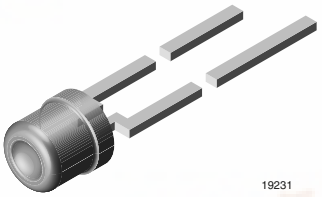
DH Backlighting LED in Ø 3 mm Tinted Non-Diffused Package



FEATURES

- High brightness
- Wide viewing angle
- Categorized for luminous flux
- Available in DH red
- Tinted clear package
- Low power dissipation
- Low self heating
- Rugged design
- High reliability
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb-free

e1

RoHS COMPLIANT

DESCRIPTION

The TLVD4200 serie was developed for backlighting in the extrem bright double heterojunction (DH) red GaAlAs on GaAs technology. 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 bright and flexible solution for backlighting different areas.

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

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm backlighting
- Product series: standard
- Angle of half intensity: ± 85°

PARTS TABLE

PART	COLOR, LUMINOUS FLUX	TECHNOLOGY
TLVD4200	Red, ϕ_V > 40 mlm	GaAlAs on GaAs

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC forward current		I_F	50	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 60$ °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}	- 55 to + 100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T_{sd}	260	°C
Thermal resistance junction/ ambient		R_{thJA}	400	K/W

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Luminous flux	I_F = 15 mA	ϕ_V	40	80		mlm
Dominant wavelength	I_F = 10 mA	λ_d		640		nm
Peak wavelength	I_F = 10 mA	λ_p		650		nm
Angle of half intensity	I_F = 10 mA	φ		± 85		deg
Forward voltage	I_F = 20 mA	V_F		1.8	2.2	V
Reverse voltage	I_R = 10 µA	V_R	6	15		V
Junction capacitance	V_R = 0, f = 1 MHz	C_j		50		pF

LUMINOUS FLUX CLASSIFICATION		
GROUP	**LUMINOUS FLUX (mlm)**	
STANDARD	**MIN.**	**MAX.**
U	40	80
V	63	125
W	100	200
X	130	260
Y	180	360
Z	240	480

Note:
Luminous flux 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 in 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 on any one bag.
In order to ensure availability, single wavelength groups will not be orderable.

