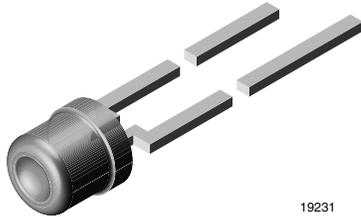


## Backlighting Blue LED, $\varnothing$ 3 mm Tinted Non-Diffused Package



### DESCRIPTION

The TLVB4200 series was developed for backlighting. Due to its special shape the spatial distribution of the radiation is qualified for backlighting.

To optimize the brightness of backlighting a custom-built reflector (with scattering) is required. Uniform illumination can be enhanced by covering the front of the reflector with diffusor material.

This is a flexible solution for backlighting different areas.

### PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm backlighting
- Product series: standard
- Angle of half intensity:  $\pm 85^\circ$

### FEATURES

- High light output
- Wide viewing angle (Backlighting)
- Categorized for luminous flux
- Tinted clear package
- Low power dissipation
- Low self heating
- Rugged design
- High reliability
- ESD class 1
- Lead (Pb)-free device

### APPLICATIONS

- Backlighting of display panels, LCD displays, symbols on switches, keyboards, graphic boards and measuring scales
- Illumination of large areas e.g. dot matrix displays

### PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLVB4200	Blue, $\phi_V > 25$ mlm	GaN on SiC

### ABSOLUTE MAXIMUM RATINGS<sup>1)</sup> TLVB4200

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		$V_R$	5	V
DC Forward current	$T_{amb} \leq 60^\circ\text{C}$	$I_F$	20	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	$I_{FSM}$	0.1	A
Power dissipation	$T_{amb} \leq 60^\circ\text{C}$	$P_V$	100	mW
Junction temperature		$T_j$	100	$^\circ\text{C}$
Operating temperature range		$T_{amb}$	- 40 to + 100	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	- 40 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 5$ s, 2 mm from body	$T_{sd}$	260	$^\circ\text{C}$
Thermal resistance junction/ambient		$R_{thJA}$	400	K/W

Note:

<sup>1)</sup>  $T_{amb} = 25^\circ\text{C}$ , unless otherwise specified

OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>1)</sup> TLVB4200, BLUE						
PARAMETER	TEST CONDITION	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity	$I_F = 15 \text{ mA}$	$I_V$	25	38		mlm
Dominant wavelength	$I_F = 10 \text{ mA}$	$\lambda_d$		466		nm
Peak wavelength	$I_F = 10 \text{ mA}$	$\lambda_p$		428		nm
Angle of half intensity	$I_F = 10 \text{ mA}$	$\varphi$		$\pm 85$		deg
Forward voltage	$I_F = 20 \text{ mA}$	$V_F$		3.9	4.5	V
Reverse voltage	$I_R = 10 \mu\text{A}$	$V_R$	5			V

Note:

<sup>1)</sup>  $T_{amb} = 25 \text{ }^\circ\text{C}$  unless otherwise specified

## TYPICAL CHARACTERISTICS

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

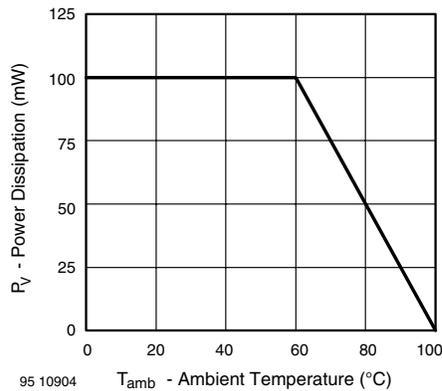


Figure 1. Power Dissipation vs. Ambient Temperature

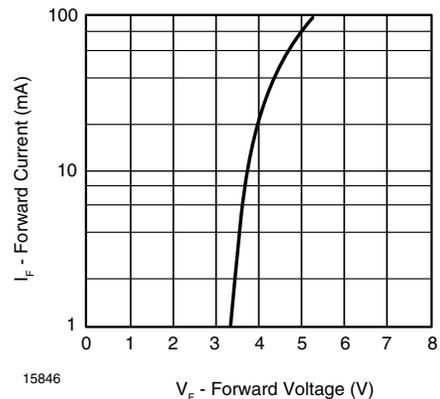


Figure 3. Forward Current vs. Forward Voltage

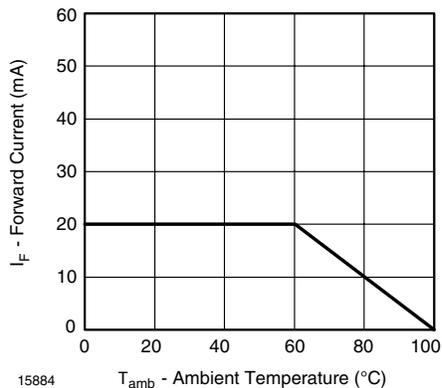


Figure 2. Forward Current vs. Ambient Temperature for InGaN

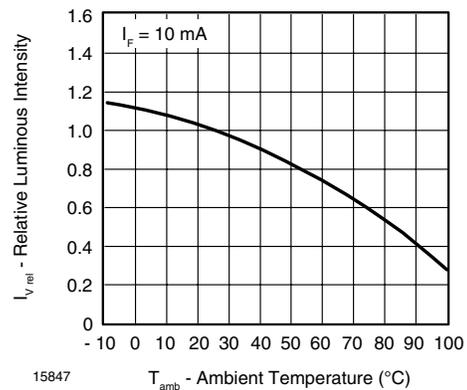


Figure 4. Rel. Luminous Flux vs. Ambient Temperature

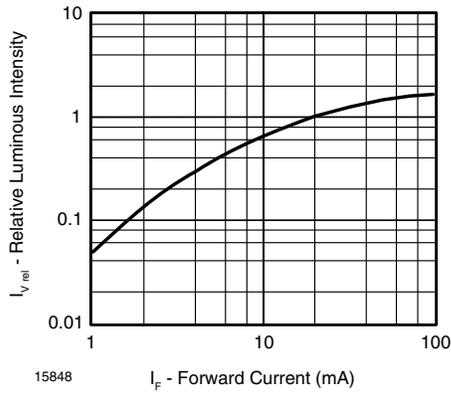


Figure 5. Relative Luminous Flux vs. Forward Current

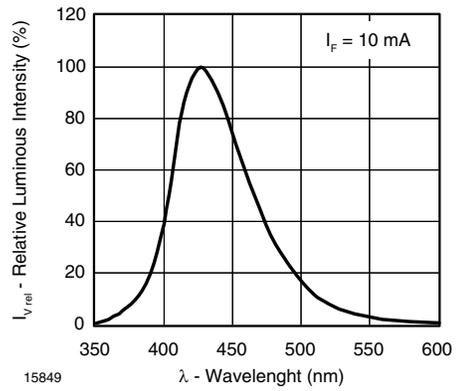


Figure 6. Relative Intensity vs. Wavelength

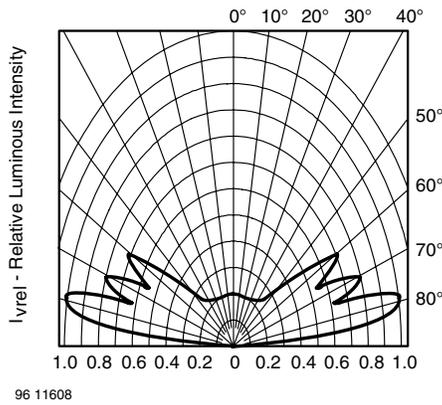


Figure 7. Rel. Luminous Intensity vs. Angular Displacement for 90 ° Emission Angle

**PACKAGE DIMENSIONS** in millimeters

