



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	VR max		5	V
Forward current	IF max		70	mA
Forward current decrease rate	ΔIF	Ta > 25 °C	0.7	mA/°C
Pulse forward current	IFP max	Pulse width=10 μs Duty ratio=1%	0.3	A
Pulse forward current decrease rate	ΔIFP	Ta > 25 °C	3	mA/°C
Power dissipation	Pd max		150	mW
Operating temperature	Topr	No dew condensation*1	-30 to +85	°C
Storage temperature	Tstg	No dew condensation*1	-40 to +100	°C
Soldering temperature	Tsol		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

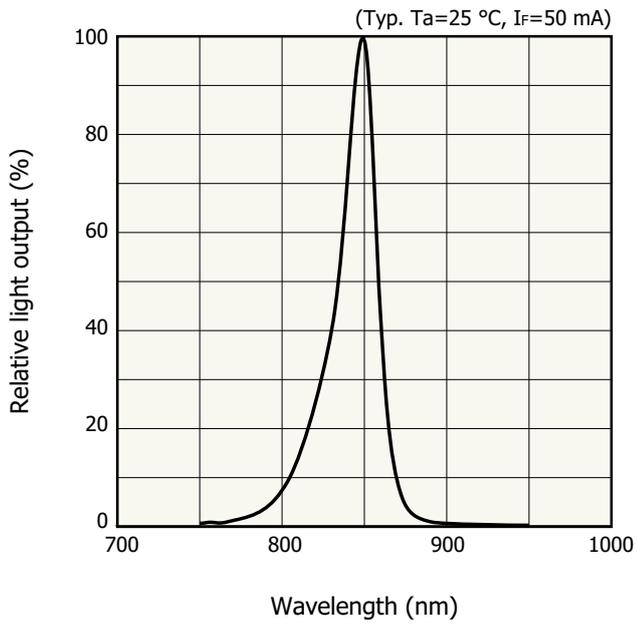
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Ta=25 °C)

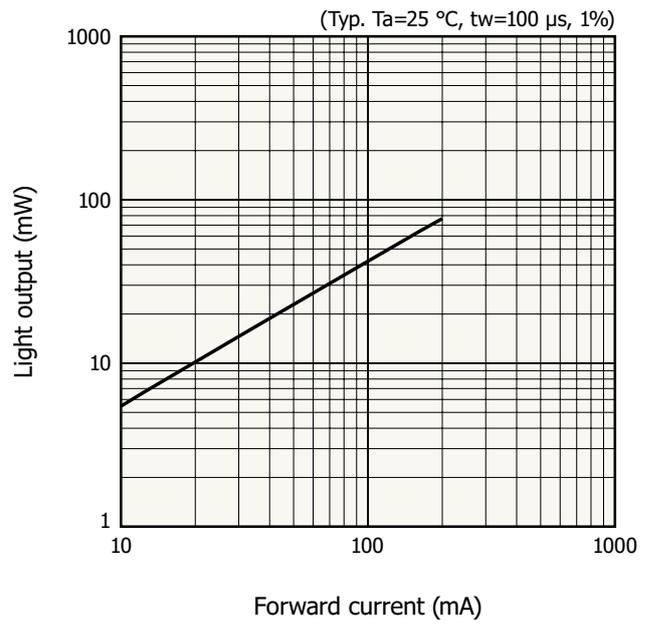
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λp	IF=50 mA	820	850	880	nm
Spectral half width	Δλ	IF=50 mA	-	25	50	nm
Radiant flux	φe	IF=50 mA	16	23	-	mW
Radiant intensity	Ie	IF=50 mA	70	100	-	mW/sr
Forward voltage	VF	IF=50 mA	-	1.9	2.2	V
Reverse current	IR	VR=5 V	-	-	10	μA
Cutoff frequency*3	fc	IF=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

