QD LASER

QLF093A-05A0/QLF093D-05A0

905 nm 100mW FP LASER TO-CAN C00112-03 June 2022

1. DESCRIPTION

The QLF093x-05A0 series is a 905 nm quantum well laser device designed for high output power application. The laser diode is mounted into a TO-56 header including a monitor PD and hermetic sealed with a flat glass cap.

2. FEATURES

- 905 nm FP-LD
- Φ5.6mm TO-CAN package
- High output power
- Lateral single mode
- Including monitor PD
- Two types of pin assignments: Anode common type (QLF093A-05A0)/cathode common type (QLF093D-05A0)

3. APPLICATIONS

- Sensing
- Industrial application

4. ABSOLUTE MAXIMUM RATING

(CW operation, T_c = 25°C, unless otherwise specified)

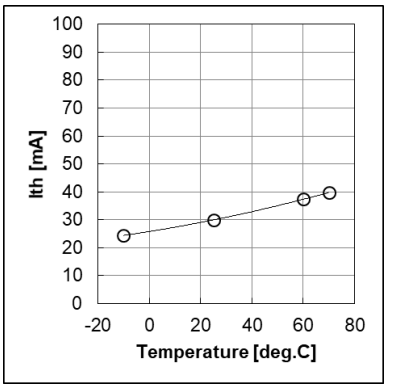
PARAMETER	SYMBOL	RATING	UNIT
Optical output power	P_o(CW)	150	mW
	P_o(Pulse) *	300	mW
LD reverse voltage	V_{RLD}	2	V
PD reverse voltage	V_{RPD}	30	V
Operation temperature	T_c	-10 to 70	°C
Storage temperature	T_{stg}	-40 to 85	°C

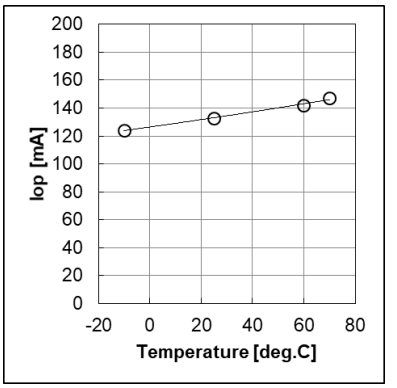
*note : Pulse width < 100nsec, Duty < 50%

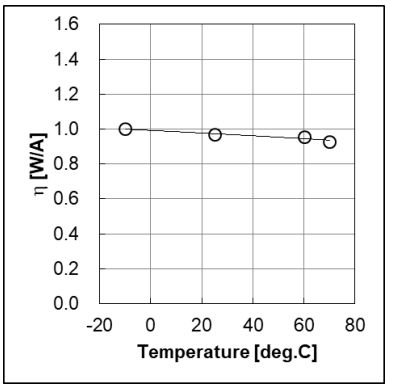
5. OPTICAL AND ELECTRICAL CHARACTERISTICS

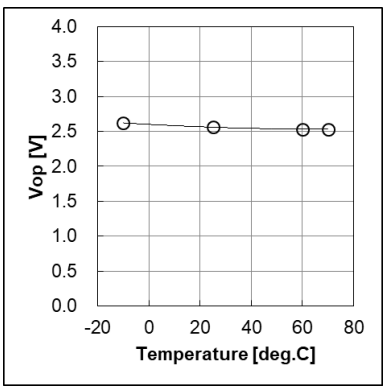
(T_c = 25°C, unless otherwise specified)

