

JENOPTIK

## LED Emitter | 850 nm | AlGaAs/GaAs TO-18 + flat window ELP-850-024-060-1

Pat. US 8847241 B2

### Features

- 60  $\mu\text{m}$  Pointsource
- Radiation 850 nm (Infrared)
- Narrow Emitting
- High Efficiency
- Long Lifetime

### Applications

- Incremental Rotary Encoder
- Industrial, Scientific, and Medical Systems
- Security Systems

Lead (Pb) Free Product – RoHS Compliant

ELP-850-024-060-1 | 850 nm | TO-18 + flat window  
 Pointsource LED Emitter

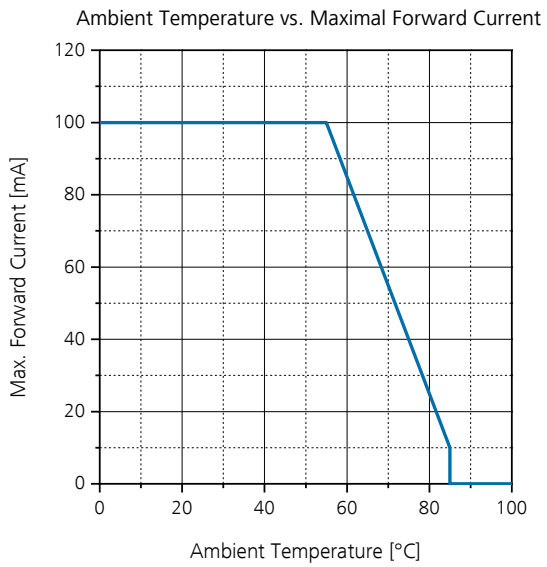
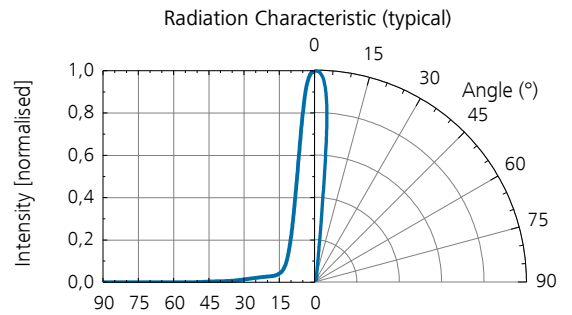
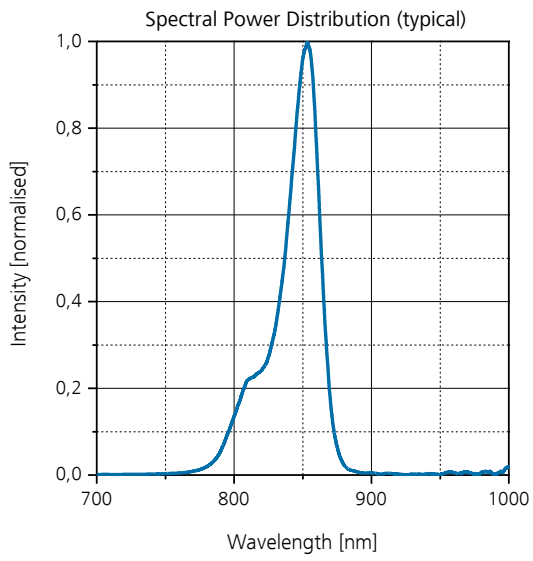
Maximum Ratings <sup>1</sup>	Symbol	Value	Unit
Forward Current (DC)	$I_F$	100	mA
Power Dissipation	$P_D$	150	mW
Operating Temperature Range	$T_{amb}$	-40 to +85	°C
Storage Temperature Range	$T_{stg}$	-40 to +100	°C
Junction Temperature	$T_J$	+125	°C
Soldering Temperature ( $t \leq 5$ s, 3 mm from case)	$T_{sd}$	260	°C

