



L14096-0085GL

Surface mount type infrared LED with lens

The L14096-0085GL is an LED available in a surface mount type COB package with lens. Narrow directivity was achieved by adopting a lens.

Features

- High output
- Compact, surface mount type package with lens (2.8 × 2.8 × 2.0^t mm)
- High reliability
- Narrow directivity
- Supports lead-free reflow soldering

Application

- Optical switches

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

| Parameter | Symbol | Condition | Specification | Unit |
|-------------------------------------|---------------------|------------------------------------|---------------|-------|
| Reverse voltage | V _R max | | 5 | V |
| Forward current | I _F max | | 70 | mA |
| Forward current decrease rate | ΔI _F | T _a > 25 °C | 0.7 | mA/°C |
| Pulse forward current | I _{FP} max | Pulse width=10 μs Duty ratio=1% | 0.3 | A |
| Pulse forward current decrease rate | ΔI _{FP} | T _a > 25 °C | 3 | mA/°C |
| Power dissipation | P _d max | | 150 | mW |
| Operating temperature | T _{opr} | No dew condensation*1 | -30 to +85 | °C |
| Storage temperature | T _{stg} | No dew condensation*1 | -40 to +100 | °C |
| Soldering temperature | T _{sol} | | 250 (twice)*2 | °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.

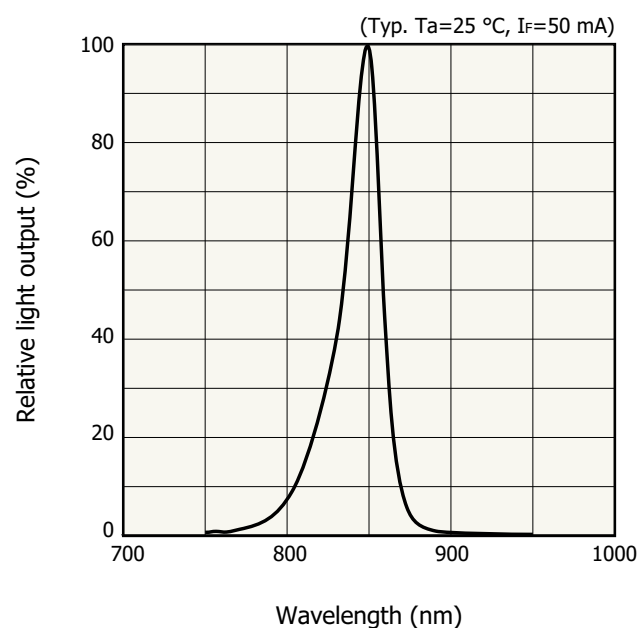
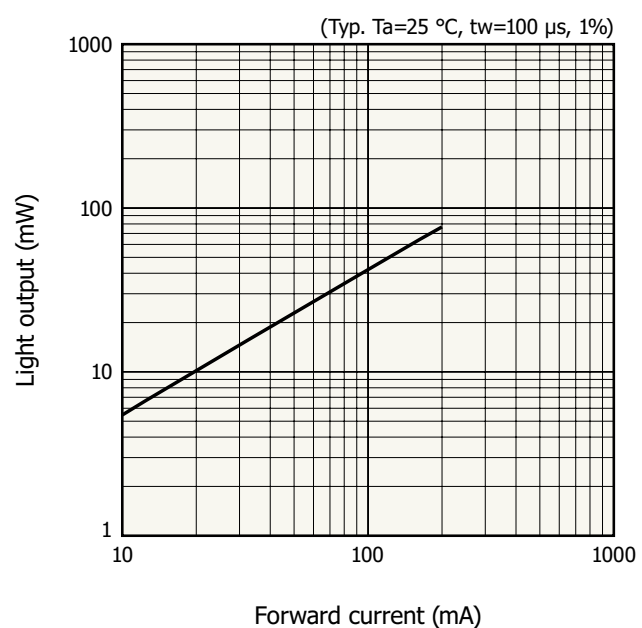
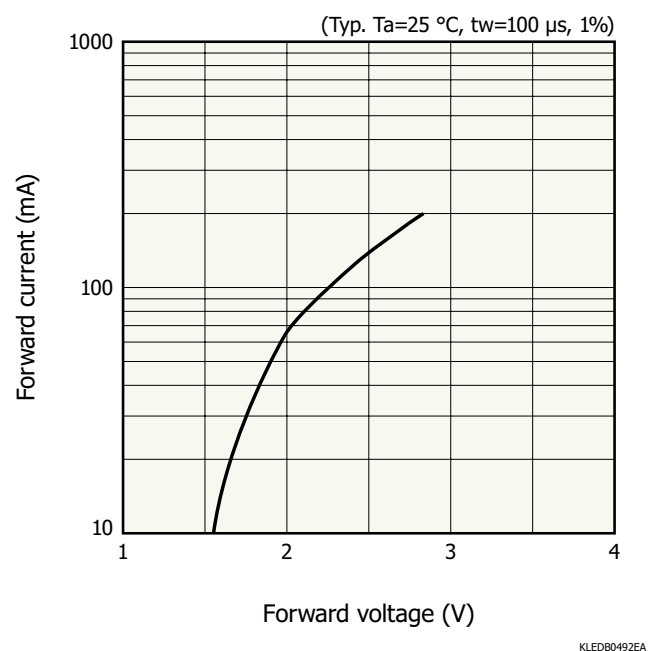
*2: Reflow soldering, JEDEC J-STD-020 MSL 2a, see P.6

