



Technical Specification
of
1.49 μ m MQW-DFB Laser Diode
with Aspherical Lens Cap
of Short Focal Distance Type

SLT1446-G120D

RoHS Compliant



1. General

SLT1446-G120D is a 1.49 μ m InGaAsP/InP MQW-DFB laser diode fabricated by OMVPE entirely.

This diode has 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 an aspherical lens cap of 7.5mm focal distance.

2. Package dimension and pin assignment

(See attached appendix.)

3. Absolute maximum ratings

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40 to+100	°C
Operating case temperature	Top	-20 to+85	°C
Peak optical output power	Po	20	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	Ith	CW	—	10	15	mA
		CW, Tc=-20 to+85°C	—	—	50	
Optical output power	Po	CW, If=Ith+20mA	5.0	6.0	—	mW
		CW, If=Ith+20mA, Tc=-20 to+85°C	2.5	—	—	
Operating voltage	Vf	CW, Tc=-20 to+85°C	—	—	1.6	V
Slope efficiency	Se	CW	0.25	0.30	—	mW/mA
		CW, Tc=-20 to+85°C	0.125	—	—	
Peak wavelength	λ_p	CW, Tc=-20 to+85°C	1480	—	1500	nm
Side-mode suppression ratio	SSR	CW, Tc=-20 to+85°C	30	—	—	dB
Spectral width	$\Delta\lambda$	CW, 20dB down, Tc=-20 to+85°C	—	—	1	nm
Rise time	tr	Ib=Ith, 20-80%, Tc=-20 to+85°C	—	—	0.10	ns
Fall time	tf	Ib=Ith, 80-20%, Tc=-20 to+85°C	—	—	0.15	ns
Monitor current	Im	CW, VrP=5V, Tc=-20 to+85°C	80	500	—	μ A
Monitor dark current	Id	VrP=5V	—	—	10	nA
		VrP=5V, Tc=-20 to+85°C	—	—	100	
Monitor capacitance	C	VrP=5V, f=1MHz	—	—	10	pF

5. Accompanied data

The following data shall be supplied with each device.

- Threshold current: I_{th} (CW, $T_c=+25^{\circ}\text{C}$)
- Optical output power: P_o (CW, $I_f=I_{th}+20\text{mA}$, $T_c=+25^{\circ}\text{C}$)
- Peak wavelength: λ_p (CW, $P_o=5\text{mW}$, $T_c=+25^{\circ}\text{C}$)
- Side-mode suppression ratio : SSR (CW, $P_o=5\text{mW}$, $T_c=+25^{\circ}\text{C}$)
- Monitor current: I_m (CW, $P_o=5\text{mW}$, $V_rP=5\text{V}$, $T_c=+25^{\circ}\text{C}$)

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 modules 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

