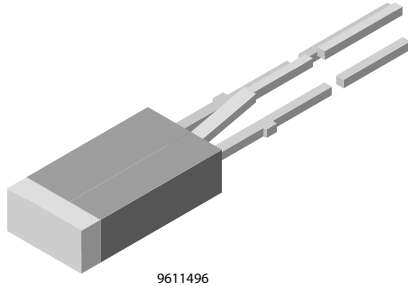




# THE DATASHEET OF TLSV5100



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



9611496

### PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 2.5 mm x 5 mm symbol
- Product series: bicolor
- Angle of half intensity:  $\pm 50^\circ$

### 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
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### APPLICATIONS

- Indicating and illumination purposes

### PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I <sub>F</sub> (mA)	WAVELENGTH (nm)			at I <sub>F</sub> (mA)	FORWARD VOLTAGE (V)			at I <sub>F</sub> (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TL5V5100	Red	0.63	1	-	10	612	-	625	10	-	2.0	3.0	20	GaP on GaP
TL5V5100	Green	0.63	1	-	10	562	-	575	10	-	2.4	3.0	20	GaP on GaP

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified) TL5V5100

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage per diode		V <sub>R</sub>	6	V
DC forward current per diode		I <sub>F</sub>	30	mA
Surge forward current per diode	t <sub>p</sub> ≤ 10 ms	I <sub>FSM</sub>	1	A
Power dissipation per diode	T <sub>amb</sub> ≤ 55 °C	P <sub>V</sub>	100	mW
Total power dissipation	T <sub>amb</sub> ≤ 55 °C	P <sub>tot</sub>	150	mW
Junction temperature		T <sub>j</sub>	100	°C
Operating temperature range		T <sub>amb</sub>	- 40 to + 100	°C
Storage temperature range		T <sub>stg</sub>	- 55 to + 100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T <sub>sd</sub>	260	°C
Thermal resistance junction/ambient per diode		R <sub>thJA</sub>	450	K/W
Thermal resistance junction/ambient total		R <sub>thJA</sub>	300	K/W

**OPTICAL AND ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)  
**TLSV5100R, RED**

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
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	$I_F = 20\text{ mA}$	$V_F$	-	2.0	3.0	V
Reverse voltage	$I_R = 10\text{ }\mu\text{A}$	$V_R$	6	15	-	V
Junction capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_j$	-	50	-	pF

**Note**
<sup>(1)</sup> In one packing unit  $I_{Vmin.}/I_{Vmax.} \leq 0.5$ 
**OPTICAL AND ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)  
**TLSV5100G, GREEN**

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
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	3.0	V
Reverse voltage	$I_R = 10\text{ }\mu\text{A}$	$V_R$	6	15	-	V
Junction capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	$C_j$	-	50	-	pF

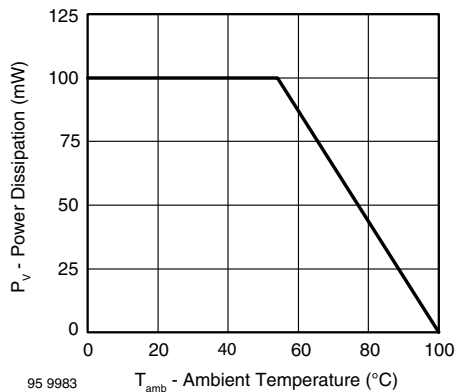
**Note**
<sup>(1)</sup> In one packing unit  $I_{Vmin.}/I_{Vmax.} \leq 0.5$ 
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Power Dissipation vs. Ambient Temperature

