

### Description

LNCT27PF01HT is a MOCVD fabricated 660nm and 780nm 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 783 nm (typ)
- High output power: 300 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

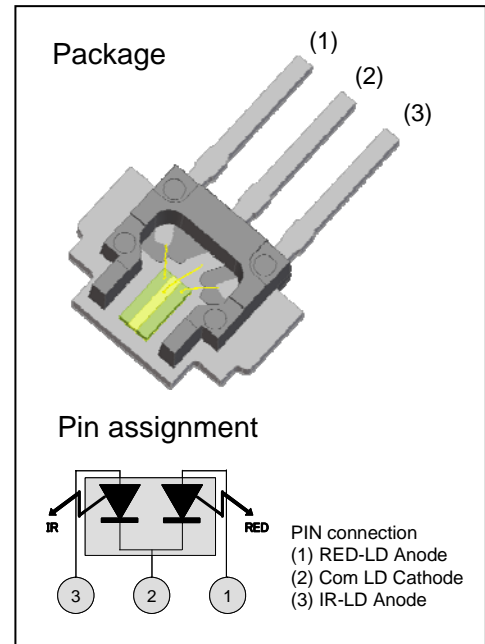
### Absolute Maximum Ratings <sup>3)</sup>

LD	Item	Symbol	Value	Unit	Condition
RED	Output power	Po	100	mW	CW
			300	mW	pulse <sup>1)</sup>
	Reverse voltage	Vr	1.6	V	CW
	Operating case temperature	Tc	-10 to +85	°C	CW/pulse
IR	Output power	Po	200	mW	CW
			380	mW	pulse <sup>2)</sup>
	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

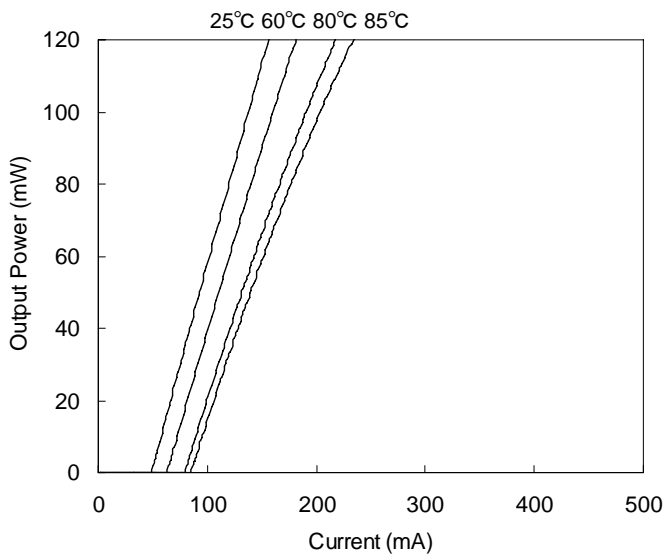
T=25°C, CW, Po=90 mW for RED-LD, 175 mW for IR-LD

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	$\lambda$	656	661	665	nm	
	Beam Divergence	Parallel	$\theta_h$	7.5	-	13.0	deg
Perpendicular		$\theta_v$	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	$\lambda$	777	783	791	Nm	
	Beam divergence	Parallel	$\theta_h$	6.0	-	11.5	deg
Perpendicular		$\theta_v$	12.0	-	19.0	deg	

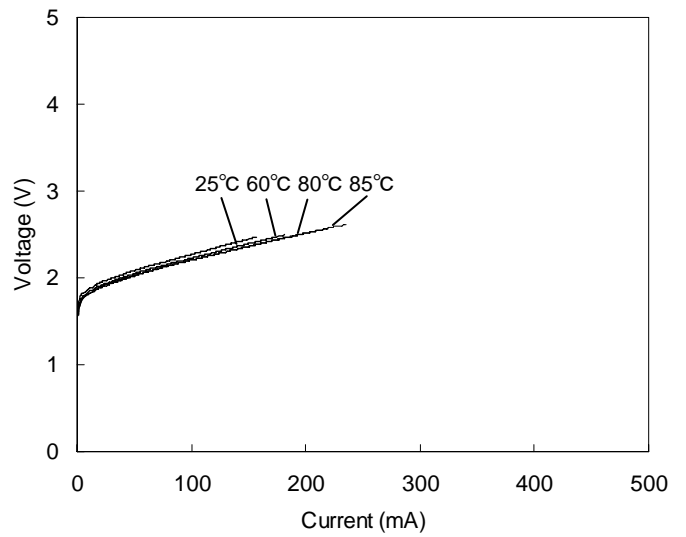
FWHM : Full width at half maximum

Representative Characteristics [RED-LD]

