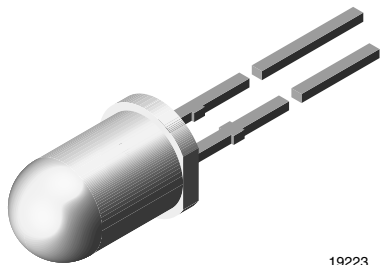




High Efficiency Blue LED, Ø 5 mm Untinted Non-Diffused Package



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.

PRODUCT GROUP AND PACKAGE DATA

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

FEATURES

- GaN on SiC technology
- Standard Ø 5 mm T-1 $\frac{3}{4}$ package
- Small mechanical tolerances
- Small viewing angle
- Very high intensity
- Luminous intensity categorized
- ESD class 1
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

APPLICATIONS

- Status lights
- Off / on indicator
- Background illumination
- Readout lights
- Maintenance lights
- Legend light

PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I _F (mA)	WAVELENGTH (nm)			at I _F (mA)	FORWARD VOLTAGE (V)			at I _F (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLHB5100	Blue	63	250	-	20	-	466	-	10	-	3.9	4.5	20	GaN on SiC
TLHB5102	Blue	130	-	360	20	-	466	-	10	-	3.9	4.5	20	GaN on SiC

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified) TLHB510.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V _R	5	V
DC forward current	T _{amb} ≤ 65 °C	I _F	20	mA
Surge forward current	t _p ≤ 10 μs	I _{FSM}	0.1	A
Power dissipation	T _{amb} ≤ 65 °C	P _V	100	mW
Junction temperature		T _j	100	°C
Operating temperature range		T _{amb}	-40 to +100	°C
Storage temperature range		T _{stg}	-40 to +100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T _{sd}	260	°C
Thermal resistance junction-to-ambient		R _{thJA}	350	K/W



OPTICAL AND ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) TLHB5100, TLHB5102, BLUE							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ⁽¹⁾	I _F = 20 mA	TLHB5100	I _V	63	250	-	mcd
		TLHB5102	I _V	130	-	360	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	-	± 9	-	°
Forward voltage	I _F = 20 mA		V _F	-	3.9	4.5	V
Reverse voltage	I _R = 10 μA		V _R	5	-	-	V

Note

(1) In one packing unit I_{Vmin}/I_{Vmax} ≤ 0.5

LUMINOUS INTENSITY CLASSIFICATION			
GROUP STANDARD	LUMINOUS INTENSITY (mcd)		
	MIN.		MAX.
V	63		125
W	100		200
X	130		260
Y	180		360
Z	240		480
AA	320		640
BB	430		860

Note

- Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of ± 11 %.
- The above type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each bag (there will be no mixing of two groups on each bag).
- 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 in any one bag.
- In order to ensure availability, single wavelength groups will not be orderable

