

High Efficiency LED, ø 5 mm Tinted Non-Diffused Package

Color	Type	Technology	Angle of Half Intensity $\pm\theta$
High efficiency red	TLHR52../TLHR62..	GaAsP on GaP	14°
Yellow	TLHY52../TLHY62..	GaAsP on GaP	
Green	TLHG52../TLHG62..	GaP on GaP	

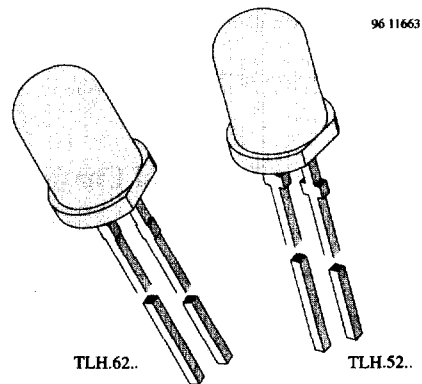
Description

The TLH.52.. and 62.. series 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.

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.



Features

- Choice of three bright colors
- Standard T-1 $\frac{3}{4}$ package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Small viewing angle
- Luminous intensity categorized
- Yellow and green color categorized
- TLH.52.. with stand-offs
- TLH.62.. without stand-offs

Applications

Status lights
OFF / ON indicator
Background illumination
Readout lights
Maintenance lights
Legend light

Absolute Maximum Ratings

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

TLHR52../TLHR62.., TLHY52../TLHY62.., TLHG52../TLHG62..

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage			V_R	6	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}	1	A
Power dissipation	$T_{amb} \leq 65^{\circ}\text{C}$		P_V	100	mW
Junction temperature			T_j	100	$^{\circ}\text{C}$
Operating temperature range			T_{amb}	-20 to +100	$^{\circ}\text{C}$
Storage temperature range			T_{stg}	-55 to +100	$^{\circ}\text{C}$
Soldering temperature	$t \leq 5 \text{ s}$, 2 mm from body		T_{sd}	260	$^{\circ}\text{C}$
Thermal resistance junction/ambient			R_{thJA}	350	K/W

Optical and Electrical Characteristics

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

High efficiency red (TLHR52../TLHR62..)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	$I_F = 10 \text{ mA}$, $I_{Vmin}/I_{Vmax} \geq 0.5$	TLHR5200/6200	I_V	10	20		mcd
		TLHR5201/6201	I_V	16	30		mcd
		TLHR5205/6205	I_V	25	40		mcd
Dominant wavelength	$I_F = 10 \text{ mA}$		λ_d	612		625	nm
Peak wavelength	$I_F = 10 \text{ mA}$		λ_p		635		nm
Angle of half intensity	$I_F = 10 \text{ mA}$		ϕ		± 14		deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F		2	3	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	15		V
Junction capacitance	$V_R = 0$, $f = 1 \text{ MHz}$		C_j		50		pF

Yellow (TLHY52../TLHY62..)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	$I_F = 10 \text{ mA}$, $I_{Vmin}/I_{Vmax} \geq 0.5$	TLHY5200/6200	I_V	10	30		mcd
		TLHY5201/6201	I_V	16	40		mcd
		TLHY5205/6205	I_V	25	50		mcd
Dominant wavelength	$I_F = 10 \text{ mA}$		λ_d	581		594	nm
Peak wavelength	$I_F = 10 \text{ mA}$		λ_p		585		nm
Angle of half intensity	$I_F = 10 \text{ mA}$		ϕ		± 14		deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F		2.4	3	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	15		V
Junction capacitance	$V_R = 0$, $f = 1 \text{ MHz}$		C_j		50		pF

Green (TLHG52../TLHG62..)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	$I_F = 10 \text{ mA}$, $I_{Vmin}/I_{Vmax} \geq 0.5$	TLHG5200/6200	I_V	16	30		mcđ
		TLHG5201/6201	I_V	25	40		mcđ
		TLHG5205/6205	I_V	40	50		mcđ
Dominant wavelength	$I_F = 10 \text{ mA}$		λ_d	562		575	nm
Peak wavelength	$I_F = 10 \text{ mA}$		λ_p		565		nm
Angle of half intensity	$I_F = 10 \text{ mA}$		φ		± 14		deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F		2.4	3	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	15		V
Junction capacitance	$V_R = 0, f = 1 \text{ MHz}$		C_j		50		pF

