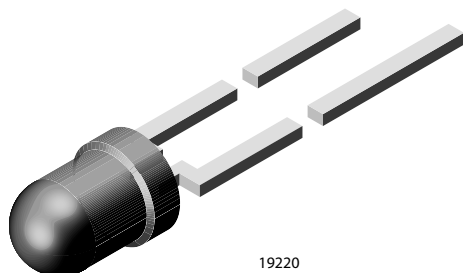


## High Efficiency LED in Ø 3 mm Tinted Diffused Package



### DESCRIPTION

The TLHG44K1M2 was developed for standard applications like general indicating and lighting purposes.

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

All LEDs are categorized in luminous intensity groups. The color is categorized additionally in wavelength 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:  $\pm 30^\circ$

### FEATURES

- Standard Ø 3 (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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### 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.		
TLHG44K1M2	Green	7.1	-	28	10	562	-	575	10	-	2.1	2.6	10	GaP on GaP

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V <sub>R</sub>	6	V
DC forward current		I <sub>F</sub>	30	mA
Surge forward current	t <sub>p</sub> ≤ 10 μs	I <sub>FSM</sub>	1	A
Power dissipation	T <sub>amb</sub> ≤ 60 °C	P <sub>V</sub>	100	mW
Junction temperature		T <sub>j</sub>	100	°C
Operating temperature range		T <sub>amb</sub>	-40 to +100	°C
Storage temperature range		T <sub>stg</sub>	-55 to +100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T <sub>sd</sub>	260	°C
Thermal resistance junction to ambient		R <sub>thJA</sub>	400	K/W

**OPTICAL AND ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)  
**TLHG44K1M2, GREEN**

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity <sup>(1)</sup>	$I_F = 10\text{ mA}$	TLHG44K1M2	$I_V$	7.1	-	28	mcd
Dominant wavelength	$I_F = 10\text{ mA}$		$\lambda_d$	562	-	575	nm
Peak wavelength	$I_F = 10\text{ mA}$		$\lambda_p$	-	565	-	nm
Angle of half intensity	$I_F = 10\text{ mA}$		$\phi$	-	$\pm 30$	-	$^{\circ}$
Forward voltage	$I_F = 10\text{ mA}$		$V_F$	-	2.1	2.6	V
Reverse voltage	$I_R = 10\text{ }\mu\text{A}$		$V_R$	6	15	-	V
Junction capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$		$C_j$	-	50	-	pF

**Note**

(1) in one packing unit  $i_{Vmin}/i_{Vmax} \leq 1.6$

**LUMINOUS INTENSITY CLASSIFICATION**

GROUP	LIGHT INTENSITY (mcd)		
	OPTIONAL	MIN.	MAX.
K	1	7.1	9
	2	9	11.2
L	1	11.2	14.0
	2	14.0	18.0
M	1	18.0	22.4
	2	22.4	28.0

**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 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	GREEN	
	DOM. WAVELENGTH (nm)	
	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

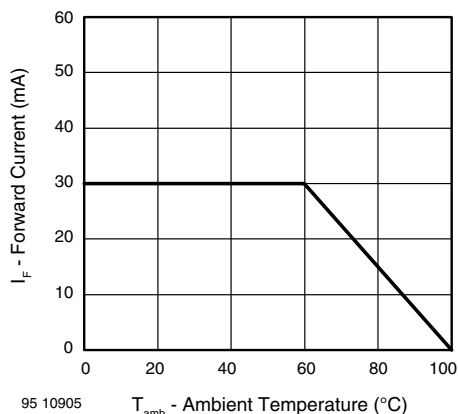
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

