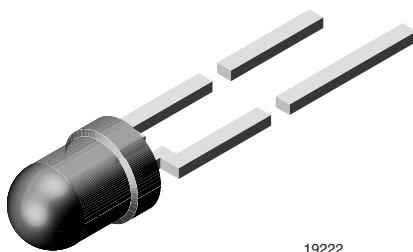


High Intensity LED in Ø 3 mm Tinted Non-Diffused Package



19222

DESCRIPTION

This device has been designed to meet the increasing demand for AlInGaP technology.

It is housed in a 3 mm clear plastic package. The small viewing angle of these devices provides a high brightness.

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

- AlInGaP technology
- Standard Ø 3 mm (T-1) package
- Small mechanical tolerances
- Suitable for DC and high peak current
- Small viewing angle
- Very high intensity
- Luminous intensity color categorized
- Material categorization:
for definitions of compliance please see
www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN FREE
GREEN
(S-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.		
TLHK4200	Red	25	100	-	10	-	630	-	10	-	1.9	2.6	20	AlInGaP on GaAs
TLHK4200-AS12Z	Red	25	100	-	10	-	630	-	10	-	1.9	2.6	20	AlInGaP on GaAs

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified) **TLHK4200**

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	5	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}	0.1	A
Power dissipation	$T_{amb} \leq 60^\circ\text{C}$	P_V	80	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 ($T_{amb} = 25$ °C, unless otherwise specified)
TLHK4200, RED

PARAMETER	TEST CONDITION	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity ⁽¹⁾	$I_F = 10$ mA	I_V	25	100	-	mcd
Dominant wavelength	$I_F = 10$ mA	λ_d	-	630	-	nm
Peak wavelength	$I_F = 10$ mA	λ_p	-	643	-	nm
Angle of half intensity	$I_F = 10$ mA	φ	-	± 22	-	deg
Forward voltage	$I_F = 20$ mA	V_F	-	1.9	2.6	V
Reverse voltage	$I_R = 10$ μ A	V_R	5	-	-	V
Junction capacitance	$V_R = 0$ V, $f = 1$ MHz	C_j	-	15	-	pF

Note

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

LUMINOUS INTENSITY CLASSIFICATION

GROUP	LIGHT INTENSITY (mcd)	
STANDARD	MIN.	MAX.
T	25	50
U	40	80
V	63	125
W	100	200
X	130	260
Y	180	360
Z	240	480

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.

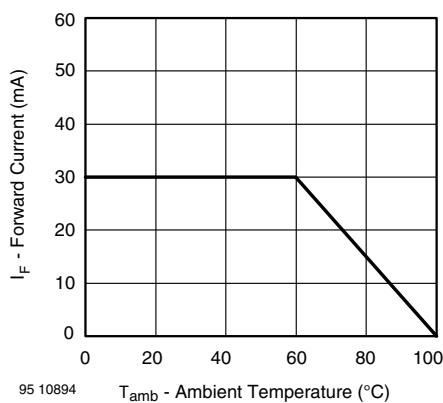
TYPICAL CHARACTERISTICS ($T_{amb} = 25$ °C, unless otherwise specified)


