Rev. 10 [12. 2005]

OKI Electronics Components

OL4450L-3-Wnnn,OL4451L-3-Wnnn
OL4453L-3-Wnnn,OL5450L-3-Wnnn
OL5451L-3-Wnnn,OL5453L-3-Wnnn
OL6450L-3-Wnnn,OL6451L-3-Wnnn
OL6453L-3-Wnnn Series(W147-W161)

3mWCoaxial DFB Laser Diode Modules

1. DESCRIPTION

The OL4450L-3-Wnnn, OL4451L-3-Wnnn, OL4453L-3-Wnnn, OL5450L-3-Wnnn, OL5451L-3-Wnnn, OL5453L-3-Wnnn, OL6450L-3-Wnnn, OL6451L-3-Wnnn, OL6453L-3-Wnnn series consist of an MQW-DFB laser diode, a monitor PD, a single-stage optical isolator, a single-mode fiber and a coaxial package.

These modules are coaxial DFB Laser Diode Modules for CWDM 2.5Gbit/s transmission with high power at high temperature.

2. FEATURES

- High output power: 3.0mW fiber output power under CW
- Wide operating temperature range: Tc=0 to +85°C
- Side-mode suppression: 32dB
- Multi-quantum-well (MQW) DFB structure
- Internal monitor PD for power control
- Built-in single-stage optical isolator
- Coaxial Package
- No TEC required

3. APPLICATION

- CWDM

4.OPTICAL AND ELECTRICAL CHARACTERISTICS

(Tc = 0 to +85°C, unless otherwise specified)

Parameter	Symbol	Test Conditions		Min.	Typ.	Max.	Unit
Fiber Output Power	Pf	CW		3.0			mW
Fiber Output Power (Average)	P_{AVG}	Modulated		1.5			mW
Threshold Current	Ith	Tc=+25°C ,CW,BOL			7	15	mA
		Tc=+85°C,CW,BOL			25	40	
		Tc=+85°C,CW,EOL				1.5*Ith-BOL	
Operation Current	Iop	Pf=3.0mW,CW			70	110	mA
Slope efficiency	η	Pf=3.0mW, CW,Tc=+25°C		0.075	0.11		W/A
Modulation Current	Imod	Pf=3.0mW,CW,Tc=+25°C			30	40	mA
Peak Wavelength	λp	Pf= 3.0mW, CW Tc=25°C	OL445xL-3-W147	1467	1470	1473	nm
			OL445xL-3-W149	1487	1490	1493	
			OL545xL-3-W151	1507	1510	1513	
			OL545xL-3-W153	1527	1530	1533	
			OL545xL-3-W155	1547	1550	1553	
			OL545xL-3-W157	1567	1570	1573	
			OL545xL-3-W159	1587	1590	1593	
			OL645xL-3-W161	1607	1610	1613	
Spectral Width	Δλ	Pf= 3.0mW,CW,-20dB			0.2	0.5	nm
Side-mode suppression ratio	SMSR	Pf=3.0mW,CW		32	40		dB
Rise/Fall times	Tr/Tf	P_{AVG}=1.5mW,20-80% ExR*=9dB			0.09	0.15	ns
Relative Intensity Noise	RIN	Pf=3.0mW,CW			-140	-130	dB/Hz
Monitor Current	Im	Pf= 3.0mW,CW,Tc=+25°C		50	400	2200	μA
Tracking Error**	TRE	(RT to WCT)		-1	---	+1	dB
Dispersion Penalty***	DP	-				2	dB

*ExR=Extinction ratio

**TRE=10*log{(Pf@0~+85°C)/(Pf@25°C)} at Im hold(@25°C)

***For OLx45xL-3-Wnnn-xxxxL (See P.4) after Corning SMF-28™ 80km transmission
Test condition:ExR=9dB,NRZ,PRBS=2^23-1,@10^-10

5.ABSOLUTE MAXIMUM RATING

(Tc = +25°C, unless otherwise specified)

Parameter	Symbol	Rating	Unit
Fiber Output Power	Pf	5	mW
LD Reverse Voltage	Vrl	2	V
Monitor PD Forward Current	Ifd	10	mA
Monitor PD Reverse Current	Ird	3	mA
Monitor PD Reverse Voltage	Vrd	30	V
Operating Case Temperature (Tc)	Tc	0 to +85	°C
Storage Temperature	Tstg	-40 to +85	°C
Lead Soldering Temperature (10s)	-	260	°C

6.CONNECTOR AND FIBER SPECIFICATIONS

Parameter	Specifications	Unit
Type	SM	---
Mode Field Diameter	9+/-1	μm
Cladding Diameter	125+/-2	μm
Jacket Diameter	900	μm
Length	1(Min)	m
Connector Type	FC/SC/LC/MU/MU-J	---

7.ORDERING INFORMATION

OL 5 45 0 L – 3 – W155 – AF SC L

Wavelength
4: 1.4 μm
5: 1.5 μm
6: 1.6 μm

Pin Assignment
0: C type
1: A type
3: B type
(See P.5)

Peak Wavelength
W147: 1.47 μm
W149: 1.49 μm
W151: 1.51 μm
W153: 1.53 μm
W155: 1.55 μm
W157: 1.57 μm
W159: 1.59 μm
W161: 1.61 μm

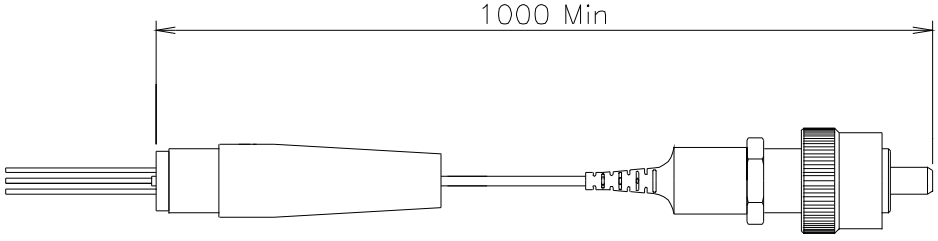
Flange type
AF: Angled Flange
SF: Straight Flange
NF: No Flange

