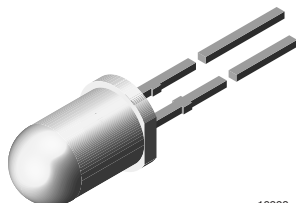


Low Current LED in Ø 5 mm Tinted Diffused Package



19223

FEATURES

- Low power consumption
- High brightness
- CMOS/MOS compatible
- Specified at $I_F = 2 \text{ mA}$
- Luminous intensity categorized
- Yellow and green color categorized
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC


RoHS
COMPLIANT

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: low current
- Angle of half intensity: $\pm 25^\circ$

APPLICATIONS

- Low power DC circuits

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
TLLR5400	Red, $I_V > 0.63 \text{ mcd}$	GaAsP on GaP
TLLR5401	Red, $I_V > 1 \text{ mcd}$	GaAsP on GaP
TLLY5400	Yellow, $I_V > 0.63 \text{ mcd}$	GaAsP on GaP
TLLY5401	Yellow, $I_V > 1 \text{ mcd}$	GaAsP on GaP
TLLG5400	Green, $I_V > 0.63 \text{ mcd}$	GaP on GaP
TLLG5400-AS12	Green, $I_V > 0.63 \text{ mcd}$	GaP on GaP
TLLG5401	Green, $I_V > 1 \text{ mcd}$	GaP on GaP

ABSOLUTE MAXIMUM RATINGS ¹⁾ TLL.540.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC forward current	$T_{amb} \leq 90^\circ \text{C}$	I_F	7	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	I_{FSM}	0.15	A
Power dissipation	$T_{amb} \leq 90^\circ \text{C}$	P_V	20	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	$t \leq 5 \text{ s}$, 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 CHARACTERISTICS ¹⁾ TLLR540., RED

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ²⁾	$I_F = 2 \text{ mA}$	TLLR5400	I_V	0.63	1.2		mcd
		TLLR5401	I_V	1	2		mcd
Dominant wavelength	$I_F = 2 \text{ mA}$		λ_d	612		625	nm
Peak wavelength	$I_F = 2 \text{ mA}$		λ_p		635		nm
Angle of half intensity	$I_F = 2 \text{ mA}$		φ		± 25		deg
Forward voltage	$I_F = 2 \text{ mA}$		V_F		1.9	2.4	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	20		V
Junction capacitance	$V_R = 0, f = 1 \text{ MHz}$		C_j		50		pF

Notes:

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

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

OPTICAL AND ELECTRICAL CHARACTERISTICS ¹⁾ TLLY540., YELLOW

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ²⁾	$I_F = 2 \text{ mA}$	TLLY5400	I_V	0.63	1.2		mcd
		TLLY5401	I_V	1	2		mcd
Dominant wavelength	$I_F = 2 \text{ mA}$		λ_d	581		594	nm
Peak wavelength	$I_F = 2 \text{ mA}$		λ_p		585		nm
Angle of half intensity	$I_F = 2 \text{ mA}$		φ		± 25		deg
Forward voltage	$I_F = 2 \text{ mA}$		V_F		2.4	2.9	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	20		V
Junction capacitance	$V_R = 0, f = 1 \text{ MHz}$		C_j		50		pF

Notes:

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

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

OPTICAL AND ELECTRICAL CHARACTERISTICS ¹⁾ TLLG540., GREEN

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ²⁾	$I_F = 2 \text{ mA}$	TLLG5400	I_V	0.63	1.2		mcd
		TLLG5401	I_V	1	2		mcd
Dominant wavelength	$I_F = 2 \text{ mA}$		λ_d	562		575	nm
Peak wavelength	$I_F = 2 \text{ mA}$		λ_p		565		nm
Angle of half intensity	$I_F = 2 \text{ mA}$		φ		± 25		deg
Forward voltage	$I_F = 2 \text{ mA}$		V_F		1.9	2.4	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	20		V
Junction capacitance	$V_R = 0, f = 1 \text{ MHz}$		C_j		50		pF

Notes:

