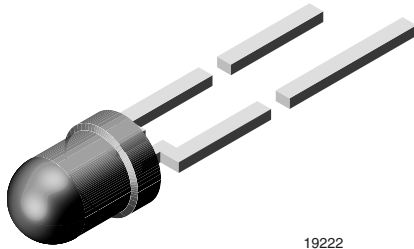




## High Intensity LED in Ø 3 mm Tinted Non-Diffused Package



19222

### DESCRIPTION

This device has been designed to meet the increasing demand for AllnGaP 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:  $\pm 22^\circ$

### FEATURES

- AllnGaP 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](http://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

### PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (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.		
TLHF42U1V2-35	Soft orange	450	700	1120	20	602	605	609	20	-	2	2.6	20	AllnGaP on GaAs

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

#### TLHF42U1V2-35

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V <sub>R</sub>	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	A
Power dissipation	T <sub>amb</sub> ≤ 60 °C	P <sub>V</sub>	80	mW
Junction temperature		T <sub>J</sub>	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 to ambient		R <sub>thJA</sub>	400	K/W



OPTICAL AND ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
TLHF42U1V2-35, SOFT ORANGE						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity <sup>(1)</sup>	I <sub>F</sub> = 20 mA	I <sub>V</sub>	450	700	1120	mcd
Dominant wavelength	I <sub>F</sub> = 20 mA	λ <sub>d</sub>	602	605	609	nm
Peak wavelength	I <sub>F</sub> = 20 mA	λ <sub>p</sub>	-	610	-	nm
Angle of half intensity	I <sub>F</sub> = 20 mA	φ	-	± 22	-	°
Forward voltage	I <sub>F</sub> = 20 mA	V <sub>F</sub>	-	2	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	C <sub>j</sub>	-	15	-	pF

**Note**

<sup>(1)</sup> In one packing unit I<sub>Vmax</sub>/I<sub>Vmin</sub> ≤ 1.6

LUMINOUS INTENSITY CLASSIFICATION			
GROUP	LIGHT INTENSITY (mcd)		
STANDARD	OPTIONAL	MIN.	MAX.
U	1	450	560
	2	560	710
V	1	710	900
	2	900	1120

**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		
GROUP	SOFT ORANGE	
	DOM. WAVELENGTH (nm)	
	MIN.	MAX.
3	602	605
4	604	607
5	606	609

