

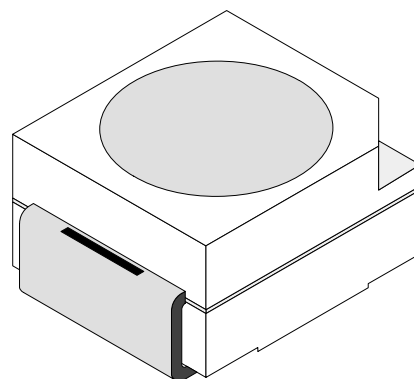
High Intensity SMD LED

Color	Type	Technology	Angle of Half Intensity $\pm\varphi$
Blue	TLMB3140	InGaN on SiC	60°
Blue Green	TLMBG3100	InGaN on SiC	60°
True Green	TLMTG3100	InGaN on SiC	60°

Description

This device has been designed to meet the increasing demand for InGaN technology.

The package of the TLMB/TLMBG/TLMTG31.. is the P-LCC-2 (equivalent to a size B tantalum capacitor). It consists of a lead frame which is surrounded with a white thermoplast. The reflector inside this package is filled up with clear epoxy.



94 8553

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 $I_{Vmax}/I_{Vmin} \leq 1.6$

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

$T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified

TLMB3140 , TLMBG3100 , TLMTG3100 ,

Parameter	Test Conditions	Symbol	Value	Unit
Reverse voltage		V_R	5	V
DC forward current	$T_{amb} \leq 80^{\circ}\text{C}$	I_F	20	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	I_{FSM}	0.2	A
Power dissipation	$T_{amb} \leq 80^{\circ}\text{C}$	P_V	84	mW
Junction temperature		T_j	110	$^{\circ}\text{C}$
Operating temperature range		T_{amb}	-40 to +100	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	-40 to +100	$^{\circ}\text{C}$
Soldering temperature	$t \leq 5 \text{ s}$	T_{sd}	260	$^{\circ}\text{C}$
Thermal resistance junction/ambient	mounted on PC board (pad size > 16 mm ²)	R_{thJA}	350	K/W

Optical and Electrical Characteristics

$T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified

Blue (TLMB3140)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	$I_F = 20 \text{ mA}$	TLMB3140	I_V	20	40		mcd
Dominant wavelength	$I_F = 20 \text{ mA}$		λ_d	462	470	476	nm
Peak wavelength	$I_F = 20 \text{ mA}$		λ_p		464		nm
Angle of half intensity	$I_F = 20 \text{ mA}$		ϕ		± 60		deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F		3.5	4.2	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	5			V
Temperature coefficient of V_F	$I_F = 20 \text{ mA}$		TC_V		-4		mV/K
Temperature coefficient of I_V	$I_F = 20 \text{ mA}$		TC_I		-0.4		%/K

Blue Green (TLMBG3100)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	$I_F = 20 \text{ mA}$	TLMBG3100	I_V	66	130		mcd
Dominant wavelength	$I_F = 20 \text{ mA}$		λ_d	496	505	514	nm
Peak wavelength	$I_F = 20 \text{ mA}$		λ_p		502		nm
Angle of half intensity	$I_F = 20 \text{ mA}$		ϕ		± 60		deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F		3.5	4.2	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	5			V
Temperature coefficient of V_F	$I_F = 20 \text{ mA}$		TC_V		-4		mV/K
Temperature coefficient of I_V	$I_F = 20 \text{ mA}$		TC_I		-0.2		%/K



True Green (TLMTG3100)

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Luminous intensity	$I_F = 20 \text{ mA}$	TLMTG3100	I_V	80	180		mcd
Dominant wavelength	$I_F = 20 \text{ mA}$		λ_d	515	528	541	nm
Peak wavelength	$I_F = 20 \text{ mA}$		λ_p		522		nm
Angle of half intensity	$I_F = 20 \text{ mA}$		ϕ		± 60		deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F		3.5	4.2	V
Reverse voltage	$I_R = 10 \text{ }\mu\text{A}$		V_R	5			V
Temperature coefficient of V_F	$I_F = 20 \text{ mA}$		TC_V		-3.5		mV/K
Temperature coefficient of I_V	$I_F = 20 \text{ mA}$		TC_I		-0.3		%/K

