

High Intensity LED, Ø 5 mm Untinted Non-Diffused Package



19223

DESCRIPTION

This device has been designed to meet the increasing demand for extremely bright yellow LEDs.

It is housed in a 5 mm untinted non-diffused plastic package. The very small viewing angle of this device provides a very high luminous intensity.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: standard
- Angle of half intensity: $\pm 4^\circ$

FEATURES

- AllnGaP technology
- Standard T-1 $\frac{3}{4}$ package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Very small viewing angle
- Very high intensity
- Luminous intensity categorized
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

APPLICATIONS

- Status lights
- Off/on indicator
- Lightpipe
- Outdoor display
- Medical instruments
- Maintenance lights
- Legend lights

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. | | |
| TLHE5800 | Yellow | 1000 | 3500 | - | 20 | 581 | 588 | 594 | 10 | - | 2 | 2.6 | 20 | AllnGaP on GaAs |

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

TLHE5800

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|-------------------------------------|--------------------------|-------------------|---------------|------|
| Reverse voltage | | V _R | 5 | V |
| DC forward current | T _{amb} ≤ 65 °C | I _F | 30 | mA |
| Surge forward current | t _p ≤ 10 μs | I _{FSM} | 0.1 | A |
| Power dissipation | T _{amb} ≤ 65 °C | P _V | 80 | 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} | 350 | K/W |

| OPTICAL AND ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------|------|---------|------|------|
| TLHE5800, YELLOW | | | | | | |
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Luminous intensity ⁽¹⁾ | $I_F = 20\text{ mA}$ | I_V | 1000 | 3500 | - | mcd |
| Dominant wavelength | $I_F = 10\text{ mA}$ | λ_d | 581 | 588 | 594 | nm |
| Peak wavelength | $I_F = 10\text{ mA}$ | λ_p | - | 590 | - | nm |
| Angle of half intensity | $I_F = 10\text{ mA}$ | ϕ | - | ± 4 | - | deg |
| Forward voltage | $I_F = 20\text{ mA}$ | V_F | - | 2 | 2.6 | V |
| Reverse voltage | $I_R = 10\text{ }\mu\text{A}$ | V_R | 5 | - | - | V |
| Junction capacitance | $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ | C_j | - | 15 | - | pF |

Note

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

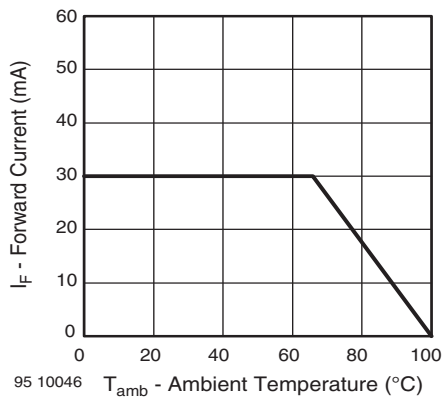
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Ambient Temperature

