

L7560-04

## High-speed, high output power LED with mini-lens

The L7560-04 is a high-speed, high-power LED with a micro-ball lens bonded to the surface of the LED chip having an internal confinement structure. In addition to the micro-ball lens, the LED chip is sealed with a cap with a mini-lens to make the output beam even narrower. This allows highly efficient input of the beam into an optical fiber, making the L7560-04 well suited for optical fiber communications.

### Features

- High-speed response: 100 MHz typ. (I<sub>F</sub>=50 mA)
- High light output: 30 μW typ. (I<sub>F</sub>=50 mA, GI 50)

### Applications

- Optical fiber communications
- Optical rangefinders

### Absolute maximum ratings (T<sub>a</sub>=25 °C)

Parameter	Symbol	Condition	Specification	Unit
Forward current	I <sub>F</sub>		70	mA
Reverse voltage	V <sub>R</sub>		3	V
Pulse forward current	I <sub>FP</sub> max	Pulse width=10 μs Duty ratio=1%	0.25	A
Power dissipation	P		150	mW
Operating temperature	T <sub>opr</sub>		-30 to +85	°C
Storage temperature	T <sub>stg</sub>		-40 to +100	°C
Soldering conditions	-		260 °C or less, within 5 s, at least 1 mm away from lead root	-

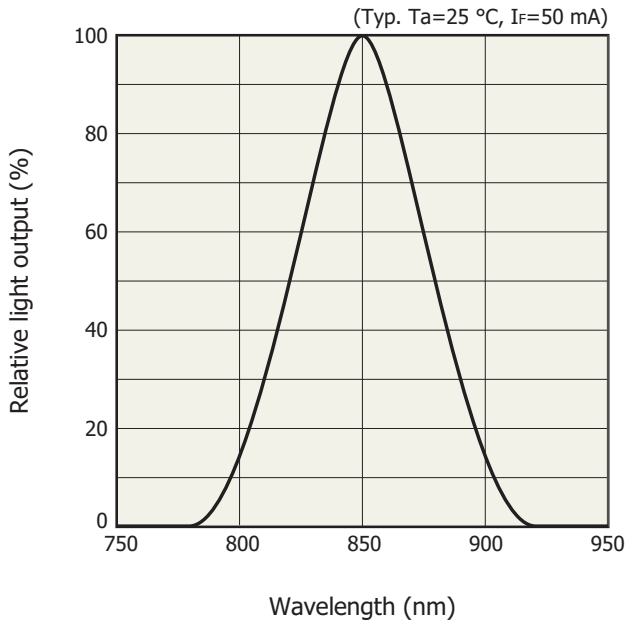
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

### Electrical and optical characteristics (T<sub>a</sub>=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λ <sub>p</sub>	I <sub>F</sub> =50 mA	820	850	880	nm
Spectral half-width	Δλ	I <sub>F</sub> =50 mA	-	50	80	nm
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =50 mA	-	1.8	2.0	V
Pulse forward voltage	V <sub>FP</sub>	I <sub>F</sub> =0.25 A	-	2.7	4.0	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =3 V	-	-	20	μA
Fiber end output	P <sub>f</sub>	I <sub>F</sub> =50 mA, GI 50	20	30	-	μW
Cutoff frequency*1	f <sub>c</sub>	I <sub>F</sub> =50 mA + 1 mAp-p	70	100	-	MHz

