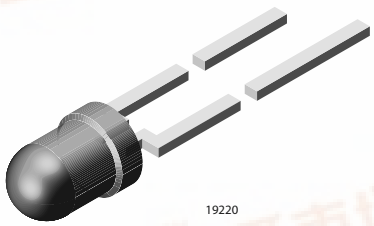
High Efficiency LED, Ø 3 mm Tinted Undiffused Package



FEATURES

- Choice of five bright colors
- Standard T-1 package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Wide viewing angle
- Luminous intensity categorized
- Yellow and green color categorized
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb-free

e1

RoHS COMPLIANT

DESCRIPTION

The TLHR4206 serie was developed for standard applications like general indicating and lighting purposes.
It is housed in a 3 mm tinted clear plastic package. The wide viewing angle of these devices provides a high on-off contrast.
Several selection types with different luminous intensities are offered. All LEDs are categorized in luminous intensity groups. The green and yellow LEDs are categorized additionally in wavelength 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: 3 mm
- Product series: standard
- Angle of half intensity: ± 22°

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLHR4206	Red, I_V > 16 mcd	GaAsP on GaP

ABSOLUTE MAXIMUM RATINGS [1] TLHR4206

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC Forward current		I_F	30	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 60$ °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/ambient		R_{thJA}	400	K/W

Note:
[1] T_{amb} = 25 °C unless otherwise specified

OPTICAL AND ELECTRICAL CHARACTERISTICS[1] TLHR4206, RED						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity [2]	I_F = 10 mA	I_V	16	25	50	mcd
Dominant wavelength	I_F = 10 mA	λ_d	620	623	628	nm
Peak wavelength	I_F = 10 mA	λ_p		635		nm
Angle of half intensity	I_F = 10 mA	φ		± 22		deg
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, f = 1 MHz	C_j		50		pF

Note:
[1] T_{amb} = 25 °C unless otherwise specified
[2] In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