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

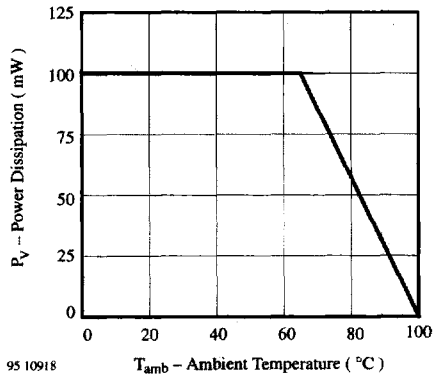


Figure 1. Power Dissipation vs. Ambient Temperature

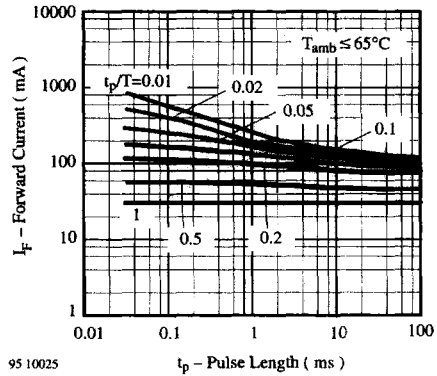


Figure 3. Forward Current vs. Pulse Length

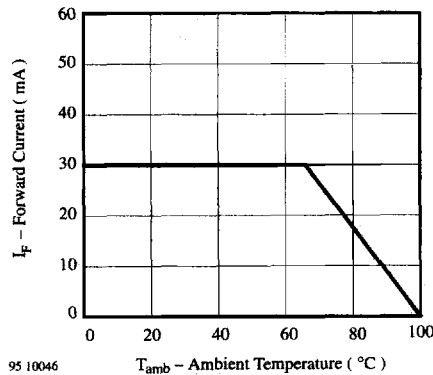


Figure 2. Forward Current vs. Ambient Temperature

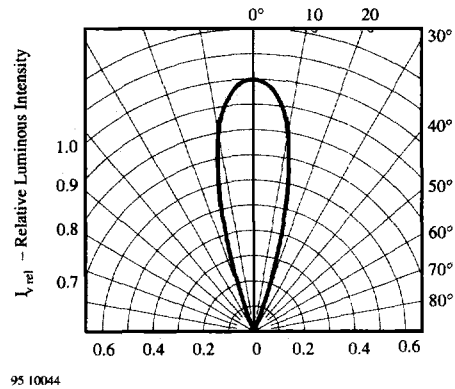


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

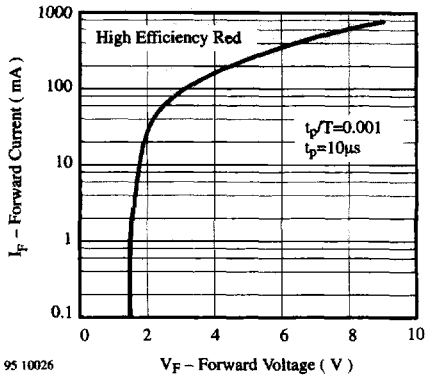


Figure 5. Forward Current vs. Forward Voltage

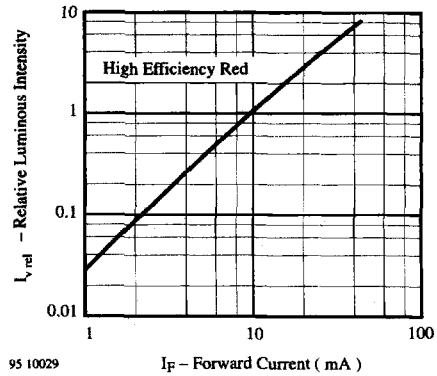


Figure 8. Relative Luminous Intensity vs. Forward Current

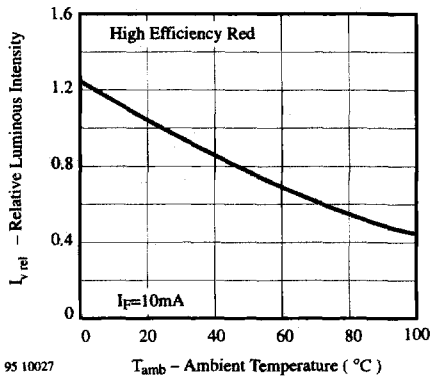