Fig. 1 - Forward Current vs. Ambient Temperature for InGaN

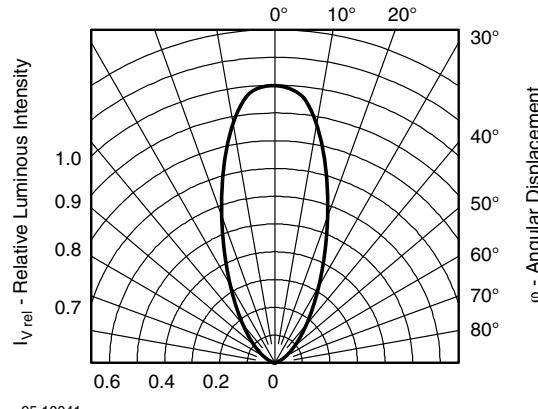


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

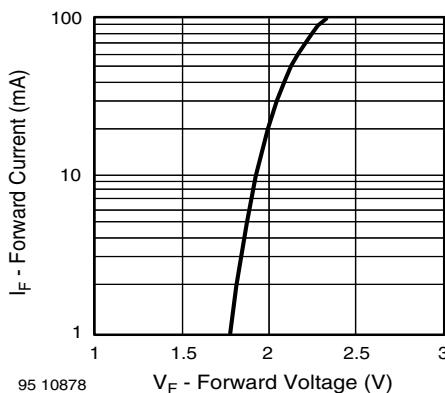


Fig. 3 - Forward Current vs. Forward Voltage

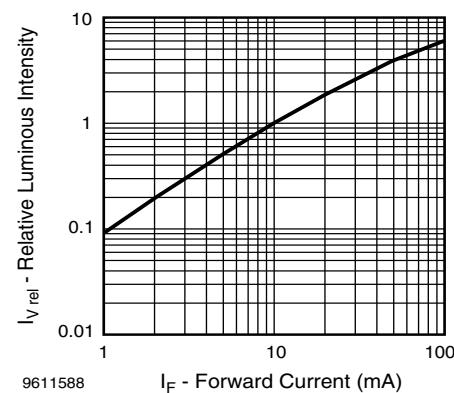


Fig. 6 - Relative Luminous Intensity vs. Forward Current

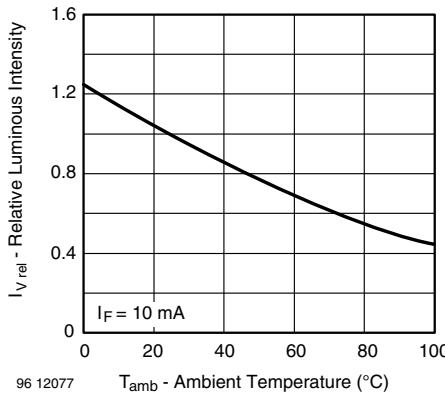


Fig. 4 - Relative Luminous Intensity vs. Ambient Temperature

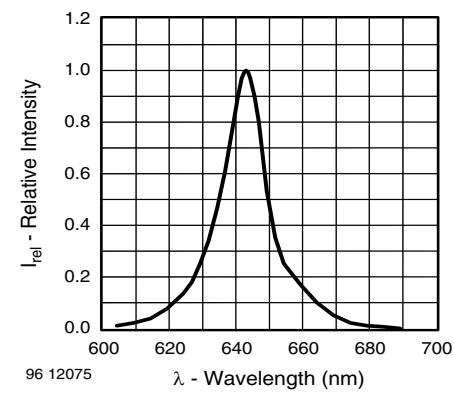


Fig. 7 - Relative Intensity vs. Wavelength

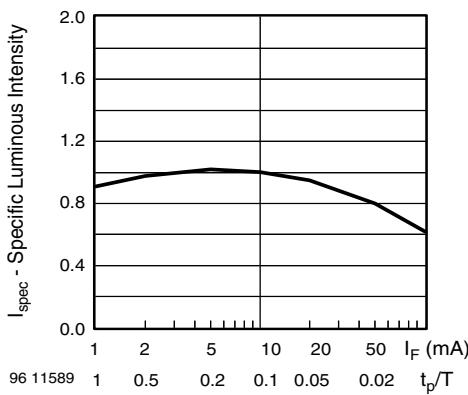
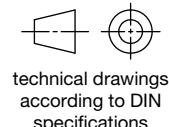
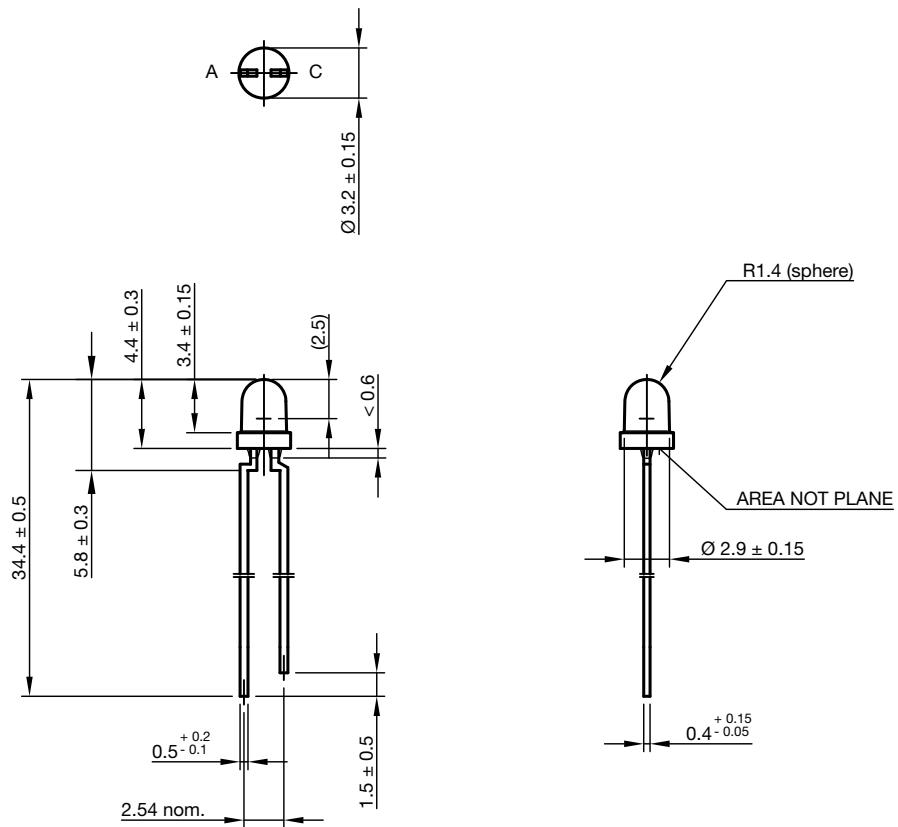


