



Preliminary Specification  
of  
1.27 $\mu$ m~1.61 $\mu$ m MQW-DFB Laser Diode Module:  
(Transmitter Optical Sub-assembly)  
for CWDM of 622Mb/s and 2.5Gb/s transmission

SLT2420-xN-xnnnx Series



1. General

SLT2420-xN-xnnnx Series are 1.27 $\mu$ m~1.61 $\mu$ 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  $\phi$ 5.6mm coaxial package integrated with an InGaAs monitor PD, a single-mode fiber-stub and a split sleeve for the SC optical connector.

2. Package dimension and pin assignment

(See attached appendix.)

3. Absolute maximum ratings

Parameter	Symbol	Ratings	Unit
Storage temperature	Tstg	-40~+85	°C
Operating case temperature	Top	0~+70	°C
Optical output power	Pf	5	mW
Forward current (LD)	IfL	150	mA
Reverse voltage (LD)	VrL	2	V
Reverse current (PD)	IrP	2	mA
Reverse voltage (PD)	VrP	15	V
Soldering temperature (<10s)	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	—	5.0	
Operating voltage	Vf	CW, Tc=0~+70°C	—	—	1.7	V
Slope efficiency	Se	CW	0.05	0.075	0.15	mW/mA
Peak wavelength	λp	CW	(*2)			nm
Wavelength Temperature Coeff	—	CW, Tc=0~+70°C	0.07	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	—	0.05	0.10	ns
Fall time	tf	Ib=Ith, 80-20%, Tc=0~+70°C	—	0.10	0.15	ns
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	—	(*1)	-1	—	+1	dB

Note: \*1. Measured with SEI's master plug and an extra receptacle.

Note: \*2. Detail of peak wavelength specification

Rank A					Rank B				
Channel No.	Min.	Typ.	Max.	Unit	Channel No.	Min.	Typ.	Max.	Unit
-K605A	1268	1270	1272	nm	-K605B	1267	1270	1273	nm
-K240A	1288	1290	1292		-K240B	1287	1290	1293	
-J885A	1308	1310	1312		-J885B	1307	1310	1313	
-J540A	1328	1330	1332		-J540B	1327	1330	1333	
-J205A	1348	1350	1352		-J205B	1347	1350	1353	
-H885A	1368	1370	1372		-H885B	1367	1370	1373	
-H570A	1388	1390	1392		-H570B	1387	1390	1393	
-H260A	1408	1410	1412		-H260B	1407	1410	1413	
-G965A	1428	1430	1432		-G965B	1427	1430	1433	
-G675A	1448	1450	1452		-G675B	1447	1450	1453	
-G390A	1468	1470	1472		-G390B	1467	1470	1473	
-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	

5. Ordering information

Part number	Pin assignment	Number of pin	Pin length
SLT2420-CN-xnnnx	Type A	4	13.5±0.5mm
SLT2426-CN-xnnnx	Type C	4	13.5±0.5mm

Channel (-xnnnx)	p@25°C	Range	Status
-K605A	1270nm	±2nm	Preliminary
-K605B		±3nm	
-K240A	1290nm	±2nm	
-K240B		±3nm	
-J885A	1310nm	±2nm	
-J885B		±3nm	
-J540A	1330nm	±2nm	
-J540B		±3nm	
-J205A	1350nm	±2nm	
-J205B		±3nm	
-H885A	1370nm	±2nm	
-H885B		±3nm	
-H570A	1390nm	±2nm	
-H570B		±3nm	
-H260A	1410nm	±2nm	
-H260B		±3nm	
-G965A	1430nm	±2nm	
-G965B		±3nm	
-G675A	1450nm	±2nm	
-G675B		±3nm	
-G390A	1470nm	±2nm	In production
-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.

Preliminary



7. For More Information

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Revision Record

Document No.	Date of issue	Description	Incorporated by	Checked by	Approved by
HUW9924209-01A	Feb./25/00	Preliminary issue.	T. Fujitani	M. Yoshimura	T. Fujitani
HUW9924209-01B	Mar./03/00	"-xnnx" code of $\lambda p5$ has been changed to E855A and E855B.	M. Yoshimura	T. Fujitani	T. Fujitani
HUW9924209-01C	Nov./07/00	Corrected Tstg from -40~90°C to -40~+85°C; Corrected Ith on condition of Tc=+25°C from max.: 18mA to max.: 20mA; Corrected Ith on condition of Tc=0~+70°C from max.: 40mA to max.: 50mA; Corrected Pf on condition of Tc=+25°C from max.: 2.0mW to min.: 3.0mW; Added Se on condition of Tc=+25°C; Corrected $\Delta Pf$ from min.: -1dB and max.: 1dB to min.: -1.5dB and max.: 1.5dB; Added Er on condition of Tc=0~+70°C; Added C on condition of Tc=+25°C; Added the channel of G390 and G120.	T. Nakanishi	M. Yoshimura	T. Fujitani
HUW9924209-01D	Jan./18/01	Revised Id on condition of Tc=0~+70°C from max.: 30nA to max.: 100nA; Corrected wavelength of F095x channel from 1550nm to 1570nm in the section of ordering information.	T. Nakanishi	M. Yoshimura	M. Yoshimura
HUW9924209-01E	Dec./04/02	Added channels of 1270nm, 1290nm, 1310nm, 1330nm, 1350nm, 1370nm, 1390nm, 1410nm, 1430nm and 1450nm; Revised wavelength temperature coeff. from min.: 0.08nm/°C to min.: 0.07 nm/°C.	H. Koseki	Y. Yamasaki	M. Yoshimura