

## High Efficiency LED, Ø 5 mm Tinted Diffused Package



19223

### DESCRIPTION

The tinted diffused 5 mm green LED series was developed for standard applications like general indicating and lighting purposes. The low current version TLLG542, using AlInGaP chip technology is categorized at 2 mA. 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.

### PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: low current
- Angle of half intensity:  $\pm 25^\circ$

### FEATURES

- Standard T-1 $\frac{3}{4}$  package
- Wide viewing angle
- Luminous intensity and wavelength categorized
- TLLG542, with stand-offs
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### APPLICATIONS

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



### PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I <sub>F</sub> (mA)	WAVELENGTH (nm)			at I <sub>F</sub> (mA)	FORWARD VOLTAGE (V)			at I <sub>F</sub> (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLLG5420	Green	1	3.5	-	2	562	569	575	2	-	1.9	2.2	2	AlInGaP on GaAs

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

#### TLLG542.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V <sub>R</sub>	5	V
DC forward current		I <sub>F</sub>	25	mA
Surge forward current	(Duty cycle 1/10 at 1 kHz)	I <sub>FSM</sub>	60	mA
Power dissipation		P <sub>V</sub>	60	mW
Junction temperature		T <sub>j</sub>	100	°C
Operating temperature range		T <sub>amb</sub>	-40 to +85	°C
Storage temperature range		T <sub>stg</sub>	-40 to +100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T <sub>sd</sub>	260	°C
Thermal resistance junction to solder point		R <sub>thJS</sub>	325	K/W

**OPTICAL AND ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)  
**TLLG542., GREEN**

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity <sup>(1)</sup>	$I_F = 2\text{ mA}$	$I_V$	1	3.5	-	mcd
Dominant wavelength	$I_F = 2\text{ mA}$	$\lambda_d$	562	569	575	nm
Peak wavelength	$I_F = 2\text{ mA}$	$\lambda_p$	-	570	-	nm
Angle of half intensity	$I_F = 2\text{ mA}$	$\phi$	-	$\pm 25$	-	$^{\circ}$
Forward voltage <sup>(2)</sup>	$I_F = 2\text{ mA}$	$V_F$	-	1.9	2.2	V
Reverse current	$V_R = 5\text{ V}$	$I_R$	-	-	10	$\mu\text{A}$
Junction capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_j$	-	50	-	pF

**Notes**

- (1) In one packing unit  $I_{Vmin.}/I_{Vmax.} \leq 0.5$   
(2) Measurement uncertainty of forward voltage:  $\pm 0.1\text{ V}$

**LUMINOUS INTENSITY CLASSIFICATION**

GROUP	LUMINOUS INTENSITY (mcd)	
	MIN.	MAX.
STANDARD		
L	1	2
M	1.6	3.2
N	2.5	5
P	4	8
Q	6.3	12.5

**Note**

- Luminous flux is tested at a current pulse duration of 25 ms and an accuracy of  $\pm 10\%$ .  
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