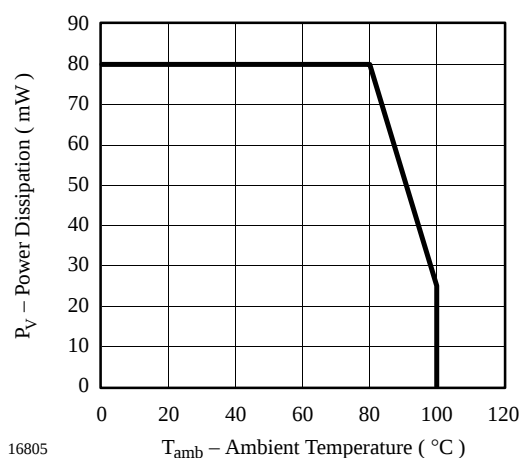
Typical Characteristics ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

Figure 1 Power Dissipation vs. Ambient Temperature

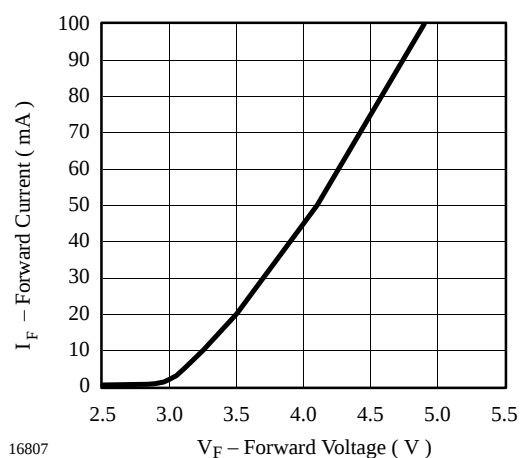


Figure 3 Forward Current vs. Forward Voltage

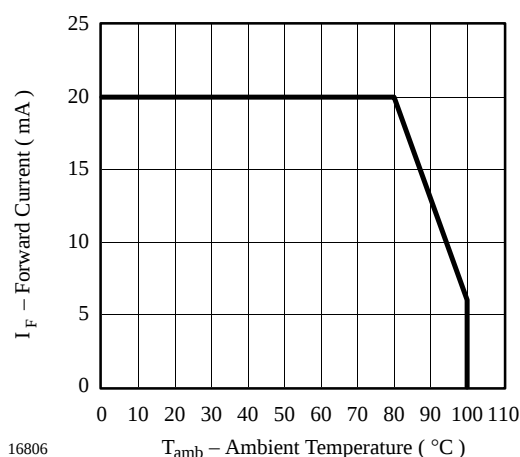


Figure 2 Forward Current vs. Ambient Temperature

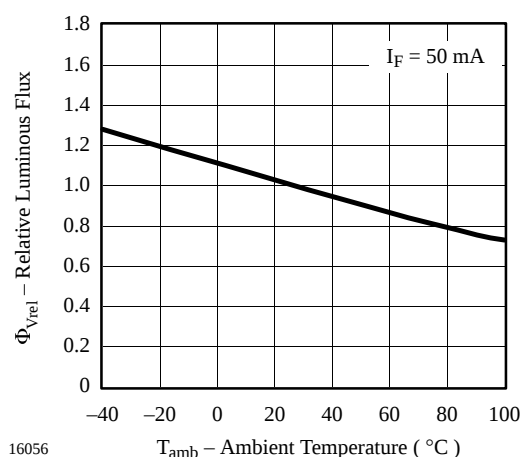


Figure 4 Rel. Luminous Flux vs. Ambient Temperature

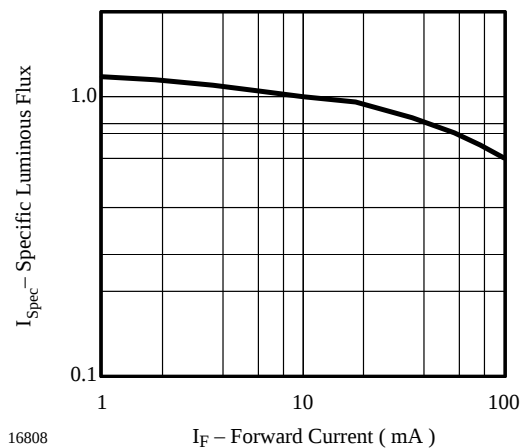


Figure 5 Specific Luminous Flux vs. Forward Current

