

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

## 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.

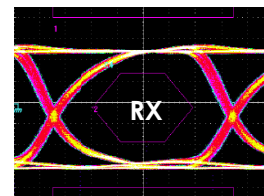
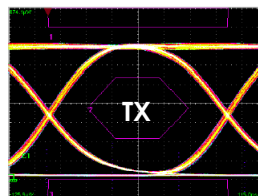


Lead-Free

## SFP-1250LX-AT2K



1.25 Gb/s, 2<sup>7</sup>-1 NRZ Data Eye Pattern



## 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

## 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 <sup>1</sup>	$\Delta V_i$	0.4	---	2.0	V
Differential Input Impedance <sup>2</sup>	$Z$	---	100	---	ohm
Optical Output Power <sup>3</sup>	$P_o$	-9	---	-1	dBm
Optical Wavelength	$\lambda_o$	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	$\lambda_c$	1260	---	1610	nm
Receiver Overload	$P_{max}$	-1	---	---	dBm
Receiver Sensitivity <sup>1</sup>	$P_I$	---	---	-19	dBm
Differential Output Voltage	$\Delta V_o$	0.5	---	1.2	V
Differential Input Impedance <sup>2</sup>	$Z$	---	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	$\mu$ s
RX Signal Loss Deassert Time	$T_{RL-}$	---	---	100	$\mu$ 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, 2<sup>7</sup> – 1 PRBS data pattern, and > 1x10<sup>-12</sup> 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

