Panasonic

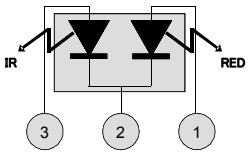
LNCT28PS01WW

Description

LNCT28PS01WW is a MOCVD fabricated 660nm and 780nm band dual wavelength laser diode with multi quantum well structure, using TO-56 CAN package to ensure versatile use.

Package

Pin assignment



PIN connection
(1) RED-LD Anode
(2) Com LD Cathode
(3) IR-LD Anode

Features

- Dual wavelength: 661 nm (typ) and 783 nm (typ)
- High output power: 100 mW (CW) for Red and 200 mW (CW) for IR
- Package: TO-56 CAN

Applications

- Optical disk drive
- Sensing
- Analysis
- Measurement
- Agriculture
- Other industrial use

Absolute Maximum Ratings [1)]

LD	Item	Symbol	Value	Unit	Condition
RED	Output power	Po	100	mW	CW
	Reverse voltage	Vr	1.5	V	CW
	Operating case temperature	Tc	–10 to +70	°C	CW
IR	Output power	Po	200	mW	CW
	Reverse voltage	Vr	1.5	V	CW
	Operating case temperature	Tc	–10 to +70	°C	CW
	Storage temperature	Tstg	–40 to +85	°C	

Note) 1) These ratings are guaranteed only when RED-LD or IR-LD is turned on individually.

Electrical and Optical Characteristics

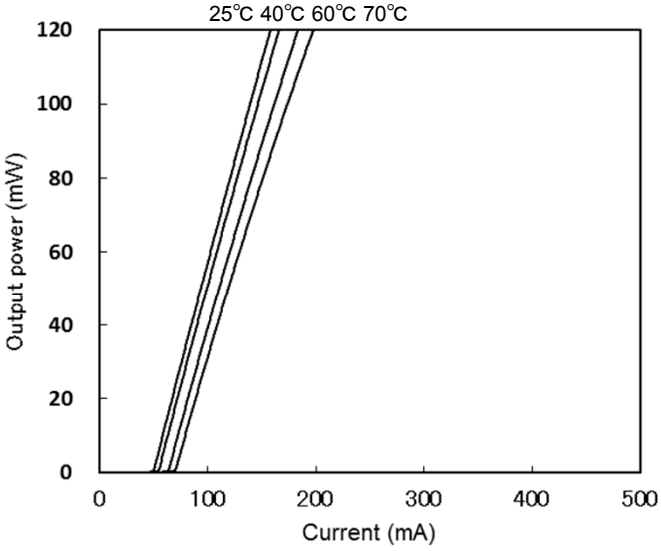
T=25°C, CW, Po=90 mW for RED-LD, 175 mW for IR-LD

LD	Item		Symbol	Min.	Typ.	Max.	Unit	Condition
RED	Threshold current		Ith	-	50	80	mA	
	Operating current		Iop	-	128	180	mA	
	Operating voltage		Vop	-	2.4	3.0	V	
	Wavelength		λ	656	661	665	nm	
	Beam Divergence	Parallel	θh	7.5	-	13.0	deg	FWHM
		Perpendicular	θv	13.0	-	19.5	deg	FWHM
IR	Threshold current		Ith	-	45	70	mA	
	Operating current		Iop	-	210	275	mA	
	Operating voltage		Vop	-	2.5	3.0	V	
	Wavelength		λ	777	783	791	Nm	
	Beam divergence	Parallel	θh	6.0	-	11.5	deg	FWHM
		Perpendicular	θv	12.0	-	19.0	deg	FWHM

