

## C-1xx-2500-FDFB-SLC2



### Features

- CWDM DFB Laser
- SFP MSA compliant
- Data rate 2.488 Gbps
- Single +3.3 V Power Supply
- Low power consumption
- Available with LC duplex connector
- LVPECL Differential Inputs and Outputs
- Class 1 Laser Int. Safety Standard IEC 825 Compliant
- Uncooled laser diode with MQW structure
- Complies with CORE GR-253

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Power Supply Voltage	$V_{CC}$	-	3.6	V
Input Voltage	-	GND	$V_{CC}$	V
Output Current	$I_{out}$	0	30	mA
Soldering Temperature	-	-	260/6	°C/s
Operating Temperature	$T_{opr}$	0	70	°C
Storage Temperature	$T_{stg}$	-40	85	°C
Grounding Post Temp/Time	-	-	300/10	°C /s

### Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Power Supply Voltage	$V_{CC}$	3.1	3.3	3.5	V
Operating Temperature(case)	$T_{opr}$	0	-	70	°C
Data Rate	-	-	2.488	-	Gbps

### Transmitter Specifications (0°C< $T_{op}$ <70°C, 3.1V< $V_{CC}$ <3.5V)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
<b>Optical</b>						
Transmit Power- $\lambda\lambda$	$P_o$	-5	-	0	dBm	Output power is coupled into a 9/125 $\mu$ m single mode fiber
Output Center Wavelength	$\lambda$	$\lambda_c - 6.5$	$\lambda_c$	$\lambda_c + 6.5$	nm	0 to +70°C
Output Spectrum Width	$\Delta\lambda_{20}$	-	-	1	nm	-20 dB
<b>Center Wavelength</b>						
Part no. Identif.-xx	$\lambda_c$	Unit	Part no. Identif.-xx	$\lambda_c$	Unit	Part no. Identif.-xx
31	1311	nm	39	1391	nm	47
33	1331	nm	41	1411	nm	49
35	1351	nm	43	1431	nm	51
37	1371	nm	45	1451	nm	53
55	1551	nm	57	1571	nm	59
61	1611	nm	63	1631	nm	65
<b>Electrical</b>						
Extinction Ratio	$E_R$	8.2	-	-	dB	
Output Eye	Compliant with Bellcore TR-NWT-000253 and ITU recommendation G.957					
Optical Rise Time	$t_r$	-	-	0.2	ns	10%-90% Values
Optical Fall Time	$t_f$	-	-	0.2	ns	10%-90% Values
Total Jitter	TJ	-	-	1.2	ns	Measured with 2 <sup>23</sup> -1 PRBS with 72 ones and 72 zeros.
Power Supply Current	$I_{CC}$	-	-	150	mA	Maximum current is specified at $V_{CC}$ =Maximum @maximum temperature.
Data Input Voltage-Low	$V_{IL}-V_{CC}$	-1.98	-	-1.71	V	These inputs are compatible with 10K, 10KH and 100K ECL and LVPECL inputs.
Data Input Voltage-High	$V_{IH}-V_{CC}$	-1.1	-	-0.91	V	
TX_DISABLE Input Voltage-Low	$V_{IL}$	0	-	0.8	V	
TX_DISABLE Input Voltage -High	$V_{IH}$	2	-	3.45	V	
TX_FAULT Output Voltage -Low	$V_{TOL}$	$V_{CC}-0.5$	-	$V_{CC}+0.3$	V	
TX_FAULT Output Voltage - High	$V_{TOH}$	0	-	0.5	V	

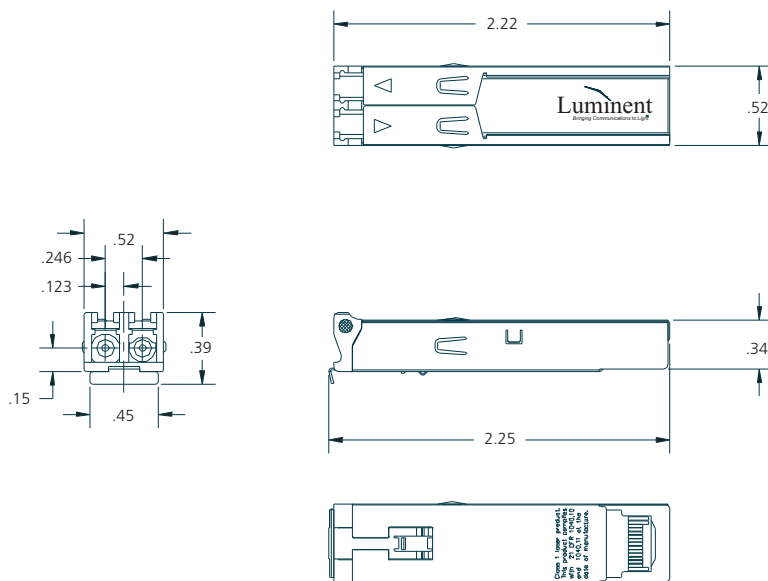
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Receiver Specifications (0°C < T <sub>op</sub> < 70°C, 3.1 V < V <sub>cc</sub> < 3.5 V)						
Parameter	Symbol	Min	Typ	Max	Unit	Notes
<b>Optical</b>						
Sensitivity		-20	-	-	dBm	Measured with 2 <sup>23</sup> -1 PRBS with 72 ones and 72 zeros. (ITU-T recommendation G.958)
Maximum Input Power	P <sub>in</sub>	-	-	-3	dBm	
RX_LOS - Asserted	P <sub>a</sub>	-	-	-20	dBm	Measured on transition: low to high
RX_LOS - Deasserted	P <sub>d</sub>	-28	-	-	dBm	Measured on transition: high to low
RX_LOS - Hysteresis		1	-	-	dB	
Wavelength of Operation		1200	-	1620	nm	
<b>Electrical</b>						
Power Supply Current	I <sub>cc</sub>		-	100	mA	The current excludes the output load current
Data output Voltage - Low	V <sub>OL</sub> -V <sub>CC</sub>	-1.98	-	-1.71	V	
Data output Voltage - High	V <sub>OH</sub> -V <sub>CC</sub>	-1.1	-	-0.91	V	
RX_LOS Output Voltage-Low	V <sub>roh</sub>	V <sub>cc</sub> -0.5	-	V <sub>cc</sub> +0.3	V	These outputs are compatible with 10K, 10KH and 100K ECL and LVPECL outputs.
RX-LOS Output Voltage - High	V <sub>rol</sub>	0	-	0.5	V	

