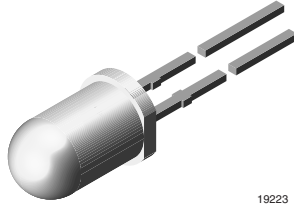


Universal LED in \varnothing 5 mm Tinted Diffused Package



19223

FEATURES

- For DC and pulse operation
- Luminous intensity categorized
- Standard \varnothing 5 mm (T-1 $\frac{3}{4}$) package
- TLUR54.. with stand-offs
- Lead (Pb)-free device

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: standard
- Angle of half intensity: $\pm 30^\circ$

APPLICATIONS

- General indicating and lighting purposes

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLUR5400	Red, $I_V > 4$ mcd	GaAsP on GaAs
TLUR5401	Red, $I_V = (4 \text{ to } 32)$ mcd	GaAsP on GaAs

ABSOLUTE MAXIMUM RATINGS¹⁾ TLUR54..

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC Forward current		I_F	20	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 65^\circ\text{C}$	P_V	60	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		R_{thJA}	500	K/W

Note:

¹⁾ $T_{amb} = 25^\circ\text{C}$, unless otherwise specified

OPTICAL AND ELECTRICAL CHARACTERISTICS¹⁾ TLUR54.., RED

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity ²⁾	$I_F = 10$ mA	TLUR5400	I_V	4	15		mcd
		TLUR5401	I_V	4	15	32	mcd
Dominant wavelength	$I_F = 10$ mA		λ_d		630		nm
Peak wavelength	$I_F = 10$ mA		λ_p		640		nm
Angle of half intensity	$I_F = 10$ mA		ϕ		± 30		deg
Forward voltage	$I_F = 20$ mA		V_F		2	3	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	15		V
Junction capacitance	$V_R = 0$, $f = 1$ MHz		C_j		50		pF

Note:

