

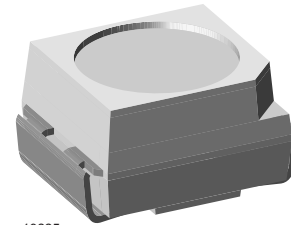
SMD LED in PLCC-2 Package

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.



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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-free device

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	Angle of Half Intensity ($\pm\phi$)	Technology
TLMB3100	Blue, $I_V > 4.0$ mcd	60 °	GaN on SiC
TLMB3101	Blue, $I_V = (4.0$ to 12.5)	60 °	GaN on SiC
TLMB3104	Blue, $I_V = (5.0$ to 12.5)	60 °	GaN on SiC
TLMB3106	Blue, $I_V = (5.0$ to 20.0)	60 °	GaN on SiC

Absolute Maximum Ratings

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

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	$t_p \leq 10$ μ s	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

Parameter	Test condition	Symbol	Value	Unit
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

Optical and Electrical Characteristics

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

Blue

TLMB310.

Parameter	Test condition	Part	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 $I_{Vmax}/I_{Vmin} \leq 1.6$

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

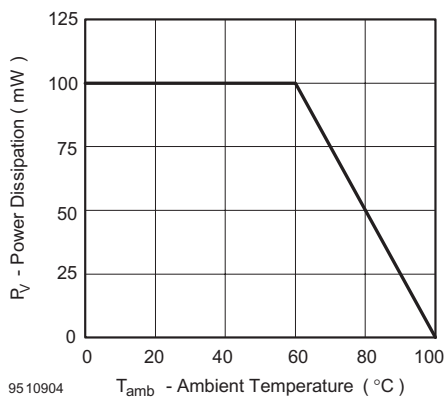


Figure 1. Power Dissipation vs. Ambient Temperature

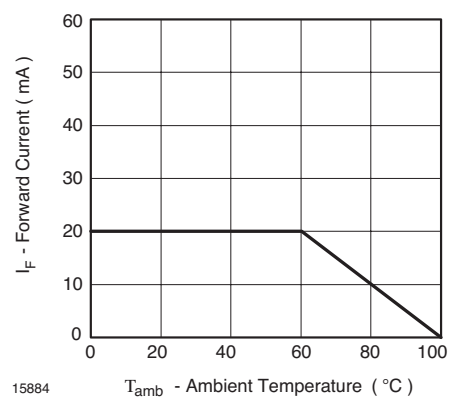


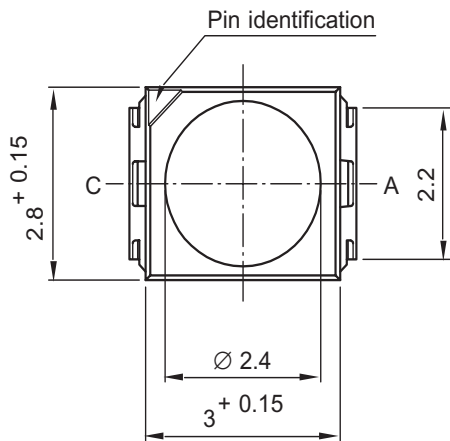
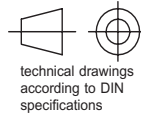
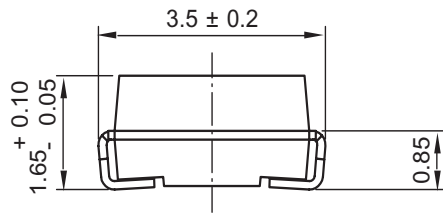
Figure 2. Forward Current vs. Ambient Temperature for InGaN

TLMB310.

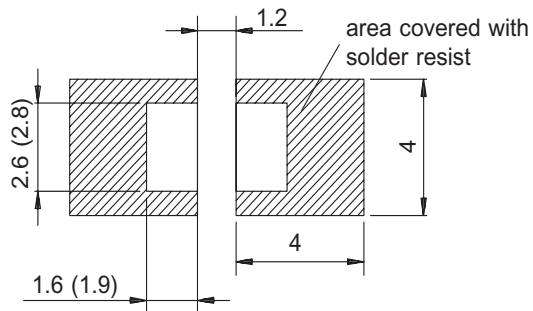
Vishay Semiconductors



Package Dimensions in mm



Mounting Pad Layout



Dimensions: IR and Vaporphase
(Wave Soldering)

Drawing-No. : 6.541-5025.01-4
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