



# QLF093A-0540/QLF093D-0540

905nm 40mW FP LASER TO-CAN

Preliminary

C00098-03 August. 2021



## 1. DESCRIPTION

The QLF093x-0540 series is a 905 nm quantum well laser devices 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

- 905nm FP-LD
- $\Phi$ 5.6mm TO-CAN package including monitor PD
- Two types of pin assignments: anode common type (QLF093A-0540) / cathode common type (QLF093D-0540)

## 3. APPLICATIONS

- Sensing
- Industrial application

## 4. ABSOLUTE MAXIMUM RATING

(CW operation,  $T_c = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Optical output power	$P_o(\text{CW})$	60	mW
	$P_o(\text{Pulse})^*$	300	mW
LD reverse voltage	$V_{\text{RLD}}$	2	V
PD reverse voltage	$V_{\text{RPD}}$	30	V
Operation temperature	$T_c$	-10 to 70	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-40 to 85	$^\circ\text{C}$

\*note : Pulse width < 10nsec, Duty < 0.1%

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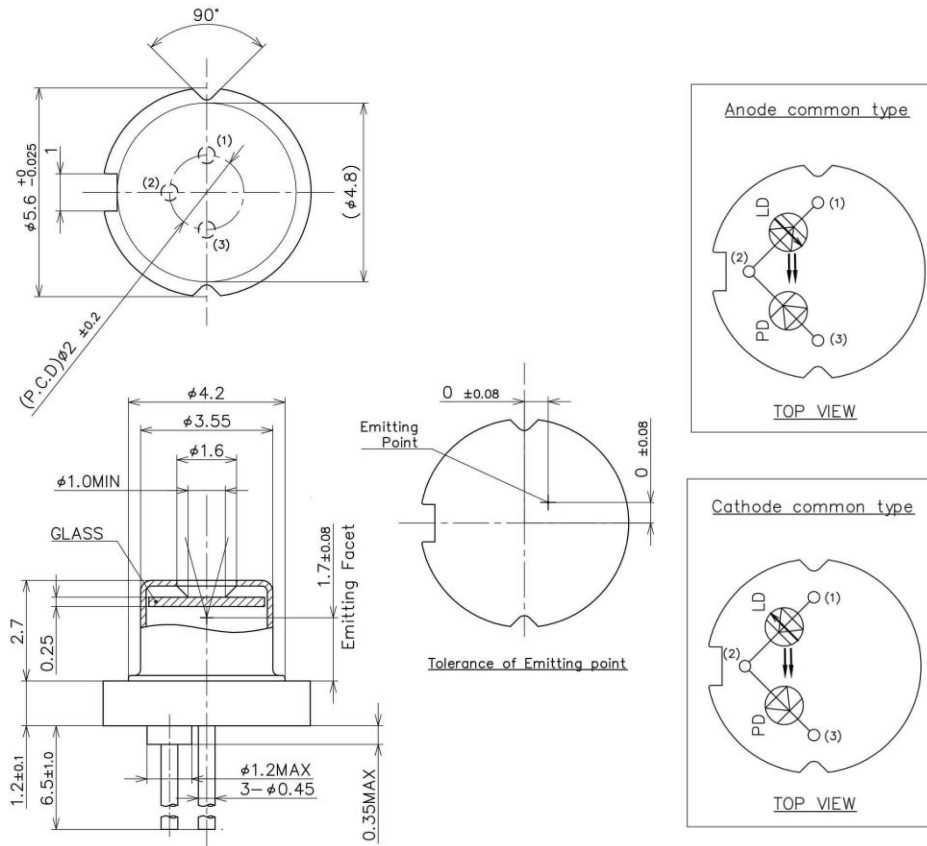
**5. OPTICAL AND ELECTRICAL CHARACTERISTICS**

( $T_c = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Threshold current	$I_{th}$	CW	-	30	55	mA
Operation current	$I_{op}$	CW, $P_o=40\text{ mW}$	-	75	100	mA
Operation voltage	$V_{op}$	CW, $P_o=40\text{ mW}$	-	2.1	2.5	V
Slope efficiency	$\eta$	CW, $P_o=5 - 40\text{ mW}$	0.8	0.9	-	W/A
Monitor current	$I_m$	CW, $P_o=40\text{ mW}$ , $V_{RD}=5\text{ V}$	30	150	500	$\mu\text{A}$
Peak wavelength	$\lambda_p$	CW, $P_o=40\text{ mW}$	880	900	915	nm
Beam divergence*, Horizontal	$\theta_h$	CW, $P_o=40\text{ mW}$	8	11	14	deg.
Beam divergence*, Vertical	$\theta_v$	CW, $P_o=40\text{ mW}$	14	17	20	deg.
Beam angle, Horizontal	$d\theta_h$	CW, $P_o=40\text{ mW}$	-3	-	3	deg.
Beam angle, Vertical	$d\theta_v$	CW, $P_o=40\text{ mW}$	-3	-	3	deg.

\*Beam divergence is FWHM of far field pattern.

**6. Outline Drawing**



All dimensions in millimeters  
Unless otherwise specified, Tolerance  $\pm 0.3\text{mm}$

**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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