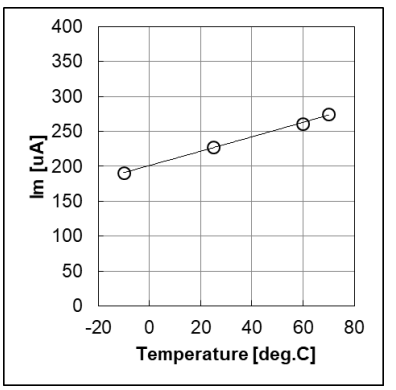
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Threshold current	I_{th}	CW	-	30	55	mA
Operation current	I_{op}	CW, P_o=100mW	-	137	160	mA
Operation voltage	V_{op}	CW, P_o=100mW	-	2.5	3.0	V
Slope efficiency	η	CW, P_o=5 - 100mW	0.8	0.9	-	W/A
Monitor current	I_m	CW, P_o=100mW,V_{RD}=5 V	50	350	600	μA
Peak wavelength	λ_p	CW, P_o=100mW	885	905	915	nm
Far filed pattern, horizontal	θ_h	CW, P_o=100mW	8	11	14	deg.
Far filed pattern, vertical	θ_v	CW, P_o=100mW	14	17	20	deg.
Tilt angle, horizontal	$d\theta_h$	CW, P_o=100mW	-3	-	3	deg.
Tilt angle, vertical	$d\theta_v$	CW, P_o=100mW	-3	-	3	deg.
Emitting point accuracy	Δx, Δy, Δz	-	-50	-	50	μm

