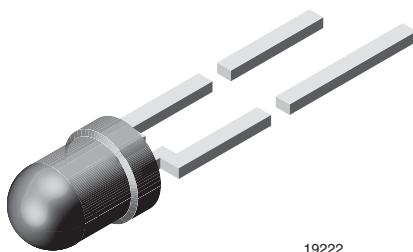


High Intensity LED in Ø 3 mm Tinted Clear Package



19222

DESCRIPTION

This series is housed in a 3 mm tinted, clear plastic package. The wide viewing angle of these devices provides a high brightness across a large field of view.

All packing units are categorized in luminous intensity and color groups. That allows users to assemble LEDs with uniform appearance.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 3 mm
- Product series: standard
- Angle of half intensity: $\pm 22^\circ$

FEATURES

- Standard Ø 3 mm (T-1) package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Wide viewing angle
- Very high intensity
- Luminous intensity and color categorized
- ESD-withstand voltage: up to 2 kV HBM according to JESD22-A114-B
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN FREE
GREEN
(5-2008)

APPLICATIONS

- Status lights
- Off / on indicator
- Background illumination
- Readout lights
- Maintenance lights
- Legend light

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.		
TLHP4200	Pure green	2.5	7	-	10	555	-	565	10	-	2.4	3	20	GaP on GaP
TLHP4201	Pure green	6.3	-	20	10	555	-	565	10	-	2.4	3	20	GaP on GaP
TLHP4201-AS12Z	Pure green	6.3	-	20	10	555	-	565	10	-	2.4	3	20	GaP on GaP

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified) TLHP4200..

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC forward current	$T_{amb} \leq 60^\circ\text{C}$	I_F	30	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 60^\circ\text{C}$	P_V	100	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	$t \leq 5 \text{ s}, 2 \text{ mm from body}$	T_{sd}	260	°C
Thermal resistance junction/ambient		R_{thJA}	400	K/W

OPTICAL AND ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^\circ C$, unless otherwise specified)
TLHP42..., PURE GREEN

PARAMETER	TEST CONDITION	PARTS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous intensity ⁽¹⁾	$I_F = 10 \text{ mA}$	TLHP4200	I_V	2.5	7	-	mcd
		TLHP4201	I_V	6.3	-	20	mcd
Dominant wavelength	$I_F = 10 \text{ mA}$		λ_d	555	-	565	nm
Peak wavelength	$I_F = 10 \text{ mA}$		λ_p	-	555	-	nm
Angle of half intensity	$I_F = 10 \text{ mA}$		ϕ	-	± 22	-	deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F	-	2.4	3	V
Reverse current	$V_R = 6 \text{ V}$		I_R	-	-	10	μA
Junction capacitance	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$		C_j	-	50	-	pF

Note

⁽¹⁾ In one packing unit $I_{V_{max}}/I_{V_{min}} \leq 1.6$.

LUMINOUS INTENSITY CLASSIFICATION		
GROUP	LIGHT INTENSITY (mcd)	
STANDARD	MIN.	MAX.
NA	2.5	4
NB	3.2	5
PA	4	6.3
PB	5	8
QA	6.3	10
QB	8	12.5
RA	10	16
RB	12.5	20

Note

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

COLOR CLASSIFICATION		
GROUP	PURE GREEN	
	DOM. WAVELENGTH (nm)	
	MIN.	MAX.
0	555	559
1	558	561
2	560	563
3	562	565

Note

- Wavelengths are tested at a current pulse duration of 25 ms.