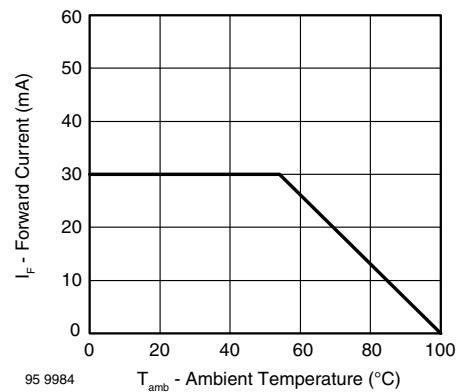


Fig. 2 - Forward Current vs. Ambient Temperature for InGaN

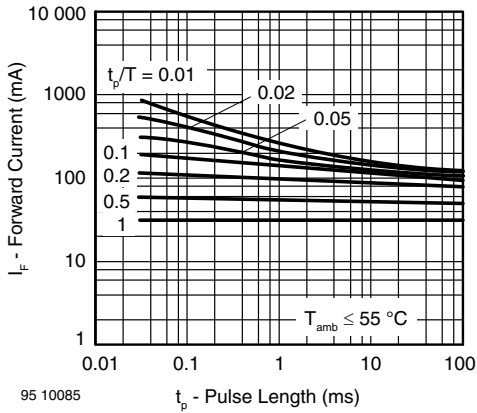


Fig. 3 - Forward Current vs. Pulse Length

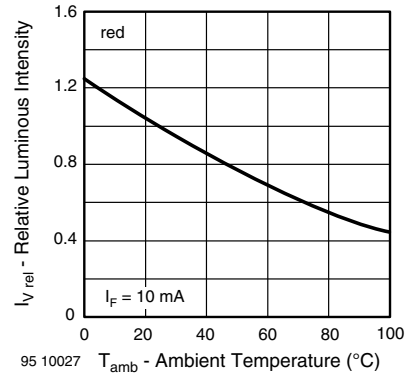


Fig. 6 - Relative Luminous Intensity vs. Ambient Temperature

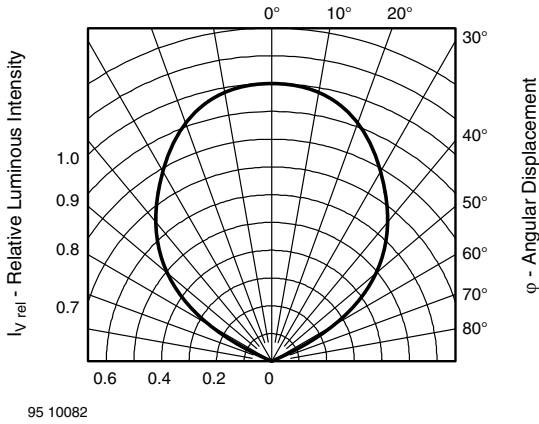


Fig. 4 - Relative Luminous Intensity vs. Angular Displacement

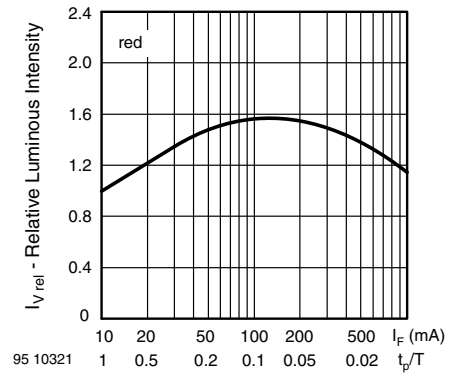


