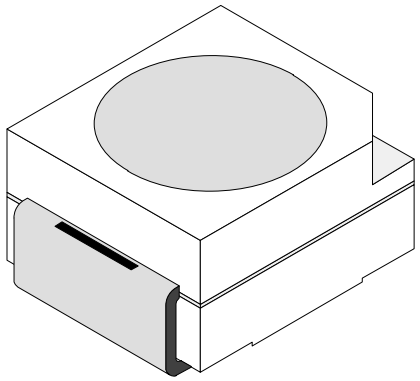
High Intensity SMD LED

Color	Type	Technology	Angle of Half Intensity ±φ
Red	TLMK310.	AlInGaP on GaAs	60°

Description

This device has been designed to meet the increasing demand for AlInGaP technology.
The package of the TLMK310. is the P–LCC–2 (equivalent to a size B tantalum capacitor).
It consists of a lead frame which is embedded in a white thermoplast. The reflector inside this package is filled up with clear epoxy.



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Features

- SMD LED with exceptional brightness
- Luminous intensity categorized
- Compatible with automatic placement equipment
- EIA and ICE standard package
- Compatible with infrared, vapor phase and wave solder processes according to CECC
- Available in 8 mm tape
- Low profile package
- Non-diffused lens: excellent for coupling to light pipes and backlighting
- Low power consumption
- Luminous intensity ratio in one packaging unit $I_{Vmax}/I_{Vmin} \leqq 1.6$

Applications

- Automotive:
  backlighting in dashboards and switches
- Telecommunication: indicator and backlighting in telephone and fax
- Indicator and backlight for audio and video equipment
- Indicator and backlight in office equipment
- Flat backlight for LCDs, switches and symbols
- General use

Absolute Maximum Ratings

T_{amb} = 25°C, unless otherwise specified
TLMK310., , , ,

Parameter	Test Conditions	Symbol	Value	Unit
Reverse voltage		V_R	5	V
DC forward current	$T_{amb} \leq 60°C$	I_F	30	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	0.1	A
Power dissipation	$T_{amb} \leq 60°C$	P_V	80	mW
Junction temperature		T_j	125	°C
Operating temperature range		T_{amb}	–40 to +100	°C
Storage temperature range		T_{stg}	–55 to +100	°C
Soldering temperature	$t \leq 5$ s	T_{sd}	260	°C
Thermal resistance junction/ambient	mounted on PC board (pad size > 16 mm^2)	R_{thJA}	400	K/W

Optical and Electrical Characteristics

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

Red (TLMK310.)

Parameter	Test Conditions	Type	Symbol	Min.	Typ.	Max.	Unit
Luminous intensity [2]	I_F = 10 mA	TLMK3100	I_V	10	18		mcd
		TLMK3102	I_V	20		64	mcd
		TLMK3105	I_V	32		100	mcd
Dominant wavelength	I_F = 10 mA		λ_d		630		nm
Peak wavelength	I_F = 10 mA		λ_p		643		nm
Angle of half intensity	I_F = 10 mA		φ		±60		deg
Forward voltage	I_F = 20 mA		V_F		1.9	2.6	V
Reverse voltage	I_R = 10 µA		V_R	5			V
Junction capacitance	V_R = 0, f = 1 MHz		C_j		15		pF