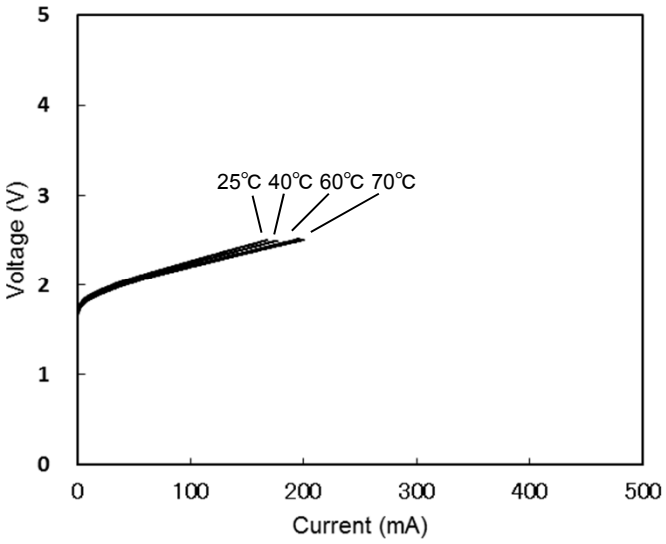
FWHM: Full width at half maximum

Typical Characteristics [RED-LD]

Output Power vs Current (CW)

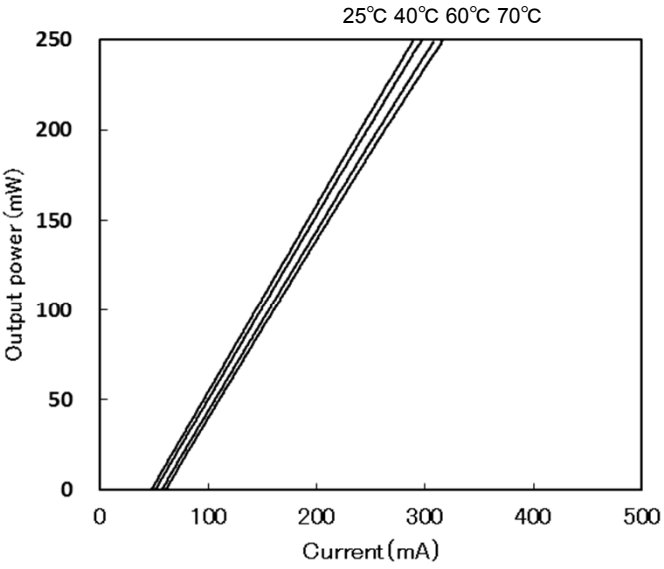


Voltage vs Current (CW)

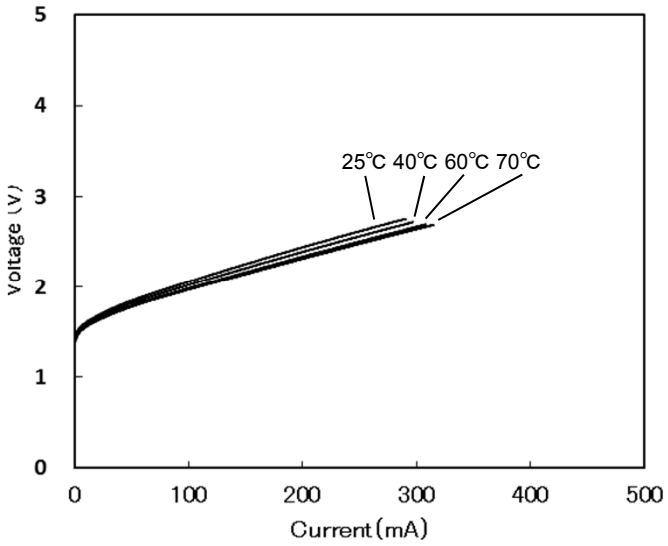


Typical Characteristics [IR-LD]

Output Power vs Current (CW)

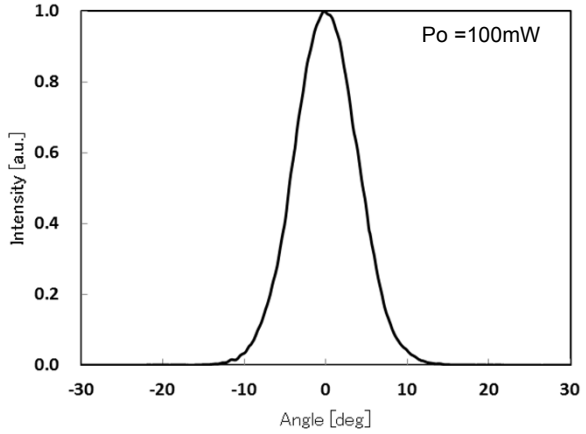


Voltage vs Current (CW)

