QD LASER

QLD106D-6450Cz series

1064 nm 50 mW DFB Laser BFY Module under CW Operation C00287-02 August 2023

1. DESCRIPTION

The QLD106D-6450Cz series is a 1064 nm-wavelength distributed feedback (DFB) laser for use in seeder and sensing applications. The laser is assembled into a 14-pin butterfly package with an optical isolator, a monitor PD and a thermo-electric cooler.

2. FEATURES

- Single longitudinal mode operation
- Fiber-pigtailed 14-pin butterfly package with a monitor PD and a TEC
- Optical isolator integration
- Polarization maintaining fiber integration
- CW operation

3. APPLICATIONS

- Seeder for fiber lasers
- Sensing

4. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Optical Output Power	P_f	70	mW
LD Forward Current	I_F	300	mA
LD Reverse Voltage	V_{RLD}	2	V
TEC Drive Current	I_{TEC}	2	A
TEC Drive Voltage	V_{TEC}	4.3	V
Operation Temperature	T_c	0 to 60	°C
Storage Temperature	T_{stg}	-40 to 85	°C
Lead Soldering Temperature (10 s)	T_{sld}	260	°C

5. OPTICAL AND ELECTRICAL CHARACTERISTICS

(T_{LD} = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Peak Wavelength	λ_p	CW, P_f =50 mW	1059.3	1064.3	1069.3	nm
Temperature Coefficient of λ_p	$d\lambda_p/dT$	CW	-	0.08	-	nm/K
Current Coefficient of λ_p	$d\lambda_p/dI$	CW	-	0.003	-	nm/mA
Fiber Output Power	P_f	CW	50	-	-	mW
Threshold Current	I_{th}	CW	-	25	-	mA
Operation Current	I_{op}	CW, P_f =50 mW	-	180	250	mA
Operation Voltage	V_{op}	CW, P_f =50 mW	-	1.6	2	V
Sidemode Suppression Ratio	SMSR	CW, P_f =50 mW	30	50	-	dB
Polarization Extinction Ratio	PER	CW	15	20		dB
Monitor PD Current	Im	CW, P_f =50 mW	10	100	1000	μA
Thermistor Resistance	Rth	T_{LD} = 25°C, B=3900K	9.5	10	10.5	kΩ

(*1) Tighter wavelength tolerance of +/-1 nm and +/-0.5 nm is available as an option. Refer to product part number according to wavelength tolerance.

6. PRODUCT PART NUMBER

6-1. General naming rule

QLD106D-6450Cz

Symbol	Description	Parameter
z	Wavelenth tolerance	none: 1064.3 +/-5 nm W64: 1064.3 +/-1 nm TW64: 1064.3 +/-0.5 nm

6-2. Connector type

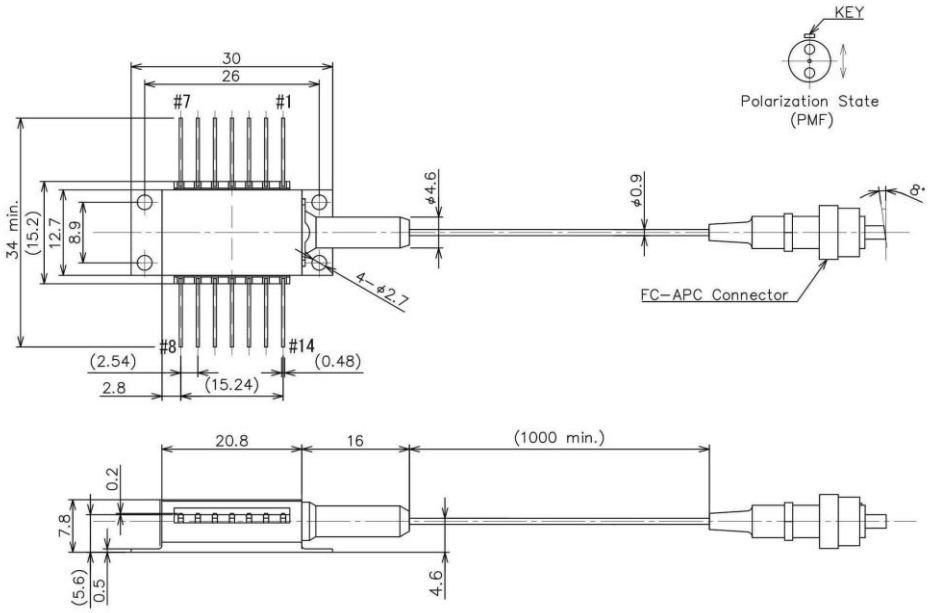
Part Number	Fiber Type	Fiber Diameter	Connector
QLD106D-6450Cz	Polarization maintaining fiber	900 μm	FC/APC
QLD106D-6450Cz11		250 μm	Ferrule/APC

