

## Vishay Semiconductors

## Bicolor LED in Ø 5 mm Untinted Diffused Package



### PRODUCT GROUP AND PACKAGE DATA

Product group: LEDPackage: 5 mmProduct series: bicolor

• Angle of half intensity: ± 30°

#### **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







# RoHS

HALOGEN FREE

**GREEN** (5-2008)

### **APPLICATIONS**

· Indicating and illumination purposes

PARTS TABLE														
PART COLOR		LUMINOUS INTENSITY (mcd)		at I <sub>F</sub>	WAVELENGTH (nm)		at I <sub>F</sub>	FORWARD VOLTAGE (V)		at I <sub>F</sub> (mA)	TECHNOLOGY			
		MIN.	TYP.	MAX.	(mA)	MIN.	TYP.	MAX.	(IIIA)	MIN.	TYP.	MAX.	(MA)	
TLUV5300	Red	1	2.5	-	10	612	-	625	10	-	2	3	20	GaAsP on GaP
TLUV5300	Green	1	2.5	-	10	552	-	575	10	-	2.4	3	20	GaAsP on GaP

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 μs	I <sub>FSM</sub>	1	Α
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		Tj	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	$t \le 5$ 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



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OPTICAL AND ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25  ^{\circ}C$ , unless otherwise specified) TLUV5300, RED							
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Per diode							
Luminous intensity (1)	I <sub>F</sub> = 10 mA	I <sub>V</sub>	1	2.5	-	mcd	
Dominant wavelength	I <sub>F</sub> = 10 mA	$\lambda_{d}$	612	-	625	nm	
Peak wavelength	I <sub>F</sub> = 10 mA	λρ	-	630	-	nm	
Angle of half intensity	I <sub>F</sub> = 10 mA	φ	-	± 30	-	deg	
Forward voltage	I <sub>F</sub> = 20 mA	V <sub>F</sub>	-	2	3	V	
Reverse voltage	I <sub>R</sub> = 10 μA	V <sub>R</sub>	6	15	-	V	
Junction capacitance	V <sub>R</sub> = 0 V, f = 1 MHz	C <sub>j</sub>	-	50	-	pF	

#### Note

 $<sup>^{(1)}~</sup>$  In one packing unit  $I_{Vmin.}/I_{Vmax.} \leq 0.5$ 

OPTICAL AND ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) TLUV5300, GREEN							
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Per diode							
Luminous intensity (1)	I <sub>F</sub> = 10 mA	I <sub>V</sub>	1	2.5	-	mcd	
Dominant wavelength	I <sub>F</sub> = 10 mA	$\lambda_{d}$	552	-	575	nm	
Peak wavelength	I <sub>F</sub> = 10 mA	λρ	=	565		nm	
Angle of half intensity	I <sub>F</sub> = 10 mA	φ	-	±30		deg	
Forward voltage	I <sub>F</sub> = 20 mA	V <sub>F</sub>	=	2.4	3	V	
Reverse voltage	I <sub>R</sub> = 10 μA	V <sub>R</sub>	6	15	-	V	
Junction capacitance	V <sub>R</sub> = 0 V, f = 1 MHz	Ci	-	50	-	pF	

