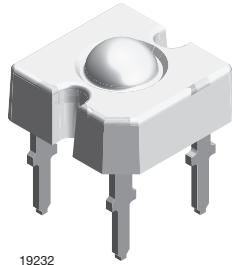


TELUX LED



19232

DESCRIPTION

The TELUX series is a clear, non diffused LED for applications where supreme luminous flux is required.

It is designed in an industry standard 7.62 mm square package utilizing highly developed super bright, AllnGaP technology.

The supreme heat dissipation of TELUX allows applications at high ambient temperatures.

All packing units are binned for luminous flux, forward voltage and color to achieve the most homogeneous light appearance in application.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: TELUX
- Product series: power
- Angle of half intensity: $\pm 45^\circ$

FEATURES

- High luminous flux
- Supreme heat dissipation: R_{thJP} is 90 K/W
- High operating temperature:
 $T_{amb} = -40\text{ }^\circ\text{C}$ to $+110\text{ }^\circ\text{C}$
- Meets SAE and ECE color requirements for the automobile industry for color red
- Packed in tubes for automatic insertion
- Luminous flux, forward voltage and color categorized for each tube
- Small mechanical tolerances allow precise usage of external reflectors or lightguides
- Compatible with wave solder processes according to CECC 00802
- ESD-withstand voltage: up to 2 kV according to JESD 22-A114-B
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



APPLICATIONS

- Exterior lighting
- Tail-, stop- and, turn signals of motor vehicles
- Traffic light and signs

PARTS TABLE

PART	COLOR	LUMINOUS FLUX (lm)			at I_F (mA)	WAVELENGTH (nm)			FORWARD VOLTAGE (V)			TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
VLWY9930	Yellow	4000	-	12 200	70	585	592	597	1.83	2.2	3.03	AllnGaP on Si
VLWY9932	Yellow	6000	-	12 200	70	587	592	597	1.95	2.2	2.67	AllnGaP on Si

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified)

VLWY9930, VLWY9932

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage ⁽¹⁾		V_R	10	V
DC forward current	$T_{amb} \leq 85\text{ }^\circ\text{C}$	I_F	70	mA
Surge forward current	$t_p \leq 10\text{ }\mu\text{s}$	I_{FSM}	0.1	A
Power dissipation		P_V	212	mW
Junction temperature		T_j	125	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 40 to + 110	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 40 to + 110	$^\circ\text{C}$
Soldering temperature	$t \leq 5\text{ s}$, 1.5 mm from body preheat temperature $100\text{ }^\circ\text{C}/30\text{ s}$	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient	With anode heatsink of 70 mm^2	R_{thJA}	200	K/W
Thermal resistance junction/pin		R_{thJP}	90	K/W

Note

⁽¹⁾ Driving the LED in reverse direction is suitable for a short term application

**OPTICAL AND ELECTRICAL CHARACTERISTICS** ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)
VLWY9930, VLWY9932, YELLOW

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Total flux	$I_F = 70\text{ mA}$, $R_{thJA} = 200\text{ K/W}$	VLWY9930	ϕ_V	4000	-	12 200	mlm
		VLWY9932	ϕ_V	6000	-	12 200	mlm
Luminous intensity/total flux	$I_F = 70\text{ mA}$, $R_{thJA} = 200\text{ K/W}$		I_V/ϕ_V	-	0.7	-	mcd/mlm
Dominant wavelength	$I_F = 70\text{ mA}$, $R_{thJA} = 200\text{ K/W}$	VLWY9930	λ_d	585	592	597	nm
		VLWY9932	λ_d	587	592	597	nm
Peak wavelength	$I_F = 70\text{ mA}$, $R_{thJA} = 200\text{ K/W}$		λ_p	-	594	-	nm
Angle of half intensity	$I_F = 70\text{ mA}$, $R_{thJA} = 200\text{ K/W}$		ϕ	-	± 45	-	deg
Total included angle	90 % of total flux captured		$\phi_{0.9V}$	-	100	-	deg
Forward voltage	$I_F = 70\text{ mA}$, $R_{thJA} = 200\text{ K/W}$	VLWY9930	V_F	1.83	2.2	3.03	V
		VLWY9932	V_F	1.95	2.2	2.67	V
Reverse voltage			V_R	10	20	-	V
Temperature coefficient of λ_{dom}	$I_F = 70\text{ mA}$		$T_C\lambda_{dom}$	-	0.1	-	nm/K
Temperature coefficient of V_F	$I_F = 70\text{ mA}$, $T > -25\text{ }^{\circ}\text{C}$		T_{CVF}	-	-2	-	mV/K

LUMINOUS FLUX CLASSIFICATION

GROUP	LUMINOUS FLUX (mlm)	
	MIN.	MAX.
H	4000	6100
I	5000	7300
K	6000	9700
L	7000	12 200

Note

- Luminous flux is tested at a current pulse duration of 25 ms and an accuracy of $\pm 11\%$.
The above type numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each tube (there will be no mixing of two groups on each tube).
In order to ensure availability, single brightness groups will be not orderable.
In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped in any one tube.
In order to ensure availability, single wavelength groups will not be orderable.

