

MORE LIGHT

## LED Emitter | 650 nm | AlInGaP/GaAs | PCB ELP-650-992-0XX-2

Preliminary

Pat. US 8847241 B2

### Features

- 8  $\mu\text{m}$ , 25  $\mu\text{m}$ , 50  $\mu\text{m}$  Point Source on PCB
- Radiation 650 nm (Red)
- High Efficiency
- Long Lifetime
- Designed for Minimum Parasitic Light

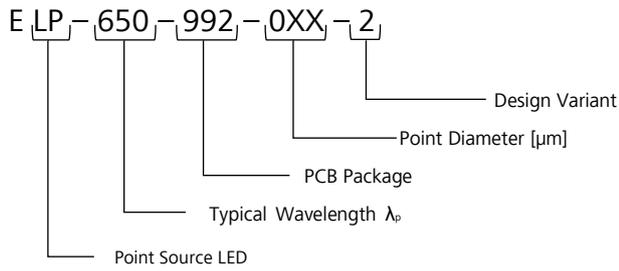
### Applications

- Industrial, Scientific and Medical Systems
- Safety and Security

Lead (Pb) Free Product – RoHS Compliant

# ELP-650-992-0XX-2 | 650 nm | PCB

## Parameters



### Contained Products

ELP-650-992-008-2

ELP-650-992-025-2

ELP-650-992-050-2

Measurement Conditions	0XX-2	Symbol	Value	Unit
	008-2		1	
Measurement Current	025-2	$I_{\text{Meas}}$	3	mA
	050-2		10	
Ambient Temperature		$T_{\text{amb}}$	+25	°C
These conditions apply for all parameters below, unless otherwise specified				
All parameters are measured with Jenoptik equipment				

Maximum Ratings	0XX-2	Symbol	Value	Unit
	008-2		1.5	
Forward Current (DC)	025-2	$I_{\text{F}}$	3	mA
	050-2		10	
Junction Temperature		$T_{\text{J}}$	+125	°C
Operating Temperature Range		$T_{\text{amb}}$	-40 to +85	°C
Storage Temperature Range		$T_{\text{stg}}$	-40 to +125	°C

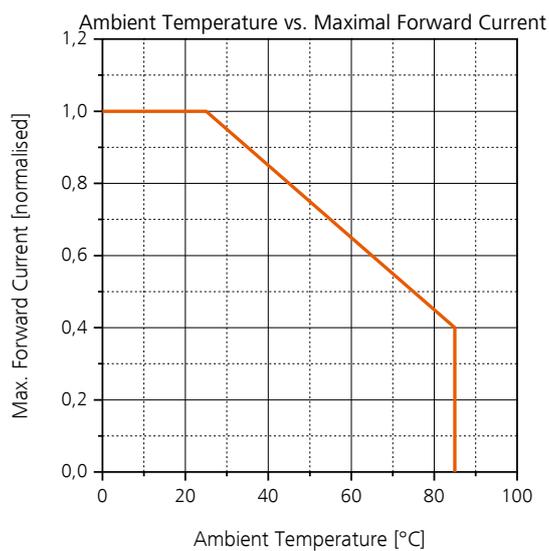
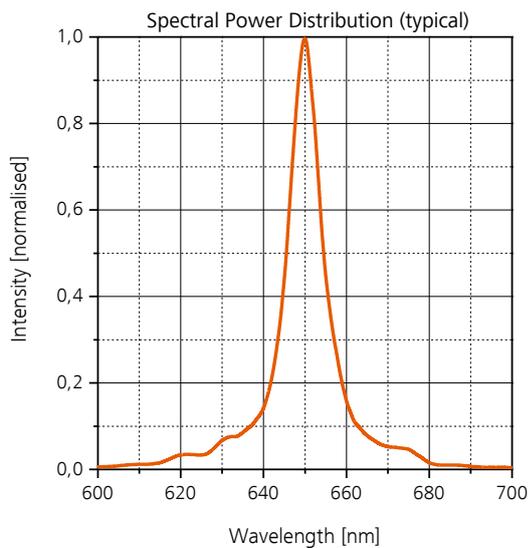
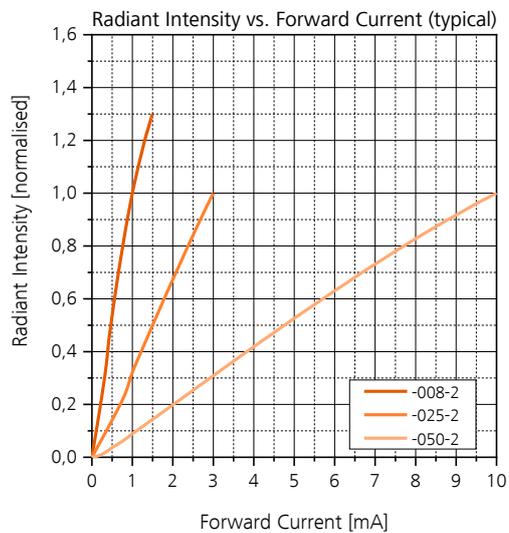
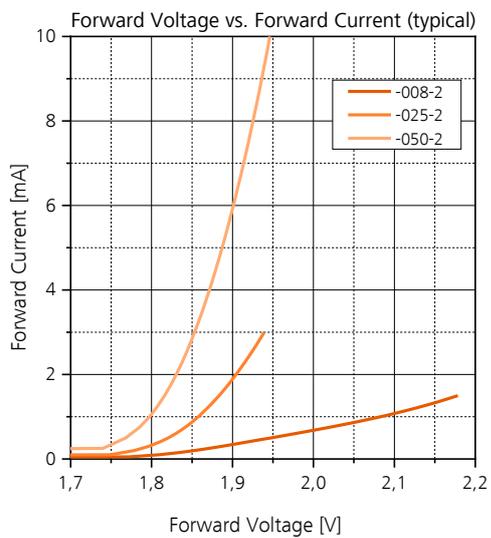


