QD LASER

QC9D1x6x Series

Nanosecond high power pulsed seeder laser board C00217-04 March 2024

1. DESCRIPTION

QC9D1x6x series is a nanosecond high power pulsed seed laser board integrated with 14-pin butterfly DFB laser module of QLD1x61, QLD1x6P and QLD106D series. Electrical pulse width can be tuned from 5ns to 125ns, and maximum current as driver ability is 2A. Flexible and easy operation can be achieved with both external and internal trigger. All operation parameters including pulse peak current and laser diode temperature can be controlled by PC software via USB interface. Only single +5V power supply is required for the board operation.

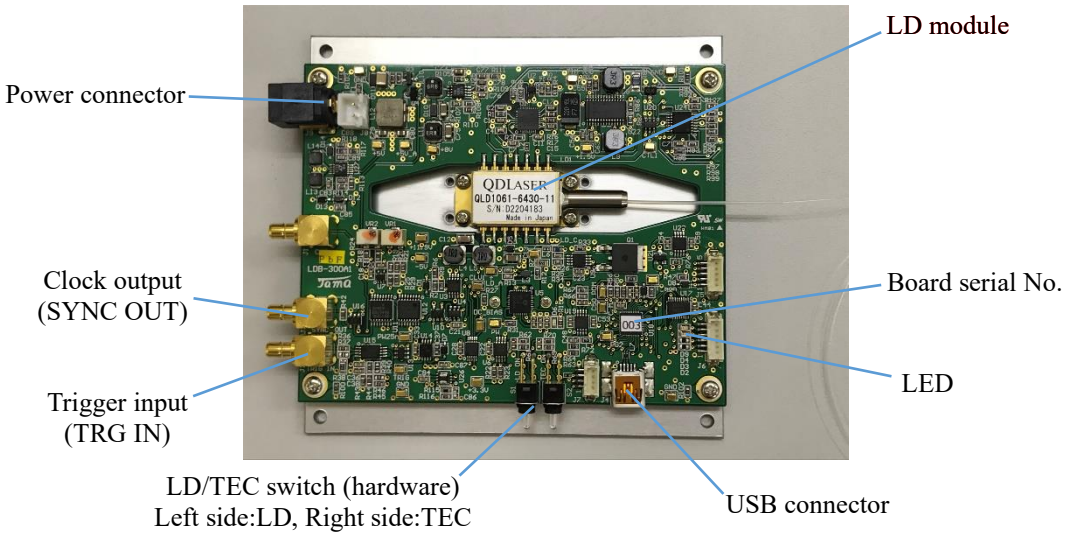
2. FEATURES

- QLD1x61 or QLD1x6P series with wavelength of 1018-1122 nm and 1040-1188 nm integrated (1064 nm only for QLD106D series)
- 5 to 125 ns electrical pulse generation
- High output power under pulsed operation
- Internal / External clock operation
- 1.5 kHz to 2 MHz repetition rate with internal clock operations
- Flexible parameter control via USB
- Plug and Play

3. APPLICATIONS

- Pulsed seeder for fiber lasers
- Time resolved measurement

4. APPEARANCE



5. ACCESSORIES

- Power cable (Option: AC/DC adapter)
- USB cable
- SMA-SMB conversion cable
- Document CD-ROM (manual, applicaton software)

6. ABSOLUTE MAXIMUM RATINGS

(T_c = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Input Voltage	V_{in}	5.5	V
Operation Temperature *1)	T_c	5 to 45	°C
Storage Temperature *1)	T_{stg}	-10 to 50	°C

*1)no condensation

7. OPTICAL AND ELECTRICAL CHARACTERISTICS

(T_c = 25°C, unless otherwise specified)

Optical specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Optical pulse width	5	-	125	ns	Tunable
Peak output power (20 ns to 125 ns)	-	-	100	mW	
Peak output power (5 ns to 20 ns)	-	300	-	mW	Up to 50 ns upon request for QLD106D series
Peak wavelength *2)	-	λ_p	-	nm	Depends on integrated LD
Wavelength tuning range	-	2	-	nm	-
Pulsed side-mode supression ratio	-	30	-	dB	-
Pulsed spectral line width	-	0.04	-	nm	10 ns pulse width and 1.6A

*2) Peak wavelength is dependent on integrated LD module. Available wavelength is from 1018 to 1122 nm and 1140 to 1188 nm for QLD1x61 and QLD1x6P series, and 1064 nm only for QLD106D series

Electrical specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Electrical pulse width tuning range	5	-	125	ns	-
Repetition rate tuning range	1.5	-	2000	kHz	With internal clock mode
Pulse peak current (I_p) tuning range	0	-	2	A	Driver ability
Rise time and fall time	-	-	3	ns	
LD chip temperature tuning range	0	25	60	°C	-
TEC current	-	-	1.3	A	-
Input power (Voltage)	-	+ 5	-	V	-
Input power (Current)	-	1	3	A	-

TRIG IN Signal specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Termination	-	50	-	Ω	
Threshold voltage	-	0.47	-	V	-
Input voltage	-3	-	+3	V	-