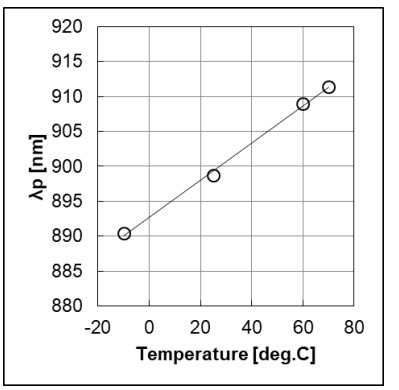


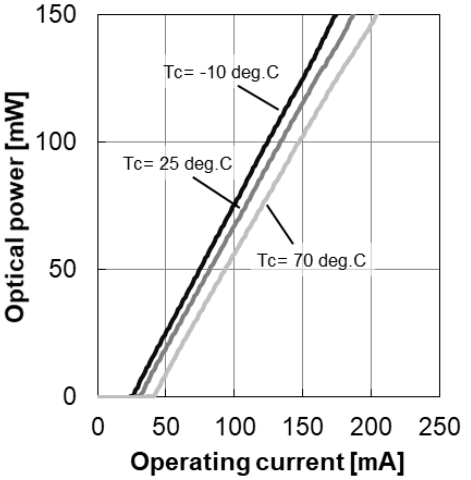


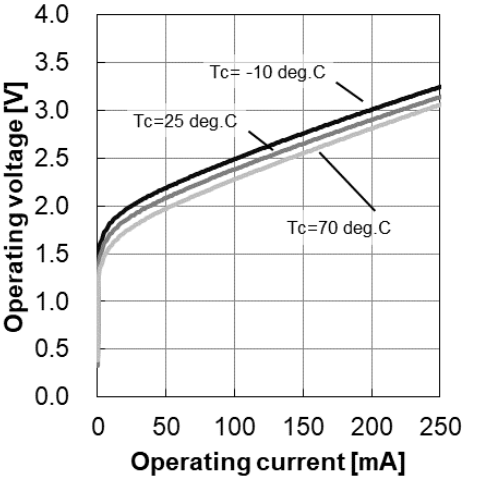


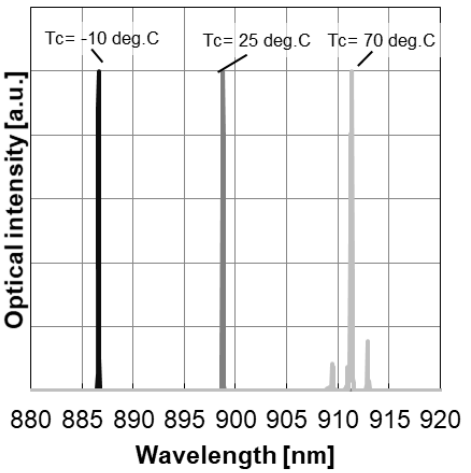


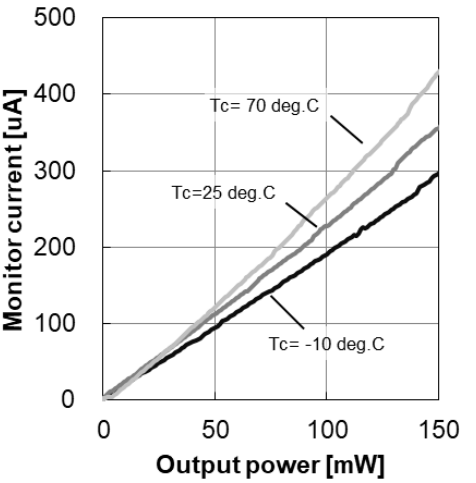


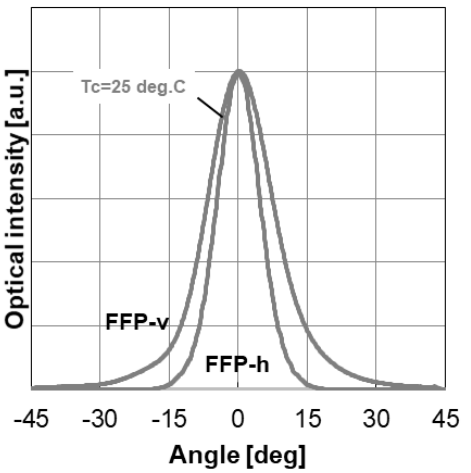



Optical power [mW]
150
100
50
0
Tc= -10 deg.C
Tc= 25 deg.C
Tc= 70 deg.C
0 50 100 150 200 250
Operating current [mA]

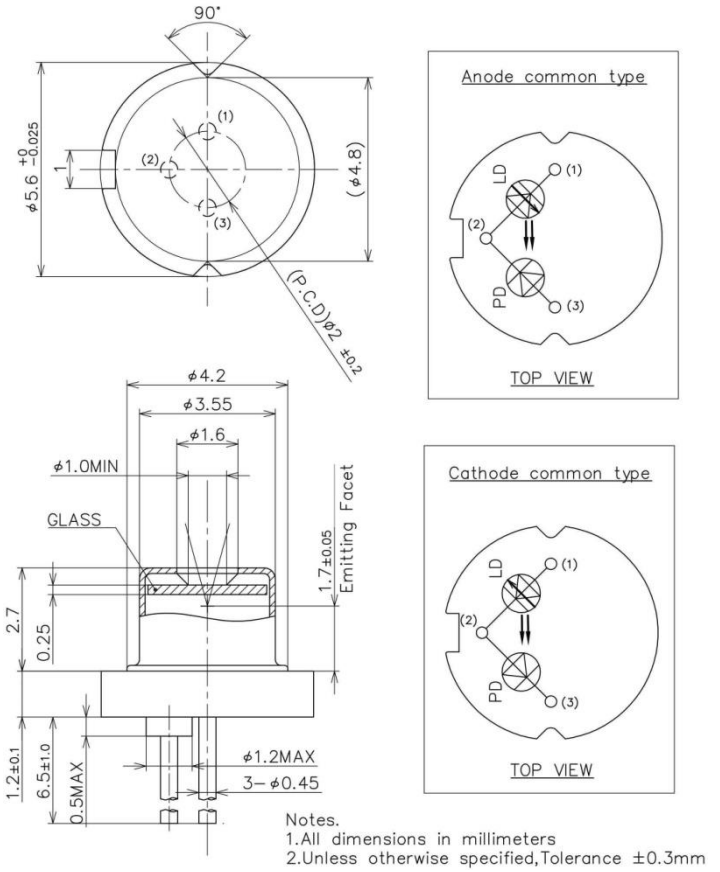

Operating voltage [V]
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Tc= -10 deg.C
Tc=25 deg.C
Tc=70 deg.C
0 50 100 150 200 250
Operating current [mA]


Optical intensity [a.u.]
Tc= -10 deg.C
Tc= 25 deg.C
Tc= 70 deg.C
880 885 890 895 900 905 910 915 920
Wavelength [nm]


Monitor current [uA]
500
400
300
200
100
0
Tc= 70 deg.C
Tc=25 deg.C
Tc= -10 deg.C
0 50 100 150
Output power [mW]


Optical intensity [a.u.]
Tc=25 deg.C
FFP-v
FFP-h
-45 -30 -15 0 15 30 45
Angle [deg]

6. Outline Drawing



7. 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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