QDLASER

QLF1312-P10

1310 nm FP LASER DIODE

Preliminary

C00055-02, Nov. 2011

1. DESCRIPTION

QLF1312-P10 is a 1310 nm quantum dot FP laser diode chip for use in telecom and datacom applications up to 2.5Gbps speed. Since quantum dot technologies are equipped with active layers of the device, it realizes excellent temperature characteristics and low power consumptions.

2. FEATURES

- 1300nm FP-LD Chip
- Wide temperature operation: -10 to 85 °C

3. APPLICATION

- Optical communication

4. ABSOLUTE MAXIMUM RATING

(T_c = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Light Output Power	P_o	15	mW
LD Forward Current	I_F	80	mA
LD Reverse Voltage	V_{RLD}	2	V
Operation Temperature (Tc)	T_c	-10 to +85	°C
Storage Temperature *1)	T_{stg}	-40 to +85	°C
Soldering Temperature (<1.5s)	T_{sld}	390	°C

*1)no condensation

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5. OPTICAL AND ELECTRICAL CHARACTERISTICS

All chips are screend at 85 °C based on the following items.

PARAMETER	SYMBOL	TEST CONDITION	T_c	MIN	TYP	MAX	UNIT
Threshold current	I_{th}	CW	25°C	-	8	-	mA
			85°C	-	12	15	
Operation current	I_{op}	CW, P_o=10 mW	25°C	-	35	-	mA
			85°C	-	40	50	
Operation voltage	V_{op}	CW, P_o=10 mW	25°C	-	1.35	-	V
			85°C	-	1.25	1.6	
Slope efficiency	η	CW	25°C	-	0.40	-	W/A
			85°C	0.25	0.35	-	
Saturation power	P_{sat}	CW	85°C	10	-	-	mW
Center wavelength	λ_c	CW, P_o=10 mW	25°C	-	1305	-	nm
			85°C	1325	1335	1345	
Spectral width	Δλ	CW, P_o=10 mW RMS(-20dB)	25°C	-	2.7	-	nm
			85°C	-	2.2	4.0	
Beam divergence angle Pararell	θ//	CW, Po=10 mW, FWHM	25°C	-	18	-	deg.
Beam divergence angle Perpendicular	θ⊥		25°C	-	44	-	deg.

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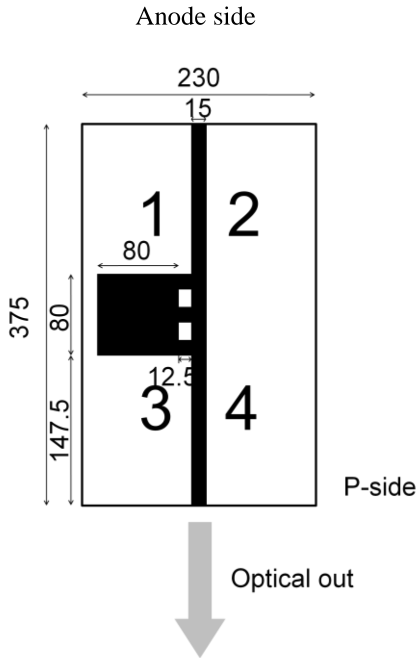
6. OUTLINE DRAWING



Length	375
Width	230
Height	120

All dimensions in micrometers

7. SHIPPING FORM

LD chips are shipped on an antistatic sheet of 6 inch-ϕ ring.
Product name, lot number and quantity are printed on labels.

8. NOTICE OF ASSEMBLING CHIPS

LD chips are easily damaged by external stress, such as physical contact, excess temperature and ESD.
QD Laser shall not take any responsibility for reliability and characteristics after assembly.
Please pay attention to handling chips, and use within range of maximum ratings.

(1) Chip handling
When handling LD chips, please do not use tweezers and use a capillary with a head shape to prevent the damage of the chip surface and the mesa structure.

(2) Die and wire bonding
Appropriate conditions should be used for die and wire bonding.
Die should be mounted into an anode-side up configraion.
Wire bonding should not be on an mesa structure.

(3) Burn-in
Burn-in can not be done on a chip level. After assembly, burn-in process is recommended to be done.
Suggested condition: Tchip=100deg.C, Iop=90mA, 12hrs,
Criteria: Tchip=25deg.C, ΔIth<+/-1.0mA, ΔIop<+/-10%, Δη<+/-10%

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9. NOTICE

- Safety Information

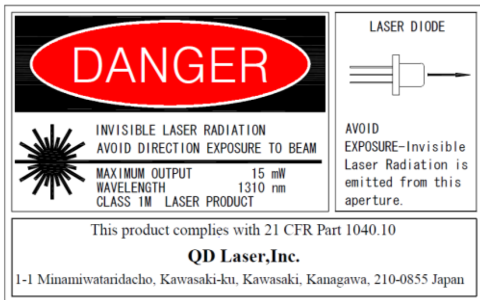
This product is classified as Class 1M laser product, and complies with 21 CFR Part 1040.10.
Please do not take a look laser lighting in operations since laser devices may cause troubles to human eyes.
Please do not eat, burn, break and make chemical process of the products since they contain GaAs material.

- 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.
QDL 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 2002/95/EC.



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