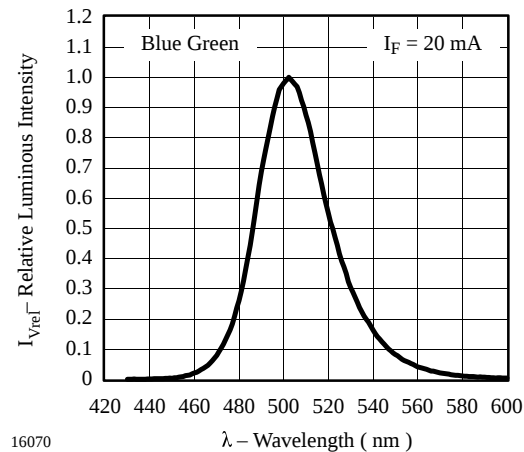


Figure 8 Relative Luminous Intensity vs. Wavelength

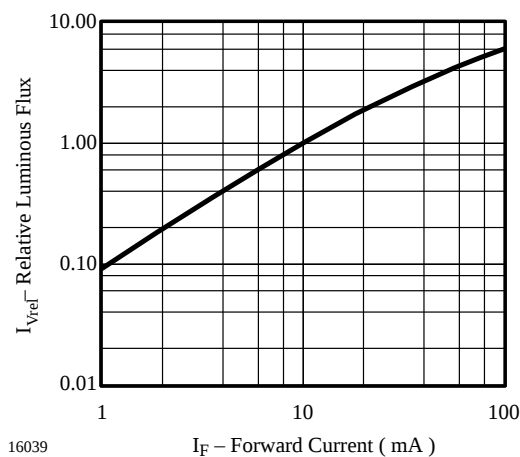


Figure 6 Relative Luminous Flux vs. Forward Current

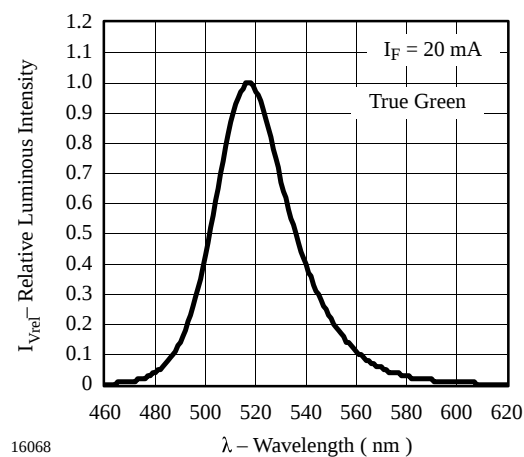


Figure 9 Relative Luminous Intensity vs. Wavelength

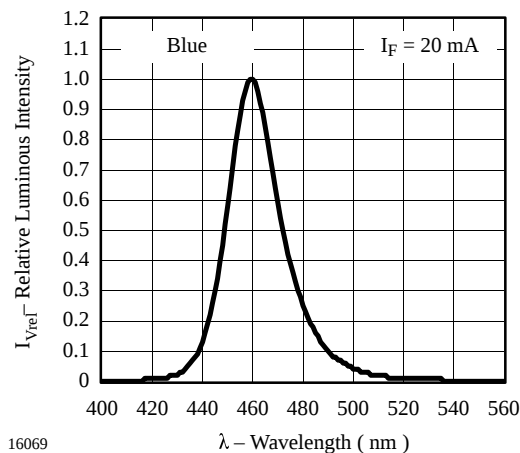


Figure 7 Relative Luminous Intensity vs. Wavelength

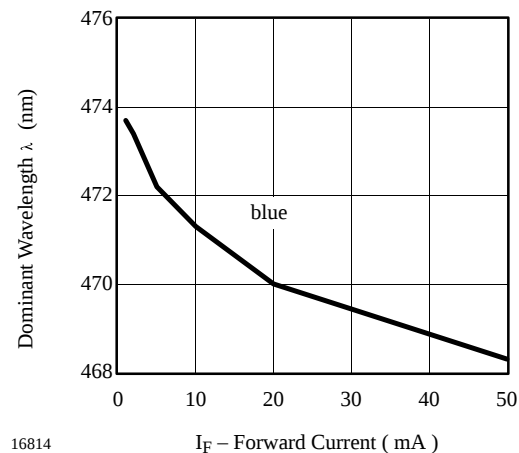
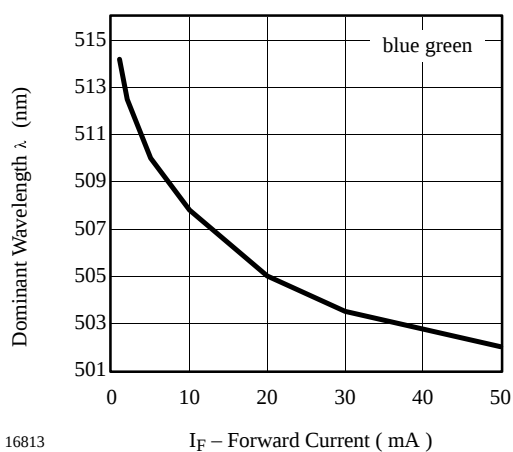
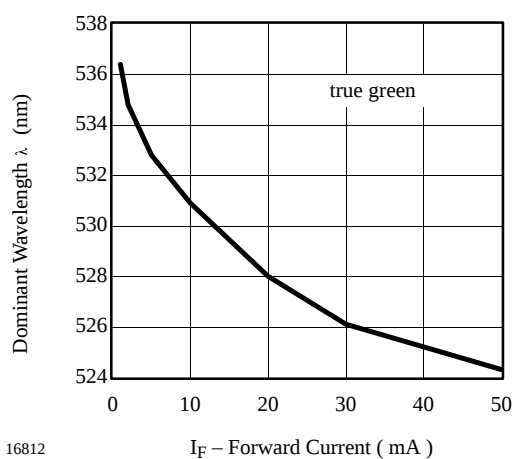


