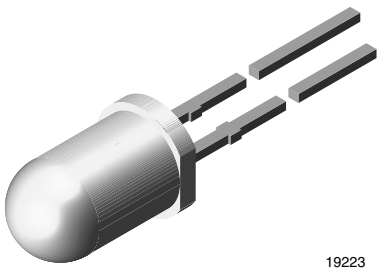
Low Current LED in Ø 5 mm Tinted Diffused Package



19223

FEATURES

- Low power consumption
- High brightness
- CMOS/MOS compatible
- Specified at I_F = 2 mA
- Luminous intensity categorized
- Yellow and green color categorized
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: low current
- Angle of half intensity: ± 25°

APPLICATIONS

- Low power DC circuits

PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I_F (mA)	WAVELENGTH (nm)			at I_F (mA)	FORWARD VOLTAGE (V)			at I_F (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLLR5400	Red	0.63	1.2	-	2	612	-	625	2	-	1.9	2.4	2	GaAsP on GaP
TLLR5401	Red	1	2	-	2	612	-	625	2	-	1.9	2.4	2	GaAsP on GaP
TLLY5400	Yellow	0.63	1.2	-	2	581	-	594	2	-	2.4	2.9	2	GaAsP on GaP
TLLY5401	Yellow	1	2	-	2	581	-	594	2	-	2.4	2.9	2	GaAsP on GaP
TLLG5400	Green	0.63	1.2	-	2	562	-	575	2	-	1.9	2.4	2	GaP on GaP
TLLG5400-AS12	Green	0.63	1.2	-	2	562	-	575	2	-	1.9	2.4	2	GaP on GaP
TLLG5401	Green	1	2	-	2	562	-	575	2	-	1.9	2.4	2	GaP on GaP

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

TLLR540., TLLY540., TLLG540.

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC forward current	$T_{amb} \leq 90$ °C	I_F	7	mA
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	0.15	A
Power dissipation	$T_{amb} \leq 90$ °C	P_V	20	mW
Junction temperature		T_j	100	°C
Operating temperature range		T_{amb}	-40 to +100	°C
Storage temperature range		T_{stg}	-55 to +100	°C
Soldering temperature	t ≤ 5 s, 2 mm from body	T_{sd}	260	°C
Thermal resistance junction/ambient		R_{thJA}	500	K/W

