Luminent
Bringing Communications to Light™

OC-48 Small Form Pluggable Transceiver (3.3V)

C-1x-2500-SFPD-SLC2

Features

- 1310 and 1550 nm 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
Optical						
Optical Transmit Power	P_o	-5	-	0	dBm	Output power is coupled into a 9/125µm singlemode fiber. ITU GR.957, I-4
Output Center Wavelength						
C-13-2500-SFPD-SLC2	λ	1260	1310	1360	nm	
C-15-2500-SFPD-SLC2	λ	1430	1550	1580	nm	
Output Spectrum Width	$\Delta\lambda_{20}$	-	-	1	nm	-20dB
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 PRBS 2^{23}-1 with 72 ones and 72 zeros.
Electrical						
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}	-1.10	-	-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	VTOL	Vcc-0.5	-	V_{cc}+0.3	V	
TX_FAULT Output Voltage - High	V_{TOH}	0	-	0.5	V	

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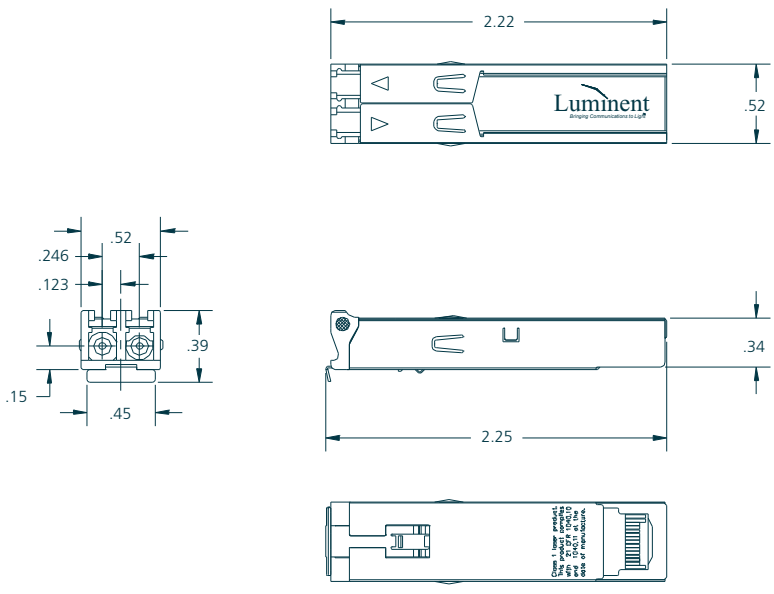
Receiver Specifications (-40°C<T_{op}<85°C, 3.1V<V_{cc}<3.5V)						
Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Note**
Optical						
Sensitivity		-20	-	-	dBm	Measured with 2^7 - 1 PRBS
Maximum Input Power	P_{in}	-	-	-3	dBm	
RX_LOS – Asserted	P_a	-	-	-20	dBm	Measured on transition: low to high
RX_LOS –Deasserted	P_d	-28	-	-	dBm	Measured on transition: high to low
Signal detect –Hysteresis		1.0	-	-	dB	
Wavelength of Operation		1200	-	1550	nm	
Electrical						
Power Supply Current	I_{cc}		-	110	mA	The current excludes the output load current
Data output Voltage—Low	V_{OL}-V_{CC}	-1.98	-	-1.71	V	These outputs are compatible with 10K ,
Data output Voltage—High	V_{OH}-V_{CC}	-1.10	-	-0.91	V	10KH and 100KECL and LVPECL outputs.
RX_LOS Output Voltage-Low	V_{roh}	Vcc-0.5	-	V_{cc}+0.3	V	
RX-LOS Output Voltage-High	V_{rol}	0	-	0.5	V	

Pinout Definitions

Pin	Function	Notes
1	V_{ee}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_{ee}R	RX Ground
10	V_{ee}R	RX Ground
11	V_{ee}R	RX Ground
12	RXD-	RX Data Negative
13	RXD+	RX Data Positive
14	VeeR	RX GND
15	V_{cc}R	RX Power
16	V_{cc}T	TX Power
17	V_{ee}T	TX GND
18	TXD+	TX Data Positive
19	TXD-	TX Data Negative
20	VeeT	TX GND

Outline Drawing



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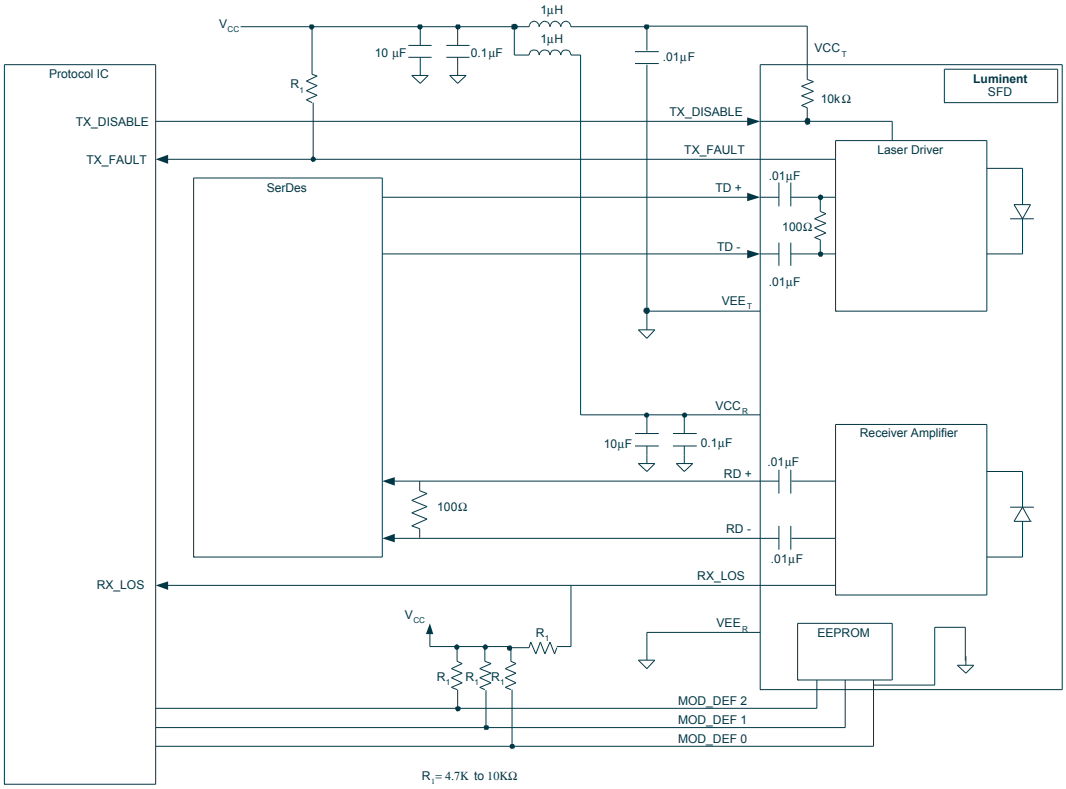
Suggested Transceiver Interface



Ordering Information

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Wavelength
x= 3 for IR-1
x= 5 for IR-2

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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