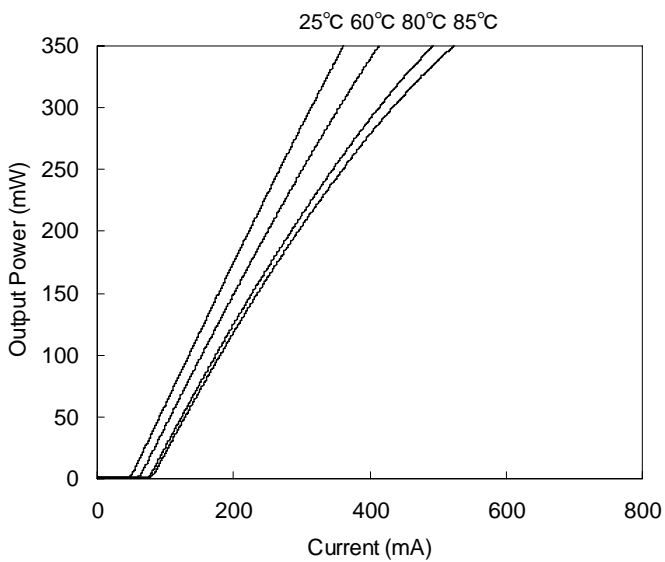
Output Power vs Current (CW)



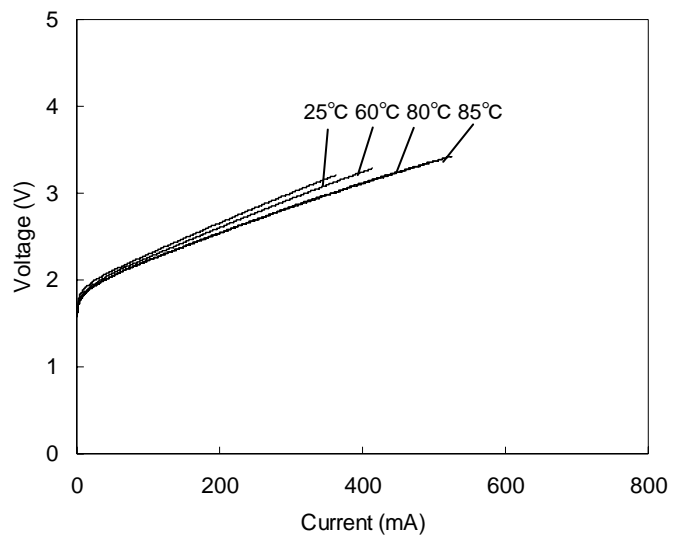
Voltage vs Current (CW)



