Backlighting LEDs in ø 3 mm Tinted Non Diffused Package

Color	Type	Technology	Angle of half intensity ±φ
Soft orange	TLVS4200	GaAsP on GaP	85°
Pure green	TLVP4200	GaP on GaP	

Description

The TLVS4200 and TLVP4200 series was developed for backlighting. Due to its special shape the spatial distribution of the radiation is qualified for backlighting.
To optimize the brightness of backlighting a custom–built reflector (with scattering) is required. Uniform illumination can be enhanced by covering the front of the reflector with diffusor material.
This is a flexible solution for backlighting different areas.

Features

- High brightness
- Wide viewing angle
- Categorized for luminous flux
- Available in soft orange and pure green
- Tinted clear package
- Low power dissipation
- Low self heating
- Rugged design
- High reliability

Applications

Backlighting of display panels, LCD displays, symbols on switches, keyboards, graphic boards and measuring scales
Illumination of large areas e.g. dot matrix displays

Absolute Maximum Ratings

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

TLVS4200 ,TLVP4200

Parameter	Test Conditions	Type	Symbol	Value	Unit
Reverse voltage			V_R	6	V
DC forward current			I_F	30	mA
Surge forward current	$t_p \leqq 10$ µs		I_{FSM}	1	A
Power dissipation	$T_{amb} \leqq 30$˚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 (TLVS4200)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous flux	I_F = 15 mA		ϕ_V	10	25		mlm
Dominant wavelength	I_F = 10 mA		λ_d	598		611	nm
Peak wavelength	I_F = 10 mA		λ_p		605		nm
Angle of half intensity	I_F = 10 mA		φ		±85		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

Pure green (TLVP4200)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous flux	I_F = 15 mA		ϕ_V	4	10		mlm
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		±85		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		50		pF