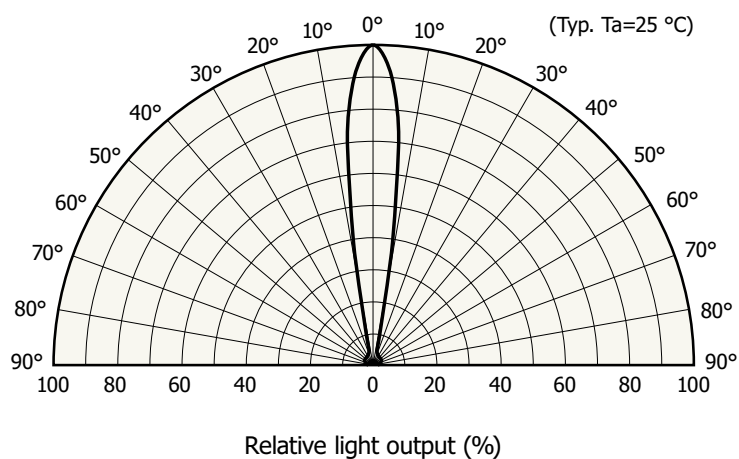
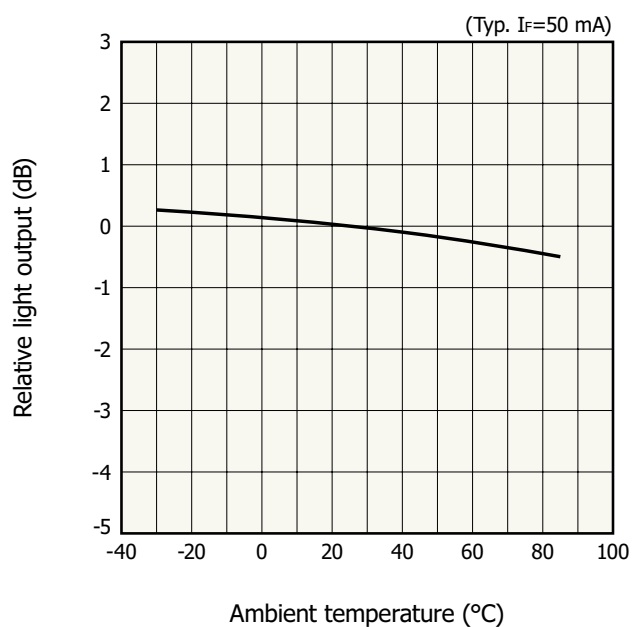
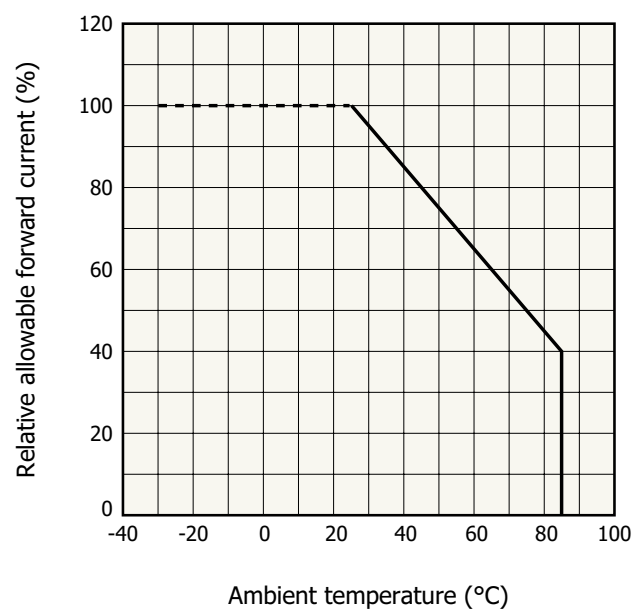
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Ta=25 °C)