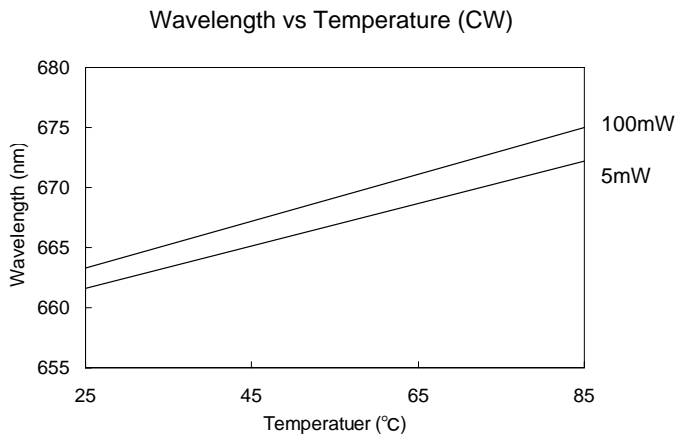
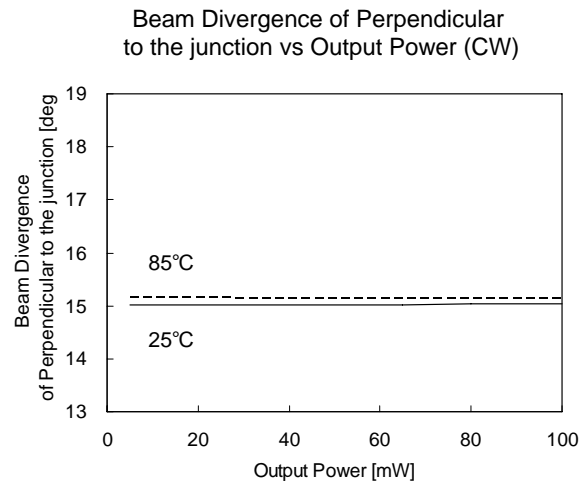
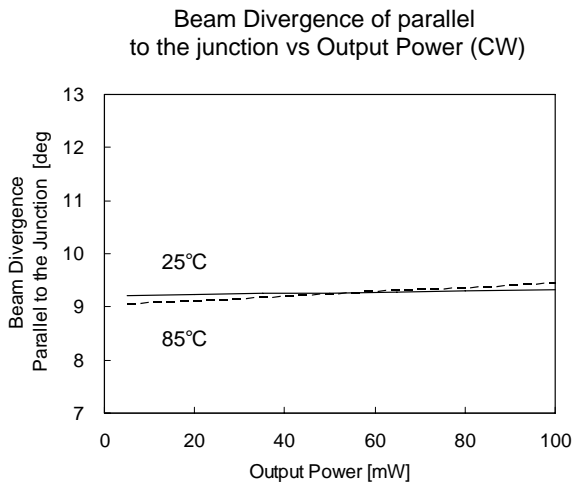
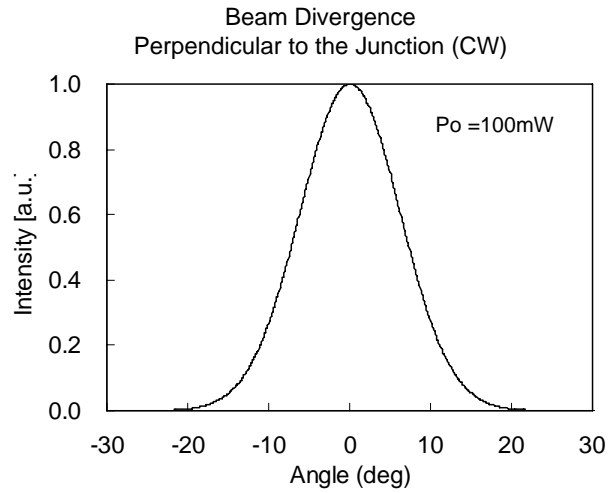
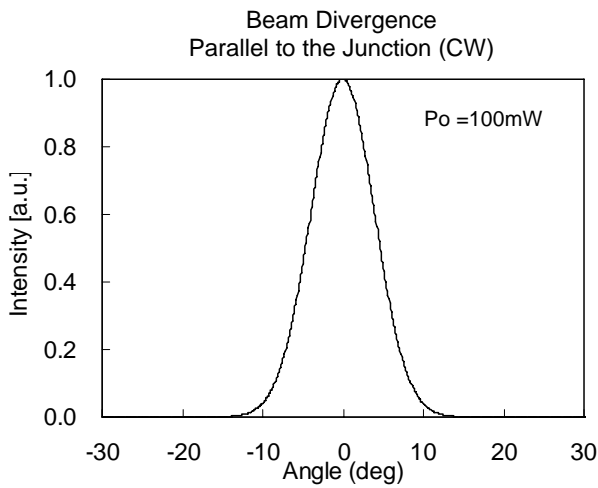
Output Power vs Current (Pulse)



Voltage vs Current (Pulse)

