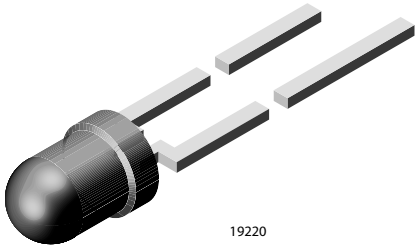
High Efficiency LED in Ø 3 mm Tinted Undiffused Package



FEATURES

- Standard T-1 package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Wide viewing angle
- Luminous intensity categorized
- 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

The TLHO42M1N2 was developed for standard applications like general indicating and lighting purposes.

It 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.

The LED is categorized in luminous intensity groups and additionally in wavelength groups.

That allows users to assemble LEDs with uniform appearance.

APPLICATIONS

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

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm
- Product series: standard
- Angle of half intensity: ± 22°

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.		
TLHO42M1N2	Soft orange	18	-	45	10	598	-	611	10	-	2.2	2.6	10	GaAsP on GaP

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C unless otherwise specified)
TLHO42M1N2

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage [1]		V_R	6	V
DC forward current		I_F	30	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	1	A
Power dissipation		P_V	100	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

Note

[1] Driving the LED in reverse direction is suitable for a short term application

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLHO42M1N2, SOFT ORANGE

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity	I_F = 10 mA	TLHO42M1N2	I_V	18	-	45	mcd
Dominant wavelength	I_F = 10 mA		λ_d	598	-	611	nm
Peak wavelength	I_F = 10 mA		λ_p	-	605	-	nm
Angle of half intensity	I_F = 10 mA		φ	-	± 22	-	deg
Forward voltage	I_F = 10 mA		V_F	-	2.2	2.6	V
Reverse current	V_R = 6 V		I_R	-	-	10	µA
Junction capacitance	V_R = 0 V, f = 1 MHz		C_j	-	50	-	pF

LUMINOUS INTENSITY CLASSIFICATION

GROUP	LIGHT INTENSITY (mcd)		
STANDARD	OPTIONAL	MIN.	MAX.
M	1	18	22.4
	2	22.4	28
N	1	28	35.5
	2	35.5	45

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 reel (there will be no mixing of two groups on each reel).
  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 reel.
  In order to ensure availability, single wavelength groups will not be orderable.

COLOR CLASSIFICATION

GROUP	SOFT ORANGE	
	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.

