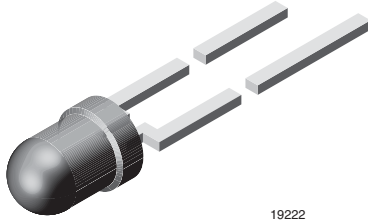


High Intensity LED in Ø 3 mm Tinted Non-Diffused Package



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 LEDs 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
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



APPLICATIONS

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

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLHF42U1V2-35	Soft Orange, $I_V = (450 \text{ to } 1120) \text{ mcd}$	AllnGaP on GaAs

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

TLHF42U1V2-35

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	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 40 to + 100	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 55 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 5 \text{ s}$, 2 mm from body	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient		R_{thJA}	400	K/W

** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

OPTICAL AND ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)
TLHF42U1V2-35, SOFT ORANGE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ¹⁾	$I_F = 20\text{ mA}$	I_V	450	700	1120	mcd
Dominant wavelength	$I_F = 20\text{ mA}$	λ_d	602	605	609	nm
Peak wavelength	$I_F = 20\text{ mA}$	λ_p		610		nm
Angle of half intensity	$I_F = 20\text{ mA}$	ϕ		± 22		deg
Forward voltage	$I_F = 20\text{ mA}$	V_F		2	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:

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

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 $\pm 11\%$.

