

Description

LNCT22PK01WW is a MOCVD fabricated 660 nm and 780 nm band dual wavelength laser diode with multi quantum well structure, adapting open type frame package to reduce the size and weight.

Feature

- Dual wavelength: 661 nm (typ) and 785 nm (typ)
- High output power: 280 mW (pulse) for Red and 380 mW (pulse) for IR
- Package : Flat package
- Operating temperature : Max. +85°C

Application

- Optical disk drive
- Sensing
- Industrial use

Absolute Maximum Ratings ³⁾

LD	Item	Symbol	Value	Unit	Condition
RED	Output power	Po	100	mW	CW
			280	mW	pulse ¹⁾
	Reverse voltage	Vr	1.5	V	CW
	Operating case temperature	Tc	-10 to +85	°C	CW/pulse
IR	Output power	Po	200	mW	CW
			380	mW	pulse ²⁾
	Reverse voltage	Vr	1.5	V	CW
	Operating case temperature	Tc	-10 to +85	°C	CW/pulse
	Storage temperature	Tstg	-40 to +85	°C	

Note) 1) Pulse width ≤ 30 ns, duty ≤ 33% for RED-LD

2) Pulse width ≤ 100 ns, duty ≤ 50% for IR-LD

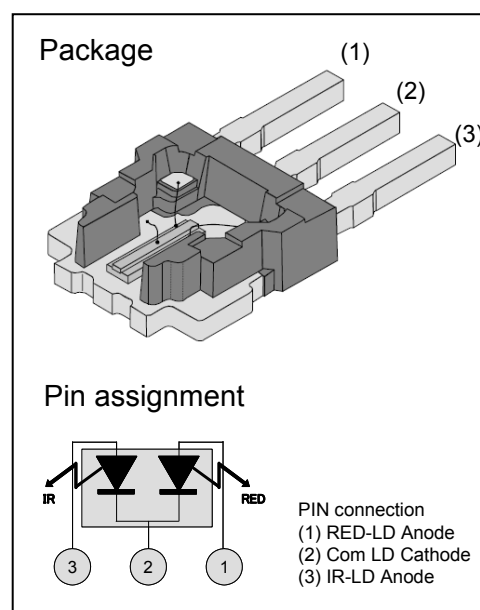
3) These ratings are guaranteed only when RED-LD or IR-LD is turned on individually.

Electrical and Optical Characteristics

Tc = 25°C, CW, Po = 100mW for RED-LD, 200mW for IR-LD

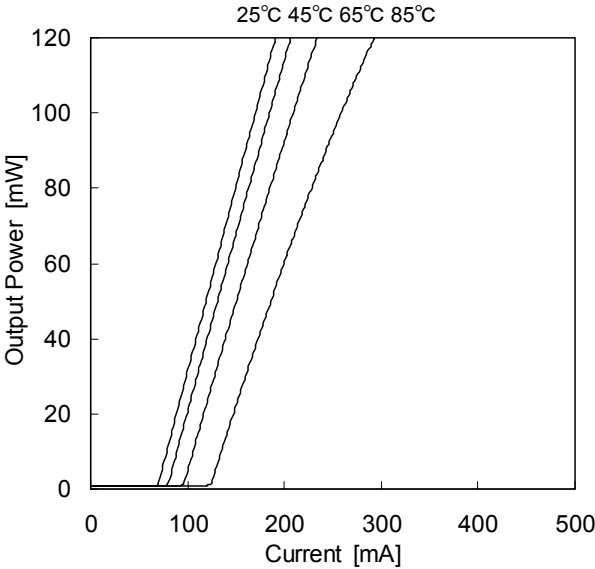
LD	Item		Symbol	Min.	Typ.	Max.	Unit	Condition
RED	Threshold current		Ith	-	65	95	mA	
	Operating current		Iop	-	160	230	mA	
	Operating voltage		Vop	-	2.3	3.0	V	
	Wavelength		λ	656	661	665	nm	
	Beam divergence	Parallel	θh	7.5	9.0	13.0	deg	FWHM
		Perpendicular	θv	13.0	16.0	19.5	deg	FWHM
IR	Threshold current		Ith	-	60	95	mA	
	Operating current		Iop	-	260	380	mA	
	Operating voltage		Vop	-	2.4	3.2	V	
	Wavelength		λ	777	785	791	nm	
	Beam divergence	Parallel	θh	6.0	7.5	11.5	deg	FWHM
		Perpendicular	θv	12.0	15.0	19.0	deg	FWHM

