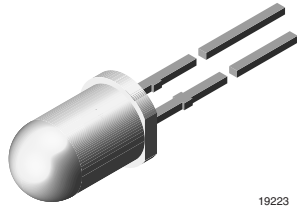


High Efficiency Blue LED, Ø 5 mm Untinted Non - Diffused Package



FEATURES

- GaN on SiC technology
- Standard Ø 5 mm T-1¾ package
- Small mechanical tolerances
- Small viewing angle
- Very high intensity
- Luminous intensity categorized
- ESD class 1
- Compliant to RoHS directive 2002/95/EC


RoHS
COMPLIANT

DESCRIPTION

This device has been redesigned in 1998 replacing SiC by GaN 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.

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: $\pm 4^\circ$

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLHB5800	Blue, $I_V > 130$ mcd	GaN on SiC

ABSOLUTE MAXIMUM RATINGS ¹⁾ TLHB5800

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:

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

OPTICAL AND ELECTRICAL CHARACTERISTICS ¹⁾ TLHB5800, BLUE						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ²⁾	$I_F = 20 \text{ mA}$	I_V	130	380		mcd
Dominant wavelength	$I_F = 10 \text{ mA}$	λ_d		466		nm
Peak wavelength	$I_F = 10 \text{ mA}$	λ_p		428		nm
Angle of half intensity	$I_F = 10 \text{ mA}$	ϕ		± 4		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 $I_{Vmin}/I_{Vmax} \leq 0.5$

LUMINOUS INTENSITY CLASSIFICATION		
GROUP STANDARD	LIGHT INTENSITY (mcd)	
	MIN.	MAX.
X	130	260
Y	180	360
Z	240	480
AA	320	640
BB	430	860
CC	575	1150
DD	750	1500
EE	1000	2000

Note:

Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of $\pm 11 \%$.

The above type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each reel (there will be no mixing of two groups on each reel).

In order to ensure availability, single brightness groups will not be orderable.

In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped on any one reel. In order to ensure availability, single wavelength groups will not be orderable.

