

### ■ Features

- Wavelength: 905 nm
- Emission width: 230 μm
- Sharp NFP light emitting pattern
- Narrow non-light emitting area (narrow GAP)
- High-reliability hollow ceramic packages

### ■ Applications

- LiDAR
- 3D sensing



### ■ Outline

4 channel array surface-mount pulsed laser diode (PLD) is ideal for high-reliability LiDAR. LD is mounted on the highly reliable hollow ceramic package. This facilitates short pulse operation and high peak power output. And the anodes in 3 stack structure are independent electrodes, and cathode is common electrode, this enables to operate PLD with both simultaneous and individual operation.

### ■ Absolute maximum rating (1 channel)

Parameter	Symbol	Value		Unit
Pulse forward current	$I_{fp}$	35	30	A
Reverse voltage (DC)	$V_r$	6		V
Pulse width	$t_w$	10	50	ns
Duty ratio *1	DR	0.05	0.1	%
Operating temperature	$T_{op(c)}$	-40 to +105		°C
Storage temperature	$T_{stg}$	-40 to +125		°C
Reflow soldering condition *2	$T_{sol}$	Peak temperature 260 °C, 2 times		—

\*1 When the each channels are sequentially driven, the entire value is set as the duty ratio, and the duty ratio per 1 channel is 1/4 of rating value.

\*2 See "Figure. 6 Recommended reflow soldering condition"

\* Except for temperature parameter,  $T_{op(c)}=25$  °C

### ■ Specification

Parameter	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Peak radiant power	$\Phi_{ep}$	$I_{fp} = 25$ A, 1 channel	60	70	—	W
Operating voltage	$V_{op}$		—	13	16	V
Center emission wavelength	$\lambda_c$		895	905	915	nm
FWHM	$\Delta\lambda$		—	4	8	
Beam spread angle (FWHM)	Horizontal	$\theta_{//}$	6	10	14	° (Degrees)
	Vertical	$\theta_{\perp}$	20	25	30	
Threshold current	$I_{th}$	1 channel	—	0.6	—	A
Emitting area (FWHM)	$W$	Designing value, per 1 channel *1	—	230 × 10	—	μm × μm
Gap between channels (FWHM) *2	$\Delta d$		—	30	—	μm
Number of the channels	—	—	—	4	—	ch

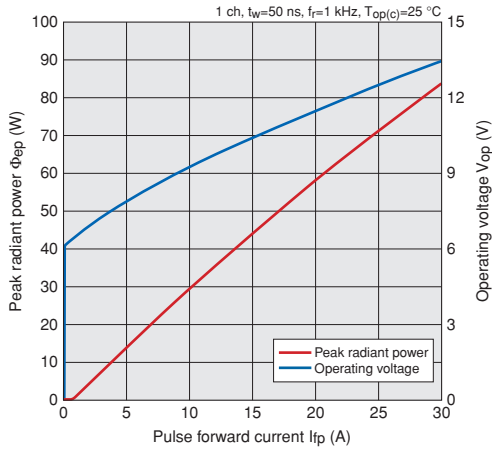
\*1 Second layer emission.

\*2 Distance of the non-light emitting section between each channel.

\* Drive condition:  $t_w=50$  ns,  $f_r=1$  kHz,  $T_{op(c)}=25$  °C

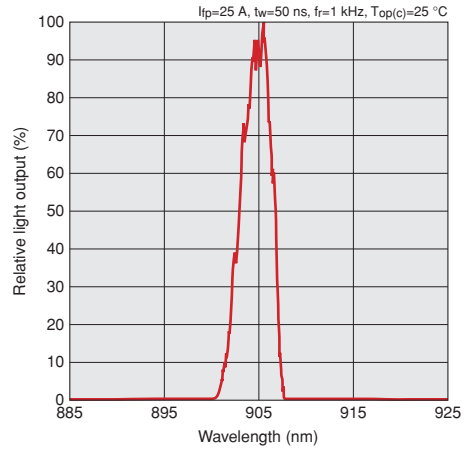
# Pulsed Laser Diode L15326-01

Figure 1: Peak radiant power - pulse forward current and operating voltage - pulse forward current (example)



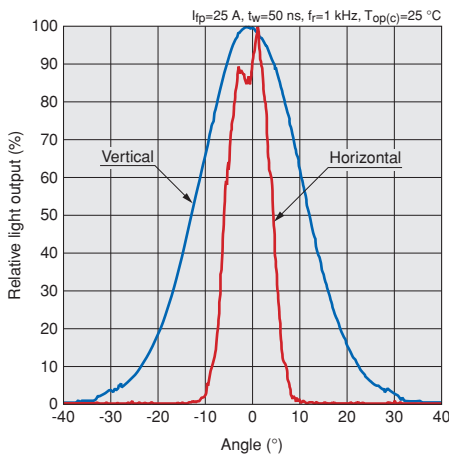
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Figure 2: Emission spectrum (example)



