



L14097-0094GL

Surface mount type infrared LED with lens

The L14097-0094GL is an LED available in a surface mount type COB package with lens. High output was realized by using a large chip and heat dissipation board.

Features

- High output
- Compact, surface mount type package with lens (2.8 × 2.8 × 1.45^t mm)
- High reliability
- Supports lead-free reflow soldering

Application

- Optical switches
- Near infrared lighting

Absolute maximum ratings (Ta=25 °C unless otherwise noted)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	VR max		5	V
Forward current	IF max		1	A
Forward current decrease rate	ΔIF	Ta > 25 °C	8	mA/°C
Pulse forward current	IFP max	Pulse width=10 μs Duty ratio=1%	3	A
Pulse forward current decrease rate	ΔIFP	Ta > 25 °C	24	mA/°C
Power dissipation	Pd max		3.5	W
Operating temperature	Topr	No dew condensation*1	-30 to +100	°C
Storage temperature	Tstg	No dew condensation*1	-40 to +125	°C
Junction temperature	Tj	*2	145	°C
Soldering temperature	Tsol		250 (twice)*3	°C

*1: When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

*2: Please allow sufficient heat dissipation on the mounting side.

*3: Reflow soldering, JEDEC J-STD-020 MSL 2a, see P.6

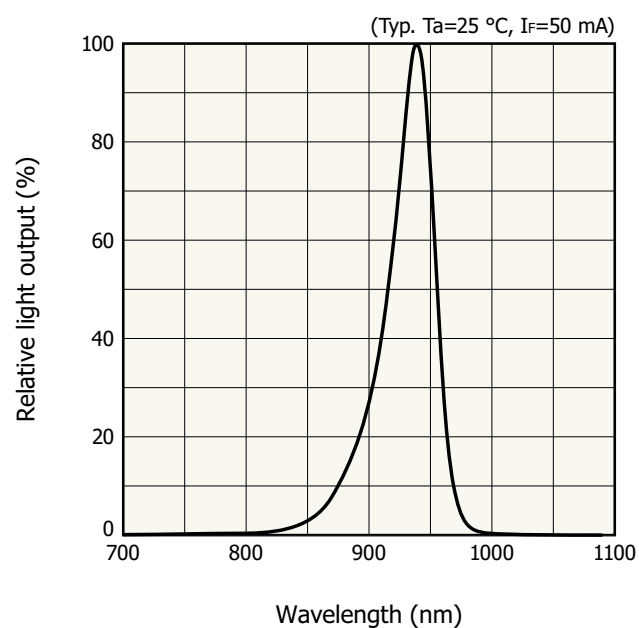
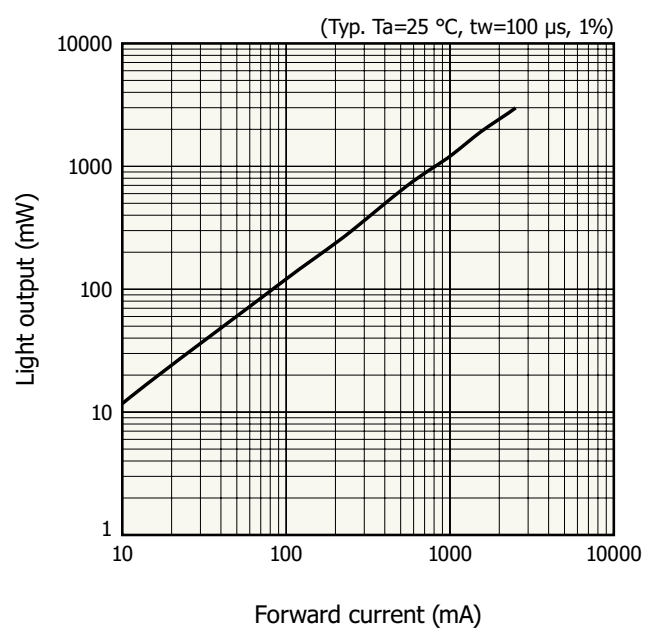
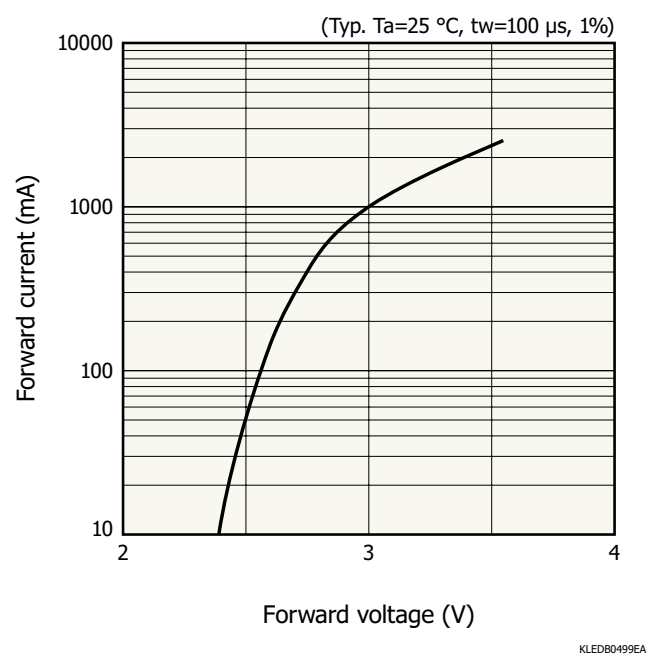
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