Fig. 7 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

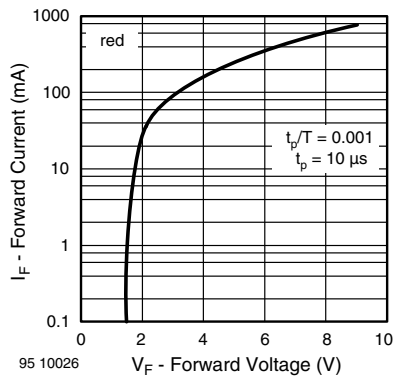


Fig. 5 - Forward Current vs. Forward Voltage

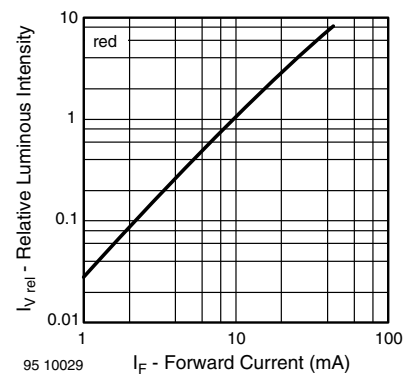


Fig. 8 - Relative Luminous Intensity vs. Forward Current

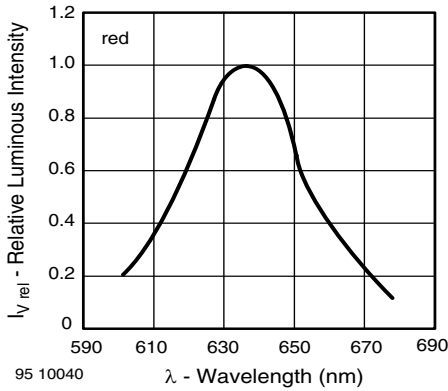


Fig. 9 - Relative Intensity vs. Wavelength

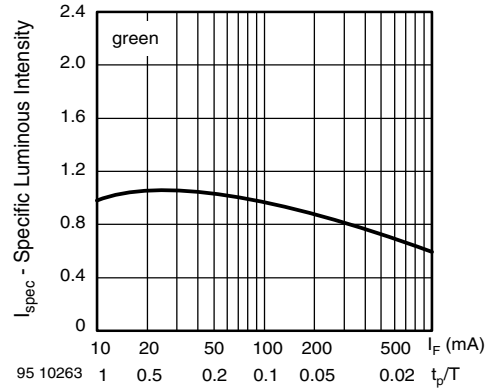


Fig. 12 - Specific Luminous Intensity vs. Forward Current

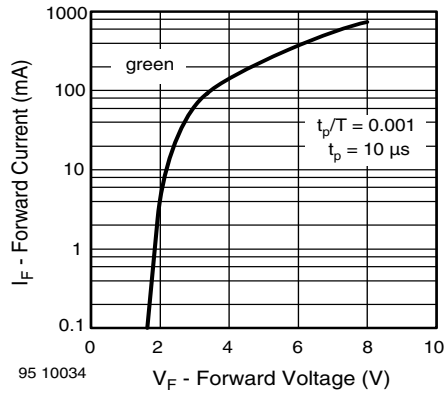