TYPICAL CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified

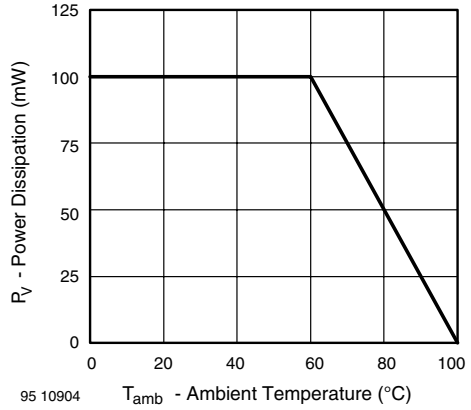


Figure 1. Power Dissipation vs. Ambient Temperature

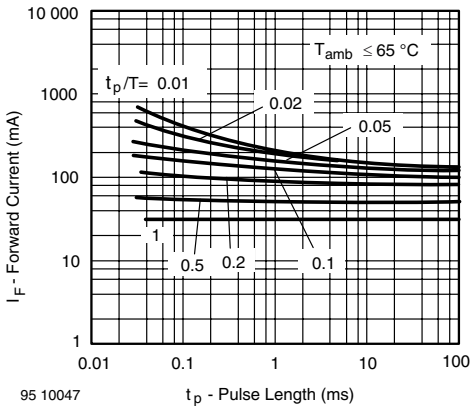


Figure 3. Forward Current vs. Pulse Length

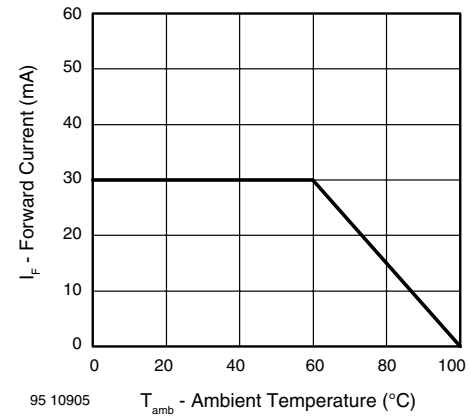


Figure 2. Forward Current vs. Ambient Temperature for InGaN

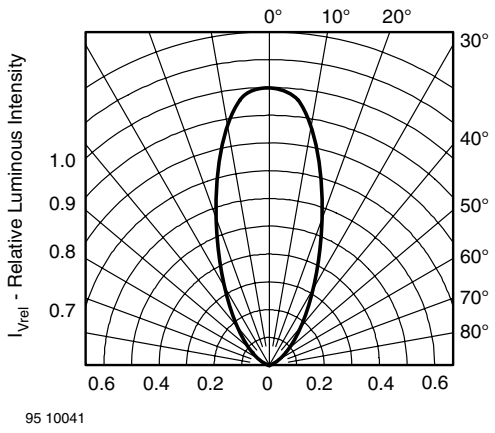


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

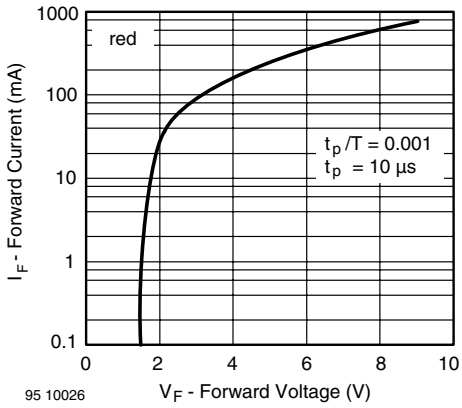


Figure 5. Forward Current vs. Forward Voltage

