Panasonic

LNCQ28MS01WW

Description

LNCQ28MS01WW is a MOCVD fabricated 660nm band wavelength laser diode with multi quantum well structure, using TO-56 CAN package to ensure versatile use.

Features

- Wavelength: 661 nm (typ.)
- High output power and temperature: 100 mW, Max+85°C (CW)
  300 mW, Max+85°C (pulse)
  350 mW, Max+75°C (pulse)
- Package: TO-56 CAN
- With photo diode(PD)

Package

Applications

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

Absolute Maximum Ratings

Item		Symbol	Value	Unit	Condition
Output power		Po	100	mW	CW
			300	mW	pulse[1)]
			350	mW	pulse[2)]
Reverse voltage	LD	Vr_LD	1.5	V	CW
	PD	Vr_PD	5	V	CW
Operating case temperature		Tc	–10 to +85	°C	CW
			–10 to +85	°C	pulse[1)]
Storage temperature		Tstg	–40 to +85	°C	

Note) 1) Pulse width≦40ns, duty≦33%
2) Pulse width≦40ns, duty≦33% Operating case temperature condition: -10～+75°C

Electrical and Optical Characteristics

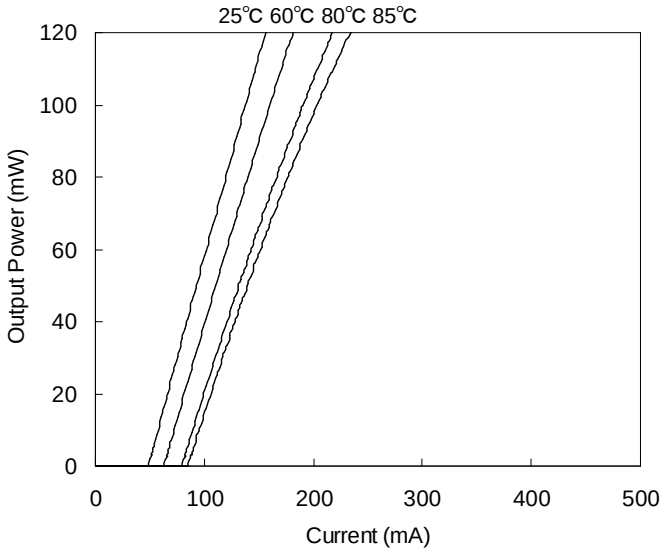
T=25°C, CW, Po=90 mW

Item		Symbol	Min.	Typ.	Max.	Unit	Condition
Threshold current		Ith	35	50	70	mA	
Operating current		Iop	110	128	165	mA	
Operating voltage		Vop	2.0	2.4	3.0	V	
Monitoring Current		Im	0.1	0.4	1.0	mA	
Wavelength		λ	656	661	665	nm	
Beam Divergence	Parallel	θh	7.5	9.0	13.0	deg	FWHM
	Perpendicular	θv	13.0	15.0	19.5	deg	FWHM

