



Sumitomo Electric Industries, Ltd.
Part No.: SLT2470-xN-xnnnx Series
Document No.: HUW9924210-01A
Data of issue: January 18, 2001

Preliminary Specification
of
1.47 μ m~1.61 μ m MQW-DFB Laser Diode Module:
(Transmitter Optical Sub-assembly in small PKG)
for CWDM of 622Mb/s and 2.5Gb/s transmission

SLT2470-xN-xnnnx Series



1. General

SLT2470-xN-xnnnx Series are 1.47 μ m~1.61 μ m InGaAsP/InP MQW-DFB laser diode modules designed for fiber optic communication systems. These modules are transmitter optical sub-assembly with low threshold current and high performance at high temperature, and are ideally suitable for CWDM of 622Mbps or 2.5Gbps transmission applications.

A laser diode is mounted into a ϕ 3.6mm coaxial package integrated with an InGaAs monitor PD, a single-mode fiber-stub and a split sleeve for the optical connector with ϕ 1.25mm ferrule.

2. Package dimension and pin assignment

(See attached appendix.)

3. Absolute maximum ratings (Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+85	°C
Operating case temperature	Top	0~+70	°C
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 (<10sec.)	Stemp	260	°C

4. Electrical and optical characteristics

(Pf=1.5mW, SMF(9.5/125μm), Tc=+25°C, unless otherwise noted.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold current	Ith	CW	—	10	20	mA
		CW, Tc=0~+70°C	—	—	50	
Optical output power	Pf	CW, If=Ith+20mA	1.0	1.5	3.0	mW
		CW, If=Ith+20mA, Tc=0~+70°C	0.5	—	—	
Operating voltage	Vf	CW, Tc=0~+70°C	—	—	1.7	V
Slope efficiency	Se	CW, Average(Ith to Ith+20mA)	0.05	0.075	0.15	mW/mA
Peak wavelength	λc	CW	(*1)			nm
Wavelength Temperature Coeff	—	CW, Tc=0~+70°C	0.08	0.1	0.12	nm/°C
Side-mode suppression ratio	SSR	CW, Tc=0~+70°C	30	—	—	dB
Tracking error	ΔPf	Im hold(@Pf=1.5mW(25°C)), CW Tc=0~+70°C	-1.5	—	1.5	dB
Rise time	tr	Ib=Ith, 20-80%, Tc=0~+70°C	—	0.10	0.15	nsec.
Fall time	tf	Ib=Ith, 80-20%, Tc=0~+70°C	—	0.10	0.15	nsec.
Extinction ratio	Er	10log(1.5mW/Pf(Ith)) Tc=0~+70°C	10	—	—	dB
Monitor current	Im	CW, VrP=5V, Tc=0~+70°C	50	—	—	μA
Monitor dark current	Id	VrP=5V	—	1	10	nA
		VrP=5V, Tc=0~+70°C	—	—	100	
Monitor capacitance	C	VrP=5V, f=1MHz	—	—	10	pF
Connector repeatability	—	(*2)	—	—	±1	dB

Note: *1. Detail of peak wavelength specification

Rank A					Rank B				
Channel No.	Min.	Typ.	Max.	Unit	Channel No.	Min.	Typ.	Max.	Unit
-G390A	1468	1470	1472	nm	-G390B	1467	1470	1473	nm
-G120A	1488	1490	1492		-G120B	1487	1490	1493	
-F850A	1508	1510	1512		-F850B	1507	1510	1513	
-F590A	1528	1530	1532		-F590B	1527	1530	1533	
-F340A	1548	1550	1552		-F340B	1547	1550	1553	
-F095A	1568	1570	1572		-F095B	1567	1570	1573	
-E855A	1588	1590	1592		-E855B	1587	1590	1593	
-E620A	1608	1610	1612		-E620B	1607	1610	1613	

*2. Measured with SEI's master plug and an extra receptacle.

