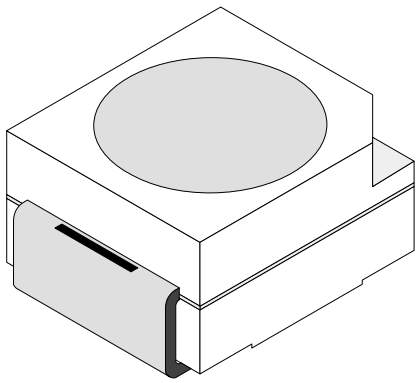
SMD LED in P–LCC–2 Package

Color	Type	Technology	Angle of Half Intensity ±φ
Blue	TLMB310.	GaN on SiC	60°

Description

This device has been redesigned in 1998 replacing SiC by GaN technology to meet the increasing demand for high efficiency blue LEDs.
The package of the TLMB310. 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. All LEDs are categorized in luminous intensity groups. That allows users to assemble LEDs with uniform appearance.



94 8553

Features

- GaN on SiC technology
- EIA and ICE standard package
- Compatible with infrared, vapor phase and wave solder processes according to CECC
- Available in 8 mm tape
- Non-diffused lens: excellent for coupling to light pipes and backlighting
- Luminous intensity ratio in one packaging unit $I_{Vmax}/I_{Vmin} \leqq 1.6$
- ESD class 1

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

TLMB310.

Parameter	Test Conditions	Symbol	Value	Unit
Reverse voltage		V_R	5	V
DC forward current	$T_{amb} \leq 60°C$	I_F	20	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	0.1	A
Power dissipation	$T_{amb} \leq 60°C$	P_V	100	mW
Junction temperature		T_j	100	°C
Operating temperature range		T_{amb}	–40 to +100	°C
Storage temperature range		T_{stg}	–40 to +100	°C
Soldering temperature	t ≤ 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

Blue (**TLMB310.**)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity 1)	I_F = 10 mA,	TLMB3100	I_V	4.0	8.0		mcd
		TLMB3101	I_V	4.0		12.5	mcd
		TLMB3104	I_V	5.0		12.5	mcd
		TLMB3106	I_V	5.0		20.0	mcd
Dominant wavelength	I_F = 10 mA		λ_d		466		nm
Peak wavelength	I_F = 10 mA		λ_p		428		nm
Angle of half intensity	I_F = 10 mA		φ		±60		deg
Forward voltage	I_F = 20 mA		V_F		3.9	4.5	V
Reverse voltage	I_R = 10 µA		V_R	5			V
1) in one Packing Unit I_V Min./ I_V Max. ≤ 1.6							