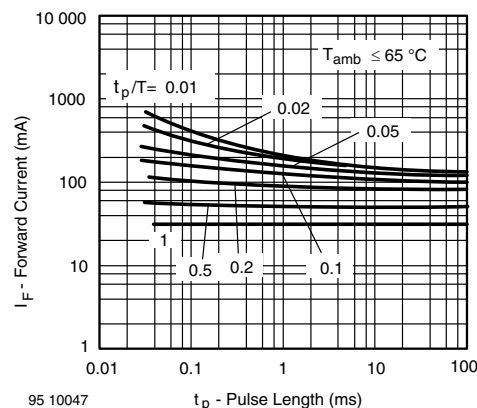


Fig. 2 - Forward Current vs. Pulse Length

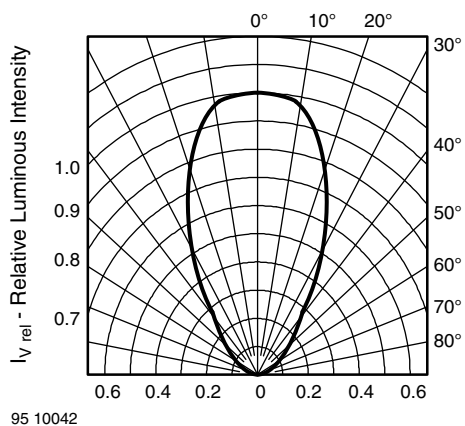


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

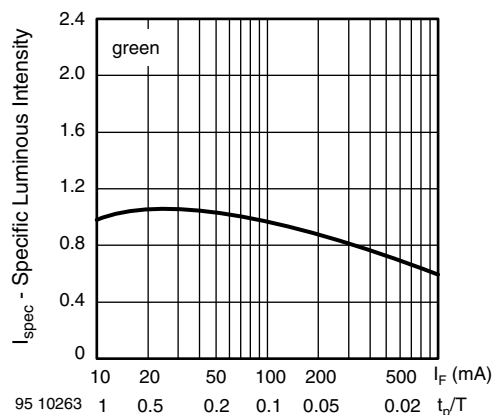


Fig. 6 - Specific Luminous Intensity vs. Forward Current

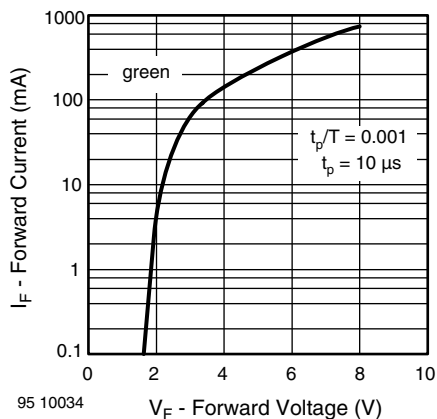


Fig. 4 - Forward Current vs. Forward Voltage

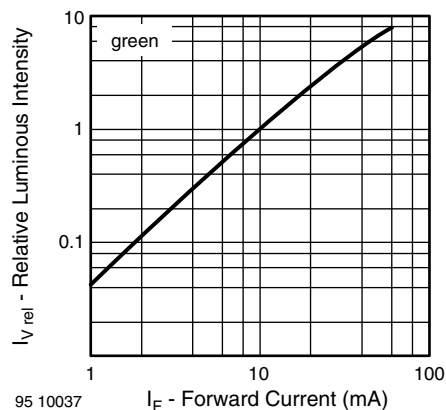


Fig. 7 - Relative Luminous Intensity vs. Forward Current

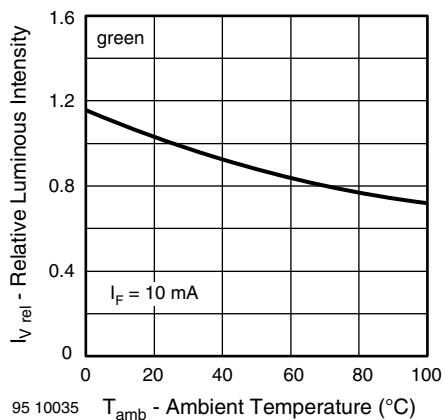


Fig. 5 - Relative Luminous Intensity vs. Ambient Temperature

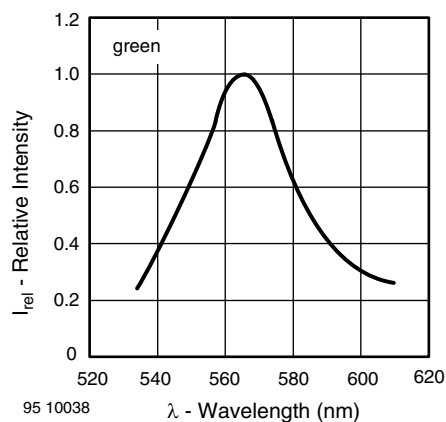
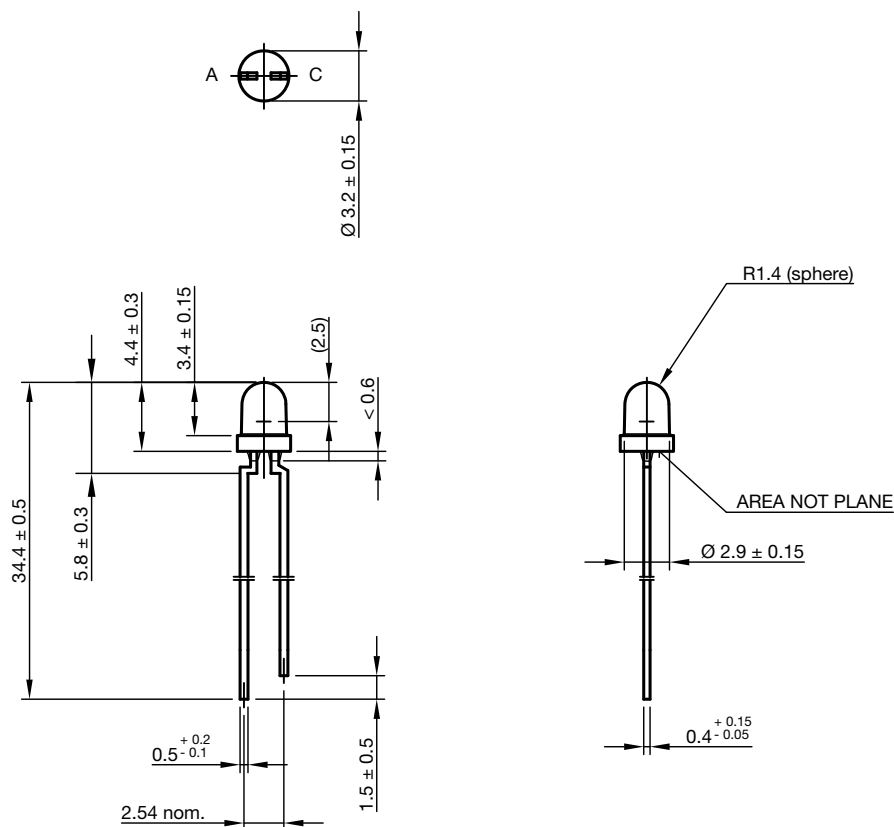


Fig. 8 - Relative Intensity vs. Wavelength



**PACKAGE DIMENSIONS** in millimeters



Drawing-No.: 6.544-5255.01-4  
Issue: 9; 28.07.14



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