



Technical Specification  
of  
1.3 $\mu$ m MQW-FP Laser Diode Module:  
(Transmitter Optical Sub-assembly in Small PKG)  
SLT2770-xN series



## 1. General

SLT2770-xN series are the 1.3 $\mu$ m InGaAsP/InP MQW-FP laser diode modules designed for fiber optic communication systems, especially for Gigabit Ethernet or Fiber channel up to 10km applications.

These modules are transmitter optical sub-assembly, and have low threshold current and high performance at high temperature.

A laser diode is mounted into a  $\phi$ 3.8mm coaxial package integrated with an InGaAs monitor PD, a single-mode fiber-stub and a split sleeve for the optical connector with  $\phi$ 1.25mm ferrule.

## 2. Package dimension and pin assignment

(See attached the outline drawing.)

## 3. Absolute maximum ratings

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+85	°C
Operating case temperature	Top	-40~+85	°C
Fiber output power	Pf	2.5	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 (Pf=0.5mW, SMF(10/125 $\mu$ m), Tc=+25 $\pm$ 2 $^{\circ}$ C, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold current	Ith	CW	—	5	15	mA
		CW, Tc=-40~+85 $^{\circ}$ C	1	—	30	
Threshold optical output power	Pth	CW, If=Ith	—	—	30	$\mu$ W
Optical output power	Pf	CW, If=Ith+20mA	0.35	0.5	0.8	mW
		CW, If=Ith+20mA, Tc=-40~+85 $^{\circ}$ C	0.24	—	—	
Forward voltage	Vf	CW, Tc=-40~+85 $^{\circ}$ C	—	—	1.6	V
Slope efficiency	Se	CW, Tc=-40~+85 $^{\circ}$ C	0.012	—	—	mW/mA
Central wavelength	$\lambda_c$	CW, 20dB down RMS	1290	—	1310	nm
		CW, 20dB down RMS, Tc=-40~+85 $^{\circ}$ C	1270	—	1340	
Wavelength temp coef.	$\lambda_{ct}$	CW	—	—	0.45	nm/ $^{\circ}$ C
Spectral width	$\Delta\lambda$	CW, 20dB down, RMS, Tc=-40~+85 $^{\circ}$ C	—	—	2.0	nm
Rise time	tr	Pf=Pth to 0.5mW, Duty ratio=50%, 20-80%	—	—	0.14	ns
Fall time	tf		—	—	0.14	
Relative intensity noise	RIN	CW, ORL<-12dB	—	—	-122	dB/Hz
Monitor current	Im	CW, VrP=5V,	200	—	950	$\mu$ A
Monitor dark current	Id	VrP=5V	—	1	1000	nA
Monitor capacitance	C	VrP=5V, f=1MHz	—	—	25	pF
Connector repeatability	—	CW, SEI master plug	-1	—	+1	dB

## 5. Ordering information

Part number	Pin assignment	Number of pin	Pin cercle diameter
SLT2770-LN	TypeA	4	1.35±0.20
SLT2776-LN	TypeC	4	1.35±0.20
SLT2779-LN	TypeE	3	1.27±0.20

## 6. Accompanied data

The following data measured at  $T_c=+25^{\circ}\text{C}$  shall be supplied with each device.

- Threshold current:  $I_{th}$  (CW)
- Optical output power:  $P_f$  (CW,  $I_f=I_{th}+20\text{mA}$ , SMF)
- Central wavelength:  $\lambda_c$  (CW,  $P_f=0.5\text{mW}$ , SMF)
- Spectral width:  $\Delta\lambda$  (CW,  $P_f=0.5\text{mW}$ , RMS, SMF)
- Monitor current:  $I_m$  (CW,  $P_f=0.5\text{mW}$ ,  $V_rP=5\text{V}$ , SMF)

## 7. 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.

Appendix

Part No.: SLT277 □-□N/□□□

(Customize code)