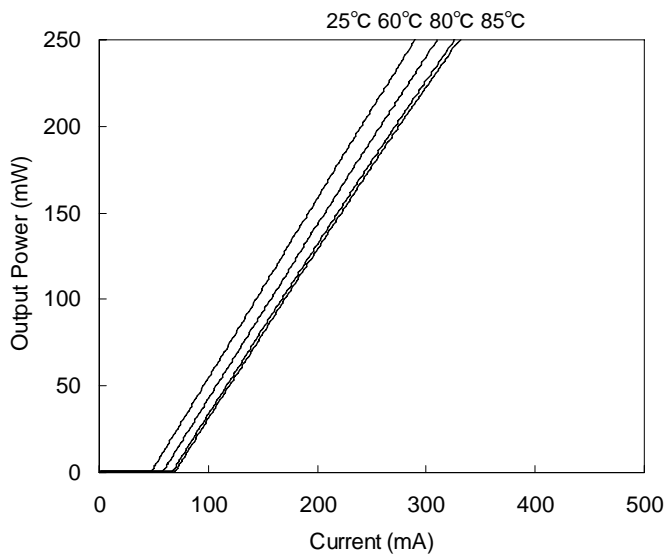


Representative Characteristics [RED-LD]

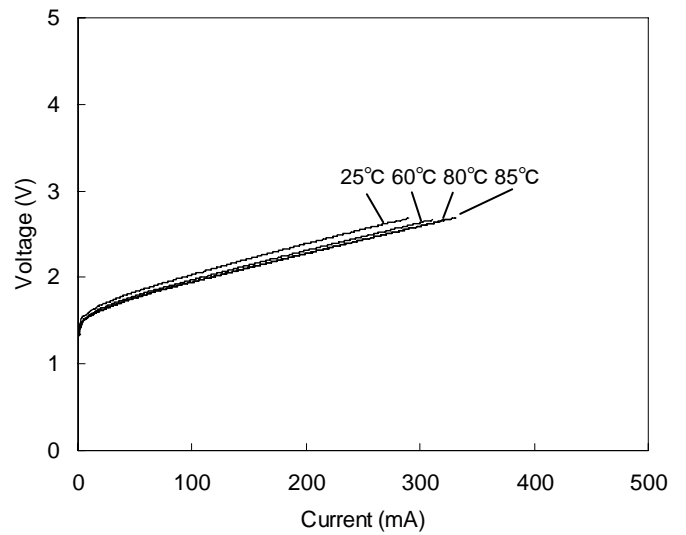


Representative Characteristics [IR-LD]

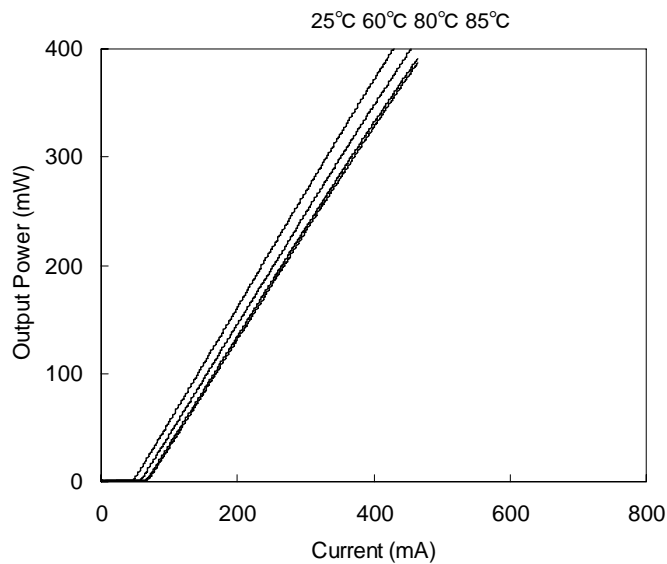
Output Power vs Current (CW)