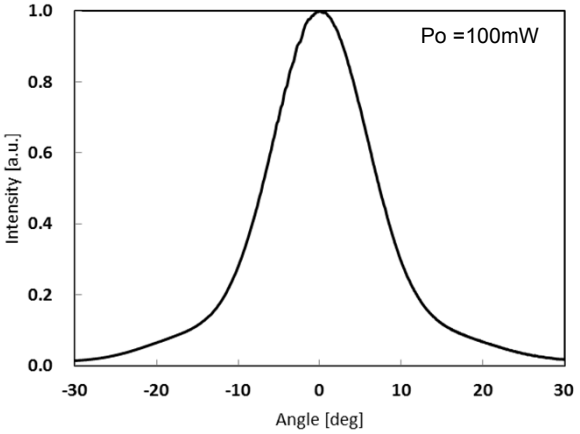


Typical Characteristics [RED-LD]

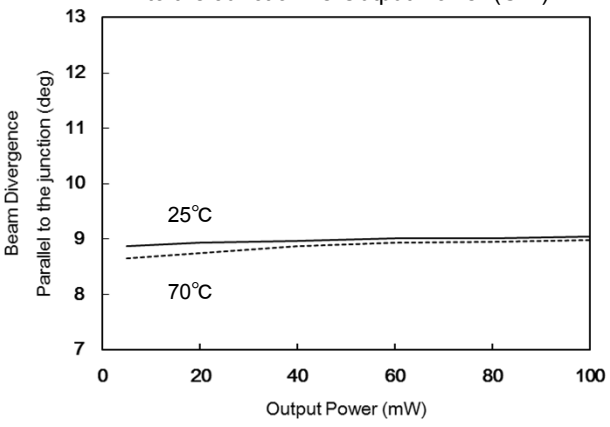
Beam Divergence
Parallel to the Junction (CW)



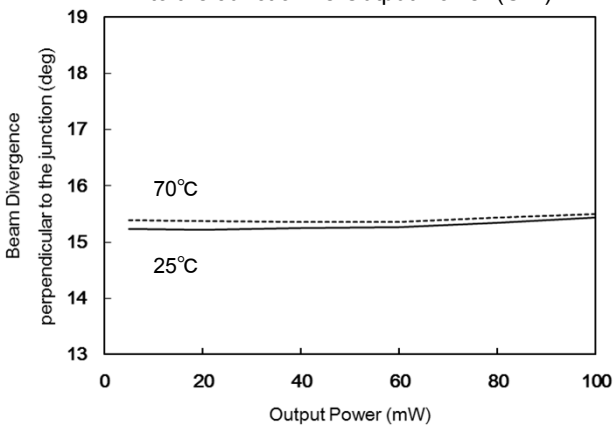
Beam Divergence
Perpendicular to the Junction (CW)



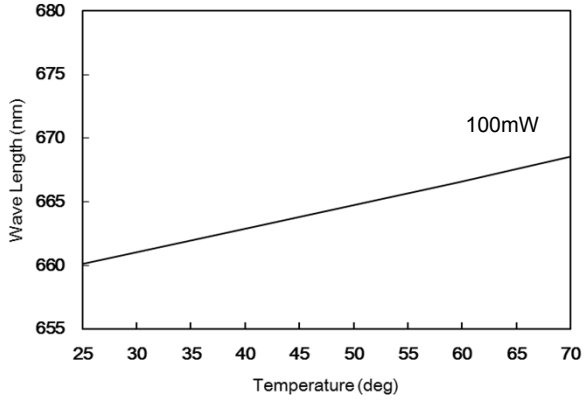
Beam Divergence of Parallel
to the Junction vs Output Power (CW)



