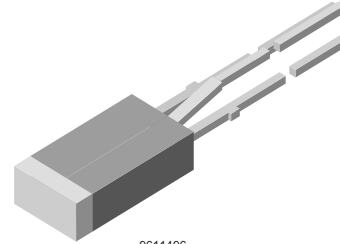


## Bicolor Symbol LED in 2.5 x 5 mm Untinted Top-Diffused Package

### Features

- Even luminance of the emitting surface
- Ideal as flush mounted panel indicators
- For DC and pulse operation
- Color mixing possible due to separate anode terminals
- Luminous intensity selected into groups
- Categorized for green color
- Wide viewing angle
- Common cathode
- Lead-free device



9611496



### Applications

Indicating and illumination purposes

### Parts Table

Part	Color, Luminous Intensity	Angle of Half Intensity ( $\pm\phi$ )	Technology
TLSV5100	Green / Red, $I_V > 0.63$ mcd	50 °	GaP on GaP

### Absolute Maximum Ratings

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

#### TLSV5100

Parameter	Test condition	Symbol	Value	Unit
Reverse voltage per diode		$V_R$	6	V
DC Forward current per diode		$I_F$	30	mA
Surge forward current per diode	$t_p \leq 10$ $\mu$ s	$I_{FSM}$	1	A
Power dissipation per diode	$T_{amb} \leq 55$ °C	$P_V$	100	mW
Total power dissipation	$T_{amb} \leq 55$ °C	$P_{tot}$	150	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	$t \leq 5$ s, 2 mm from body	$T_{sd}$	260	°C
Thermal resistance junction/ambient per diode		$R_{thJA}$	450	K/W
Thermal resistance junction/ambient total		$R_{thJA}$	300	K/W

### Optical and Electrical Characteristics

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

#### Red

##### TL5V5100R

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Per diode						
Luminous intensity <sup>1)</sup>	$I_F = 10\text{ mA}$	$I_V$	0.63	1		mcd
Dominant wavelength	$I_F = 10\text{ mA}$	$\lambda_d$	612		625	nm
Peak wavelength	$I_F = 10\text{ mA}$	$\lambda_p$		635		nm
Angle of half intensity	$I_F = 10\text{ mA}$	$\phi$		$\pm 50$		deg
Forward voltage	$I_F = 20\text{ mA}$	$V_F$		2	3	V
Reverse voltage	$I_R = 10\text{ }\mu\text{A}$	$V_R$	6	15		V
Junction capacitance	$V_R = 0, f = 1\text{ MHz}$	$C_j$		50		pF

<sup>1)</sup> in one Packing Unit  $I_{Vmin}/I_{Vmax} \leq 0.5$

#### Green

##### TL5V5100G

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Per diode						
Luminous intensity <sup>1)</sup>	$I_F = 10\text{ mA}$	$I_V$	0.63	1		mcd
Dominant wavelength	$I_F = 10\text{ mA}$	$\lambda_d$	562		575	nm
Peak wavelength	$I_F = 10\text{ mA}$	$\lambda_p$		565		nm
Angle of half intensity	$I_F = 10\text{ mA}$	$\phi$		$\pm 50$		deg
Forward voltage	$I_F = 20\text{ mA}$	$V_F$		2.4	3	V
Reverse voltage	$I_R = 10\text{ }\mu\text{A}$	$V_R$	6	15		V
Junction capacitance	$V_R = 0, f = 1\text{ MHz}$	$C_j$		50		pF

