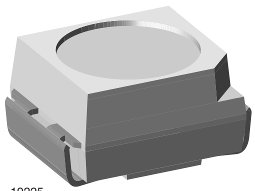
Standard SMD LED PLCC-2



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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 $I_{Vmax}/I_{Vmin} \leq 1.6$
- ESD class 1
- Lead (Pb)-free device

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 PLCC-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.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: SMD PLCC-2
- Product series: standard
- Angle of half intensity: ± 60°

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

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLMB3100	Blue, I_V > 4.0 mcd	GaN on SiC
TLMB3101	Blue, I_V = (4.0 to 12.5) mcd	GaN on SiC
TLMB3104	Blue, I_V = (5.0 to 12.5) mcd	GaN on SiC
TLMB3106	Blue, I_V = (5.0 to 20.0) mcd	GaN on SiC

ABSOLUTE MAXIMUM RATINGS[1)] TLMB310.				
PARAMETER	TEST CONDITION	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	$t \leq 5$ s	T_{sd}	260	°C
Thermal resistance junction/ambient	mounted on PC board (pad size > 16 mm^2)	R_{thJA}	400	K/W

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

OPTICAL AND ELECTRICAL CHARACTERISTICS[1)] TLMB310., BLUE							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity [2)]	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

Note:
1) T_{amb} = 25 °C, unless otherwise specified
2) In one packing unit $I_{Vmax}/I_{Vmin} \leq 1.6$