### Pinout Definitions

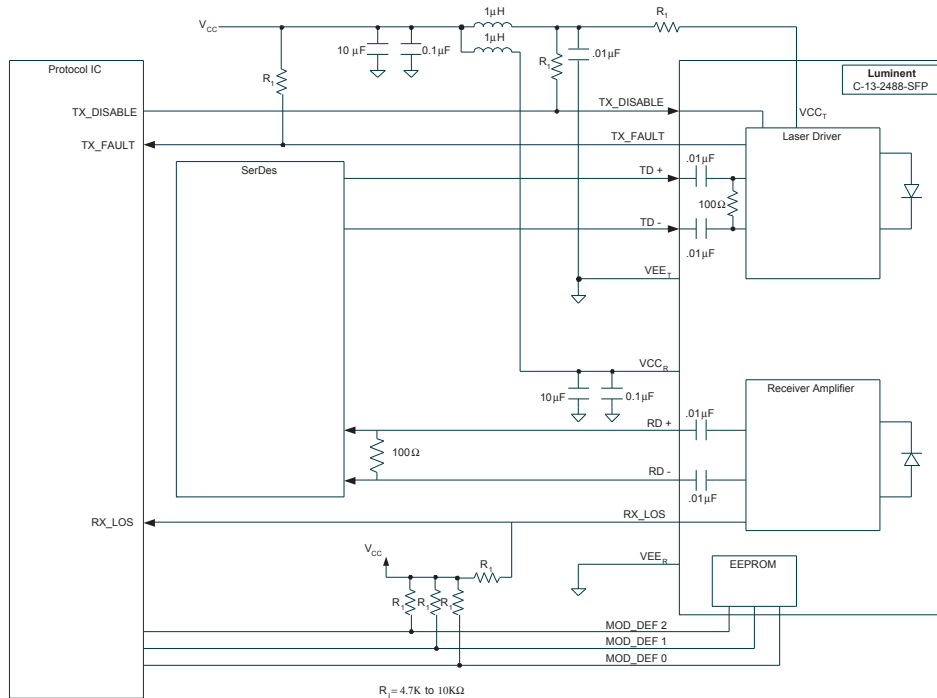
Pin	Function	Notes
1	V <sub>ee</sub> T	TX GND
2	TX_FAULT	Open Collector
3	TX_DISABLE	Internally Pulled High
4	MOD_DEF2	Serial Clock Input
5	MOD_DEF1	Serial Data Input
6	MOD_DEF0	Internally Grounded
7	NC	Not Connected
8	LOS	Open Collector
9	V <sub>ee</sub> R	RX Ground
10	V <sub>ee</sub> R	RX Ground
11	V <sub>ee</sub> R	RX Ground
12	RXD-	RX Data Negative
13	RXD+	RX Data Positive
14	V <sub>ee</sub> R	RX GND
15	V <sub>cc</sub> R	RX Power
16	V <sub>cc</sub> T	TX Power
17	V <sub>ee</sub> T	TX GND
18	TXD+	TX Data Positive
19	TXD-	TX Data Negative
20	V <sub>ee</sub> T	TX GND

### Package Diagram



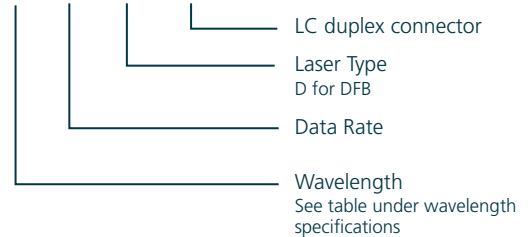
## C-1xx-2500-FDFB-SLC2

### Suggested Transceiver Interface



### Ordering information

#### C-1xx-2500-FDFB-SLC2



### Warnings

**Handling Precautions:** This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

**Laser Safety:** Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

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