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLLR540., RED

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

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

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLLY540., YELLOW

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

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

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
TLLG540., GREEN

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

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

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

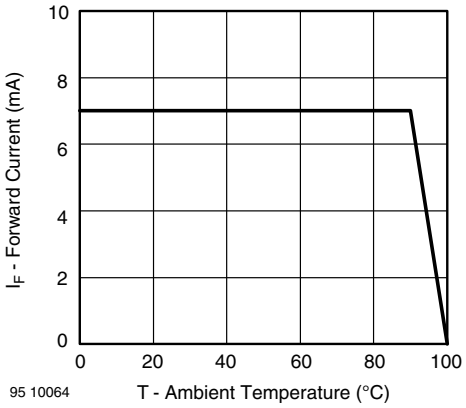


Fig. 1 - Forward Current vs. Ambient Temperature

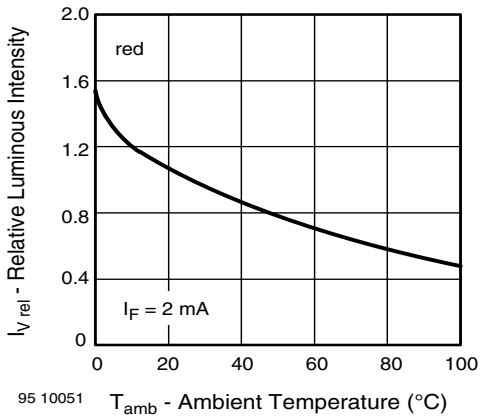