Figure 10 Dominant Wavelength vs. Forward Current



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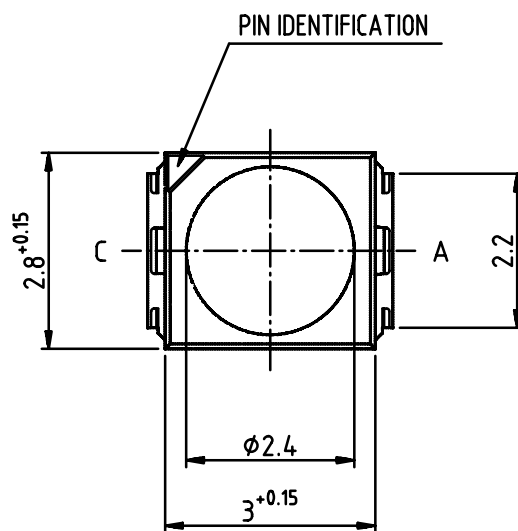
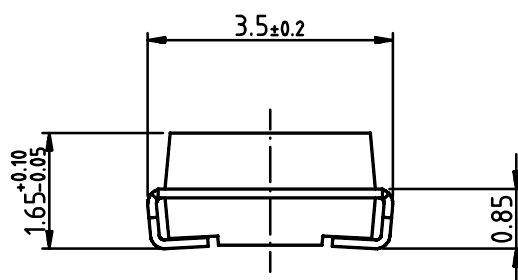
Figure 11 Dominant Wavelength vs. Forward Current



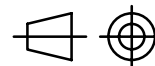
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Figure 12 Dominant Wavelength vs. Forward Current

Dimensions in mm

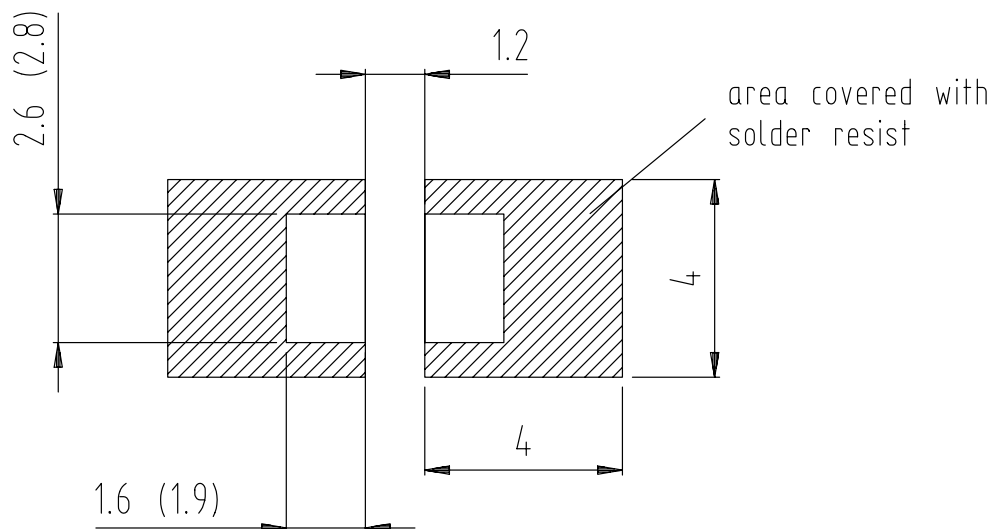


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technical drawings
according to DIN
specifications

PCB Layout 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.

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 Vishay-Telefunken products for any unintended or unauthorized application, the buyer shall indemnify Vishay-Telefunken 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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