

1.25 Gb/s, SFP Package 1310 nm Multimode 2 km Distance



Small Form Pluggable (SFP) Transceivers

Description

OptixCom's SFP transceiver offers advanced optical interconnect solution for general data communication links. This multimode transceiver is designed with low cost, high performance 1310 nm FP laser. Dual LC connectors are used as standard interface and the package is compliant with Small Form Pluggable (SFP) specifications.

The is compliant with SFP Multi-Source Agreement (MSA). This product can be used at 1.0625 Gb/s for Fiber Channel or 1.25 Gb/s for Gigabit Ethernet applications. It offers 2 km of transmission distance with multimode fibers and >10 dB of power budget. This product is RoHS compliant.



Lead-Free

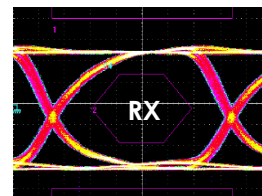
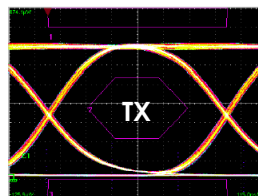
SFP-1250LX-AT2K



Key Features

- 1310 nm multimode, 1.0625/1.25 Gb/s data rates
- >10 dB power budget, 2 km reach
- Duplex LC connector optical interface
- Z-axis hot pluggable
- SFF-8472 MSA Compliant
- AC coupling LVPECL differential I/O logics
- TTL Signal detect to monitor optical signals
- Single 3.3V power supply
- -40–85 °C operating temperatures available
- RoHS compliant

1.25 Gb/s, 2⁷-1 NRZ Data Eye Pattern



Applications

- ✓ Fiber Channel, Gigabit Ethernet
- ✓ High speed I/O for file server
- ✓ Video over fiber links
- ✓ Media converter
- ✓ Data Communication for SAN and LAN
- ✓ Industrial Control Link
- ✓ Central offices routers and switches
- ✓ Mass storage systems interconnect
- ✓ Computer cluster cross-connect

Ordering Information

Part Number: SFP-1250LX-AT2K

Description:

1310 nm 1.0625/1.25 Gb/s, multimode, SFP Fiber Optics Transceiver, 2 km reach, 0-70°C.

* Add "-T" in the Part Number for extended temperature range -40–85 °C, i.e., SFP-1250LX-AT2K-T.

Operating Conditions

Parameter	Min.	Typical	Max.	Units
Operate Temperature	0	25	70	°C
- T Transceivers	-40	25	85	°C
Data Rate	---	1.25	1.3	Gb/s
Supply Voltage	3.1	3.3	3.5	V
Supply Current	---	200	250	mA

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	T_{st}	-40	85	°C
Supply Voltage	V_{cc}	-0.5	6.0	V
Input Voltage	V_{in}	-0.5	V_{cc}	V
Operating Current	I_{op}	---	400	mA
Output Current	I_o	---	50	mA
Soldering Temperature (10 sec. on leads)	T_{sd}	---	260	°C

Transmitter Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Voltage ¹	ΔV_i	0.4	---	2.0	V
Differential Input Impedance ²	Z	---	100	---	ohm
Optical Output Power ³	P_o	-9	---	-1	dBm
Optical Wavelength	λ_o	1270	1310	1355	nm
Extinction Ratio	ET	9	---	---	dB
Spectral Width (rms)	$\Delta\lambda$	---	---	4	nm
Relative Intensity Noise	RIN	---	---	-120	dB/Hz
Rise/Fall Time (20% - 80%)	T_r/T_f	---	---	260	ps
TX Disable Voltage - High	V_{DH}	2.4	---	V_{cc}	V
TX Disable Voltage - Low	V_{DL}	0	---	0.5	V
TX Fault Output - High	V_{FH}	2.4	---	V_{cc}	V
TX Fault Output - Low	V_{FL}	0	---	0.5	V
TX Disable Assert Time	T_{ass}	---	---	10	μs
TX Disable Deassert Time	T_{disass}	---	---	1.0	ms
Time to Initialize	T_{as}	---	---	300	ms
TX Fault from Fault to Assertion	T_{fault}	---	---	100	μs
TX Disable Time to Start Reset	T_{reset}	10	---	---	μs
Total Jitter	T_j	---	---	227	ps

Notes:

1. Module is designed for AC LVPECL coupling. See the design guide for proper termination.
2. Single ended will be 50 ohm for each signal line.
3. Output of coupling optical power into 62.5/125 or 50/125μm MMF.
4. Optical eye diagram is compliant with IEEE 802.3z standard.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11



Receiver Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Operating Wavelength	λ_c	1260	---	1610	nm
Receiver Overload	P_{max}	-1	---	---	dBm
Receiver Sensitivity ¹	P_I	---	---	-19	dBm
Differential Output Voltage	ΔV_o	0.5	---	1.2	V
Differential Input Impedance ²	Z	---	100	---	Ohm
Optical Return Loss	OL	12	---	---	dB
Rise/Fall Time (20% - 80%)	T_r/T_f	---	---	350	ps
RX Signal Loss – Asserted	P_{RL+}	---	---	-19	dBm
RX Signal Loss – Deasserted	P_{RL-}	-35	---	---	dBm
Signal Detect Hysteresis	$P_{RL+} - P_{RL-}$	1.0	---	---	dB
Stressed Receiver Sensitivity		---	---	-17	dBm
RX Signal Loss Assert Time	T_{RL+}	---	---	100	μ s
RX Signal Loss Deassert Time	T_{RL-}	---	---	100	μ s
RX Signal Loss Output - High	V_{RL+}	2.4	---	V_{cc}	V
RX Signal Loss Output - Low	V_{RL-}	0	---	0.5	V

Notes:

1. Test at 1.25 Gb/s, 2⁷ – 1 PRBS data pattern, and > 1x10⁻¹² of Bit-Error-Rate (BER).
2. Single ended will be 50 ohm for each signal line.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11