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

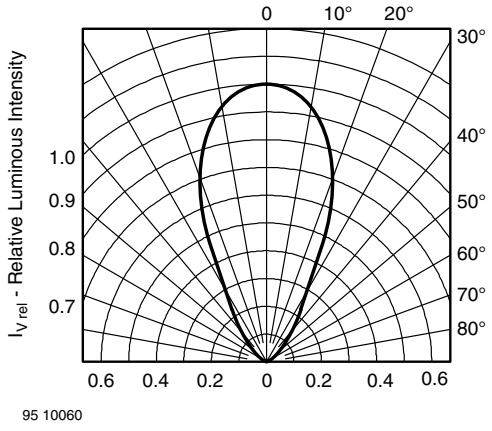


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

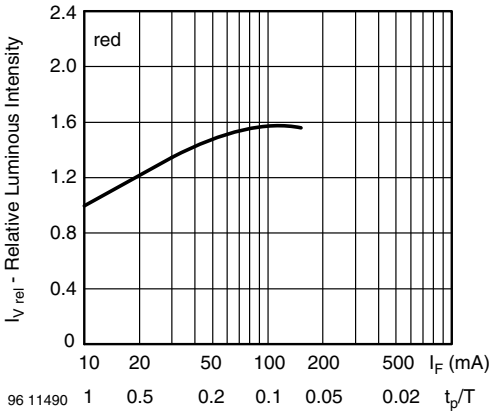


Fig. 5 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

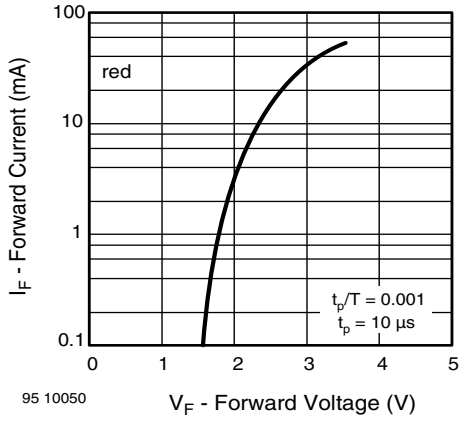


Fig. 3 - Forward Current vs. Forward Voltage

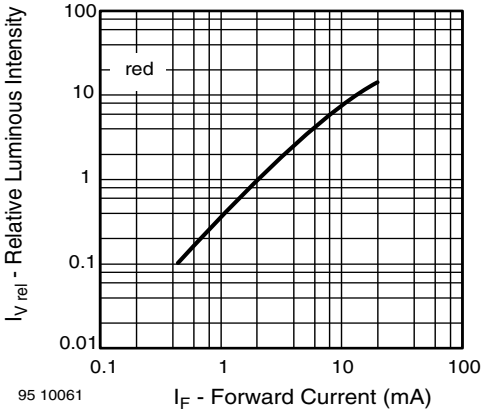


Fig. 6 - Relative Luminous Intensity vs. Forward Current

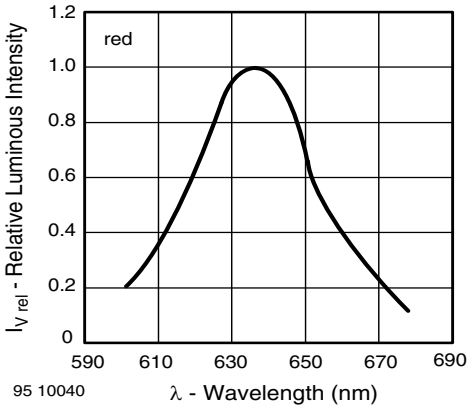


Fig. 7 - Relative Intensity vs. Wavelength

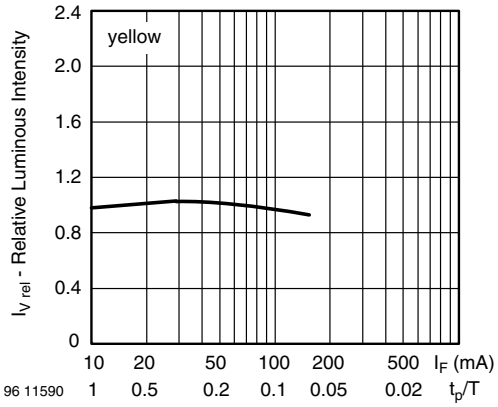


Fig. 10 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

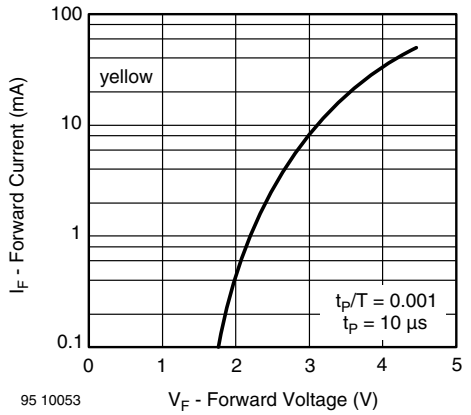


Fig. 8 - Forward Current vs. Forward Voltage

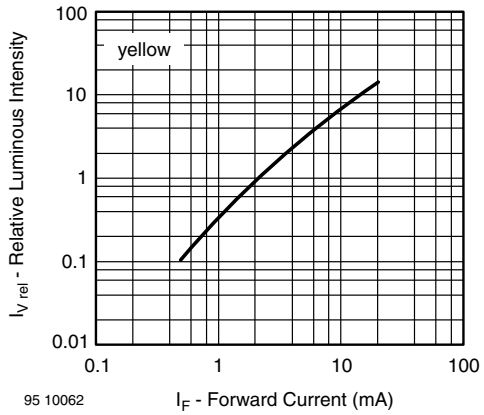