<sup>1)</sup> in one Packing Unit  $I_{Vmin}/I_{Vmax} \leq 0.5$

### Typical Characteristics ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

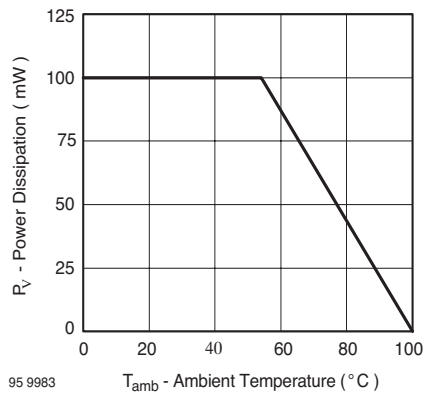


Figure 1. Power Dissipation vs. Ambient Temperature

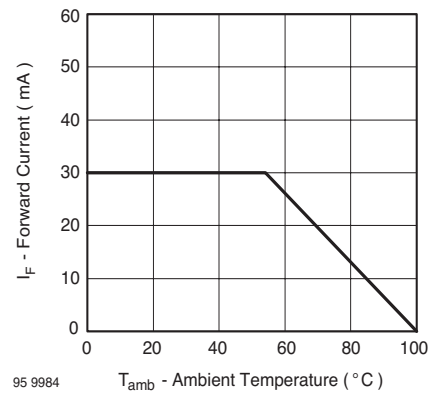


Figure 2. Forward Current vs. Ambient Temperature for InGaN

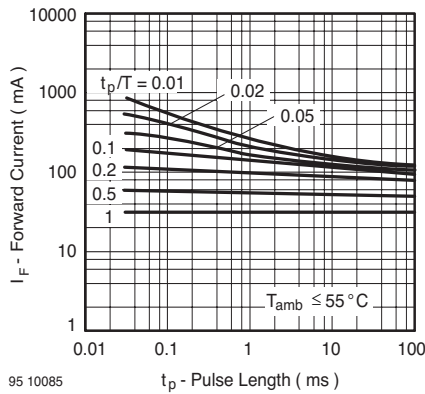


Figure 3. Forward Current vs. Pulse Length

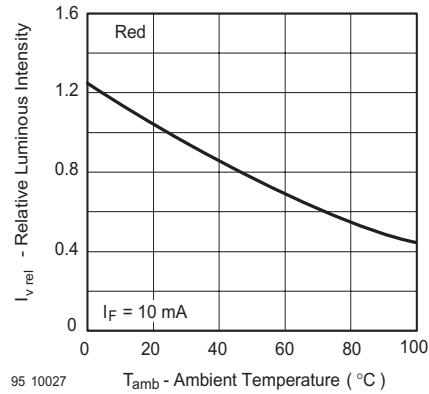


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

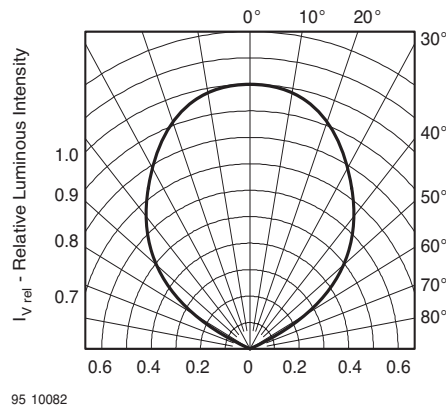


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

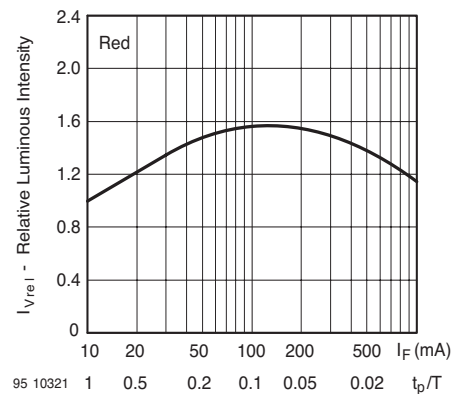