5. Ordering information

Part number	Pin assignment	Number of pin	Pin cercle diameter
SLT2470-LN-xnnnx	TypeA	4	1.35±0.20
SLT2476-LN-xnnnx	TypeC	4	1.35±0.20
SLT2479-LN-xnnnx	TypeE	3	1.27±0.20

Channel (-xnnnx)	$\lambda_p@25^\circ\text{C}$	Range
-G390A	1470nm	±2nm
-G390B		±3nm
-G120A	1490nm	±2nm
-G120B		±3nm
-F850A	1510nm	±2nm
-F850B		±3nm
-F590A	1530nm	±2nm
-F590B		±3nm
-F340A	1550nm	±2nm
-F340B		±3nm
-F095A	1570nm	±2nm
-F095B		±3nm
-E855A	1590nm	±2nm
-E855B		±3nm
-E620A	1610nm	±2nm
-E620B		±3nm

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.

Appendix

Part No.: SLT247□-□N/□□□-□□□□□

(Customize code)

Code	Fiber-sleeve type
L	LC

Fiber-sleeve type

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 assignment and pin circle

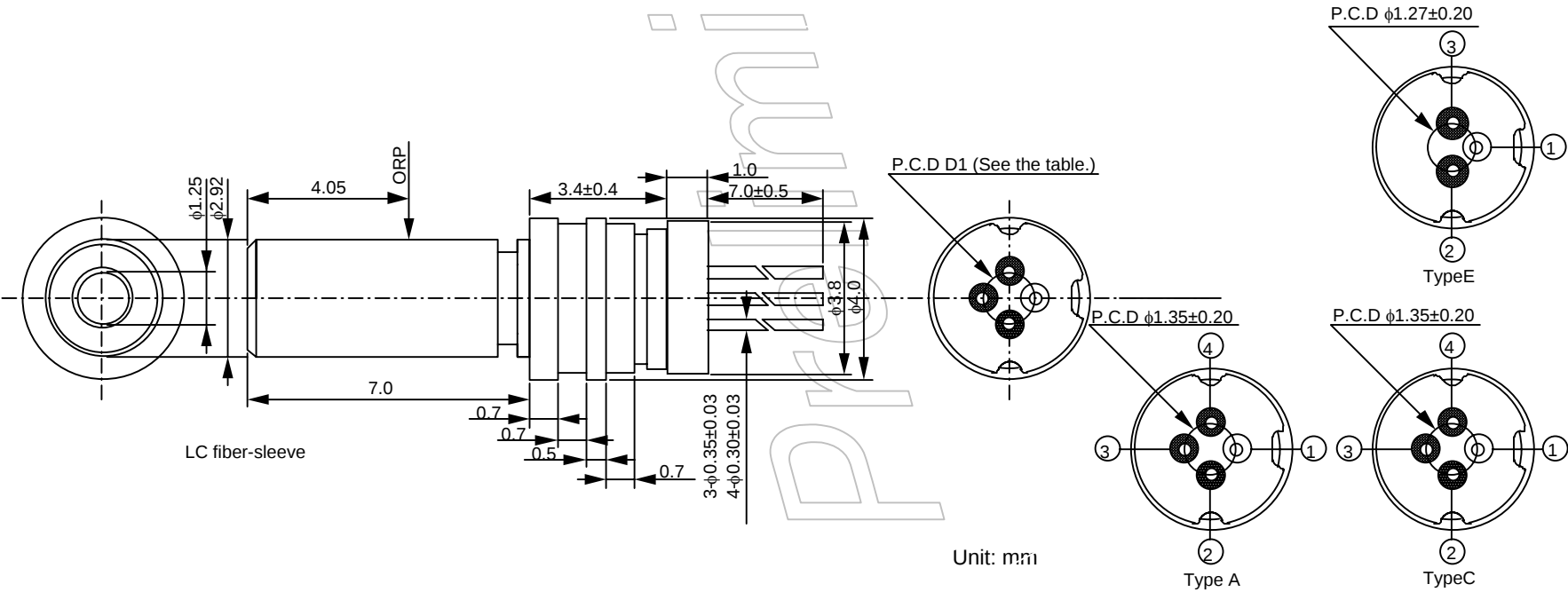
Code	Wavelength range
A	$\pm 2\text{nm}$
B	$\pm 3\text{nm}$

Channel	Wavelength @25deg.
-G390	1470nm
-G120	1490nm
-F850	1510nm
-F590	1530nm
-F340	1550nm
-F095	1570nm
-E855	1590nm
-E620	1610nm

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

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

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



7. For More Information

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