

1.25 Gb/s, 1310 nm Multimode, 2 km 1x9 Dual SC Package

Description

OptixCom's 1x9 DSC transceiver provides a low cost and compact solution for general data communication links. This multimode fiber optics transceiver is designed with high performance 1310 nm FP laser. Dual SC connectors are used as the standard interface.

The transceiver uses industry standard 1x9 pluggable package. 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

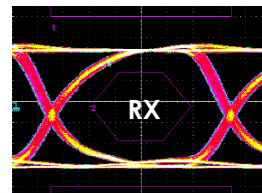
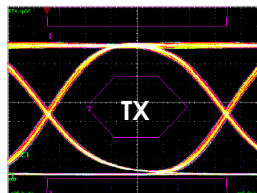
DSC-1250LX-AT2K



Key Features

- 1310 nm multimode, 1.0625/1.25 Gb/s data rates
- >10 dB power budget, 2 km reach
- Duplex SC connector optical interface
- Industry standard 1x9 pluggable package
- AC coupling LVPECL differential I/O logics
- Single 3.3/5 V power supply
- TTL signal detect to monitor optical signals
- IEEE 802.3z Gigabit Ethernet standard compliant
- 1X Fiber Channel standard compliant
- -40–85 °C operating temperatures available
- RoHS compliant

1.25 Gb/s, 2⁷-1 NRZ Data Eye Pattern



Ordering Information

Part Number: DSC-1250LX-AT2K

Description:

1310 nm 1.0625/1.25 Gb/s, multimode, 1x9 DSC Fiber Optics Transceiver, 2 km reach, 0-70°C, RoHS compliant.

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

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

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	5.25	V
Supply Current	---	200	300	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	0.3	---	1.6	V
Differential Input Impedance ²	Z	---	100	---	ohm
Optical Output Power ³	P_o	-9	---	-1	dBm
Optical Wavelength	λ_o	1260	1310	1360	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
Total Jitter	T_j	---	---	227	ps
Data Input Current - Low	I_{LL}	-350	---	---	μA
Data Input Current - High	I_{IH}	---	---	350	μA

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 50/125 μm 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	0.3	---	1.6	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
Signal Detect- Asserted	P_{SD+}	---	---	-19	dBm
Signal Detect- Deasserted	P_{SD-}	-35	---	---	dBm
Signal Detect Hysteresis	$P_{SD+} - P_{SD-}$	1.0	---	---	dB
Stressed Receiver Sensitivity		---	---	-17	dBm
Signal Detect Assert Time	T_{ass}	---	---	100	μ s
Signal Detect Deassert Time	T_{disass}	---	---	100	μ s
Signal Detect Output - High	V_{SD+}	2.4	---	V_{cc}	V
Signal Detect Output - Low	V_{SD-}	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**