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

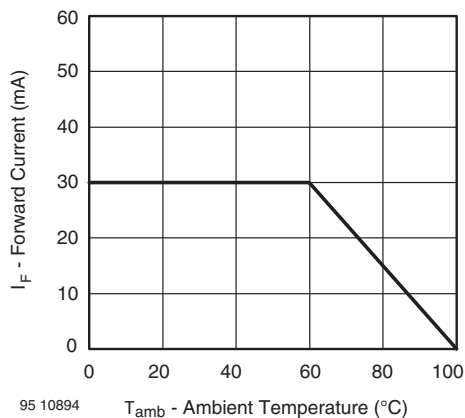


Figure 1. Forward Current vs. Ambient Temperature

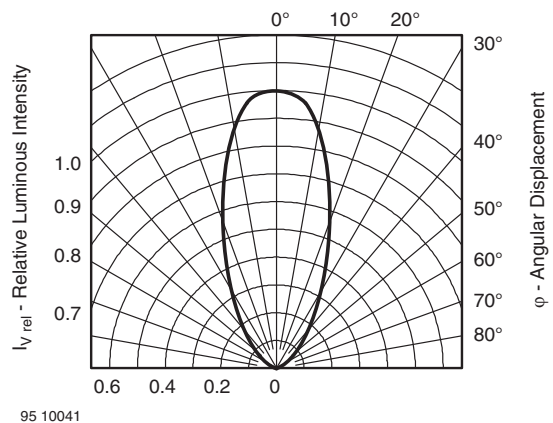


Figure 2. Rel. Luminous Intensity vs. Angular Displacement

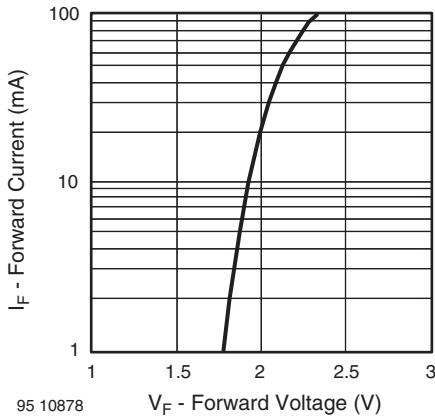


Figure 3. Forward Current vs. Forward Voltage

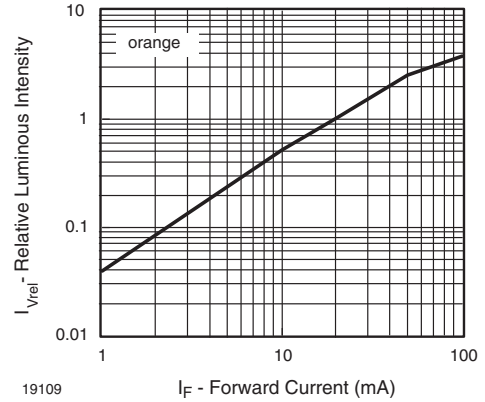


Figure 6. Relative Luminous Intensity vs. Forward Current

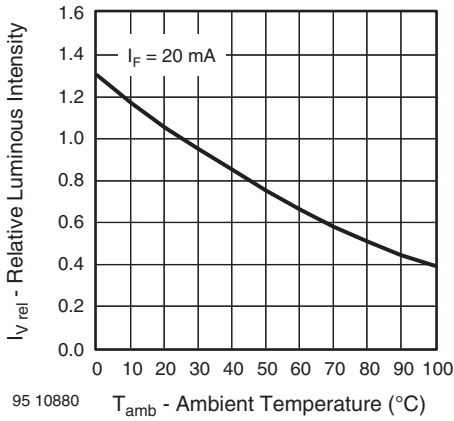


Figure 4. Rel. Luminous Intensity vs. Ambient Temperature

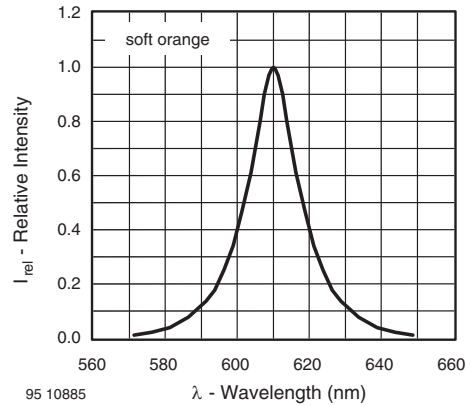


Figure 7. Relative Intensity vs. Wavelength

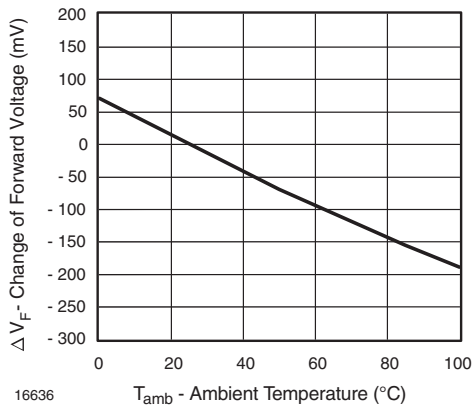
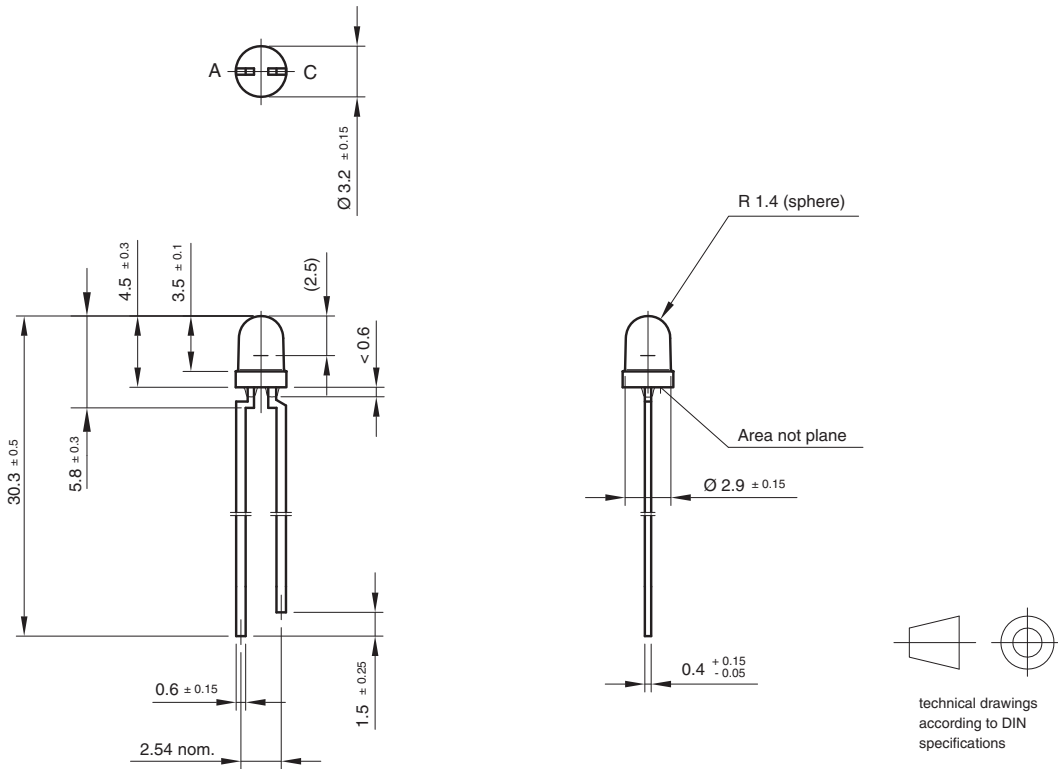


Figure 5. Change of Forward Voltage vs. Ambient Temperature

PACKAGE DIMENSIONS in millimeters



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