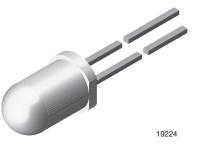
**Vishay Semiconductors** 

# Universal LED in Ø 5 mm Tinted Diffused Package



## PRODUCT GROUP AND PACKAGE DATA

www.vishay.com

- Product group: LED
- Package: 5 mm
- Product series: standard
- Angle of half intensity: ± 30°

### FEATURES

- For DC and pulse operation
- Luminous intensity categorized
- Standard T-1¾ package
- TLUR640. without stand-offs
- Material categorization: For definitions of compliance please see <u>www.vishav.com/doc?99912</u>

## APPLICATIONS

• General indicating and lighting 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.	(IIIA)	MIN.	TYP.	MAX.	(11174)	MIN.	TYP.	MAX.	(IIIA)	
TLUR6400	Red	4	15	-	10	-	630	-	10	-	2	3	20	GaAsP on GaAs
TLUR6401	Red	4	15	32	10	-	630	-	10	-	2	3	20	GaAsP on GaAs

### **ABSOLUTE MAXIMUM RATINGS** (T<sub>amb</sub> = 25 °C, unless otherwise specified) **TLUR6401**

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Reverse voltage		V <sub>R</sub>	6	V	
DC forward current		١F	20	mA	
Surge forward current	t <sub>p</sub> ≤ 10 μs	I <sub>FSM</sub>	1	A	
Power dissipation	T <sub>amb</sub> ≤ 65 °C	Pv	60	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		R <sub>thJA</sub>	500	K/W	

# **OPTICAL AND ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25 \text{ °C}$ , unless otherwise specified) **TLUR640.**, **RED**

TEST CONDITION	PART	MIN.	TYP.	MAX.	UNIT	MIN.
I 10 m 4	TLUR6400	Ι <sub>V</sub>	4	15	-	mcd
IF = TO THA	TLUR6401	I <sub>V</sub>	4	15	32	mcd
I <sub>F</sub> = 10 mA		$\lambda_d$	-	630	-	nm
l <sub>F</sub> = 10 mA		λp	-	640	-	nm
I <sub>F</sub> = 10 mA		φ	-	± 30	-	deg
I <sub>F</sub> = 20 mA		VF	-	2	3	V
I <sub>R</sub> = 10 μA		V <sub>R</sub>	6	15	-	V
V <sub>R</sub> = 0 V, f = 1 MHz		Cj	-	50	-	pF
	$I_{F} = 10 \text{ mA}$ $I_{F} = 20 \text{ mA}$ $I_{R} = 10 \mu \text{A}$	$\label{eq:result} \begin{array}{c} I_F = 10 \text{ mA} & \\ \hline TLUR6400 \\ \hline TLUR6401 \\ \hline \\ I_F = 10 \text{ mA} \\ \hline \\ I_F = 10 \text{ mA} \\ \hline \\ I_F = 20 \text{ mA} \\ \hline \\ I_R = 10  \mu \text{A} \end{array}$	$\label{eq:linear} \begin{array}{ c c c c c } \hline I_F = 10 \text{ mA} & \hline TLUR6400 & I_V \\ \hline TLUR6401 & I_V \\ \hline I_F = 10 \text{ mA} & & & & & & \\ \hline I_F = 10 \text{ mA} & & & & & & & \\ \hline I_F = 10 \text{ mA} & & & & & & & & \\ \hline I_F = 20 \text{ mA} & & & & & & & V_F \\ \hline I_R = 10 \ \mu \text{A} & & & & & & V_R \end{array}$	$\label{eq:linear_relation} \begin{array}{ c c c c c } \hline I_F = 10 \text{ mA} & \hline TLUR6400 & I_V & 4 \\ \hline TLUR6401 & I_V & 4 \\ \hline I_F = 10 \text{ mA} & & & & & & & \\ \hline I_F = 10 \text{ mA} & & & & & & & & \\ \hline I_F = 10 \text{ mA} & & & & & & & & & \\ \hline I_F = 20 \text{ mA} & & & & & & & & & \\ \hline I_R = 10 \ \mu A & & & & & & & & V_R & 6 \\ \hline \end{array}$	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

#### Note

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

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Pb-free

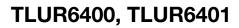
RoHS

COMPLIANT

HALOGEN

<u>GREEN</u>

(5-2008)





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## **TYPICAL CHARACTERISTICS** ( $T_{amb} = 25 \text{ °C}$ , unless otherwise specified)

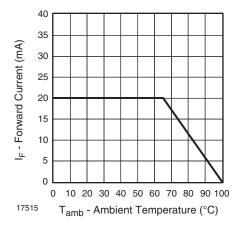


Fig. 1 - Forward Current vs. Ambient Temperature

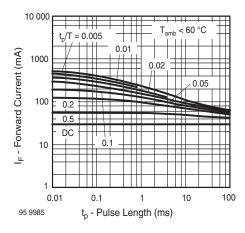


Fig. 2 - Pulse Forward Current vs. Pulse Duration

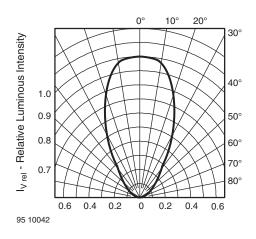


Fig. 3 - Relative Luminous Intensity vs. Angular Displacemen

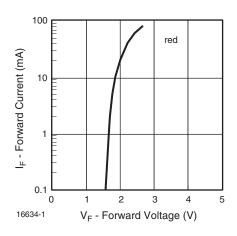


Fig. 4 - Forward Current vs. Forward Voltage

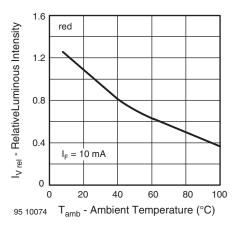


Fig. 5 - Relative Luminous Intensity vs. Ambient Temperature

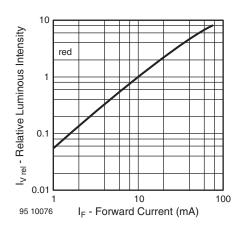


Fig. 6 - Relative Luminous Intensity vs. Forward Current

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# TLUR6400, TLUR6401

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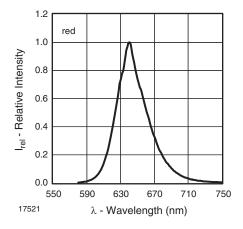
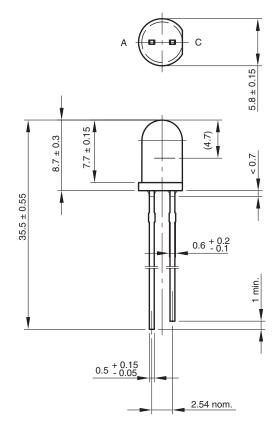
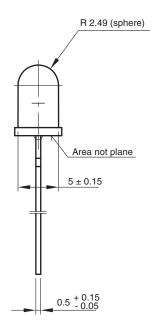
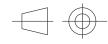


Fig. 7 - Relative Intensity vs. Wavelength

#### **PACKAGE DIMENSIONS** in millimeters







technical drawings according to DIN specifications

6.544-5259.02-4 Issue: 8; 19.05.09 95 10917



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