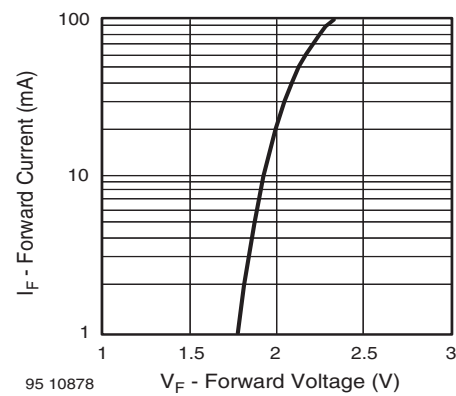


Fig. 3 - Forward Current vs. Forward Voltage

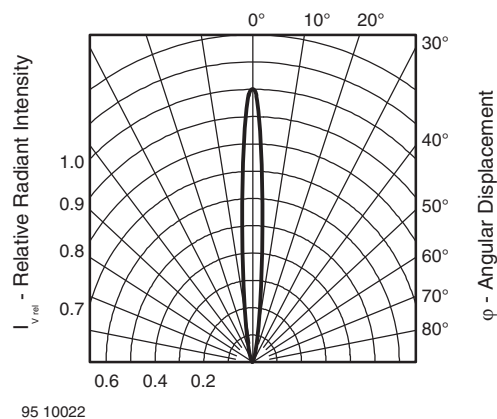


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

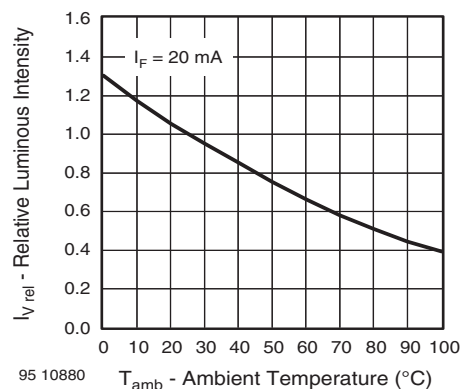


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

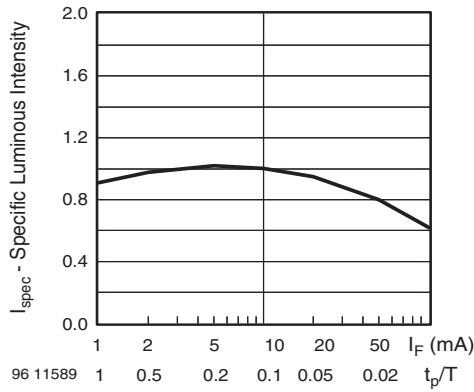


Fig. 5 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

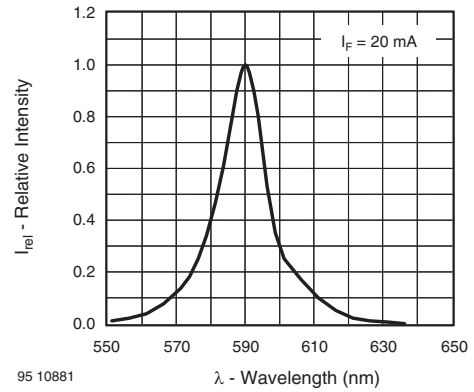


Fig. 7 - Relative Intensity vs. Wavelength

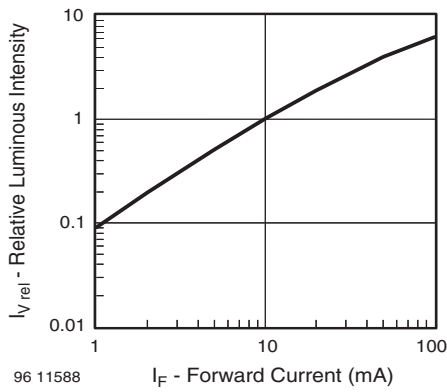
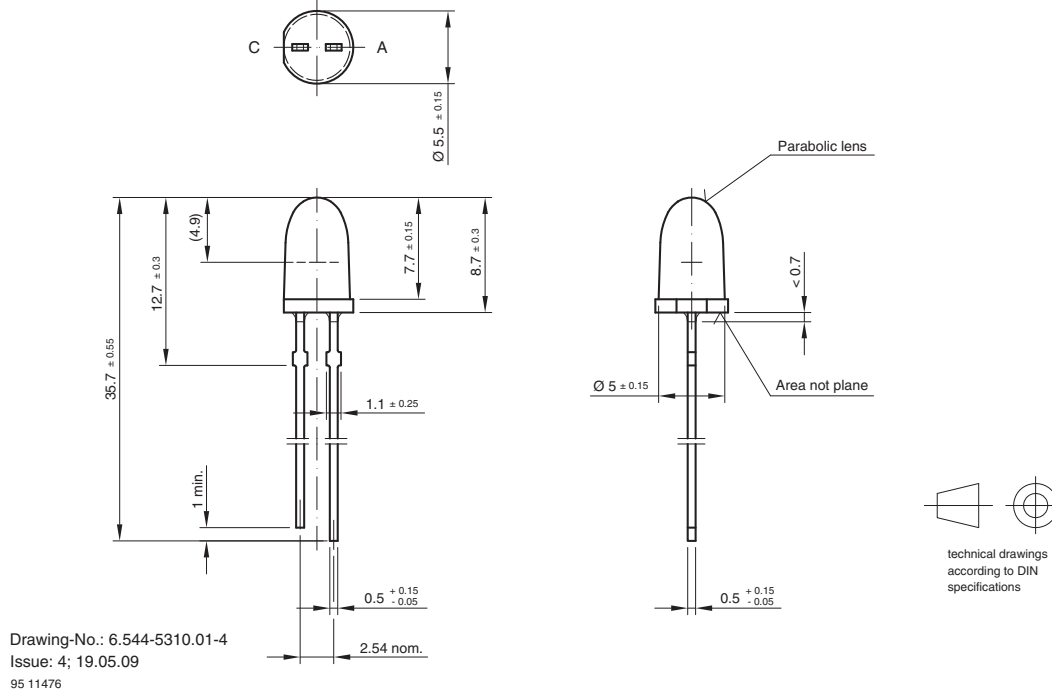


Fig. 6 - Relative Luminous Intensity vs. Forward Current

PACKAGE DIMENSIONS in millimeters





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