



Technical Specification  
of  
1.55 $\mu$ m MQW-DFB Laser Diode  
with Ball Lens Cap

SLT14D0 Series

RoHS Compliant



### 1. General

SLT14D0 Series are 1.55 $\mu$ m InGaAsP/InP MQW-DFB laser diodes fabricated by OMVPE entirely. These diodes have low threshold current and high performance at high temperature.

A laser diode is mounted into a coaxial package integrated with an InGaAs monitor PD and a high refractive ball lens cap.

### 2. Package dimension and pin assignment

(See attached appendix.)

### 3. Absolute maximum ratings

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+100	°C
Operating case temperature	Top	-40~+85	°C
Peak optical output power	Po	15	mW
Forward current (LD)	IfL	150	mA
Reverse voltage (LD)	VrL	2	V
Reverse voltage (PD)	VrP	15	V
Reverse current (PD)	IrP	2	mA
Soldering temperature (<10s)	Stemp	260	°C

4. Electrical and optical characteristics (Po=5mW, Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold current	I <sub>th</sub>	CW	—	10	15	mA
		CW, T <sub>c</sub> =-40~+85°C	—	—	50	
Operating voltage	V <sub>f</sub>	CW, T <sub>c</sub> =-40~+85°C	—	—	1.6	V
Optical output power	P <sub>o</sub>	CW, I <sub>f</sub> =I <sub>th</sub> +20mA	3.0	5.0	—	mW
		CW, I <sub>f</sub> =I <sub>th</sub> +20mA, T <sub>c</sub> =-40~+85°C	2.0	—	—	
Slope efficiency	S <sub>e</sub>	CW	0.15	0.25	—	mW/mA
		CW, T <sub>c</sub> =-40~+85°C	0.10	—	—	
Peak wavelength	λ <sub>p</sub>	CW	1540	1550	1560	nm
		CW, T <sub>c</sub> =-40~+85°C	1530	—	1570	
Spectral width	Δλ	CW, 20dB down, T <sub>c</sub> =-40~+85°C	—	—	1	nm
Side-mode suppression ratio	SSR	CW, T <sub>c</sub> =-40~+85°C	30	—	—	dB
Fiber coupling power (*1)	P <sub>f</sub>	CW, I <sub>f</sub> =I <sub>th</sub> +20mA	—	1.2	—	mW
Focal length	—	From the reference plane of the stem (*2)	5.7	6.7	7.7	mm
Rise time	t <sub>r</sub>	I <sub>b</sub> =I <sub>th</sub> , 20-80%, T <sub>c</sub> =-40~+85°C	—	—	0.10	ns
Fall time	t <sub>f</sub>	I <sub>b</sub> =I <sub>th</sub> , 80-20%, T <sub>c</sub> =-40~+85°C	—	—	0.15	ns
Monitor current	I <sub>m</sub>	CW, V <sub>rP</sub> =5V, T <sub>c</sub> =-40~+85°C	80	500	—	μA
Monitor dark current	I <sub>d</sub>	V <sub>rP</sub> =5V	—	—	10	nA
		V <sub>rP</sub> =5V, T <sub>c</sub> =-40~+85°C	—	—	100	
Monitor capacitance	C	V <sub>rP</sub> =5V, f=1MHz	—	—	10	pF

Note: \*1. Measured with the standard equipment of SEI.

Using a flat fiber, peak coupling.

Note: \*2. See attached appendix.

## 5. Ordering information

Part number	Pin assignment	Number of pin	Pin length
SLT14D0	Type A	4	13.5±0.5mm
SLT14D6	Type C	4	13.5±0.5mm

## 6. Precaution

- (1) Radiation emitted by laser devices can be dangerous to the eyes. Avoid eye or skin exposure to direct or scattered radiation.
- (2) The laser diodes should be handled in the same manner as ordinary semiconductor devices to prevent the electro-static damages. For safe keeping and carrying, the modules should be packaged with ESD proof material. To assemble the modules on PCB, the workbench, the soldering iron and the human body should be grounded.
- (3) Please pay special attention to the atmosphere condition because the dew on the module may cause some electrical damages.
- (4) Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.