Optical and Electrical Characteristics <sup>1</sup>	Test conditions	Symbol	Min	Typ	Max	Unit
Forward Voltage	$I_F = 50$ mA	$V_F$		1.8	2.3	V
Reverse Voltage	$I_R = 10$ $\mu$ A	$V_R$	5			V
Radiant Power	$I_F = 50$ mA	$\Phi_e$		3.5		mW
Radiant Intensity	$I_F = 50$ mA	$I_e$	21	23		mW/sr
Peak Wavelength	$I_F = 20$ mA	$\lambda_p$		850		nm
Spectral Bandwidth at 50%	$I_F = 20$ mA	$\Delta\lambda_{0.5}$		30		nm
Viewing Angle	$I_F = 50$ mA	$2\phi$		16		deg.
Temperature Coefficient of $V_F$	$I_F = 20$ mA	$TC(V_F)$		-1.95		mV/K
Temperature Coefficient of $I_e$	$I_F = 20$ mA	$TC(I_e)$		-0.45		%/K
Switching Time	$I_F = 50$ mA	$t_r / t_f$		10/20		ns

<sup>1</sup>  $T_{amb} = 25^\circ\text{C}$ , unless otherwise specified

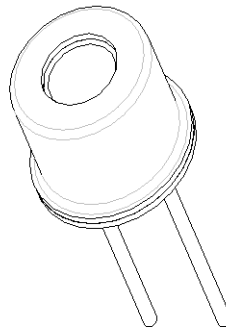
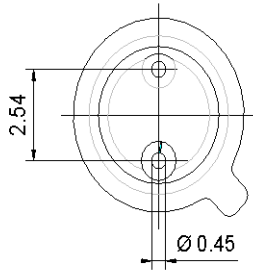
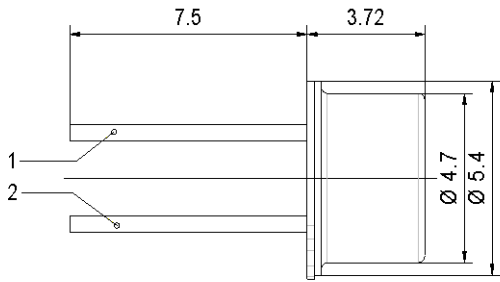


ELP-850-024-060-1 | 850 nm | TO-18 + flat window  
Typical Characteristics





ELP-850-024-060-1 | 850 nm | TO-18 + flat window  
Mechanical Dimensions



- |          |                |
|----------|----------------|
| <u>1</u> | <u>Cathode</u> |
| <u>2</u> | <u>Anode</u>   |

dimensions specified in mm



ELP-850-024-060-1 | 850 nm | TO-18 + flat window  
**Packing**

LEDs packaged in box with PE foam

<u>Storage on Blue Tape</u>		<u>Symbol</u>	<u>Min</u>	<u>Max</u>	<u>Unit</u>
<u>Storage Temperature</u>	<u>Air</u>	<u>T<sub>STG</sub></u>	<u>15</u>	<u>60</u>	<u>°C</u>
<u>Storage Relative Humidity</u>	<u>Air</u>	<u>RH<sub>STG</sub></u>	<u>40</u>	<u>75</u>	<u>% RH</u>
<u>Storage Time</u>	<u>Air</u>	<u>t<sub>STG</sub></u>		<u>3</u>	<u>years</u>

**Labeling**

<u>Labeling</u>	<u>ELP-850-024-060-1</u>
<u>Manufacturer</u>	<u>Jenoptik Polymer Systems GmbH</u>
<u>Lot N°</u>	<u>XXXXXX</u>
<u>Date</u>	<u>dd.mm.yyyy</u>
<u>Item N°</u>	<u>XXXXXXXX</u>
<u>Quantity</u>	<u>XXXX</u>

**JENOPTIK** Polymer System GmbH  
Manufacturer

15.06.2018

**ELP-850-024-060-1**      **585361**

Type

**300 pcs**  
Quantity

**123456**  
Charge

**17123456**  
PO No.

**RoHS**  
COMPLIANT  
2011/65/EU

Köpenicker Str. 325, Haus 201, 12556 Berlin Tel./Fax: +49 30 6576-2543 / -2545





ELP-850-024-060-1 | 850 nm | TO-18 + flat window

## General Information

### Attention

We reserve the right to make changes to improve technical design and may do so without further notice. 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.