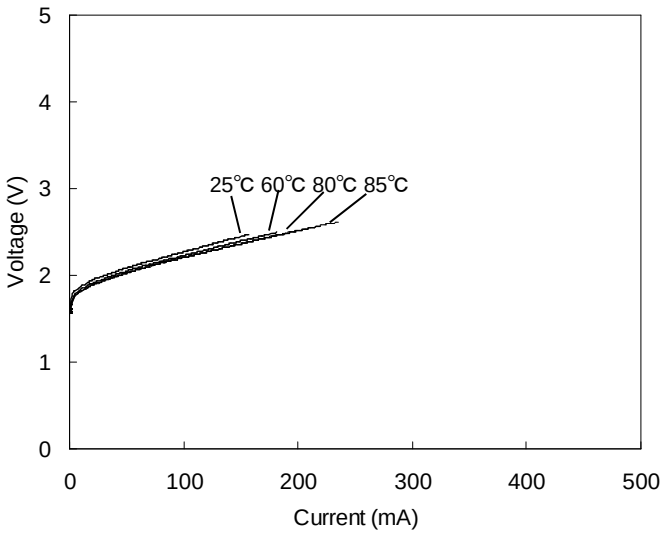
FWHM: Full width at half maximum

Typical Characteristics

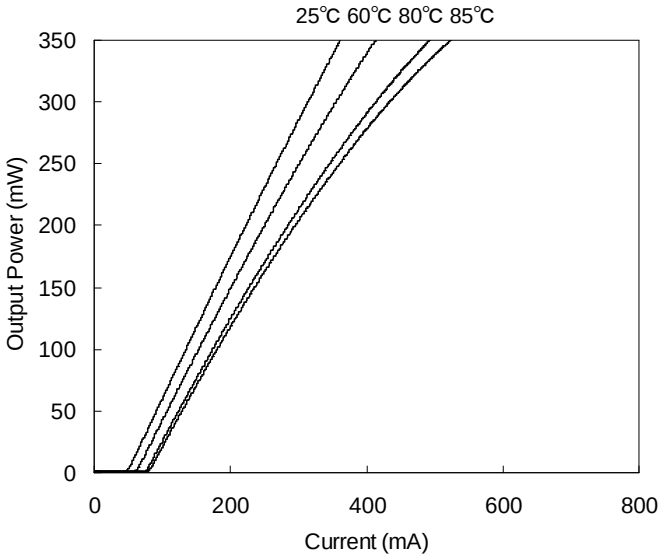
Output Power vs Current (CW)



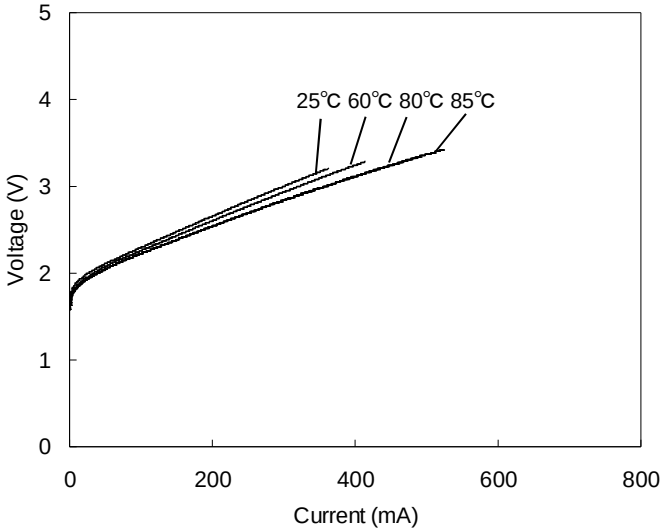
Voltage vs Current (CW)



Output Power vs Current (Pulse)

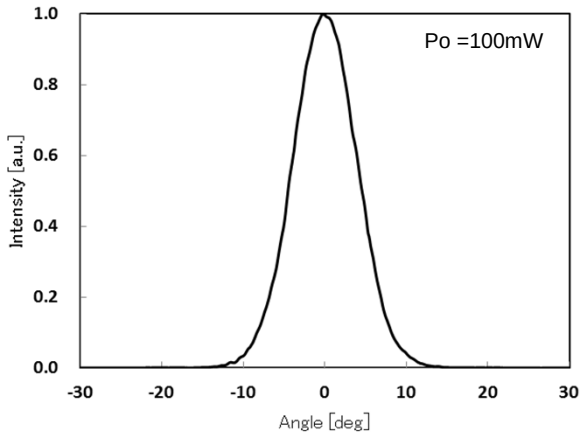


Voltage vs Current (Pulse)

