

QDLASER

QBB1007

Preliminary

Picosecond pulsed driver box for 20ps gain switched operation

C00181-01 November 2015



1. DESCRIPTION

QBB1007 series is a picosecond pulsed driver box for 7-pin butterfly DFB laser module of QLD106G series. 20-psec optical pulse with stable single longitudinal mode can be obtained by gain switched operation. Flexible and easy operation can be achieved with both external and internal trigger from single shot to 250MHz high repetition rate. LD bias current, repetition rate and laser diode temperature can be controlled by PC software via USB interface.

2. FEATURES

- Designed for 7-pin butterfly DFB-LD module of QLD106G series
- 20psec gain-switched pulse generation
- >10mW peak power
- Internal / External clock operation
- Single shot to 250MHz repetition rate
- Flexible parameter control via USB
- Plug and Play

3. APPLICATION

- Pulsed seeder for fiber lasers
- Time resolved measurement

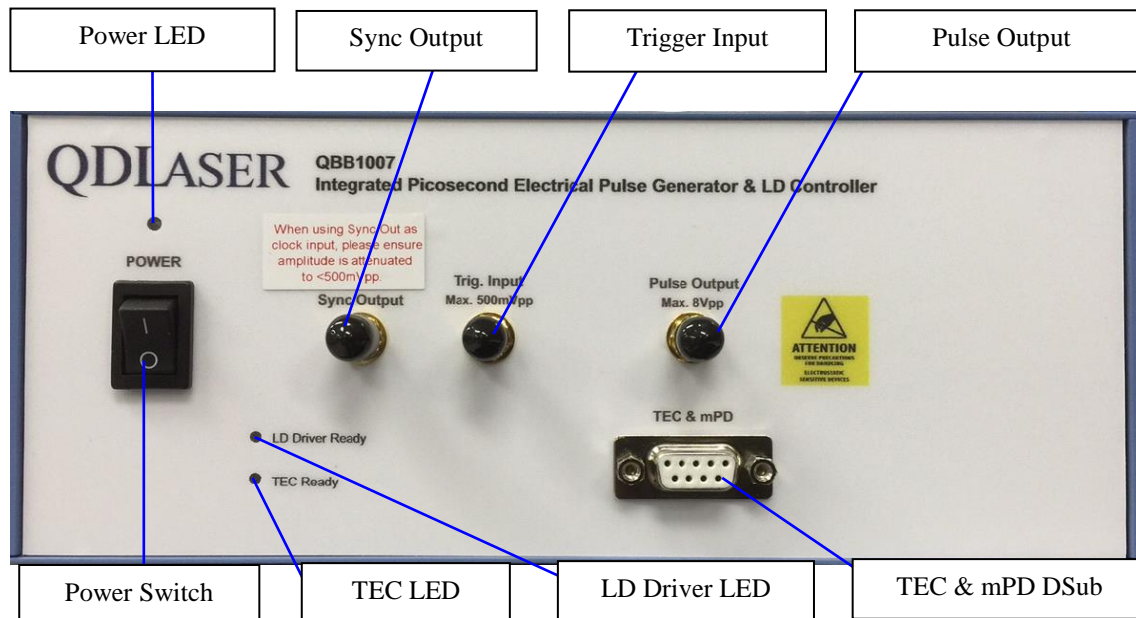
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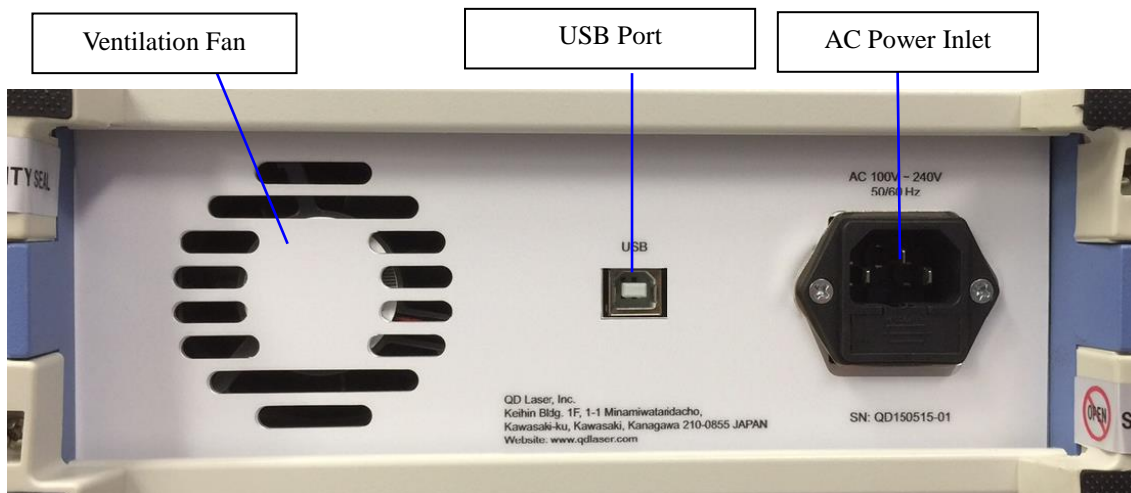
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4. APPEARANCE

•Front Panel



•Rear Panel



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5. OPTICAL AND ELECTRICAL CHARACTERISTICS

Optical specifications (depends on the integrated laser diode module)

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Optical pulse width	-	20	-	psec	-
Peak output power	10		-	mW	-
Jitter _{RMS}	-	4	-	psec	-
Pulse to pulse stability	-	TBD	-	%	-
Peak wavelength	-	λ_p	-	nm	Depends on integrated LD
Wavelength tuning range	-	TBD	-	nm	-
Pulsed side-mode supression ratio	-	30	-	dB	-
Pulsed spectral line width	-	0.1	-	nm	Under 20psec pulse width

Electrical specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Electrical pulse width	-	70	-	psec	-
Repetition rate tuning range (*1)	0.012	-	250	MHz	With internal clock mode
Pulse peak voltave (V_p)	-	5	8	V	-
Bias current (I_b) tuning range	0	-	TBD	mA	Not exceed 200mA
LD chip temperature tuning range	15	25	40	°C	-
Ambient temperature range	10	-	40	°C	-
TEC 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
Total unit size	235 x 390 x 100 (Maximum parts hight)	mm
Weight	3.3	kg

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6. PIN CONFIGURATION

Pin Number	Description
1	TEC-
2	Reserved
3	TEC+
4	Reserved
5	TH+
6	TH-
7	PD+
8	PD-
9	Reserved

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 EU Directive 2011/65/EU.

QD Laser, Inc.

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