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

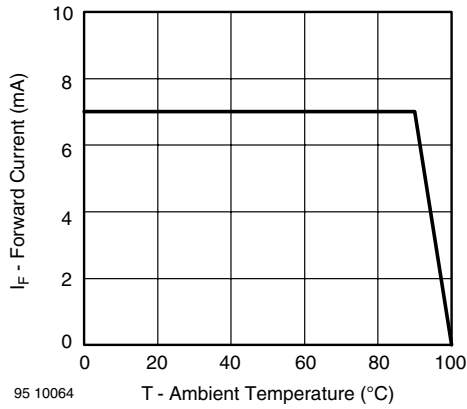


Figure 1. Forward Current vs. Ambient Temperature

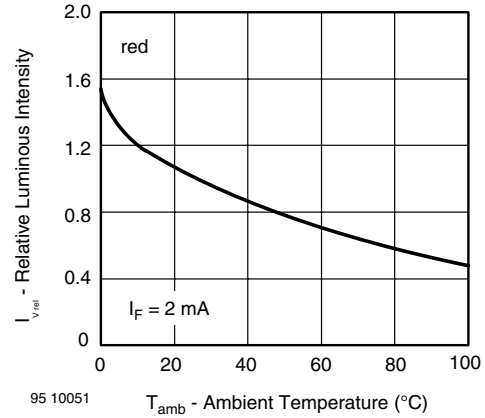


Figure 4. Rel. Luminous Intensity vs. Ambient Temperature

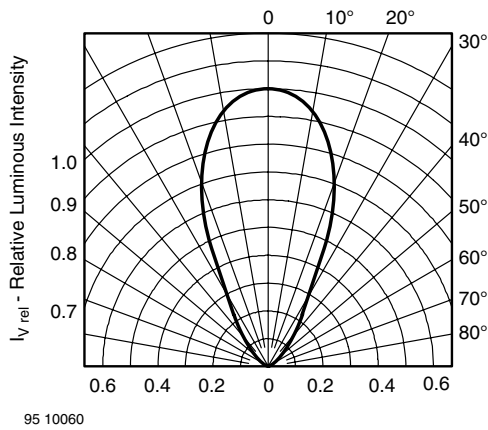


Figure 2. Rel. Luminous Intensity vs. Angular Displacement

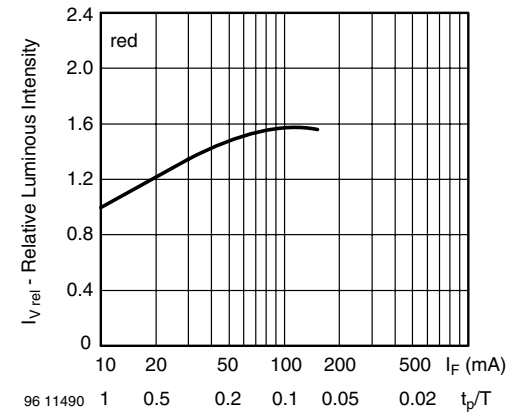


Figure 5. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

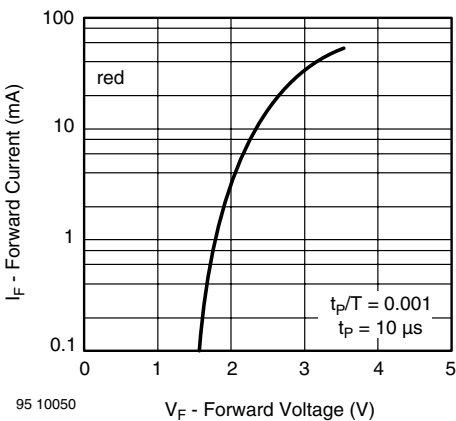


Figure 3. Forward Current vs. Forward Voltage

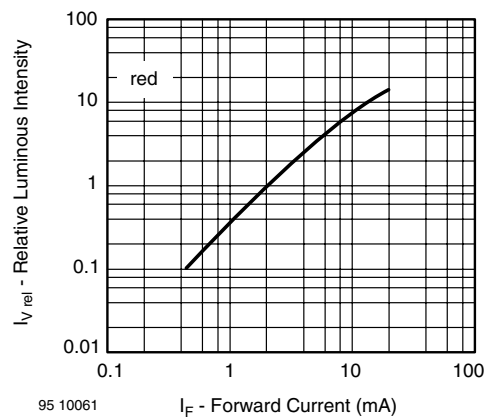