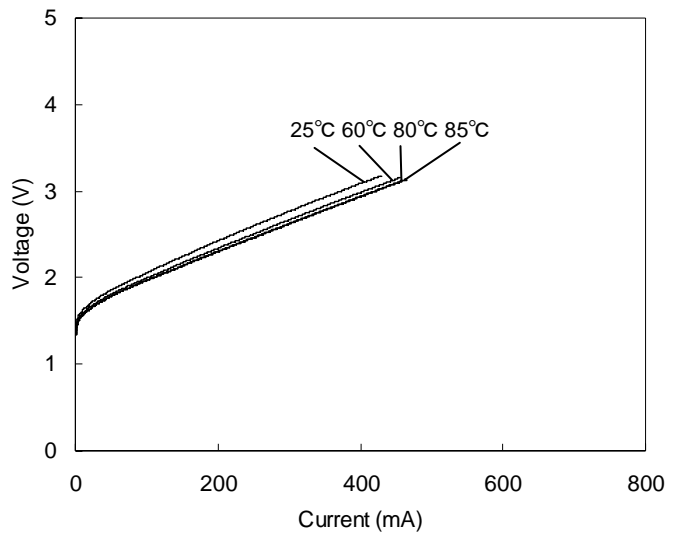
Voltage vs Current (CW)



Output Power vs Current (Pulse)

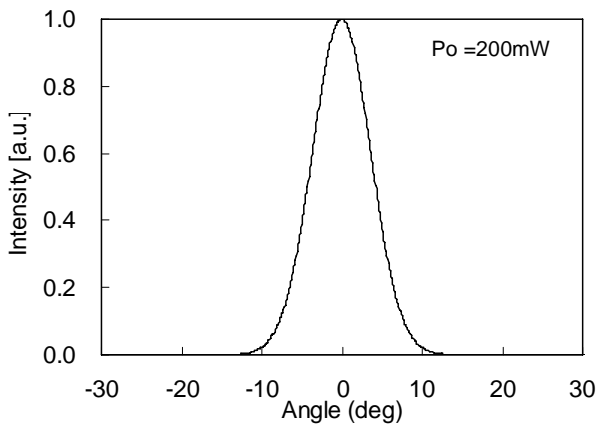


Voltage vs Current (Pulse)

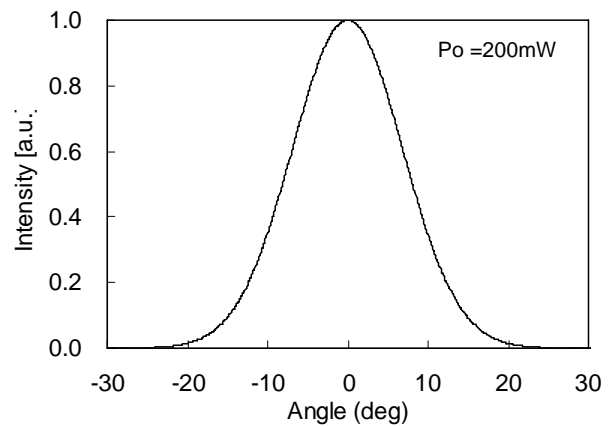


Representative Characteristics [IR-LD]

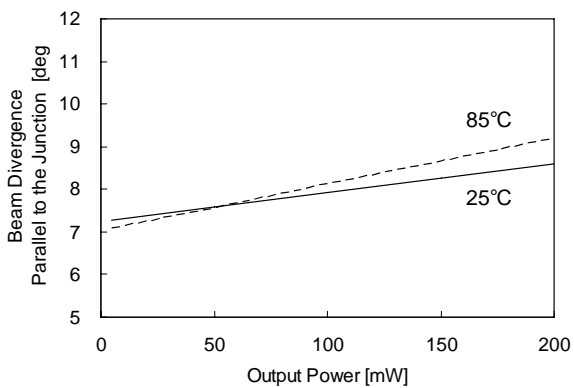
Beam Divergence  
Parallel to the Junction (CW)



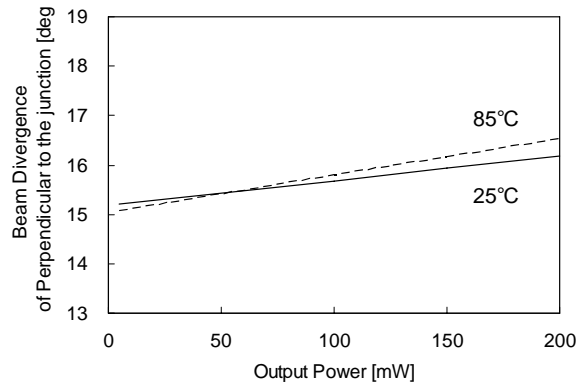
Beam Divergence  
Perpendicular to the Junction (CW)