ELP-650-992-0XX-2 | 650 nm | PCB  
Parameters

Optical / Electrical Characteristics	0XX-2	Test conditions	Symbol	Min	Typ	Max	Unit
Forward Voltage	008-2	1 mA			2.10		
	025-2	$I_F = 3$ mA	$V_F$		1.95	2.4	V
	050-2	10 mA			1.95	2.5	
Reverse Voltage		$I_F = 10$ $\mu$ A	$V_R$	5			V
Radiant Power	008-2	1 mA			15		
	025-2	$I_F = 3$ mA	$\phi_e$		175		$\mu$ W
	050-2	10 mA			550		
Radiant Intensity	008-2	1 mA			8.0		
	025-2	$I_F = 3$ mA	$I_e$	60	75		$\mu$ W/sr
	050-2	10 mA		180	250		
Luminous Intensity	008-2	1 mA			0.8		
	025-2	$I_F = 3$ mA	$I_v$		7.5		mcd
	050-2	10 mA			23		
Peak Wavelength	008-2	$I_F = I_{Meas}$	$\lambda_p$		650		nm
	025-2						
	050-2						
Centroid Wavelength <sup>1</sup>	008-2	$I_F = I_{Meas}$	$\lambda_c$	635	650	660	nm
	025-2						
	050-2						
Spectral Bandwidth at 50%	008-2	$I_F = I_{Meas}$	$\Delta\lambda_{0.5}$		15		nm
	025-2						
	050-2						
Switching Time	008-2	$I_F = I_{Meas}$	$t_r / t_f$		10/10		ns
	025-2						
	050-2						
Emitting Point Diameter	008-2		D		8		$\mu$ m
	025-2				25		
	050-2				50		