Figure 6. Relative Luminous Intensity vs. Forward Current

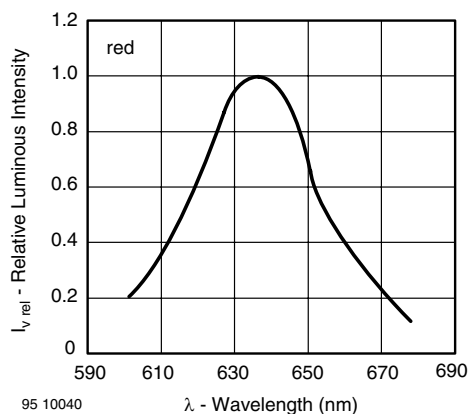


Figure 7. Relative Intensity vs. Wavelength

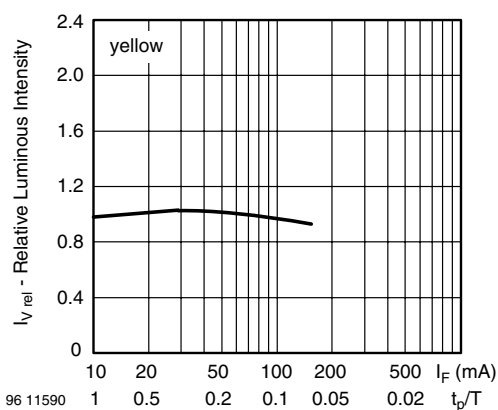


Figure 10. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

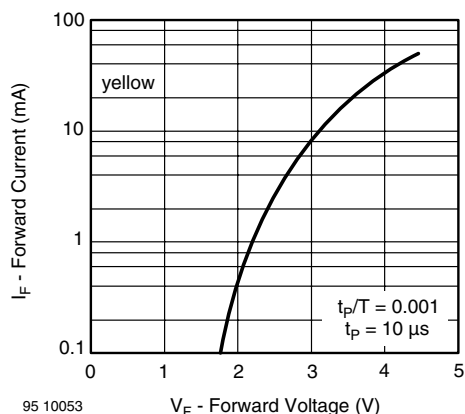


Figure 8. Forward Current vs. Forward Voltage

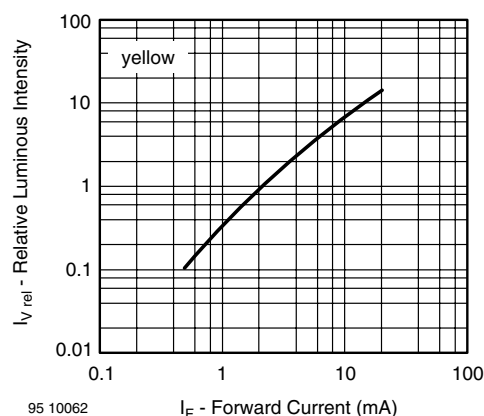


Figure 11. Relative Luminous Intensity vs. Forward Current

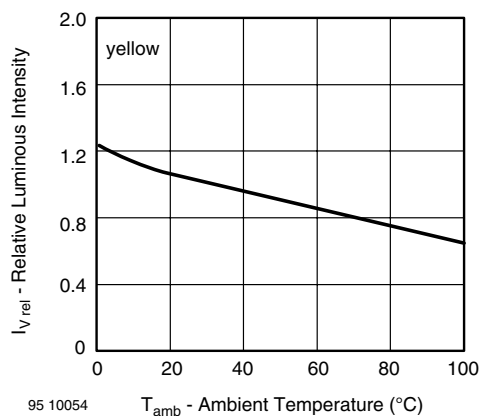


Figure 9. Rel. Luminous Intensity vs. Ambient Temperature