Figure 7. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

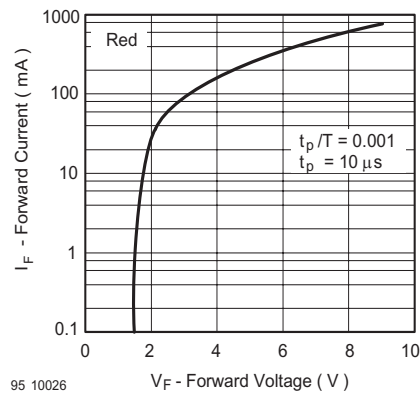


Figure 5. Forward Current vs. Forward Voltage

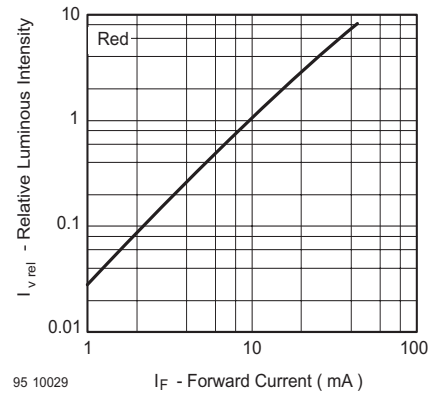


Figure 8. Relative Luminous Intensity vs. Forward Current

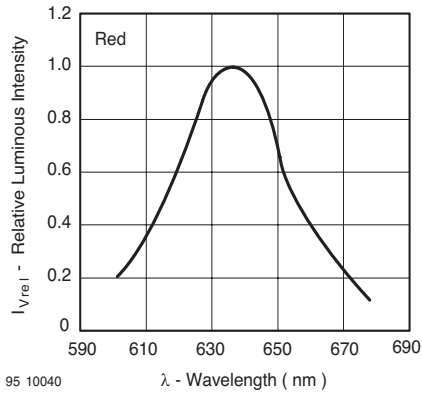


Figure 9. Relative Intensity vs. Wavelength

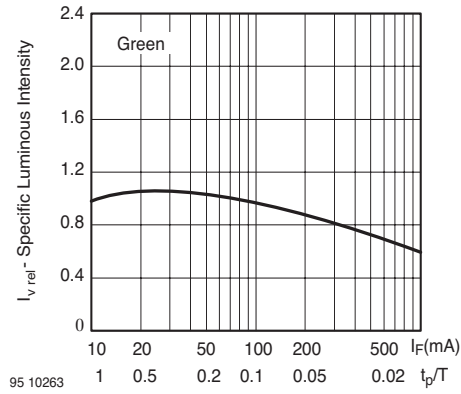


Figure 12. Specific Luminous Intensity vs. Forward Current

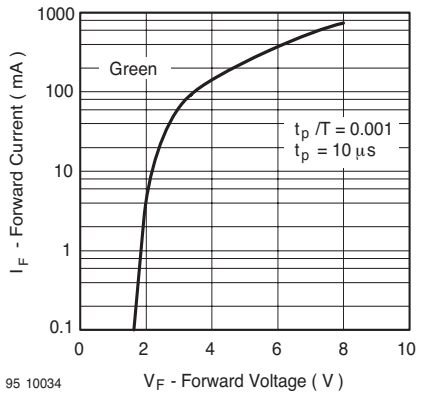


Figure 10. Forward Current vs. Forward Voltage

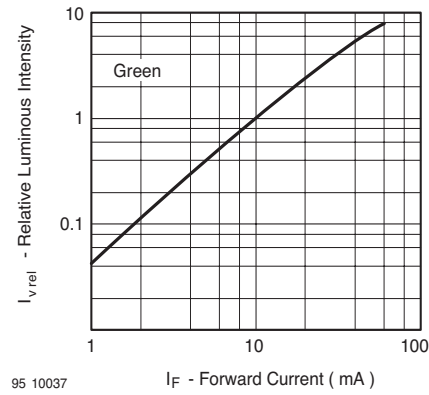


Figure 13. Relative Luminous Intensity vs. Forward Current

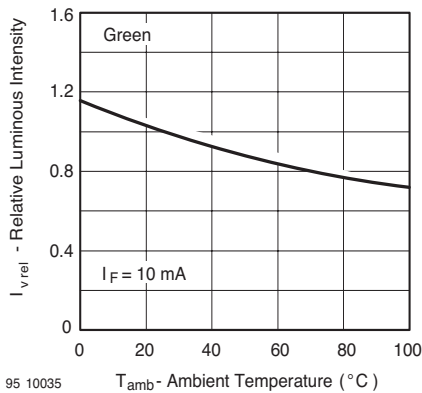


