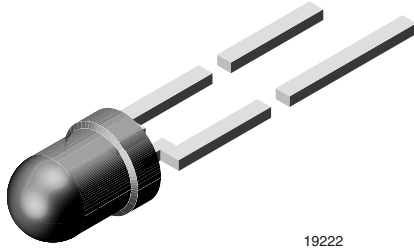




High Intensity LED in Ø 3 mm Tinted Non-Diffused Package



DESCRIPTION

This device has been designed to meet the increasing demand for AlInGaP technology.

It is housed in a 3 mm clear plastic package. The small viewing angle of these devices provides a high brightness.

All packing units are categorized in luminous intensity and color groups. That allows users to assemble with uniform appearance.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
• Package: 3 mm
• Product series: standard
• Angle of half intensity: ± 22°

FEATURES

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



APPLICATIONS

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

Table with 14 columns: PART, COLOR, LUMINOUS INTENSITY (mcd) [MIN, TYP, MAX], at If (mA), WAVELENGTH (nm) [MIN, TYP, MAX], at If (mA), FORWARD VOLTAGE (V) [MIN, TYP, MAX], at If (mA), TECHNOLOGY. Rows include TLHK42T1U2 and TLHK42S1T2.

Table with 5 columns: PARAMETER, TEST CONDITION, SYMBOL, VALUE, UNIT. Title: ABSOLUTE MAXIMUM RATINGS (Tamb = 25 °C, unless otherwise specified) TLHK42T1U2, TLHK42S1T2. Rows include Reverse voltage, DC forward current, Surge forward current, Power dissipation, Junction temperature, Operating temperature range, Storage temperature range, Soldering temperature, Thermal resistance junction/ambient.

OPTICAL AND ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
TLHK42T1U2, TLHK42S1T2, RED							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity <sup>(1)</sup>	$I_F = 20\text{ mA}$	TLHK42T1U2	$I_V$	280	360	710	mcd
		TLHK42S1T2		180	-	450	
Dominant wavelength	$I_F = 20\text{ mA}$		$\lambda_d$	-	630	-	nm
Peak wavelength	$I_F = 20\text{ mA}$		$\lambda_p$	-	643	-	nm
Angle of half intensity	$I_F = 20\text{ mA}$		$\phi$	-	$\pm 22$	-	deg
Forward voltage	$I_F = 20\text{ mA}$		$V_F$	-	1.9	2.6	V
Reverse voltage	$I_R = 10\text{ }\mu\text{A}$		$V_R$	5	-	-	V
Junction capacitance	$V_R = 0, f = 1\text{ MHz}$		$C_j$	-	15	-	pF

**Note**

<sup>(1)</sup> In one packing unit  $I_{Vmax}/I_{Vmin.} \leq 1.6$

LUMINOUS INTENSITY CLASSIFICATION				
GROUP	LIGHT INTENSITY (mcd)			
	STANDARD	OPTIONAL	MIN.	MAX.
S	1	180	224	224
	2	224	280	280
T	1	280	355	355
	2	355	450	450
U	1	450	560	560
	2	560	710	710

**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.

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

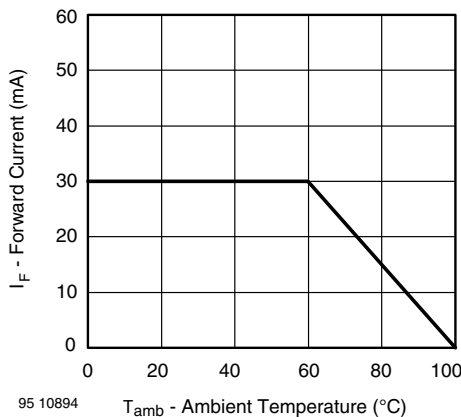


Fig. 1 - Forward Current vs. Ambient Temperature for InGaN

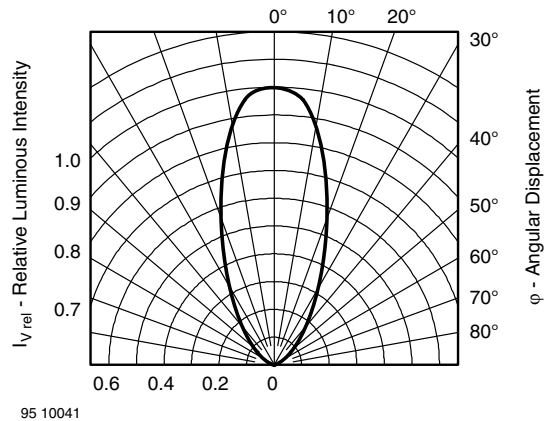


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement



Fig. 3 - Forward Current vs. Forward Voltage

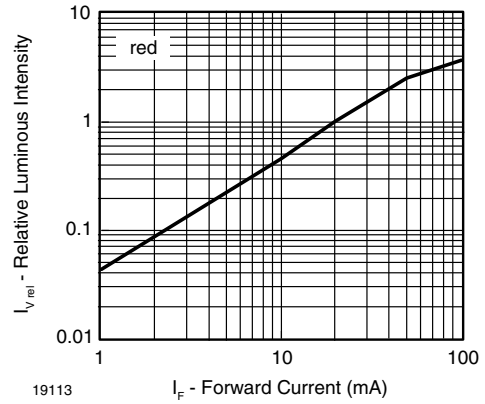


Fig. 5 - Relative Luminous Intensity vs. Forward Current

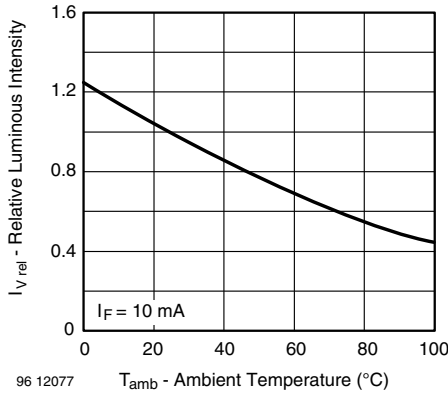


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

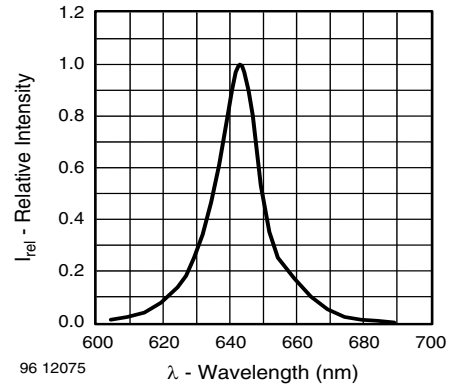


Fig. 6 - Relative Intensity vs. Wavelength





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