

1.25 Gb/s, 1550 nm Single Mode, 30 – 80 km 1x9 Dual SC Package



Description

OptixCom's 1x9 DSC transceiver provides a low cost and compact solution for general data communication links. This single mode transceiver is designed with high performance 1550 nm laser. Dual SC connectors are used as the standard interface.

The transceiver modules use 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 with 30 - 80 km transmission distance with single mode fibers. The products are RoHS compliant.



Lead-Free

DSC-1250EX-ATXXK
(XX = 30, 60, 80)



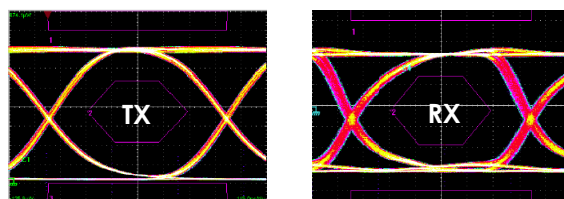
Key Features

- 1550 nm single mode, 1.0625/1.25 Gb/s data rates
- 30 – 80 km reach, 12 – 24 dB power budget
- 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

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

1.25 Gb/s, 2⁷-1 NRZ Data Eye Pattern



Ordering Information

Part Number: DSC-1250EX-ATXXK

Description:

1550 nm 1.0625/1.25 Gb/s, single mode, 1x9 DSC Fiber Optics Transceiver, XX km reach, 0-70°C

* Add "-T" in the Part Number for extended temperature range -40–85 °C, i.e., DSC-1250EX-AT60K-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

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	T_{st}	-40	85	°C
Supply Voltage	V_{cc}	-0.5	4.0	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

General Transmitter 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
Relative Intensity Noise	RIN	---	---	-120	dB/Hz
Rise/Fall Time (20% - 80%)	T_r/T_f	---	---	260	ps
Data Input Current - High	I_{IH}	---	---	350	μA
Data Input Current - Low	I_{IL}	-350	---	---	μA
Side Mode Suppression Ratio	$SMSR$	30	---	---	dB
Total Jitter	T_j	---	---	227	ps

General Receiver Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Output Voltage ¹	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 Hysteresis	$P_{SD+} - P_{SD}$	1	---	---	dB
Signal Detect Output - Low	V_{SD-}	0	---	0.5	V
Signal Detect Output - High	V_{SD+}	2.4	---	V_{cc}	V

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.

Transmitter Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Optical Output Power ¹	P_o	0	---	+5	dBm
Optical Wavelength	λ_o	1520	1550	1580	nm
Extinction Ratio	ET	7	---	---	dB
Spectral Width (-20 dB)	$\Delta\lambda$	---	---	1	nm

Receiver Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Operating Wavelength	λ_c	1260	---	1610	nm
Receiver Overload	P_{max}	-3	---	---	dBm
Receiver Sensitivity ²	P_I	---	---	-24	dBm
Signal Detect– Asserted	P_{SD+}	---	---	-24	dBm
Signal Detect– Deasserted	P_{SD-}	-35	---	---	dBm

Notes:

1. Output of coupling optical power into 9/125 μm SMF.
2. Test at 1.25 Gb/s, $2^7 - 1$ PRBS data pattern, and $> 1 \times 10^{-12}$ of Bit-Error-Rate (BER).
3. Optical eye diagram is compliant with IEEE 802.3z standard.
4. Maximum supply current for the transceiver from Vcc is 300 mA for 3.3V and 400 mA for 5V.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11

