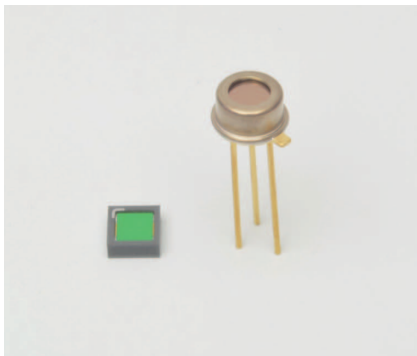


# Mid infrared LED

L13201 series



**Peak emission wavelength: 4.3 μm**

The L13201 series is a mid infrared LED with a 4.3 μm peak emission wavelength. It is a product that has been achieved using Hamamatsu unique crystal growth technology and process technology. It is a suitable light source for CO<sub>2</sub> detectors.

## Features

- High output
- High-speed response
- High reliability
- Low power consumption
- Surface mount type ceramic package (L13201-0430C)

## Applications

- CO<sub>2</sub> detectors

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

Parameter	Symbol	Condition	L13201-0430C	L13201-0430M	Unit
Reverse voltage	VR			1	V
Forward current (QCW mode*1)	IFqCW	Pulse width=100 μs Duty ratio=50%	100		mA
Pulse forward current	IFP	Pulse width=10 μs Duty ratio=1%	0.5		A
Power dissipation	P		110		mW
Operating temperature	Topr	No dew condensation*2	-30 to +85		°C
Storage temperature	Tstg	No dew condensation*2	-40 to +100		°C
Reflow soldering condition	-		Peak temperature: 260 °C, 2 times*3	-	-

\*1: Quasi continuous wave mode

\*2: 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.

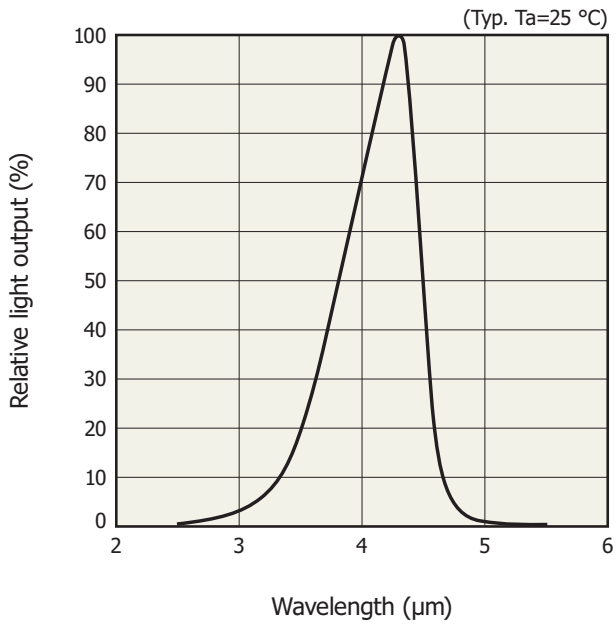
\*3: JEDEC level 3

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)

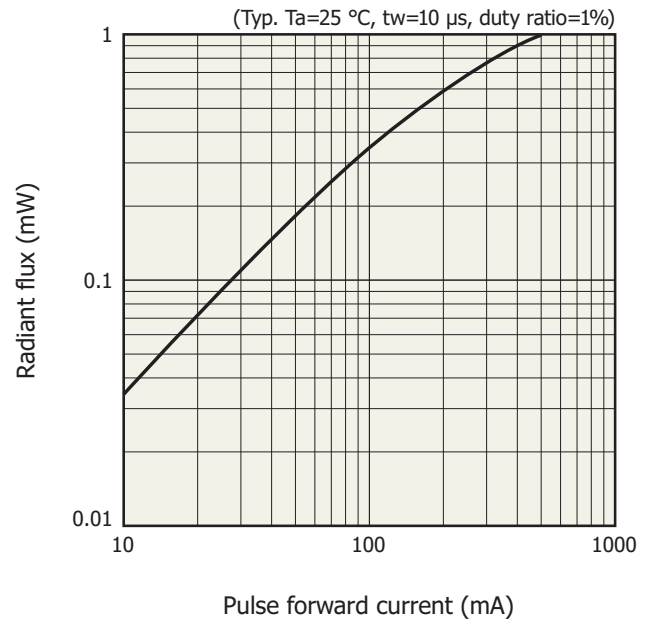
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λp	IF=80 mA, QCW mode	4.1	4.3	4.4	μm
Spectral half width	Δλ	IF=80 mA, QCW mode	-	0.7	1.0	μm
Radiant flux	φe	IF=80 mA, QCW mode	0.15	0.3	-	mW
Forward voltage	VF	IF=80 mA, QCW mode	-	1.6	2.0	V
Reverse current	IR	VR=100 mV	-	-	1000	μA
Rise time	tr	10 to 90%	-	-	1	μs

