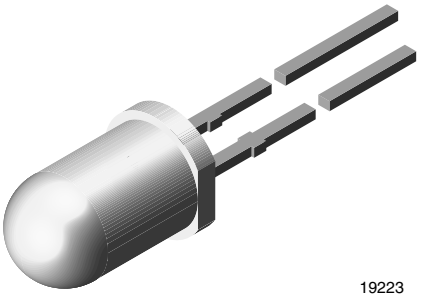
# High Efficiency LED, Ø 5 mm Tinted Non-Diffused Package



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## FEATURES

- Standard T-1¾ package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Small viewing angle
- Luminous intensity categorized
- TLHR5200 with 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 TLHR5200 was developed for standard applications like general indicating and lighting purposes.

It is housed in a 5 mm tinted non-diffused plastic package. The small viewing angle of these devices provides a high brightness.

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: ± 14°

**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. | | |
| TLHR5200 | Red | 10 | 50 | - | 10 | 612 | - | 630 | 10 | - | 2 | 3 | 20 | GaAsP on GaP |

**ABSOLUTE MAXIMUM RATINGS** ($T_{amb}$ = 25 °C, unless otherwise specified)
**TLHR5200**

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Reverse voltage | | $V_R$ | 6 | V |
| DC forward current | $T_{amb} \leq 65$ °C | $I_F$ | 30 | mA |
| Surge forward current | $t_p \leq 10$ µs | $I_{FSM}$ | 1 | A |
| Power dissipation | $T_{amb} \leq 65$ °C | $P_V$ | 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 to ambient | | $R_{thJA}$ | 350 | K/W |



For technical questions, contact: LED@vishay.com

| **OPTICAL AND ELECTRICAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified) **TLHR5200, RED** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **PART** | **SYMBOL** | **MIN.** | **TYP.** | **MAX.** | **UNIT** |
| Luminous intensity (1) | $I_F$ = 10 mA | TLHR5200 | $I_V$ | 10 | 50 | - | mcd |
| Dominant wavelength | $I_F$ = 10 mA | | $\lambda_d$ | 612 | - | 630 | nm |
| Peak wavelength | $I_F$ = 10 mA | | $\lambda_p$ | - | 635 | - | nm |
| Angle of half intensity | $I_F$ = 10 mA | | φ | - | ± 14 | - | ° |
| Forward voltage | $I_F$ = 20 mA | | $V_F$ | - | 2 | 3 | V |
| Reverse voltage | $I_R$ = 10 µA | | $V_R$ | 6 | 15 | - | V |
| Junction capacitance | $V_R$ = 0 V, f = 1 MHz | | $C_j$ | - | 50 | - | pF |