[2] in one Packing Unit I_VMin./ I_VMax. ≦ 2

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

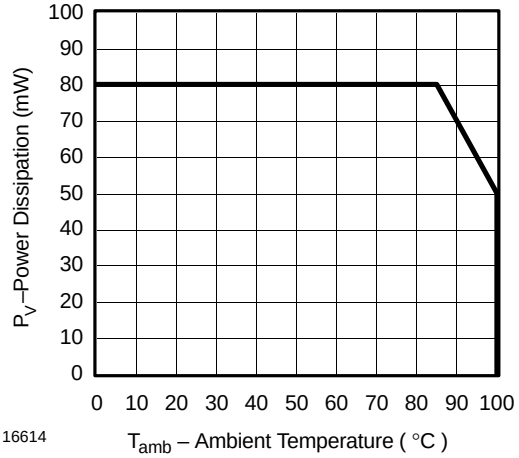


Figure 1. Power Dissipation vs. Ambient Temperature

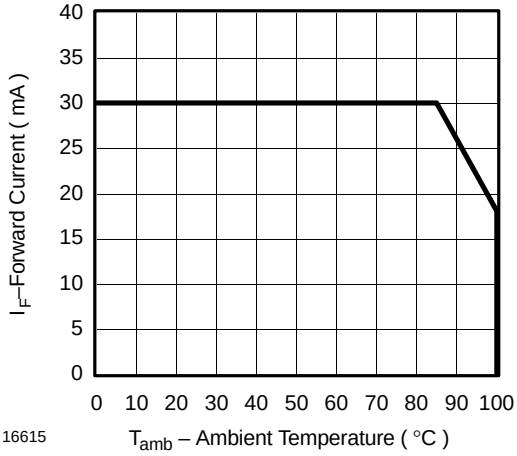


Figure 2. Forward Current vs. Ambient Temperature

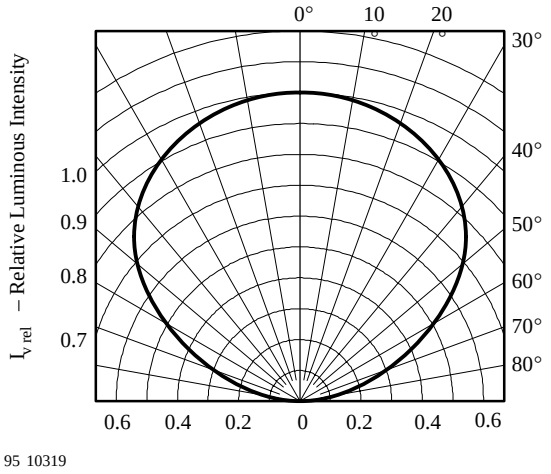


Figure 3. Rel. Luminous Intensity vs. Angular Displacement

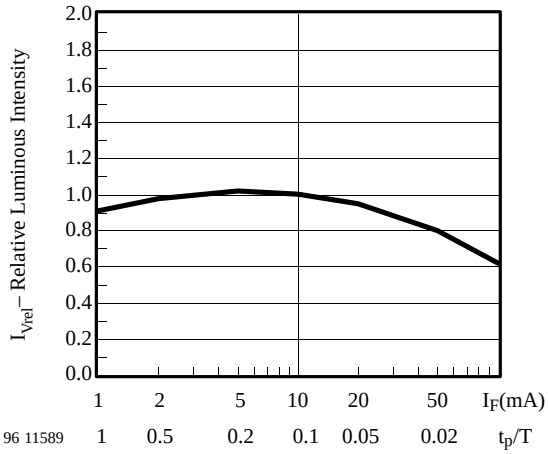


Figure 6. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