**Note**

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

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

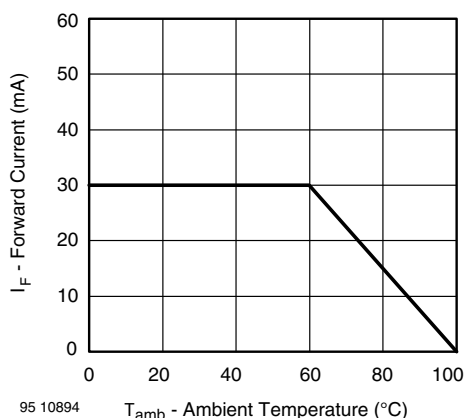


Fig. 1 - Forward Current vs. Ambient Temperature for InGaN

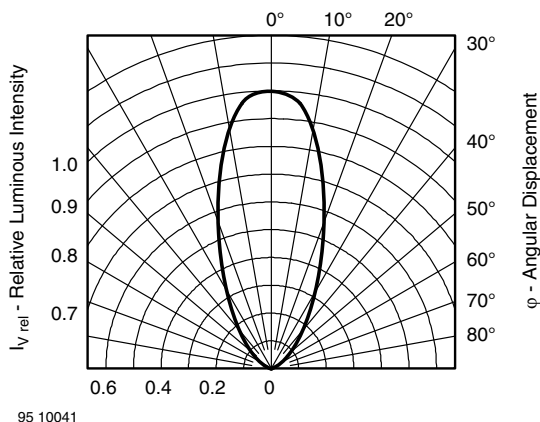


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

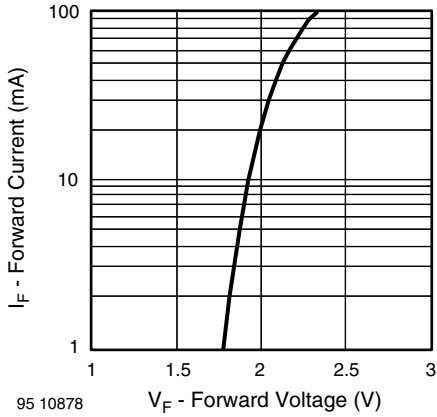


Fig. 3 - Forward Current vs. Forward Voltage

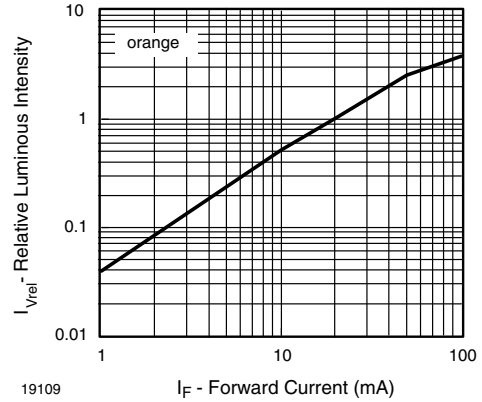


Fig. 6 - Relative Luminous Intensity vs. Forward Current

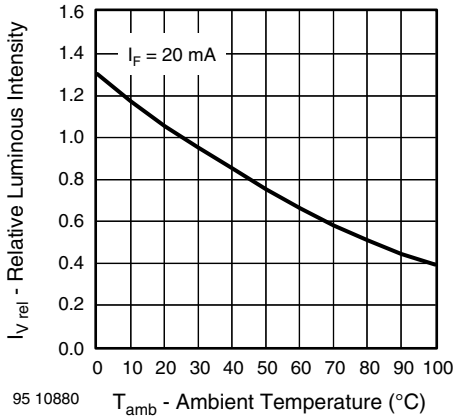


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

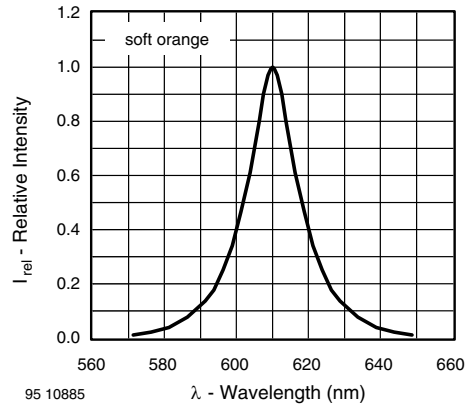


Fig. 7 - Relative Intensity vs. Wavelength

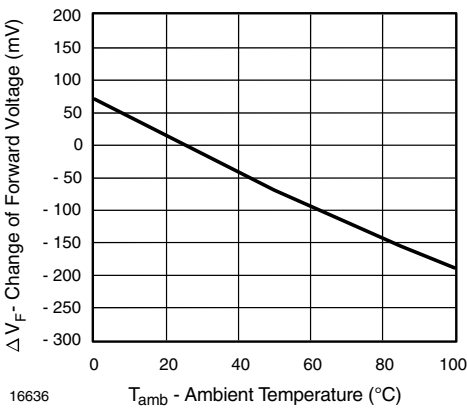
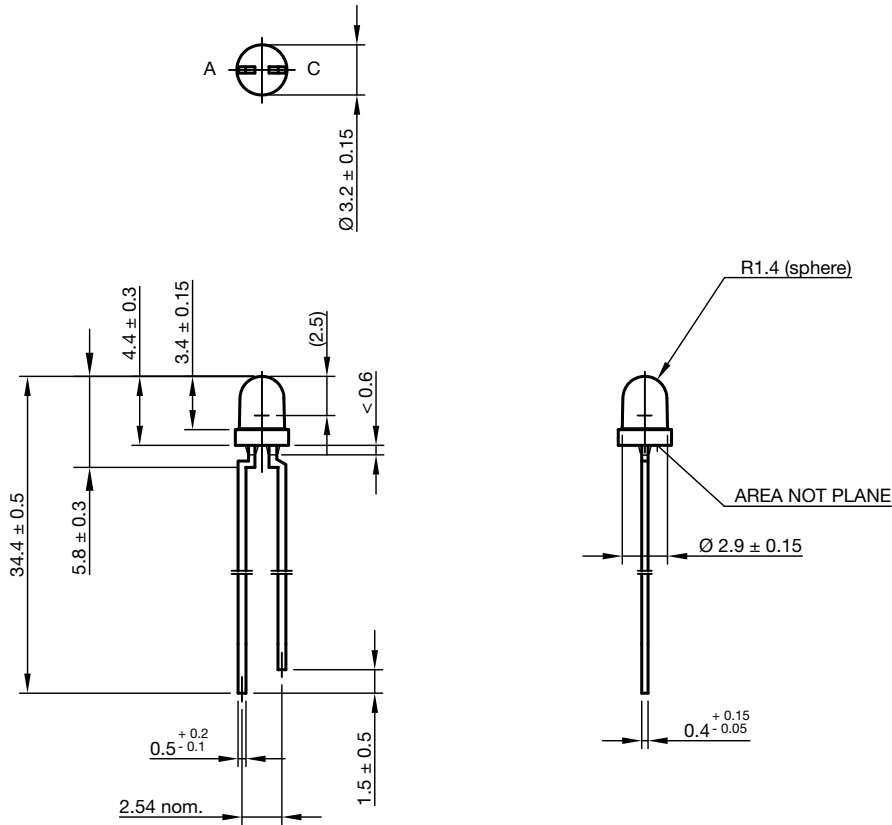
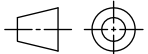


Fig. 5 - Change of Forward Voltage vs. Ambient Temperature



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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