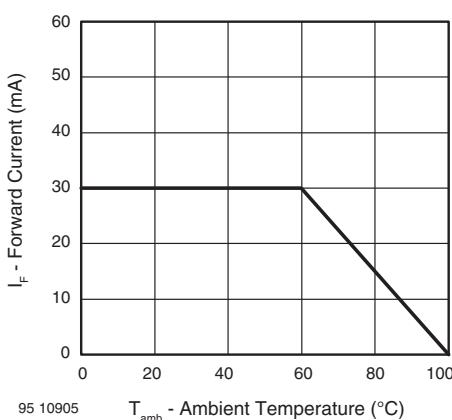
TYPICAL CHARACTERISTICS ($T_{amb} = 25^\circ C$, unless otherwise specified)


Fig. 1 - Forward Current vs. Ambient Temperature

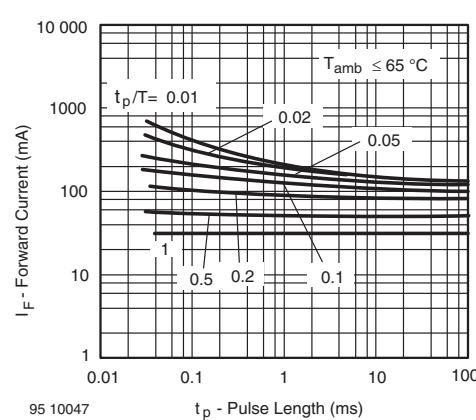


Fig. 2 - Forward Current vs. Pulse Length

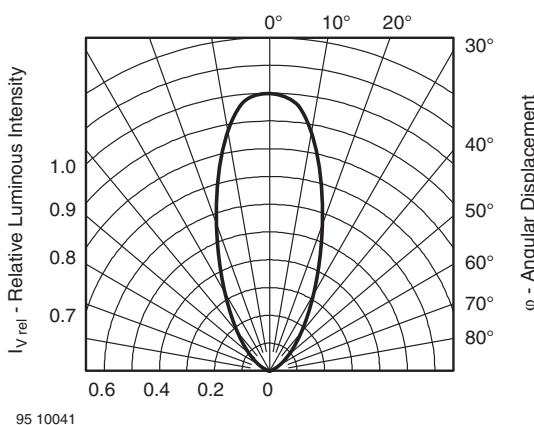


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

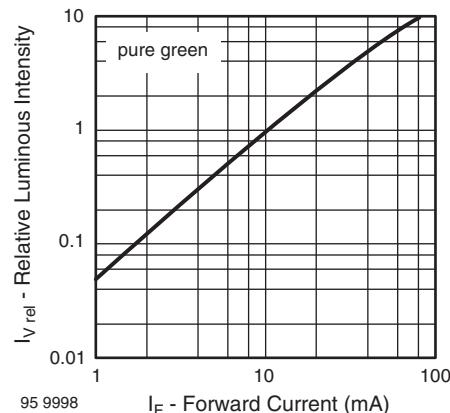


