

# QDLASER

## QC2x1x6x Series

Picosecond pulsed seeder laser board

Preliminary

C00124-02 January 2015



### 1. DESCRIPTION

QC2x1x6x series is a picosecond pulsed seed laser board integrated with 14-pin butterfly DFB laser module of QLD1x6x and QLA1x6x series. 50-psec optical pulse with stable single longitudinal mode can be obtained. Flexible and easy operation can be achieved with both external and internal trigger from single shot to 250MHz high repetition rate. 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.

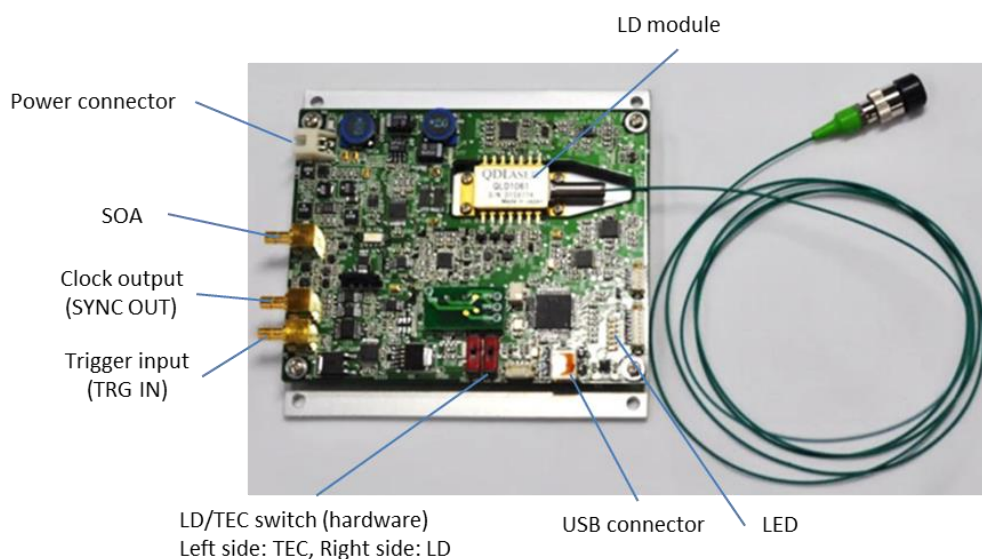
### 2. FEATURES

- 1030-1180nm DFB-LD/DFB-SOA LD integrated
- 50psec gain-switched pulse generation
- >30mW peak power
- Internal / External clock operation
- Single shot to 250MHz repetition rate
- Flexible parameter control via USB
- Plug and Play

### 3. APPLICATIONS

- Pulsed seeder for fiber lasers
- Time resolved measurement

### 4. APPEARANCE



## 5. OPTICAL AND ELECTRICAL CHARACTERISTICS

Optical specifications (depends on the integrated laser diode module)

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Optical pulse width	-	50	-	psec	Adjustable to 9nsec
Peak output power	30	50	-	mW	-
Jitter <sub>RMS</sub>	-	10	-	psec	-
Pulse to pulse stability	-	TBD	-	%	-
Peak wavelength	-	$\lambda_p$	-	nm	Depends on integrated LD
Wavelength tuning range	-	2	-	nm	-
Pulsed side-mode suppression ratio	-	30	-	dB	-
Pulsed spectral line width	-	0.1	-	nm	Under 50psec pulse width

Electrical specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Electrical pulse width tuning range	300	-	9000	psec	-
Repetition rate tuning range (*1)	0.012	-	250	MHz	With internal clock mode
Pulse peak current ( $I_p$ ) tuning range	0	-	200	mA	Not exceed 200mA for $I_p+I_b$
Bias current ( $I_b$ ) tuning range	0	-	200	mA	Not exceed 200mA for $I_p+I_b$
SOA bias current tuning range	0	-	300	mA	For SOA integrated version
LD chip temperature tuning range	15	25	40	°C	-
Ambient temperature range	10	-	40	°C	-
TEC current	-	-	1.3	A	-
Input power (Voltage)	-	+ 5	-	V	-
Input power (Current)	-	1	3	A	-

(\*1) Single shot to 250MHz tuning is possible with external clock mode

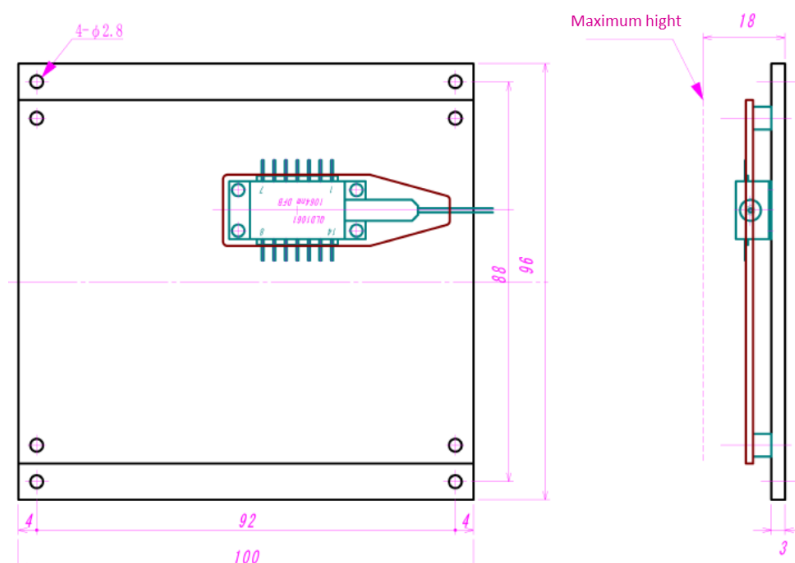
Clock interface

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
External clock frequency	-	-	250	MHz	Single shot available
External clock voltage range	0~+1	-	-5~+5	V	-
External clock rise time	-	-	10	nsec	-
External clock duty ratio	-	50	-	%	-
Clock monitor output voltage	-	0~1	-	V	50Ω (0~2V@Open)
Propagation delay	-	15	-	nsec	Including optical fiber of 1m

Dimensions

PARAMETER	Value	UNIT
Printed circuit board size	100 x 80	mm
Total unit size	100 x 96 x 18 (Maximum parts height)	mm
Weight	0.15	kg

## 6. EXTERNAL DIMENSION



## 7. PRODUCT PART NUMBER

QC2[ ][ ][ ][ ][\*][\*]

Code from integrated laser module

(Example)

Part number	Integrated module	Description
QC2D1061-6430	QLD1061	1064nm DFB
QC2D1161-2030	QLD1161-2030	1120nm DFB
QC2D1061-643011	QLD1061-6430-11	250um fiber diameter
QC2A1061-64A0	QLA1061-64A0	1064nm DFB/SOA

## 8. 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 EU Directive 2011/65/EU.

QD Laser, Inc.

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