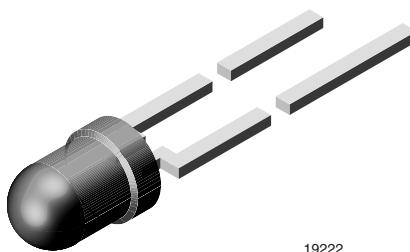


## High Intensity LED in Ø 3 mm Tinted Diffused Package



19222

### DESCRIPTION

This device has been designed to meet the increasing demand for AlInGaP 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: LED
- Package: 3 mm
- Product series: standard
- Angle of half intensity:  $\pm 30^\circ$

### FEATURES

- AlInGaP 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](http://www.vishay.com/doc?99912)



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### APPLICATIONS

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

### 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.		
TLHE44R1S2-26	Yellow	112	-	280	20	583	588	594	20	-	1.9	2.6	20	AlInGaP on GaAs

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

#### TLHE44R1S2-26

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		$V_R$	5	V
DC forward current	$T_{amb} \leq 60^\circ\text{C}$	$I_F$	30	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	$I_{FSM}$	0.1	A
Power dissipation	$T_{amb} \leq 60^\circ\text{C}$	$P_V$	80	mW
Junction temperature		$T_j$	100	°C
Operating temperature range		$T_{amb}$	-40 to +100	°C
Storage temperature range		$T_{stg}$	-55 to +100	°C
Soldering temperature	$t \leq 5 \text{ s}, 2 \text{ mm from body}$	$T_{sd}$	260	°C
Thermal resistance junction/ambient		$R_{thJA}$	400	K/W

**OPTICAL AND ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25 \text{ }^{\circ}\text{C}$ , unless otherwise specified)  
**TLHE44R1S2-26, YELLOW**

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity (1)	$I_F = 20 \text{ mA}$	$I_V$	112	-	280	mcd
Dominant wavelength	$I_F = 20 \text{ mA}$	$\lambda_d$	583	588	594	nm
Peak wavelength	$I_F = 20 \text{ mA}$	$\lambda_p$	-	590	-	nm
Angle of half intensity	$I_F = 20 \text{ mA}$	$\varphi$	-	$\pm 30$	-	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	$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$	$C_j$	-	15	-	pF

**Note**

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

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

**Note**

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

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			
GROUP	DOM. WAVELENGTH (nm)		
	YELLOW		MIN.
		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.

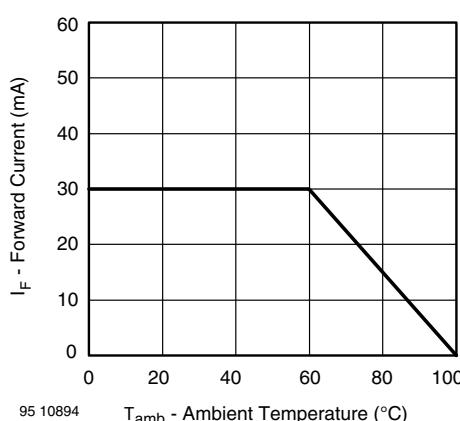
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25 \text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Ambient Temperature