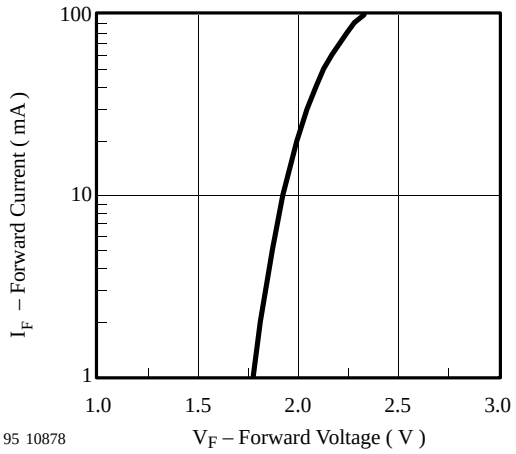


Figure 4. Forward Current vs. Forward Voltage

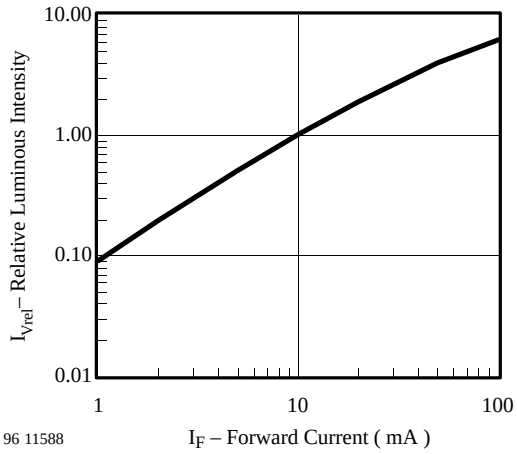


Figure 7. Relative Luminous Intensity vs. Forward Current

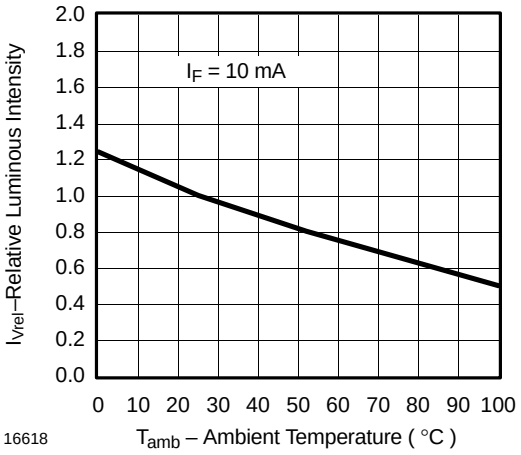


Figure 5. Rel. Luminous Intensity vs. Ambient Temperature

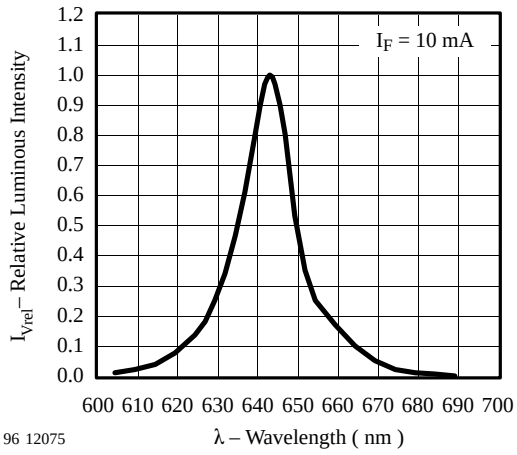


Figure 8. Relative Luminous Intensity vs. Wavelength

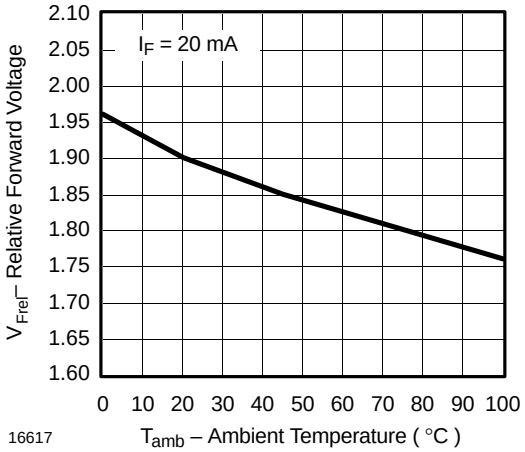


Figure 9. Forward Voltage vs. Ambient Temperature

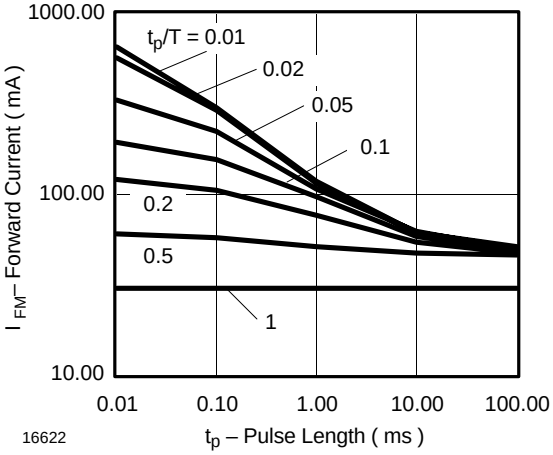