Connector type
SC: SC Connector
FC: FC Connector
LC: LC Connector
MU: MU Connector
MUJ: MU-J Connector

Distance
Default, no suffix: 40km
L: 80km

8.OUTLINE DRAWING

Length (mm)

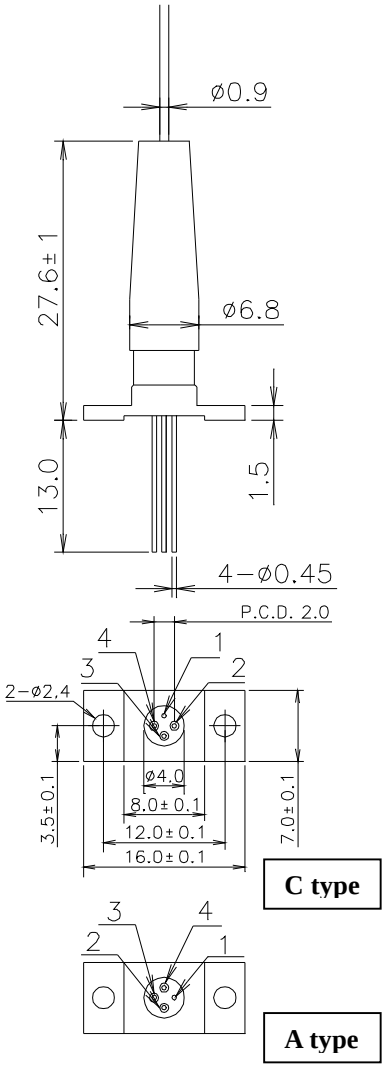


Drawing No: JOG-01064 Rev.10

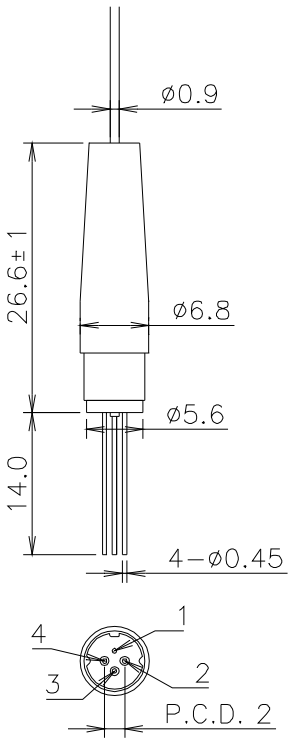
All dimensions in millimeters

Flange Type

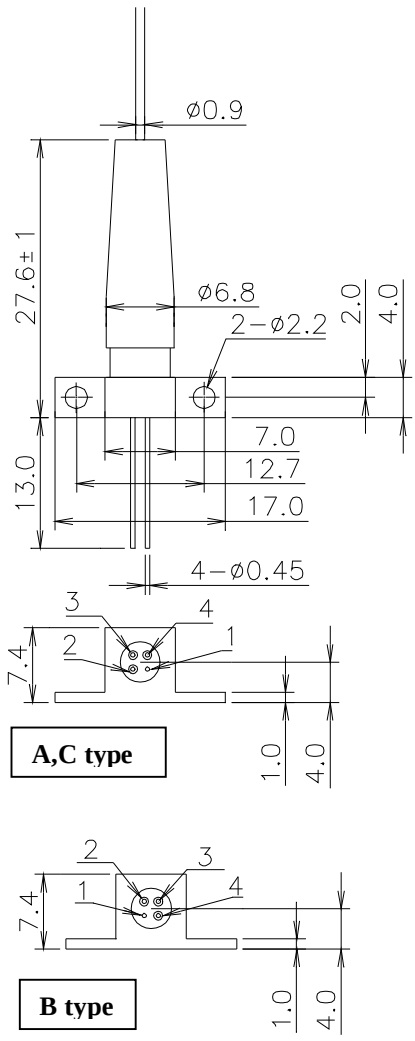
Straight flange



No flange



Angled flange



Pin Assignment

OL5450L (C type)

PIN configuration	
Assignment	
1	CASE
2	LD cathode
3	PD anode
4	LD anode PD cathode

OL5451L (A type)

PIN configuration	
Assignment	
1	LD anode (CASE)
2	LD cathode
3	PD cathode
4	PD anode

OL5453L (B type)

PIN configuration	
Assignment	
1	LD anode (CASE)
2	PD anode
3	PD cathode
4	LD cathode

Drawing No: JOG-01064 Rev.10

9. SAFETY INFORMATION ON THIS PRODUCT

Warning Laser Beam	A laser beam is emitted from this laser diode during operation. The invisible or visible laser beam, directly or indirectly, may cause injury to the eye or loss of eyesight. Do not look directly into the laser beam. Avoid exposure to the laser beam, any reflected or collimated beam.
Caution GaAs Product	The product contains gallium arsenide, GaAs. GaAs vapor and powder are hazardous to human health if inhaled, ingested or swallowed. Do not destory or burn the product. Do not crush or chemically dissolve the product. Do not put the product in the mouth. Observe related laws and company regulations when discarding this product. The product should be excluded from general industrial waste or household garbage.
Caution Optical Fiber	A glass-fiber is attached on the product. Handle with care. When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.

All specifications described herein are subject to change without notice.

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1. The information contained herein can change without notice owing to product and/or technical improvements. Before using the product, please make sure that the information being referred to is up-to-date.

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