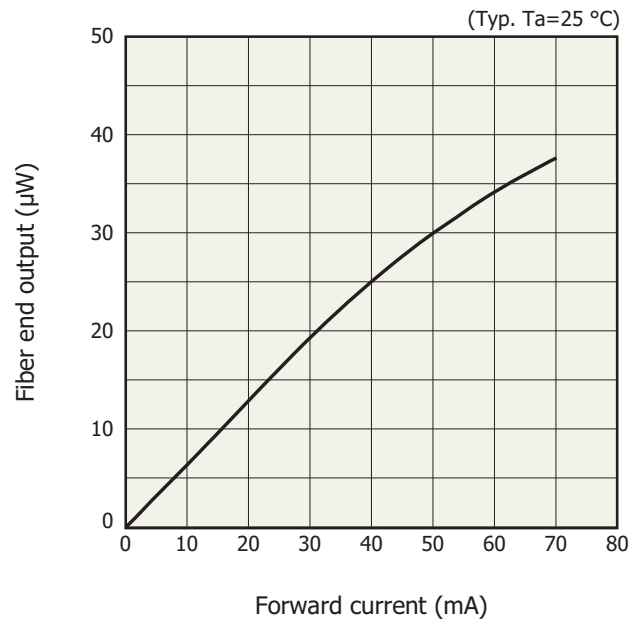
\*1: Frequency at which the light output drops by 3 dB relative to the output at 100 kHz

**Emission spectrum**



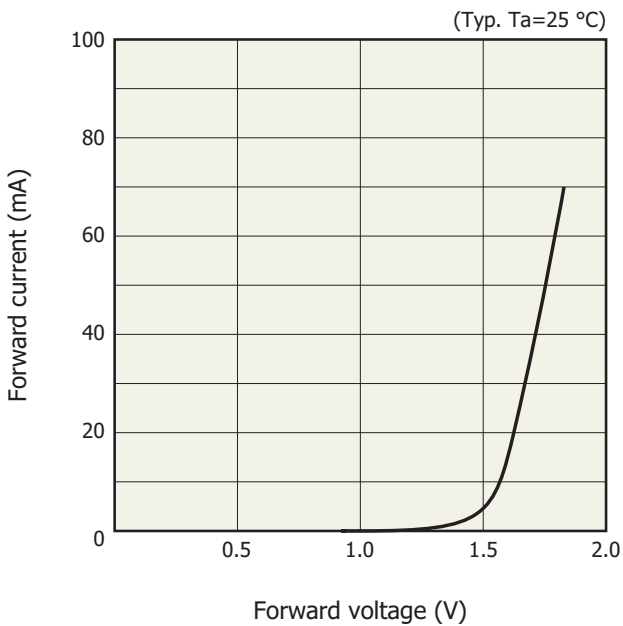
KLEDB0172EB

**Fiber end output vs. forward current**



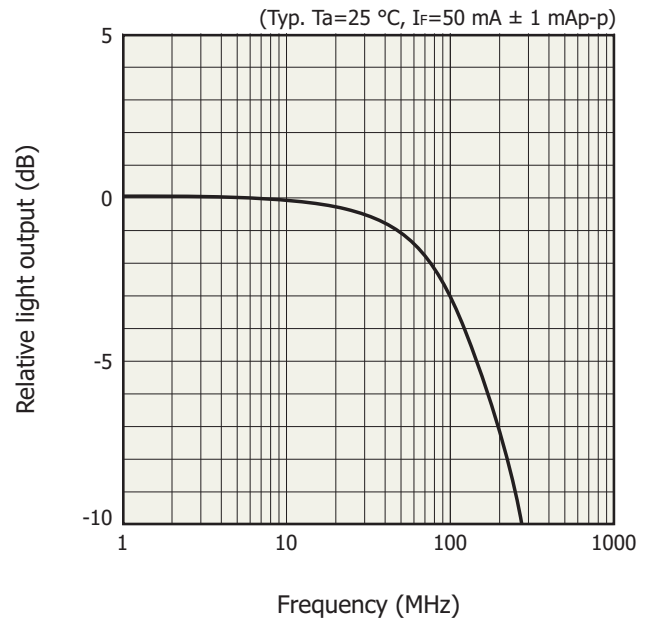
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**Forward current vs. forward voltage**



