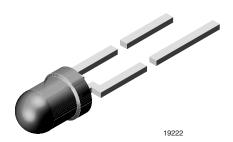


# High Intensity LED in Ø 3 mm Tinted Diffused Package



#### **DESCRIPTION**

This device has been designed to meet the increasing demand for AllnGaP technology general indicating and lighting purposes.

It is housed in a 3 mm diffused plastic package. The wide 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 LEDs with uniform appearance.

#### PRODUCT GROUP AND PACKAGE DATA

Product group: LEDPackage: 3 mm

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

#### **FEATURES**

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

# Pb-free



ROHS
COMPLIANT
HALOGEN
FREE
GREEN

(5-2008)

#### **APPLICATIONS**

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

PARTS TABLE														
PART			LUMINOUS NTENSITY (mcd)		at I <sub>F</sub> (mA)	WAVELENGTH (nm)		at I <sub>F</sub> (mA)	FORWARD VOLTAGE (V)		at I <sub>F</sub> (mA)	TECHNOLOGY		
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLHE44R1S2-26	Yellow	112	-	280	20	583	588	594	20	-	1.9	2.6	20	AllnGaP on GaAs

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) TLHE44R1S2-26						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Reverse voltage		$V_{R}$	5	V		
DC forward current	T <sub>amb</sub> ≤ 60 °C	I <sub>F</sub>	30	mA		
Surge forward current	t <sub>p</sub> ≤ 10 μs	I <sub>FSM</sub>	0.1	А		
Power dissipation	T <sub>amb</sub> ≤ 60 °C	P <sub>V</sub>	80	mW		
Junction temperature		Tj	100	°C		
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 ≤ 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) TLHE44R1S2-26, YELLOW							
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Luminous intensity (1)	I <sub>F</sub> = 20 mA	I <sub>V</sub>	112	-	280	mcd	
Dominant wavelength	I <sub>F</sub> = 20 mA	$\lambda_{d}$	583	588	594	nm	
Peak wavelength	I <sub>F</sub> = 20 mA	λρ	-	590	-	nm	
Angle of half intensity	I <sub>F</sub> = 20 mA	φ	-	± 30	-	deg	
Forward voltage	I <sub>F</sub> = 20 mA	V <sub>F</sub>	-	1.9	2.6	V	
Reverse voltage	I <sub>R</sub> = 10 μA	V <sub>R</sub>	5	-	-	V	
Junction capacitance	V <sub>R</sub> = 0 V, f = 1 MHz	Cj	-	15	-	pF	

#### Note

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

LUMINOUS INTENSITY CLASSIFICATION						
GROUP	LIGHT INTENSITY (mcd)					
STANDARD	OPTIONAL	MIN.	MAX.			
R	1	112	140			
n	2	140	180			
S	1	180	224			
3	2	224	280			

#### Note

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

These type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each reel (there will be no mixing of two groups on each reel). In order to ensure availability, single brightness groups are 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 reel.

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

COLOR CLASSIFICATION						
	DOM. WAVELENGTH (nm) YELLOW					
GROUP						
	MIN.	MAX.				
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)

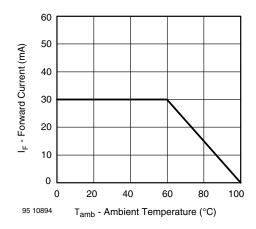


Fig. 1 - Forward Current vs. Ambient Temperature

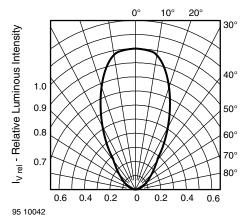


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement



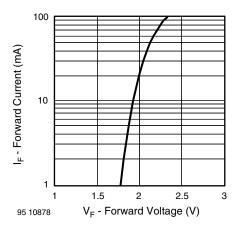


Fig. 3 - Forward Current vs. Forward Voltage

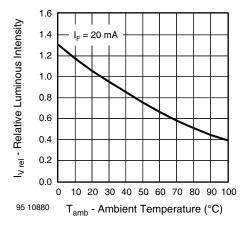


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

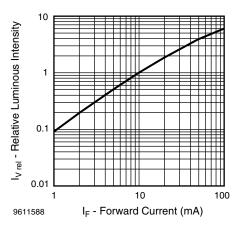


Fig. 5 - Relative Luminous Intensity vs. Forward Current

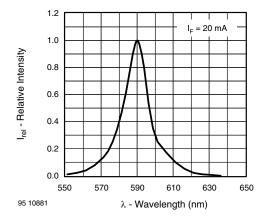
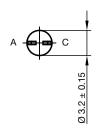
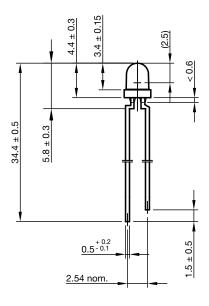


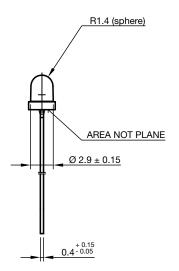
Fig. 6 - Relative Intensity vs. Wavelength



#### **PACKAGE DIMENSIONS** in millimeters







technical drawings according to DIN specifications

Drawing-No.: 6.544-5255.01-4

Issue: 9; 28.07.14



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