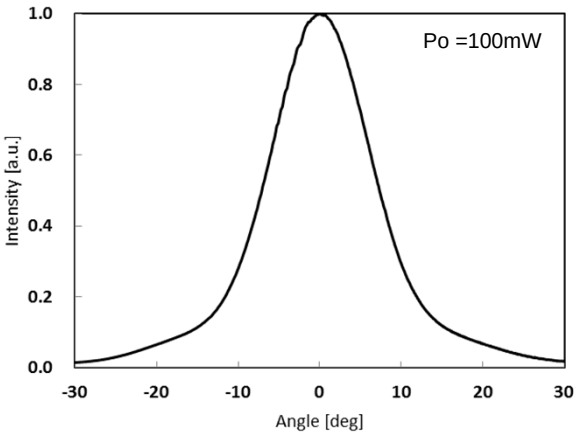


Typical Characteristics

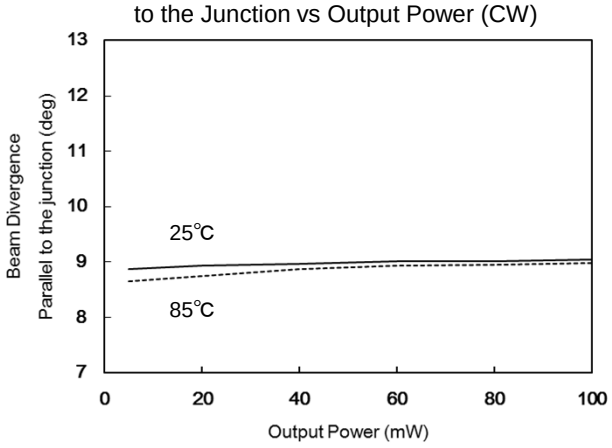
Beam Divergence
Parallel to the Junction (CW)



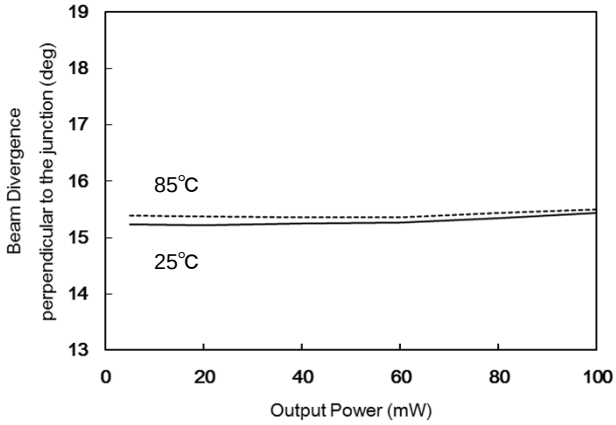
Beam Divergence
Perpendicular to the Junction (CW)



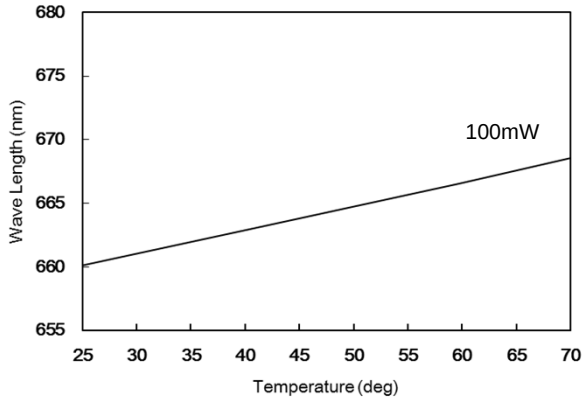
Beam Divergence of Parallel
to the Junction vs Output Power (CW)



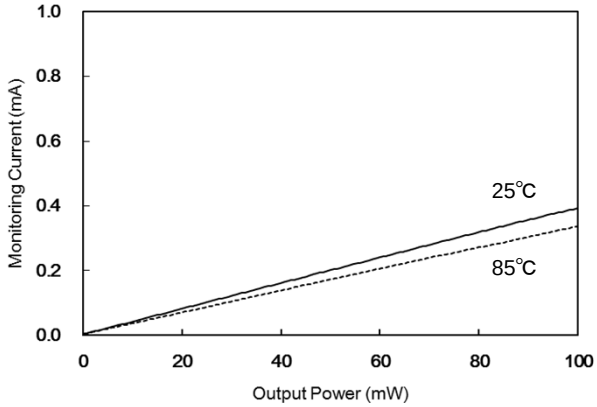
Beam Divergence of Perpendicular
to the Junction vs Output Power (CW)



