High Efficiency LEDs in ø 3 mm Tinted Diffused Package

Color	Type	Technology	Angle of half intensity ±φ
Soft orange	TLHO44..	GaAsP on GaP	30˚
Pure green	TLHP44..	GaP on GaP	

Description

The family of 3 mm LEDs in tinted diffused package is specially designed for applications requiring a superior light output with an excellent on/off contrast.
The special colors are soft orange and pure green.
This LED is available with a wide viewing angle.

Features

- High intensity
- Standard 3 mm (T-1) package
- Wide viewing angle
- Available in soft orange(605nm) and pure green (555nm)
- Luminous intensity categorized
- Wavelength categorized
- Reliable and rugged
- For DC and pulse operation

Applications

Indicator lamp
OFF / ON indicator
Backlight illumination
Readout lamp

Absolute Maximum Ratings

T_{amb} = 25°C, unless otherwise specified

TLHO44.. ,TLHP44.. ,

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage			V_R	6	V
DC forward current			I_F	30	mA
Surge forward current	$t_p \le 10$ µs		I_{FSM}	1	A
Power dissipation	$T_{amb} \le 30$˚C		P_V	100	mW
Junction temperature			T_j	100	˚C
Operating temperature range			T_{amb}	–20 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}	700	K/W

Optical and Electrical Characteristics

T_{amb} = 25°C, unless otherwise specified

Soft orange (TLHO44..)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	I_F = 10 mA, $I_{Vmin}/I_{Vmax} \ge 0.5$		I_V	1.6	4		mcd
Dominant wavelength	I_F = 10 mA	TLHO4400	λ_d	598		611	nm
		TLHO4407	λ_d	598		607	nm
		TLHO4408	λ_d	604		611	nm
Peak wavelength	I_F = 10 mA		λ_p		605		nm
Angle of half intensity	I_F = 10 mA		φ		±30		deg
Forward voltage	I_F = 20 mA		V_F		2.4	3	V
Reverse voltage	I_R = 10 µA		V_R	6	15		V
Junction capacitance	V_R = 0, f = 1 MHz		C_j		15		pF

Pure green (TLHP44..)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	I_F = 10 mA, $I_{Vmin}/I_{Vmax} \ge 0.5$	TLHP4400	I_V	0.63	2		mcd
		TLHP4401	I_V	1	3		mcd
		TLHP4405	I_V	1.6	3.5		mcd
		TLHP4403	I_V	2.5		6	mcd
Dominant wavelength	I_F = 10 mA		λ_d	555		565	nm
Peak wavelength	I_F = 10 mA		λ_p		555		nm
Angle of half intensity	I_F = 10 mA		φ		±30		deg
Forward voltage	I_F = 20 mA		V_F		2.4	3	V
Reverse voltage	I_R = 10 mA		V_R	6	15		V
Junction capacitance	V_R = 0, f = 1 MHz		C_j		50		pF

Typical Characteristics (T_{amb} = 25°C, unless otherwise specified)