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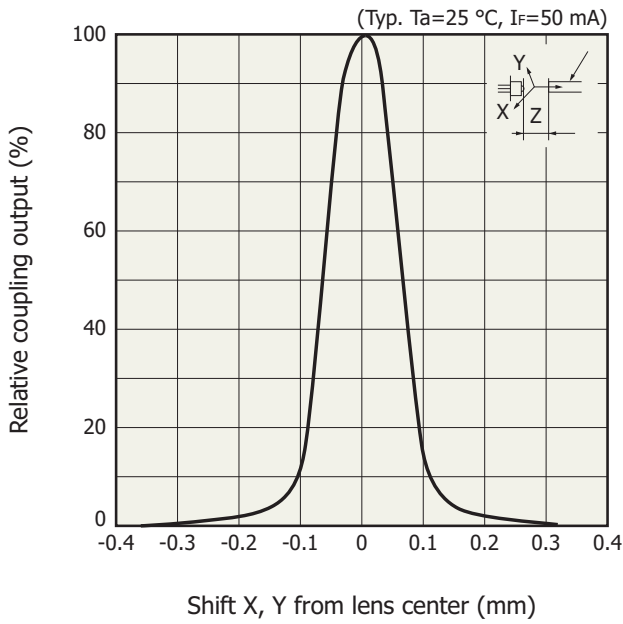
**Frequency characteristics**



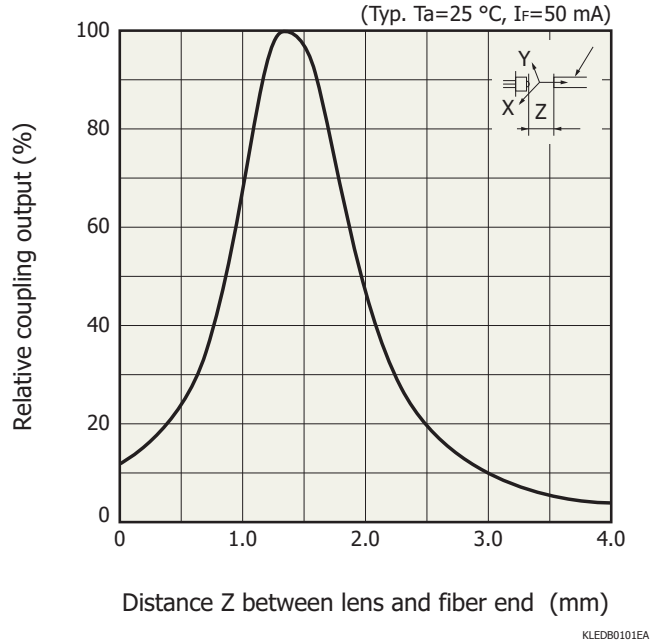
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**Fiber coupling characteristics (GI 50)**