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

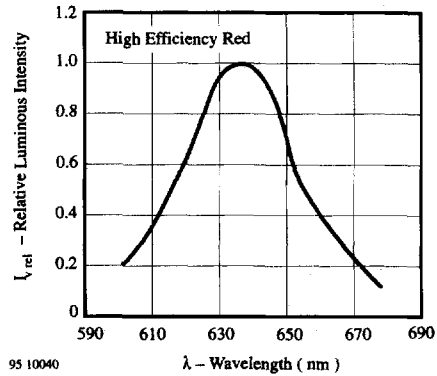


Figure 9. Relative Luminous Intensity vs. Wavelength

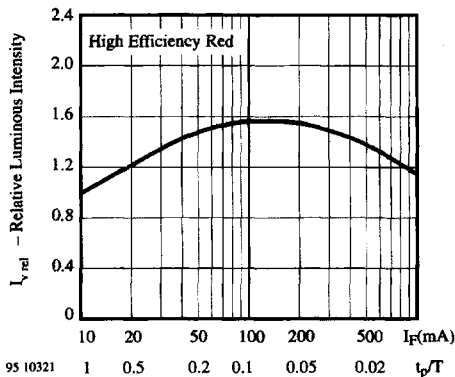


Figure 7. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

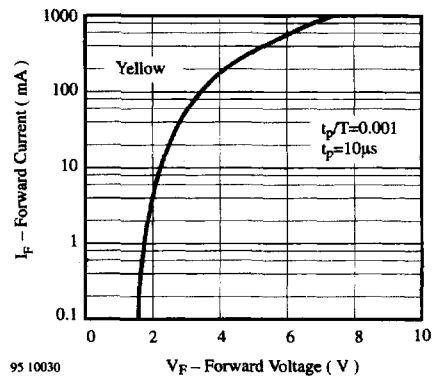


Figure 10. Forward Current vs. Forward Voltage

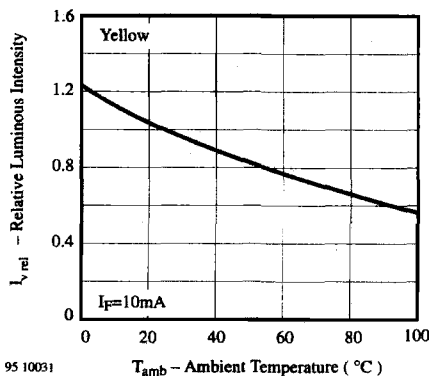


Figure 11. Rel. Luminous Intensity vs. Ambient Temperature

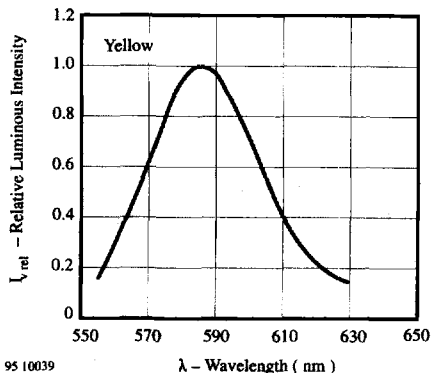


Figure 14. Relative Luminous Intensity vs. Wavelength

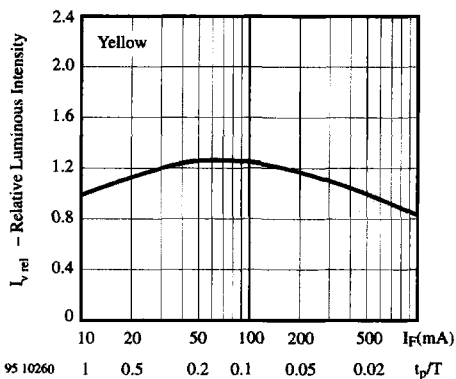


Figure 12. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

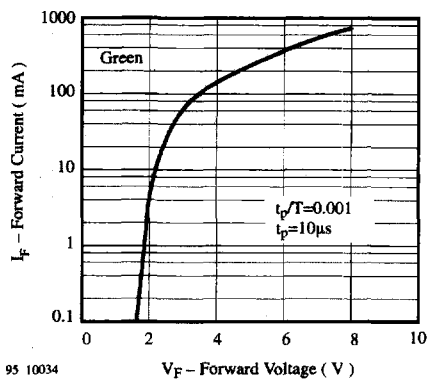


