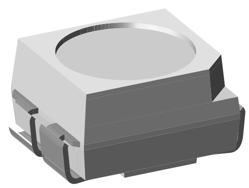
Power SMD LED PLCC-4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FEATURES

- Utilizing AlInGaP technology
- Available in 8 mm tape
- Luminous intensity, color and forward voltage categorized per packing unit
- Luminous intensity ratio per packing unit $I_{Vmax}/I_{Vmin} \leq 1.6$
- ESD class 2
- Suitable for all soldering methods according to CECC
- Lead (Pb)-free device

DESCRIPTION

The TLM.32.. series is an advanced development in terms of heat dissipation.

The leadframe profile of this PLCC-3 SMD package is optimized to reduce the thermal resistance.

This allows higher drive current and doubles the light output compared to Vishay's high intensity SMD LED in PLCC-2 package.

APPLICATIONS

- Traffic Signals and Signs
- Interior and exterior lighting
- Dashboard illumination
- Indicator and backlighting purposes for audio, video, LCD's switches, symbols, illuminated advertising etc.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: SMD PLCC-4
- Product series: power
- Angle of half intensity: ± 60°

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY
TLMPG3200-GS08	Pure green, I_V = 50 mcd (typ.)
TLMPG3200-GS18	Pure green, I_V = 50 mcd (typ.)
TLMYG3200-GS08	Yellow green, I_V = 130 mcd (typ.)

ABSOLUTE MAXIMUM RATINGS[1)] TLMPG3200, TLMYG3200

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	5	V
Forward current		I_F	70	mA
Power dissipation	$T_{amb} \leq 65$ °C (290 K/W), $T_{amb} \leq 70$ °C (270 K/W)	P_{tot}	180	mW
Junction temperature		T_j	125	°C
Operating temperature range		T_{amb}	- 40 to + 100	°C
Storage temperature range		T_{stg}	- 40 to + 100	°C
Thermal resistance junction/ambient	mounted on PC board (pad size > 5 mm^2)	R_{thJA}	270	K/W
		R_{thJA}	290	K/W

Note:
1) T_{amb} = 25 °C, unless otherwise specified

OPTICAL AND ELECTRICAL CHARACTERISTICS[1)] TLMPG3200, PURE GREEN						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN**	**TYP.**	**MAX**	**UNIT**
Luminous intensity	I_F = 50 mA	I_V	25	50		mcd
Luminous flux	I_F = 50 mA	I_V		140		mlm
Dominant wavelength	I_F = 50 mA	λ_d	555	564	567	nm
Peak wavelength	I_F = 50 mA	λ_p		565		nm
Spectral bandwidth at 50 % $I_{rel\ max}$	I_F = 50 mA	$\Delta\lambda$		15		nm
Angle of half intensity	I_F = 50 mA	φ		± 60		deg
Forward voltage	I_F = 50 mA	V_F		2.2	2.6	V
Reverse current	V_R = 5 V	V_R		0.01	10	μA

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

OPTICAL AND ELECTRICAL CHARACTERISTICS[1)] TLMYG3200, YELLOW GREEN						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN**	**TYP.**	**MAX**	**UNIT**
Luminous intensity	I_F = 50 mA	I_V	63	130		mcd
Luminous flux	I_F = 50 mA	I_V		380		mlm
Dominant wavelength	I_F = 50 mA	λ_d	566	574	577	nm
Peak wavelength	I_F = 50 mA	λ_p		576		nm
Spectral bandwidth at 50 % $I_{rel\ max}$	I_F = 50 mA	$\Delta\lambda$		20		nm
Angle of half intensity	I_F = 50 mA	φ		± 60		deg
Forward voltage	I_F = 50 mA	V_F		2.2	2.6	V
Reverse current	V_R = 5 V	V_R		0.01	10	μA