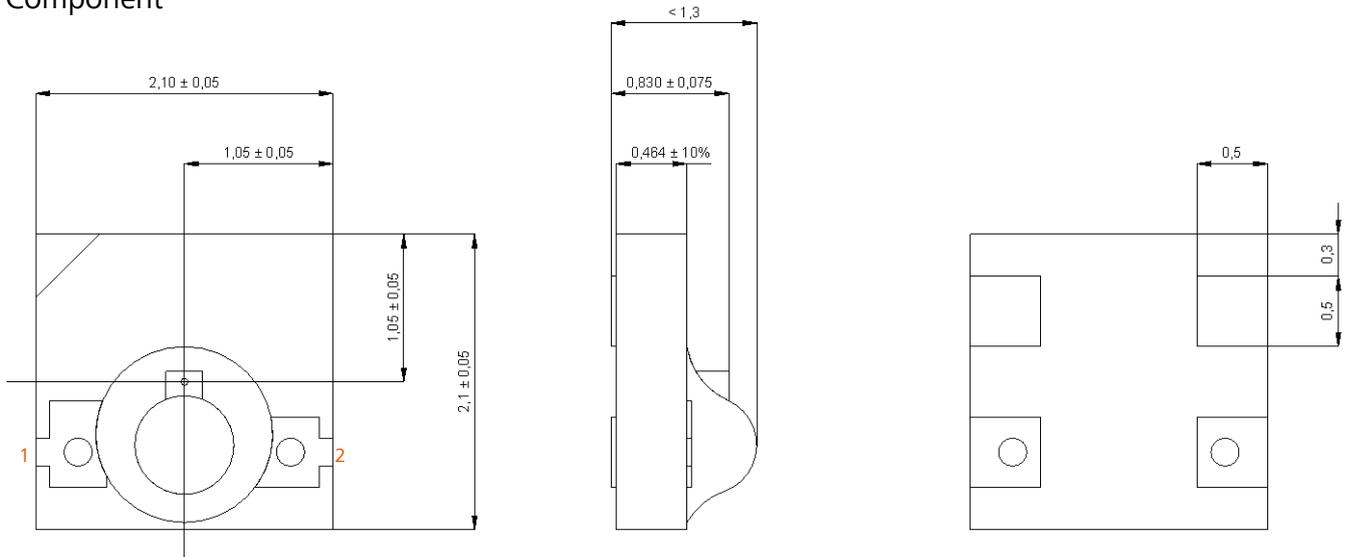
<sup>1</sup> measured on bare chip

ELP-650-992-0XX-2 | 650 nm | PCB  
Parameters



ELP-650-992-0XX-2 | 650 nm | PCB  
 Mechanical Dimensions

Component

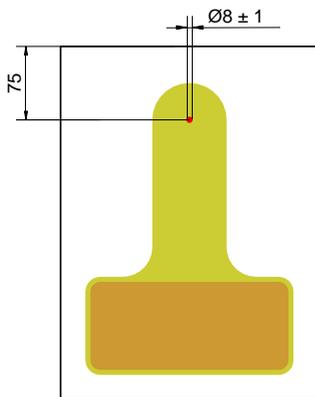


- 1      cathode
- 2      anode

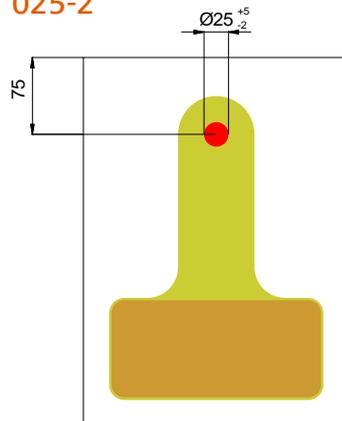
all dimensions in mm

Chip

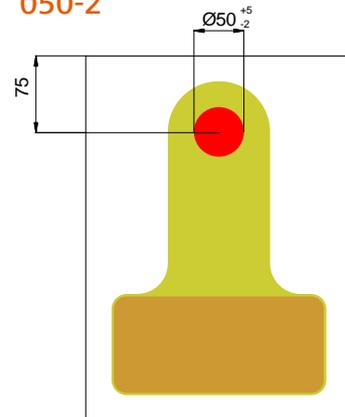