COLOR CLASSIFICATION

GROUP	DOMINANT WAVELENGTH (nm)	
	MIN.	MAX.
0	585	588
1	587	591
2	589	594
3	592	597

Note

- Wavelengths are tested at a current pulse duration of 25 ms and an accuracy of $\pm 1\text{ nm}$.

FORWARD VOLTAGE CLASSIFICATION

GROUP	FORWARD VOLTAGE (V)	
	MIN.	MAX.
Y	1.83	2.07
Z	1.95	2.19
0	2.07	2.31
1	2.19	2.43
2	2.31	2.55
3	2.43	2.67
4	2.55	2.79
5	2.67	2.91
6	2.79	3.03

Note

- Voltages are tested at a current pulse duration of 1 ms.

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

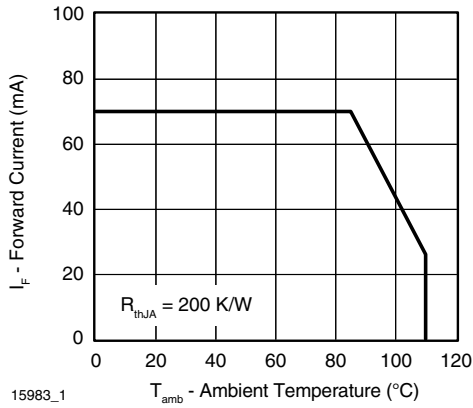


Fig. 1 - Forward Current vs. Ambient Temperature

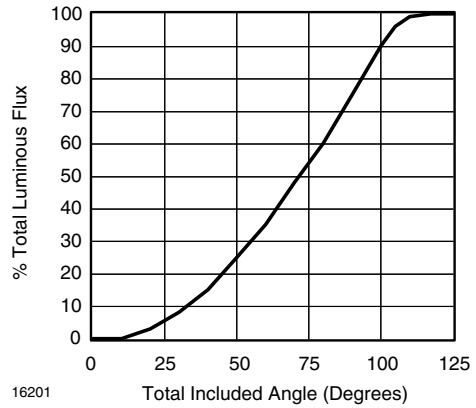


Fig. 4 - Percentage Total Luminous Flux vs. Total Included Angle for 90° Emission Angle