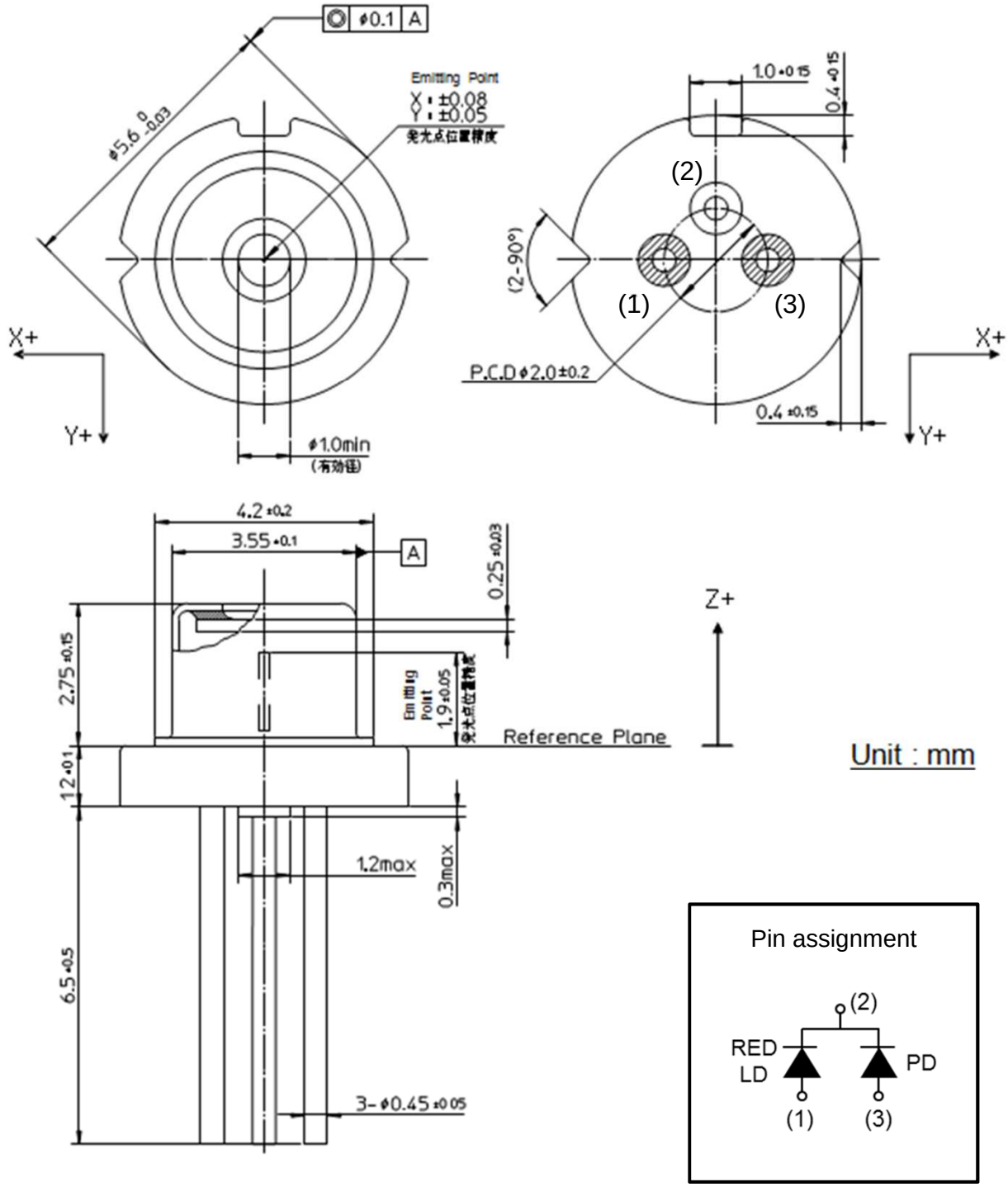
Wavelength vs Temperature (CW)



Monitoring Current vs Output Power (CW)



Package Dimensions



Note)

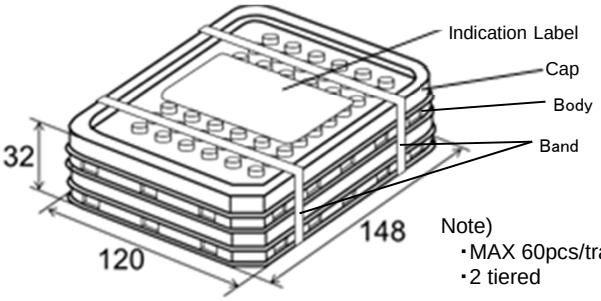
1. X-Y tolerance of lead is specified on the package bottom plane.