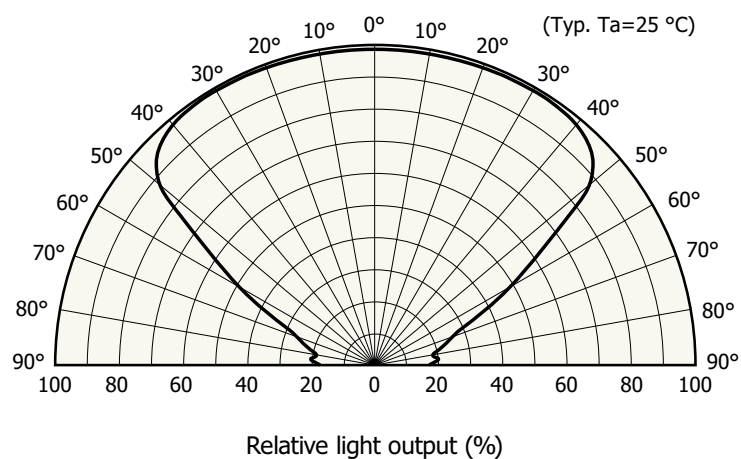
Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λp	IF=50 mA	910	940	970	nm
Spectral half width	Δλ	IF=50 mA	-	40	-	nm
Radiant flux	φe	IF=50 mA	42	60	-	mW
		IF=1000 mA*5	850	1200	-	
Radiant intensity	Ie	IF=50 mA	13	18	-	mW/sr
		IF=1000 mA*5	240	360	-	
Forward voltage	VF	IF=50 mA	-	2.5	3.0	V
		IF=1000 mA*5	-	3.0	4.0	
Reverse current	IR	VR=5 V	-	-	10	μA
Thermal resistance	Rth		-	15	-	°C/W
Cutoff frequency*4	fc	IF=50 mA ± 1 mAp-p	5	10	-	MHz

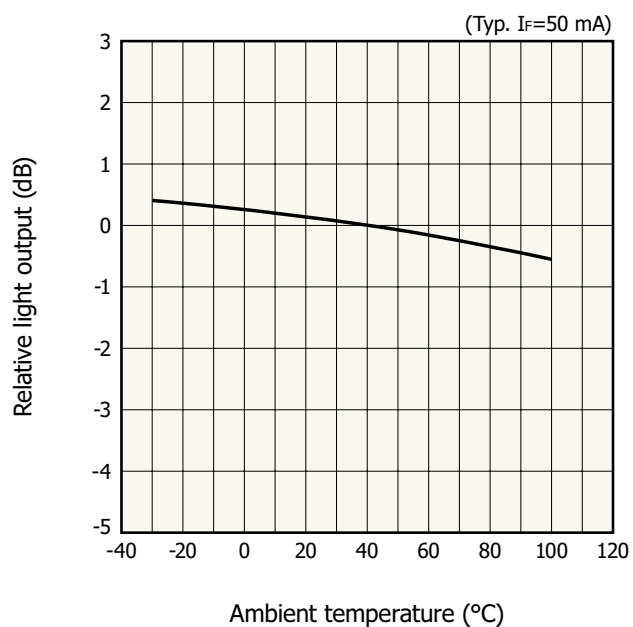
*4: Frequency at which the optical output drops by 3 dB relative to the output at 100 kHz