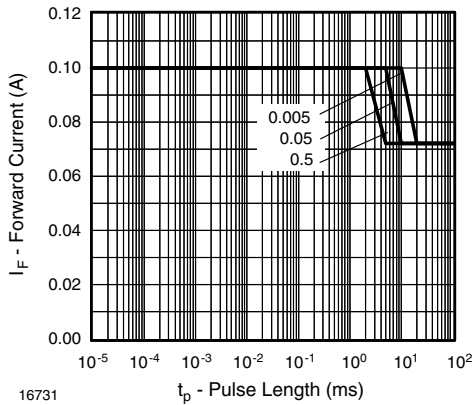


Fig. 2 - Forward Current vs. Pulse Length

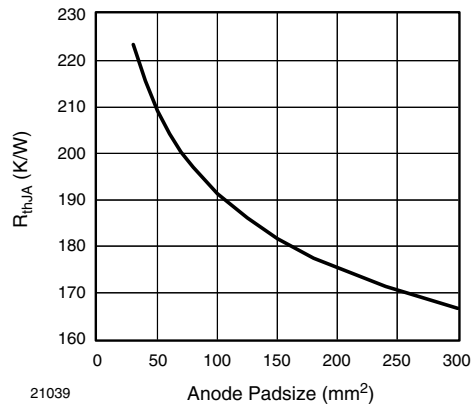


Fig. 5 - Thermal Resistance Junction Ambient vs. Anode Padsize

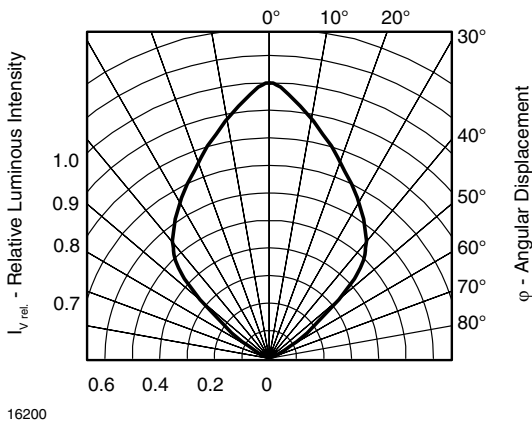
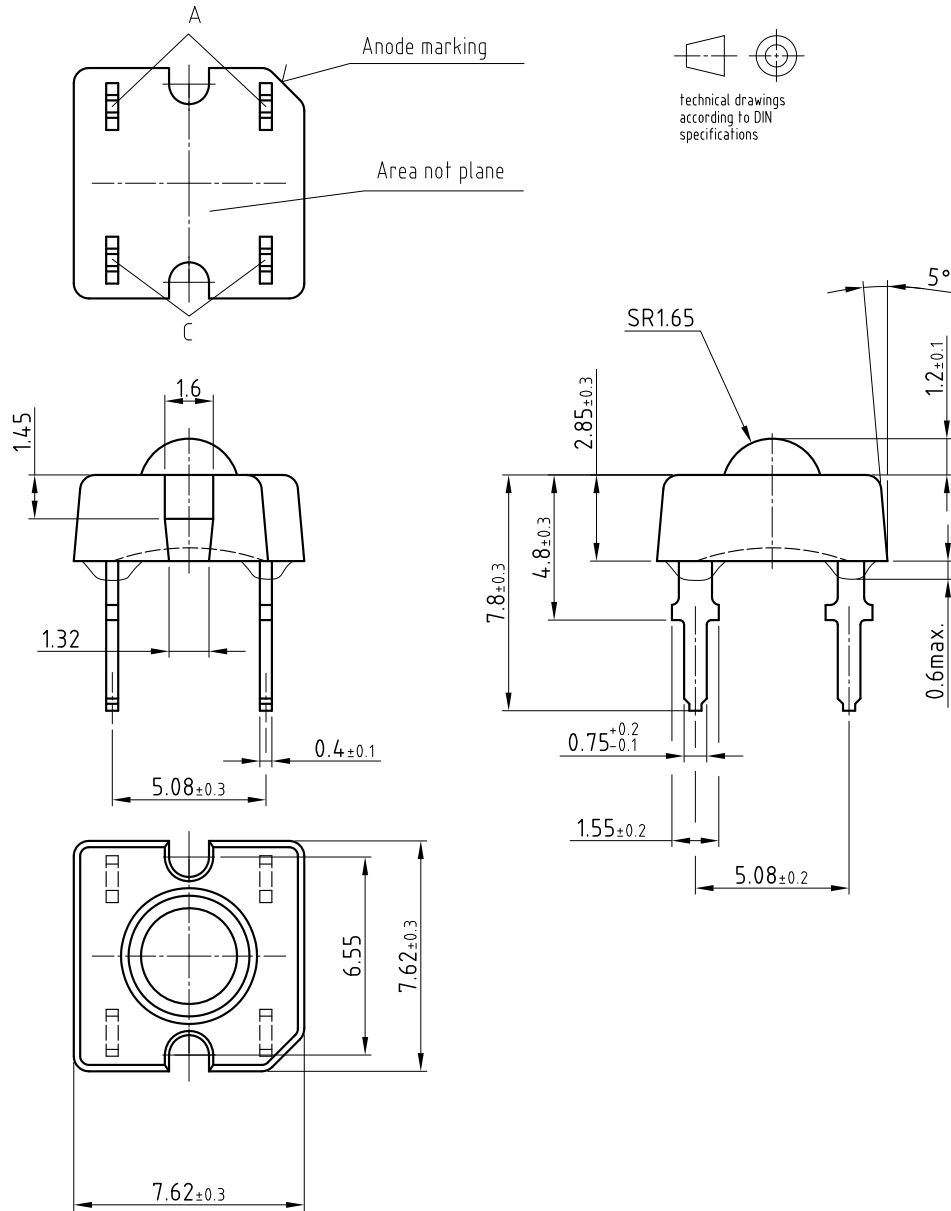


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement



PACKAGE DIMENSIONS in millimeters



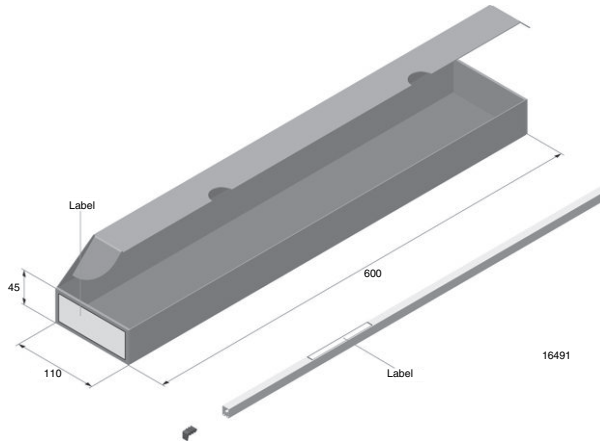
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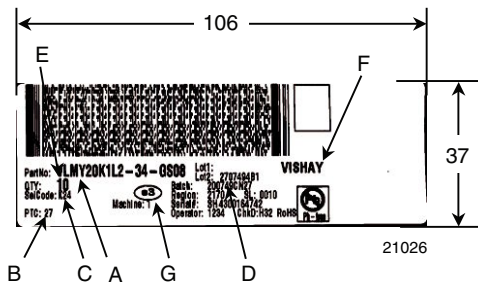
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FAN FOLD BOX DIMENSIONS in millimeters