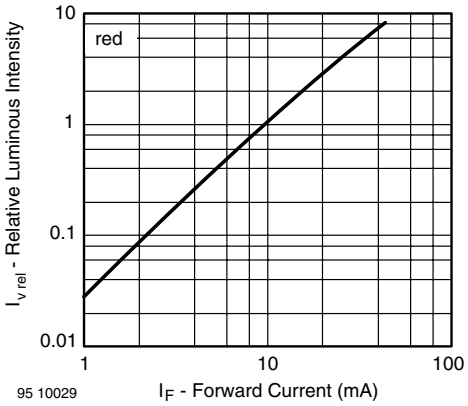


Figure 8. Relative Luminous Intensity vs. Forward Current

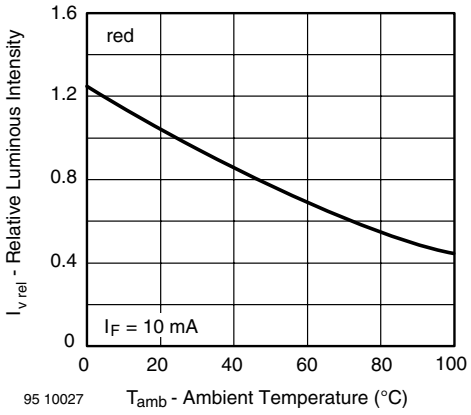


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

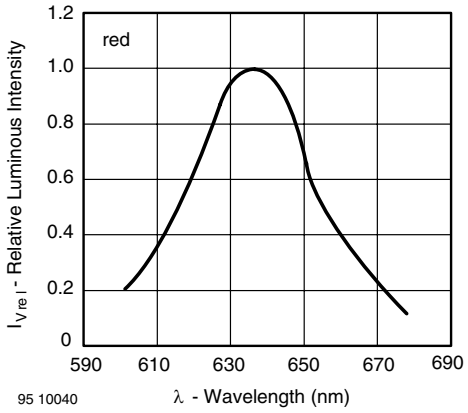


Figure 9. Relative Intensity vs. Wavelength

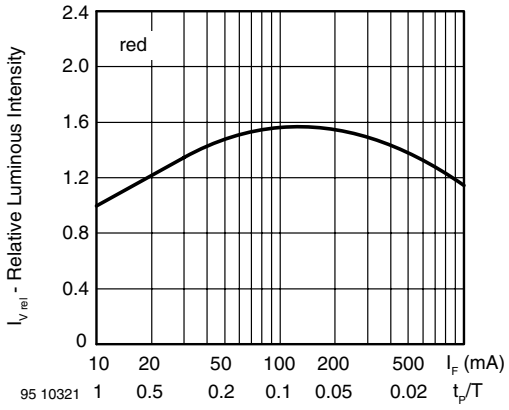
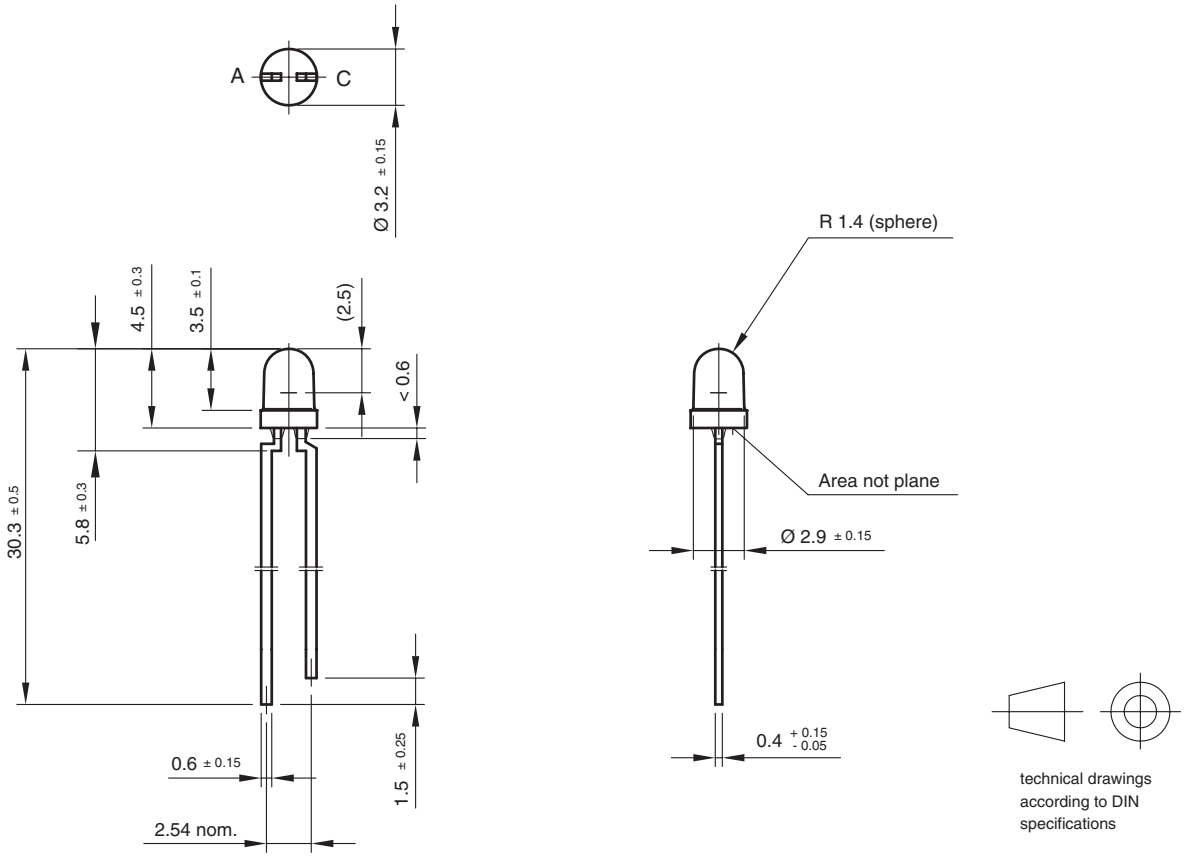


Figure 7. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

PACKAGE DIMENSIONS in millimeters



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