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

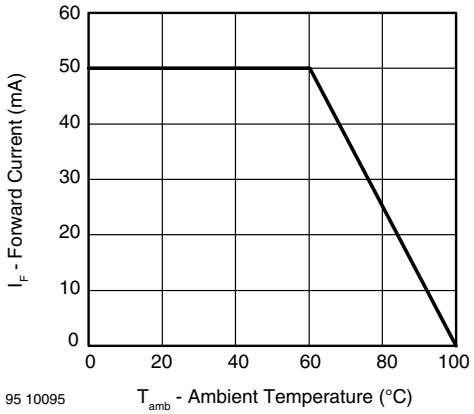


Figure 1. Forward Current vs. Ambient Temperature

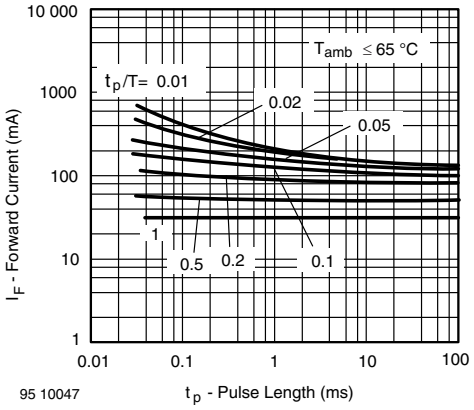


Figure 2. Forward Current vs. Pulse Length

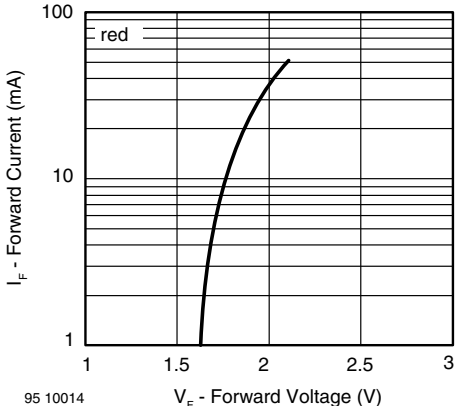


Figure 3. Forward Current vs. Forward Voltage

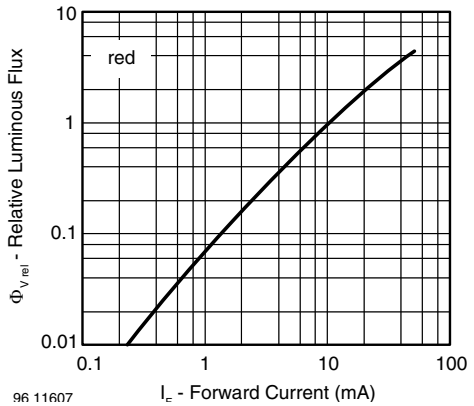


Figure 6. Relative Luminous Flux vs. Forward Current

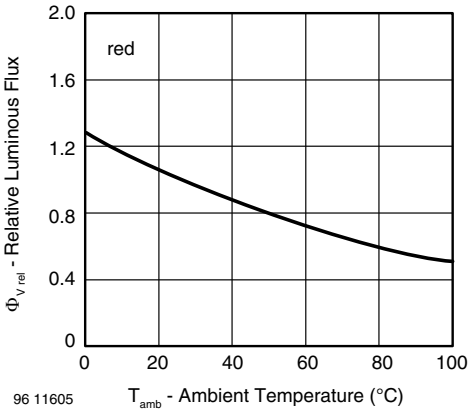


Figure 4. Rel. Luminous Flux vs. Ambient Temperature

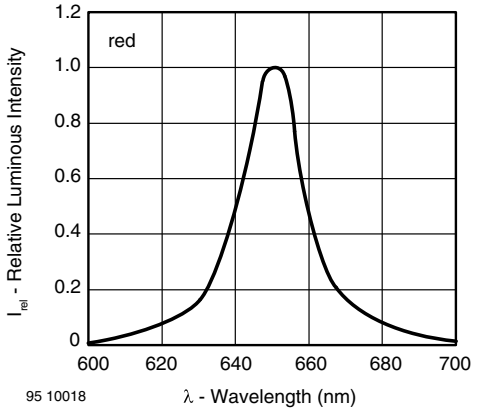


Figure 7. Relative Intensity vs. Wavelength

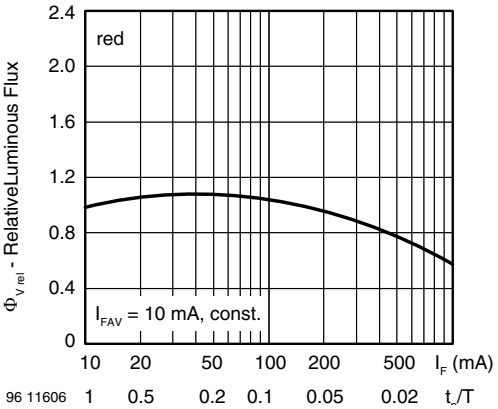


Figure 5. Rel. Luminous Flux vs. Forw. Current/Duty Cycle

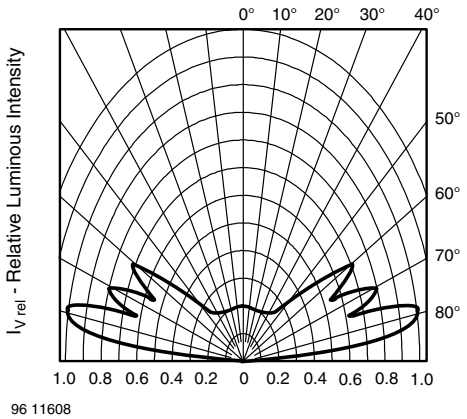
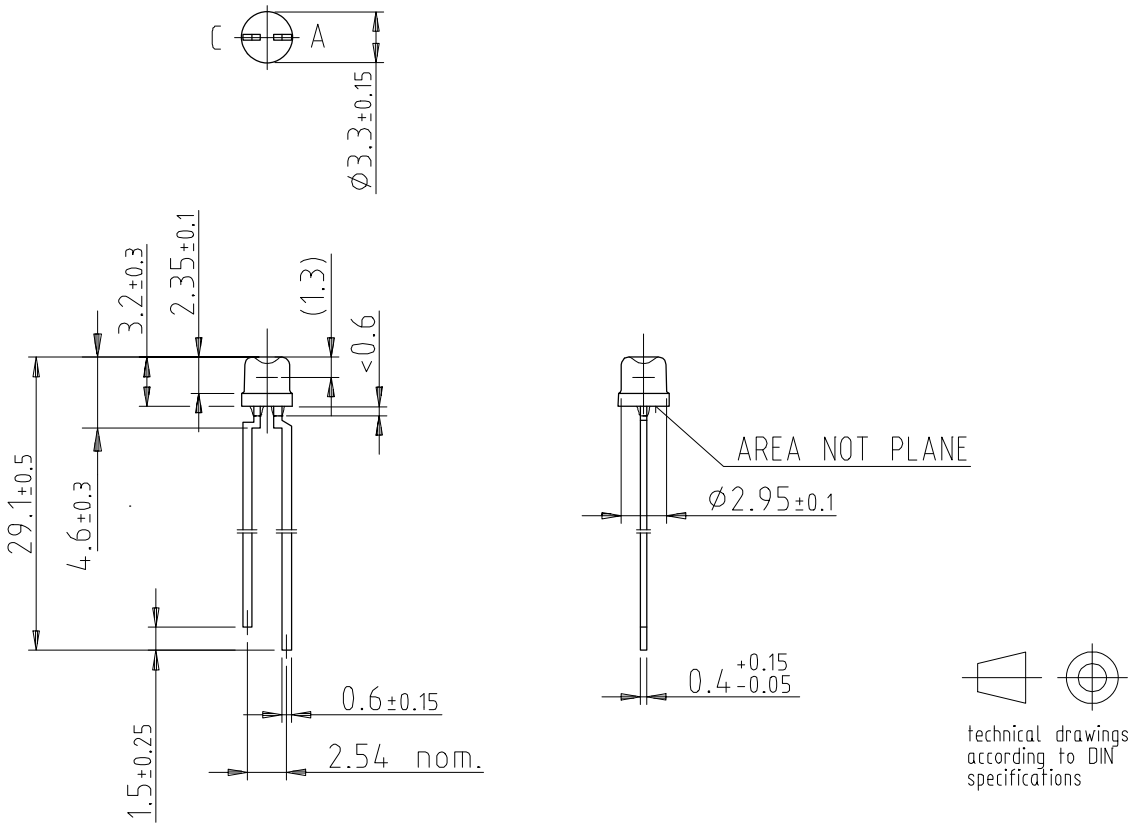


Figure 8. Rel. Luminous Intensity vs.
Angular Displacement for 90 ° Emission Angle

PACKAGE DIMENSIONS in millimeters



9510953

Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.