TYPICAL CHARACTERISTICS

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

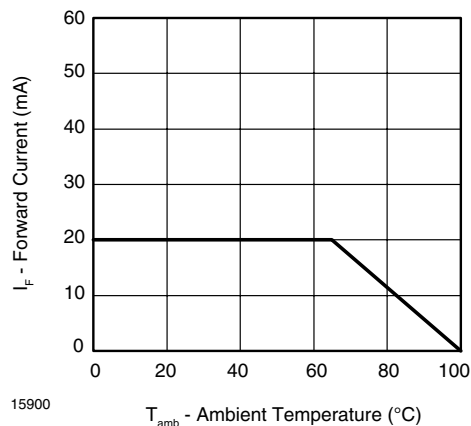


Figure 1. Forward Current vs. Ambient Temperature

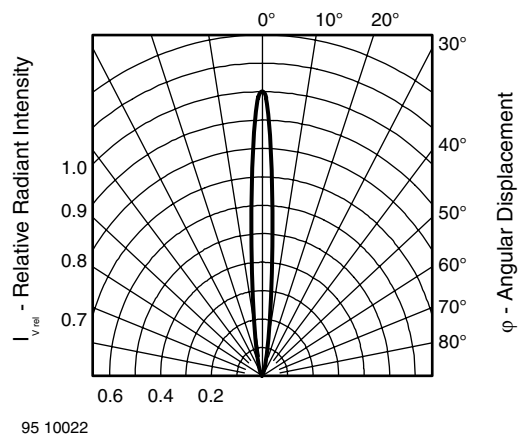


Figure 2. Rel. Luminous Intensity vs. Angular Displacement

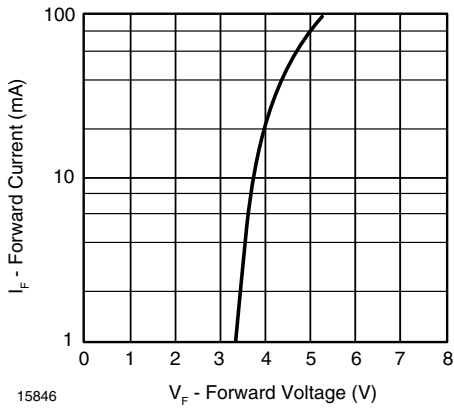


Figure 3. Forward Current vs. Forward Voltage

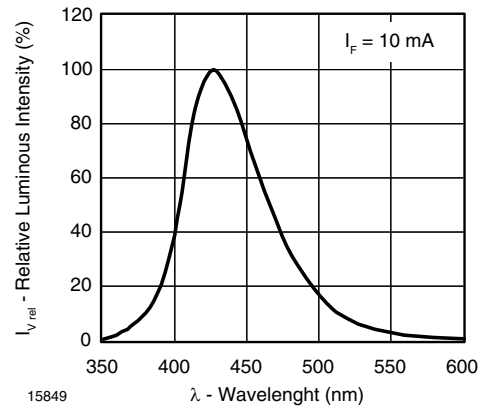


Figure 6. Relative Intensity vs. Wavelength

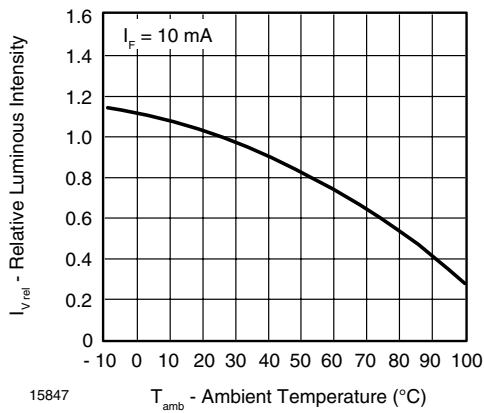


Figure 4. Rel. Luminous Flux vs. Ambient Temperature

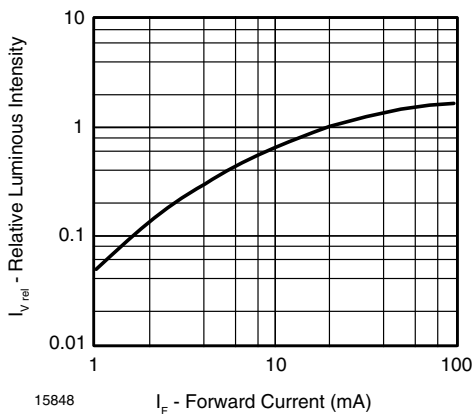
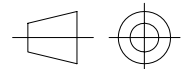
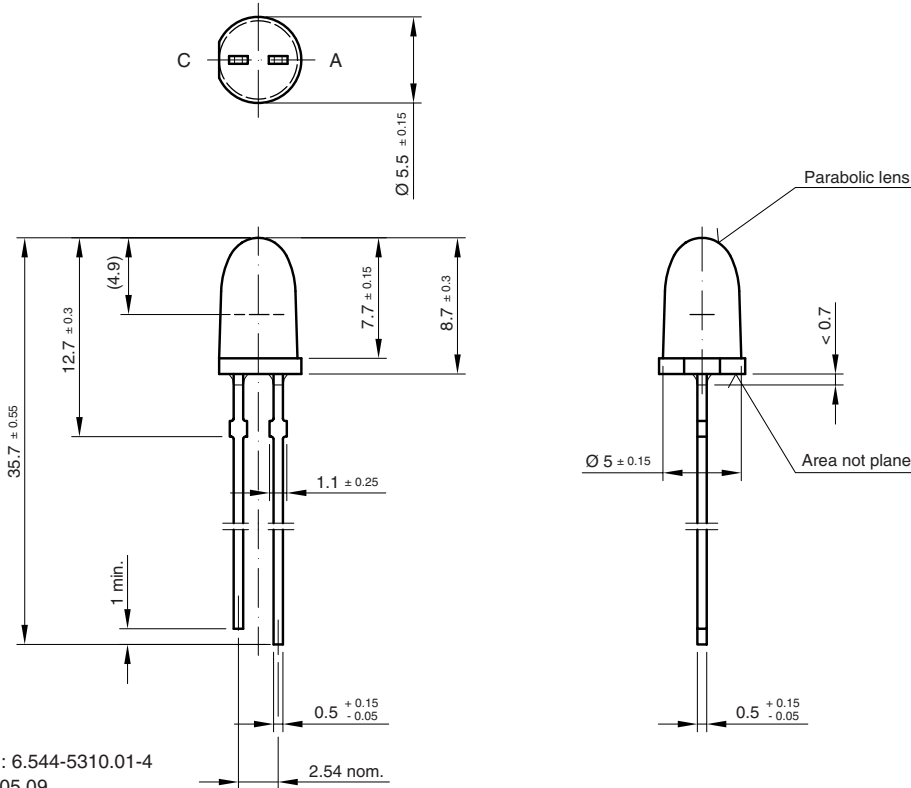


Figure 5. Relative Luminous Flux vs. Forward Current

PACKAGE DIMENSIONS in millimeters



technical drawings
according to DIN
specifications

Drawing-No.: 6.544-5310.01-4
Issue: 4; 19.05.09
95 11476



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