

# Multi-Rate 1.25 – 6.25 Gb/s 1310 nm Single Mode, 2 km SFP+ Dual LC Connector



## Description

OptixCom's multi-rate fiber optics transceiver is designed for data rate 1.25 to 6.25 Gb/s. This single mode module uses high performance 1310 nm FP laser and is compliant with Small Form Pluggable Plus (SFP+) specifications. The optical connector interface is dual LC.

The module is compliant with SFP+ Multi-Source Agreement (MSA). The transceiver reaches 2 km of distance with standard single mode fibers and 8 dB of power budget. The products are RoHS compliant. The total power consumption is < 1W.



Lead-Free

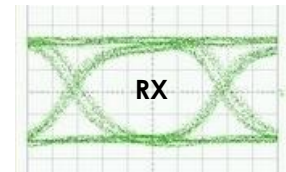
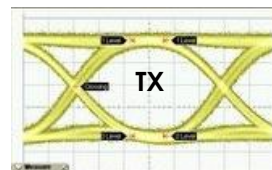
## SFP-6250LX-AT2K



## Key Features

- 1310 nm single mode
- Multi-rate from 1.25 to 6.25 Gb/s
- > 8 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
- Single 3.3 V power supply
- -40–85 °C operating temperatures available
- TTL signal detect to monitor optical signals
- RoHS compliant

6.25 Gb/s, 2<sup>7</sup>-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

## Ordering Information

**Part Number:** SFP-6250LX-AT2K

### Description:

1310 nm, 1 to 6.25 Gb/s, single mode, 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-6250LX-AT2K-T.

## Operating Conditions

Parameter	Min.	Typical	Max.	Units
Operate Temperature	0	25	70	°C
- T Transceivers	-40	25	85	°C
Data Rate	1	---	6.25	Gb/s
Supply Voltage	3.15	3.3	3.45	V
Supply Current	---	220	300	mA

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	$T_{st}$	-40	85	°C
Supply Voltage	$V_{cc}$	-0.5	4.0	V
Input Voltage	$V_{in}$	-0.5	$V_{cc}$	V
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>	$\Delta V_i$	0.2	---	0.8	V
Differential Input Impedance <sup>2</sup>	$Z$	---	100	---	ohm
Optical Output Power <sup>3</sup>	$P_o$	-6.0	---	-0.5	dBm
Optical Wavelength	$\lambda_o$	1284	1310	1345	nm
Relative Intensity Noise	$RIN$	---	---	-128	dB/Hz
Extinction Ratio	$ET$	4	---	---	dB
TX Disable Power	$P_{TD}$	---	---	-30	dBm
Spectral Width (rms)	$\Delta\lambda$	---	---	1	nm
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

Notes:

1. Applied to AC LVPECL I/O 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 9/125 μm SMF.

**Class 1 Laser Product  
Complies with  
21 CFR 1040.10 and 1040.11**



**Receiver Electro-Optical Characteristics**

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Impedance	$Z$	---	100	---	Ohm
Differential Output Voltage <sup>1</sup>	$\Delta V_o$	0.4	---	0.8	V
Operating Wavelength	$\lambda_c$	1260	1310	1360	nm
Receiver Overload	$P_{max}$	+0.5	---	---	dBm
Receiver Sensitivity <sup>2</sup>	$P_I$	---	---	-14.4	dBm
Receiver Sensitivity in OMA	$P_{IOMA}$	---	---	-12.6	dBm
Stressed Receiver Sensitivity <sup>2</sup> (OMA)	$P_I$	---	---	-10.3	dBm
Optical Return Loss	$OL$	12	---	---	dB
RX Signal Loss – Deasserted	$P_{RL-}$	-30	---	---	dBm
RX Signal Loss – Asserted	$P_{RL+}$	---	---	-16	dBm
Signal Detect Hysteresis	$P_{RL+} - P_{RL-}$	0.5	---	---	dB
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. Applied to AC LVPECL I/O coupling. See the design guide for proper termination.
2. Test at 6.25 Gb/s, 2<sup>7</sup> – 1 PRBS data pattern, and > 1x10<sup>-12</sup> of Bit-Error-Rate (BER)

**Class 1 Laser Product  
Complies with  
21 CFR 1040.10 and 1040.11**