008-2



025-2



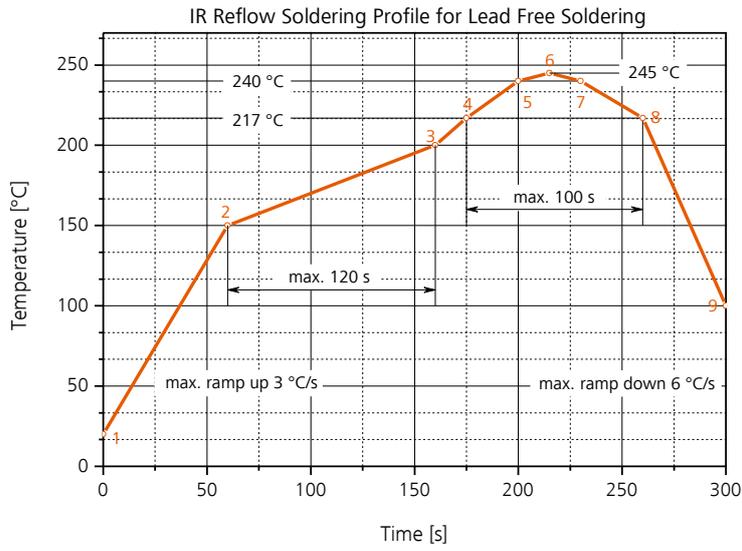
050-2



dimensions specified in  $\mu\text{m}$

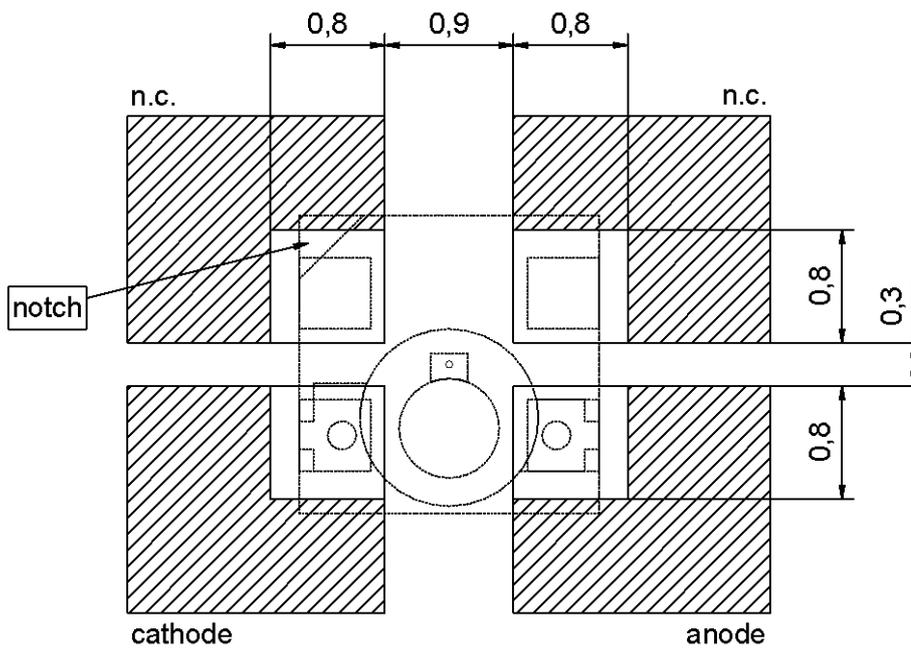


ELP-650-992-0XX-2 | 650 nm | PCB  
Soldering Conditions



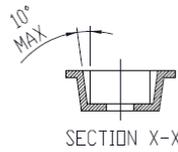
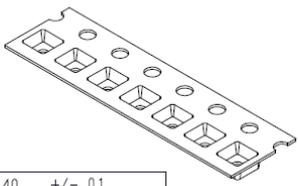
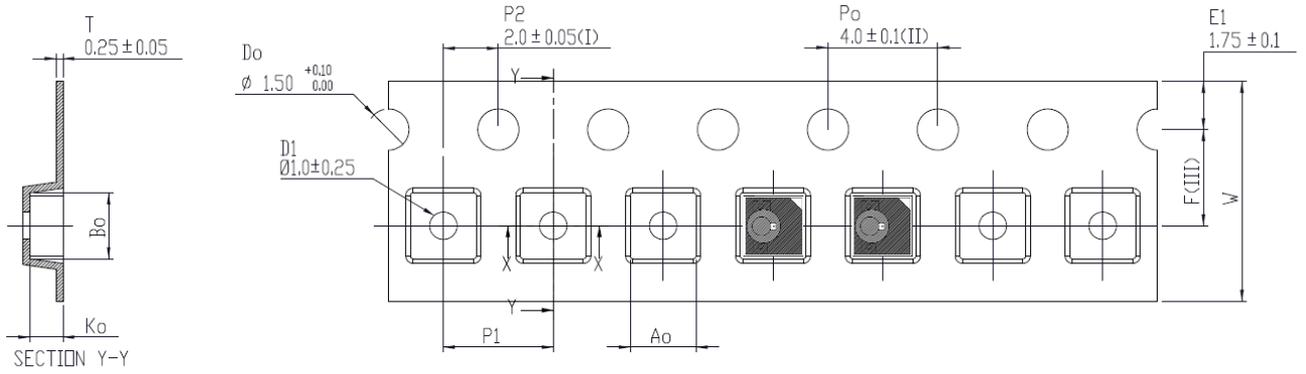
according to JEDEC J-STD-020D

