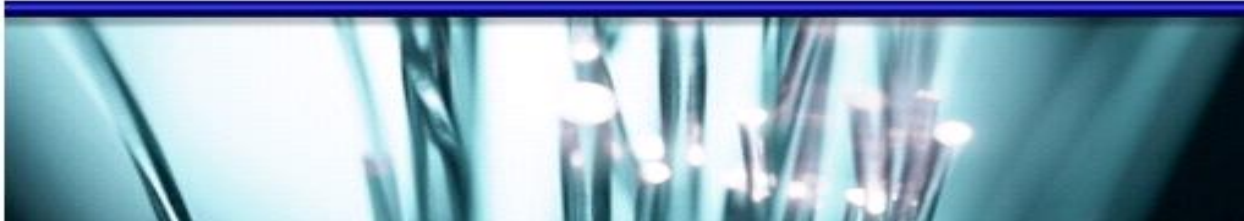




QLD1a6L-xyyyPzWtt series

1 μ m-range 130-390 mW DFB Laser BFY Module under ns Pulsed Operation C00312-01 October 2026



1. DESCRIPTION

The QLD1a6L-xyyyPzWtt series is a high power 1 μ m-wavelength range distributed feedback (DFB) laser under ns pulsed operation for use in seeder for fiber lasers and sensing applications. The laser is assembled into a 14-pin butterfly package with a monitor PD and a thermo-electric cooler.

2. FEATURES

- Single longitudinal mode operation
- High peak output power of 390 mW under pulsed operation
- 3-10 ns pulse width@390 mW and 3-100 ns pulse width@130 mW available
- Fiber-pigtailed 14-pin butterfly package with a monitor PD and a TEC
- Without an optical isolator and with one polarizer
- Polarization maintaining fiber integration

3. APPLICATIONS

- Seeder for fiber lasers
- Sensing

4. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Optical Output Power (CW)	P_f	60	mW
LD Forward Current (CW)	I_F	250	mA
Peak Output Power (Pulse 10 ns/1 MHz)	P_{f_pulse} 390 mW version	450	mW
	P_{f_pulse} 130 mW version	150	mW
LD Peak Current (Pulse 10 ns/1 MHz)	I_{F_pulse} 390 mW version	2	A
	I_{F_pulse} 130 mW version	600	mA
LD Reverse Voltage	V_{RLD}	2	V
TEC Drive Current	I_{TEC}	2	A
TEC Drive Voltage	V_{TEC}	4.3	V
Operation Temperature	T_c	0 to 60	$^{\circ}$ C
Storage Temperature	T_{stg}	-40 to 85	$^{\circ}$ C
Lead Soldering Temperature (5 s)	T_{sld}	230	$^{\circ}$ C

5. OPTICAL AND ELECTRICAL CHARACTERISTICS

5-1. 390 mW version: QLD1a6L-xxC0PzWtt

(T_{LD} = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Peak Wavelength	λ_p	CW, P _f =50 mW	λ_p-5 (*2)	λ_p (*1)	λ_p+5 (*2)	nm
Temperature Coefficient of λ_p	$d\lambda_p/dT$	CW / Pulsed	-	0.08	-	nm/K
Threshold Current	I _{th}	CW / Pulsed	-	15	-	mA
CW Fiber Output Power	P _f	CW	50	-	-	mW
CW Operation Current	I _{op}	CW, P _f =50 mW	-	120	-	mA
CW Operation Voltage	V _{op}	CW, P _f =50 mW	-	1.8	-	V
Pulsed Peak Output Power	P _{f_peak}	Pulsed, I _{f_peak} =1.5 A	-	390	-	mW
Pulsed Averaged Output Power	P _{f_ave}	Pulsed 10 ns / 100 kHz / 1.5 A	-	390	-	μW
Pulse Width	t _{pw}	Pulsed, 100 kHz / 1.5 A	3	-	10	ns
Repetition Rate	RR	Pulsed, 20 ns / 1.5 A	-	-	1(*3)	MHz
Sidemode Suppression Ratio	SMSR	CW, P _f =50 mW	30	40	-	dB
		Pulsed 10 ns / 100 kHz / P _{f_peak} =390 mW	25	30	-	dB
Polarization Extinction Ratio	PER	CW	15	20	-	dB
Monitor PD Current	I _m	CW, P _f =50 mW	50	350	1000	μA
Thermistor Resistance	R _{th}	T _{LD} =25°C, B=3900K	9.5	10	10.5	kΩ

(*1) Available peak wavelength is from 1018 to 1122 nm and 1140 to 1188 nm.