Packing Specifications

1 Packing Material

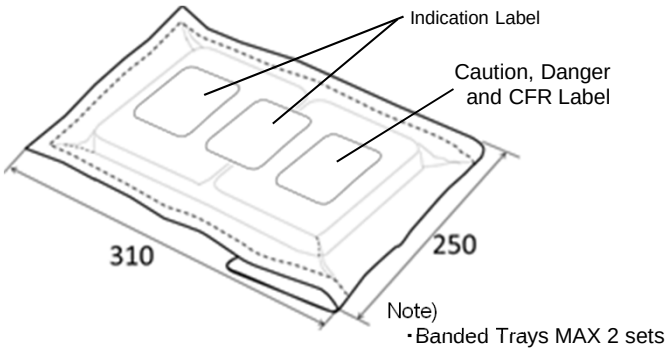
1.1 Tray

Material: PS Conductive (Black)



Note)
・MAX 60pcs/tray
・2 tiered

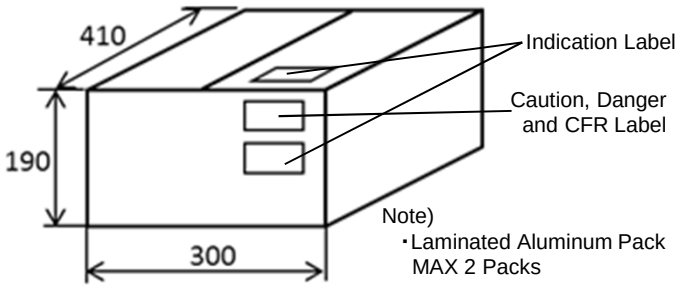
1.2 Laminated Aluminum Pack



Note)
・Banded Trays MAX 2 sets

1.3 Packing Case

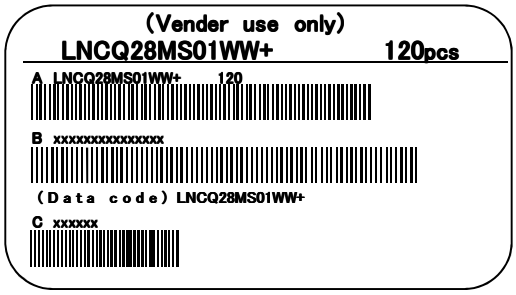
Material: Corrugated fiber board



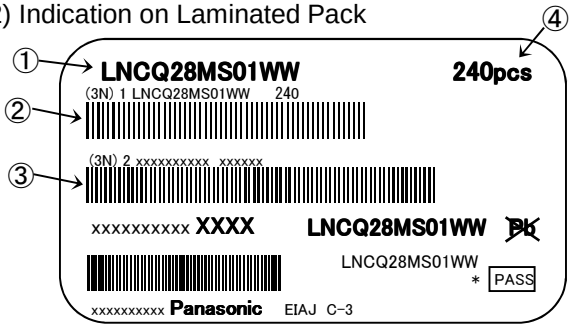
Note)
・Laminated Aluminum Pack
MAX 2 Packs

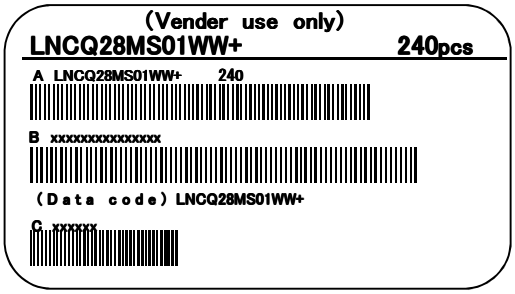
※As for label indication except ①(Order person part number), ②(Order person part number and Quantity), ③(Serial number and Corporate code), and ④(Quantity), the information only for our process control. Therefore, revision might be done for improvement without notice.

1) Indication on Top Tray

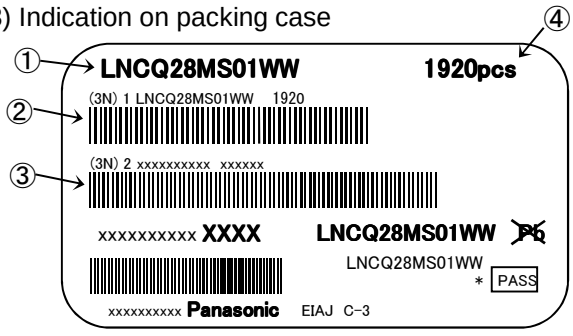


2) Indication on Laminated Pack





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	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.

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