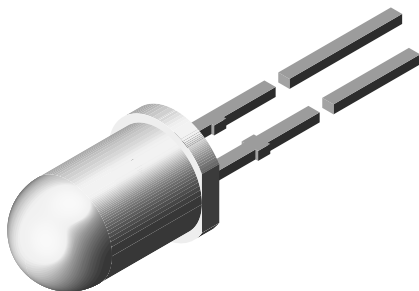


Low Current LED in Ø 5 mm Tinted Diffused Package



FEATURES

- Low power consumption
- High brightness
- CMOS/MOS compatible
- Specified at $I_F = 2$ mA
- Luminous intensity categorized
- Material categorization:
for definitions of compliance please see
www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

PRODUCT GROUP AND PACKAGE DATA

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

APPLICATIONS

- Low power DC circuits

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. | | |
| TLLR5400 | Red | 0.63 | 1.2 | - | 2 | 612 | - | 625 | 2 | - | 1.9 | 2.4 | 2 | GaAsP on GaP |
| TLLR5401 | Red | 1 | 2 | - | 2 | 612 | - | 625 | 2 | - | 1.9 | 2.4 | 2 | GaAsP on GaP |

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified) TLLR5400, TLLR5401

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|---------------------------------|------------|-------------|------------------|
| Reverse voltage | | V_R | 6 | V |
| DC forward current | $T_{amb} \leq 90^\circ\text{C}$ | I_F | 7 | mA |
| Surge forward current | $t_p \leq 10 \mu\text{s}$ | I_{FSM} | 0.15 | A |
| Power dissipation | $T_{amb} \leq 90^\circ\text{C}$ | P_V | 20 | 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 to ambient | | R_{thJA} | 500 | K/W |

OPTICAL AND ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)
TLLR5400, TLLR5401, RED

| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|-----------------------------------|---|----------|-------------|------|----------|------|------------|
| Luminous intensity ⁽¹⁾ | $I_F = 2\text{ mA}$ | TLLR5400 | I_V | 0.63 | 1.2 | - | mcd |
| | | TLLR5401 | I_V | 1 | 2 | - | mcd |
| Dominant wavelength | $I_F = 2\text{ mA}$ | | λ_d | 612 | - | 625 | nm |
| Peak wavelength | $I_F = 2\text{ mA}$ | | λ_p | - | 635 | - | nm |
| Angle of half intensity | $I_F = 2\text{ mA}$ | | ϕ | - | ± 25 | - | $^{\circ}$ |
| Forward voltage | $I_F = 2\text{ mA}$ | | V_F | - | 1.9 | 2.4 | V |
| Reverse voltage | $I_R = 10\text{ }\mu\text{A}$ | | V_R | 6 | 20 | - | V |
| Junction capacitance | $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ | | C_j | - | 50 | - | pF |

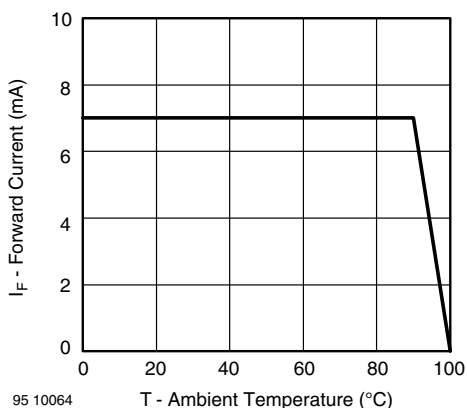
Note
⁽¹⁾ In one packing unit $I_{Vmin}/I_{Vmax} \leq 0.5$
TYPICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Ambient Temperature