Beam Divergence of Perpendicular
to the Junction vs Output Power (CW)

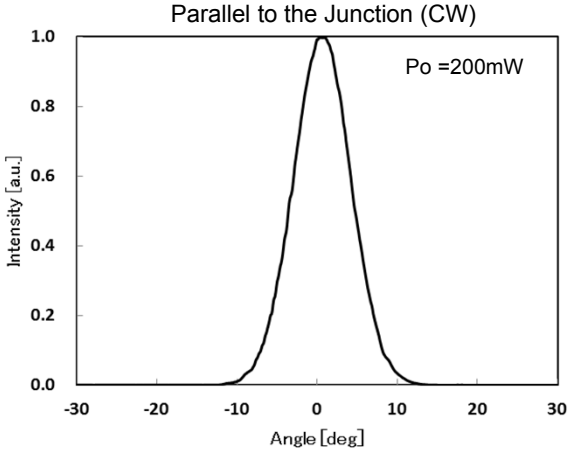


Wavelength vs Temperature (CW)

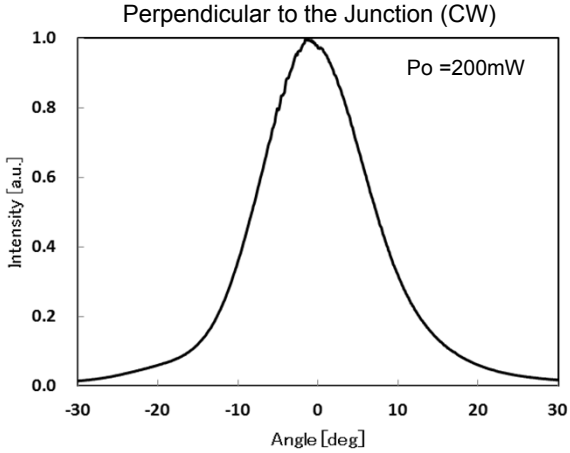


Typical Characteristics [IR-LD]

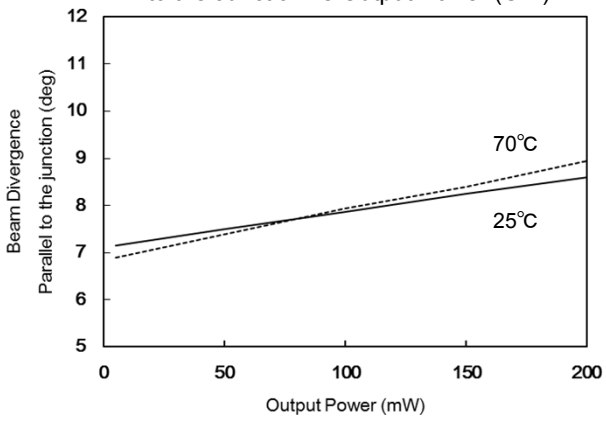
Beam Divergence
Parallel to the Junction (CW)



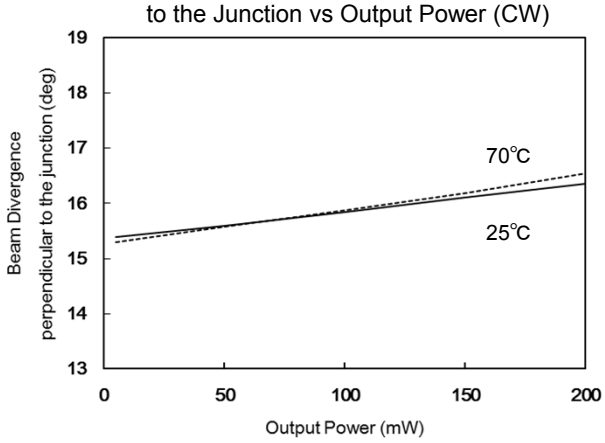
Beam Divergence
Perpendicular to the Junction (CW)