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

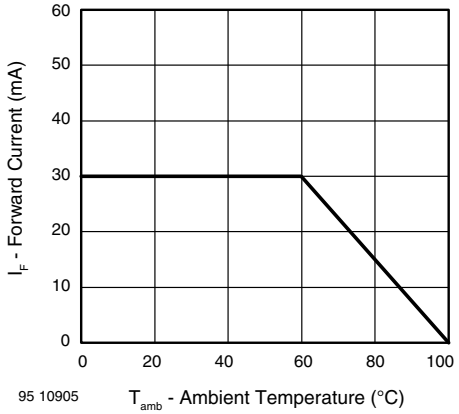


Fig. 1 - Forward Current vs. Ambient Temperature

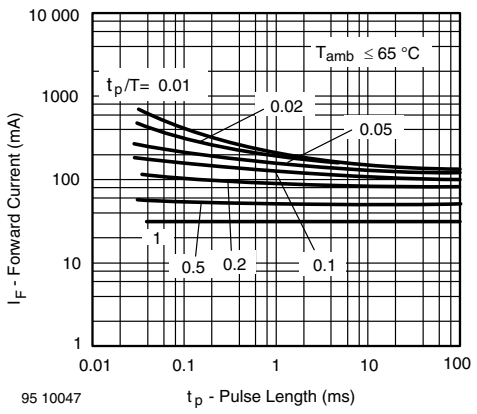


Fig. 2 - Forward Current vs. Pulse Length

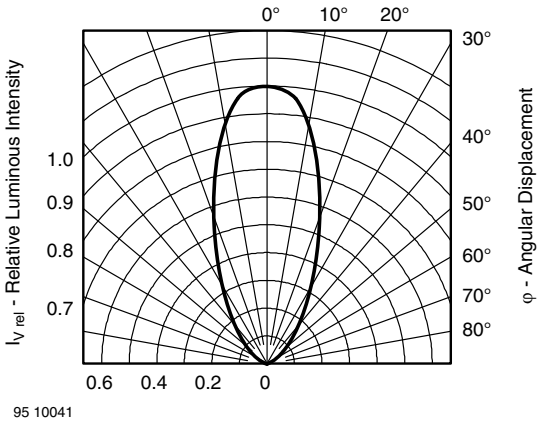


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

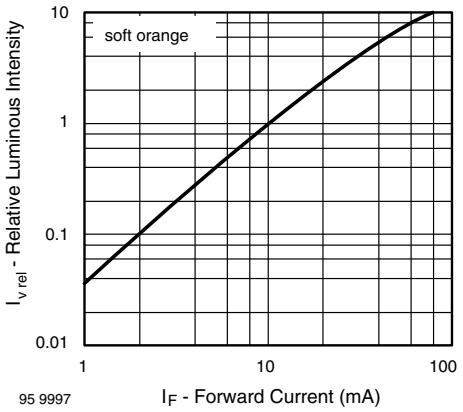


Fig. 6 - Relative Luminous Intensity vs. Forward Current

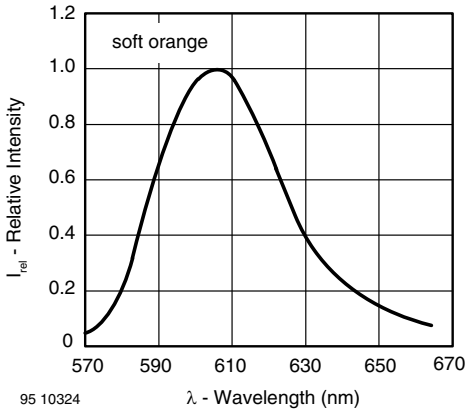


Fig. 4 - Relative Intensity vs. Wavelength

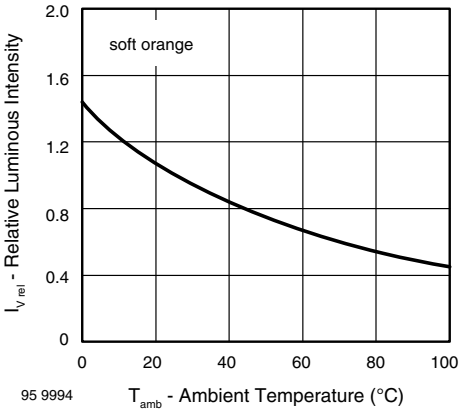


Fig. 7 - Relative Luminous Intensity vs. Ambient Temperature

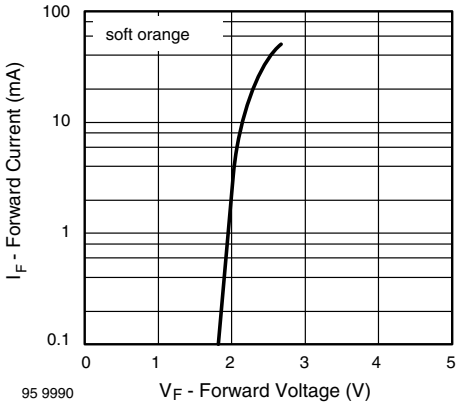


Fig. 5 - Forward Current vs. Forward Voltage

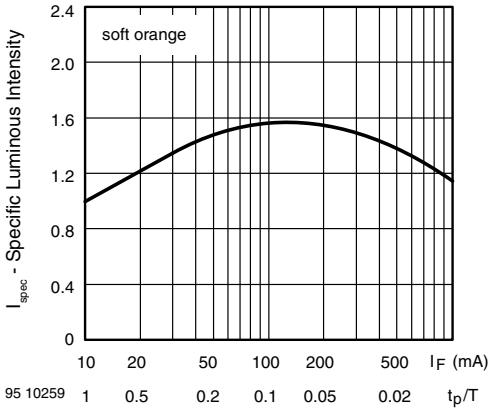
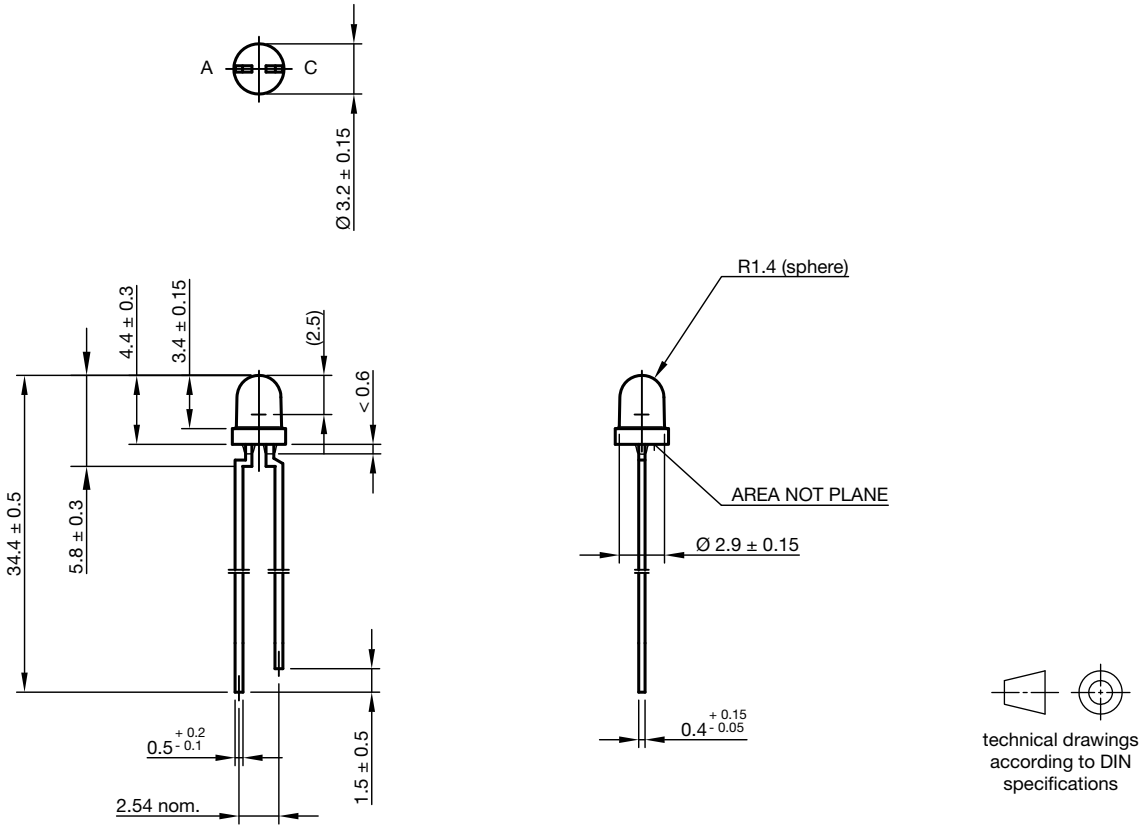


Fig. 8 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

PACKAGE DIMENSIONS in millimeters



Drawing-No.: 6.544-5255.01-4
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