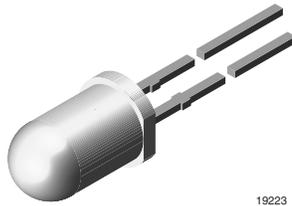


High Intensity LED, \varnothing 5 mm Untinted Non-Diffused



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
- Lead (Pb)-free device

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: $\pm 4^\circ$

APPLICATIONS

- Status lights
- OFF/ON indicator
- Lightpipe
- Outdoor display
- Medical instruments
- Maintenance lights
- Legend lights

PARTS TABLE

| PART | COLOR, LUMINOUS INTENSITY | TECHNOLOGY |
|----------|---------------------------|-----------------|
| TLHE5800 | Yellow, $I_V > 1000$ mcd | AllnGaP on GaAs |

ABSOLUTE MAXIMUM RATINGS¹⁾ TLHE5800

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|-------------------------------------|---------------------------------|------------|---------------|------------------|
| Reverse voltage | | V_R | 5 | V |
| DC Forward current | $T_{amb} \leq 65^\circ\text{C}$ | I_F | 30 | mA |
| Surge forward current | $t_p \leq 10 \mu\text{s}$ | I_{FSM} | 0.1 | A |
| Power dissipation | $T_{amb} \leq 65^\circ\text{C}$ | P_V | 80 | mW |
| Junction temperature | | T_j | 100 | $^\circ\text{C}$ |
| Operating temperature range | | T_{amb} | - 40 to + 100 | $^\circ\text{C}$ |
| Storage temperature range | | T_{stg} | - 55 to + 100 | $^\circ\text{C}$ |
| Soldering temperature | $t \leq 5$ s, 2 mm from body | T_{sd} | 260 | $^\circ\text{C}$ |
| Thermal resistance junction/ambient | | R_{thJA} | 350 | K/W |

Note:

¹⁾ $T_{amb} = 25^\circ\text{C}$, unless otherwise specified

| OPTICAL AND ELECTRICAL CHARACTERISTICS ¹⁾ TLHE5800, YELLOW | | | | | | |
|---|------------------------------|-------------|------|---------|-----|------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN | TYP. | MAX | UNIT |
| Luminous intensity ²⁾ | $I_F = 20 \text{ mA}$ | 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 | $I_R = 10 \mu\text{A}$ | V_R | 5 | | | V |
| Junction capacitance | $V_R = 0, f = 1 \text{ MHz}$ | C_j | | 15 | | pF |

Note:

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

2) in one packing unit $I_{Vmin}/I_{Vmax} \leq 0.5$

TYPICAL CHARACTERISTICS

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

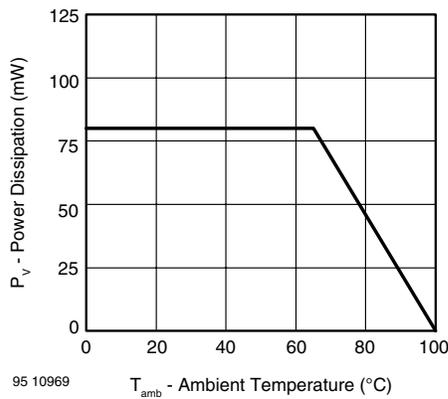


Figure 1. Power Dissipation vs. Ambient Temperature

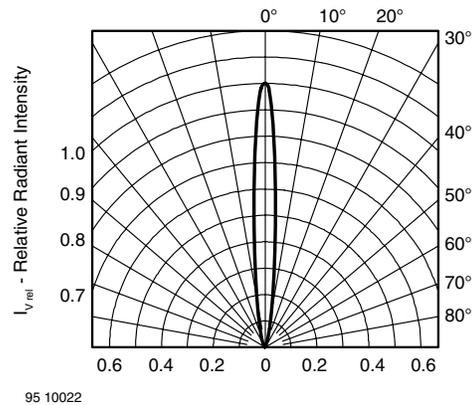


Figure 3. Rel. Luminous Intensity vs. Angular Displacement

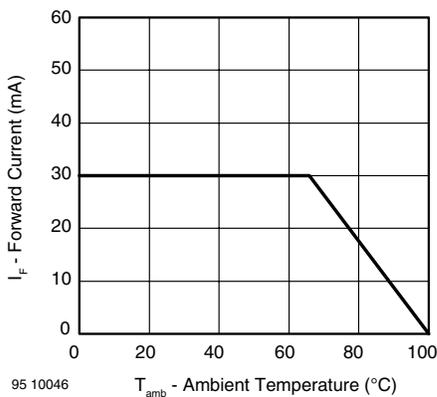


Figure 2. Forward Current vs. Ambient Temperature

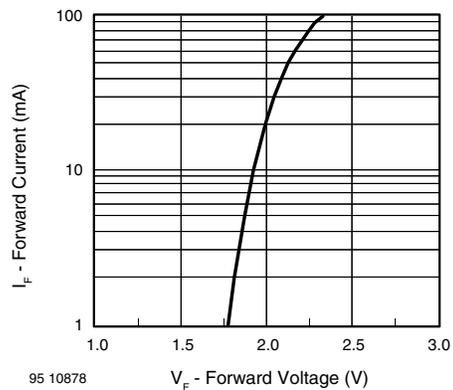


Figure 4. Forward Current vs. Forward Voltage

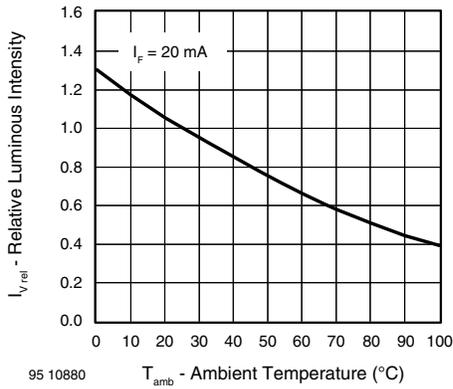


Figure 5. Rel. Luminous Intensity vs. Ambient Temperature

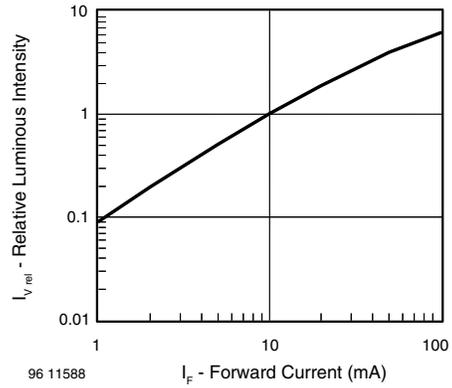


Figure 7. Relative Luminous Intensity vs. Forward Current

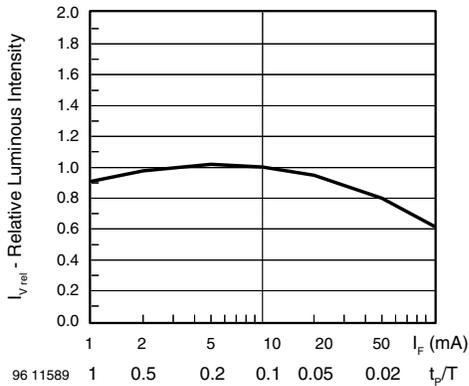


Figure 6. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

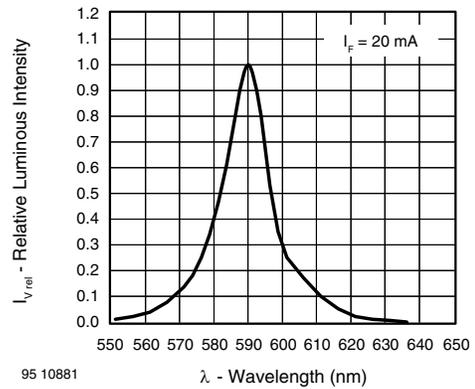
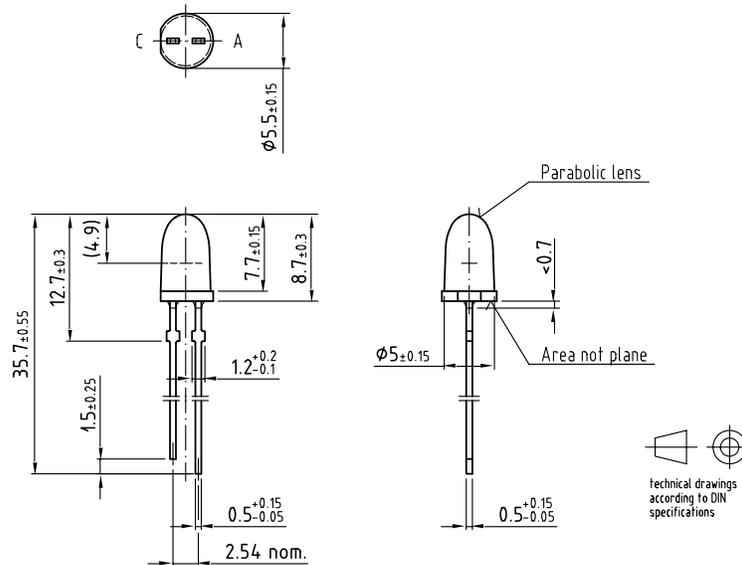


Figure 8. Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters



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