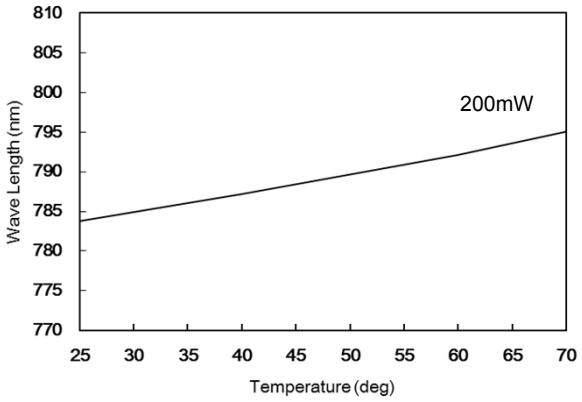
Beam Divergence of Parallel
to the Junction vs Output Power (CW)



Beam Divergence of Perpendicular
to the Junction vs Output Power (CW)

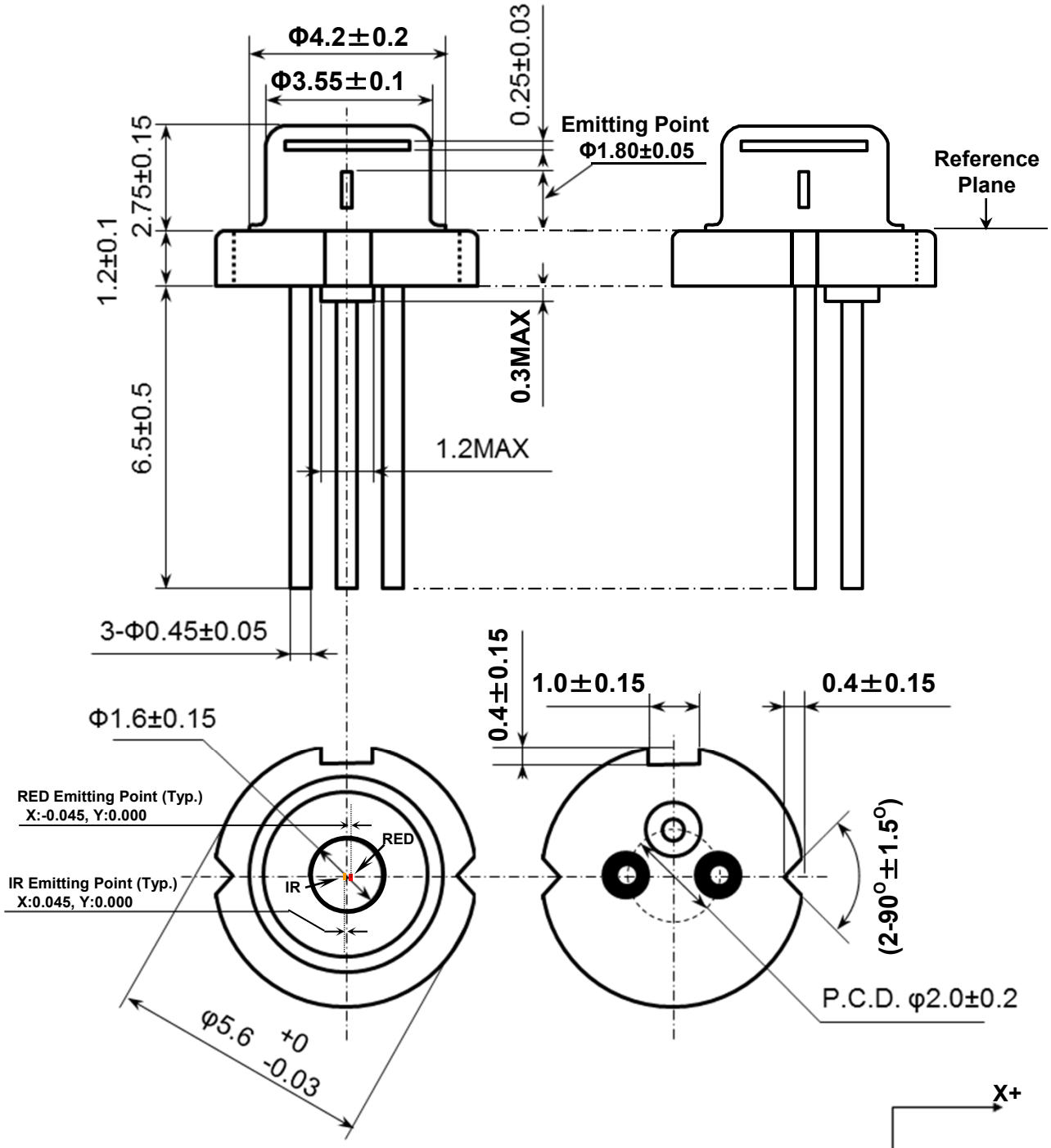


Wavelength vs Temperature (CW)



Package Dimensions

Unit: mm



Note)

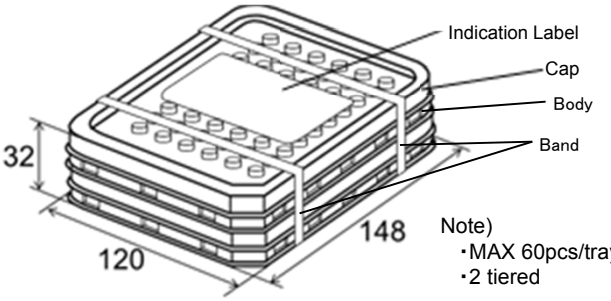
1. X-Y tolerance of lead is specified on the package bottom plane.
2. Tolerance of Emitting Point is ΔX : ±0.08, ΔY : ±0.05.