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

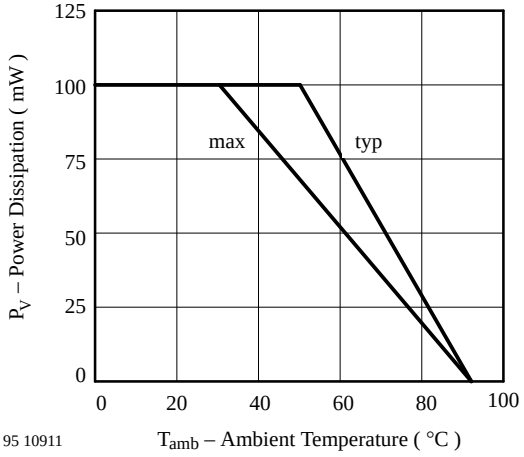


Figure 1. Power Dissipation vs. Ambient Temperature

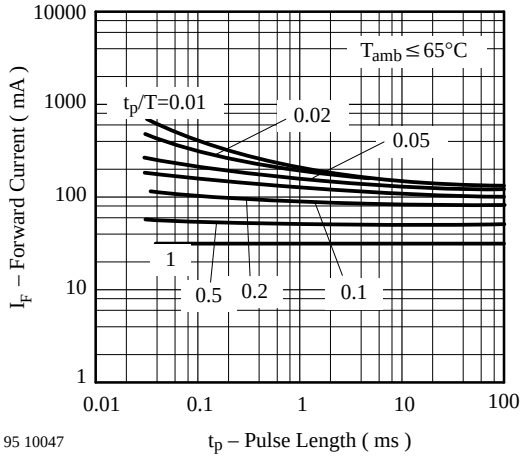


Figure 3. Forward Current vs. Pulse Length

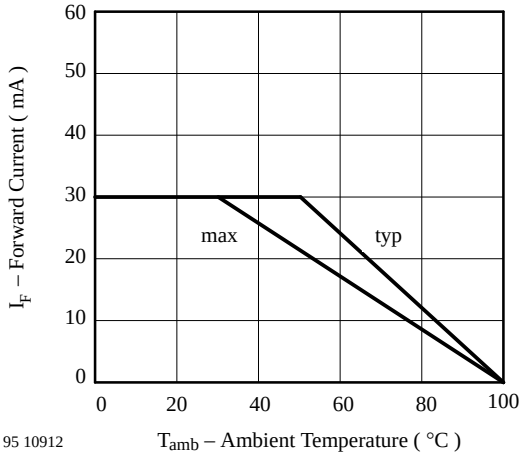


Figure 2. Forward Current vs. Ambient Temperature

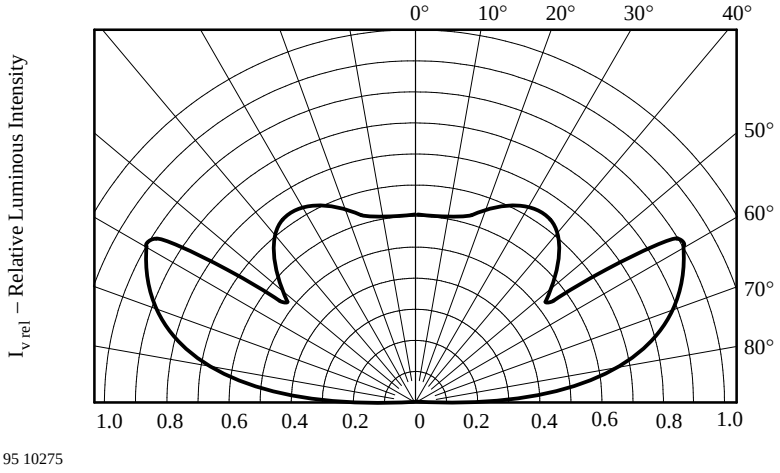


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

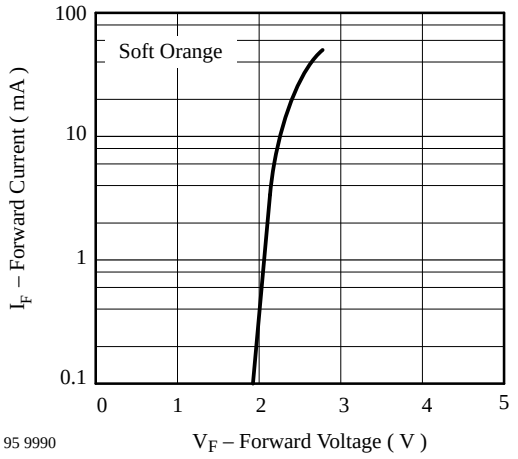


Figure 5. Forward Current vs. Forward Voltage

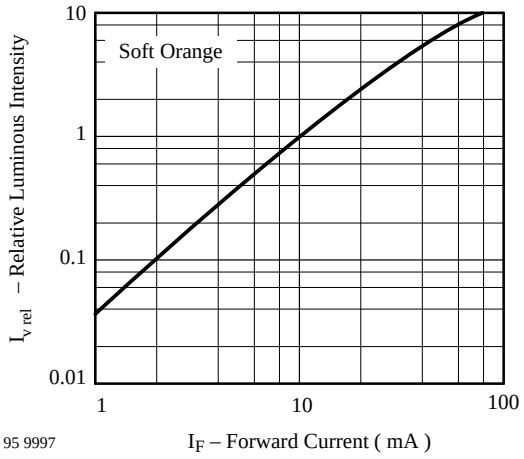


Figure 8. Relative Luminous Intensity vs. Forward Current