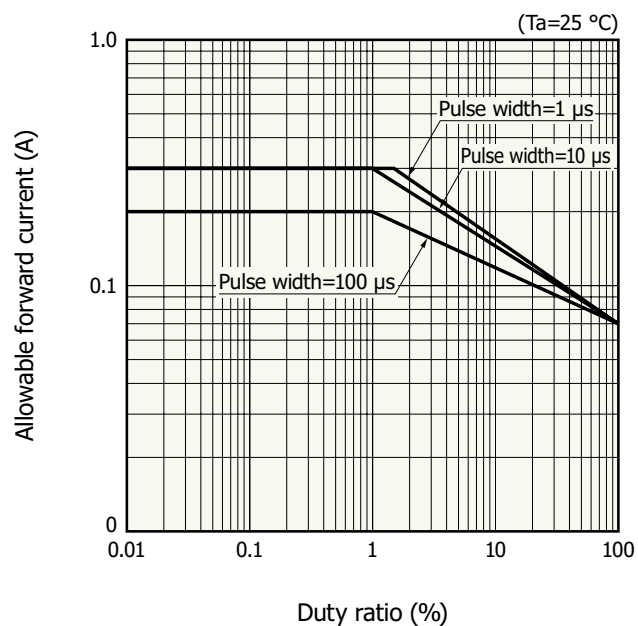
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------|----------------|---------------------------------|------|------|------|-------|
| Peak emission wavelength | λ _p | I _F =50 mA | 820 | 850 | 880 | nm |
| Spectral half width | Δλ | I _F =50 mA | - | 25 | 50 | nm |
| Radiant flux | φ _e | I _F =50 mA | 16 | 23 | - | mW |
| Radiant intensity | I _e | I _F =50 mA | 70 | 100 | - | mW/sr |
| Forward voltage | V _F | I _F =50 mA | - | 1.9 | 2.2 | V |
| Reverse current | I _R | V _R =5 V | - | - | 10 | μA |
| Cutoff frequency*3 | f _c | I _F =50 mA ± 1 mAp-p | 10 | 20 | - | MHz |

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

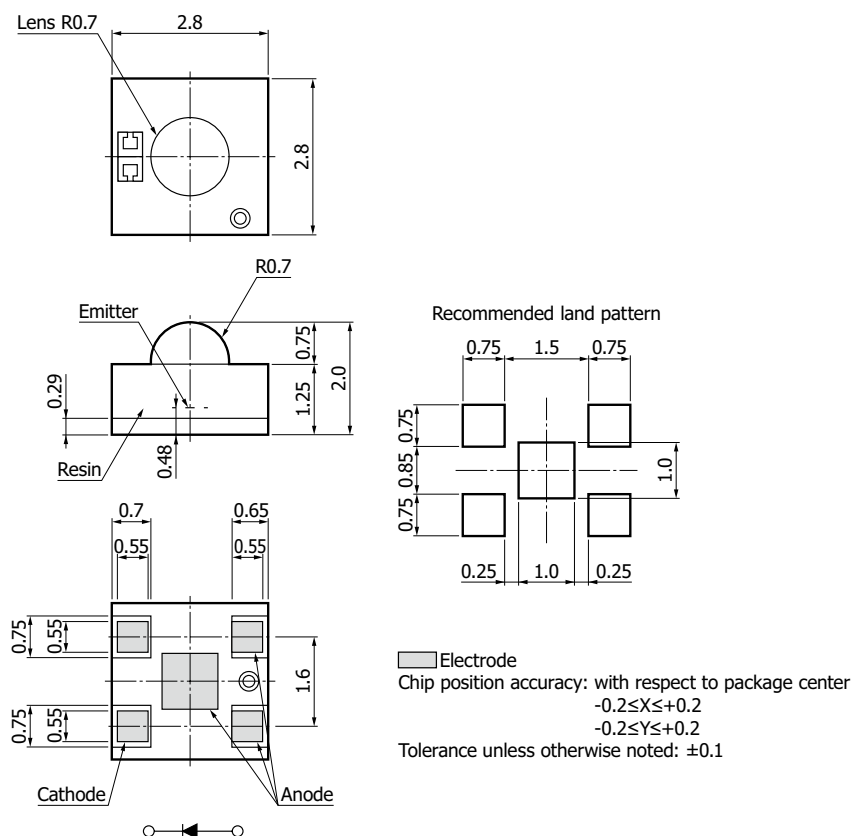
Emission spectrum**Radiant flux vs. pulse forward current****Pulse forward current vs. pulse forward voltage**

