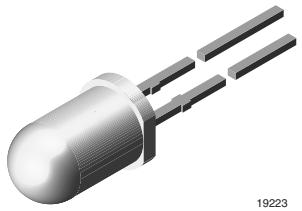
High Efficiency Blue LED, ∅ 5 mm Tinted Diffused Package



FEATURES

- GaN on SiC technology
- Standard ∅ 5 mm T-1¾ package
- Small mechanical tolerances
- Wide viewing angle
- Very high intensity
- Luminous intensity categorized
- ESD class 1
- Lead (Pb)-free device

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 tinted diffused 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: ± 30°

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLHB5400	Blue, I_V > 6.3 mcd	GaN on SiC
TLHB5401	Blue, I_V = (10 to 32) mcd	GaN on SiC

ABSOLUTE MAXIMUM RATINGS[1] TLHB540.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	5	V
DC Forward current	$T_{amb} \leq 65$ °C	I_F	20	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	0.1	A
Power dissipation	$T_{amb} \leq 65$ °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/ ambient		R_{thJA}	350	K/W

Note:
[1] T_{amb} = 25 °C, unless otherwise specified

OPTICAL AND ELECTRICAL CHARACTERISTICS[1] TLHB540., BLUE							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN**	**TYP.**	**MAX**	**UNIT**
Luminous intensity [2]	I_F = 20 mA	TLHB5400	I_V	6.3	15		mcd
		TLHB5401	I_V	10		32	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		± 30		deg
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] T_{amb} = 25 °C unless otherwise specified
[2] in one packing unit $I_{Vmin}/I_{Vmax} \leq 0.5$

TYPICAL CHARACTERISTICS

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

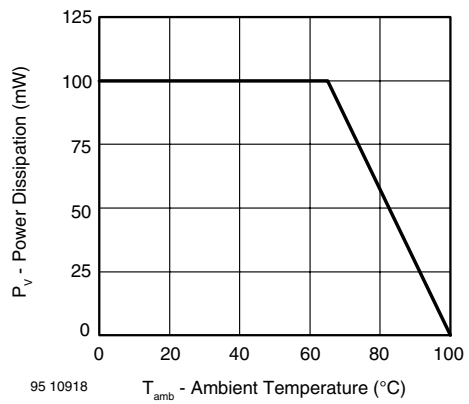


Figure 1. Power Dissipation vs. Ambient Temperature

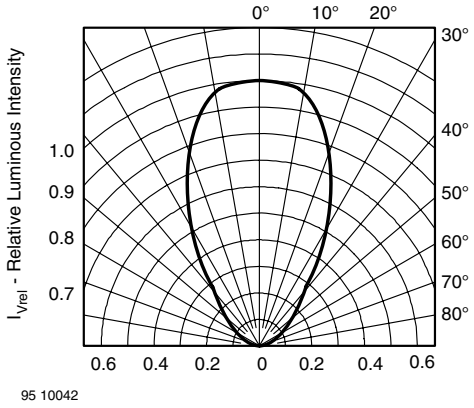


Figure 3. Rel. Luminous Intensity vs. Angular Displacement

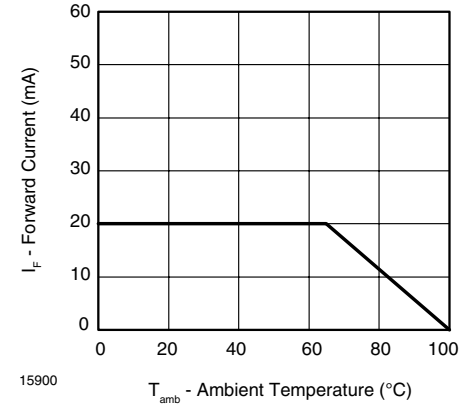


Figure 2. Forward Current vs. Ambient Temperature

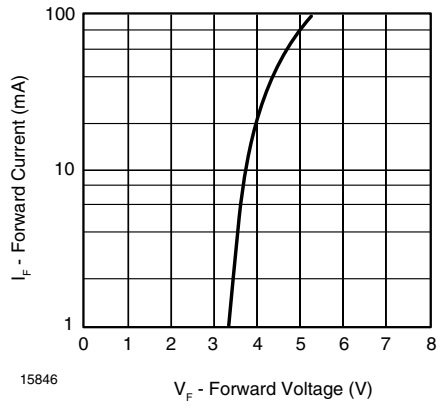


Figure 4. Forward Current vs. Forward Voltage

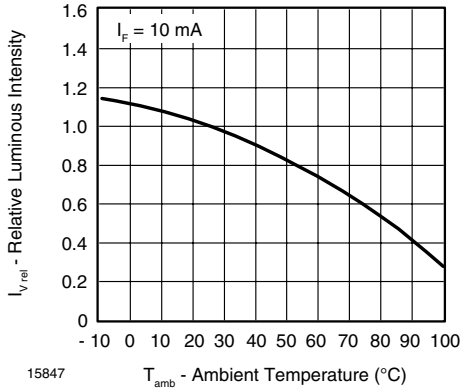


Figure 5. Rel. Luminous Flux vs. Ambient Temperature

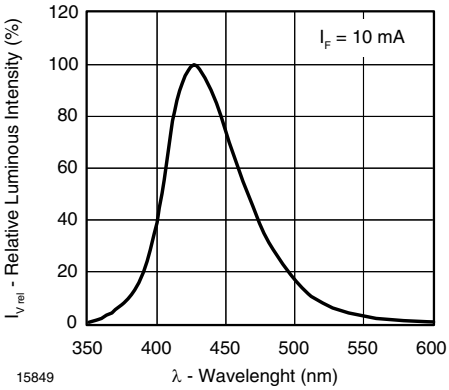


Figure 7. Relative Intensity vs. Wavelength

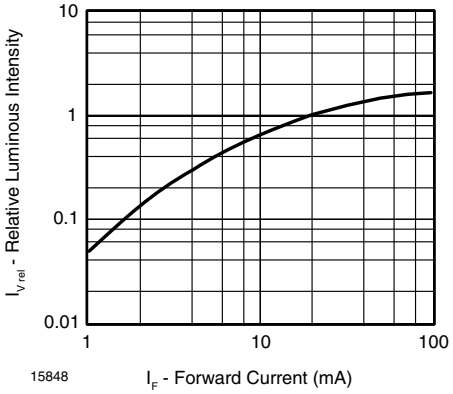


Figure 6. Relative Luminous Flux vs. Forward Current

PACKAGE DIMENSIONS in millimeters