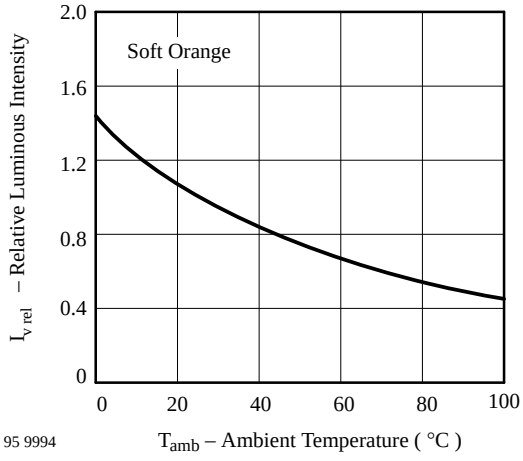


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

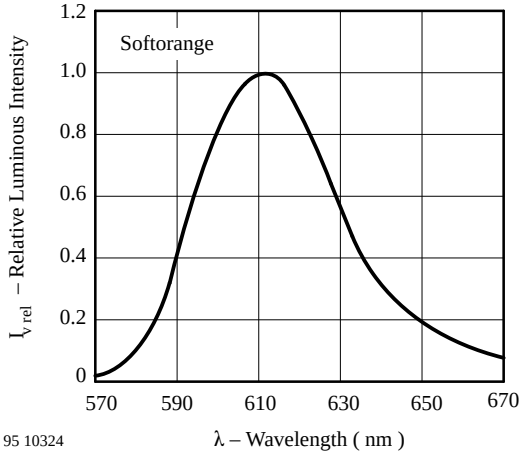


Figure 9. Relative Luminous Intensity vs. Wavelength

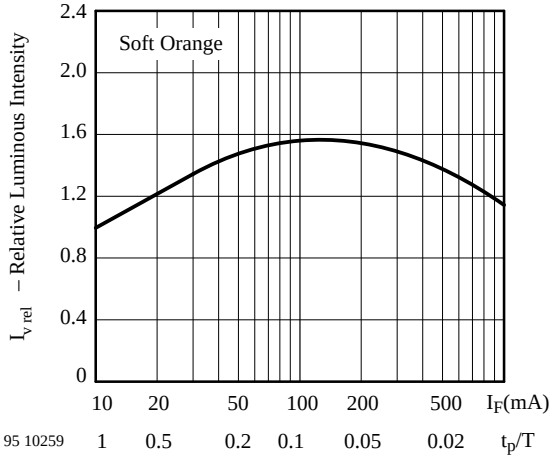


Figure 7. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

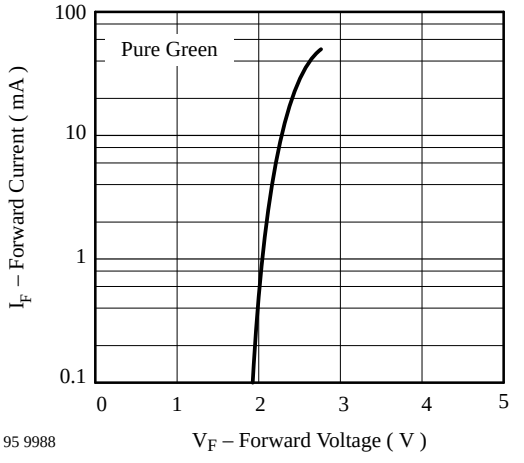


Figure 10. Forward Current vs. Forward Voltage

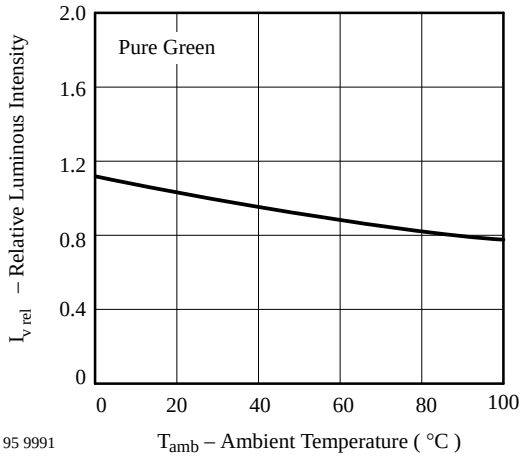


Figure 11. Rel. Luminous Intensity vs. Ambient Temperature

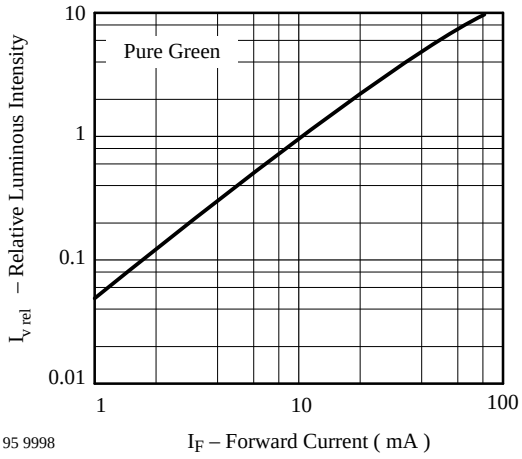


Figure 13. Relative Luminous Intensity vs. Forward Current

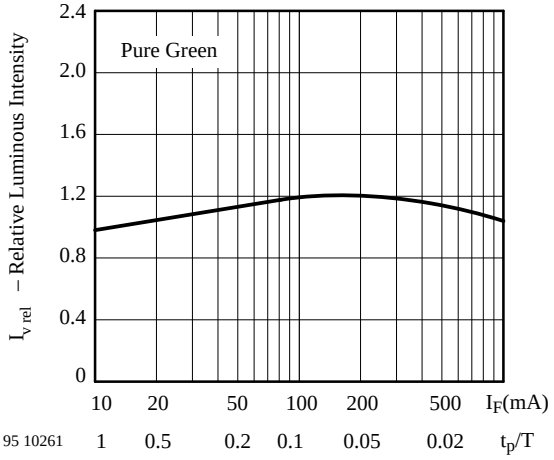


