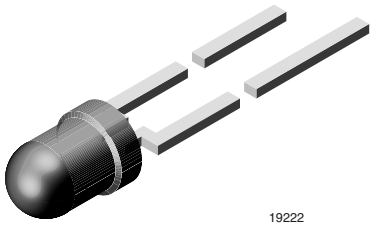
High Intensity LED in Ø 3 mm Clear Package



19222

FEATURES

- AlInGaP technology
- Standard Ø 3 mm (T-1) package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Very small 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

e3

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

DESCRIPTION

These device series 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 LEDs with uniform appearance.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm
- Product series: standard
- Angle of half intensity: ± 16°

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.		
TLHF4900	Soft orange	63	300	-	10	598	605	611	10	-	1.9	2.6	20	AlInGaP on GaAs
TLHF4901	Soft orange	320	-	1150	10	602	-	609	10	-	1.9	2.6	20	AlInGaP on GaAs

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C unless otherwise specified)
TLHF4900, TLHF4901

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	5	V
DC forward current	$T_{amb} \leq 60$ °C	I_F	30	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	0.1	A
Power dissipation	$T_{amb} \leq 60$ °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 ≤ 5 s, 2 mm from body	T_{sd}	260	°C
Thermal resistance junction/ambient		R_{thJA}	400	K/W

For technical questions, contact: LED@vishay.com

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OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLHF4900, TLHF4901, SOFT ORANGE

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity (1)	I_F = 10 mA	TLHF4900	I_V	63	300	-	mcd
	I_F = 10 mA	TLHF4901	I_V	320	-	1150	mcd
Dominant wavelength	I_F = 10 mA	TLHF4900	λ_d	598	605	611	nm
	I_F = 10 mA	TLHF4901	λ_d	602	-	609	nm
Peak wavelength	I_F = 10 mA		λ_p	-	610	-	nm
Angle of half intensity	I_F = 10 mA		φ	-	± 16	-	deg
Forward voltage	I_F = 20 mA		V_F	-	1.9	2.6	V
Reverse voltage	I_R = 10 µA		V_R	5	-	-	V
Junction capacitance	V_R = 0 V, f = 1 MHz		C_j	-	15	-	pF

Note

(1) In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$.

LUMINOUS INTENSITY CLASSIFICATION

GROUP	LIGHT INTENSITY (mcd)	
STANDARD	MIN.	MAX.
V	63	125
W	100	200
X	130	260
Y	180	360
Z	240	480
AA	320	640
BB	430	860
CC	575	1150
DD	750	1500
EE	1000	2000

Note

- Luminous intensity is tested at a current pulse duration of 25 ms. 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	YELLLOW	
	DOM. WAVELENGTH (nm)	
	MIN.	MAX.
1	598	601
2	600	603
3	602	605
4	604	607
5	606	609
6	608	611

Note

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

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TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