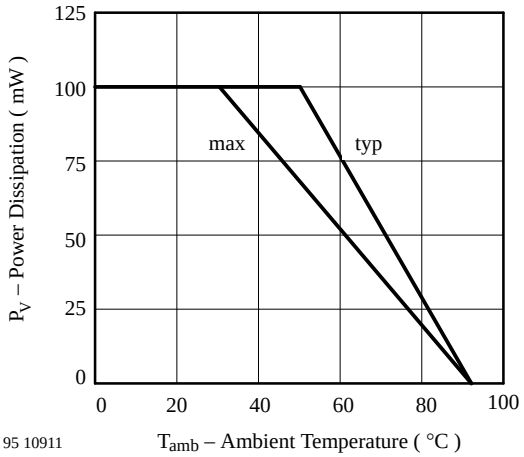


Figure 1. Power Dissipation vs. Ambient Temperature

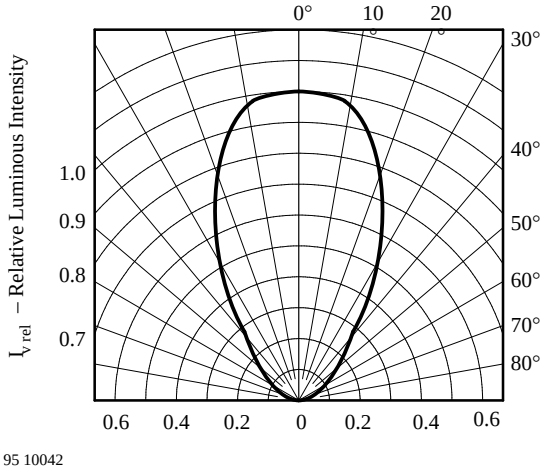


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

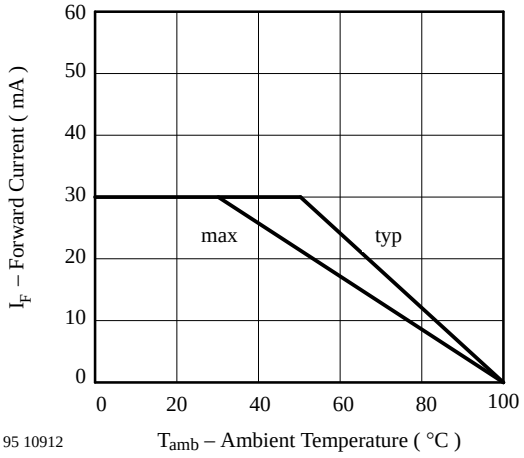


Figure 2. Forward Current vs. Ambient Temperature

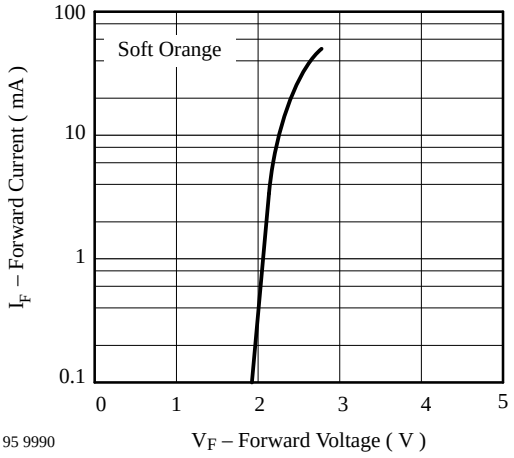


Figure 5. Forward Current vs. Forward Voltage

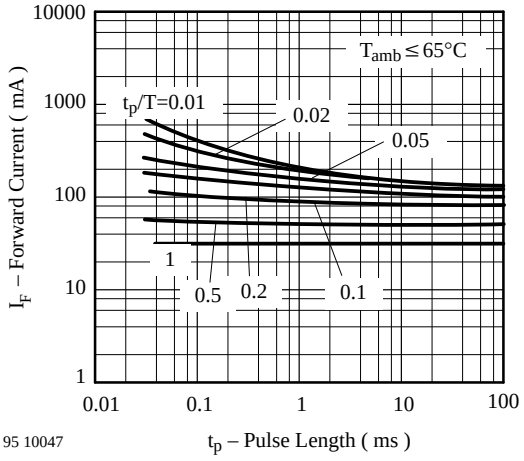


Figure 3. Forward Current vs. Pulse Length

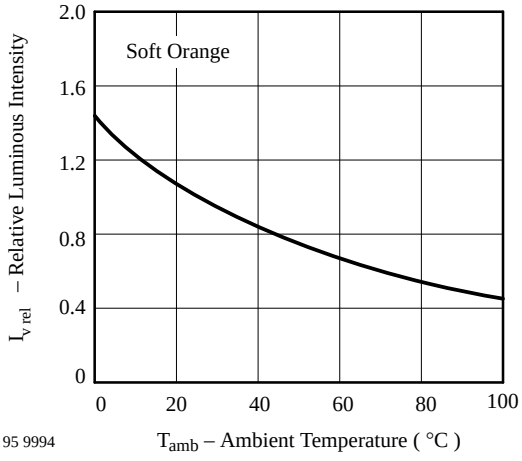


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

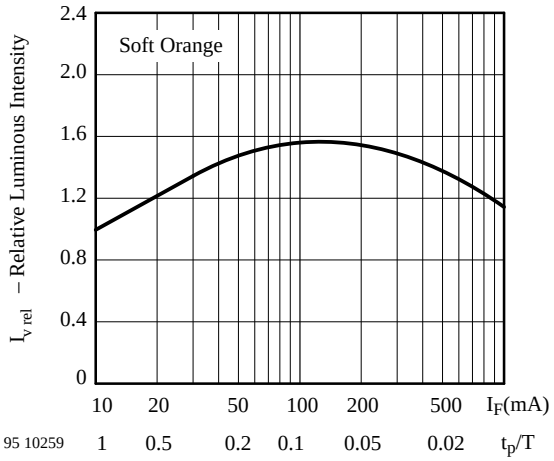


Figure 7. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