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

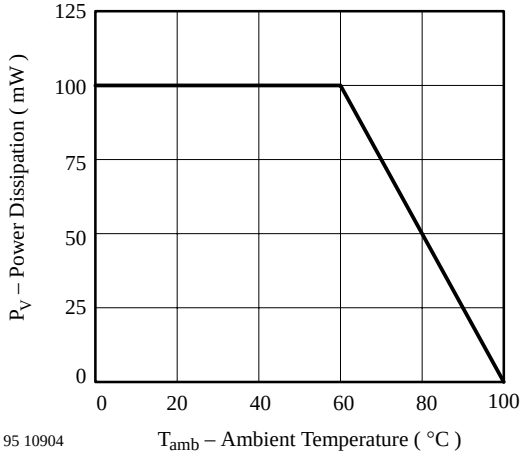


Figure 1. Power Dissipation vs. Ambient Temperature

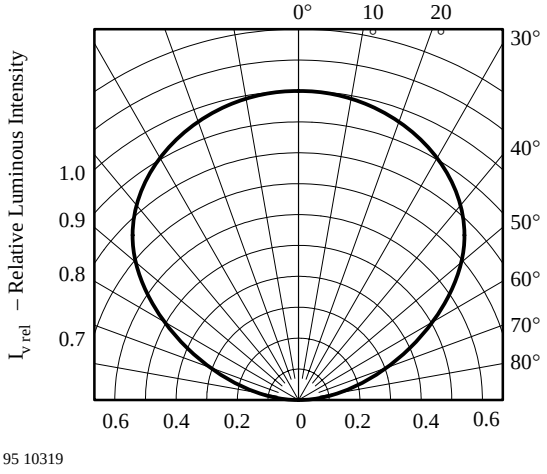


Figure 3. Rel. Luminous Intensity vs. Angular Displacement

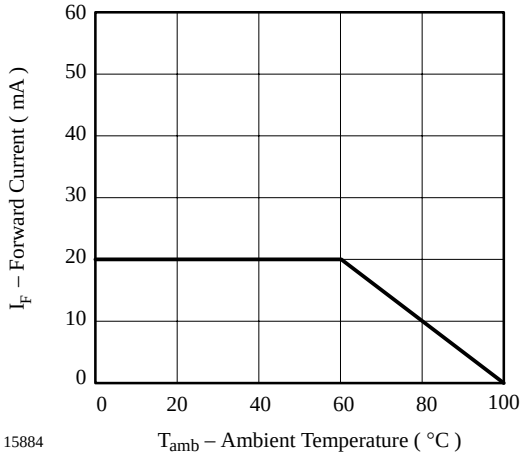


Figure 2. Forward Current vs. Ambient Temperature

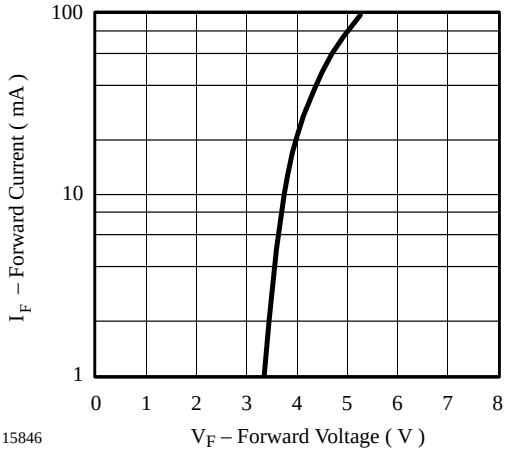


Figure 4. Forward Current vs. Forward Voltage

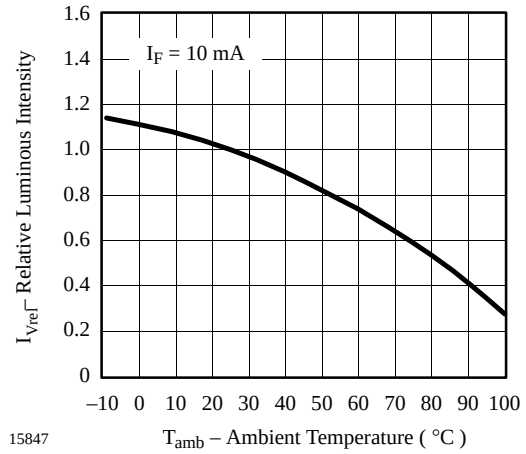


Figure 5. Rel. Luminous Intensity vs. Ambient Temperature