   The reference to the middle point of the IR and RED emission point for X direction.

Packing Specifications

1 Packing Material

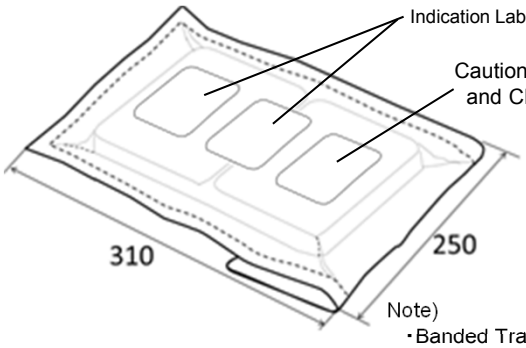
1.1 Tray

Material: PS Conductive (Black)



Note)
・MAX 60pcs/tray
・2 tiered

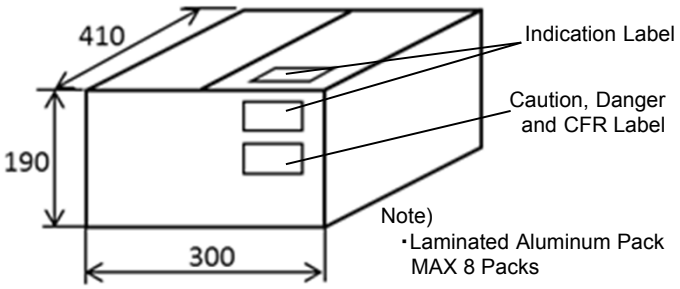
1.2 Laminated Aluminum Pack



Note)
・Banded Trays MAX 2 sets

1.3 Packing Case

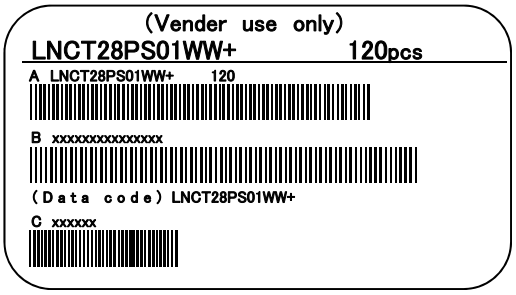
Material: Corrugated fiber board



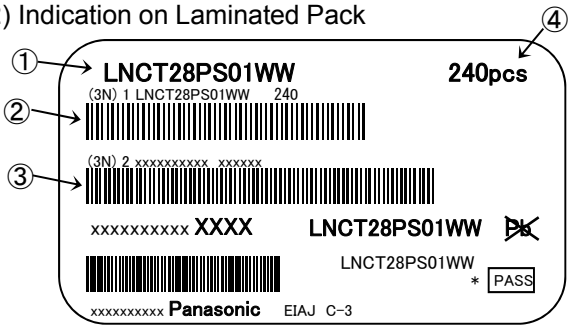
Note)
・Laminated Aluminum Pack
MAX 8 Packs