*5: Pulse width=10 μs, Duty ratio=1%

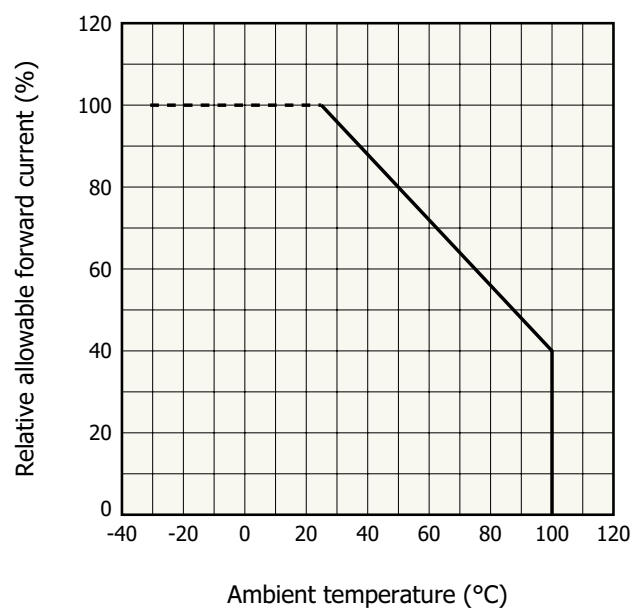
Emission spectrum**Radiant flux vs. pulse forward current****Pulse forward current vs. pulse forward voltage**

Directivity

KLEDB0500EA

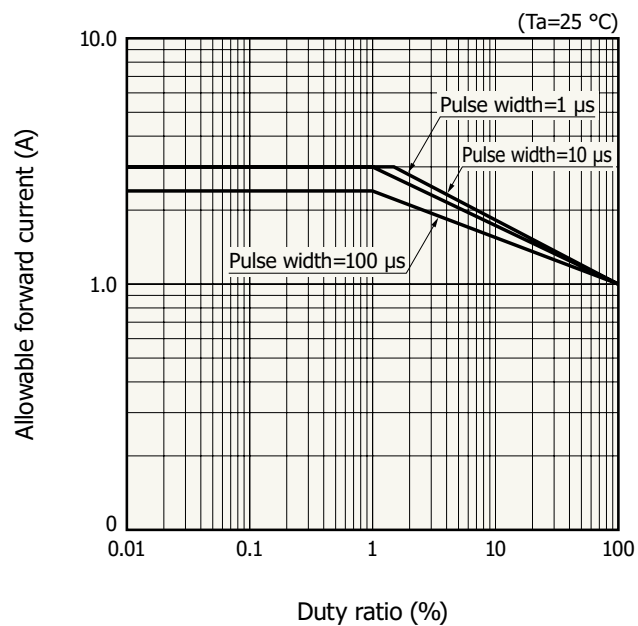
Light output vs. ambient temperature

KLEDB0501EA

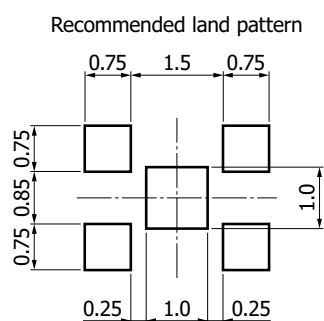
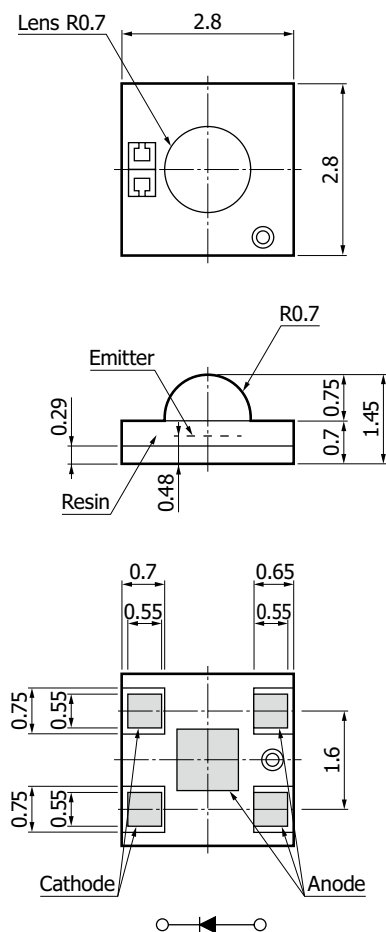
Allowable forward current vs. ambient temperature