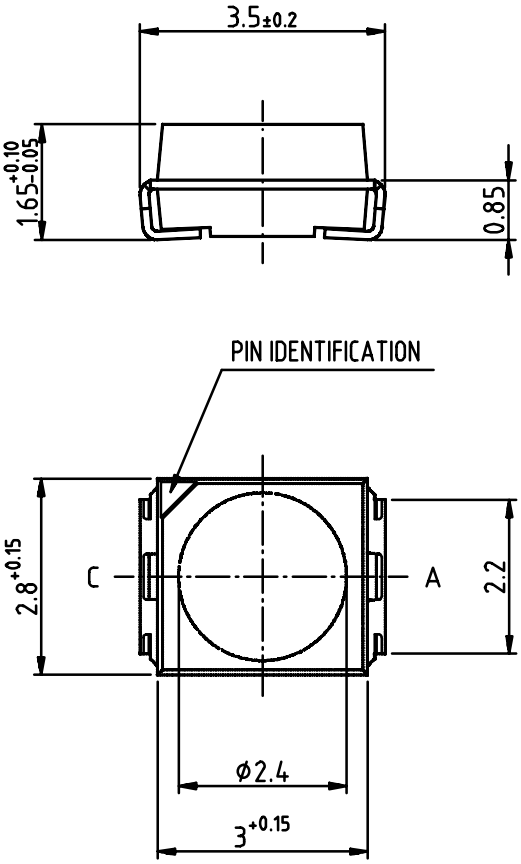


Figure 10. Forward Current vs. Pulse Length

Dimensions in mm



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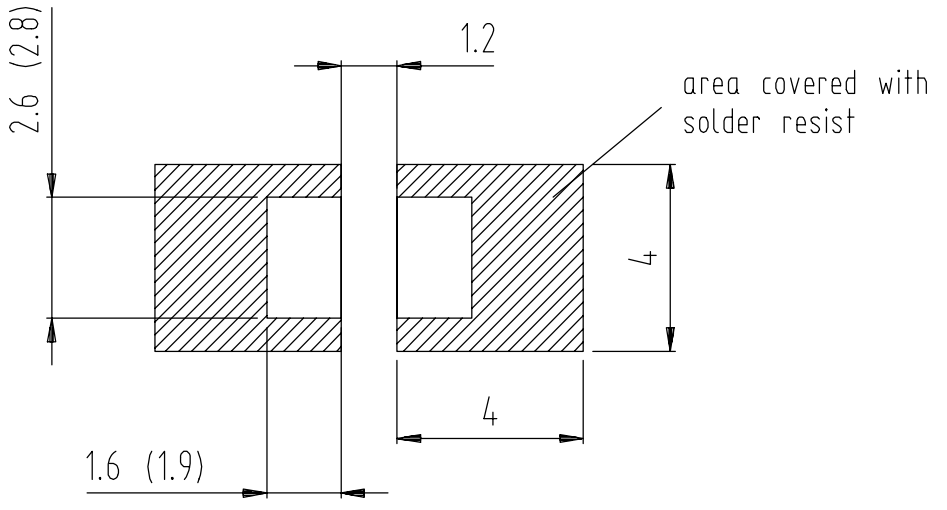
technical drawings according to DIN specifications

Dimensions in mm



Dimensions: IR and Vaporphase (Wave Soldering)

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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.

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