TYPICAL CHARACTERISTICS

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

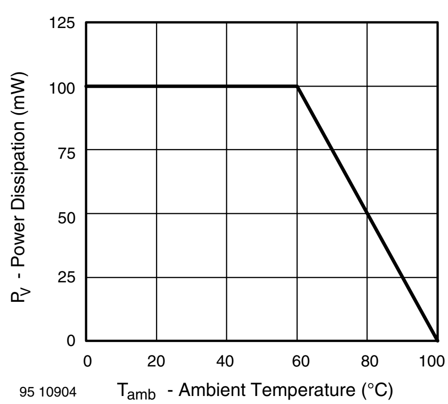


Figure 1. Power Dissipation vs. Ambient Temperature

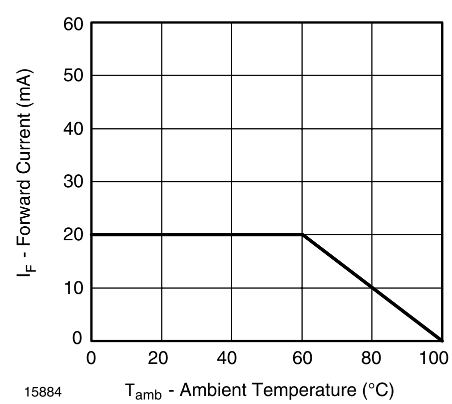


Figure 2. Forward Current vs. Ambient Temperature for InGaN

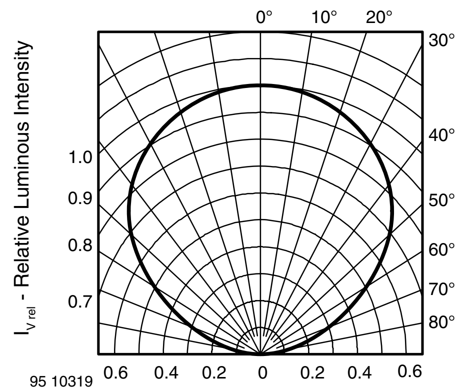


Figure 3. Rel. Luminous Intensity vs. Angular Displacement

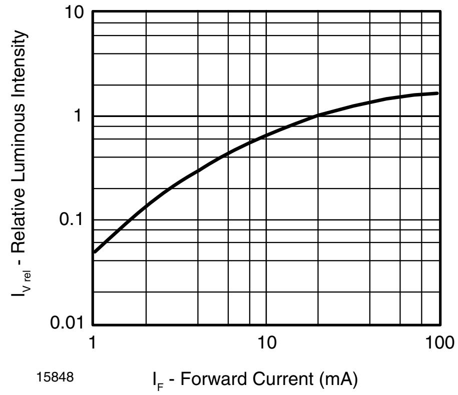


Figure 6. Relative Luminous Flux vs. Forward Current

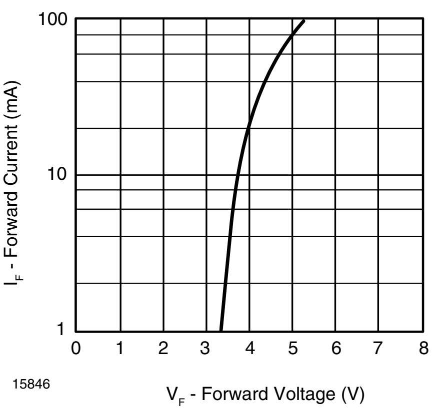


Figure 4. Forward Current vs. Forward Voltage

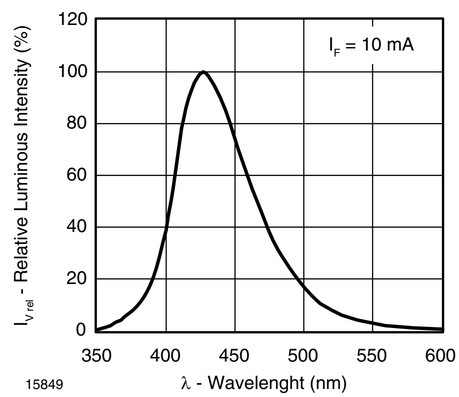


Figure 7. Relative Luminous Intensity vs. Wavelength

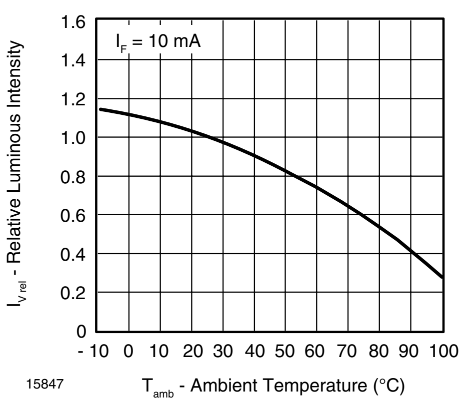


Figure 5. Rel. Luminous Flux vs. Ambient Temperature

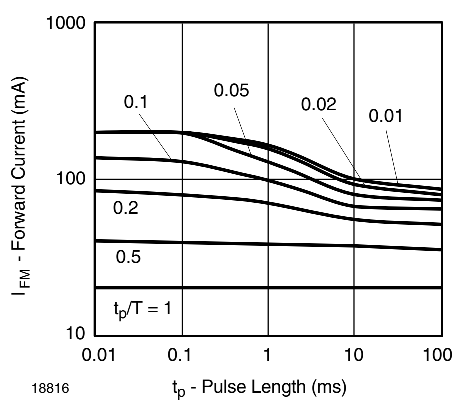
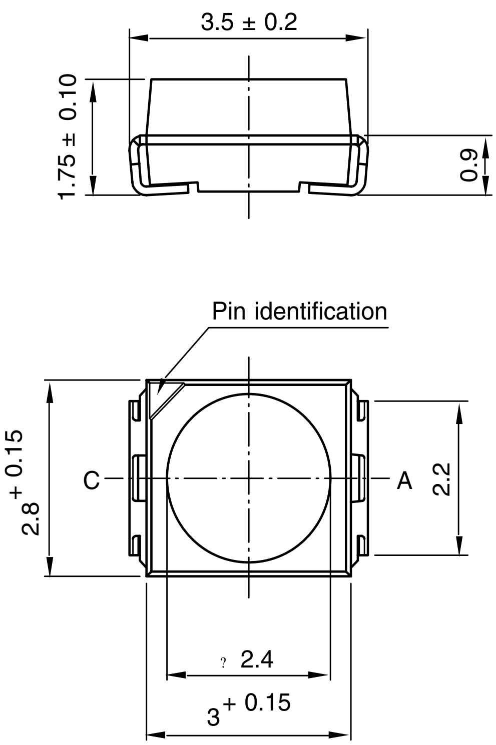


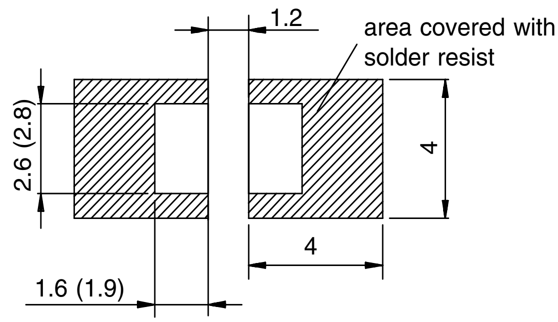
Figure 8. Forward Current vs. Pulse Length

PACKAGE DIMENSIONS in millimeters

technical drawings
according to DIN
specifications



Mounting Pad Layout



Drawing-No.: 6.541-5025.01-4
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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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and may do so without further notice.
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