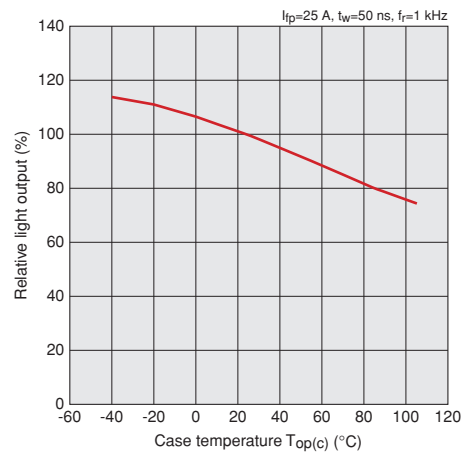
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Figure 3: Directivity (example)



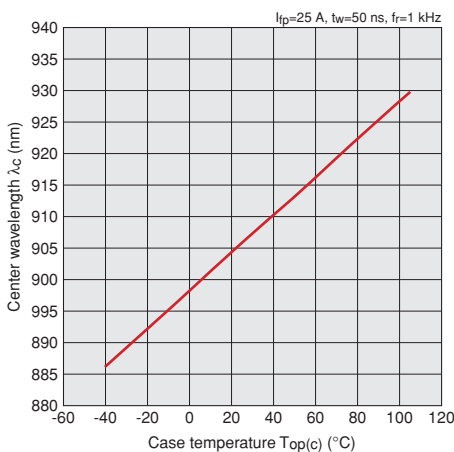
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Figure 4: Relative light output - case temperature (example)



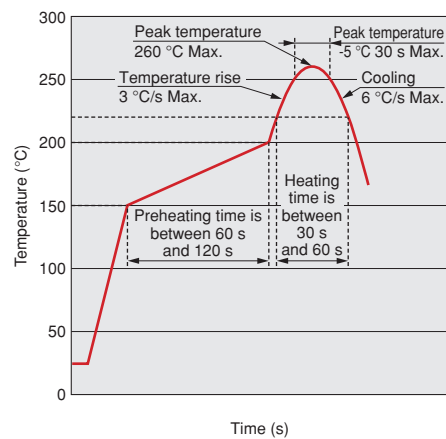
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Figure 5: Center wavelength - case temperature (example)



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Figure 6: Recommended reflow soldering condition

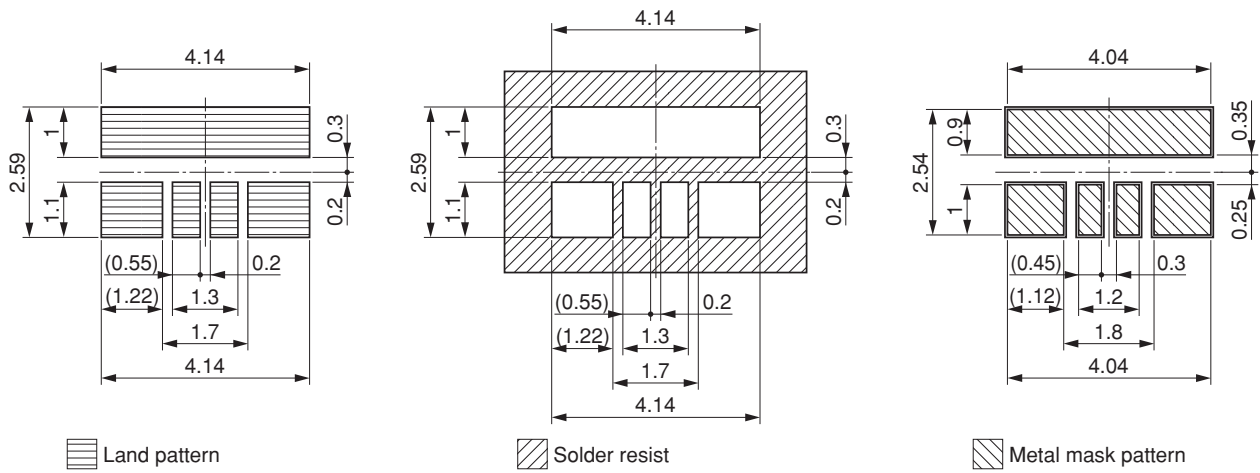


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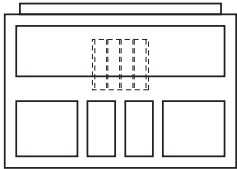
\* Depending on substrate and reflow furnace used, the effect of reflow soldering will differ. When setting the reflow soldering condition, perform experimentation beforehand to make sure that there are no issues with the product.