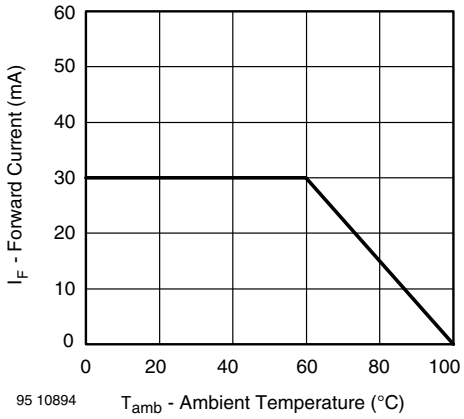


Fig. 1 - Forward Current vs. Ambient Temperature for InGaN

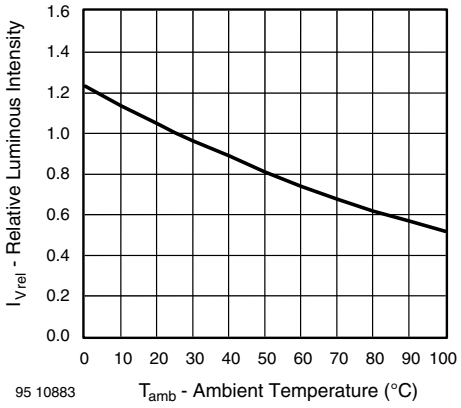


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

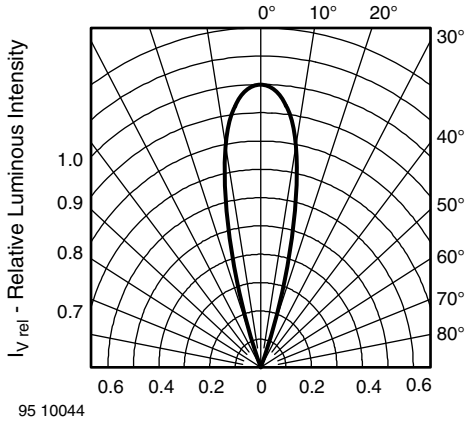


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

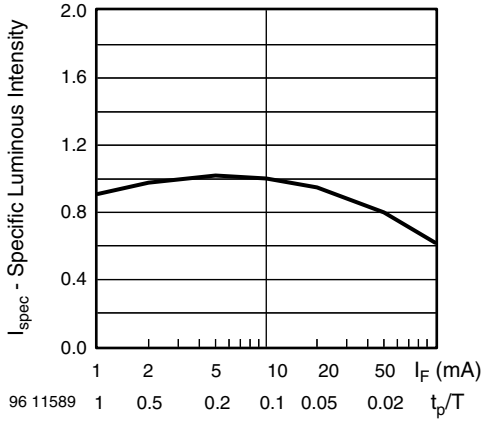


Fig. 5 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

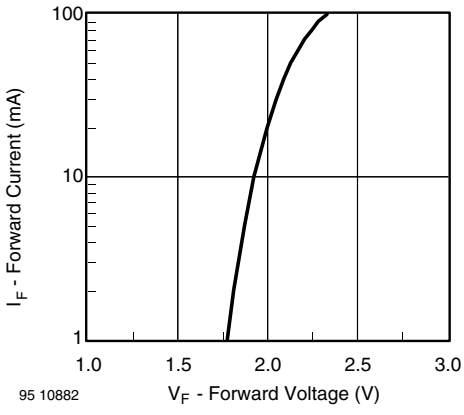


Fig. 3 - Forward Current vs. Forward Voltage

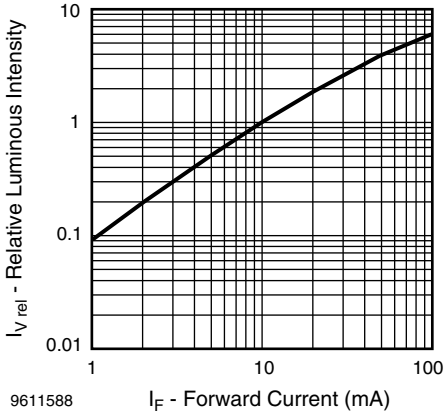


Fig. 6 - Relative Luminous Intensity vs. Forward Current

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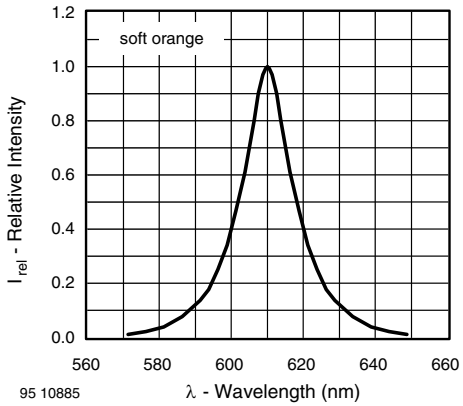
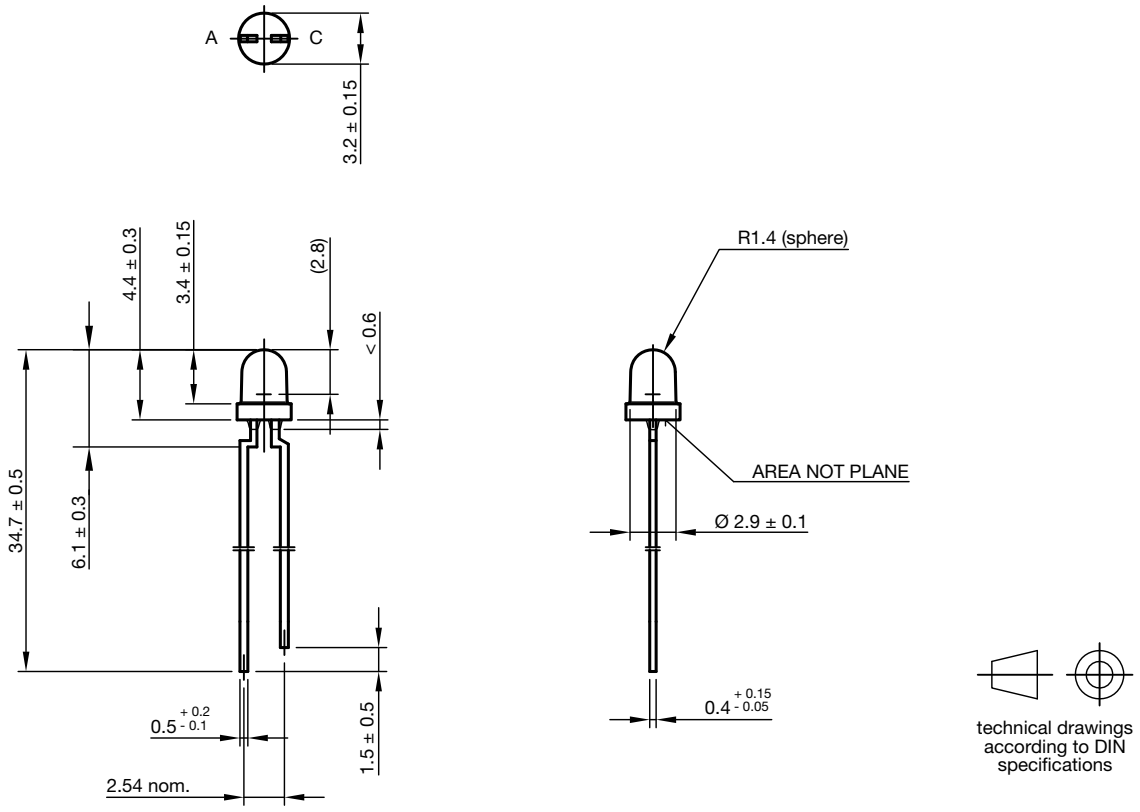


Fig. 7 - Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5255.02-4
Issue: 5; 28.07.14

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