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

TYPICAL CHARACTERISTICS

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

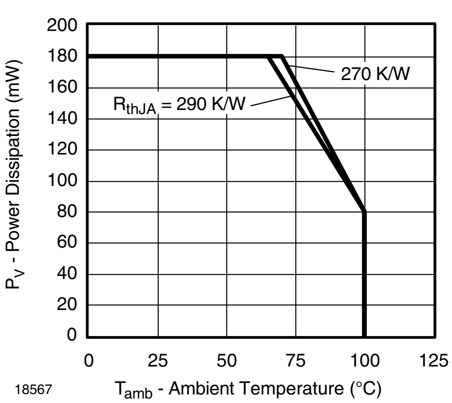


Figure 1. Power Dissipation vs. Ambient Temperature

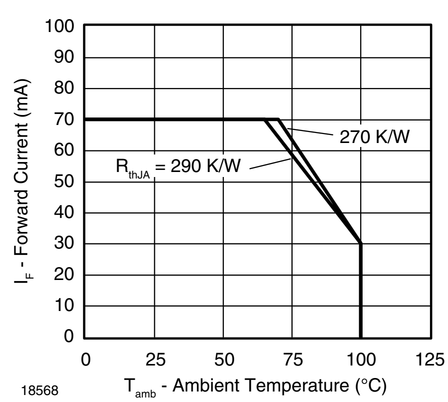


Figure 2. Forward Current vs. Ambient Temperature

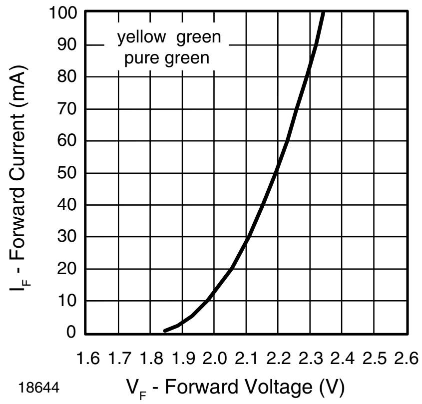


Figure 3. Forward Current vs. Forward Voltage

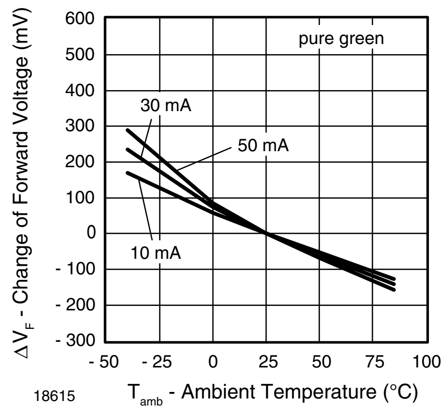


Figure 6. Change of Forward Voltage vs. Ambient Temperature

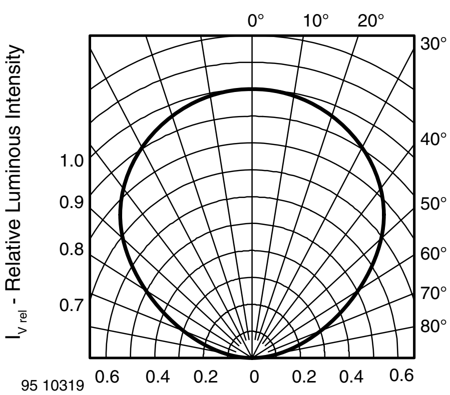


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

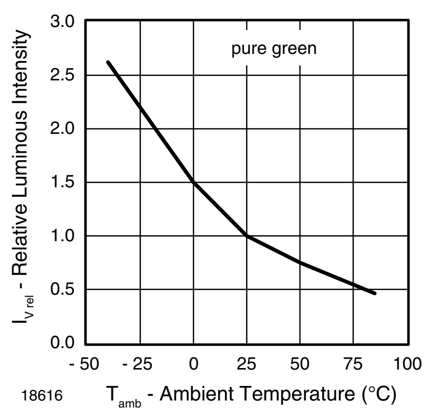


Figure 7. Rel. Luminous Intensity vs. Ambient Temperature

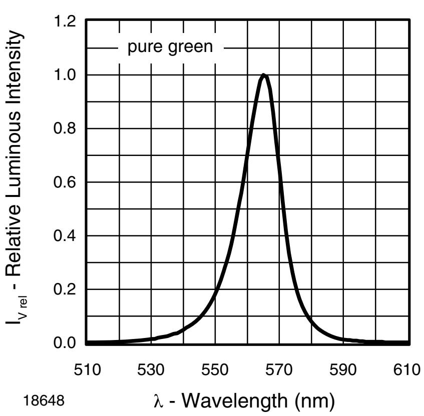


Figure 5. Relative Luminous Intensity vs. Wavelength

