



# *Light Optics*

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## **Product Features**

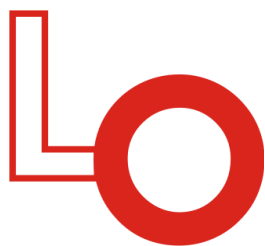
- Compliant to IEEE Std 802.3-2005 Gigabit Ethernet 1000Base-SX
- Specifications according to SFF-8074i and SFF-8472, revision 9.5
- Digital Diagnostic Monitoring available
- 850nm Vertical Cavity Surface Emitting Laser (VCSEL)
- Up to 1.25Gb/s bi-directional data links
- Up to 550m on 50/125µm MMF, 300m on 62.5/125µm MMF
- Duplex LC connector compliant
- Single +3.3V DC power supply
- Hot-pluggable SFP footprint
- Class 1 laser safety certified
- Operating temperature Options
  - (Commercial) -10°C to +70°C
- RoHS Compliant

## **Applications**

- 1.25Gb/s Ethernet 1000BASE-SX
- 1.0625Gb/s Fiber Channel

## **Ordering information**

<b>Part Number</b>	<b>Product Description</b>
LO-DG85-05	SFP 1.25Gbps SX 850nm LC MMF 550m



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Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature	T <sub>s</sub>	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	V <sub>CC</sub>	-0.5	4.0	V

## Recommended Operating Conditions

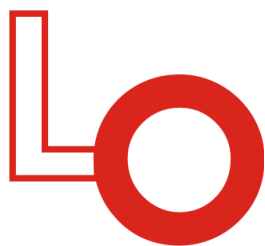
Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature Case LO-DG85-05	T <sub>C</sub>	-10	25	70	°C
Supply Voltage	V <sub>CC</sub>	3.135	3.3	3.465	V
Data Rate	-	-	1.25 1.0625	-	Gb/s

## Transceiver Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Module Supply Current	I <sub>CC</sub>	-	-	220	mA	-
Transmitter Differential Input Voltage (TD +/-)	-	300	-	2200	mV <sub>P-P</sub>	1
Receiver Differential Output Voltage (RD +/-)	-	600	-	1200	mV <sub>P-P</sub>	2
Low speed output: Transmitter Fault(TX_FAULT)	VOH	2.0	-	V <sub>CC</sub>	V	3
/ Loss of Signal (LOS)	VOL	0	-	0.8	V	-
Low speed input: Transmitter Disable	VIH	2.0	-	V <sub>CC</sub>	V	4
(TX_DISABLE), MOD_DEF 1, MOD_DEF 2	VIL	0	-	0.8	V	-

### Notes:

1. Internally AC coupled and terminated to 100Ω differential load.
2. Internally AC coupled, but requires a 100Ω differential termination or internal to Serializer/Deserializer.
3. Pulled up externally with a 4.7KΩ-10KΩ resistor on the host board to V<sub>CCT,R</sub>.
4. Mod\_Def1 and Mod\_Def2 must be pulled up externally with a 4.7KΩ-10KΩ resistor on the host board to V<sub>CCT,R</sub>.



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## Transmitter Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Launch Optical Power	P <sub>o</sub>	-9	-6	-3	dBm	1
Center Wavelength Range	λ <sub>c</sub>	830	850	860	nm	-
Extinction Ratio	EX	9	-	-	dB	-
Spectral Width(RMS)	Δλ	-	-	0.85	nm	-
Total Jitter	TJ	-	-	266	ps	-
Dispersion Penalty	-	-	-	1	dB	-
Optical Rise/Fall Time	T <sub>rise</sub> /T <sub>fall</sub>	-	-	260	ps	-
Pout @TX-Disable Asserted	P <sub>off</sub>	-	-	-45	dBm	-
Eye Diagram	IEEE Std 802.3-2005 Gigabit Ethernet 1000BASE-SX compatible					

## Receiver Optical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Receiver Sensitivity	S	-	-20	-18	dBm	1
Receiver Overload	P <sub>OL</sub>	-3	-	-	dBm	1
Optical Return Loss	ORL	12	-	-	dB	-
LOS De-Assert	LOS <sub>D</sub>	-	-	-19	dBm	-
LOS Assert	LOS <sub>A</sub>	-35	-	-	dBm	-
LOS Hysteresis	-	0.5	3	5	dB	-

### Notes:

1. 50/125μm fiber with NA = 0.2, 62.5/125μm fiber with NA = 0.275.



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## Mechanical specifications