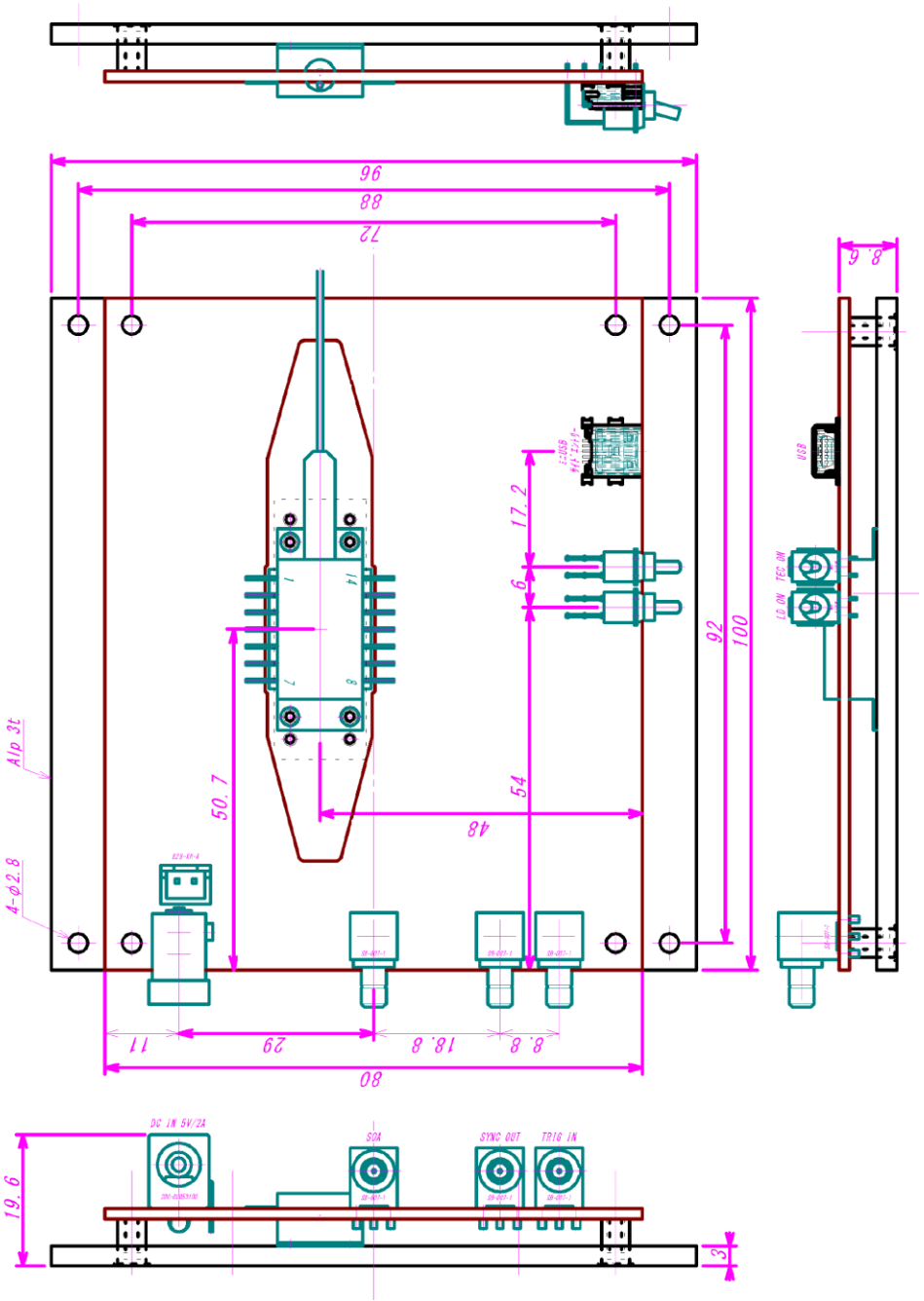
SYNC OUT

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Output voltage	-	3.3	-	V	LVTTL
Output inpedence	-	50	-	Ω	-
Trigger pulse width	-	25	-	ns	-

Dimensions

PARAMETER	Value	UNIT
Printed circuit board size	100 x 80	mm
Total unit size	100 x 96 x 19.6 (Maximum parts hight)	mm
Weight	0.15	kg

8. EXTERNAL DIMENSION



9. PRODUCT PART NUMBER

QC9D[ ][ ][ ][ ]-[*][*]

Code from integrated laser module

(Example)

Part number	Integrated module	Description
QC9D1061-6430	QLD1061	1064nm DFB
QC9D1161-2030	QLD1161-2030	1120nm DFB
QC9D1061-643011	QLD1061-6430-11	250um fiber diameter
QC9D106P-64D0	QLD106P-64D0	1064nm DFB for ns pulse
QC9D106D-64C0W6411	QLD106D-64C0W6411	1064 nm DFB for ns pulse with 250um fiber diameter

10. NOTICE

- Safety Information

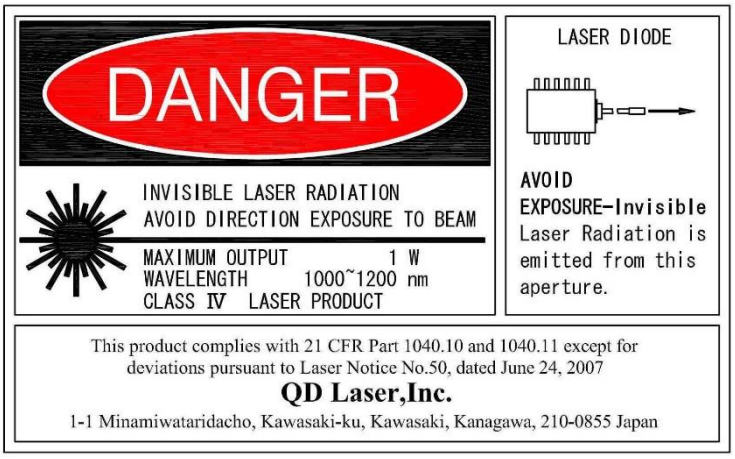
This product is classified as Class 4 laser product, and complies with 21 CFR Part 1040.10.
Please do not take a look at laser lighting in operations since laser devices may cause troubles to human eyes.
Please do not eat, burn, break and make chemical process of the products since they contain GaAs 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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