#### Note

## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

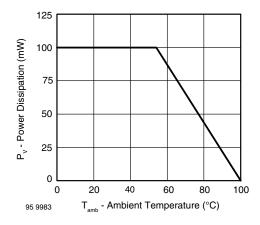


Fig. 1 - Power Dissipation vs. Ambient Temperature

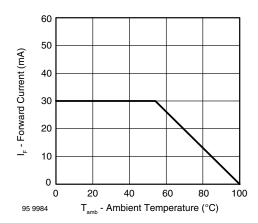


Fig. 2 - Forward Current vs. Ambient Temperature for InGaN

 $<sup>^{(1)}~</sup>$  In one packing unit  $I_{Vmin.}/I_{Vmax.} \leq 0.5$ 



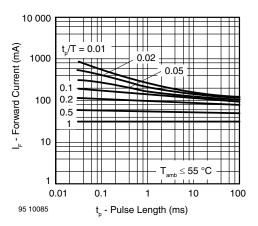


Fig. 3 - Forward Current vs. Pulse Length

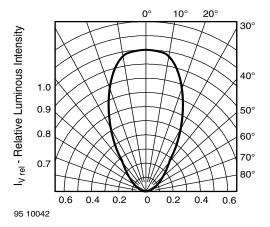


Fig. 4 - Relative Luminous Intensity vs. Angular Displacement

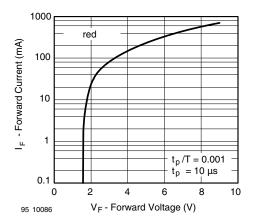


Fig. 5 - Forward Current vs. Forward Voltage

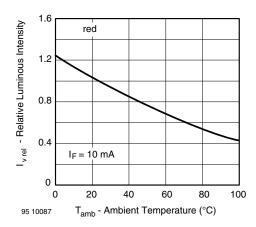


Fig. 6 - Relative Luminous Intensity vs. Ambient Temperature

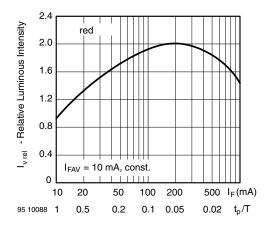


Fig. 7 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

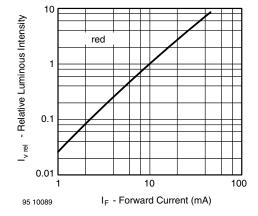
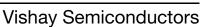


Fig. 8 - Relative Luminous Intensity vs. Forward Current





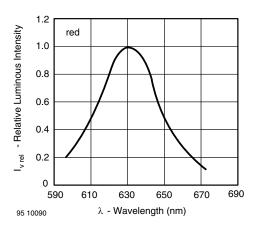


Fig. 9 - Relative Intensity vs. Wavelength

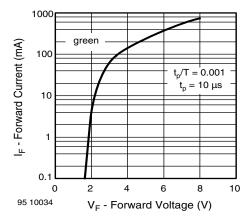


Fig. 10 - Forward Current vs. Forward Voltage

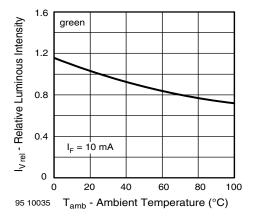


Fig. 11 - Relative Luminous Intensity vs. Ambient Temperature

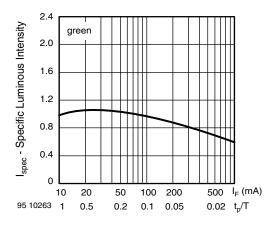


Fig. 12 - Specific Luminous Intensity vs. Forward Current

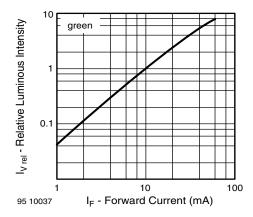


Fig. 13 - Relative Luminous Intensity vs. Forward Current

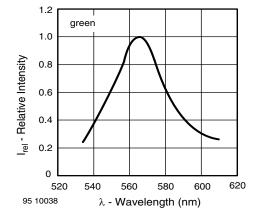
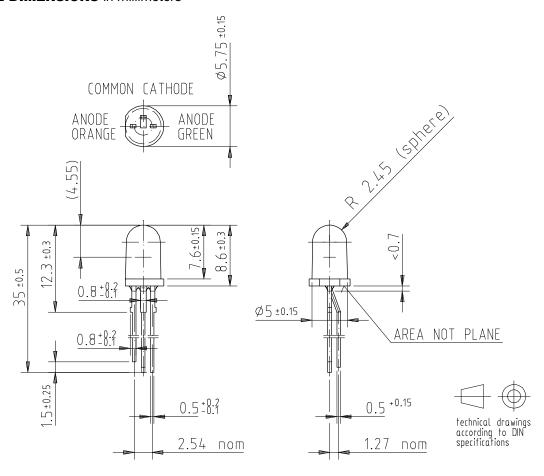


Fig. 14 - Relative Intensity vs. Wavelength



### **PACKAGE DIMENSIONS** in millimeters





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Vishay

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