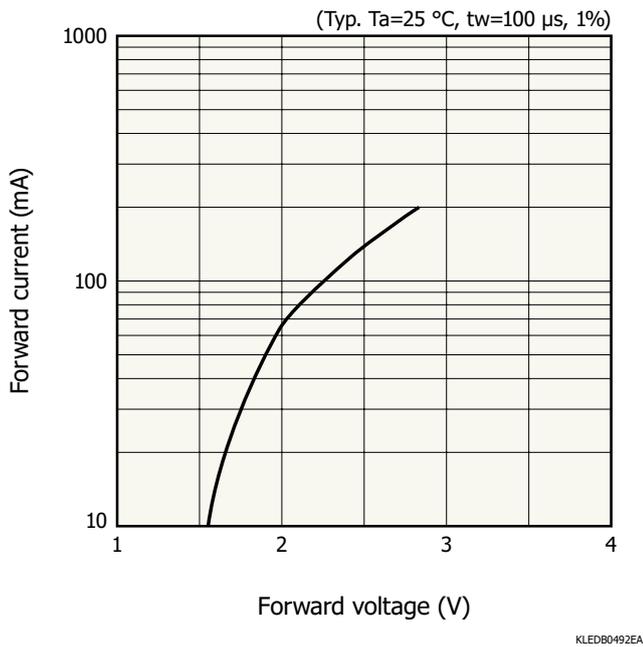
Emission spectrum



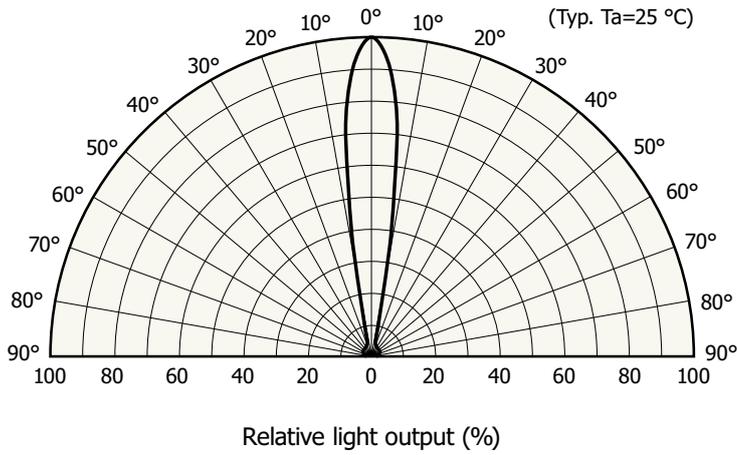
Radiant flux vs. pulse forward current



Pulse forward current vs. pulse forward voltage

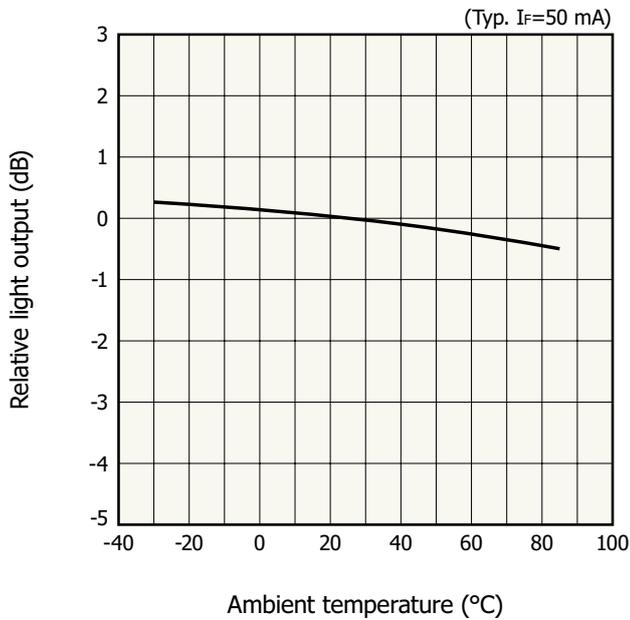


Directivity



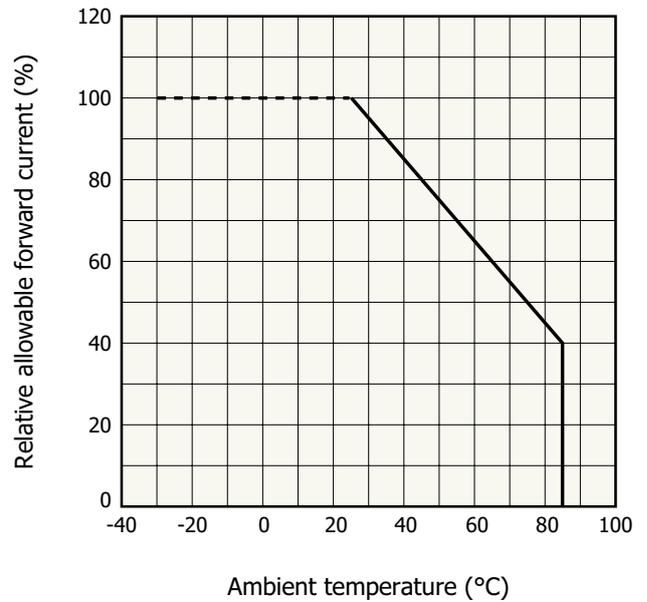
KLEDB0493EA