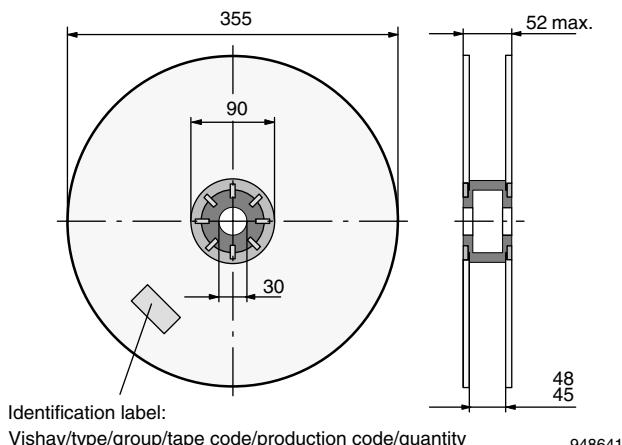
Fig. 5 - Relative Luminous Intensity vs. Forward Current/Duty Cycle

PACKAGE DIMENSIONS in millimeters


technical drawings
according to DIN
specifications

Drawing-No.: 6.544-5255.01-4

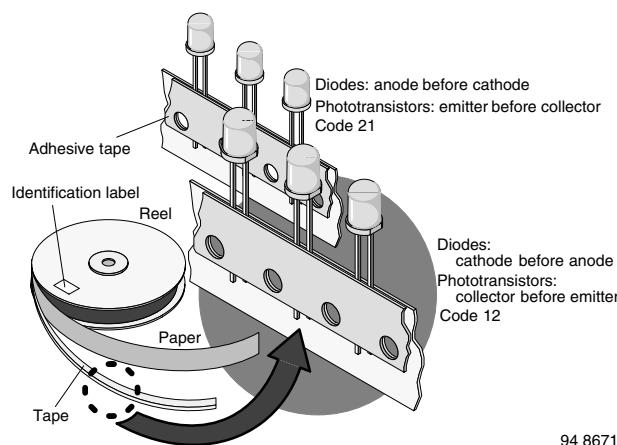
Issue: 9; 28.07.14

REEL DIMENSIONS in millimeters


Identification label:

Vishay/type/group/tape code/production code/quantity

Fig. 8 - Reel

TAPE


94 8671

Fig. 9 - LED in Tape

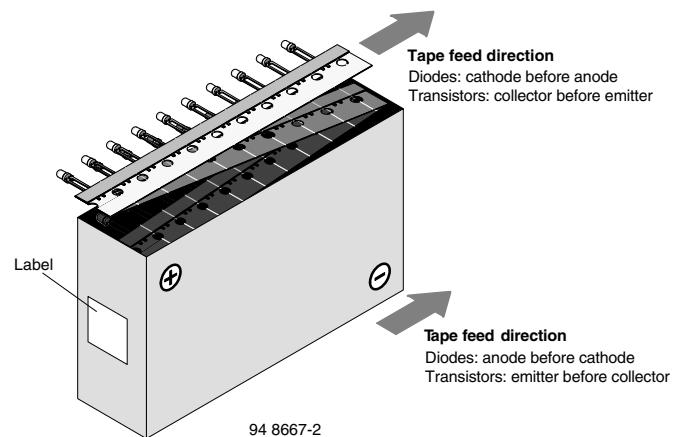
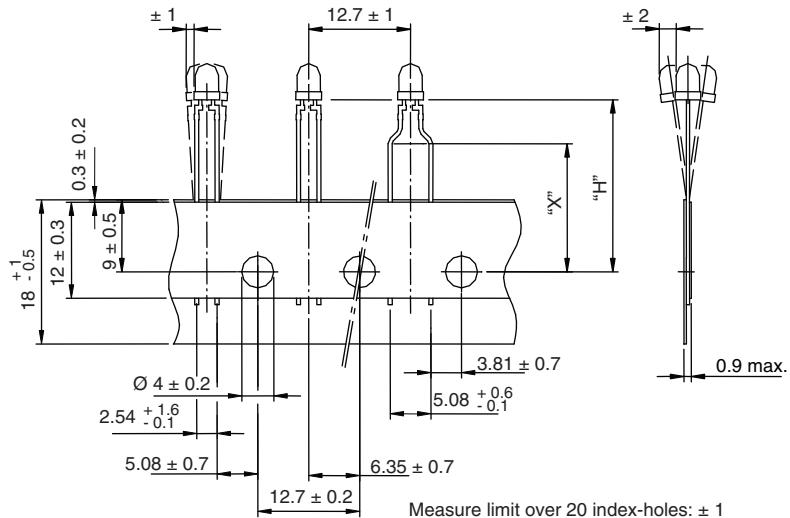
AMMOPACK


Fig. 10 - Tape Direction

Note

- The new nomenclature for ammopack is 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

21885

Option	Dim. "H" ± 0.5 mm	Dim. "X" ± 0.5 mm
AS	17.3	

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