

This is a lateral multimode CW laser diode with watt-class radiant flux. The ϕ 9.0 metal package is standard. Please consult with us regarding the built-in photodiode.

Features

Applications

- Lateral multimode (wide stripe)
- Radiant flux (CW): 1 W typ.
- Peak emission wavelength: 830 nm typ. (L9277-42) 980 nm typ. (L9418-42)
- Emission area (design value): 50 × 1 μm (L9277-42) 100 × 1 μm (L9418-42)

- Infrared excitation light source, upconversion
- Medical (ICG)
- Light source for night vision
- Light source for measurement

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

Parameter	Symbol	Rating	Unit
Radiant flux	фе	1.2	W
Forward current	IF	1.4	А
Reverse voltage	Vr	2	V
Operating temperature (case)*1	Tcase	0 to +30	°C
Storage temperature*1	Tstg	-30 to +80	°C

*1: No dew condensation

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

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 (Tcase=25 °C, unless otherwise noted)

Parameter		Symbol	Condition	L9277-42			L9418-42			Linit
				Min.	Тур.	Max.	Min.	Тур.	Max.	Unit
Radiant flux		фе	IF=1.2 A	0.8	1.0	-	0.8	1.0	-	W
Operating current		Іор	φe=1 W	-	1.25	1.38	-	1.2	1.3	А
Operating voltage		Vop		-	2	3	-	1.6	2	V
Peak emission wavelength		λр		820	830	840	970	980	990	nm
Spectral half width		Δλ		-	2	3	-	2	3	nm
Beam spread	Horizontal	θ//		4.5	7	9.5	4.5	8	11.5	. o
angle	Vertical	$\theta \bot$		27	32	37	27.5	32	36.5	
Threshold current		Ith		-	0.35	0.45	-	0.25	0.4	Α
Emission area		-	Design value	-	50 × 1	-	-	100×1	-	μm
Position accuracy of emission point*2		-	ΔΧ, ΔΥ, ΔΖ	-0.2	-	0.2	-0.2	-	0.2	mm

*2: Position of emitter center with respect to package base center

CW laser diode (CWLD)



Radiant flux vs. forward current (typical example)



CW laser diode (CWLD)



Dimensional outline (unit: mm)



<u>φ2.54 ± 0.2</u>









Recommended soldering conditions

· Soldering temperature: 260 °C or less, within 5 seconds (1 second or less if the lead terminal length is 2 mm or less) Note: When you set soldering conditions, check that problems do not occur in the product by testing out the conditions in advance.

Hazards (Class 4 laser) Invisible laser emission: Avoid exposure of beams or scattered light to eyes or skin

This product falls under the "Class 4 laser" in the classification of laser products according to IEC 60825-01. The laser light emitted by this product is an invisible laser light that cannot be seen by the naked eye. Observation of laser light and exposure to the skin are very dangerous. Scattered light can also cause serious damage. In addition, there is a risk of fire, so be careful.

When using equipment incorporating this product, please classify it according to IEC 60825-01.

Class 4 Laser Warning labe Explanatory label

KLDC0004EA



Label for wearing protective goggles KLDC0005E

Note: For more detailed information, please see [IEC 60825-1:2014].

Precautions

(1) Electrostatic countermeasures

To prevent damage due to static electricity, take electrostatic countermeasures such as grounding of workers, work benches, and work tools. For details, please refer to the related information "Precautions / Compound opto-semiconductors (photosensors, light emitters)". Also protect this device from surge voltages which might be caused by peripheral equipment.

(2) Reflected light

The product will be destroyed if it is irradiated with laser light, such as by regular reflection. When using this product, use extra caution to avoid irradiation of reflected light.

Related information

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

- Precautions
- Disclaimer
- · Safety consideration / Opto-semiconductor products
- Precautions / Compound opto-semiconductors (photosensors, light emitters)

The content of this document is current as of February 2025.

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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