FWHM : Full width at half maximum

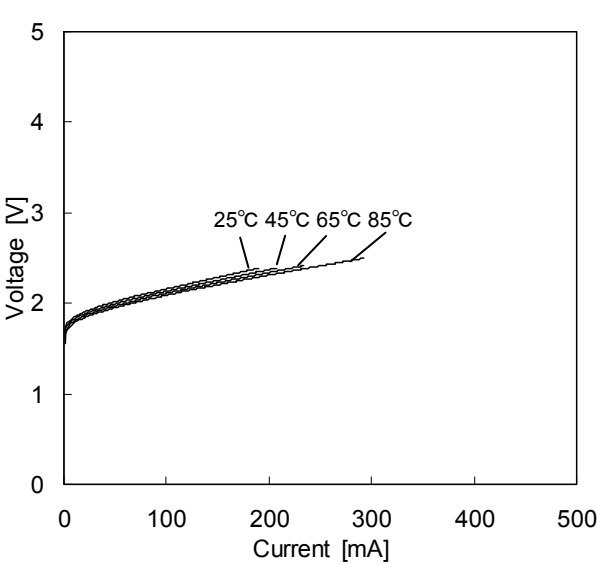


Representative Characteristics [RED-LD]

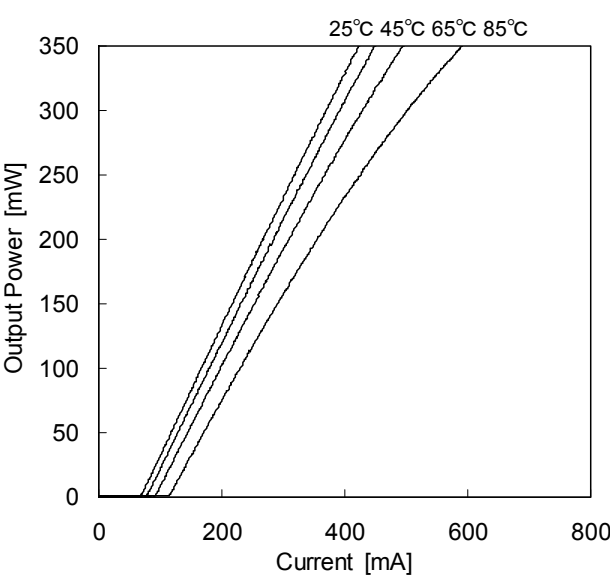
Output Power vs Current (CW)



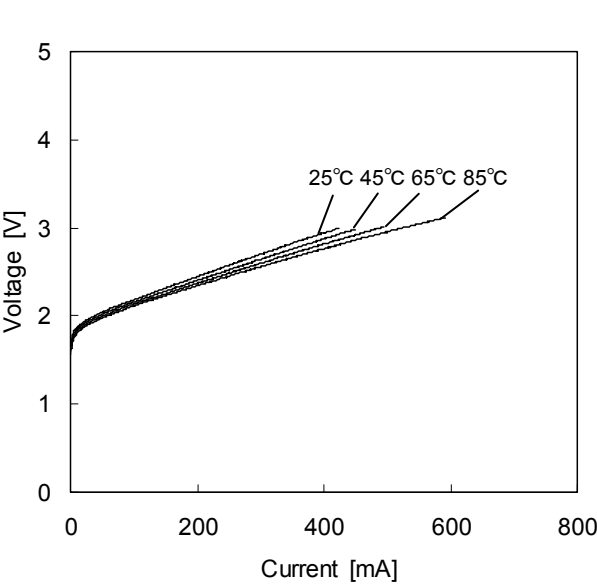
Voltage vs Current (CW)