(*2) Tighter wavelength tolerance of +/- 1 nm and +/- 0.5 nm is available as an option. Refer to product part number according to wavelength tolerance

(*3) Higher repetition rate is available with proper adjustment of a peak current and pulse width. Please ask QDL for more detail.

5-2. 130 mW version: QLD1a6L-xxA0PzWtt

(T_{LD} = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Peak Wavelength	λ_p	CW, P _f =50 mW	λ_p-5 (*2)	λ_p (*1)	λ_p+5 (*2)	nm
Temperature Coefficient of λ_p	$d\lambda_p/dT$	CW / Pulsed	-	0.08	-	nm/K
Threshold Current	I _{th}	CW / Pulsed	-	15	-	mA
CW Fiber Output Power	P _f	CW	50	-	-	mW
CW Operation Current	I _{op}	CW, P _f =50 mW	-	120	-	mA
CW Operation Voltage	V _{op}	CW, P _f =50 mW	-	1.8	-	V
Pulsed Peak Output Power	P _{f_peak}	5 ns / 100 kHz	-	130	-	mW
Pulsed Averaged Output Power	P _{f_ave}	Pulsed 10 ns / 100 kHz / 300 mA	-	130	-	μW
Pulse Width	t _{pw}	Pulsed, 100 kHz / 300 mA	3	-	10	ns
Repetition Rate	RR	Pulsed, 20 ns / 1.5 A	-	-	1(*3)	MHz
Sidemode Suppression Ratio	SMSR	CW, P _f =50 mW	30	40	-	dB
		Pulsed, 4 ns / 1 MHz / P _{f_peak} =50 mW	30	40	-	dB
Polarization Extinction Ratio	PER	CW	15	20	-	dB
Monitor PD Current	I _m	CW, P _f =50 mW	50	350	1000	μA
Thermistor Resistance	R _{th}	T _{LD} =25°C, B=3900K	9.5	10	10.5	kΩ

(*1) Available peak wavelength is from 1018 to 1122 nm and 1140 to 1188 nm.

(*2) Tighter wavelength tolerance of +/- 1 nm and +/- 0.5 nm is available as an option. Refer to product part number according to wavelength tolerance.

(*3) Higher repetition rate is available with proper adjustment of a peak current and pulse width. Please ask QDL for more detail.

6. PRODUCT PART NUMBER

6-1 General naming rule

QLD1a6L-xyyPzWtt

Symbol	Description	Definition / Options
a	Wavelength range indicator	0 : 10xx nm range 1 : 11xx nm range
xx	Tens digit of the wavelength range (nm)	30 : 1030 to 1039 nm 50 : 1050 to 1059 nm 80 : 1080 to 1089 nm (Exception: 64 for 1060 to 1069 nm)
yy	Output power (mW)	A0 : 130 mW C0 : 390 mW
tt	Last two digits of the wavelength (nm)	Examples: 63 : 1063 nm 32 : 1032 nm
zW	Wavelength tolerance	none : ± 5 nm W : ± 1 nm TW : ± 0.5 nm

