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[Vishay Semiconductor/Opto Division](#)
[TLSV5100](#)

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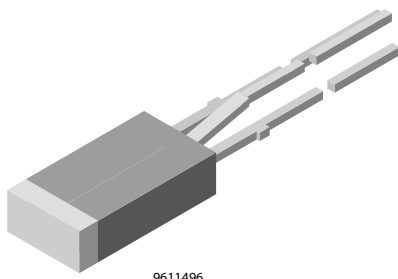


www.vishay.com

TLSV5100

Vishay Semiconductors

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



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

APPLICATIONS

- Indicating and illumination purposes

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.		
TLSV5100	Red	0.63	1	-	10	612	-	625	10	-	2.0	3.0	20	GaP on GaP
TLSV5100	Green	0.63	1	-	10	562	-	575	10	-	2.4	3.0	20	GaP on GaP

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, 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	$t_p \leq 10$ ms	I_{FSM}	1	A
Power dissipation per diode	$T_{amb} \leq 55^\circ\text{C}$	P_V	100	mW
Total power dissipation	$T_{amb} \leq 55^\circ\text{C}$	P_{tot}	150	mW
Junction temperature		T_j	100	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 40 to + 100	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 55 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 5$ s, 2 mm from body	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient per diode		R_{thJA}	450	K/W
Thermal resistance junction/ambient total		R_{thJA}	300	K/W



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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 ⁽¹⁾	$I_F = 10\text{ mA}$	I_V	0.63	1	-	mcd
Dominant wavelength	$I_F = 10\text{ mA}$	λ_d	612	-	625	nm
Peak wavelength	$I_F = 10\text{ mA}$	λ_p	-	635	-	nm
Angle of half intensity	$I_F = 10\text{ mA}$	ϕ	-	± 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

⁽¹⁾ 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 ⁽¹⁾	$I_F = 10\text{ mA}$	I_V	0.63	1	-	mcd
Dominant wavelength	$I_F = 10\text{ mA}$	λ_d	562	-	575	nm
Peak wavelength	$I_F = 10\text{ mA}$	λ_p	-	565	-	nm
Angle of half intensity	$I_F = 10\text{ mA}$	ϕ	-	± 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

⁽¹⁾ In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

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

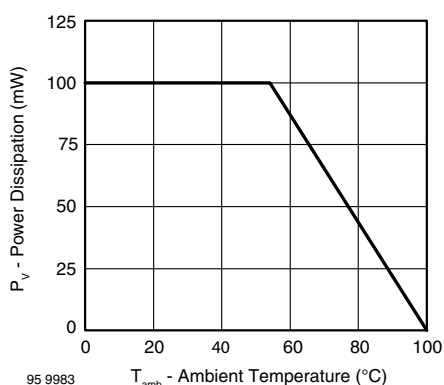


Fig. 1 - Power Dissipation vs. Ambient Temperature

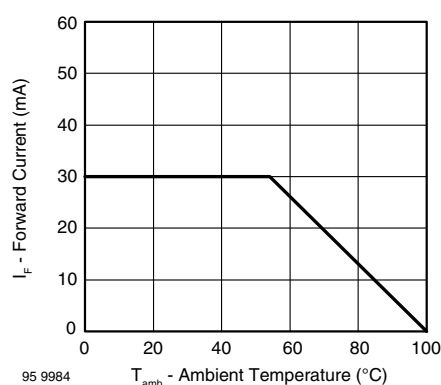


Fig. 2 - Forward Current vs. Ambient Temperature for InGaN



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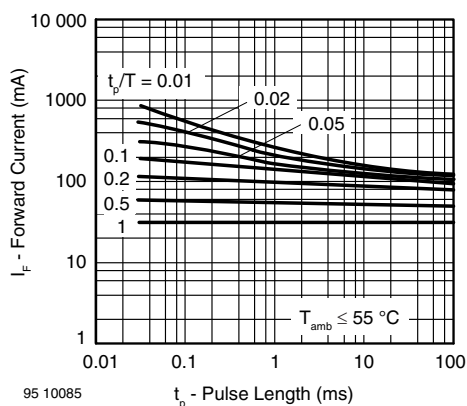