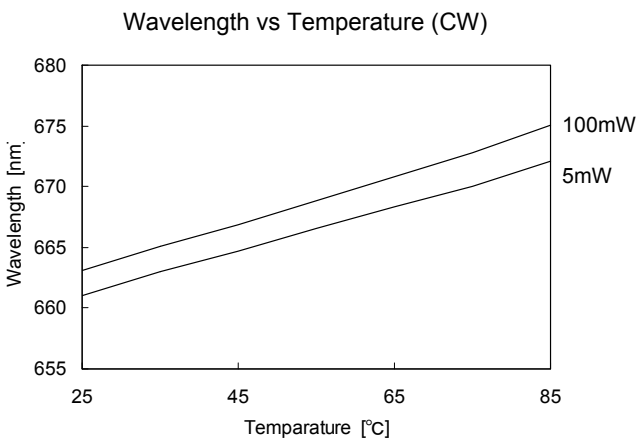
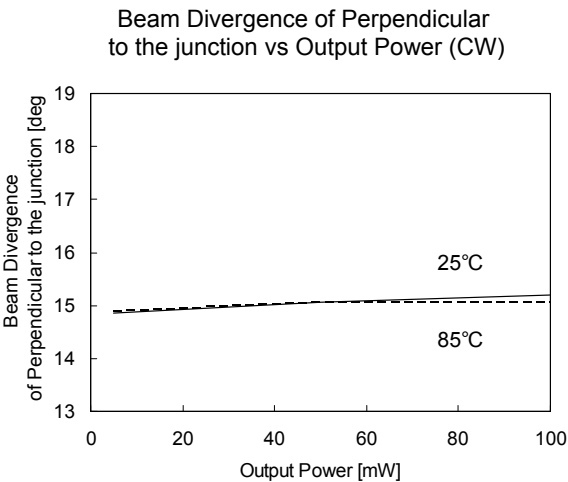
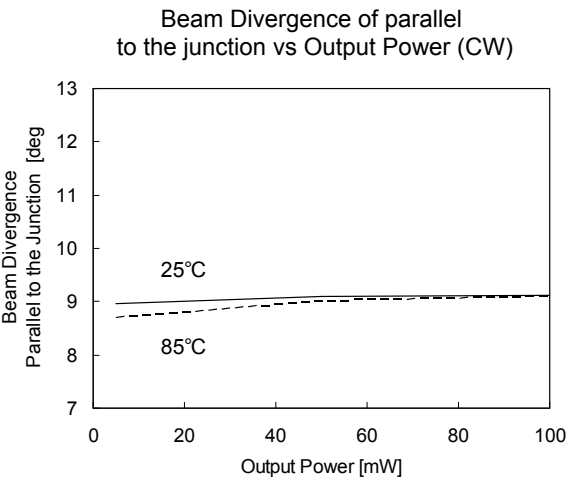
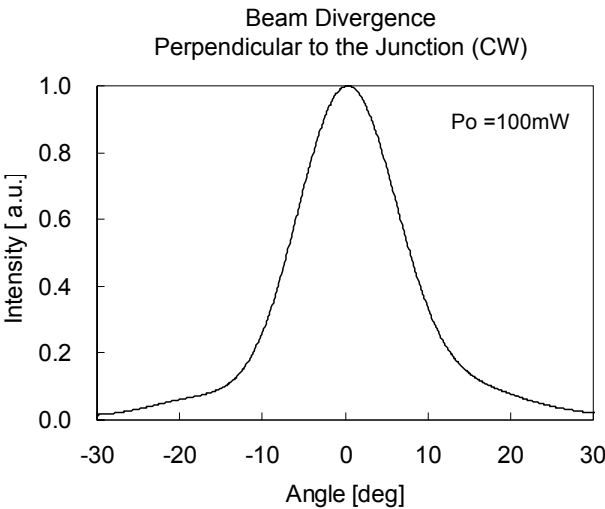
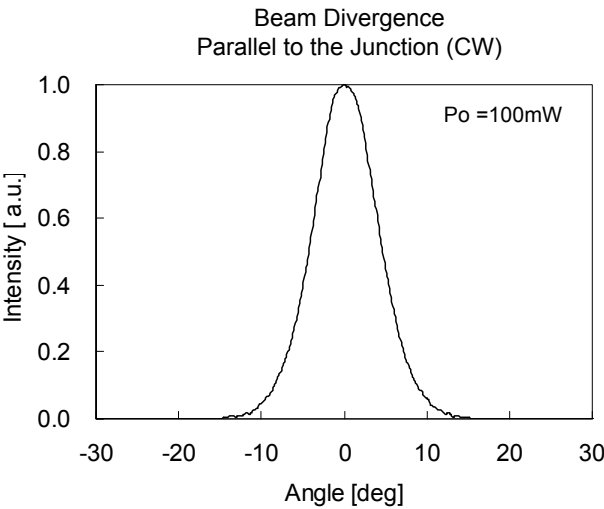
Output Power vs Current (Pulse)