Fig. 11 - Relative Luminous Intensity vs. Forward Current

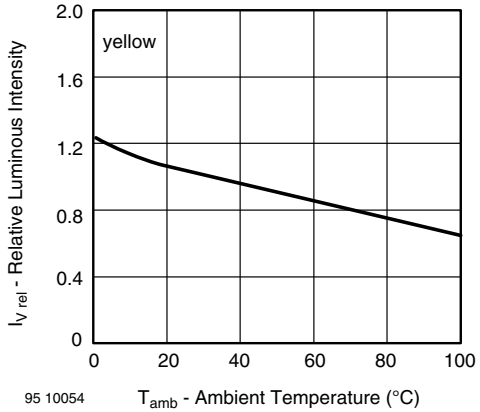


Fig. 9 - Relative Luminous Intensity vs. Ambient Temperature

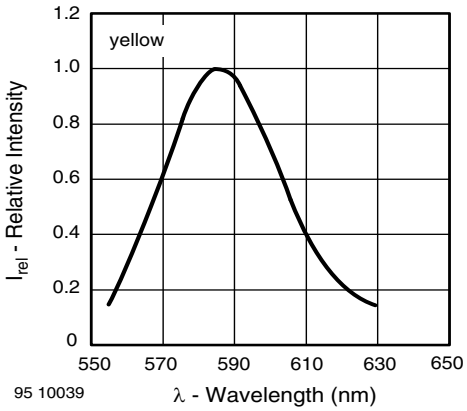


Fig. 12 - Relative Intensity vs. Wavelength

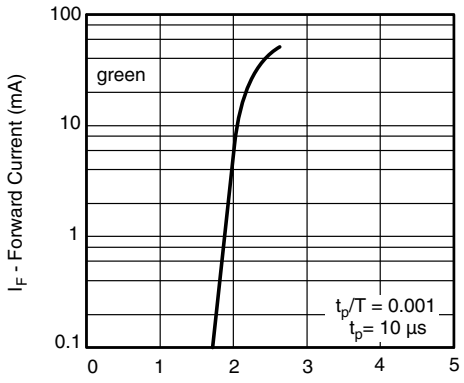


Fig. 13 - Forward Current vs. Forward Voltage

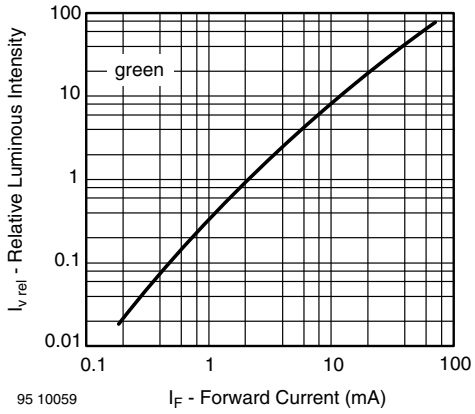


Fig. 16 - Relative Luminous Intensity vs. Forward Current

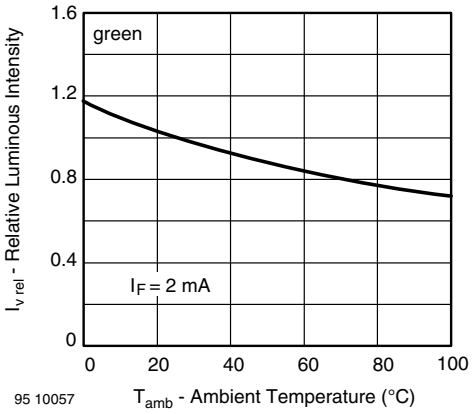


Fig. 14 - Relative Luminous Intensity vs. Ambient Temperature

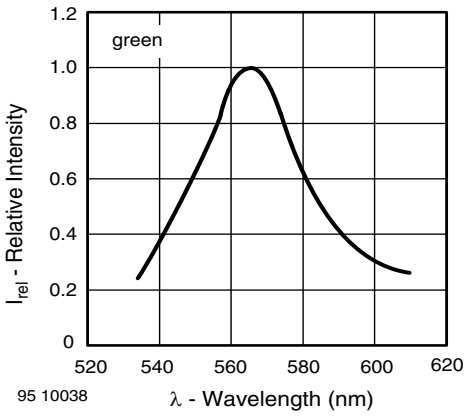


Fig. 17 - Relative Intensity vs. Wavelength

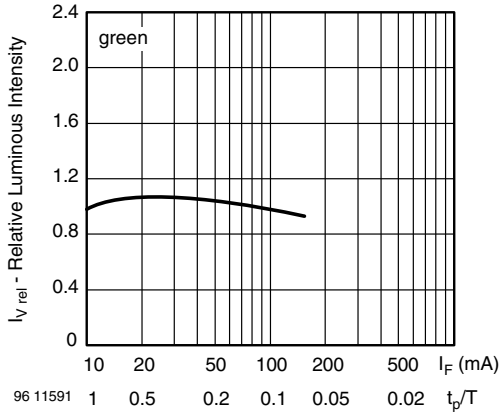
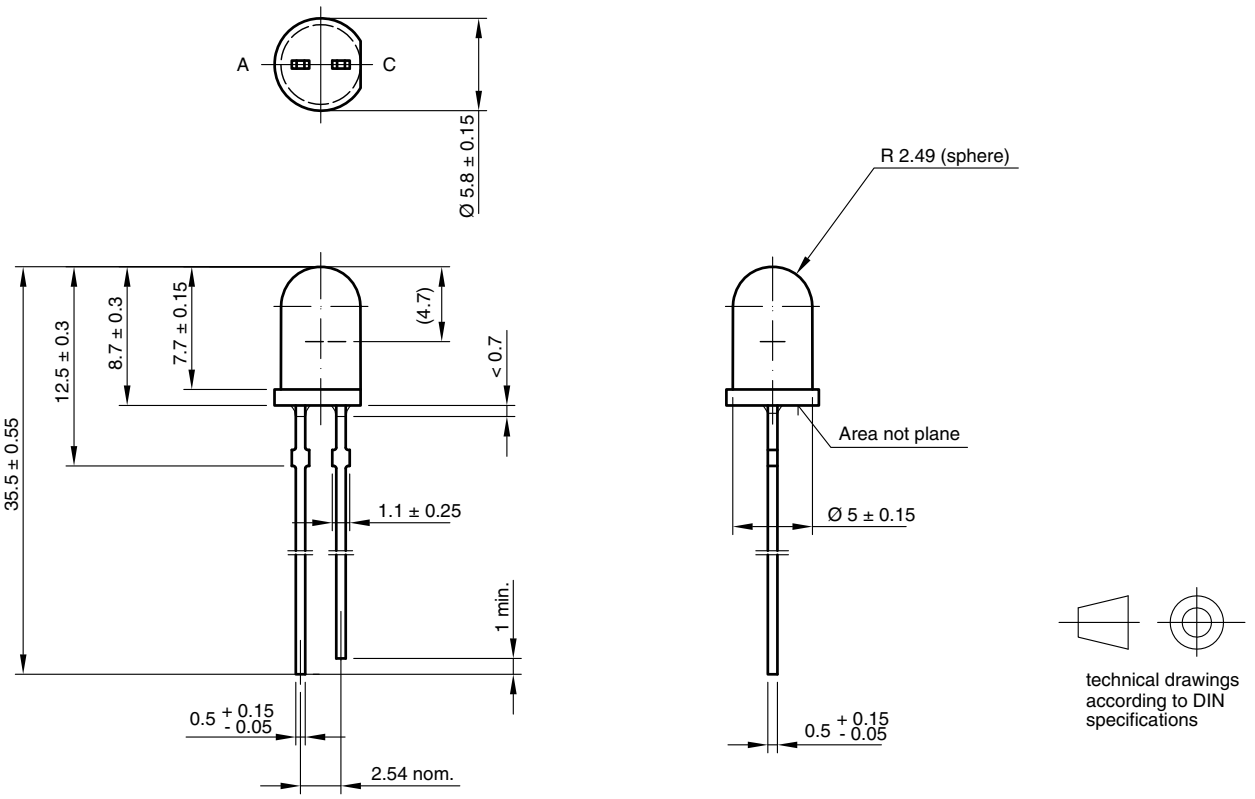


