QD LASER

QCBA1061-64A0 Series

Preliminary

Picosecond pulsed driver board for 1064nm DFB/SOA gain switched operation

C00222-01 July 2019

1. DESCRIPTION

QCBA1061-64A0 series is a picosecond pulsed seed laser board integrated with 14-pin butterfly DFB-SOA laser module of QLA1061-64A0. 50 ps optical pulse with stable single longitudinal mode is obtained under gain-switched operation for DFB section, and SOA section is simultaneously operated with DFB section to amplify gain-switched pulse. 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.

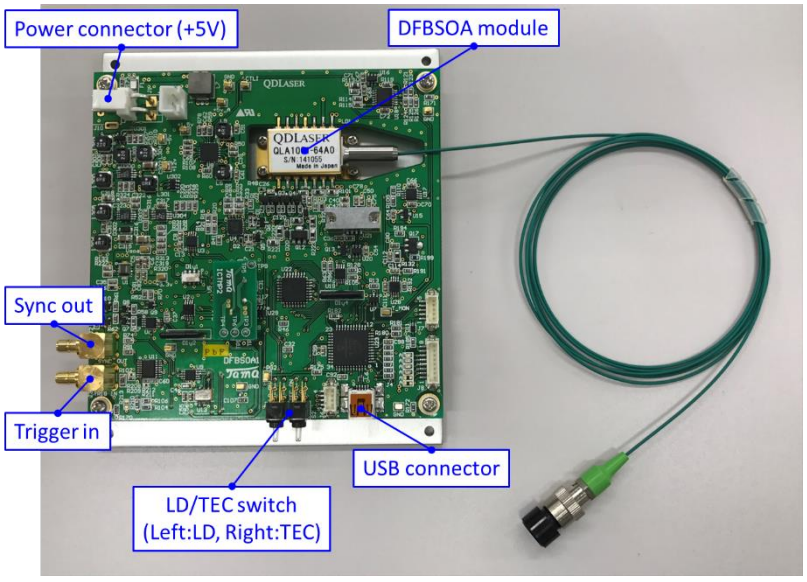
2. FEATURES

- 1064 nm DFB-SOA LD integrated
- 50 ps gain-switched pulse generation for DFB section
- Amplification of gain-switched optical pulse by simultaneous operation of SOA section with DFB section
- >100 mW peak power
- Internal / External clock operation
- Single shot to 250 MHz repetition rate for DFB section / 10 MHz repetition rate for SOA section
- Flexible parameter control via USB
- Plug and Play

3. APPLICATIONS

- Pulsed seeder for fiber lasers
- Time resolved measurement

4. APPEARANCE



5. ACCESSORIES

- Power cable
- 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	-	50	-	ps	Adjustable to 9 ns
Peak output power	-	100	-	mW	-
$Jitter_{RMS}$	-	10	-	ps	-
Pulse to pulse stability	-	TBD	-	%	-
Peak wavelength	-	1064	-	nm	-
Wavelength tuning range	-	2	-	nm	-
Pulsed side-mode supression ratio	-	TBD	-	dB	-
Pulsed spectral line width	-	TBD	-	nm	Under 50 ps pulse width

Electrical specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
DFB electrical pulse width tuning range	300	-	9000	ps	-
SOA electrical pulse width tuning range	5	-	14	ns	0.5ns step *2)
SOA electrical delay tuning range	0	-	9	ns	
DFB repetition rate tuning range *3)	0.0015	-	250	MHz	With internal clock mode
SOA repetition rate tuning range	0.0015	-	10	MHz	With internal clock mode
Pulse peak current (I_p) tuning range	0	-	200	mA	Unavailable with DFB bias current
Bias current (I_b) tuning range	0	-	100	mA	Unavailable with DFB pulse current
SOA pulse peak current tuning range	0	-	2000	mA	Unavailable with SOA bias current
SOA bias current tuning range	0	-	100	mA	Unavailable with SOA pulse current
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	-

*2) Changing a delay circuit.
*3) Single shot to 250 MHz tuning is possible with external clock mode.

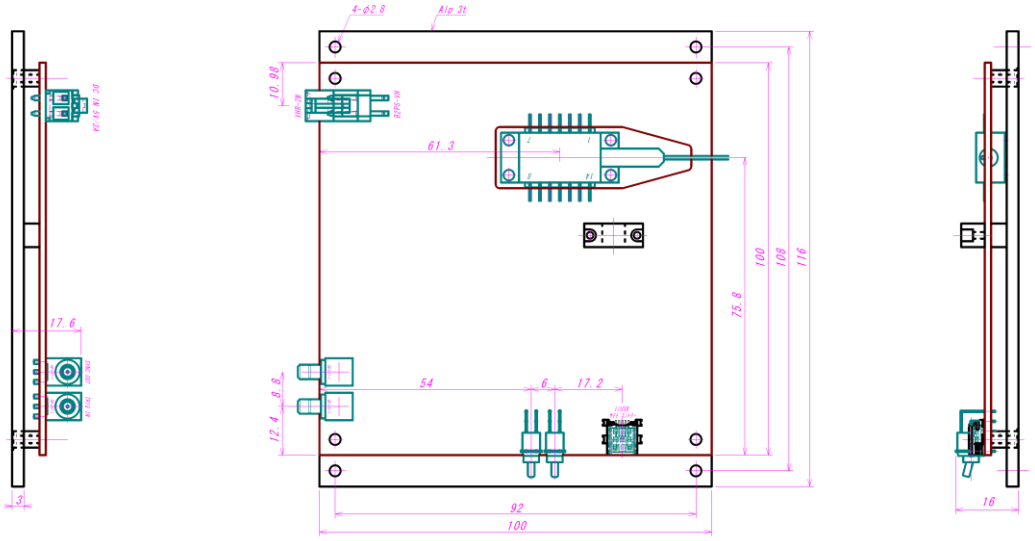
Clock interface

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	ns	-
External clock duty ratio	-	50	-	%	-
Clock monitor output voltage	-	0~1	-	V	50 Ω (0~2 V@Open)
Propagetion delay	-	15	-	ns	Including optical fiber of 1 m