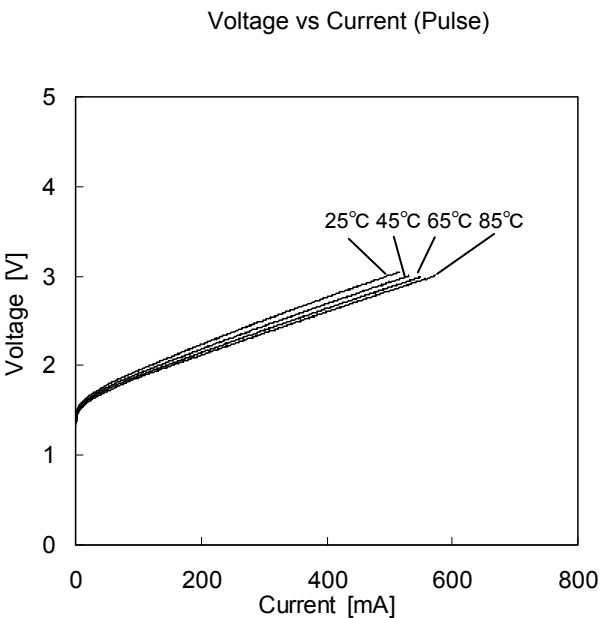
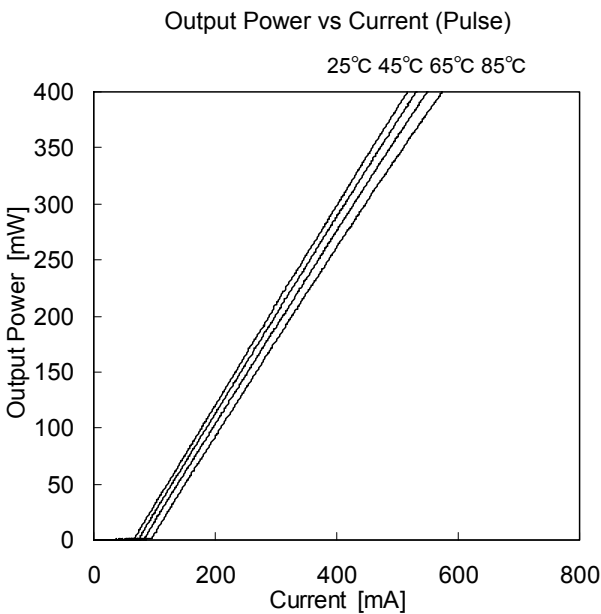
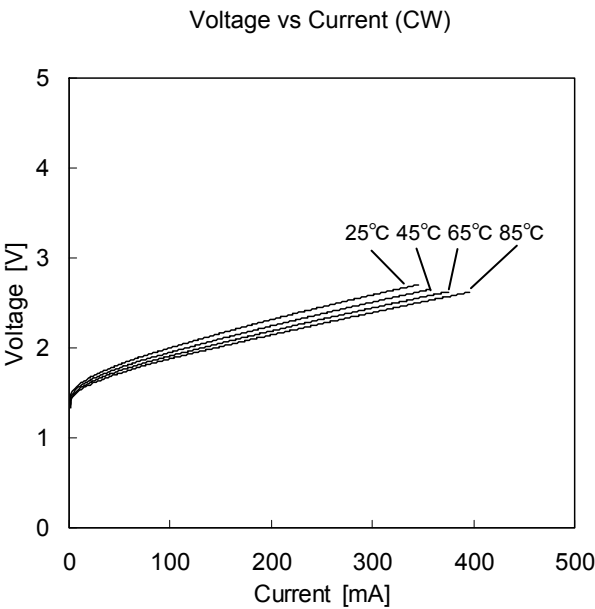
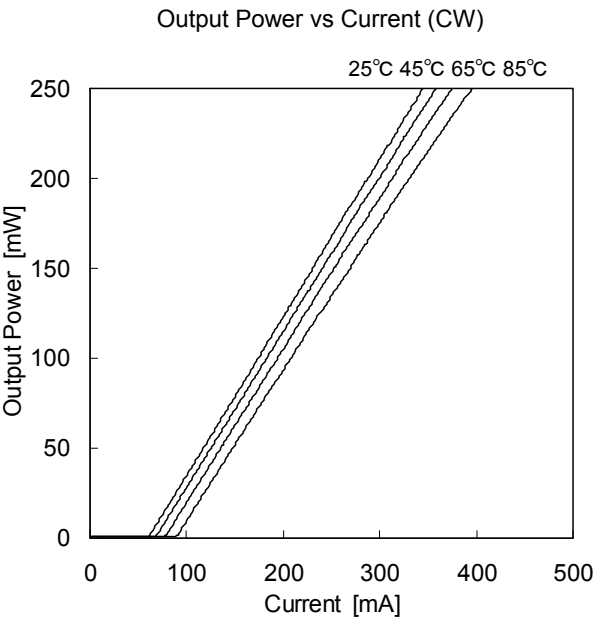
Voltage vs Current (Pulse)