¹⁾ $T_{amb} = 25^\circ\text{C}$, unless otherwise specified

²⁾ in one packing unit $I_{Vmin}/I_{Vmax} \leq 0.5$

TYPICAL CHARACTERISTICS

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

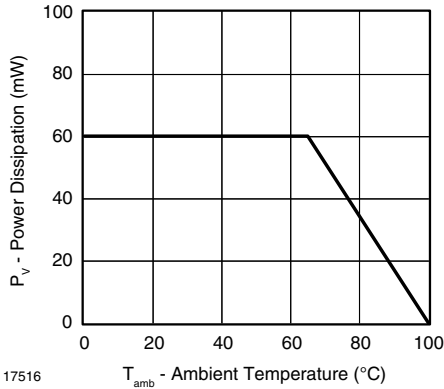


Figure 1. Power Dissipation vs. Ambient Temperature

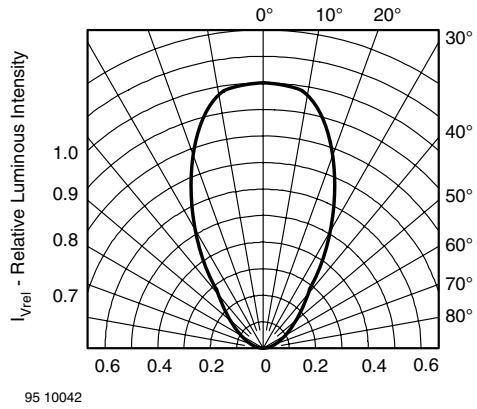


Figure 4. Rel. Luminous Intensity vs. Angular Displacement

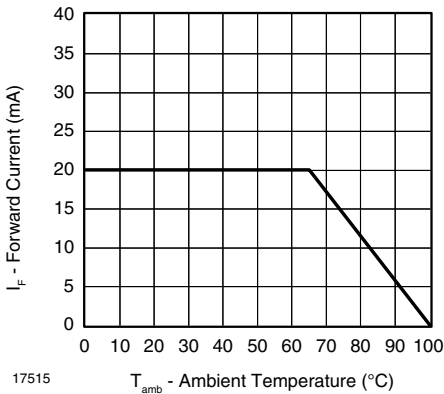


Figure 2. Forward Current vs. Ambient Temperature

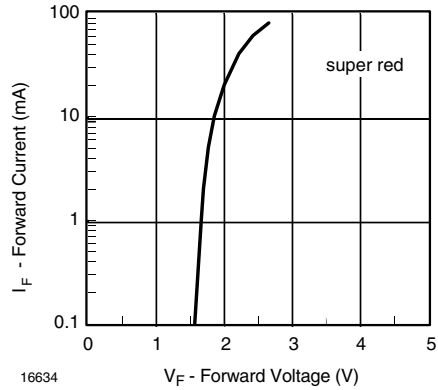


Figure 5. Forward Current vs. Forward Voltage

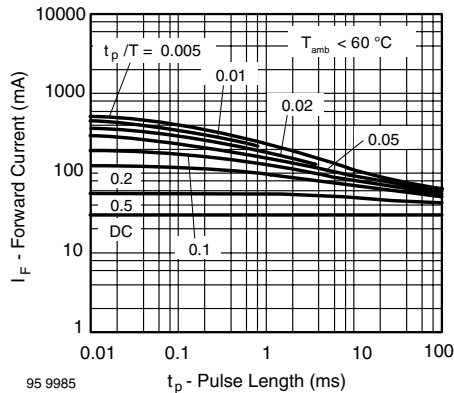


Figure 3. Pulse Forward Current vs. Pulse Duration

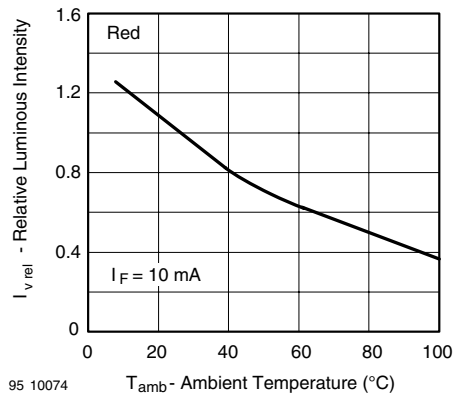


Figure 6. Rel. Luminous Intensity vs. Ambient Temperature

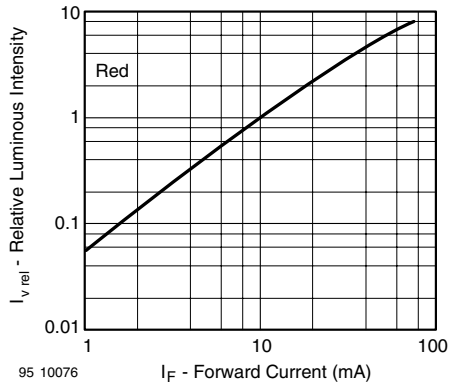


Figure 7. Relative Luminous Intensity vs. Forward Current

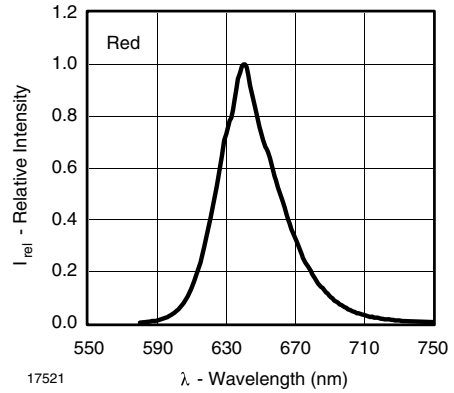
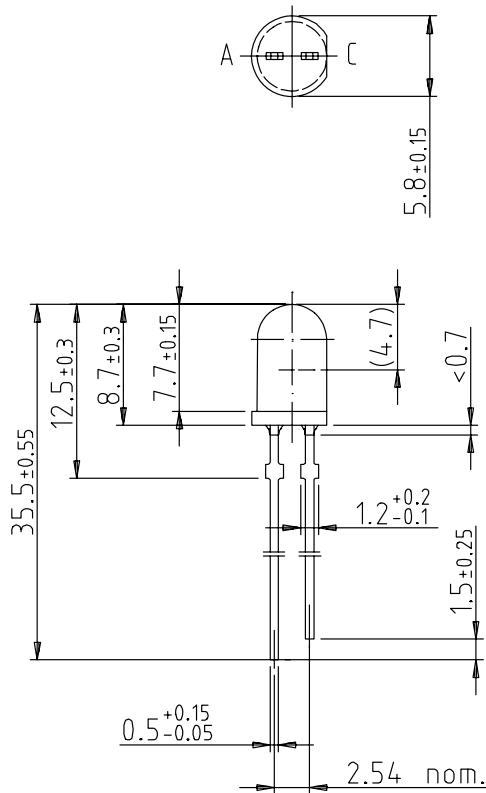
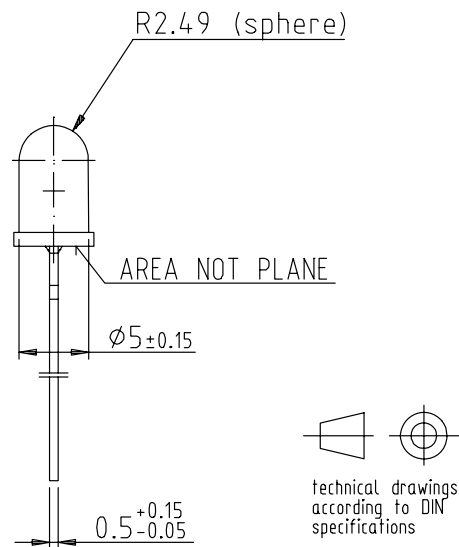


Figure 8. Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters



95 10916



Vishay Semiconductors

Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design
and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.