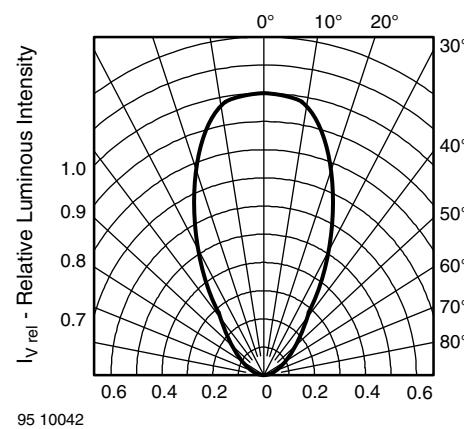


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

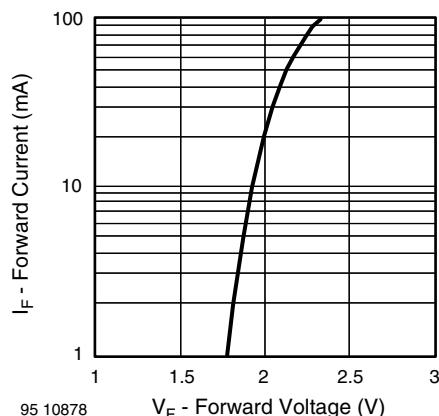


Fig. 3 - Forward Current vs. Forward Voltage

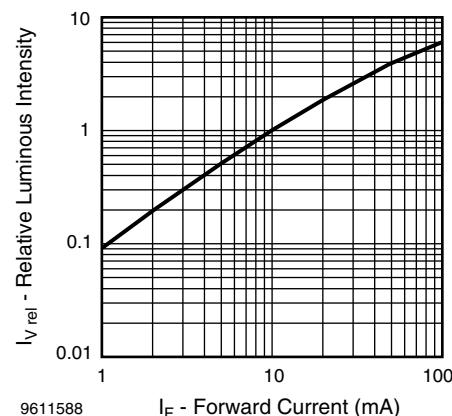


Fig. 5 - Relative Luminous Intensity vs. Forward Current

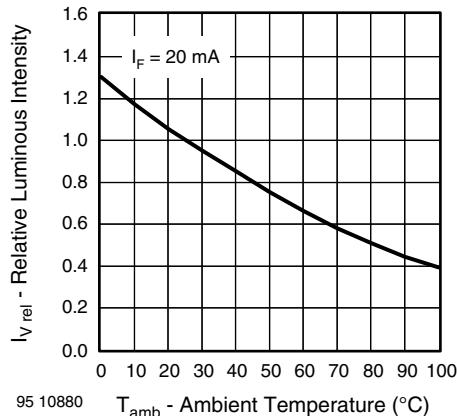


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

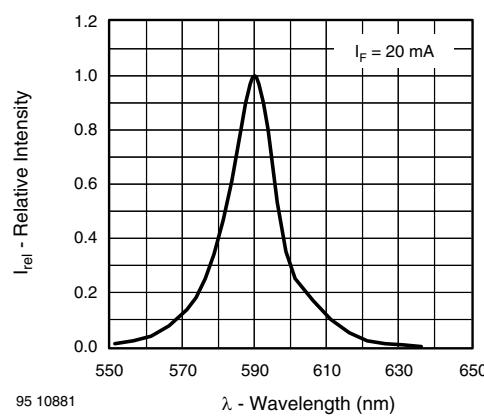
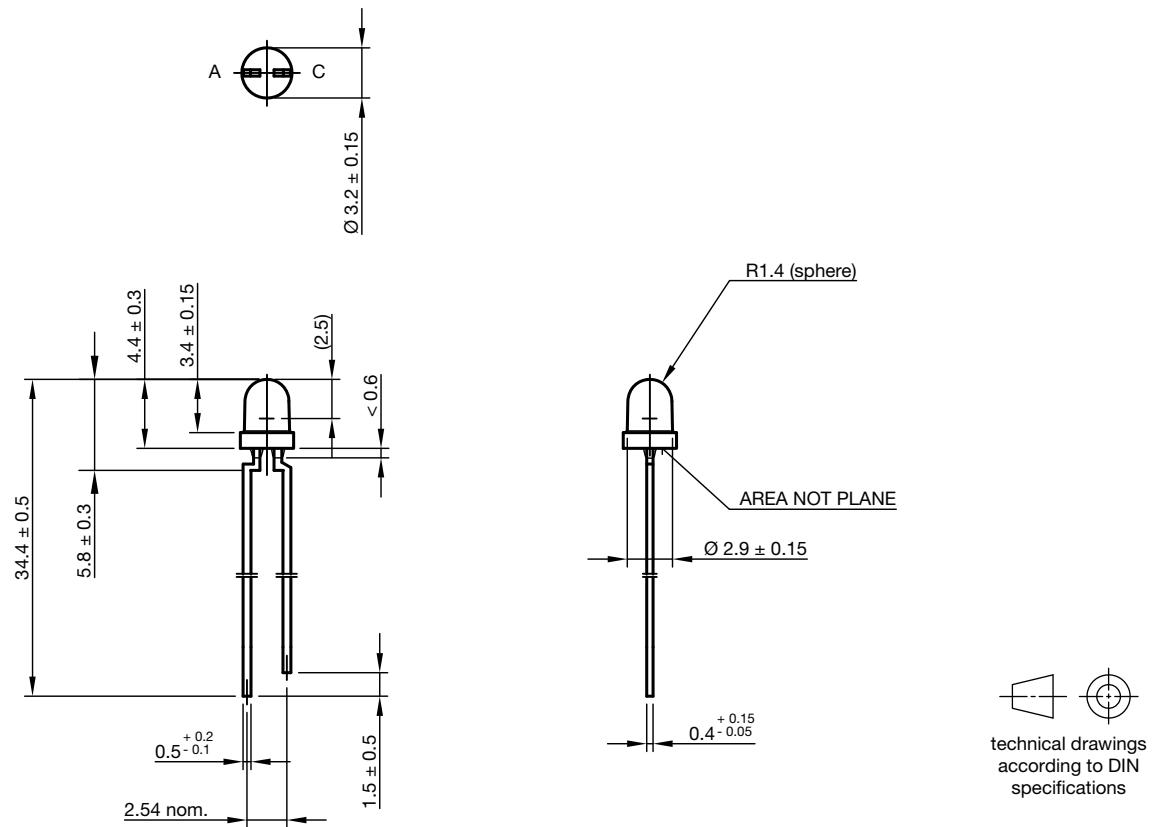


Fig. 6 - Relative Intensity vs. Wavelength

**PACKAGE DIMENSIONS** in millimeters



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