Fig. 6 - Relative Luminous Intensity vs. Forward Current

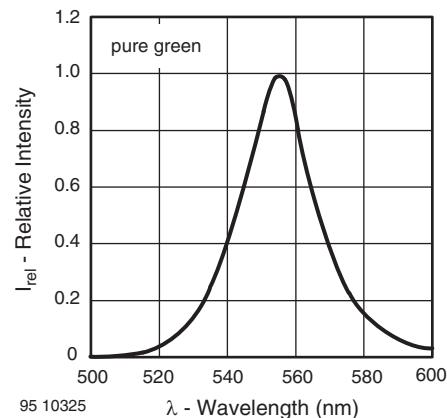


Fig. 4 - Relative Intensity vs. Wavelength

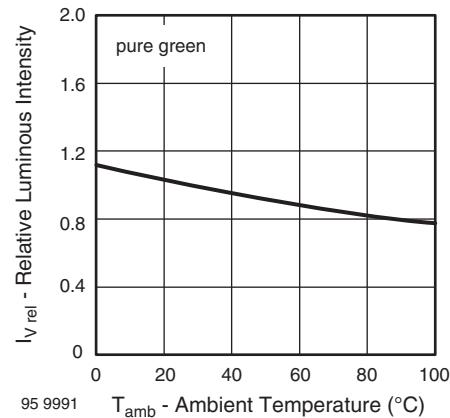


Fig. 7 - Relative Luminous Intensity vs. Ambient Temperature

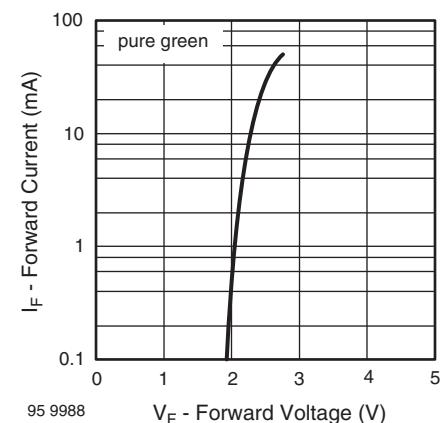


Fig. 5 - Forward Current vs. Forward Voltage

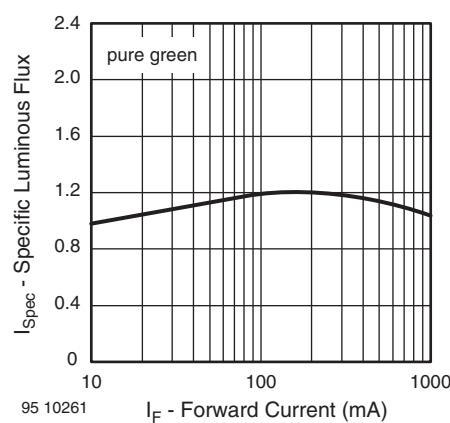
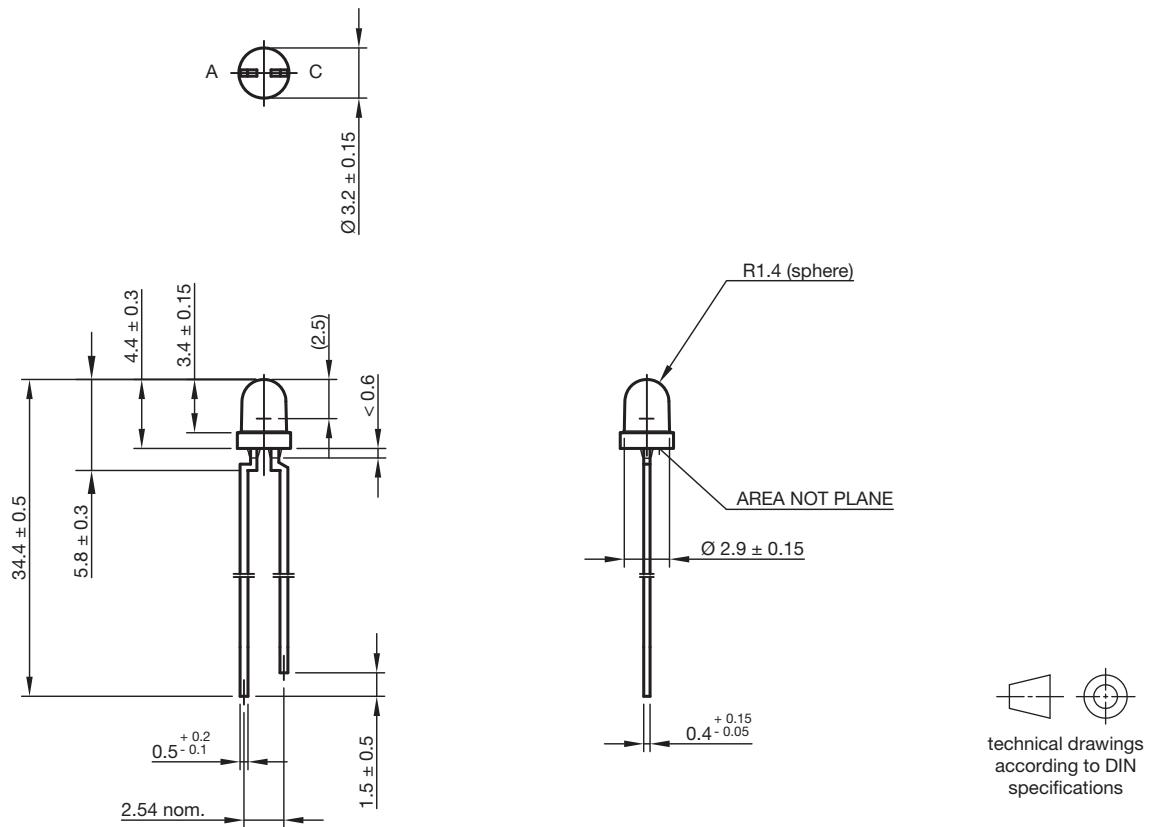