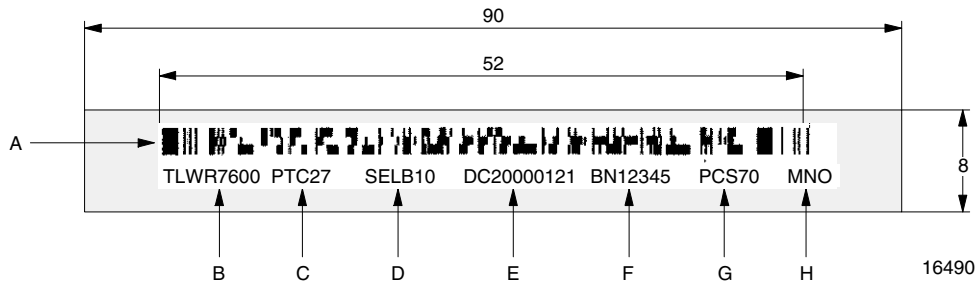


LABEL OF FAN FOLD BOX (example)



- A. Type of component
- B. PTC = manufacturing plant
- C. SEL - selection code (bin):
e.g.: K2 = code for luminous intensity group
4 = code for color group
- D. Batch/date code year/week
- E. Total quantity
- F. Company code
- G. Code for lead (Pb)-free classification (e3)

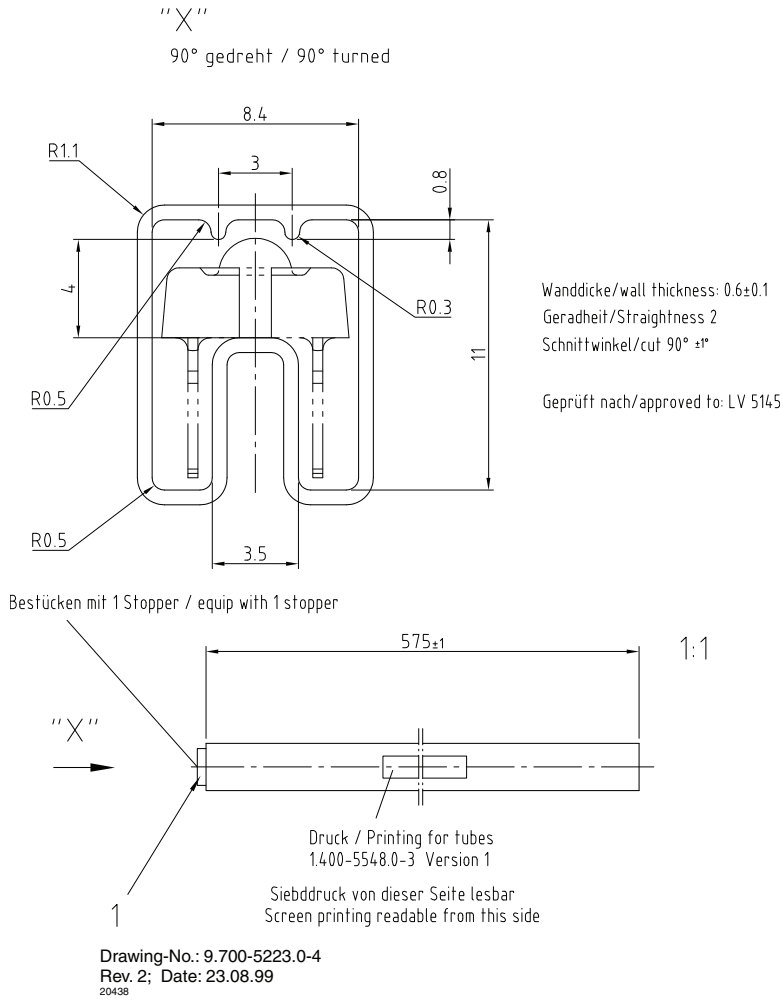
EXAMPLE FOR TELUX TUBE LABEL DIMENSIONS in millimeters



- A. Bar code
- B. Type of component
- C. Manufacturing plant
- D. SEL - selection code (bin):
digit 1 - code for luminous flux group
digit 2 - code for dominant wavelength group
digit 3 - code for forward voltage group
- E. Date code
- F. Batch no.
- G. Total quantity
- H. Company code



TUBE WITH BAR CODE LABEL DIMENSIONS in millimeters



Drawing Proportions not Scaled



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