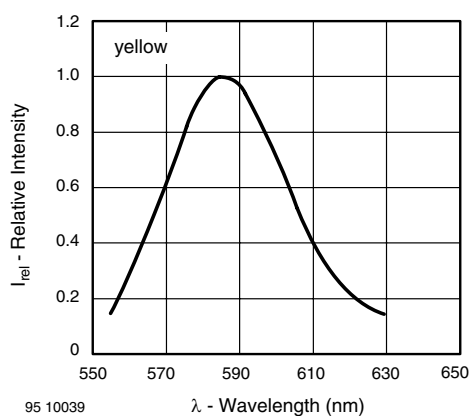


Figure 12. Relative Intensity vs. Wavelength

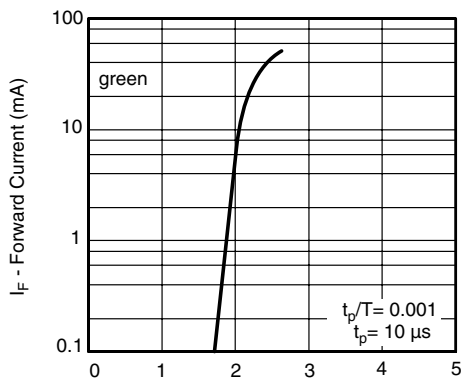


Figure 13. Forward Current vs. Forward Voltage

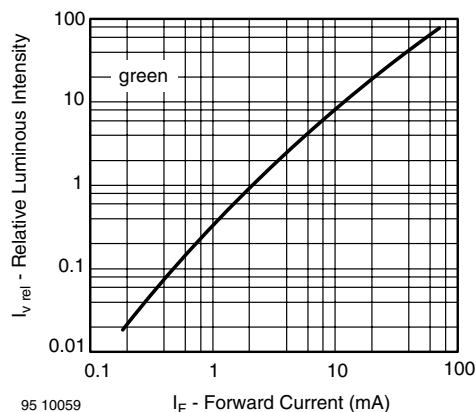


Figure 16. Relative Luminous Intensity vs. Forward Current

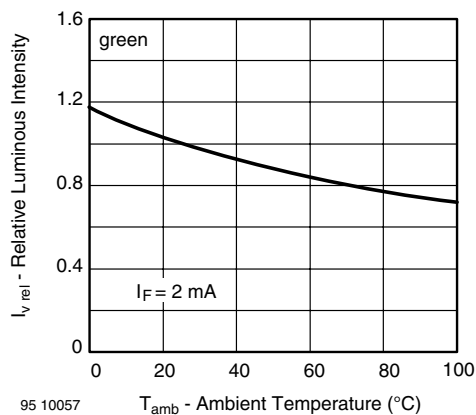


Figure 14. Rel. Luminous Intensity vs. Ambient Temperature

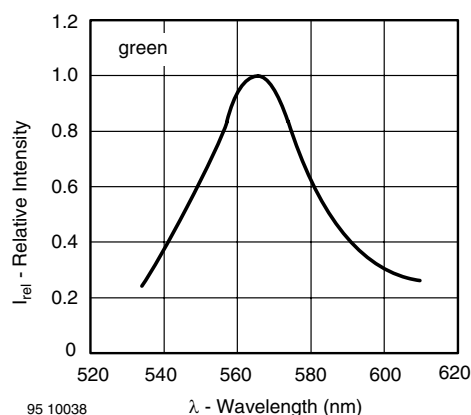


Figure 17. Relative Intensity vs. Wavelength

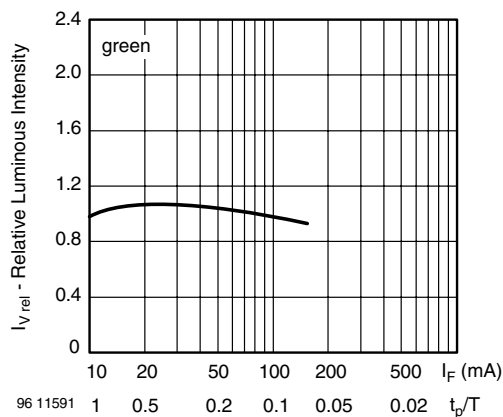
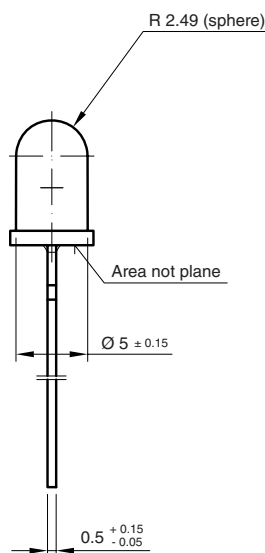
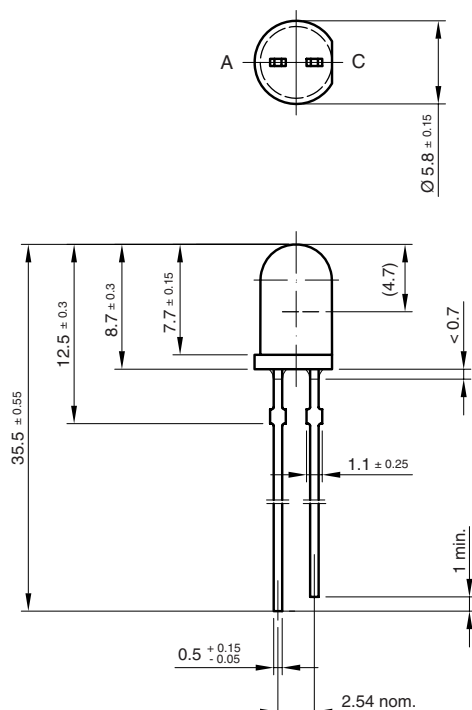