**Emission spectrum**



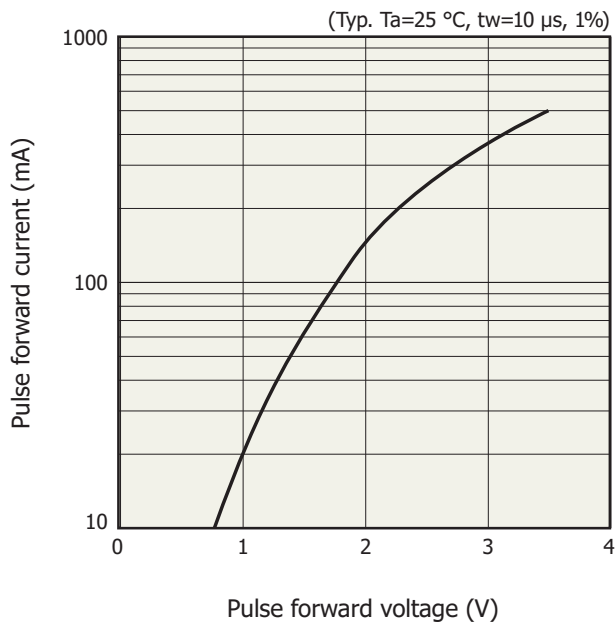
KLEDB0414EA

**Radiant flux vs. pulse forward current**



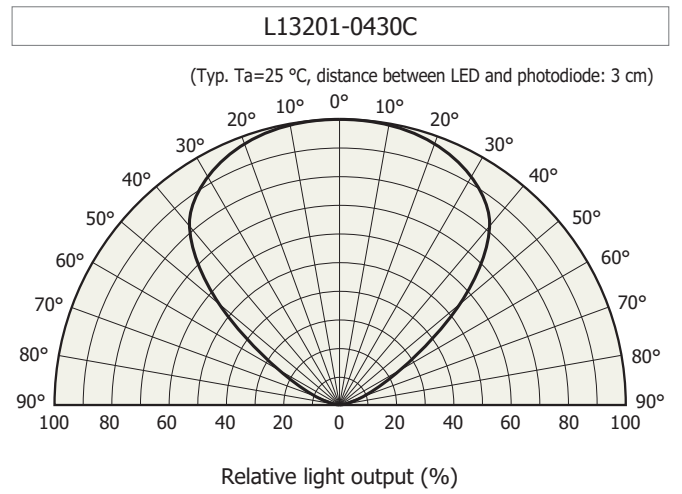
KLEDB0415EA

**Pulse forward current vs. pulse forward voltage**

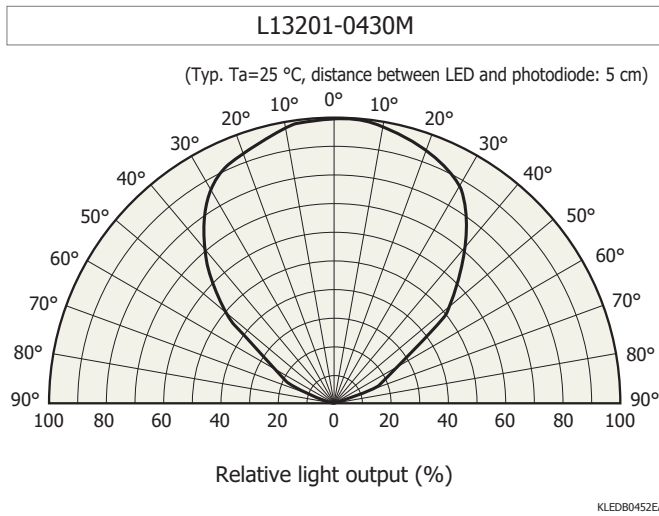