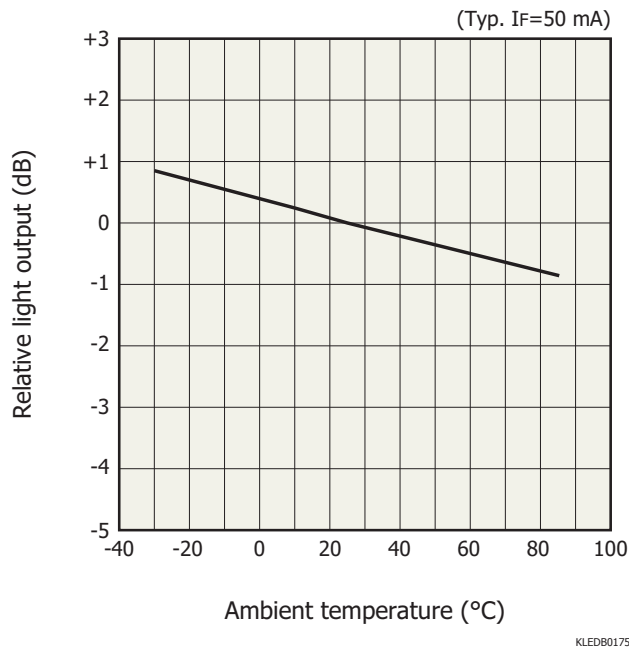
X, Y axes



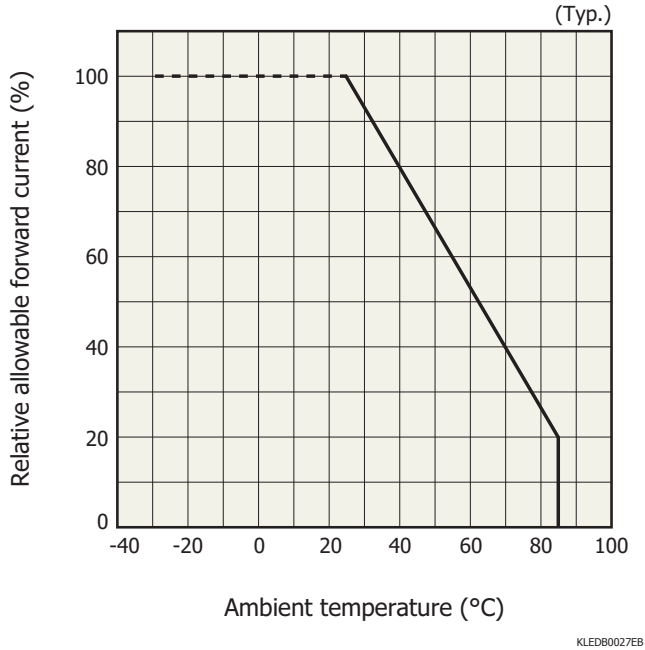
Z axis



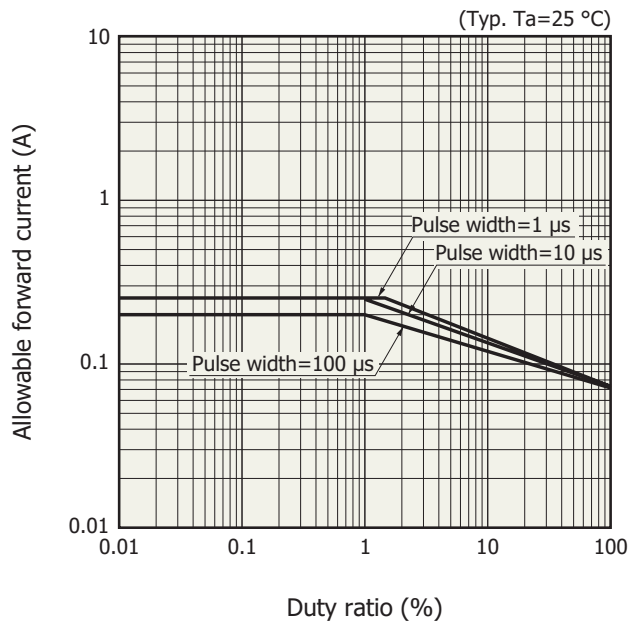
**Light output vs. ambient temperature**



**Allowable forward current vs. ambient temperature**

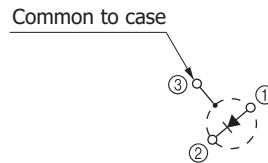
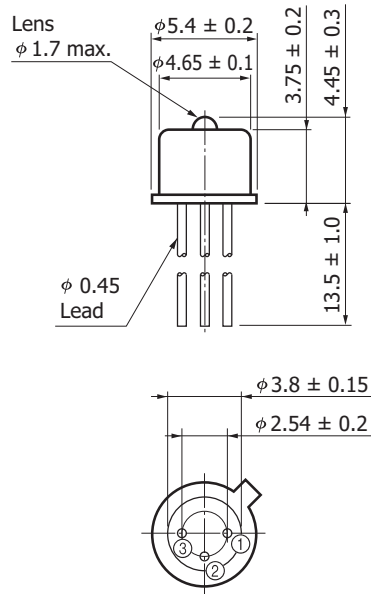


▣ Allowable forward current vs. duty ratio



KLED0176EA

▣ Dimensional outline (unit: mm)



Standard packing: Conductive tray  
(100 pcs/tray)

KLEDA0097EA

Information described in this material is current as of April, 2013.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

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