KLEDB0502EA

▣ Allowable forward current vs. duty ratio



▣ Dimensional outline (unit: mm)



■ Electrode

Chip position accuracy: with respect to package center

-0.2 ≤ X ≤ +0.2

-0.2 ≤ Y ≤ +0.2

Tolerance unless otherwise noted: ±0.1

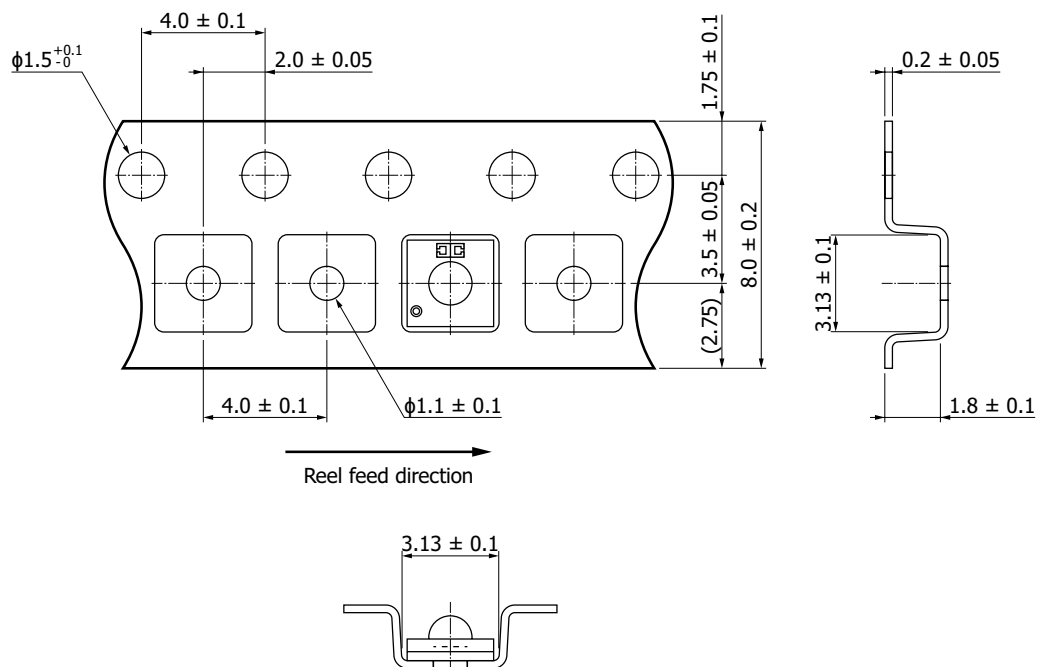
KLEDA0109EB

Standard packing specifications

■ Reel (conforms to JEITA ET-7200)

Outer diameter	Hub diameter	Tape width	Material	Electrostatic characteristics
φ180 mm	φ60 mm	8 mm	PS	Conductive

■ Embossed tape (unit: mm, material: PC, conductive)