# Pulsed Laser Diode L15326-01

Figure 7: Recommended land patterns (unit : mm)



Element mounting position

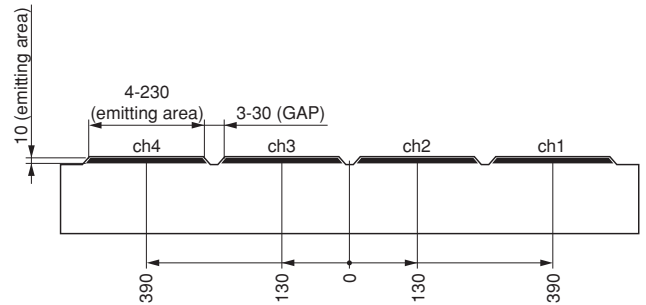


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Figure 8: NFP emitting pattern (example)



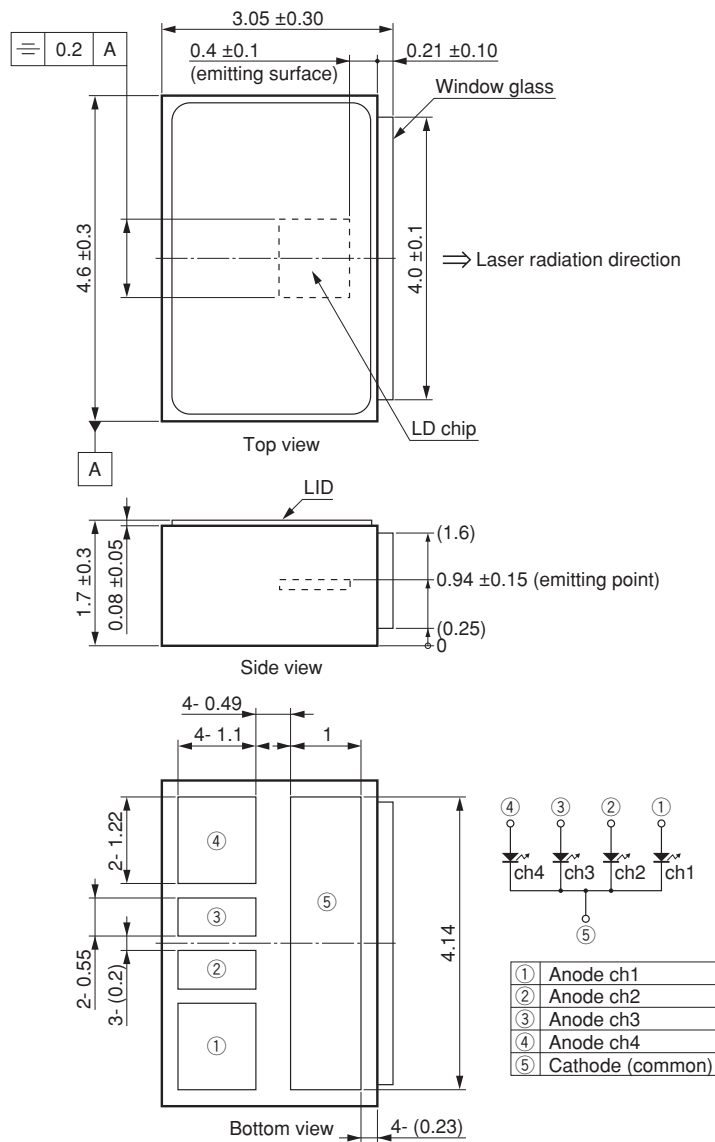
Figure 9: Dimensions of laser emitting surface (unit:  $\mu\text{m}$ )



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# Pulsed Laser Diode L15326-01

Figure 10: Dimensions and polarity (unit : mm)



\* Tolerances without indentations are  $\pm 0.2$  mm.

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## Warning (Class 3B Laser)

Invisible Laser radiation: Avoid exposure to beams

● The laser radiation emitted from this product is an invisible laser beam that cannot be seen by the human eye. This product falls within "Class 3B Laser" according to IEC 60825-1 laser product classification.

Always comply with IEC 60825-1 safety standards when using this product.

Examples of labels



Warning label

Class 3B Laser  
Explanatory label

LOGP070203CS

● Information described in this material current as of October 2023. Specifications are subject to change without notice.

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