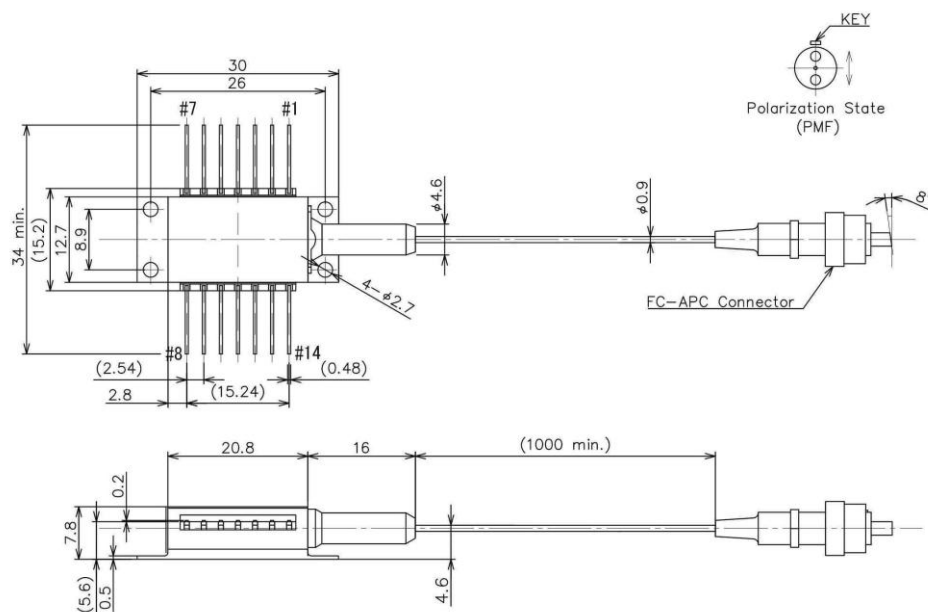
6-2 Connector type

Part Number	Fiber Type	Fiber Diameter	Connector
QLD1a6L-xyyPzWtt	Polarization maintaining fiber	900 μm	FC/APC
QLD1a6L-xyyPzWtt11		250 μm	Ferrule/APC

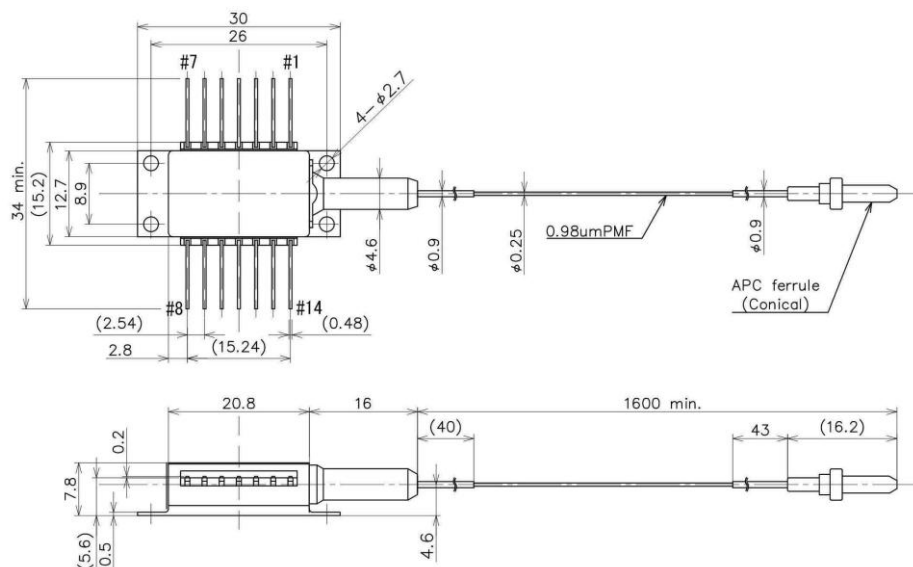
6-3 Examples of product part number

Part Number	Peak Wavelength, Fiber Type
QLD106L-64A0PW60	1060 nm ± 1 nm, 130 mW, 900 μm fiber
QLD106L-30C0PTW3211	1032 nm ± 0.5 nm, 390 mW, 250 μm fiber
QLD116L-20A0PW2211	1122 nm ± 1 nm, 130 mW, 250 μm fiber
QLD106L-80C0P83	1083 nm ± 5 nm, 390 mW, 900 μm fiber

7. OUTLINE DRAWING



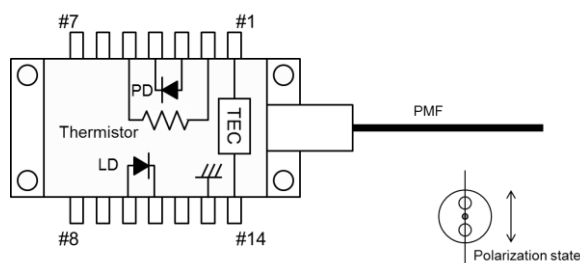
(a) 900 μm fiber diameter and FC/APC connector type (QLD1a6L-xyyyPzWtt)



(b) 250 μm fiber diameter and ferrule/APC type (QLD1a6L-xyyyPzWtt11)

8. PIN CONFIGURATION

No.	Description	No.	Description
1	TEC (+)	8	NC
2	Thermistor	9	NC
3	PD Anode	10	Laser Anode
4	PD Cathode	11	Laser Cathode
5	Thermistor	12	NC
6	NC	13	Case Ground
7	NC	14	TEC (-)



9. NOTICE

• Safety Information

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.

QD Laser, Inc.

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