Figure 15. Rel. Lumin. Intensity vs. Forw. Current/Duty Cycle

PACKAGE DIMENSIONS in millimeters



technical drawings
according to DIN
specifications

6.544-5258.02-4
Issue: 6; 19.05.09
95 10916

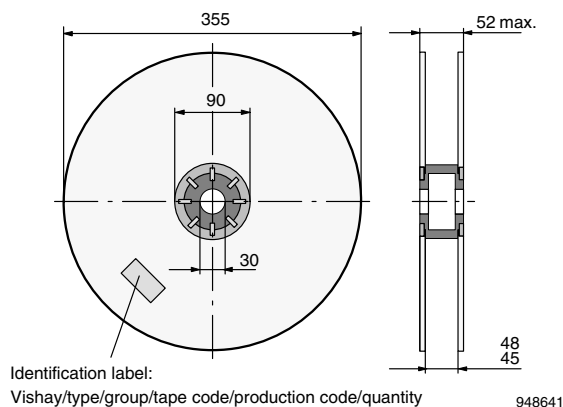
REEL

Figure 18. Reel Dimensions

AS12 = cathode leaves tape first

TAPE

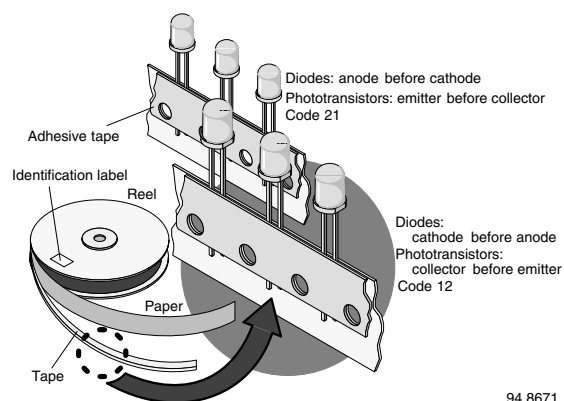
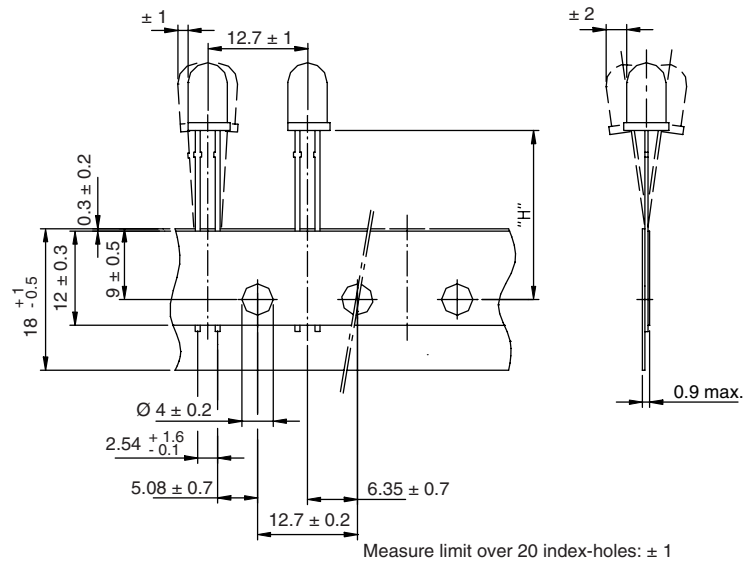


Figure 19. LED in Tape

TAPE DIMENSIONS



Measure limit over 20 index-holes: ± 1

Quantity per:	Reel (Mat.-no. 1764)
	1000

94 8172

Option	Dim. "H" ± 0.5 mm
AS	17.3



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.