KLEDC0062EA

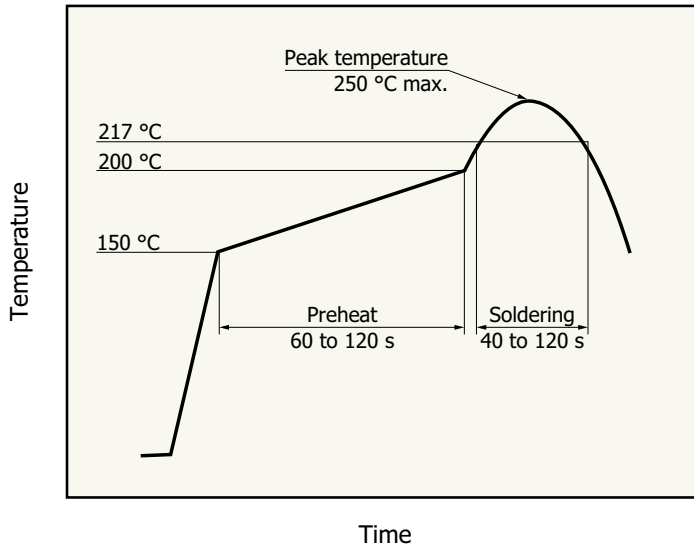
■ Packing quantity

2000 pcs/reel

■ Packing type

Reel and desiccant in moisture-proof packaging (vacuum-sealed)

Recommended reflow soldering conditions



KLED00536EC

- After unpacking, store the device in an environment at a temperature range of 5 to 30 °C and a humidity of 60% or less, and perform reflow soldering within 4 week.
- The effect that the product receives during reflow soldering varies depending on the circuit board and reflow oven that are used. When you set reflow soldering conditions, check that problems do not occur in the product by testing out the conditions in advance.

Baking

If more than 12 months have passed in the unopened state or storage conditions are exceeded after opening the package, baking is required to remove moisture before reflow soldering. For the baking, refer to "Precautions / Surface mount type products" in the related information.

Recommended baking conditions

- Temperature: 150 °C, 3 hours, once

Note: Before you set baking conditions, check that problems do not occur in the product by testing out the conditions in advance.

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

Precautions

- Disclaimer
- Safety consideration / Opto-semiconductors
- Precautions / Surface mount type products
- Precautions / Compound opto-semiconductors (photosensors, light emitters)

Catalogs

- Selection guide / LED
- Technical note / LED

Information described in this material is current as of November 2024.

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.

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HAMAMATSU

www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Chuo-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81)53-434-3311, Fax: (81)53-434-5184

U.S.A.: HAMAMATSU CORPORATION: 360 Foothill Road, Bridgewater, NJ 08807, U.S.A., Telephone: (1)908 231 0960, Fax: (1)908 231 1218

Germany: HAMAMATSU PHOTONICS DEUTSCHLAND GMBH: Arzbergerstr. 10, 82211 Herrsching am Ammersee, Germany, Telephone: (49)8152 375 0, Fax: (49)8152 265 8 E mail: info@hamamatsu.de

France: HAMAMATSU PHOTONICS FRANCE S.A.R.L.: 19 Rue du Saule Trappu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E mail: infos@hamamatsu.fr

United Kingdom: HAMAMATSU PHOTONICS UK LIMITED: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire, AL7 1BW, UK, Telephone: (44)1707 294888, Fax: (44)1707 325777 E mail: info@hamamatsu.co.uk

North Europe: HAMAMATSU PHOTONICS NORDEN AB: Torshamnsgatan 35, 16440 Kista, Sweden, Telephone: (46)8 509 031 00, Fax: (46)8 509 031 01 E mail: info@hamamatsu.se

Italy: HAMAMATSU PHOTONICS ITALIA S.R.L.: Strada della Moia, 1 int. 6 20044 Arese (Milano), Italy, Telephone: (39)02 93 58 17 33, Fax: (39)02 93 58 17 41 E mail: info@hamamatsu.it

China: HAMAMATSU PHOTONICS (CHINA) CO., LTD.: 1201, Tower B, Jiaming Center, 27 Dongsanhuan Bellu, Chaoyang District, 100020 Beijing, P.R. China, Telephone: (86)10 6586 6006, Fax: (86)10 6586 2866 E mail: hpc@hamamatsu.com.cn

Taiwan: HAMAMATSU PHOTONICS TAIWAN CO., LTD.: 13F 1, No.101, Section 2, Gongdao 5th Road, East Dist., Hsinchu City, 300046, Taiwan(R.O.C) Telephone: (886)3 659 0080, Fax: (886)3 659 0081 E mail: info@hamamatsu.com.tw