Figure 15. Forward Current vs. Forward Voltage

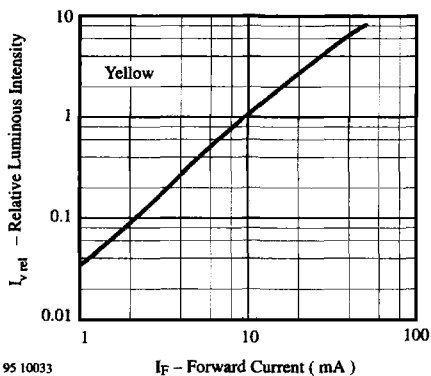


Figure 13. Relative Luminous Intensity vs. Forward Current

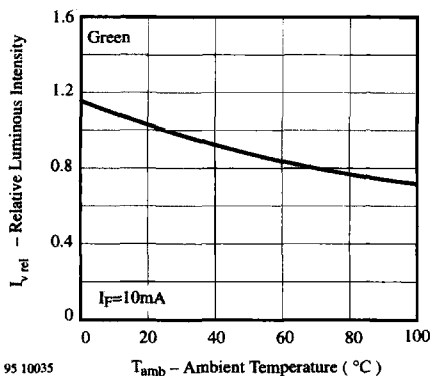


Figure 16. Rel. Luminous Intensity vs. Ambient Temperature

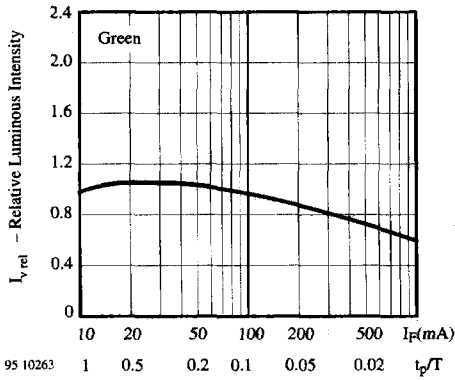


Figure 17. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

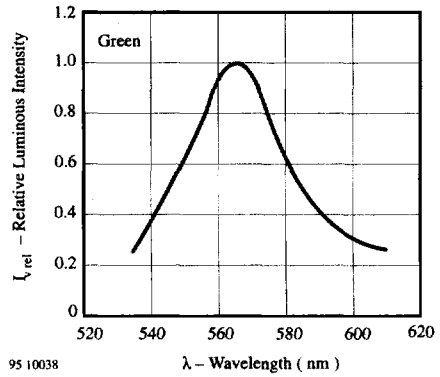


Figure 19. Relative Luminous Intensity vs. Wavelength

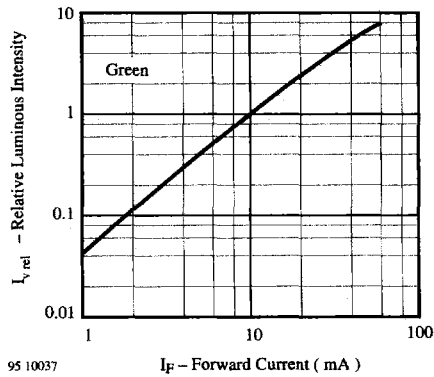
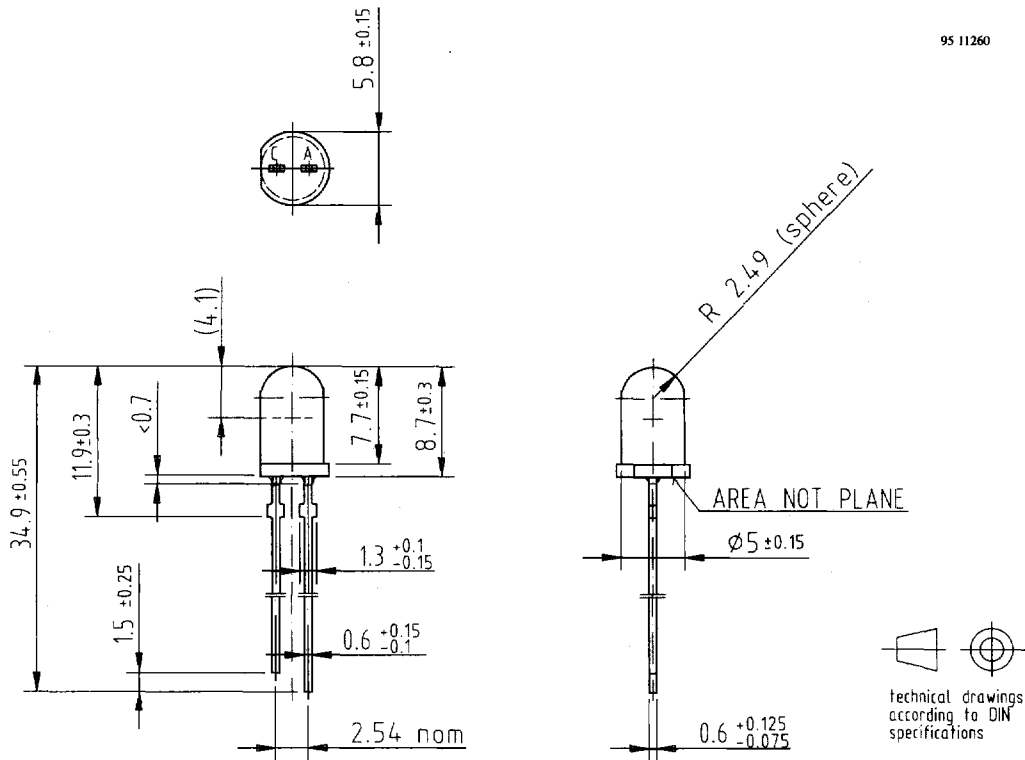


Figure 18. Relative Luminous Intensity vs. Forward Current

Dimensions in mm

Package TLH.52..

95 11260



Package TLH.62..

95 11261