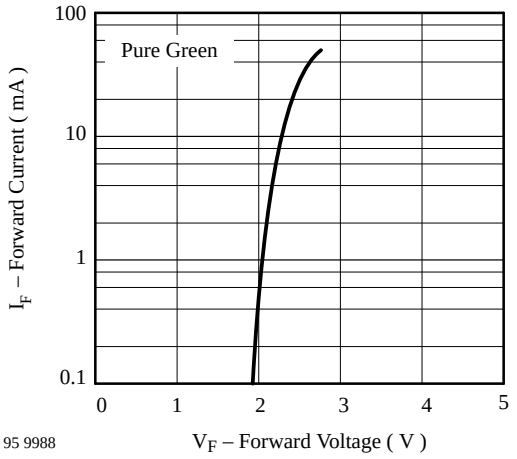


Figure 10. Forward Current vs. Forward Voltage

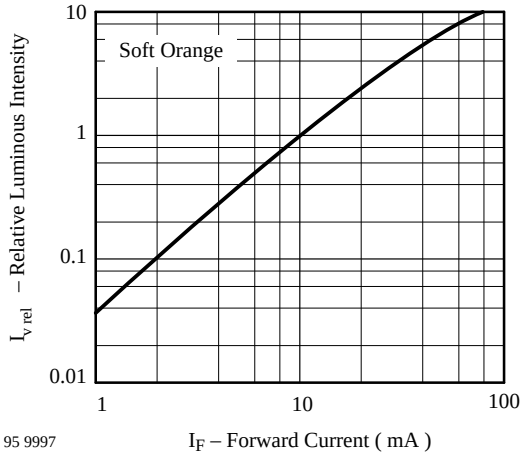


Figure 8. Relative Luminous Intensity vs. Forward Current

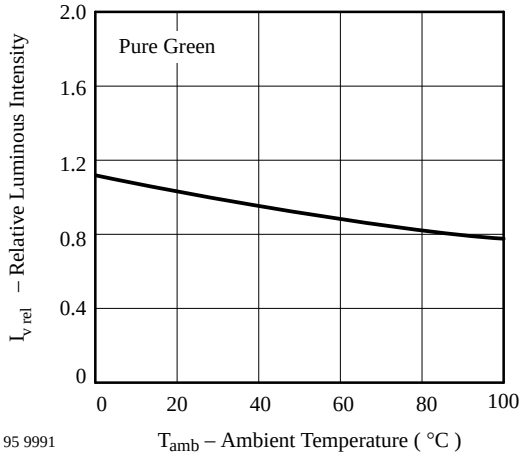


Figure 11. Rel. Luminous Intensity vs. Ambient Temperature

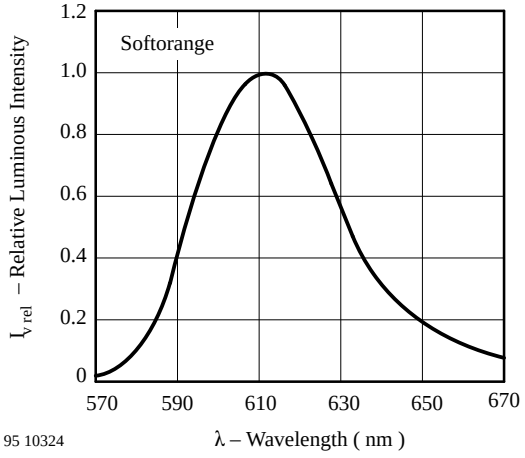


Figure 9. Relative Luminous Intensity vs. Wavelength

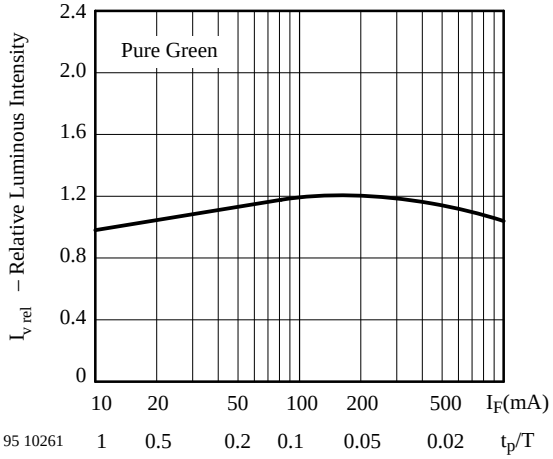


Figure 12. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

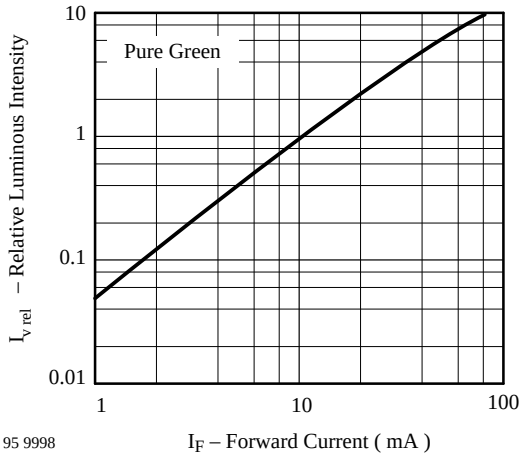


Figure 13. Relative Luminous Intensity vs. Forward Current

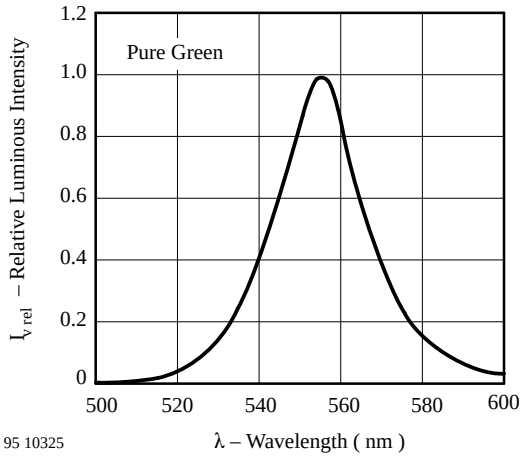
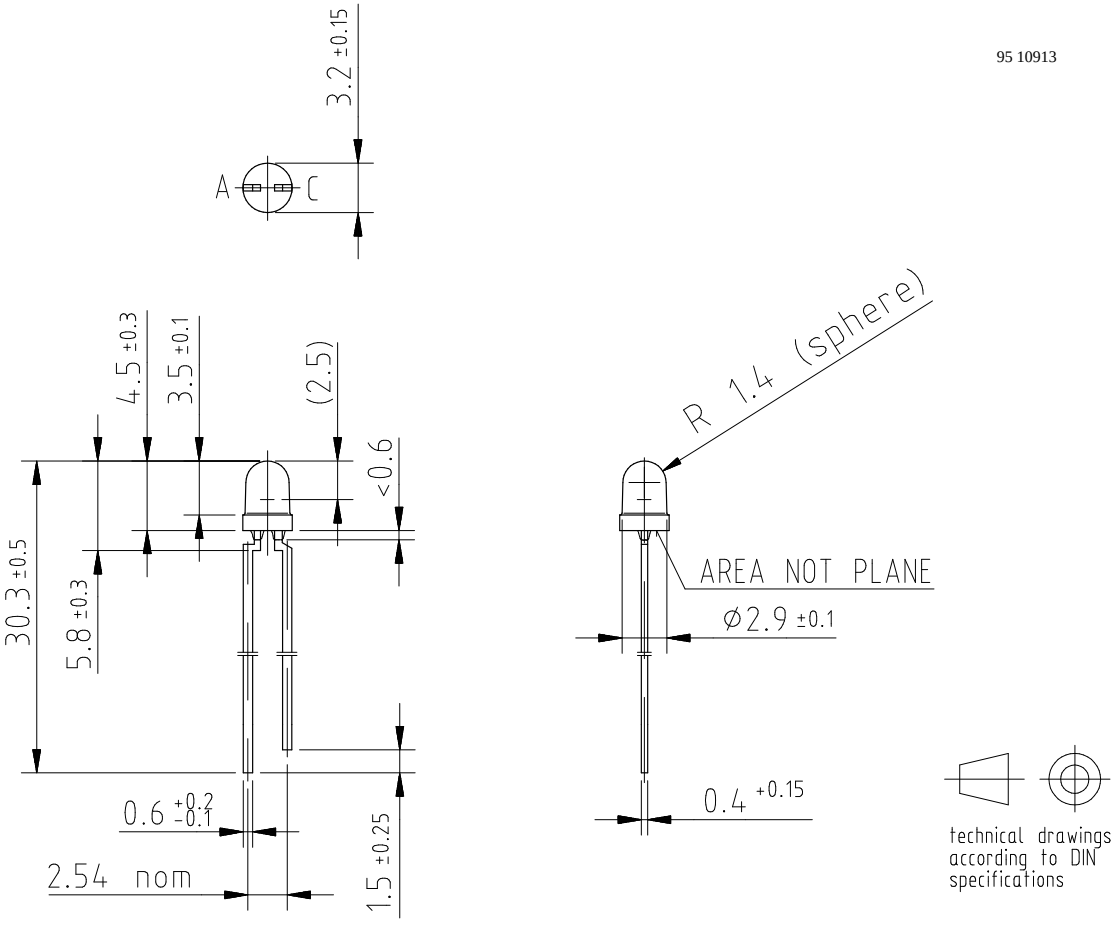


Figure 14. Relative Luminous Intensity vs. Wavelength

TLHO44../TLHP44..

Dimensions in mm



Ozone Depleting Substances Policy Statement

It is the policy of **TEMIC TELEFUNKEN microelectronic GmbH** to

1. Meet all present and future national and international statutory requirements.

2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

TEMIC TELEFUNKEN microelectronic GmbH semiconductor division has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively

2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA

3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

TEMIC can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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