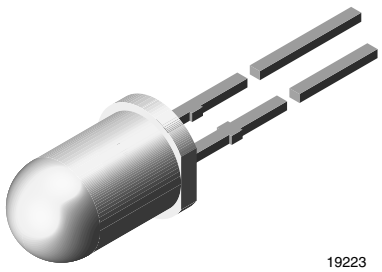
High Efficiency LED, Ø 5 mm Tinted Diffused Package



19223

FEATURES

- Standard T-1¾ package
- Wide viewing angle
- Luminous intensity and wavelength categorized
- TLHG542... with stand-offs, TLHG642... without stand-offs
- 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 tinted diffused 5 mm green LED series was developed for standard applications like general indicating and lighting purposes. It is using AlInGaP chip technology and includes the standard versions TLHG542. with stand-off and TLHG642... without stand-off. The wide viewing angle of these devices provides a high on-off contrast.

All LEDs are categorized in luminous intensity 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: 5 mm
- Product series: standard
- Angle of half intensity: ± 25°

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.		
TLHG5420	Green	6.3	20	-	10	562	570	575	10	-	2.1	2.4	20	AlInGaP on GaAs
TLHG5420-ASZ	Green	6.3	20	-	10	562	570	575	10	-	2.1	2.4	20	AlInGaP on GaAs
TLHG5420-KSZ	Green	6.3	20	-	10	562	570	575	10	-	2.1	2.4	20	AlInGaP on GaAs
TLHG6420	Green	6.3	20	-	10	562	570	575	10	-	2.1	2.4	20	AlInGaP on GaAs
TLHG6420-ASZ	Green	6.3	20	-	10	562	570	575	10	-	2.1	2.4	20	AlInGaP on GaAs
TLHG6420-CSZ	Green	6.3	20	-	10	562	570	575	10	-	2.1	2.4	20	AlInGaP on GaAs

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ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)
TLHG542., TLHG642.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	5	V
DC forward current		I_F	25	mA
Surge forward current	(Duty cycle 1/10 at 1 kHz)	I_{FSM}	60	mA
Power dissipation		P_V	60	mW
Junction temperature		T_j	100	°C
Operating temperature range		T_{amb}	-40 to +85	°C
Storage temperature range		T_{stg}	-40 to +100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T_{sd}	260	°C
Thermal resistance junction to solder point		R_{thJS}	325	K/W

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLHG542., TLHG642., GREEN

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity (1)	I_F = 10 mA	TLHG5420.	I_V	6.3	20	-	mcd
		TLHG6420.	I_V	6.3	20	-	mcd
Dominant wavelength	I_F = 10 mA		λ_d	562	570	575	nm
Peak wavelength	I_F = 10 mA		λ_p	-	571	-	nm
Angle of half intensity	I_F = 10 mA		φ	-	± 25	-	°
Forward voltage (2)	I_F = 20 mA		V_F	-	2.1	2.4	V
Reverse current	V_R = 5 V		I_R	-	-	10	µA
Junction capacitance	V_R = 0 V, f = 1 MHz		C_j	-	50	-	pF

Notes

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

(2) Measurement uncertainty of forward voltage: ± 0.1 V

LUMINOUS INTENSITY CLASSIFICATION

GROUP	LUMINOUS INTENSITY (mcd)	
STANDARD	MIN.	MAX.
Q	6.3	12.5
R	10	20
S	16	32
T	25	50
U	40	80
V	63	125

Note

- Luminous flux is tested at a current pulse duration of 25 ms and an accuracy of ± 10 %.
  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 in 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	DOM. WAVELENGTH (nm)	
	GREEN	
	MIN.	MAX.
3	562	565
4	564	567
5	566	569
6	568	571
7	570	573
8	572	575

Note

- Wavelengths are tested at a current pulse duration of 25 ms and an accuracy of 1 nm