Fig. 3 - Forward Current vs. Pulse Length

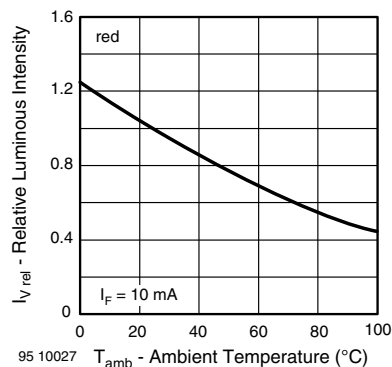


Fig. 6 - Relative Luminous Intensity vs. Ambient Temperature

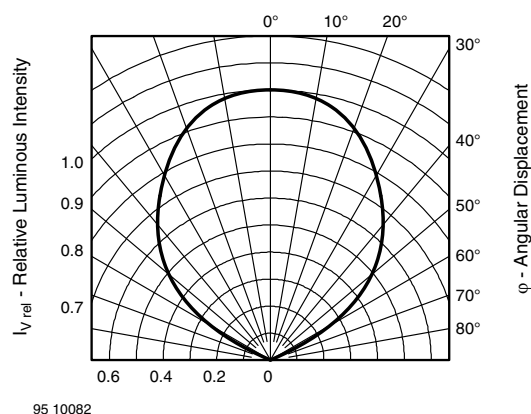


Fig. 4 - Relative Luminous Intensity vs. Angular Displacement

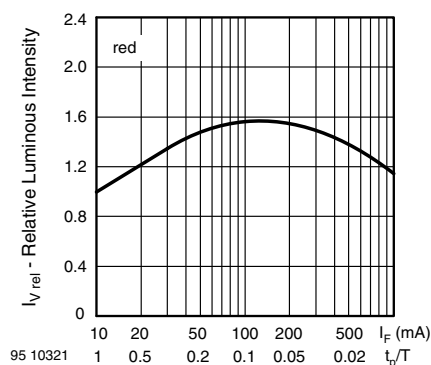


Fig. 7 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

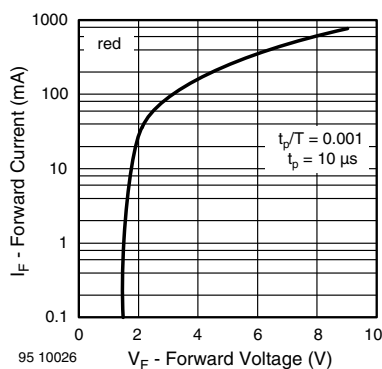


Fig. 5 - Forward Current vs. Forward Voltage

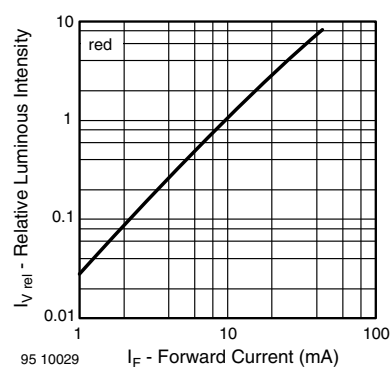


Fig. 8 - Relative Luminous Intensity vs. Forward Current



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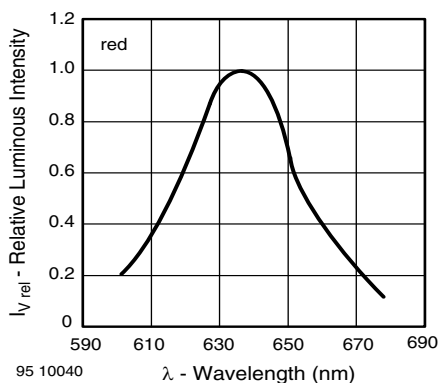