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

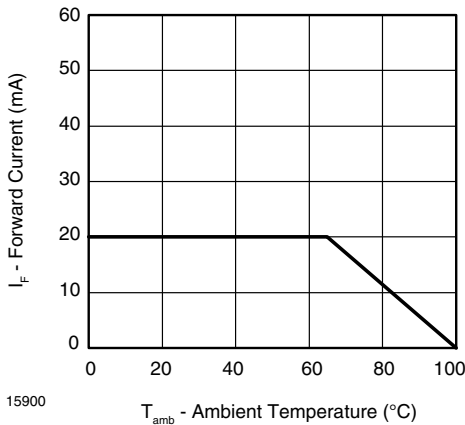


Fig. 1 - Forward Current vs. Ambient Temperature

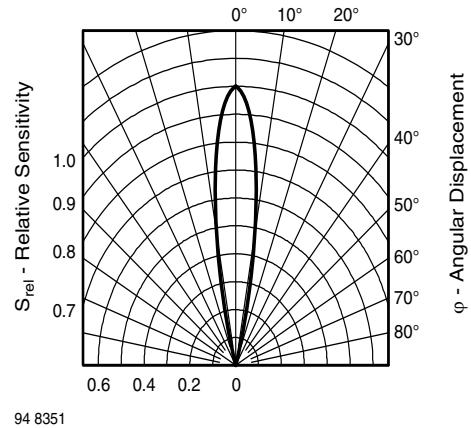


Fig. 2 - Relative Radiant Sensitivity vs. Angular Displacement

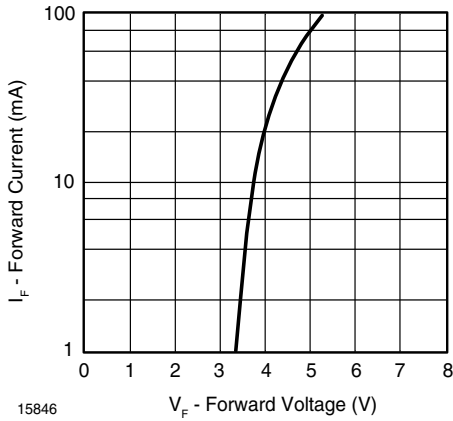


Fig. 3 - Forward Current vs. Forward Voltage

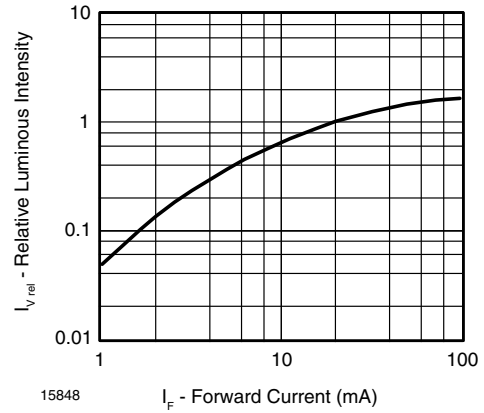


Fig. 5 - Relative Luminous Flux vs. Forward Current

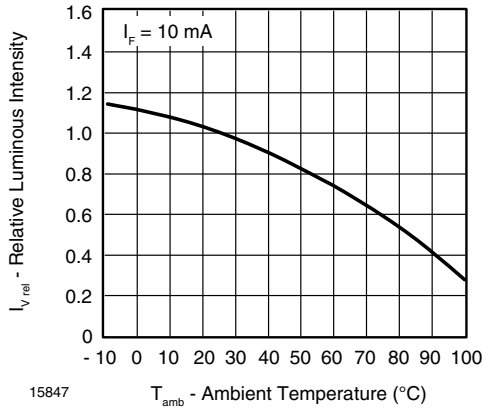


Fig. 4 - Rel. Luminous Flux vs. Ambient Temperature

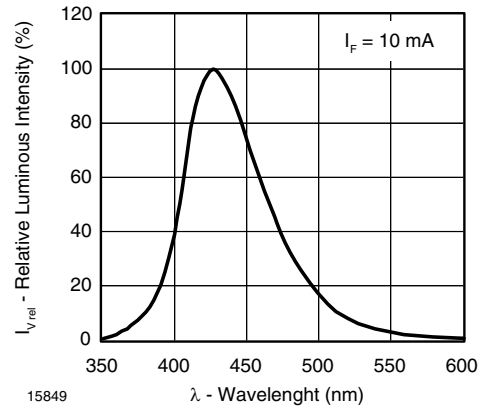
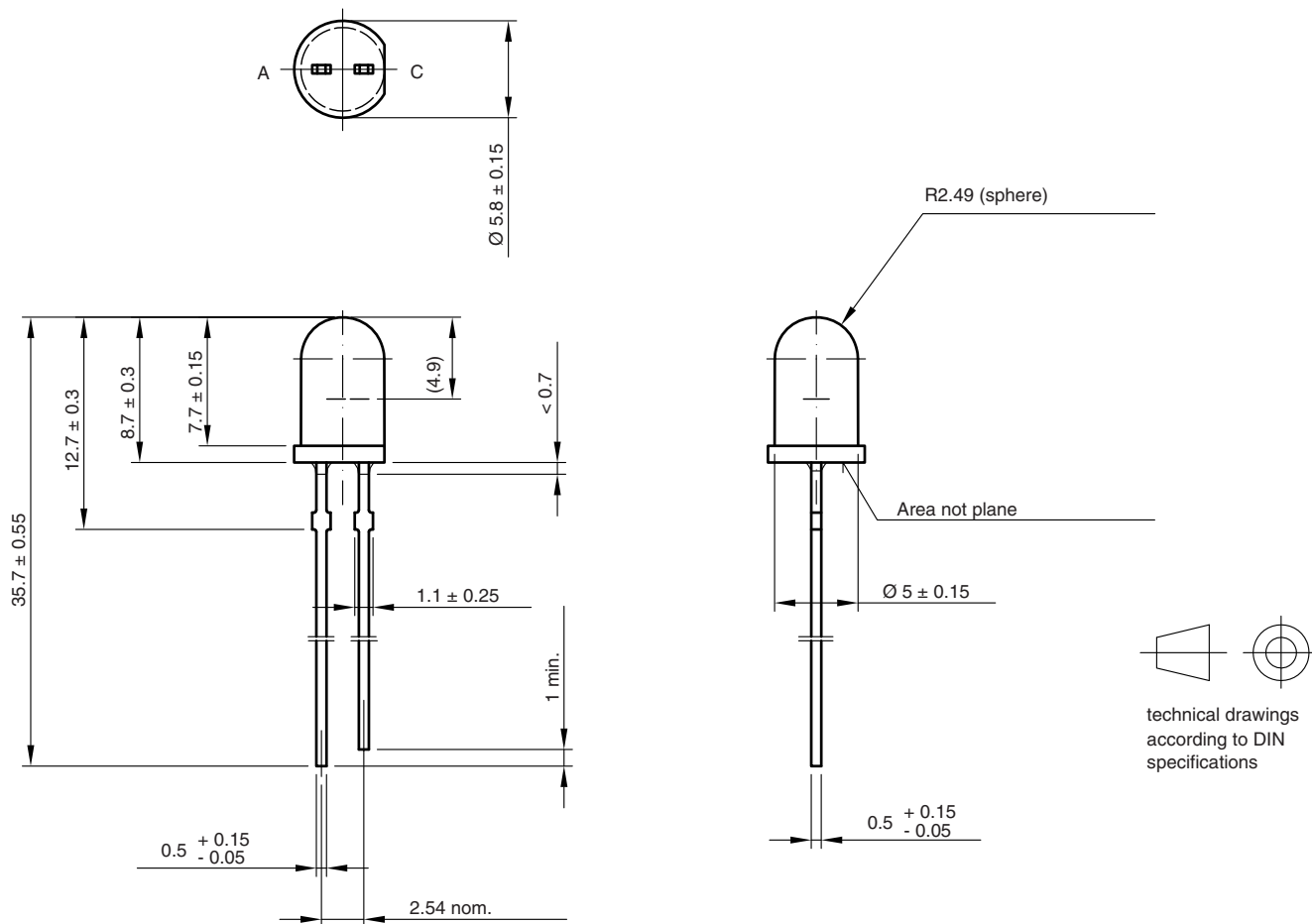


Fig. 6 - Relative Intensity vs. Wavelength



PACKAGE DIMENSIONS in millimeters



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