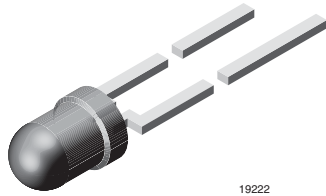


High Intensity LED in Ø 3 mm Tinted Clear Package



DESCRIPTION

This series is housed in a 3 mm tinted, clear plastic package. The wide viewing angle of these devices provides a high brightness across a large field of view. 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

- 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
- ESD-withstand voltage: up to 2 kV HBM according to JESD22-A114-B
- 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
TLHP42J2L1	Pure green, I_V (5.6 to 14) mcd	GaP on GaP

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified) TLHP42J2L1

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	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}	1	A
Power dissipation	$T_{amb} \leq 60^\circ\text{C}$	P_V	100	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)							
TLHP42J2L1, PURE GREEN							
PARAMETER	TEST CONDITION	PARTS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ¹⁾	$I_F = 10\text{ mA}$	TLHP42J2L1	I_V	5.6		14	mcd
Dominant wavelength	$I_F = 10\text{ mA}$		λ_d	555		565	nm
Peak wavelength	$I_F = 10\text{ mA}$		λ_p		555		nm
Angle of half intensity	$I_F = 10\text{ mA}$		ϕ		± 22		deg
Forward voltage	$I_F = 10\text{ mA}$		V_F		2.2	2.6	V
Reverse current	$V_R = 6\text{ V}$		I_R			10	μA
Junction capacitance	$V_R = 0, f = 1\text{ MHz}$		C_j		50		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.
J	2	5.6	7.1
	1	7.1	9
K	2	9	11.2
	1	11.2	14

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.

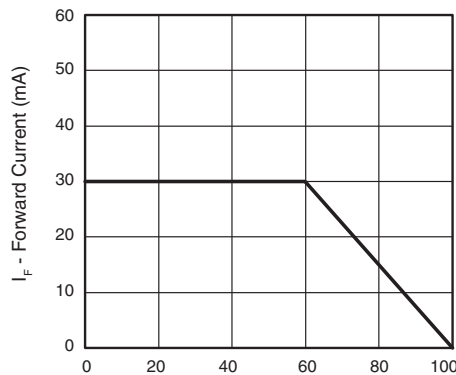
In order to ensure availability, single wavelength groups will not be orderable.

COLOR CLASSIFICATION			
GROUP	PURE GREEN		
	DOM. WAVELENGTH (nm)		MIN. MAX.
	MIN.	MAX.	
0	555	559	
1	558	561	
2	560	563	
3	562	565	

Note:

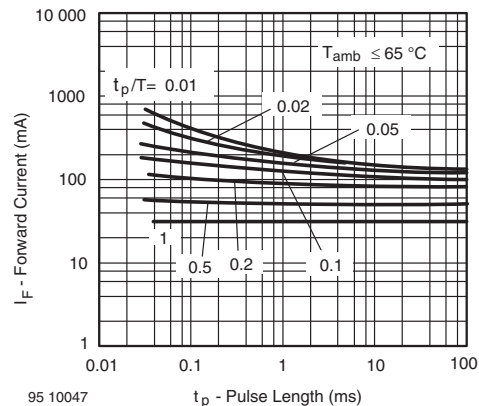
Wavelengths are tested at a current pulse duration of 25 ms.

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



95 10905 T_{amb} - Ambient Temperature ($^{\circ}\text{C}$)

Figure 1. Forward Current vs. Ambient Temperature



95 10047 t_p - Pulse Length (ms)