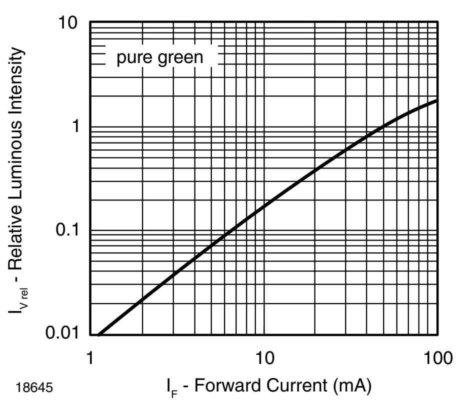


Figure 8. Relative Luminous Intensity vs. Forward Current

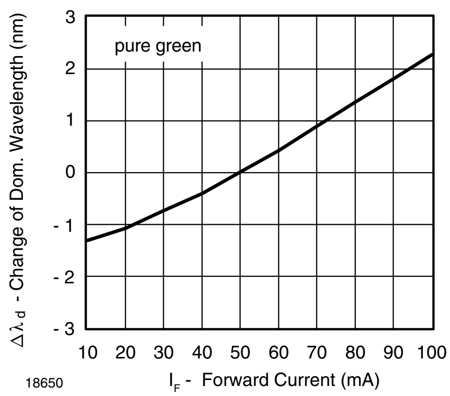


Figure 9. Change of Dominant Wavelength vs. Forward Current

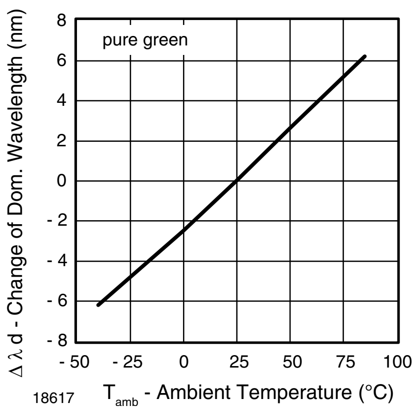


Figure 10. Change of Dominant Wavelength vs. Ambient Temperature

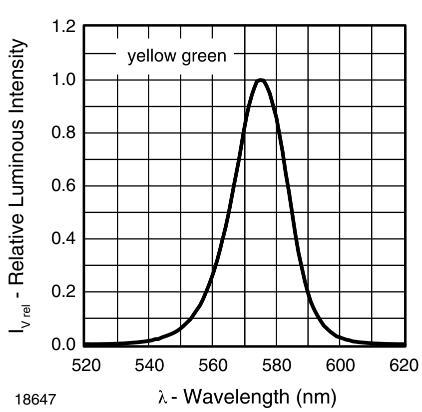


Figure 11. Relative Luminous Intensity vs. Wavelength

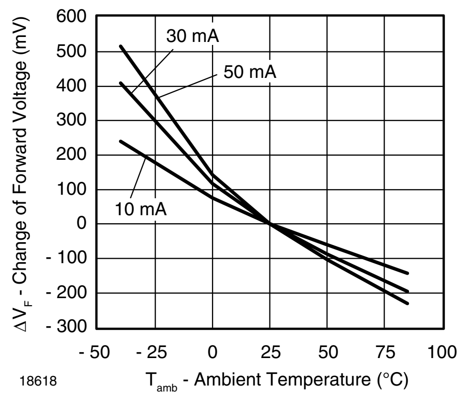


Figure 12. Change of Forward Voltage vs. Ambient Temperature

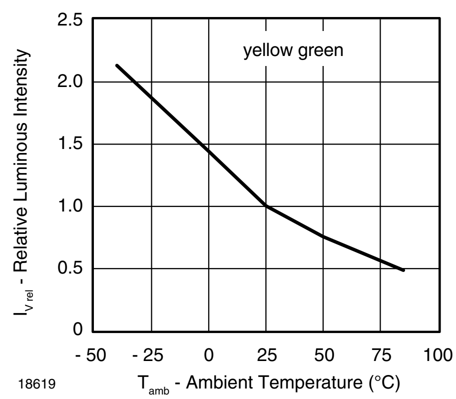


Figure 13. Rel. Luminous Intensity vs. Ambient Temperature

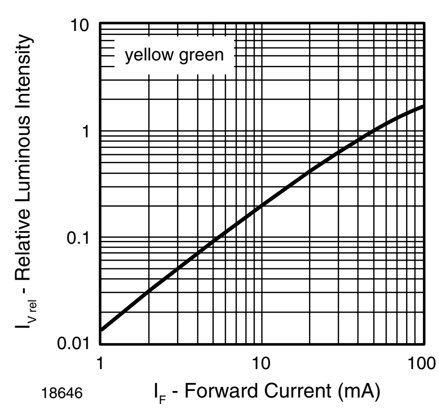


Figure 14. Relative Luminous Intensity vs. Forward Current

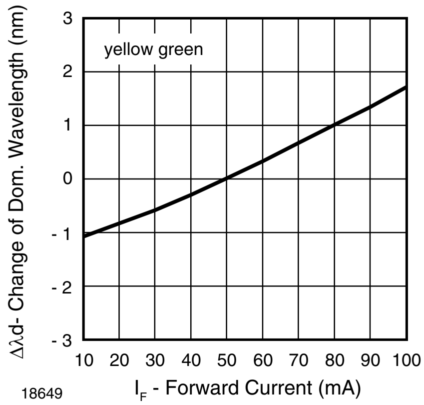


Figure 15. Change of Dominant Wavelength vs. Forward Current