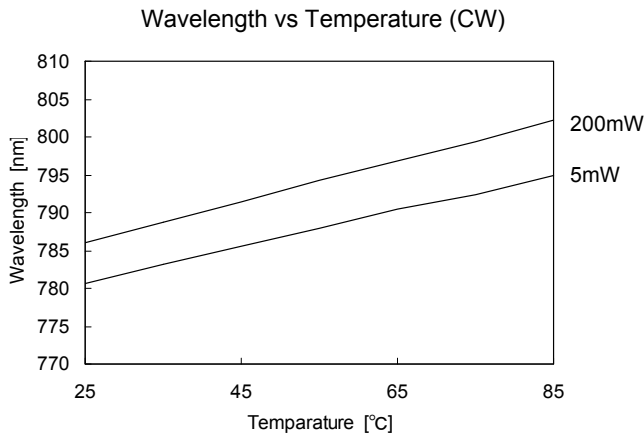
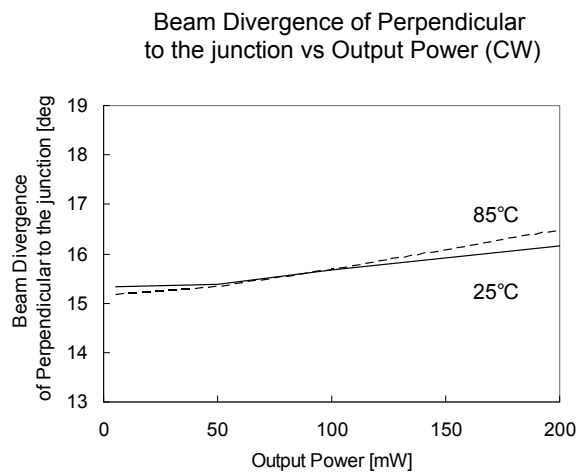
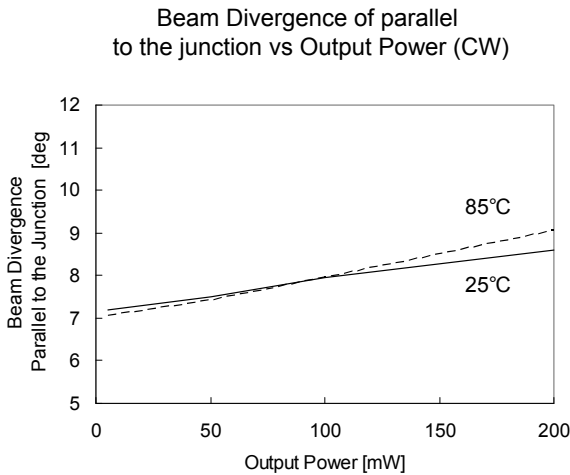
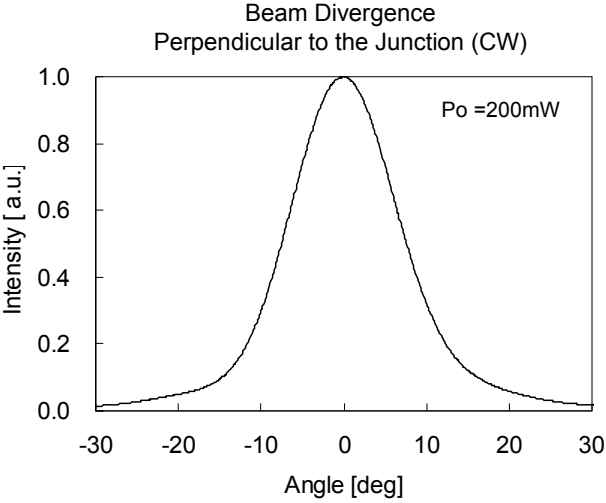
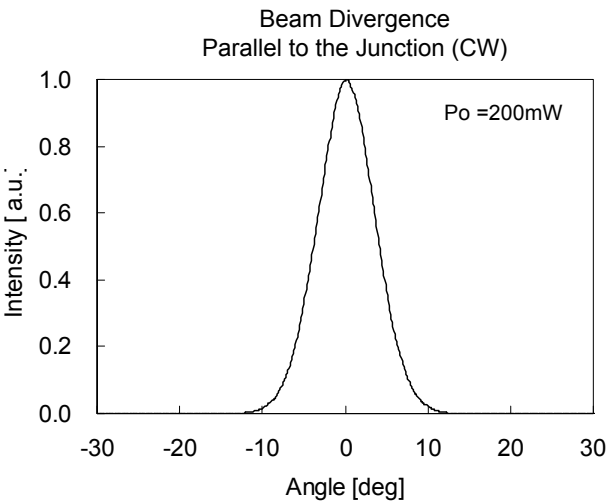
Representative Characteristics [RED-LD]