Figure 2. Forward Current vs. Pulse Length

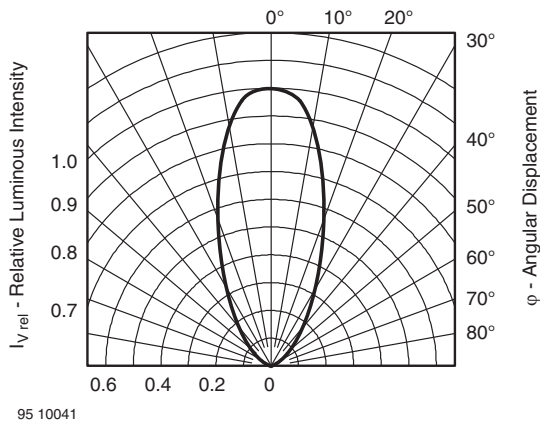


Figure 3. Rel. Luminous Intensity vs. Angular Displacement

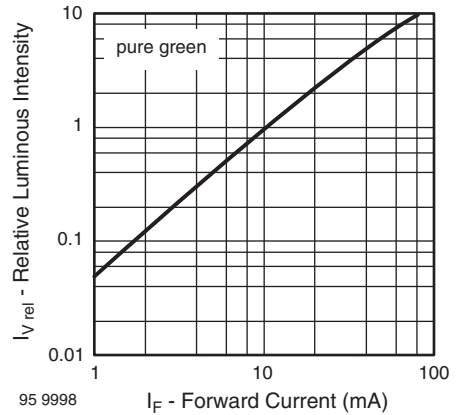


Figure 6. Relative Luminous Intensity vs. Forward Current

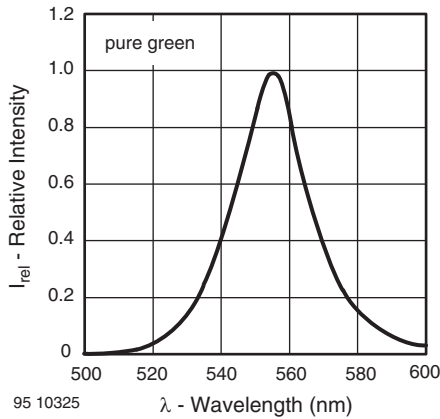


Figure 4. Relative Intensity vs. Wavelength

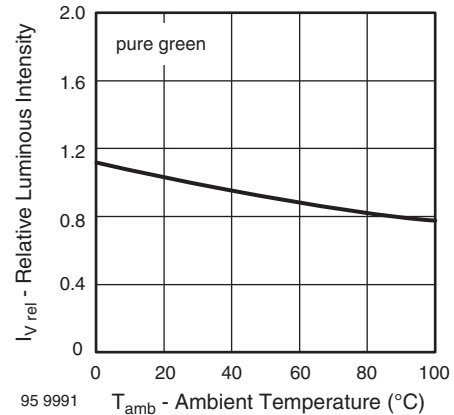


Figure 7. Rel. Luminous Intensity vs. Ambient Temperature

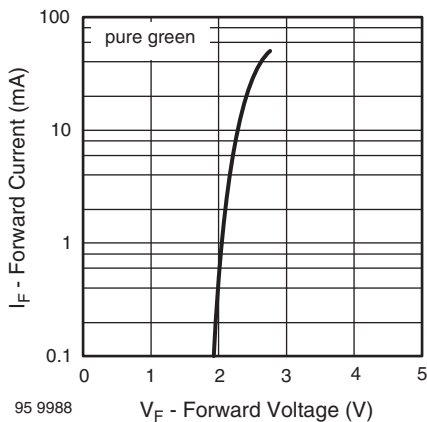


Figure 5. Forward Current vs. Forward Voltage

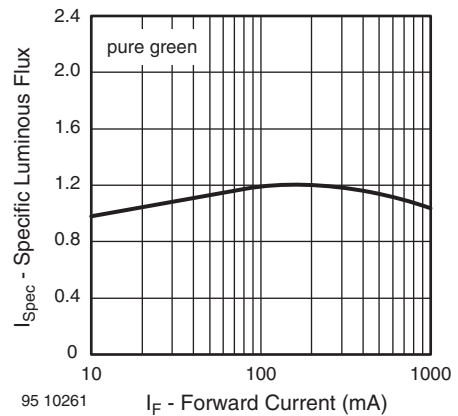


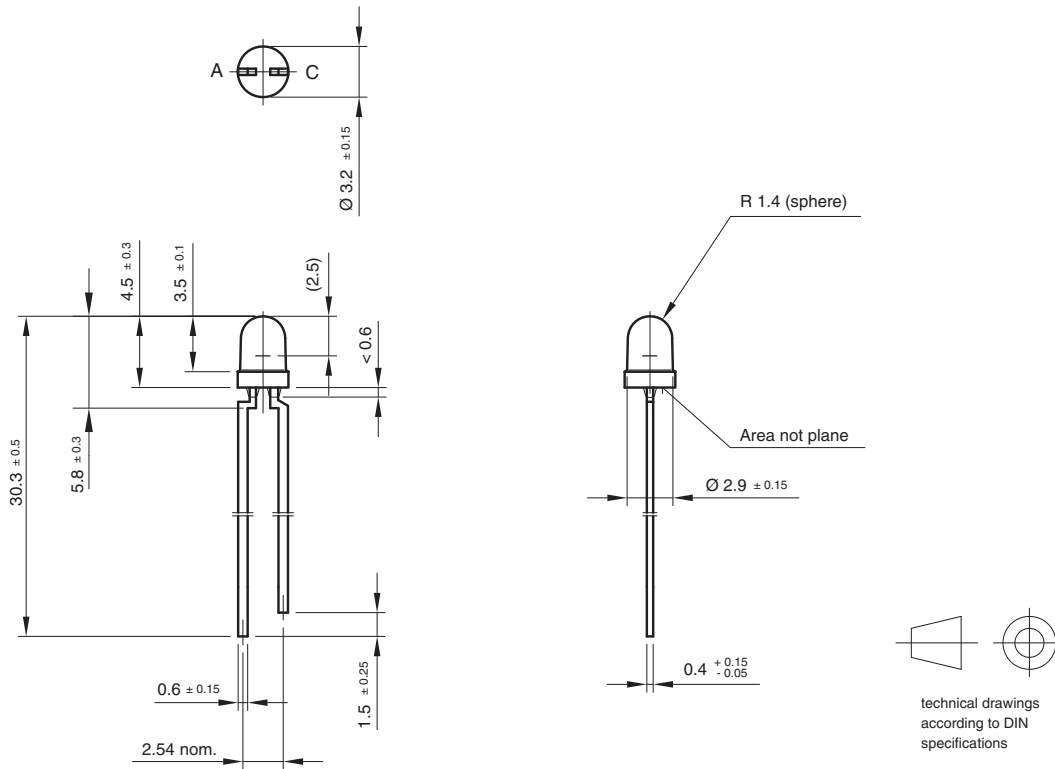
Figure 8. Specific Luminous Flux vs. Forward Current

TLHP42J2L1

Vishay Semiconductors



PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5255.01-4
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95 10913



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