**Note**

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

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

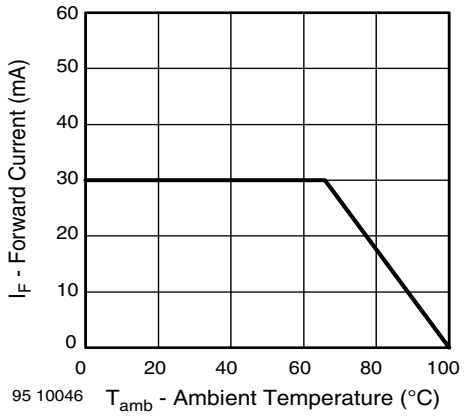



Fig. 1 - Forward Current vs. Ambient Temperature

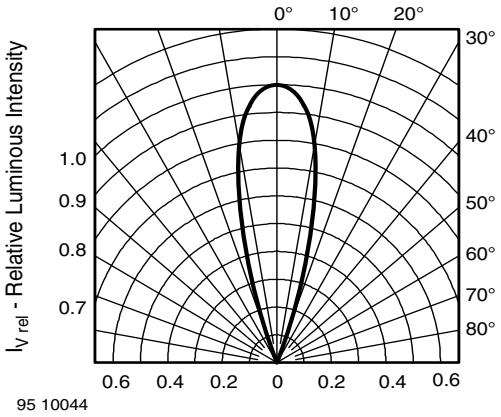



Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

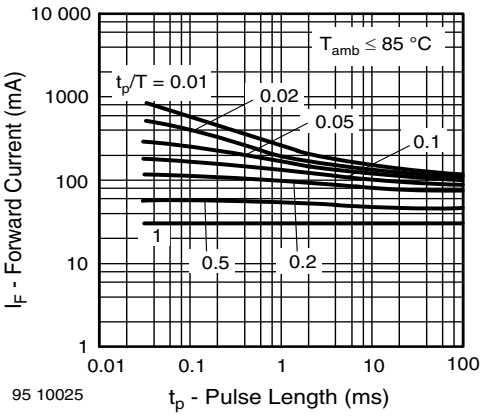



Fig. 2 - Forward Current vs. Pulse Length

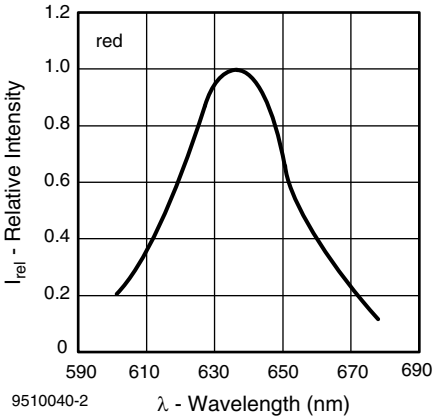



Fig. 4 - Relative Intensity vs. Wavelength

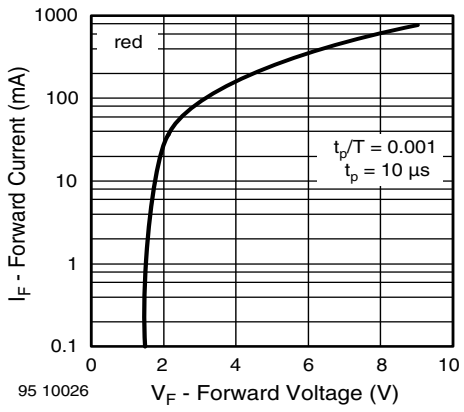



Fig. 5 - Forward Current vs. Forward Voltage

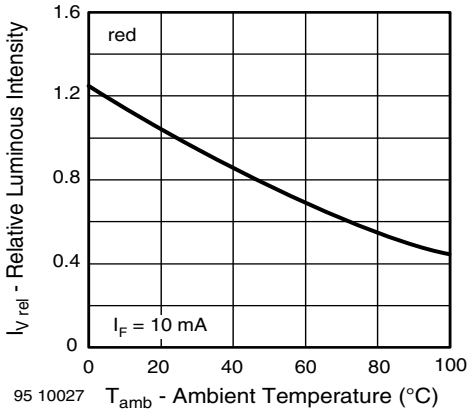



Fig. 7 - Relative Luminous Intensity vs. Ambient Temperature

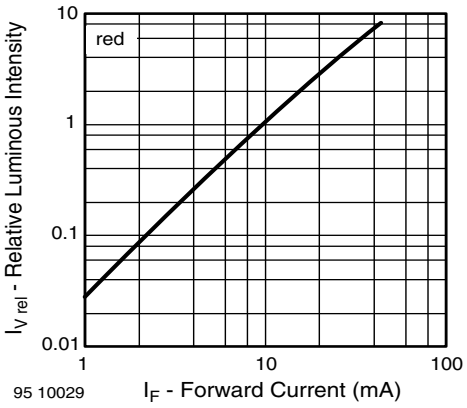
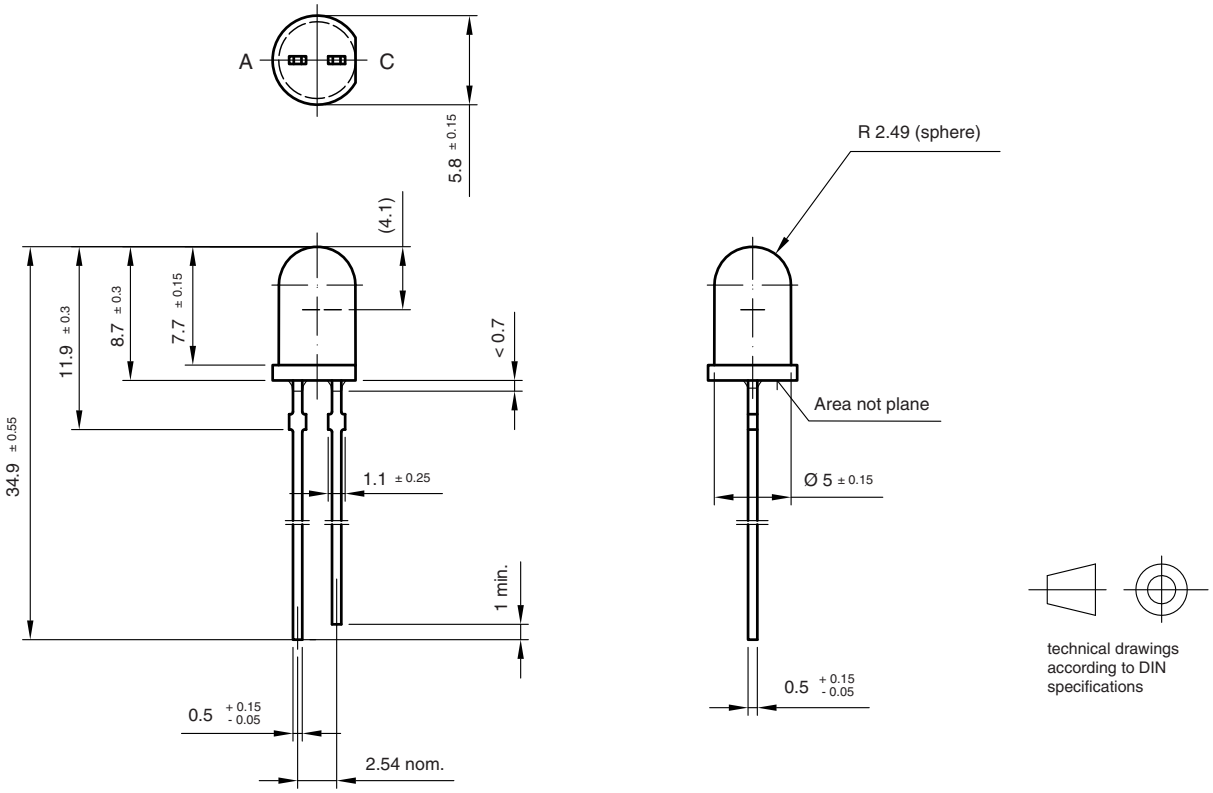



Fig. 6 - Relative Luminous Intensity vs. Forward Current

**PACKAGE DIMENSIONS** in millimeters

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