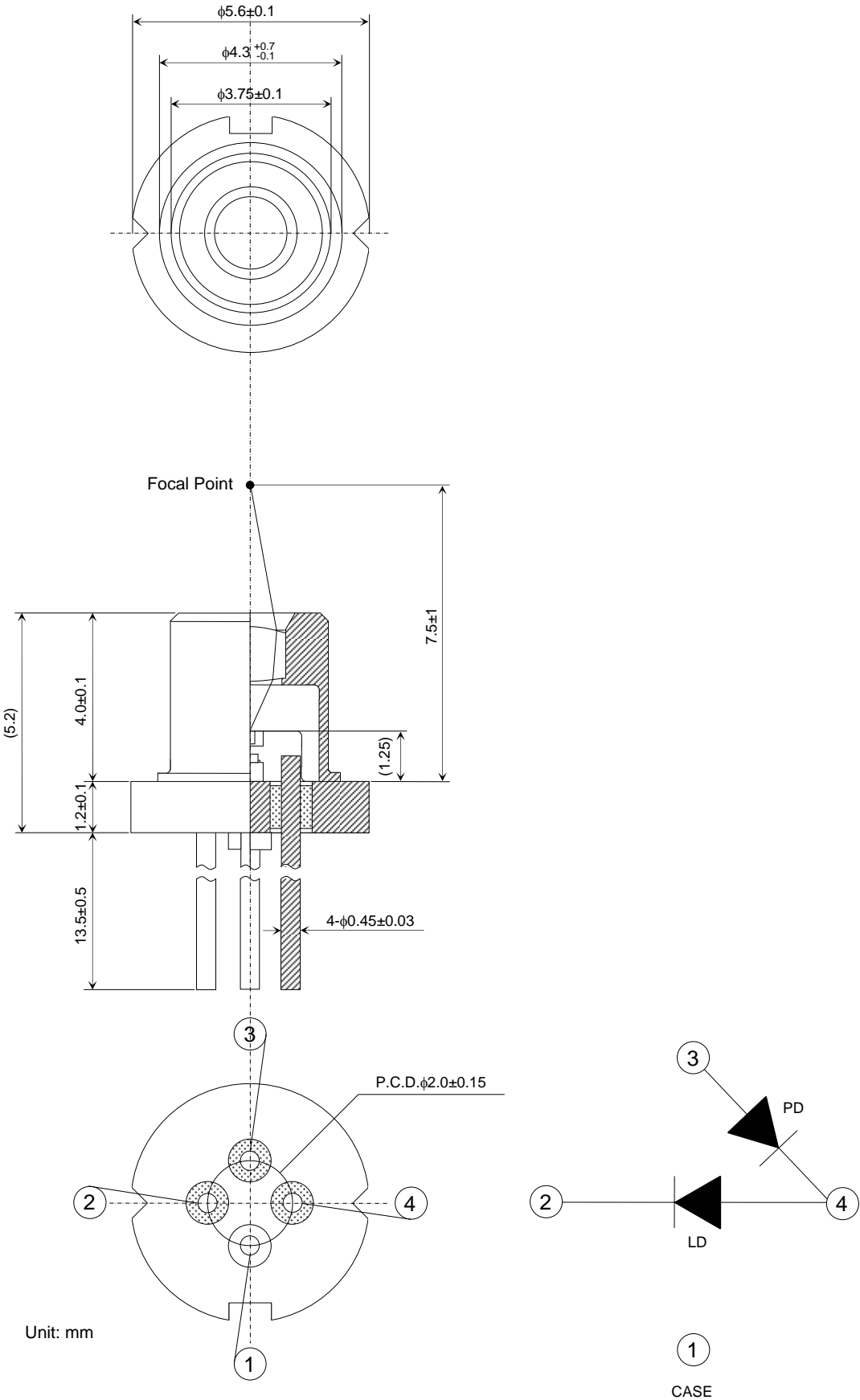
On January 27, 2003, the European Parliament and the Council of the European Union issued the directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

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



Sumitomo Electric Industries, Ltd.

Part No.: SLT1446-G120D

Document No.: HUW0424150-01C

Data of issue: December 25, 2007

8. For More Information

U.S.A.

ExceLight Communications Inc.

4021 Stirrup Creek Drive, Suite 200, Durham NC, 27703

U.S.A.

Tel. (919) 361-1600

Fax. (919) 361-1619

E-mail: info@excelight.com

URL: <http://www.excelight.com>

Europe

Sumitomo Electric Europe Ltd.

220 Centennial Park, Centennial Avenue, Elstree, Herts, WD6 3SL

United Kingdom

Tel. (020) 8953-8118

Fax. (020) 8207-5950

URL: <http://www.sumielectric.com>

Japan

Sumitomo Electric Industries, Ltd. (Opto-electronic Products Sales Div.)

3-12, Moto-Akasaka 1-chome, Minato-ku Tokyo, 107-8468

Japan

Tel. (03) 3423-5031

Fax. (03) 3423-5247

E-mail: product_info@ppd.sei.co.jp

URL: http://www.sei.co.jp/Electro-optic/index_e.html

Sumitomo Electric Industries, Ltd.

Part No.: SLT1446-G120D

Document No.: HUW0424150-01C

Data of issue: December 25, 2007

Revision Record

Document No.	Date of issue	Description	Incorporated by	Checked by	Approved by
HUW0424150-01A	Dec./14/04	Initial issue.	T. Kounosu	M. Furumai Y. Yamasaki	M. Yoshimura
HUW0424150-01B	Mar./22/05	Added rise time and fall time.	T. Kounosu	M. Furumai Y. Yamasaki	M. Yoshimura
HUW0424150-01C	Dec./25/07	Added RoHS Compliancy	T. Takagi	N. Fukushima K. Mii	H. Michikoshi