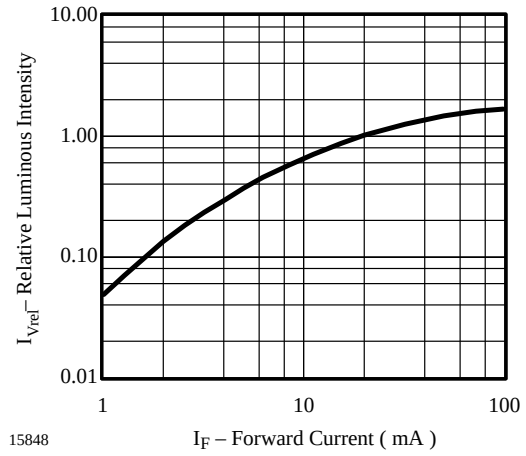


Figure 6. Relative Luminous Intensity vs. Forward Current

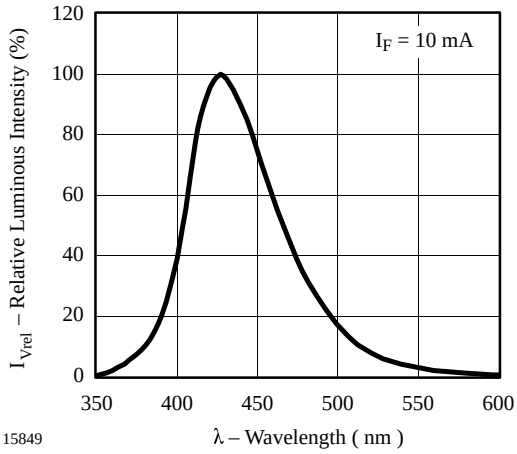
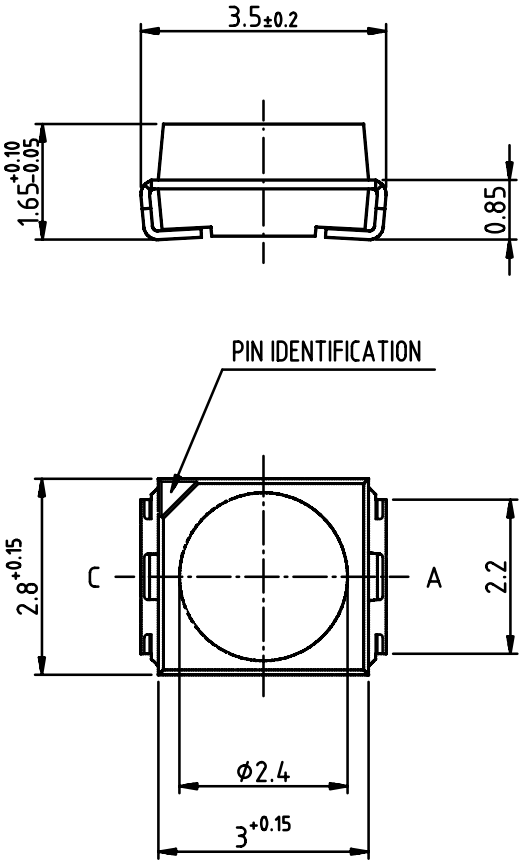


Figure 7. Relative Luminous Intensity vs. Wavelength

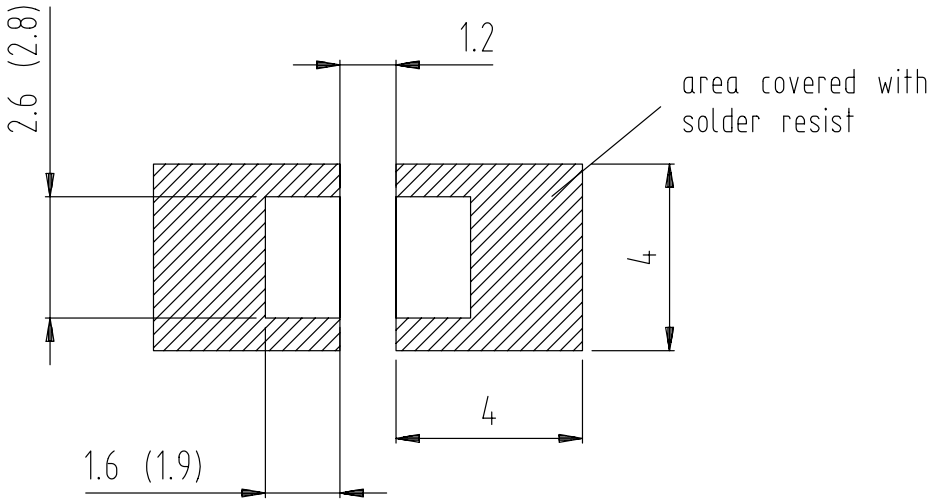
Dimensions in mm



95 11314

technical drawings according to DIN specifications

PCB Layout in mm



Dimensions: IR and Vaporphase
(Wave Soldering)

95 10966

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
Telephone: 49 (0)7131 67 2831, Fax number: 49 (0)7131 67 2423