

QDLASER

QLD156N-5050

1550 nm 50mW DFB Laser Butterfly Package

Preliminary

C00177-01 October 2015



1. DESCRIPTION

The QLD156N-5050 is a 1550-nm distributed feedback (DFB) laser for use in seeder for fiber lasers, sensing applications and telecom/data communications. The laser is assembled into a 14-pin butterfly package with an optical isolator, a monitor PD and a thermo-electric cooler.

2. FEATURES

- 50-mW fiber output power
- Single longitudinal mode operation at 1550 nm
- Fiber-pigtailed 14-pin butterfly package with a TEC

3. APPLICATION

- Seeder for fiber lasers
- Sensing
- Telecom/data communication

4. ABSOLUTE MAXIMUM RATING

($T_c = 25^\circ\text{C}$, unless otherwise specified)

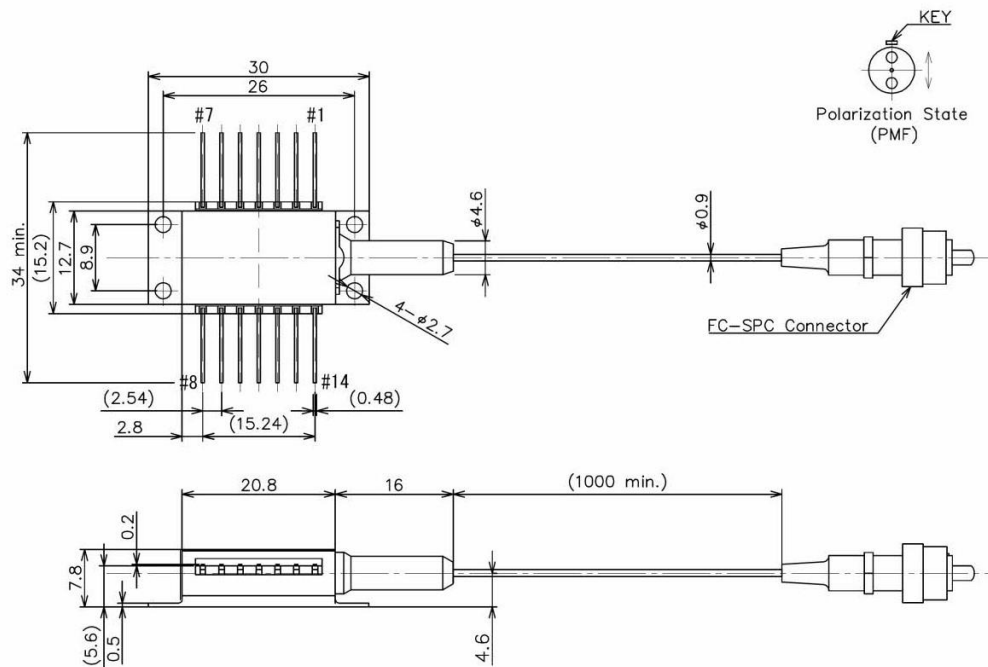
PARAMETER	SYMBOL	RATING	UNIT
LD Forward Current (CW)	I_F	500	mA
LD Reverse Voltage	V_{RLD}	2	V
PD Forward Current	$I_{V_{FPD}}$	10	mA
PD Reverse Voltage	V_{RPD}	20	V
TEC Drive Current	I_{TEC}	2	A
TEC Drive Voltage	V_{TEC}	4.3	V
Operation Temperature	T_c	-20 to 70	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to 85	$^\circ\text{C}$
Lead Soldering Temperature (10 s)	T_{sld}	260	$^\circ\text{C}$

5. OPTICAL AND ELECTRICAL CHARACTERISTICS

($T_{LD} = 25^{\circ}\text{C}$, unless otherwise specified)

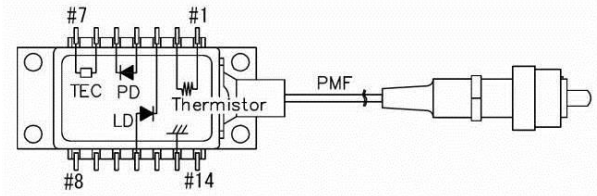
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Peak Wavelength	λ_p	CW, $P_f=50\text{ mW}$	1547	1550	1553	nm
Spectral Width (FWHM)	$\Delta\nu$	CW, $P_f=50\text{ mW}$	-	2	5	MHz
Temperature Coefficient of λ_p	$d\lambda_p/dT$	CW	-	0.1	-	nm/K
Current Coefficient of λ_p	$d\lambda_p/dI$	CW	-	0.01	-	nm/mA
Threshold Current	I_{th}	CW	-	-	40	mA
CW Fiber Output Power	P_f	CW, $I_f=300\text{ mA}$	50	-	-	mW
Operation Current	I_{op}	CW, $P_f=50\text{ mW}$	-	-	300	mA
Operation Voltage	V_{op}	CW, $P_f=50\text{ mW}$	-	-	2.5	V
Sidemode Suppression Ratio	SMSR	CW, $P_f=50\text{ mW}$	35	-	-	dB
Polarization Extinction Ratio	PER	CW	20	-	-	dB
Monitor PD Current	I_m	CW, $P_f=50\text{ mW}$, $V_r=5\text{V}$	100	-	2000	μA
Thermistor Resistance	R_{th}	$T_{LD} = 25^{\circ}\text{C}$, $B=3900\pm 100\text{K}$	9.5	10	10.5	$\text{k}\Omega$
TEC Drive Current	I_{TEC}	$P_f=50\text{ mW}$, $T_c=70^{\circ}\text{C}$,	-	-	1.2	A
TEC Drive Voltage	V_{TEC}	$P_f=50\text{ mW}$, $T_c=70^{\circ}\text{C}$	-	-	2.5	V

6. OUTLINE DRAWING



7. PIN CONFIGURATION

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



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.

	<p>LASER DIODE</p>
<p>INVISIBLE LASER RADIATION AVOID DIRECTION EXPOSURE TO BEAM</p> <p>MAXIMUM OUTPUT 200 mW WAVELENGTH 1530~1570 nm CLASS IV LASER PRODUCT</p>	<p>AVOID EXPOSURE-Invisible Laser Radiation is emitted from this aperture.</p>
<p>This product complies with 21 CFR Part 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated June 24, 2007</p> <p>QD Laser, Inc.</p> <p>1-1 Minamiwataridacho, Kawasaki-ku, Kawasaki, Kanagawa, 210-0855 Japan</p>	

QD Laser, Inc.

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