Fig. 8 - Specific Luminous Flux vs. Forward Current

PACKAGE DIMENSIONS in millimeters


Drawing-No.: 6.544-5255.01-4

Issue: 9; 28.07.14

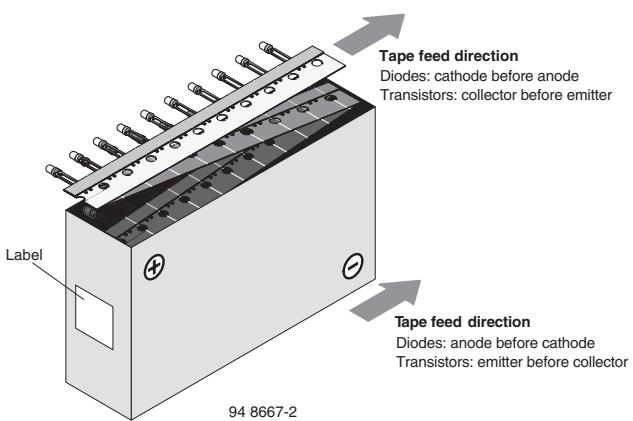
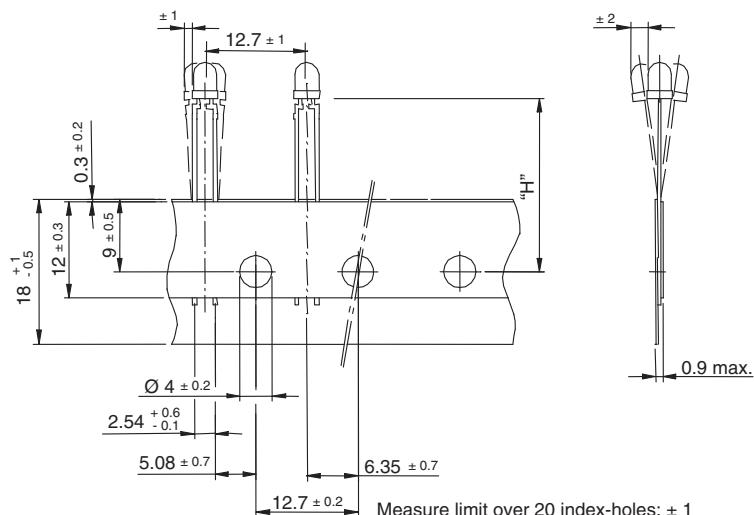
AMMOPACK


Fig. 9 - Tape Direction

Note

- The new nomenclature for ammopack is e.g. ASZ only, without suffix for the LED orientation. The carton box has to be turned to the desired position: "+" for anode first, or "-" for cathode first. AS12Z and AS21Z are still valid for already existing types, BUT NOT FOR NEW DESIGN.

TAPE DIMENSIONS in millimeters


Quantity per:	Reel
	(Mat. - No. 1764)
	2000

94 8171

Option	Dim. "H" ± 0.5 mm
AS	17.3
MS	25.5

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