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

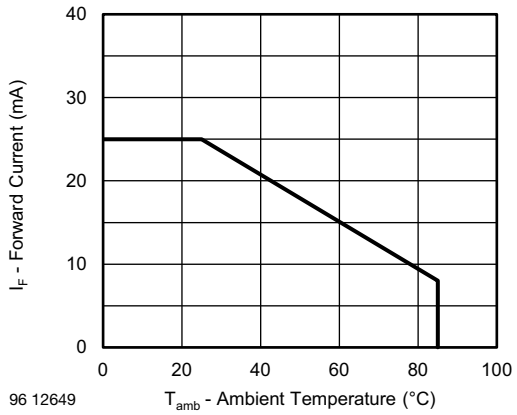


Fig. 1 - Forward Current vs. Ambient Temperature

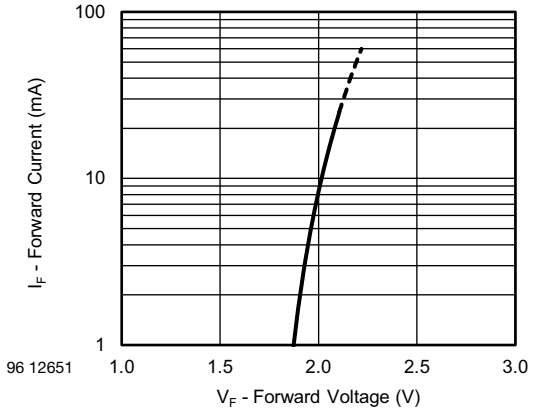


Fig. 4 - Forward Current vs. Forward Voltage

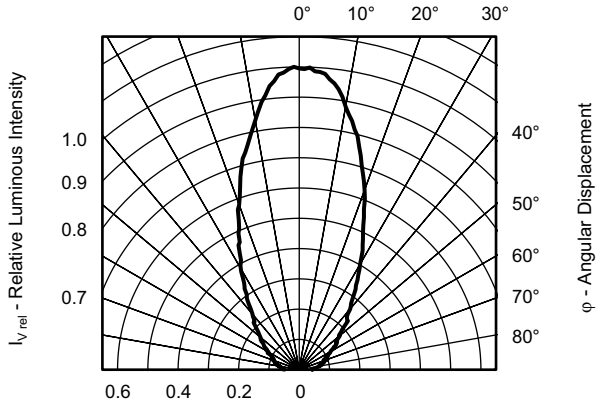


Fig. 2 - Rel. Luminous Intensity vs. Angular Displacement

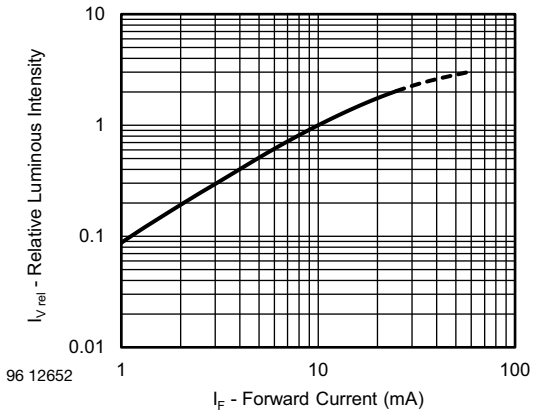