KLEDB0459EA

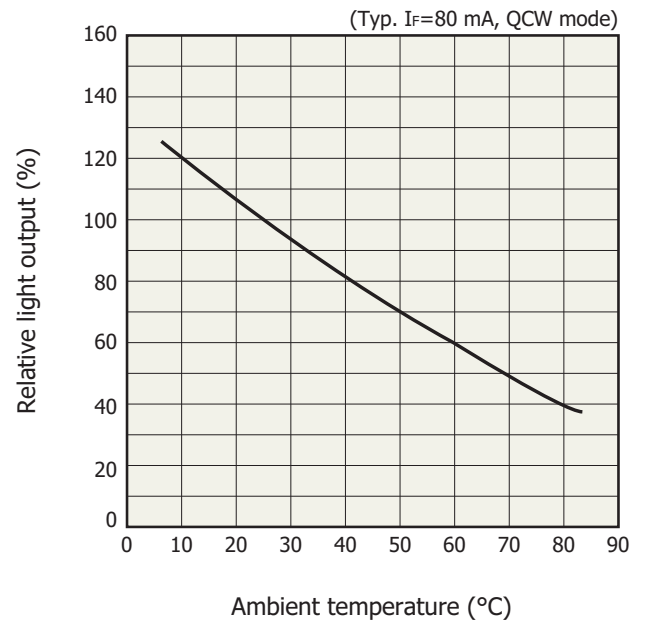
**Directivity**



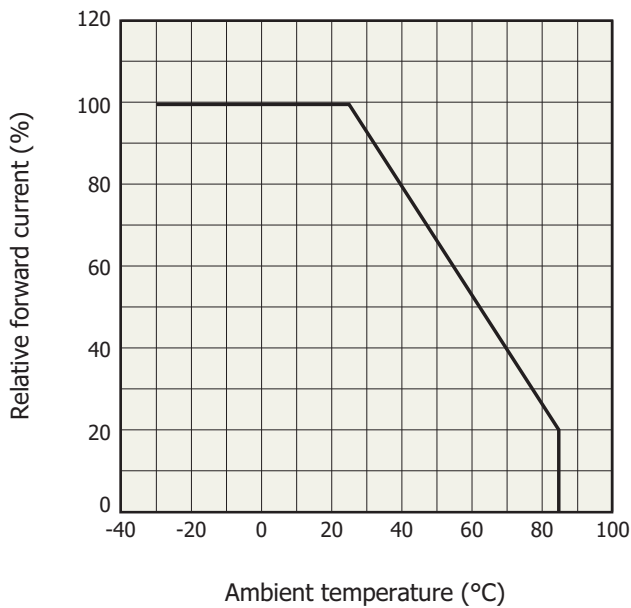
KLEDB0464EA



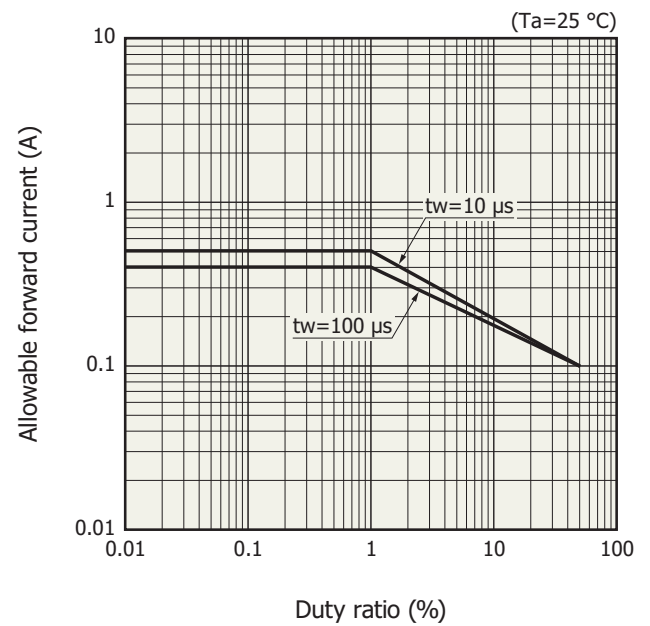
**Light output vs. ambient temperature**