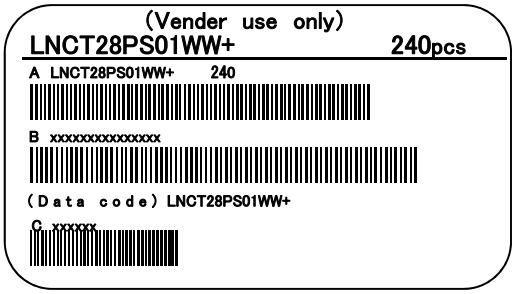
※As for label indication except ①(Order person part number), ②(Order person part number and Quantity), ③(Serial number and Corporate code), and ④(Quantity), the information only for our process control. Therefore, revision might be done for improvement without notice.

1) Indication on Top Tray

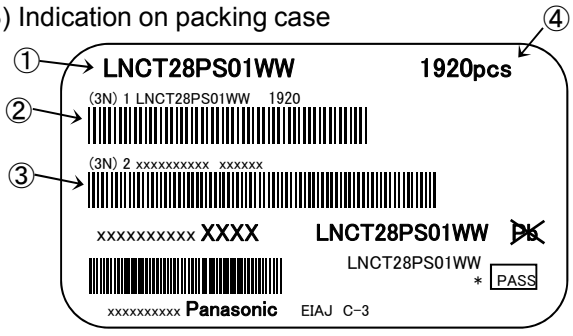


2) Indication on Laminated Pack





3) Indication on packing case



2 Packaging Quantity

Form	Quantity	Contents
Tray	n=60	--
Laminated Aluminum Pack	n=240	Tray: 4
Packing Case	n=240 to 1920	Aluminum Pack: 1 to 8

Warning

■ Laser class
This product is ranked “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.

Cautions

■ TO-56 CAN packaged laser diode
This product uses a TO-56 CAN package to ensure versatile use.

■ Prevention of Electrostatic discharge (ESD) and surge stress
Semiconductor laser diode is a device sensitive to ESD and surge, so that sufficient cautions are needed. If electrostatic discharge is applied to a laser diode, intensive light emission may occur instantaneously, leading to the potential for catastrophic damage in the laser diode or degradation of the laser diode in a short time.
Therefore, taking all possible measures against ESD and surge for usage of CAN packaged laser diode is strongly requested.

■ Heat sink design
As case temperature becomes higher, the life of semiconductor laser diode becomes shorter. So appropriate heat dissipation design is required. Especially it is effective to make a thermal connection to the highly thermally conductive heat sink at the base plate of a TO56 package.

■ Precautions for soldering
Excess heating to laser diode package during soldering may affect eutectic solder and/or laser diode itself. Soldering must be done as quickly as possible with controlling the heating temperature. Lead(terminal) soldering with appropriate cooling time is strongly recommended. Also, soldering position of lead(terminal) is recommended to be more than 2mm away from the package body.

・Soldering temperature: below 350℃
・Heating period: within 3 s
・Soldering position: 2mm away from the package body

⚠Caution for Safety

⚠DANGER

■ This product contains Gallium Arsenide (GaAs).

GaAs powder and vapor are hazardous to human health if inhaled or ingested. Do not burn, destroy, cut, cleave off, or chemically dissolve the product. Follow related laws and ordinances for disposal. The product should be excluded from general industrial waste or household garbage.

■ Do not touch or look into the laser beam directly.

The laser beam may cause injury to the eye or skin, or loss of eyesight.

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

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(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.

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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.