Fig. 5 - Relative Luminous Intensity vs. Forward Current

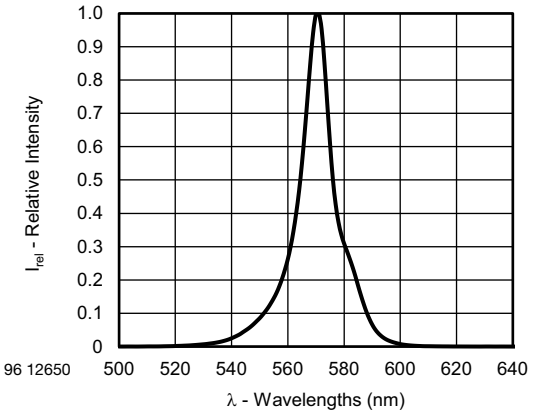


Fig. 3 - Relative Intensity vs. Wavelength

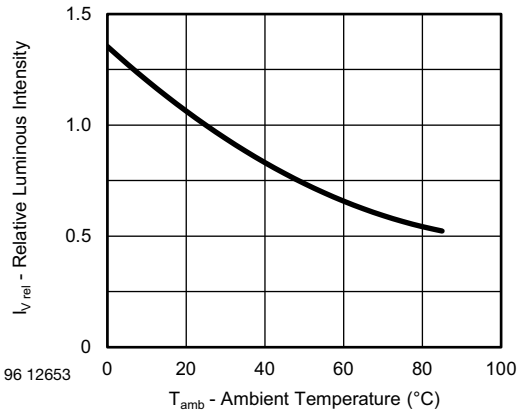
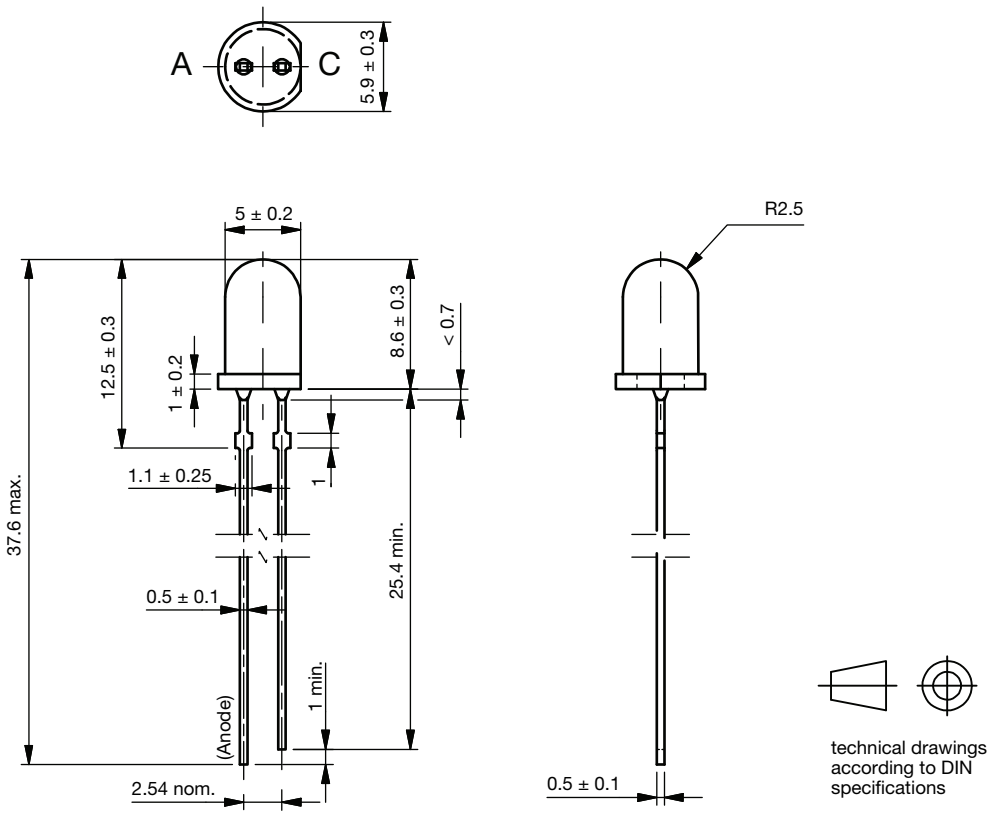


Fig. 6 - Relative Luminous Intensity vs. Ambient Temperature

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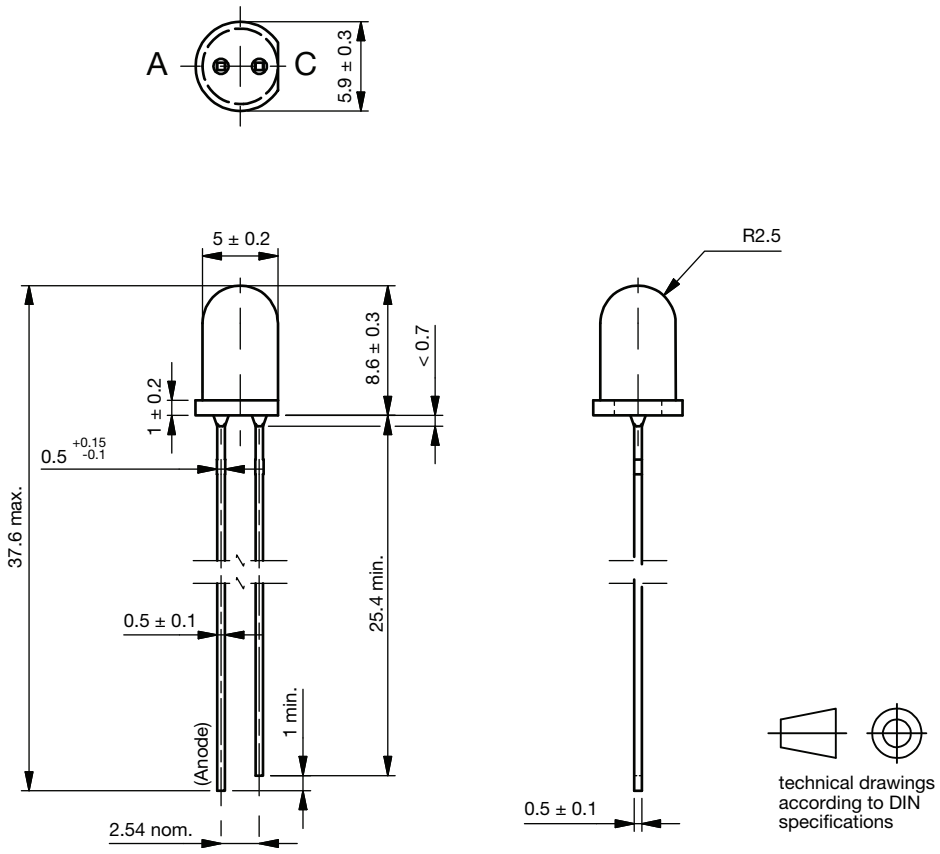
PACKAGE DIMENSIONS FOR TLHG542. in millimeters