Code	Fiber-sleeve type
L	LC

Code	Pin assignment	Pin circle (D1)
0	Type A	$\phi 1.35 \pm 0.20$
6	Type C	$\phi 1.35 \pm 0.20$
9	Type E	$\phi 1.27 \pm 0.20$

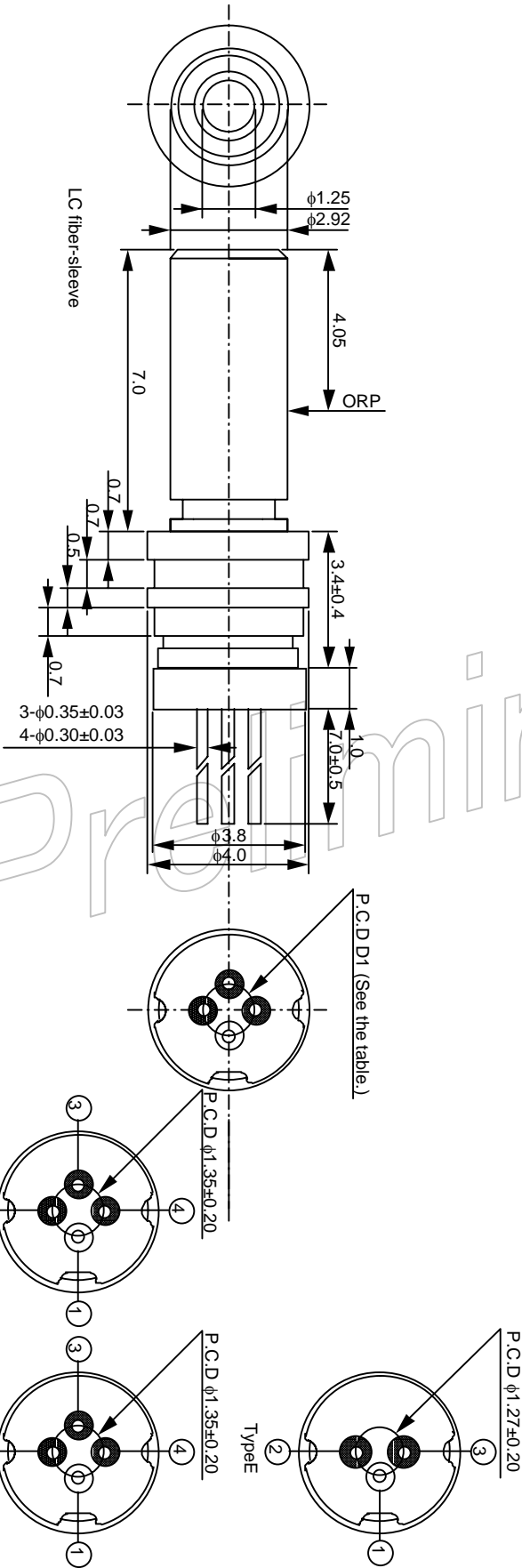
Pin No.	Pin function
1	LD anode (CASE)
2	LD cathode
3	PD cathode
4	PD anode

Pin No.	Pin function
1	(CASE)
2	LD cathode
3	PD anode
4	LD anode/PD cathode

Pin No.	Pin function
1	LD anode/PD cathode
2	LD cathode
3	PD anode

Fiber-sleeve type

Pin assignment and pin circle



Unit: mm  
 Tolerance:  $\pm 0.1$ mm, unless otherwise noted.

Sumitomo Electric Industries, Ltd.

Part No.: SLT2770-xN series

Document No.: HUW0224044-01A

Date of issue: August 27, 2002

## 8. For More Information

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Revision Record

Document No.	Date of issue	Description	Incorporated by	Checked by	Approved by
HUW0224044-01A	Aug./27/02	Preliminary	Y.Yamasaki	N.Kushida	M.Yoshimura

Preliminary