Figure 12. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

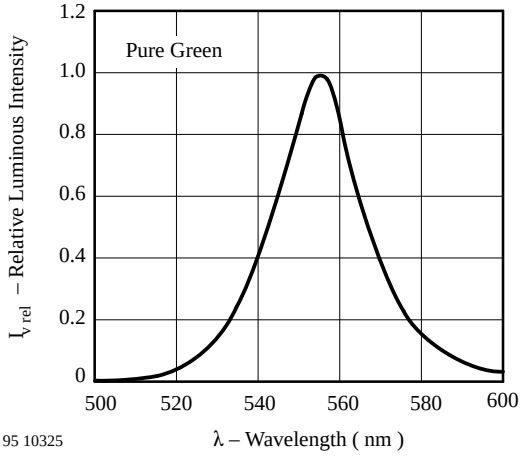
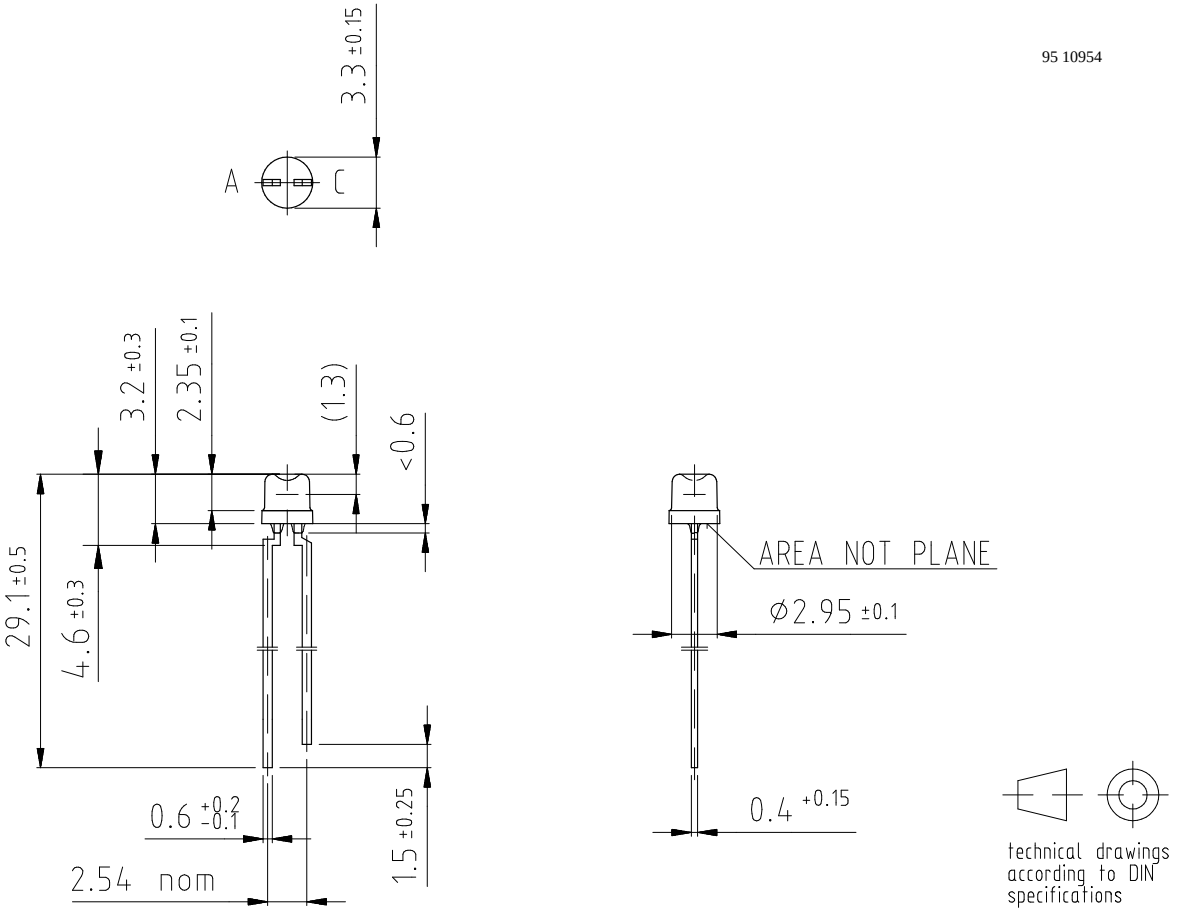


Figure 14. Relative Luminous Intensity vs. Wavelength

TLVS42../TLVP42..

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.

We reserve the right to make changes to improve technical design and may do so without further notice.
Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use TEMIC products for any unintended or unauthorized application, the buyer shall indemnify TEMIC against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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