Fig. 9 - Relative Intensity vs. Wavelength

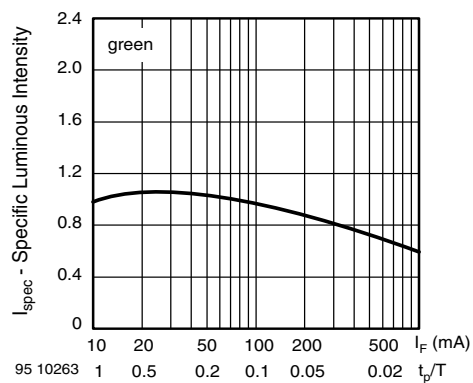


Fig. 12 - Specific Luminous Intensity vs. Forward Current

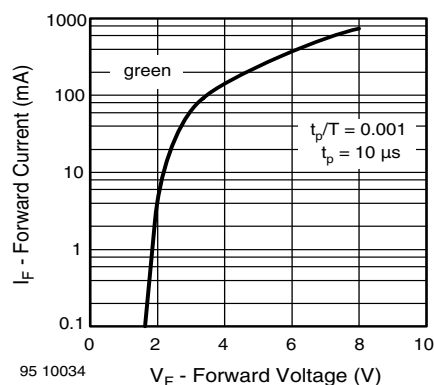


Fig. 10 - Forward Current vs. Forward Voltage

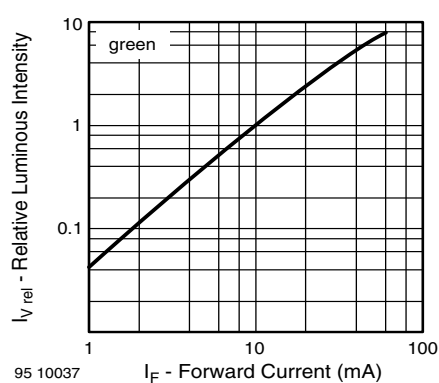


Fig. 13 - Relative Luminous Intensity vs. Forward Current

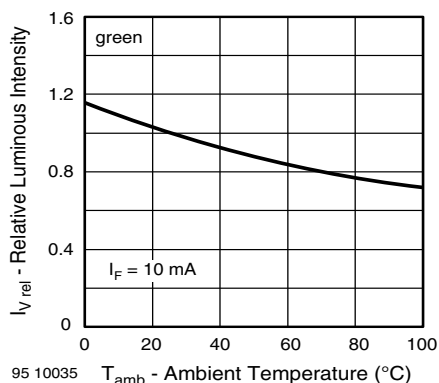


Fig. 11 - Relative Luminous Intensity vs. Ambient Temperature

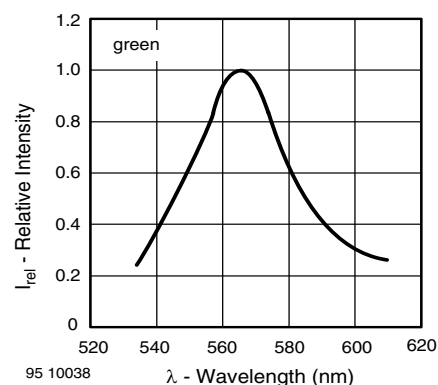
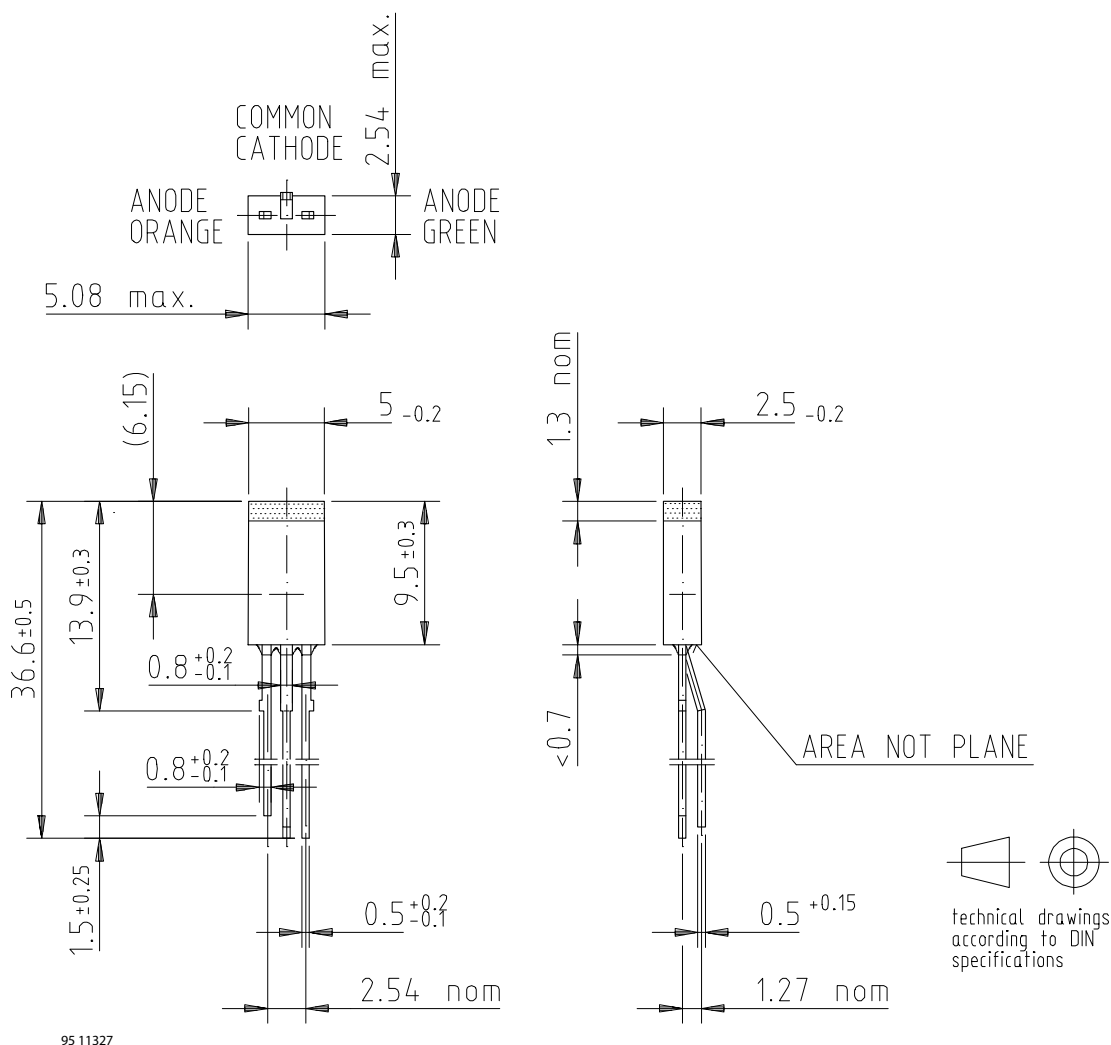


Fig. 14 - Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters





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