Dimensions

PARAMETER	Value	UNIT
Printed circuit board size	100 x 108	mm
Total unit size	100 x 116 x 18 (Maximum parts hight)	mm
Weight	0.2	kg

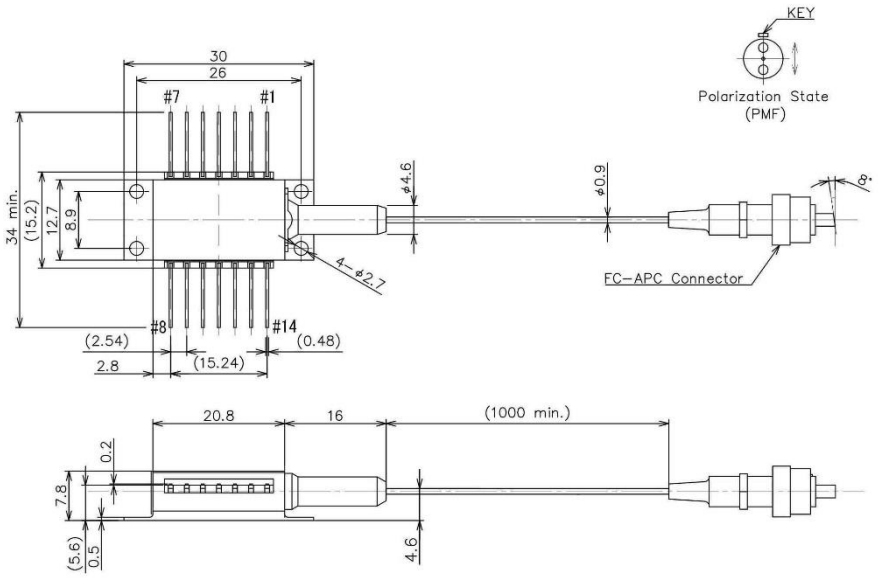
8. EXTERNAL DIMENSION



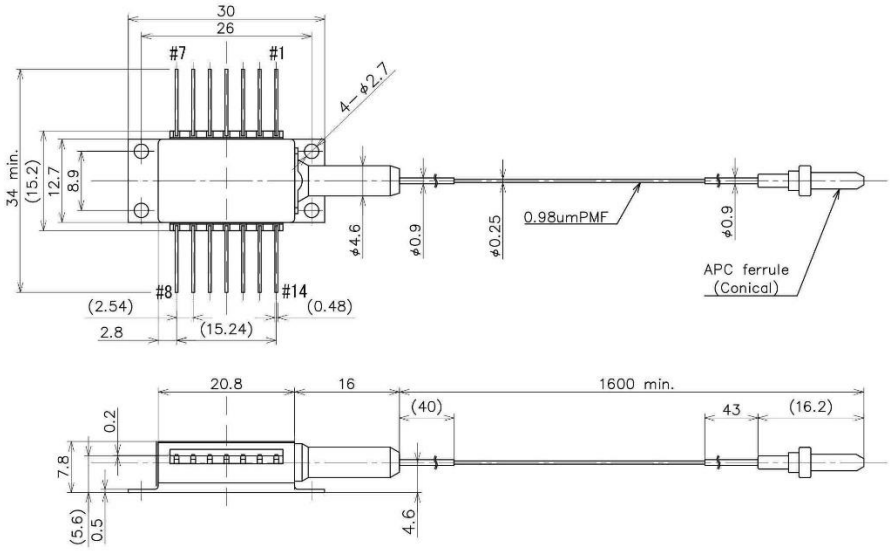
9. PRODUCT PART NUMBER

Part Number	Fiber Type	Fiber Diameter	Connector
QCBA1061-64A0	Polarization maintaining fiber	900um	FC/APC
QCBA1061-64A011		250um	Ferrule

10. Fiber tyoes of modules



900um fiber diameter and FC/APC connector type



250um fiber diameter and ferrule type

11. NOTICE

- Safety Information

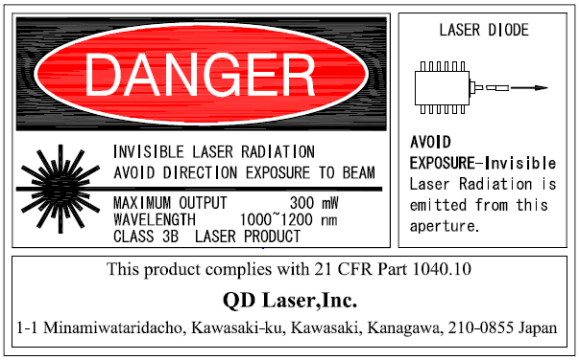
This product is classified as Class 3B laser product, and complies with 21 CFR Part 1040.10.
Please do not take a look at laser lighting in operations since laser devices may cause troubles to human eyes.
Please do not eat, burn, break and make chemical process of the products since they contain GaAs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



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