

# 155 Mb/s, 1310 nm Multimode, 2 km Distance 1x9 Dual SC Package



## Description

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

The transceiver uses industry standard 1x9 pluggable package. 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.

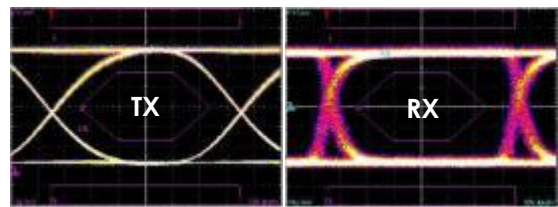


Lead-Free

## DSC-155LX-DP2K



155 Mb/s, 2<sup>23</sup>-1 NRZ Data Eye Pattern



## Key Features

- 1310 nm multimode, 155 Mb/s
- >11 dB power budget, 2 km reach
- Duplex SC connector optical interface
- Industry standard 1x9 pluggable package
- DC coupling LVPECL differential I/O logics
- LVPECL 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
- ✓ 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-155LX-DP2K

**Description:**

1310 nm 155 Mb/s, multimode, 1x9 DSC Fiber Optics Transceiver, 2 km reach, 0-70°C

**Part Number:** DSC-155LX-DP2K-T

**Description:**

1310 nm 155 Mb/s, multimode, 1x9 DSC Fiber Optics Transceiver, 2 km reach, -40-85°C

## 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
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>	$P_o$	-20	---	-14	dBm
Optical Wavelength	$\lambda_o$	1270	1310	1380	nm
Extinction Ratio	$ET$	10	---	---	dB
Spectral Width (FWHM)	$\Delta\lambda$	---	---	170	nm
Duty Cycle Distortion	$T_{dc}$	---	---	0.6	ns
Rise/Fall Time (10% - 90%)	$T_r/T_f$	---	---	3	ns
Data Dependent Jitter	$T_{DJ}$	---	---	0.6	ns
Random Jitter	$T_{RJ}$	---	---	0.6	ns
Data Input Voltage – High	$V_{IH}$	$V_{cc} - 1.1$	---	$V_{cc} - 0.7$	V
Data Input Voltage - Low	$V_{IL}$	$V_{cc} - 2.0$	---	$V_{cc} - 1.6$	V

Notes:

1. Module is designed for DC 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 50/125 or 62.5/125  $\mu$ m 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	$\lambda_c$	1260	---	1610	nm
Receiver Overload	$P_{max}$	0	---	---	dBm
Receiver Sensitivity <sup>1</sup>	$P_I$	---	---	-31	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 (10% - 90%)	$T_r/T_f$	---	---	3	ns
Signal Detect- Asserted	$P_{SD+}$	---	---	-31	dBm
Signal Detect- Deasserted	$P_{SD-}$	-45	---	---	dBm
Signal Detect Assert Time	$T_{ass}$	---	---	100	$\mu$ s
Signal Detect Deassert Time	$T_{disass}$	---	---	100	$\mu$ s
Signal Detect Hysteresis	$P_{SD+} - P_{SD-}$	1.0	---	---	dB
Signal Detect Output - Low	$V_{SD-}$	$V_{CC} - 2.0$	---	$V_{CC} - 1.6$	V
Signal Detect Output - High	$V_{SD+}$	$V_{CC} - 1.1$	---	$V_{CC} - 0.7$	V
Data Output Voltage - Low	$V_{OL}$	$V_{CC} - 2.0$	---	$V_{CC} - 1.6$	V
Data Output Voltage - High	$V_{OH}$	$V_{CC} - 1.1$	---	$V_{CC} - 0.7$	V

Notes:

1. Test at 155 Mb/s, 2<sup>23</sup> - 1 PRBS data pattern, and > 1x10<sup>-10</sup> of Bit-Error-Rate (BER).
2. Single ended will be 50 ohm for each signal line.

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Complies with  
21 CFR 1040.10 and 1040.11