Fig. 10 - Forward Current vs. Forward Voltage

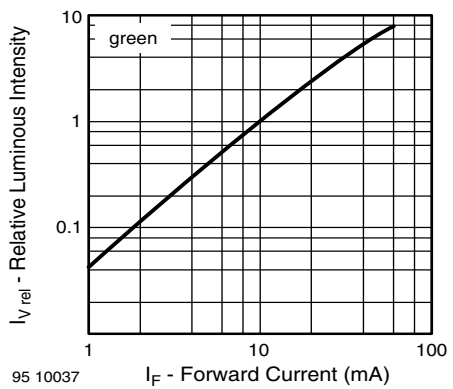


Fig. 13 - Relative Luminous Intensity vs. Forward Current

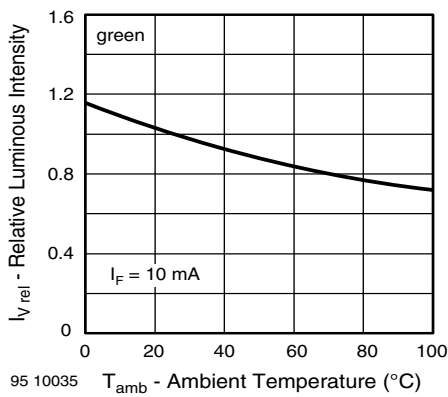


Fig. 11 - Relative Luminous Intensity vs. Ambient Temperature

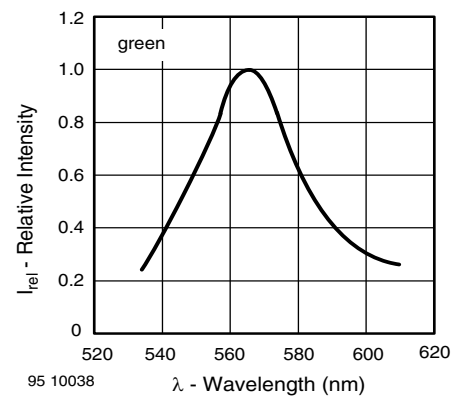
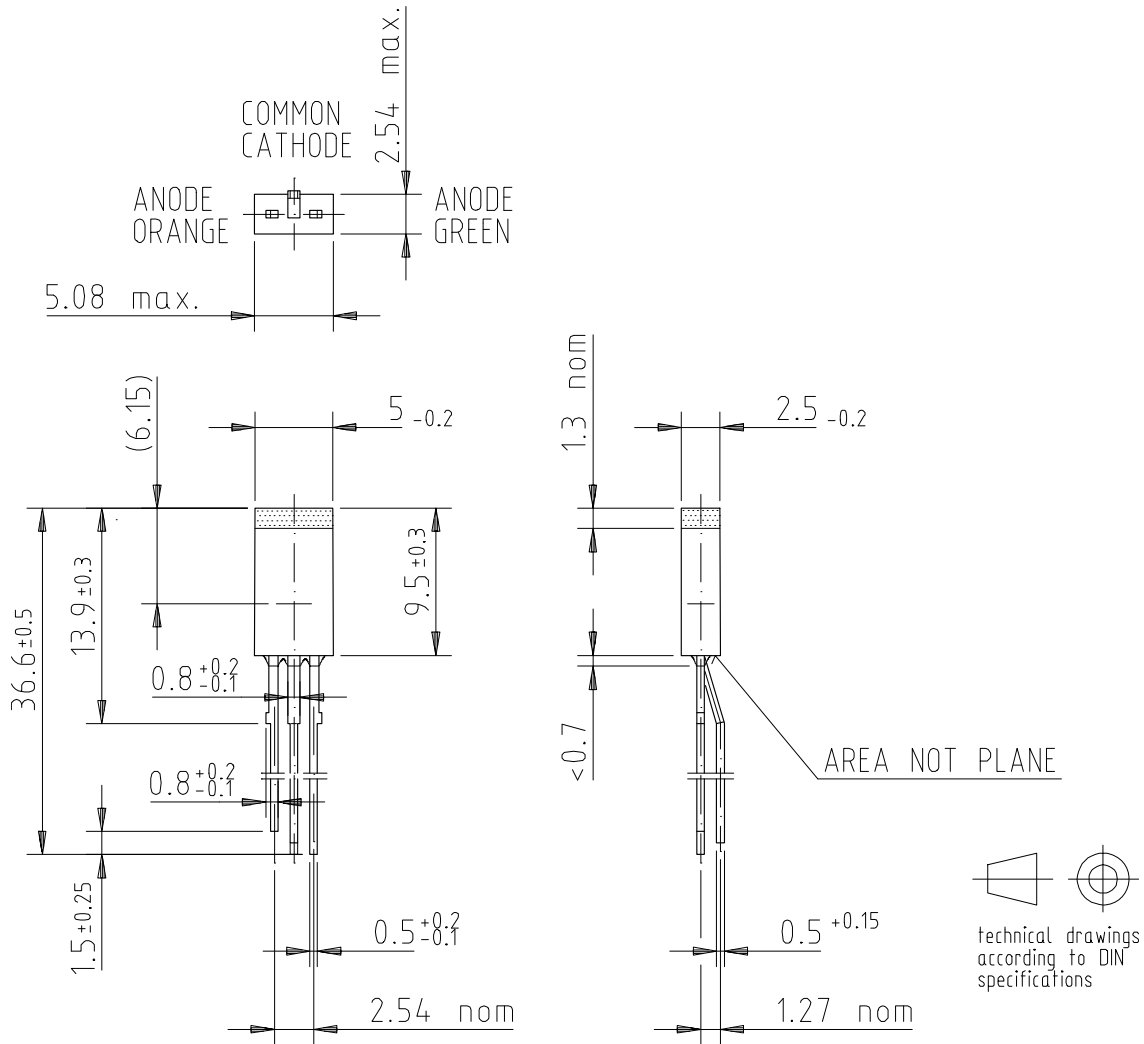


Fig. 14 - Relative Intensity vs. Wavelength



PACKAGE DIMENSIONS in millimeters



95 11327



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