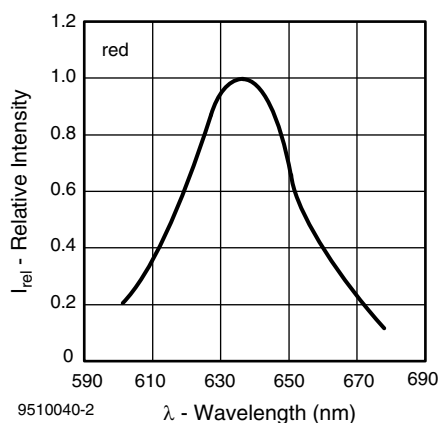


Fig. 3 - Relative Intensity vs. Wavelength

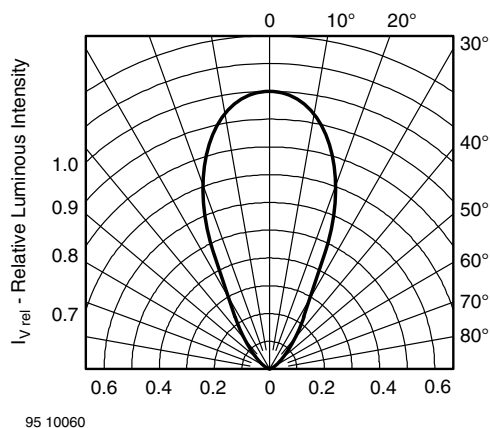


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

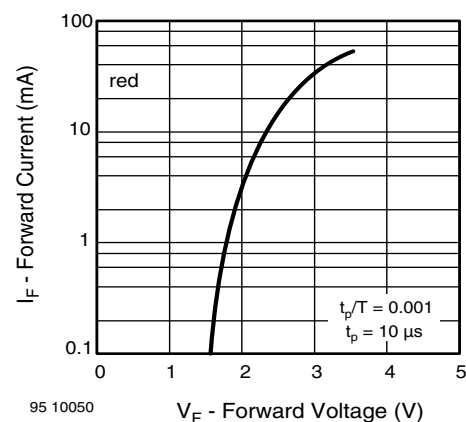


Fig. 4 - Forward Current vs. Forward Voltage

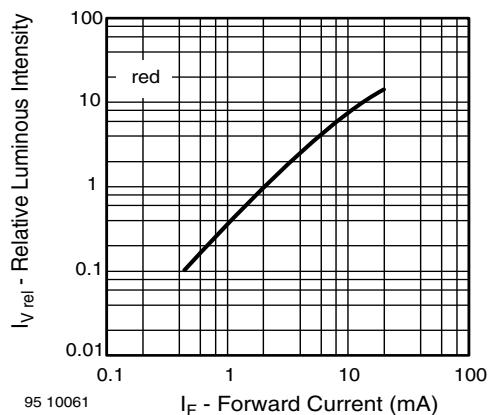


Fig. 5 - Relative Luminous Intensity vs. Forward Current

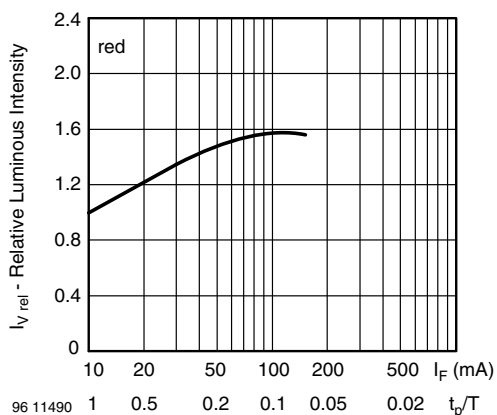


Fig. 6 - Relative Luminous Intensity vs.
Forward Current / Duty Cycle

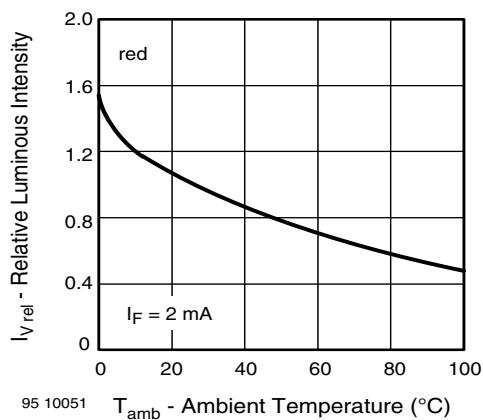


Fig. 7 - Relative Luminous Intensity vs. Ambient Temperature



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