

# 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

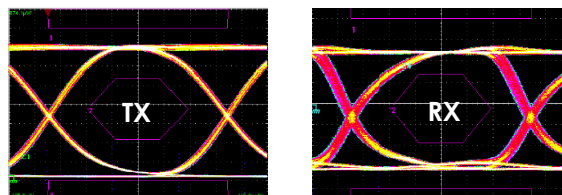
## DSC-1250LX-AT2K



## 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, 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
- ✓ Computer cluster cross-connect

## 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.

## 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 <sup>1</sup>	$\Delta V_i$	0.3	---	1.6	V
Differential Input Impedance <sup>2</sup>	$Z$	---	100	---	ohm
Optical Output Power <sup>3</sup>	$P_o$	-9	---	-1	dBm
Optical Wavelength	$\lambda_o$	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	$I_{IL}$	-350	---	---	$\mu A$
Data Input Current - High	$I_{IH}$	---	---	350	$\mu A$

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 $\mu m$  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	$\Delta V_o$	0.3	---	1.6	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
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	$\mu$ s
Signal Detect Deassert Time	$T_{disass}$	---	---	100	$\mu$ 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, 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**