Drawing-No.: 6.544-5443.1-4
Issue: 1; 03.05.2023

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PACKAGE DIMENSIONS FOR TLHG642. in millimeters



Drawing-No.: 6.544-5444.1-4
Issue: 1; 03.05.2023

AMMOPACK

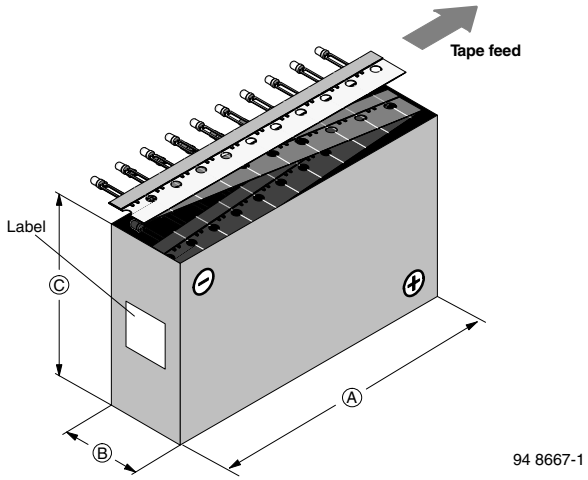


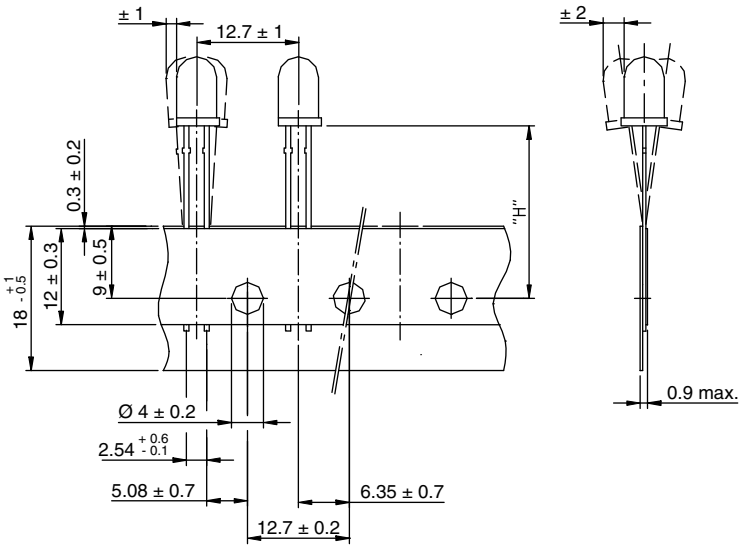
Fig. 7 - Tape Direction

Note

- The new nomenclature for ammopack is e.g. ASZ only, without suffix for the LED orientation. The carton box has to be turned to the desired position: “+” for anode first, or “-” for cathode first. AS12Z and AS21Z are still valid for already existing types, BUT NOT FOR NEW DESIGN

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TAPE DIMENSIONS in millimeters



Measure limit over 20 index-holes: ± 1

Quantity per:	Reel (Mat.-no. 1764)
	1000

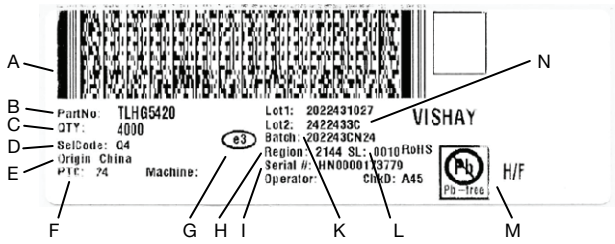
94 8172

Option	Dim. “H” ± 0.5 mm	Dim. “X” ± 0.5 mm
AS	17.3	-
KS	19.7	-
CS	22.0	-

PACKING INFORMATION			
PART	**BULK**	**TAPE AND REEL**	**AMMOPACK**
TLHG542. / TLHG642.	4000	-	-
TLHG542.-.SZ / TLHG642.-.SZ	-	-	5 x 1000

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BAR CODE PRODUCT LABEL (example)



A. 2D barcode

B. Part No: Vishay part number

C. QTY: quantity

D. SelCode: selection bin code

E. Country of origin

F. PTC: production plant code

G. Termination finish

H. Region code

I. Serial#: serial number

K. Batch number: year, week, country code, plant code

L. SL: storage location

M. Environmental symbols: RoHS, lead (Pb)-free, halogen-free

N. Lot numbers

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