Light output vs. ambient temperature



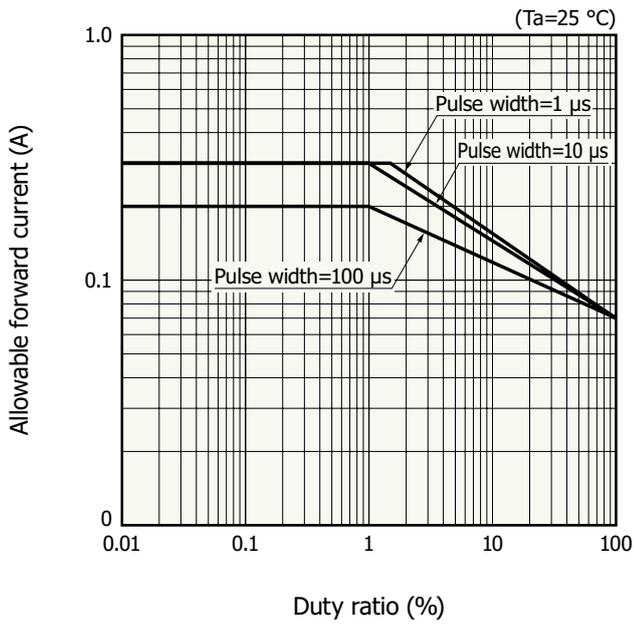
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Allowable forward current vs. ambient temperature

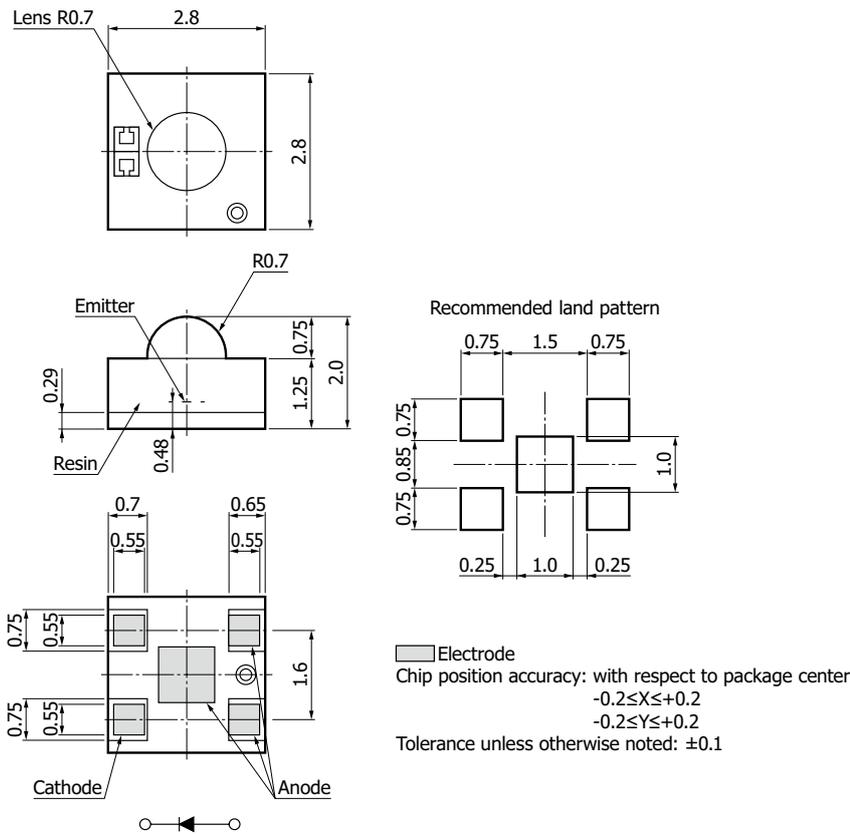


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▣ Allowable forward current vs. duty ratio