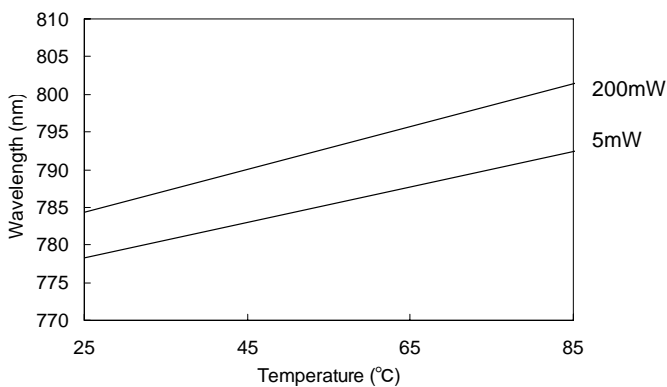
Beam Divergence of parallel  
to the junction vs Output Power (CW)



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

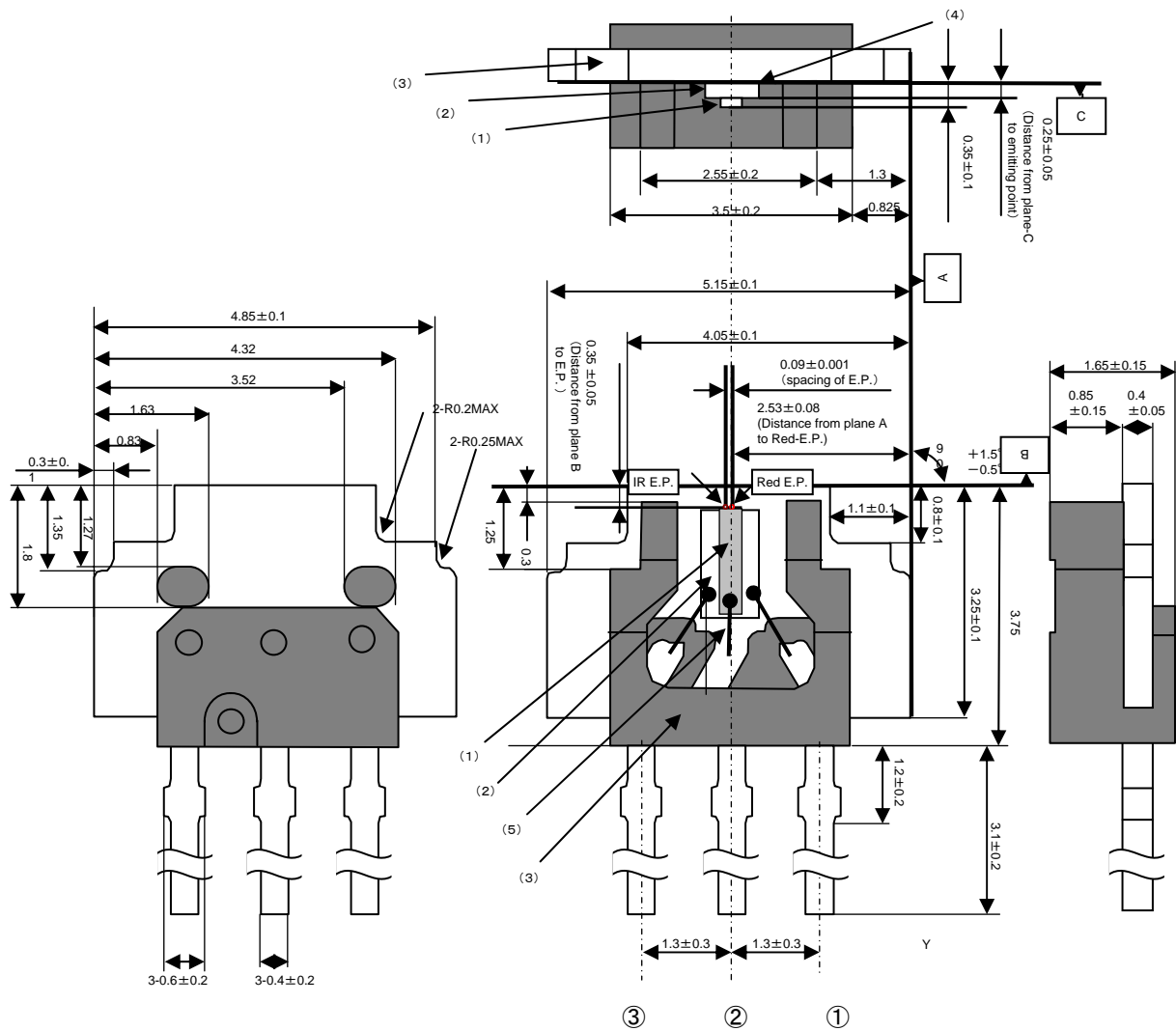


Wavelength vs Temperature (CW)



Package Dimensions

Unit: mm



- |   |
|---|
| <p>(1) LD Chip<br/>                 (2) Submount<br/>                 (3) Package<br/>                 (4) Ag Paste<br/>                 (5) Au Wire</p> <p>• E.P. = Emitting point<br/>                 • General corner R is 0.25mm</p> |
|---|

# Panasonic

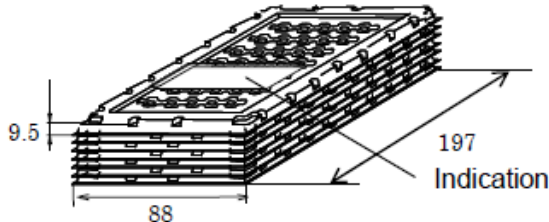
## LNCT27PF01HT

### Packing Specification

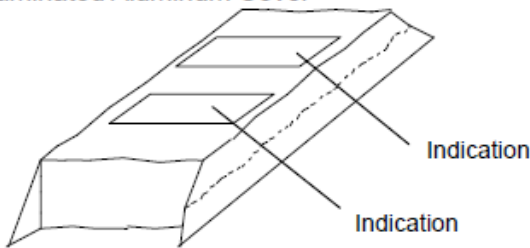