## 7. RoHS compliancy

On January 27, 2003, the European Parliament and the Council of the European Union issued the directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

Member States shall ensure that, from July 1, 2006, new electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

Applications listed in the Annex are exempted.

This product is compliant with RoHS 6/6 directive with exemptions "Lead in glass of cathode ray tubes, electronic components and fluorescent tubes" and "Lead as an alloying element in steel containing up to 0.35 % lead by weight, aluminium containing up to 0.4 % lead by weight and as a copper alloy containing up to 4 % lead by weight".

Appendix

Part No.: SLT14D□□□□

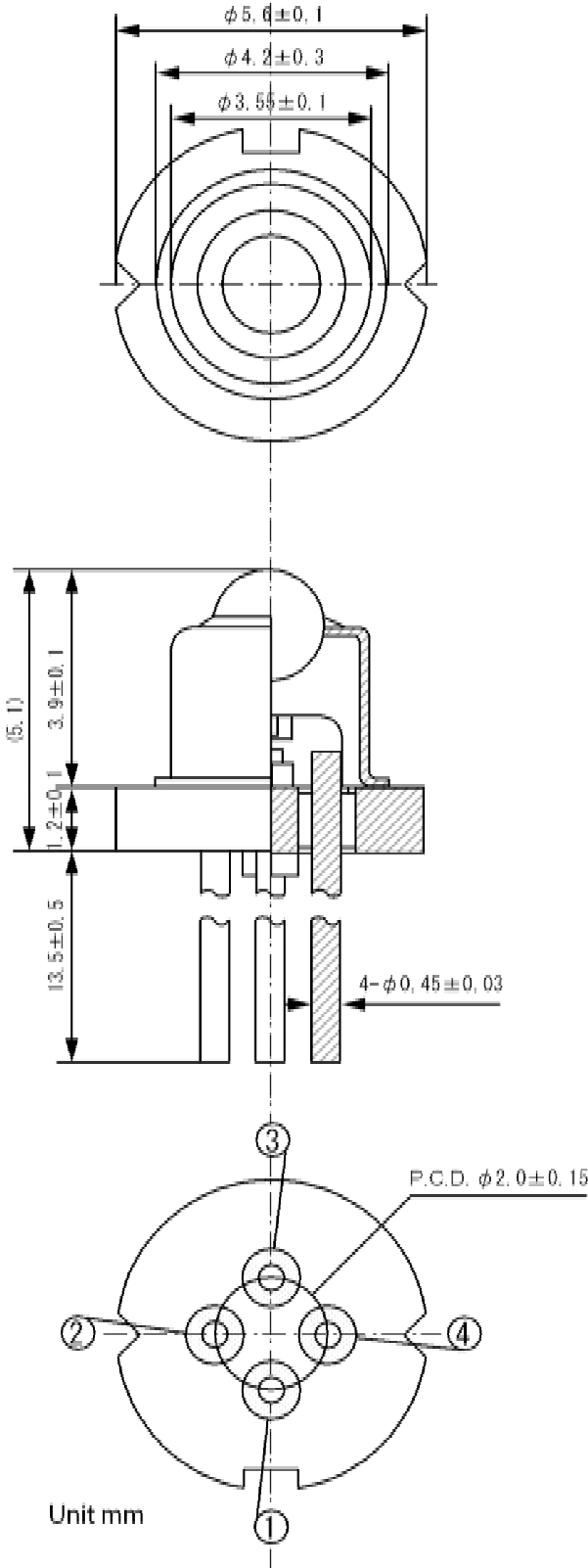
(Customize Code)

Code	Pin Assignment	Pin Length (L1)
0	Type A	13.5±0.5
6	Type C	13.5±0.5

Pin No.	Pin Function for Type A
1	LD Anode(CASE)
2	LD Cathode
3	PD Cathode
4	PD Anode

Pin No.	Pin Function for Type C
1	(CASE) LD Cathode
2	LD Cathode
3	PD Anode
4	LD Anode /PD Cathode

Pin Assignment



## 7. For More Information

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Revision Record

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HUW0724017-01A	May/11/07	Initial issue.	K. Mii	M. Furumai	T. Nakabayashi
HUW0724017-01B	Dec./25/07	Added wording of RoHS compliancy.	N. Fukushima	K. Mii Y. Yamasaki	H. Michikoshi