Figure 11. Rel. Luminous Intensity vs. Ambient Temperature

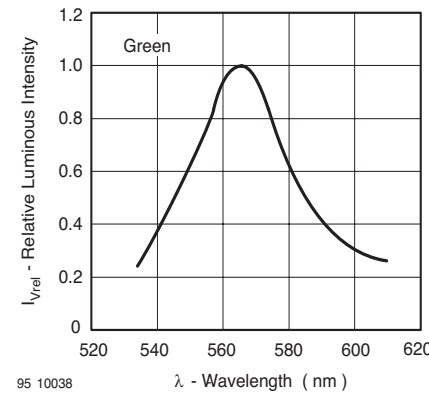
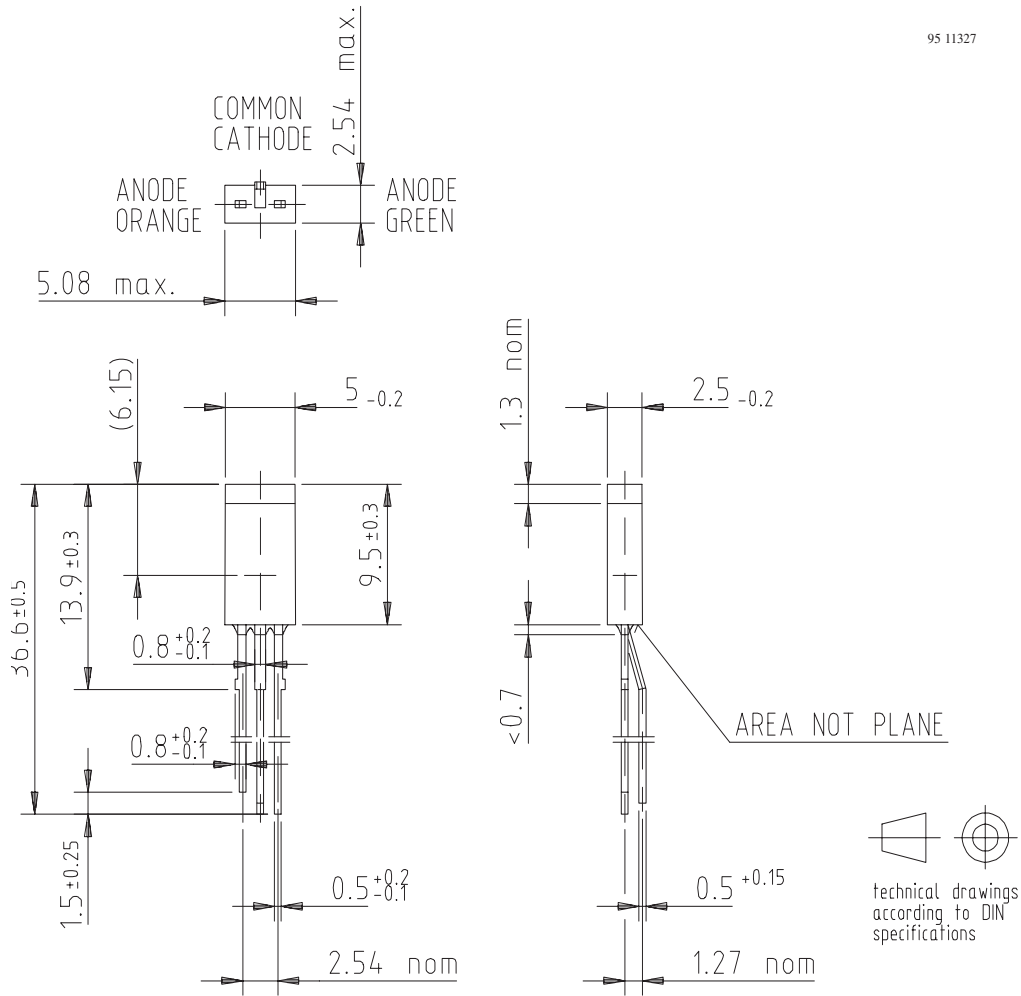


Figure 14. Relative Intensity vs. Wavelength

## Package Dimensions in mm

95 11327



### Ozone Depleting Substances Policy Statement

It is the policy of **Vishay Semiconductor GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

**Vishay Semiconductor GmbH** has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

**Vishay Semiconductor GmbH** can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

**We reserve the right to make changes to improve technical design  
and may do so without further notice.**

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