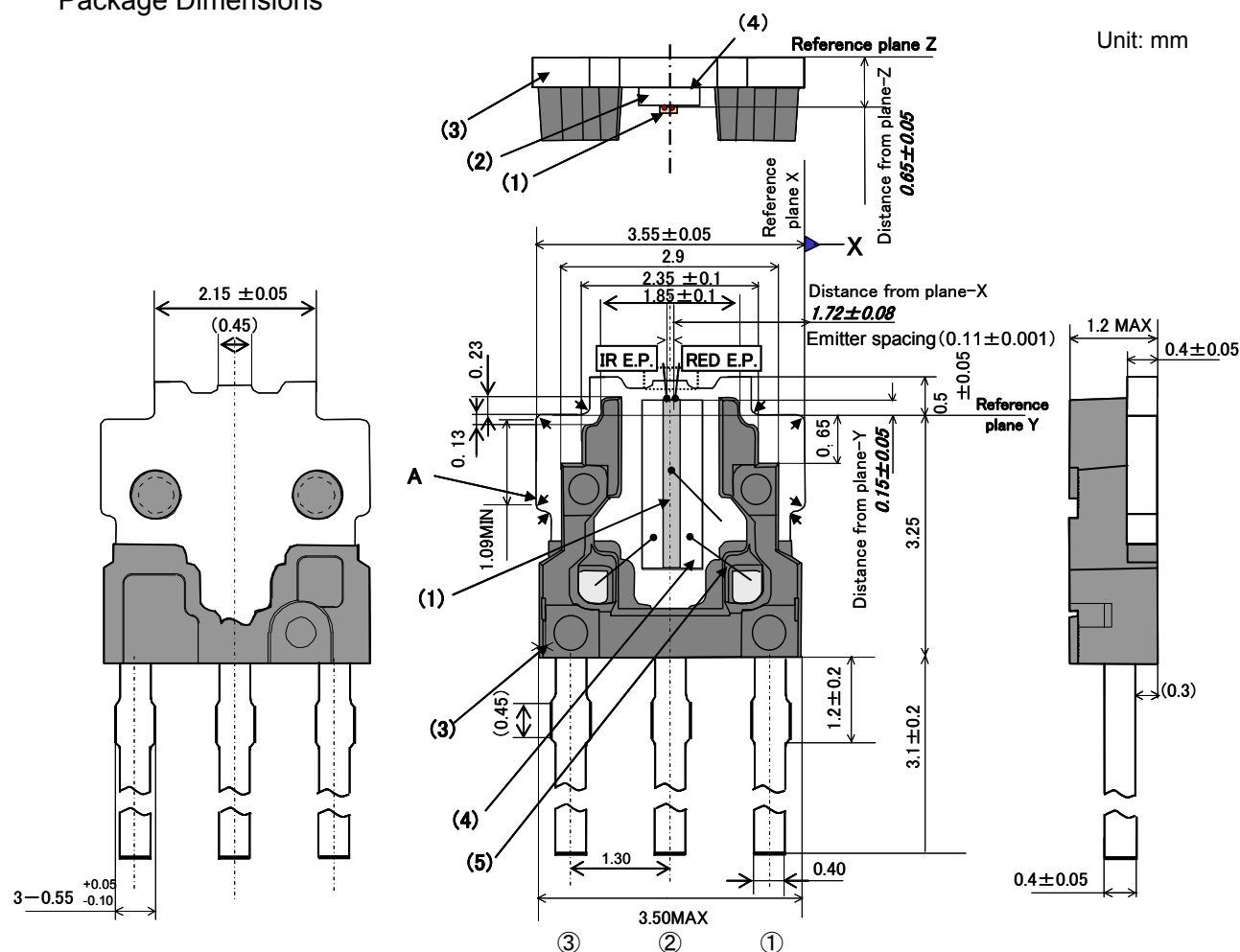


Representative Characteristics [IR-LD]



Representative Characteristics [IR-LD]





- (1) LD Chip
- (2) Submount
- (3) Package
- (4) Ag Paste
- (5) Au Wire

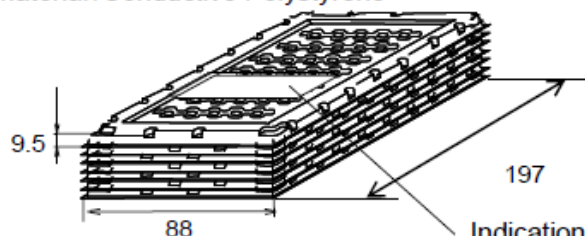
- E.P. = Emitting point
- General corner R is 0.25mm