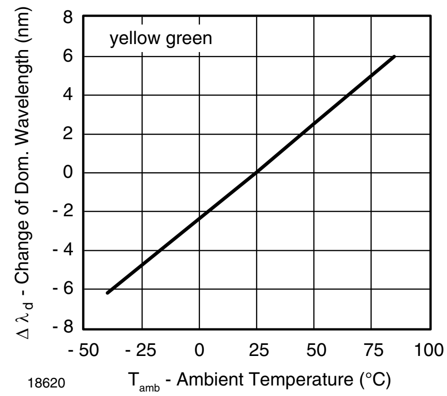
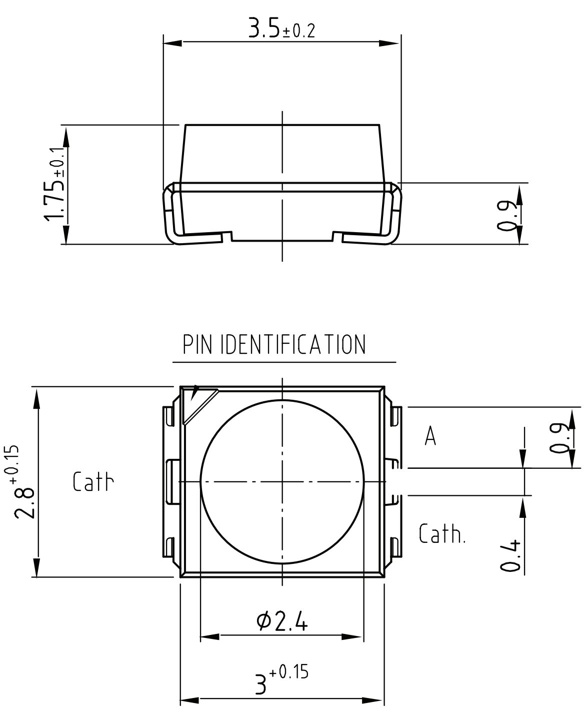
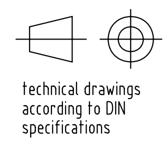


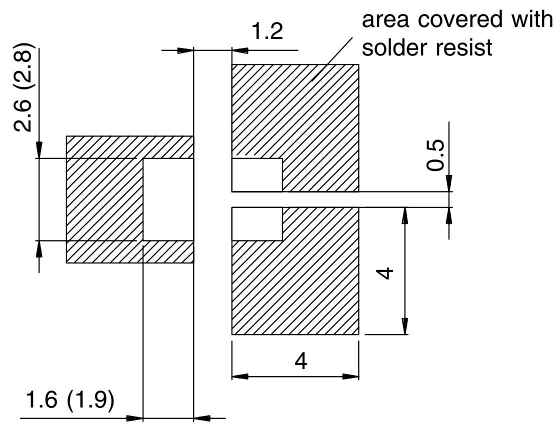
Figure 16. Change of Dominant Wavelength vs. Ambient Temperature

PACKAGE DIMENSIONS in millimeters





Mounting Pad Layout



Dimensions: IR and Vaporphase
(Wave Soldering)

Drawing-No. : 6.541-5054.01-4
Issue: 2; 02.12.05
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Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor 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.

Vishay Semiconductor GmbH 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.

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

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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