Fig. 15 - Relative Luminous Intensity vs.
Forward Current/Duty Cycle

PACKAGE DIMENSIONS in millimeters



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REEL

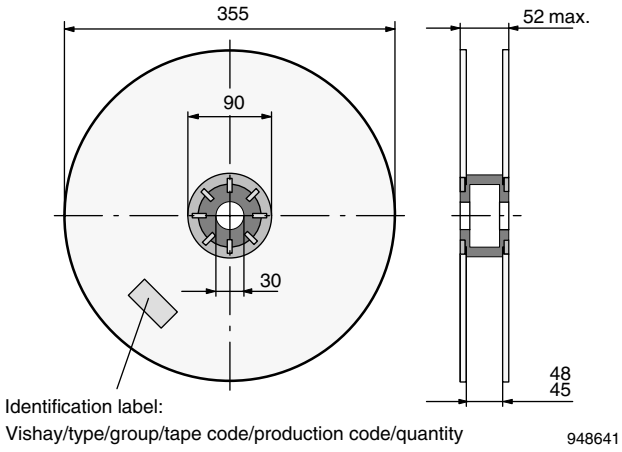


Fig. 18 - Reel Dimensions

TAPE

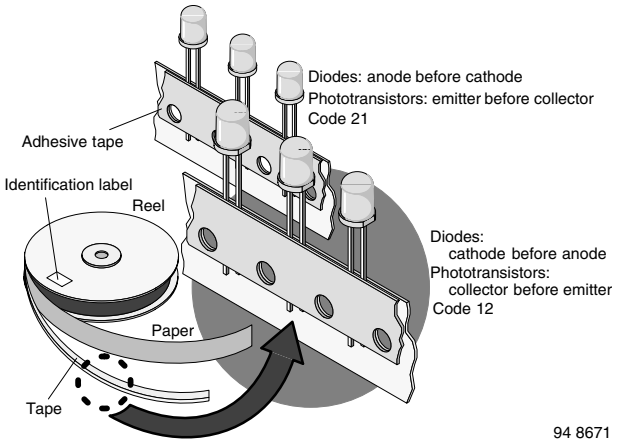
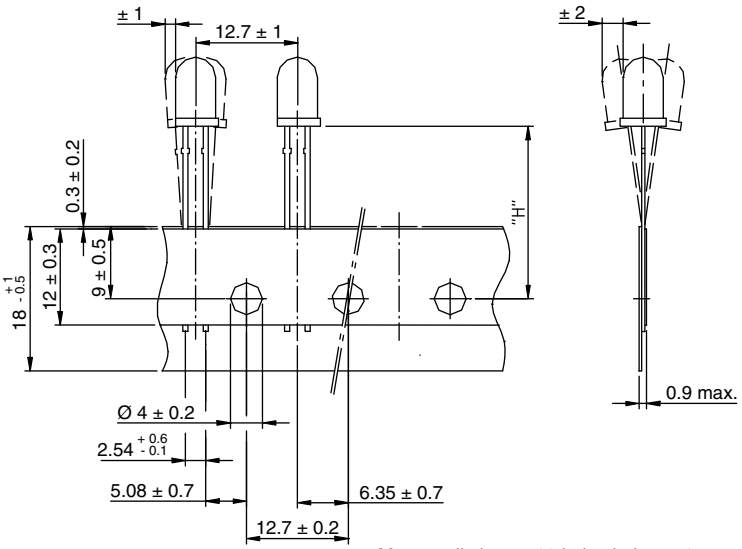


Fig. 19 - LED in Tape

AS12 = cathode leaves tape first

TAPE DIMENSIONS in millimeters



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

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Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

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