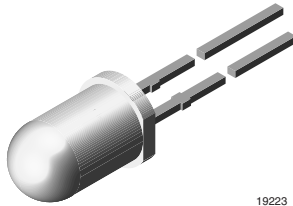


# High Efficiency Blue LED, $\varnothing$ 5 mm Untinted Non - Diffused Package



19223

## DESCRIPTION

This device has been designed in GaN on SiC technology to meet the increasing demand for high efficiency blue LEDs.

It is housed in a 5 mm waterclear plastic package.

All packing units are categorized in luminous intensity groups. That allows users to assemble LEDs with uniform appearance.

## FEATURES

- GaN on SiC technology
- Standard  $\varnothing$  5 mm T-1 $\frac{3}{4}$  package
- Small mechanical tolerances
- Small viewing angle
- Very high intensity
- Luminous intensity categorized
- ESD class 1
- Lead (Pb)-free device

## APPLICATIONS

- Status lights
- OFF/ON indicator
- Background illumination
- Readout lights
- Maintenance lights
- Legend light

## PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: standard
- Angle of half intensity:  $\pm 9^\circ$

PARTS TABLE		
PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLHB5100	Blue $I_V > 66$ mcd	GaN on SiC
TLHB5102	Blue $I_V = (130 \text{ to } 360)$ mcd	GaN on SiC

ABSOLUTE MAXIMUM RATINGS <sup>1)</sup> TLHB510.				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		$V_R$	5	V
DC Forward current	$T_{amb} \leq 65^\circ\text{C}$	$I_F$	20	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	$I_{FSM}$	0.1	A
Power dissipation	$T_{amb} \leq 65^\circ\text{C}$	$P_V$	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		$R_{thJA}$	350	K/W

Note:

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

OPTICAL AND ELECTRICAL CHARACTERISTICS <sup>1)</sup> TLHB5100, TLHB5102, BLUE							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity <sup>2)</sup>	$I_F = 20 \text{ mA}$	TLHB5100	$I_V$	66	210		mcd
		TLHB5102	$I_V$	130		360	mcd
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	$I_F = 10 \text{ mA}$		$\phi$		$\pm 9$		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:

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

2) in one packing unit  $I_{Vmin}/I_{Vmax} \leq 0.5$

**TYPICAL CHARACTERISTICS**

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

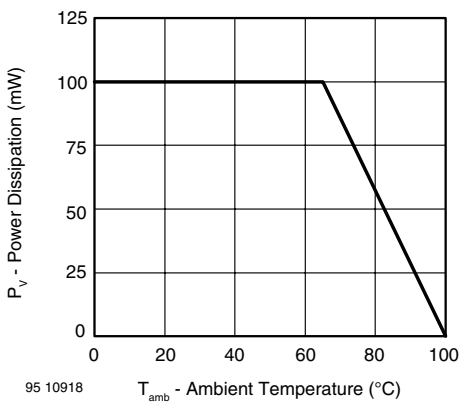


Figure 1. Power Dissipation vs. Ambient Temperature

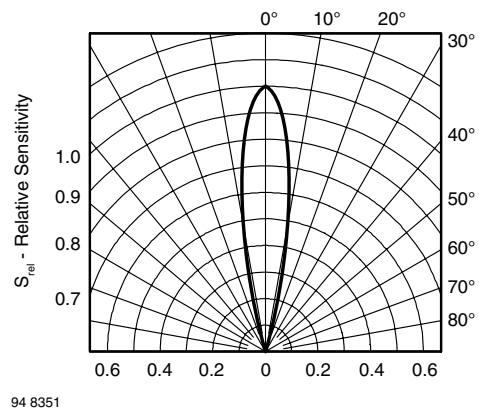


Figure 3. Relative Radiant Sensitivity vs. Angular Displacement

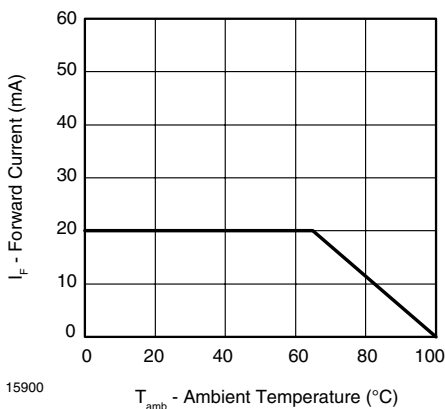


Figure 2. Forward Current vs. Ambient Temperature

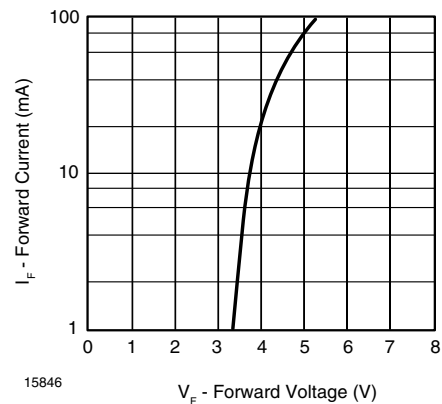


Figure 4. Forward Current vs. Forward Voltage