Recommended Solder Pad



dimensions specified in mm

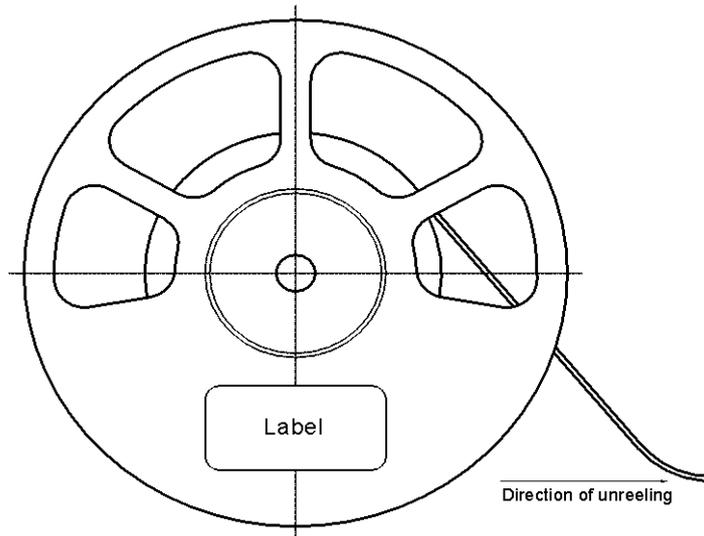
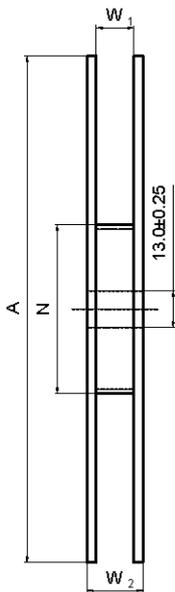
Dimensions conform to IEC 60286-3, EIA 481-D



Ao	2,40	+/- 0,1
Bo	2,40	+/- 0,1
Ko	1,20	+/- 0,1
F	3,50	+/- 0,05
P1	4,00	+/- 0,1
W	8,00	+0,3/-0,1

- (I) Measured from centreline of sprocket hole to centreline of pocket.
- (II) Cumulative tolerance of 10 sprocket holes is  $\pm 0,20$ .
- (III) Measured from centreline of sprocket hole to centreline of pocket.

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.



A	180
N	60
W <sub>1</sub>	8.4
W <sub>2</sub>	14.4

Leader: min.400  
Trailer: min.160

All dimensions in mm unless otherwise stated



ELP-650-992-0XX-2 | 650 nm | PCB  
Packing

Devices packaged according to IPC/JEDEC J-STD-033 with moisture classification level 3

Storage on Carrier Tape		Symbol	Min	Max	Unit
Storage Temperature	Air	T <sub>STG</sub>	15	40	°C
Storage Relative Humidity	Air	RH <sub>STG</sub>		70	% RH
Storage Time	Air	t <sub>STG</sub>		1	year

Labeling	
Manufacturer	Jenoptik Optical Systems GmbH
Type	ELP-650-992-0XX-2
Item N°	XXXXXXX
Charge	XXXXXX
Date	dd.mm.yyyy
Quantity	XXXX pcs.

**JENOPTIK Optical Systems GmbH**  
Type: ELP-650-992-025-2



Item No.: 123456



Charge: 1714027-026-025



Date: 25.04.2017



Quantity: 3000



Trace-Code: 1310153501  
0563#17.1002-6






### Attention

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer.

For further information, please contact our sales department.

### Handling

LEDs have to be handled ESD sensitive.



### Safety Advice\*

The evaluation of eye safety occurs according to the standard CIE/IEC 62471:2006 ("Photobiological Safety of Lamps and Lamp Systems"). Within the risk grouping system of this CIE standard the LED in this data sheet is assigned into the **Group 1 – Low Risk**.

\*Note: Safety classification of an optical component mainly depends on the intended application and the way the component is being used. Furthermore, all statements made to classification are based on calculations and are only valid for this LED "as it is", and at continuous operation, assuming direct view and maximum forward current. Using pulsed current or altering the light beam with additional optics may lead to different safety classifications. Therefore these remarks should be taken as recommendation and guideline only.