▣ Dimensional outline (unit: mm)

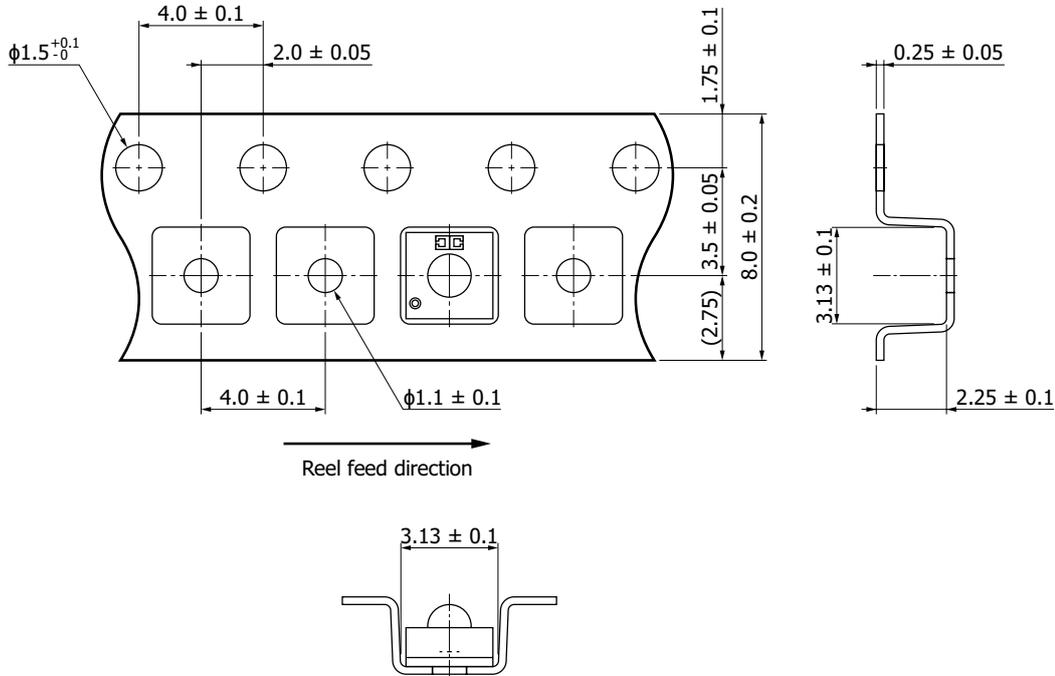


Standard packing specifications

■ 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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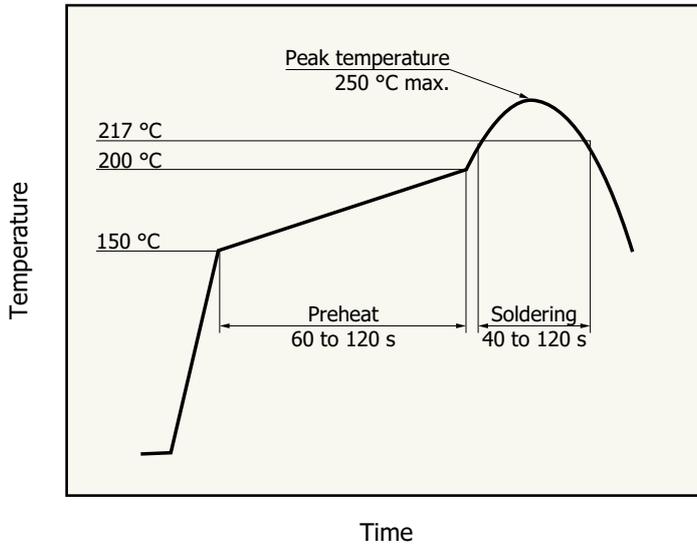
■ Packing quantity

2000 pcs/reel

■ Packing type

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

Recommended reflow soldering conditions



- 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.

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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.

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. Copying or reprinting the contents described in this material in whole or in part is prohibited without our prior permission.

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