Packing Specification

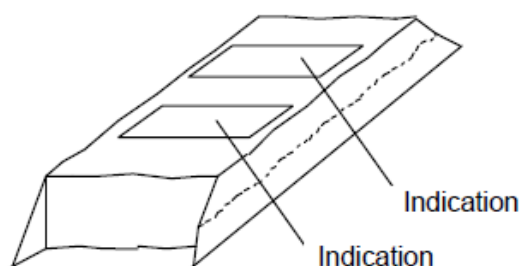
1 Packing Material

1.1 Tray

Material: Conductive Polystyrene

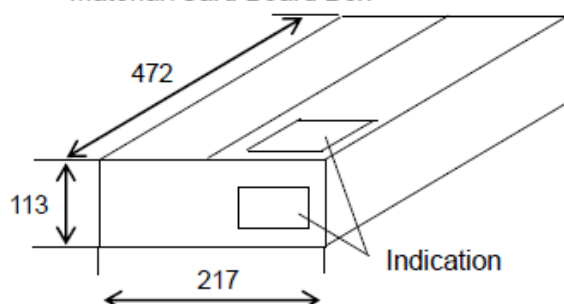


1.2 Laminated Aluminum Cover



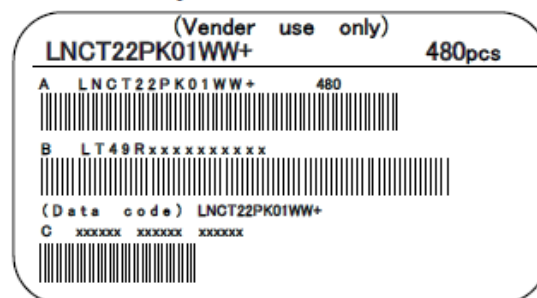
1.3 Packing Case

Material: Card Board Box

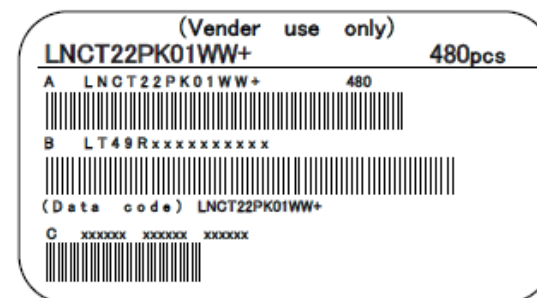
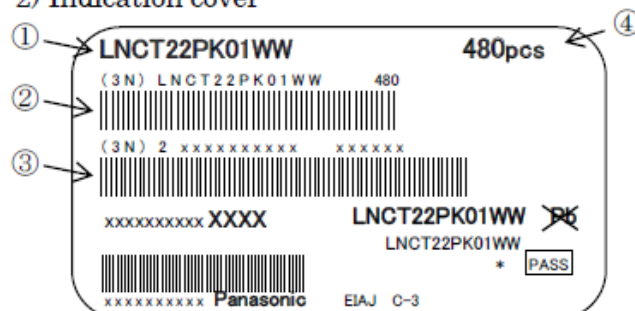


※As for label indication except ① (Order person part number), ② (Order person part number and Quantity), ③ (Serial number and Corporate code), ④ (Quantity), the information only for our process control, therefore please note that revision without notice might be done due to improvement etc.

1) Indication tray



2) Indication cover



3) Indication packing case



2 Packaging Quantity

Form	Quantity	Contents	Note
Tray	n=80	---	---
Laminated Aluminum Cover	n=480	Tray 7	Wrap The Product and The Desiccant
Packing Case	n=4800	Al Cover 10	---

Cautions

■ Laser class

This product is ranked in class IIIB laser according to IEC60825-1 and JIS standard 6802 "Laser Product Emission Safety Standards", so that safety protection is necessary when laser beam is radiated.

■ Flat package laser diode (FLD)

This product is adopting open type plastic package for the reduction of size and weight, so please take care of dust and touching laser diode with tweezers.

■ Prevention of Electrostatic discharge (ESD) and surge stress

Semiconductor laser diode is sensitive device to ESD and surge, so that sufficient cautions are needed. If electric pulses that may cause emission are inputted, the laser itself will be damaged by light intensity and will bring the laser diode degradation in a short time. Therefore, taking all possible measures against ESD and surge for FLD usage is strongly requested.

■ Heat sink design

If case temperature becomes higher, the life of semiconductor laser diode becomes shorter. So it is important that design for heat radiation is appropriated. Especially it is effective to make the heat radiation from metal moiety of the package back side, locating under the submount and laser diode.

■ Precaution at soldering

When soldering, please give attention to the mechanical stress and the temperature because of using Ag paste. Temperature of die-pad portion should be less than 200°C. It is recommended to radiate heat by putting heat sink on the package.

Soldering temperature and time

Temperature : Less than 360°C (FLD only)

Less than 380°C (FLD with holder for heat radiation)

Time : Within 5sec (Recommend within 3sec)

Request for your special attention and precautions in using the technical information and semiconductors described in this book

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for general applications (such as office equipment, communications equipment, measuring instruments and household appliances), or for specific applications as expressly stated in this book.
Consult our sales staff in advance for information on the following applications:
 - Special applications (such as for airplanes, aerospace, automotive equipment, traffic signaling equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.It is to be understood that our company shall not be held responsible for any damage incurred as a result of or in connection with your using the products described in this book for any special application, unless our company agrees to your using the products in this book for any special application.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of our company.