#### 1 Packing Material

##### 1.1 Tray

Material: Conductive Polystyrene

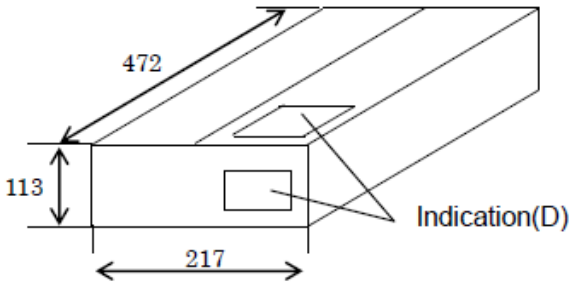


##### 1.2 Laminated Aluminum Cover



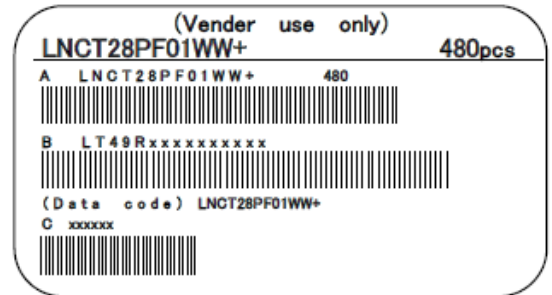
##### 1.3 Packing Case

Material: Card Board Box

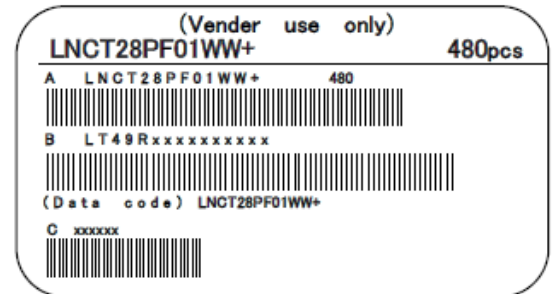


※As for label indication except ①(Order person part number), ②(Order person part number and Quantity), ③(Serial number and Corporate code), ④(Quantity), the information only for our process control, therefore please note that revision without notice might be done due to improvement etc.

#### 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)



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