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

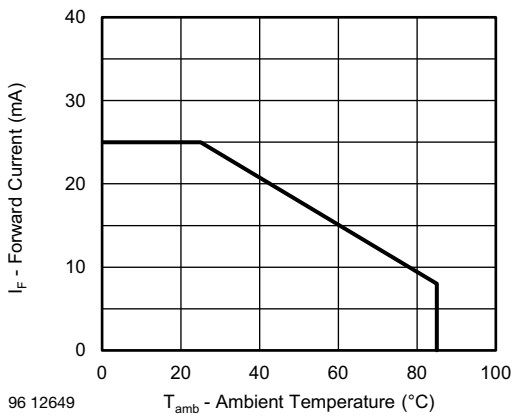


Fig. 1 - Forward Current vs. Ambient Temperature

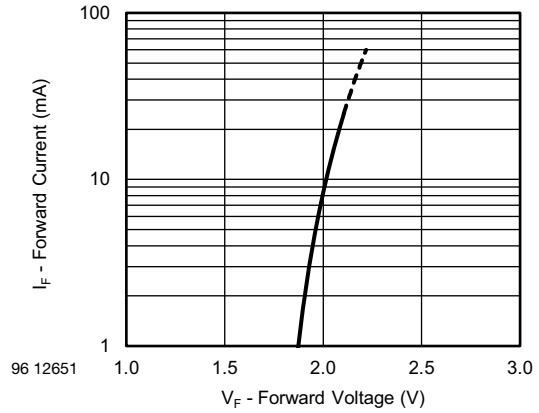


Fig. 4 - Forward Current vs. Forward Voltage

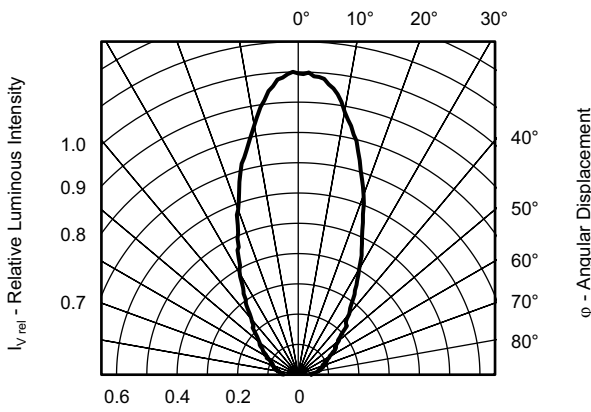


Fig. 2 - Rel. Luminous Intensity vs. Angular Displacement

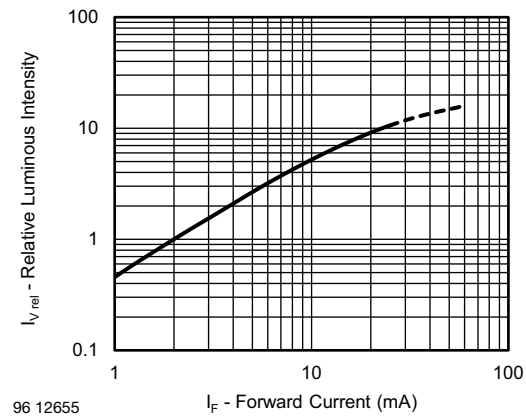


Fig. 5 - Relative Luminous Intensity vs. Forward Current

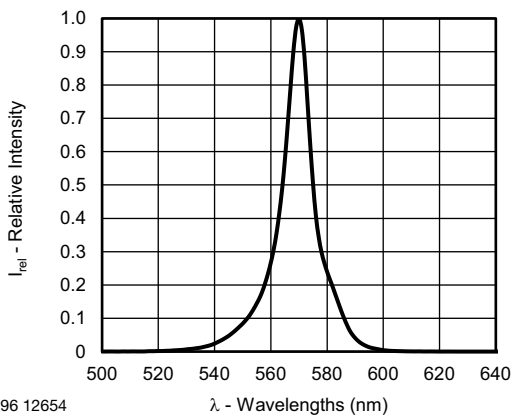


Fig. 3 - Relative Intensity vs. Wavelength

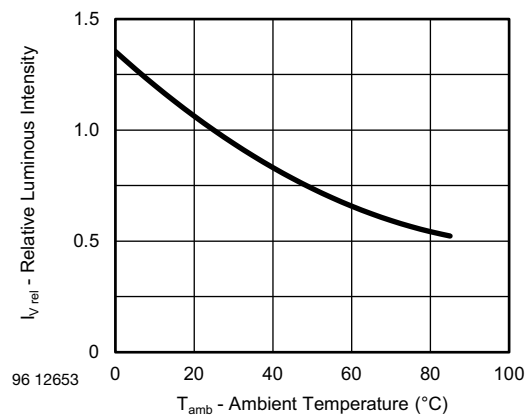
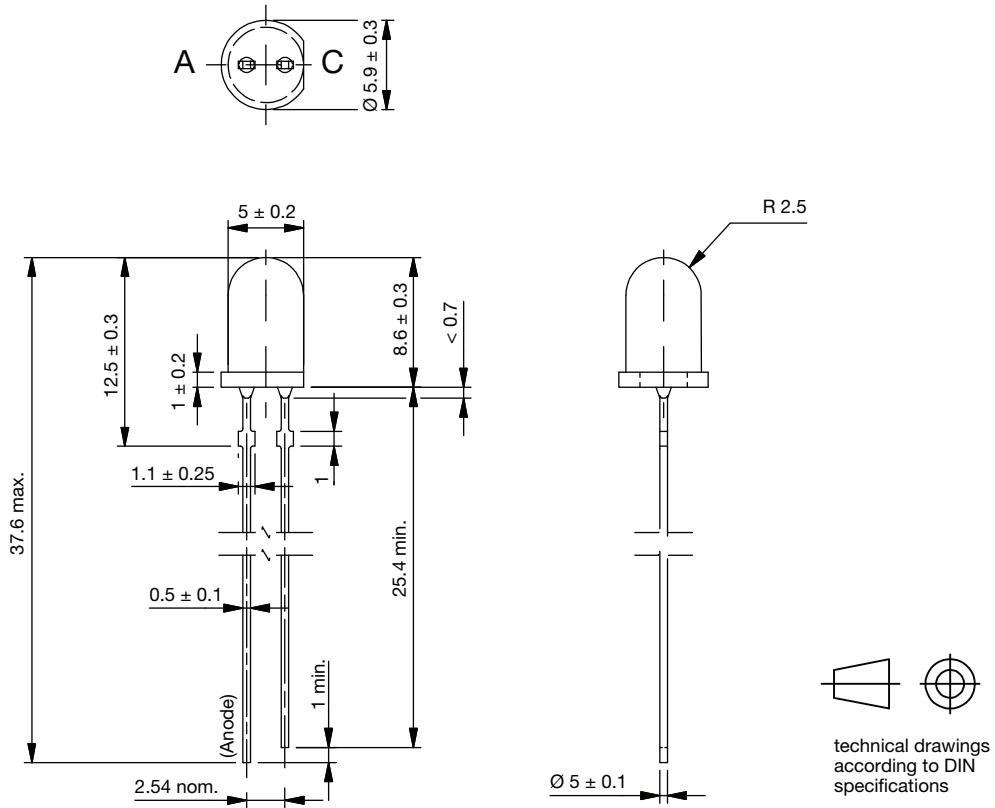


Fig. 6 - Relative Luminous Intensity vs. Ambient Temperature



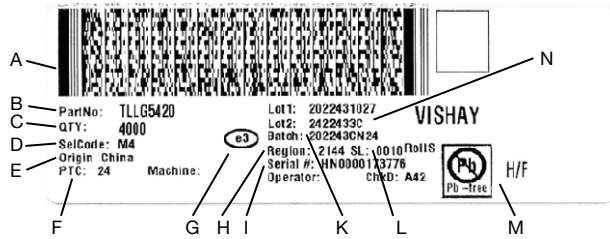
PACKAGE DIMENSIONS in millimeters



6.544-5443.1.4  
Issue: 2VK; 25.10.2022

Tolerance is  $\pm 0.25$  mm except being otherwise specified

PACKING INFORMATION			
PART	BULK	TAPE AND REEL	AMMOPACK
TLLG542.	4000	-	-

**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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