Directivity**Light output vs. ambient temperature****Allowable forward current vs. ambient temperature**

Allowable forward current vs. duty ratio



Dimensional outline (unit: mm)



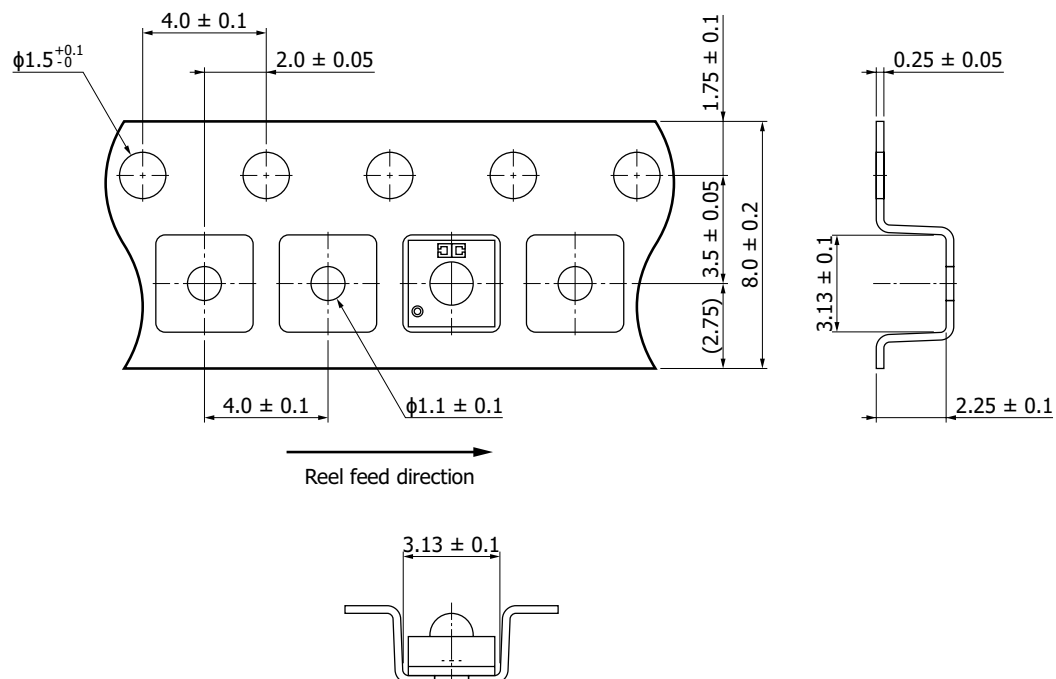
KLEDA0108EB

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)



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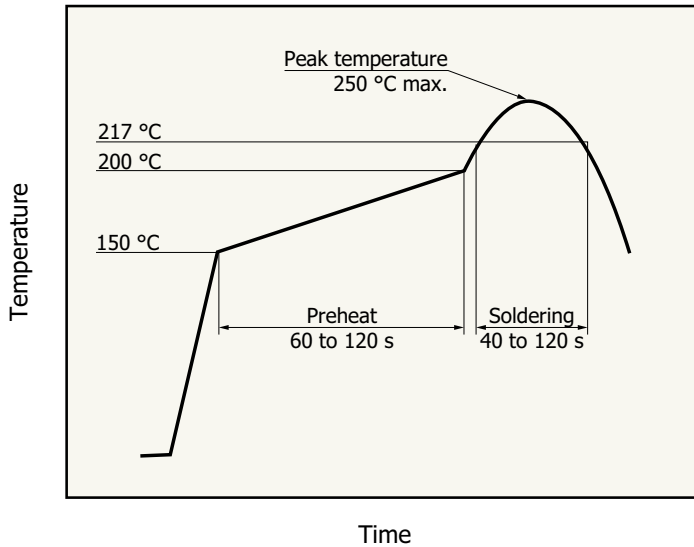
■ Packing quantity

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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