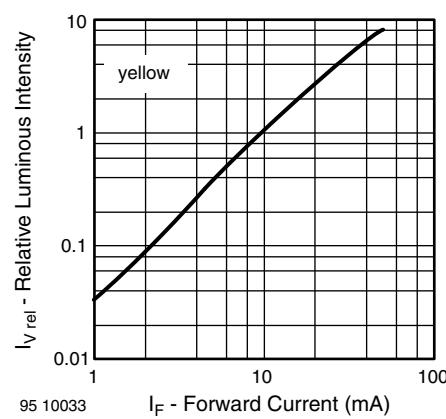


Fig. 7 - Relative Luminous Intensity vs. Forward Current

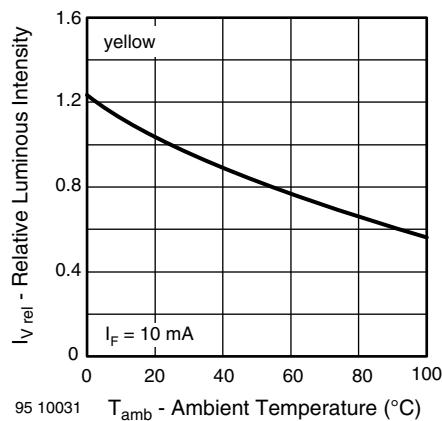


Fig. 5 - Relative Luminous Intensity vs. Ambient Temperature

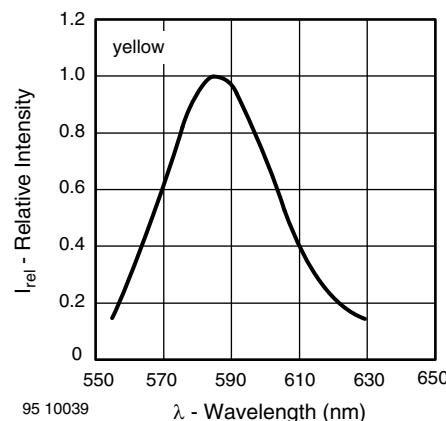
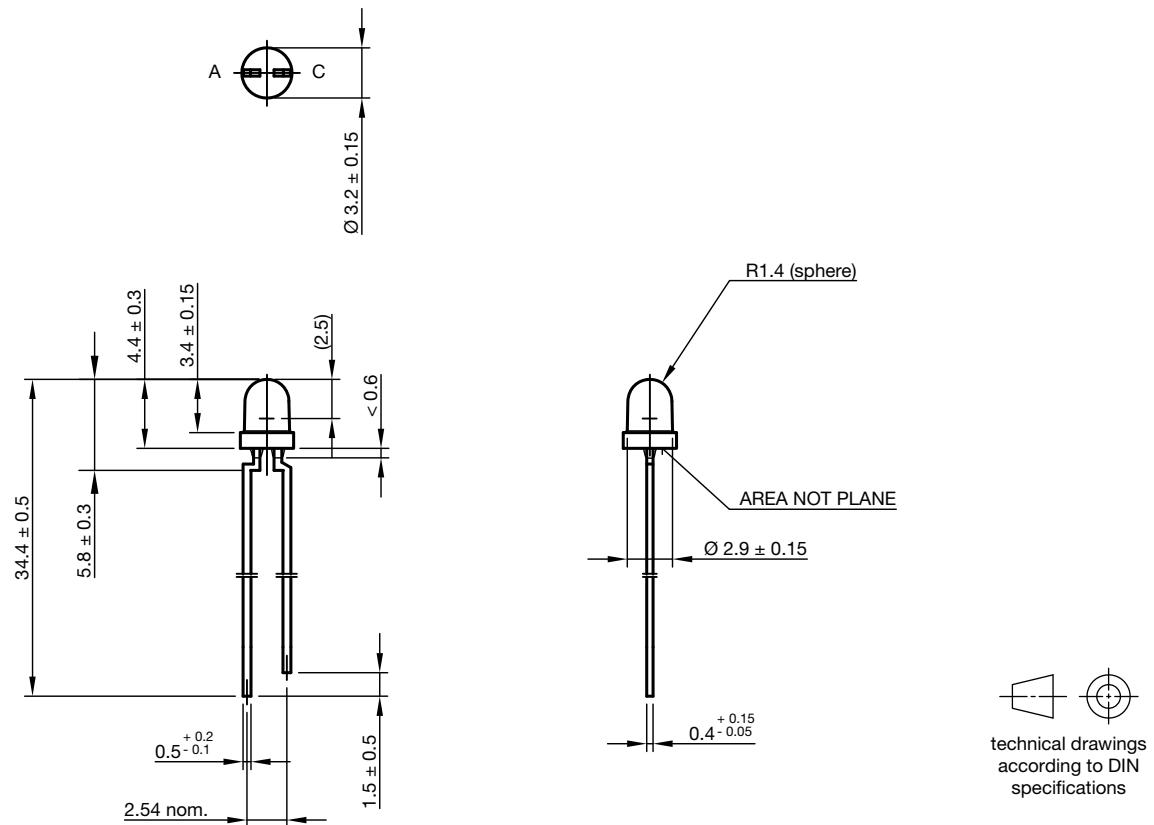


Fig. 8 - Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters


Drawing-No.: 6.544-5255.01-4

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