**Allowable forward current vs. ambient temperature**

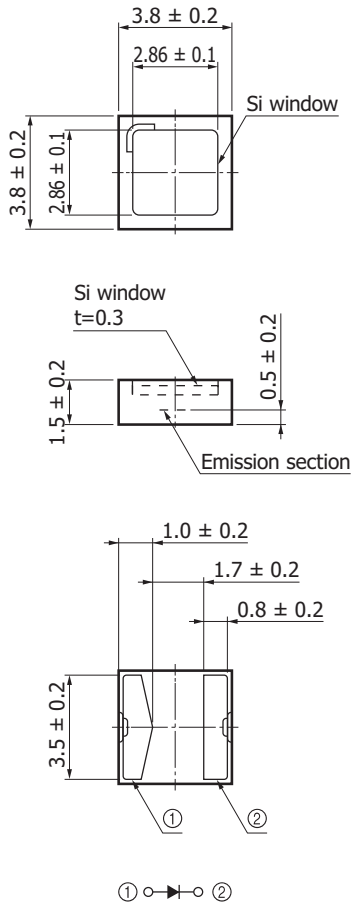


**Allowable forward current vs. duty ratio**



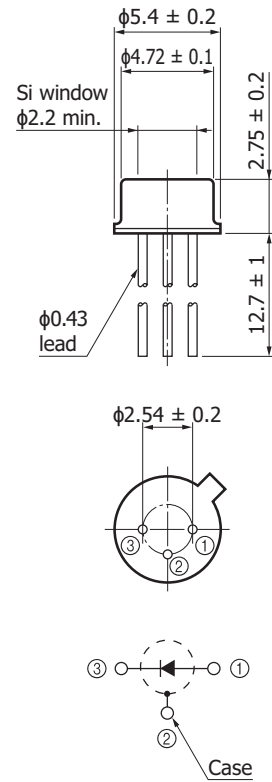
**Dimensional outlines (unit: mm)**

L13201-0430C



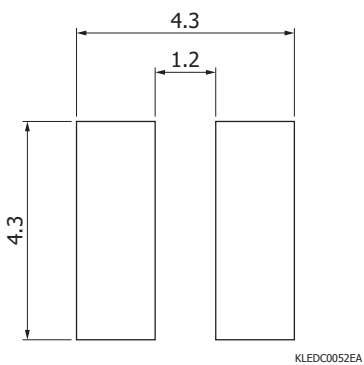
KLEDA0105EA

L13201-0430M



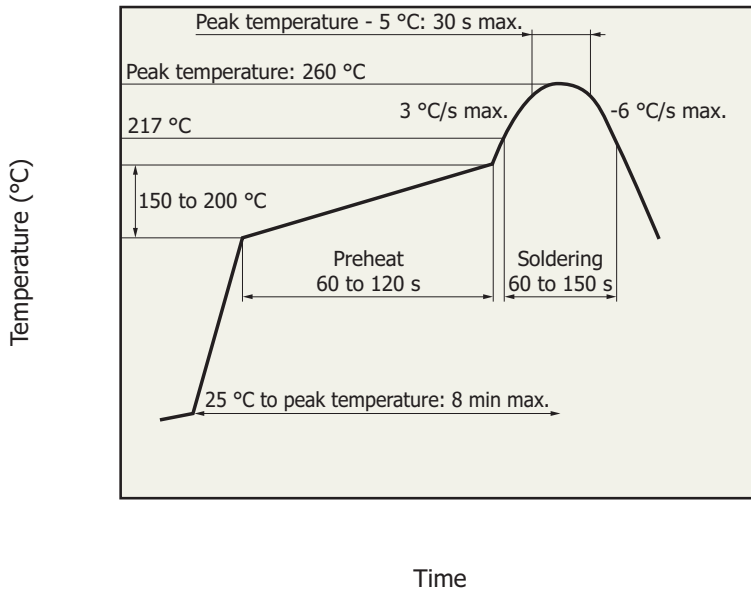
KLEDA0101EB

**Recommended land pattern (unit: mm)**



KLEDC0052EA

### Recommended solder reflow 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 168 hours.
- The effect that the product receives during reflow soldering varies depending on the circuit board and reflow oven that are used. Before actual reflow soldering, check for any problems by testing out the reflow soldering methods in advance.

KLEDB0465EA

### Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://www.hamamatsu.com/sp/ssd/doc_en.html)

#### Precautions

- Disclaimer
- Metal, ceramic, plastic packages

#### Technical information

- LED

Information described in this material is current as of February 2017.

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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