

155 Mb/s, 1310 nm Multimode, 2 km Distance Dual LC SFP Package

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 LED light source. Dual LC connectors are used as standard interface and the package is compliant with Small Form Pluggable (SFP) specifications.

The module is compliant with SFP Multi-Source Agreement (MSA). It operates at 155 Mb/s and reaches 2 km of transmission distance with multimode fibers and >11 dB of power budget. This product is RoHS compliant.

Key Features

- 1310 nm multimode, 155 Mb/s
- >11 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

- ✓ FTTH, FTTX, ATM/SONET OC-3, SDH STM-1
- ✓ Fast Ethernet
- ✓ High speed I/O for file server
- ✓ Media converter
- ✓ Data Communication for SAN and LAN
- ✓ Industrial Control Link
- ✓ Central offices routers and switches
- ✓ Mass storage systems interconnect
- ✓ Computer cluster cross-connect

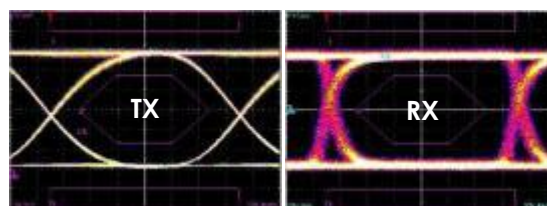


Lead-Free

SFP-155LX-AT2K



155 Mb/s, 2^{23} -1 NRZ data eye pattern



Ordering Information

Part Number: SFP-155LX-AT2K

Description:

1310 nm 155 Mb/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-155LX-AT2K-T.

Operating Conditions

Parameter	Min.	Typical	Max.	Units
Operate Temperature	0	25	70	°C
- T Transceivers	-40	25	85	°C
Data Rate	---	155	200	Mb/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

Transmitter Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Voltage ¹	ΔV_i	0.4	---	1.8	V
Differential Input Impedance ²	Z	---	100	---	ohm
Optical Output Power ³	P_o	-20	---	-14	dBm
Optical Wavelength	λ_o	1270	1310	1380	nm
Extinction Ratio	ET	10	---	---	dB
Spectral Width (RMS)	$\Delta\lambda$	---	---	4	nm
Duty Cycle Distortion	T_{dc}	---	---	0.6	ns
Rise/Fall Time (20% - 80%)	T_r/T_f	---	---	1.3	ns
Data Dependent Jitter	T_{DJ}	---	---	0.6	ns
Random Jitter	T_{RJ}	---	---	0.6	ns
TX Disable Voltage – High	V_{DH}	2.0	---	V_{CC}	V
TX Disable Voltage - Low	V_{DL}	0	---	0.8	V
TX Fault Output - High	V_{FH}	2.0	---	V_{CC}	V
TX Fault Output - Low	V_{FL}	0	---	0.8	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. Module is designed for AC 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 50/125 or 62.5/125 μm MMF.
4. Optical eye diagram is compliant with Telcordia GR-253-CORE and ITU-T G-957 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	---	1600	nm
Receiver Overload	P_{max}	-3	---	---	dBm
Receiver Sensitivity ¹	P_I	---	---	-31	dBm
Differential Output Voltage	ΔV_o	0.4	---	1.8	V
Differential Input Impedance ²	Z	---	100	---	Ohm
Optical Return Loss	OL	12	---	---	dB
Rise/Fall Time (10% - 90%)	T_r/T_f	---	1	2	ns
RX Signal Loss – Asserted	P_{RL+}	---	---	-31	dBm
RX Signal Loss – Deasserted	P_{RL-}	-45	---	---	dBm
Signal Detect Hysteresis	$P_{RL+} - P_{RL-}$	1	---	---	dB
Serial ID Clock Rate	f_c	---	---	100	kHz
RX Signal Loss Output - High	V_{RL+}	2.0	---	V_{CC}	V
RX Signal Loss Output - Low	V_{RL-}	0	---	0.8	V
RX Signal Loss Assert Time	T_{RL+}	---	---	100	μs
RX Signal Loss Deassert Time	T_{RL-}	---	---	100	μs

Notes:

1. Test at 155 Mb/s, 2²³ – 1 PRBS data pattern, and > 1x10⁻¹⁰ 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