6-3. Examples of product part number

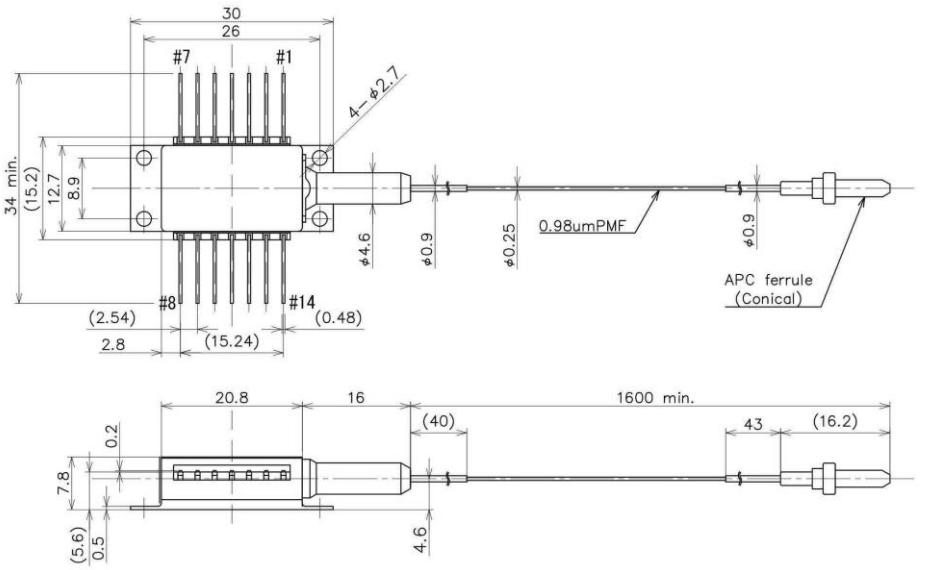
Examples of product name

Part Number	Description
QLD106D-6450C	1064.3 +/-5 nm, 900 μm Fiber
QLD106D-6450C11	1064.3 +/-5 nm, 250 μm Fiber
QLD106D-6450CW64	1064.3 +/-1 nm, 900 μm Fiber
QLD106D-6450CTW6411	1064.3 +/-0.5 nm, 250 μm Fiber

7. OUTLINE DRAWING



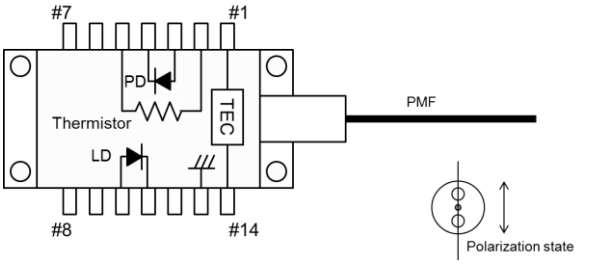
(a) 900 μm fiber diameter and FC/APC connector type (QLD106D-6450Cz)



(b) 250 μm fiber diameter and ferrule/APC type (QLD106D-6450Cz11)

8. PIN CONFIGURATION

No.	Description	No.	Description
1	TEC (+)	8	NC
2	Thermistor	9	NC
3	PD Anode	10	Laser Anode
4	PD Cathode	11	Laser Cathode
5	Thermistor	12	NC
6	NC	13	Case Ground
7	NC	14	TEC (-)



9. NOTICE

- Safety Information

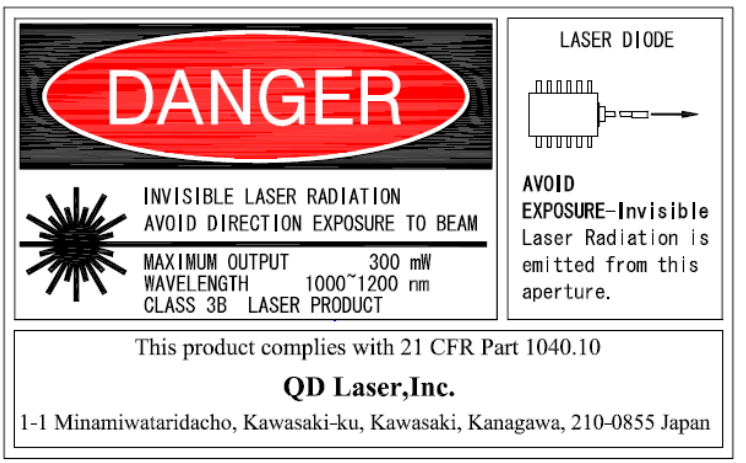
This product is classified as Class 3B laser product, and complies with 21 CFR Part 1040.10.
Please do not take a look at laser lighting in operations since laser devices may cause troubles to human eyes.
Please do not eat, burn, break and make chemical process of the products since they contain GaAs material.

- Handling products

Semiconductor lasers are easily damaged by external stress such as excess temperature and ESD.
Please pay attention to handling products, and use within range of maximum ratings.
QD Laser takes no responsibility for any failure or unusual operation resulting from improper handling, or unusual physical or electrical stress.

- RoHS

This product conforms to RoHS compliance related Directive (EU) 2015/863.



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