Multi-Rate 1.25 – 6.25 Gb/s 1310 nm Single Mode, 10 km SFP+ Dual LC Connector

OptixCom
Connect with Light
Small Form Pluggable Plus (SFP+)

Description

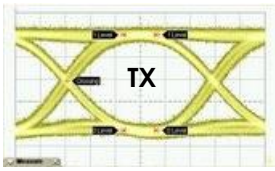
OptixCom's multi-rate fiber optics transceiver is designed for data rate 1.25 to 6.25 Gb/s. This single mode module uses high performance 1310 nm DFB laser and is compliant with Small Form Pluggable Plus (SFP+) specifications. The optical connector interface is dual LC.

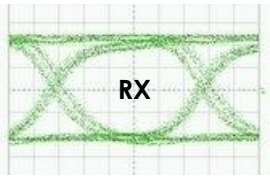
The module is compliant with SFP+ Multi-Source Agreement (MSA). The transceiver reaches 10 km of distance with standard single mode fibers and 8 dB of power budget. The products are RoHS compliant. The total power consumption is < 1W.

Lead-Free

SFP-6250LX-AT10K

6.25 Gb/s, 2^7-1 NRZ Data Eye Pattern





Key Features

- 1310 nm single mode.
- Multi-rate from 1.25 to 6.25 Gb/s
- > 8 dB power budget, 10 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

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-AT10K

Description:

1310 nm ,1 to 6.25 Gb/s, single mode, SFP+ fiber optics transceiver, 10 km reach, 0-70°C

* Add "-T" in the Part Number for extended temperature range -40–85 °C, i.e., SFP-6250LX-AT10K-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	3.1	3.3	3.5	V
Supply Current	---	220	300	mA

U.S.A. Office: Optix Communications, Inc.
17901 Von Karman Avenue, Suite 600,
Irvine, CA 92614
Tel: (949) 679-5712 Fax: (949) 420-2134

http://www.OptixCom.com
http://www.OpticalTransceiver.com
Email: Support@OptixCom.com

Germany Office: OptixCom GmbH
Freiherr vom Stein Strasse 19, 60323
Frankfurt am Main, Germany
Tel: +49 (0)69 7953-3646

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	*Tst*	-40	85	°C
Supply Voltage	*Vcc*	-0.5	4.0	V
Input Voltage	*VIN*	-0.5	*Vcc*	V
Output Current	*Io*	---	50	mA
Soldering Temperature (10 sec. on leads)	*Tsd*	---	260	°C

Transmitter Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Voltage [1]	*ΔVi*	0.2	---	0.8	V
Differential Input Impedance [2]	*Z*	---	100	---	ohm
Optical Output Power [3]	*Po*	-6.0	---	-0.5	dBm
Optical Wavelength	*λo*	1284	1310	1345	nm
Relative Intensity Noise	*RIN*	---	---	-128	dB/Hz
Extinction Ratio	*ET*	4	---	---	dB
TX Disable Power	*PTD*	---	---	-30	dBm
Spectral Width (-20dB)	*Δλ*	---	---	0.45	nm
TX Disable Voltage – High	*VDH*	2.4	---	*Vcc*	V
TX Disable Voltage - Low	*VDL*	0	---	0.5	V
TX Fault Output - High	*VFH*	2.4	---	*Vcc*	V
TX Fault Output - Low	*VFL*	0	---	0.5	V
TX Disable Assert Time	*Tass*	---	---	10	µs
TX Disable Deassert Time	*Tdisass*	---	---	1.0	ms
Time to Initialize	*Tas*	---	---	300	ms
TX Fault from Fault to Assertion	*Tfault*	---	---	100	µs
TX Disable Time to Start Reset	*Treset*	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

Underwriters Laboratories

TÜVRheinland

Lead-Free

U.S.A. Office: Optix Communications, Inc.
17901 Von Karman Avenue, Suite 600,
Irvine, CA 92614
Tel: (949) 679-5712 Fax: (949) 420-2134

http://www.OptixCom.com
http://www.OpticalTransceiver.com
Email: Support@OptixCom.com

Germany Office: OptixCom GmbH
Freiherr vom Stein Strasse 19, 60323
Frankfurt am Main, Germany
Tel: +49 (0)69 7953-3646

Receiver Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Impedance	Z	---	100	---	Ohm
Differential Output Voltage [1]	ΔV_O	0.4	---	0.8	V
Operating Wavelength	λ_C	1260	1310	1360	nm
Receiver Overload	P_{max}	+0.5	---	---	dBm
Receiver Sensitivity [2]	P_I	---	---	-14.4	dBm
Receiver Sensitivity in OMA	P_{IOMA}	---	---	-12.6	dBm
Stressed Receiver Sensitivity [2] (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	µs
RX Signal Loss Deassert Time	T_{RL-}	---	---	100	µs
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, $2^7 - 1$ PRBS data pattern, and > $1x10^{-12}$ of Bit-Error-Rate (BER)

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11

Underwriters Laboratories

TÜVRheinland

Lead-Free