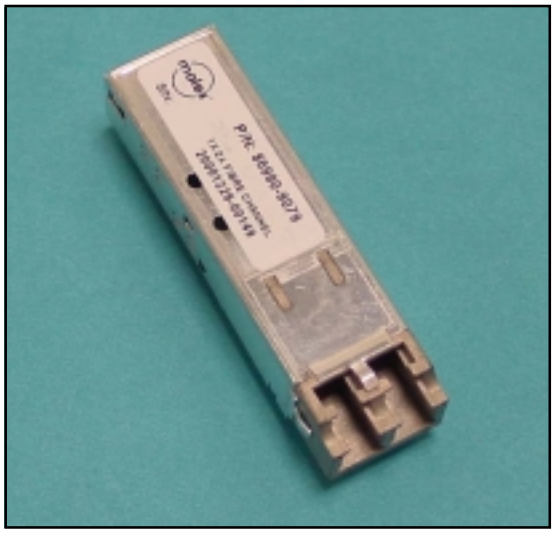
LC Gigabit Ethernet Transceiver, 850nm VCSEL (AC Coupled)



Features & Benefits

- Fully compliant with Gigabit Ethernet (IEEE 802.3z) requirements
- Data rates up to 1.25 Gbps
- Industry standard 2 by 5 pin configuration & duplex LC connectors
- Link distances up to 550 meters
- +3.3V power supply
- TTL compatible
- AC coupled data inputs & outputs
- Small form factor multi-source agreement

Applications

- Data Communication Networks
- Telecommunication Networks
- Broadband Deployments
- Disk Array Links
- Workstation & Mainframe Backbones
- Network Interface Cards

Molex Small Form Factor (SFF) transceivers utilize an LC interface and take up one half the board space of standard 1 by 9 (SC) transceivers. These Molex VCSEL Gigabit Ethernet optical transceivers are capable of serial gigabit transmission over inexpensive multimode fiber for distances up to 550 meters. Molex Gigabit Ethernet transceivers provide data transmission rates in the range of 622 Mbps to 1.25 Gbps, enabling use in Gigabit Ethernet, ATM and proprietary data interconnect systems. They feature an industry standard 2 by 5 pin configuration and duplex LC connectors. These transceivers conform to the industry SFF multi-source agreement.

Optical Performance Specifications

Parameter	Symbol	Min	Typ	Max	Units	Notes / Conditions
Data Rate	-	0.622	-	1.25	Gbps	-
Maximum Fiber Length	-	2	-	550	m	50μm core/500 MHz•km fiber
Input Voltage	V_{cc}	+3.1	+3.3	+3.5	V	V_{CC} referenced to GND
Supply Current (transmitter)	I_{TX}	-	-	100	mA	3.3V
Supply Current (receiver)	I_{RX}	-	-	100	mA	3.3V
Data Input Voltage	V_{IN}	310	-	2500	mV_{pp}	AC Coupled ECL Levels
Data Output Voltage	V_{OUT}	500	700	1000	mV_{pp}	AC Coupled ECL Levels
Transmitter Center Wavelength	λ_{TX}	830	850	860	nm	VCSEL-Source
Transmitter Spectral Width (RMS)	$\Delta\lambda$	-	-	0.85	nm	-
Transmitter Optical Output Power	P_o	-9.5	-	-4	dBm	Average Launch Power
Transmitter Extinction Ratio	-	9	-	-	dB	-
Transmitter Eye Opening	-	57	-	-	%	-
Duty Cycle	-	-	50	-	%	-
Bit Error Rate	BER	-	-	10^{-12}	-	At received power of -17 dBm
Deterministic Jitter	DJ	-	-	20	%	Peak-to-Peak
Optical Input Wavelength	λ_{RX}	770	850	860	nm	-
Optical Input Sensitivity	P_i	-17	-	-	dBm	-
Signal Detect Asserted	P_a	-	-18	-	dBm	Measured on low-to-high transition
Signal Detect Deasserted	P_d	-	-21	-	dBm	Measured on high-to-low transition
Signal Detect Hysteresis	$P_a - P_d$	1	-	-	dB	-
Operating Temp	T_{OP}	0	-	70	°C	-
Storage Temp	T_{STORE}	-40	-	85	°C	-
Relative Intensity Noise	RIN	-	-	-117	dB/Hz	-

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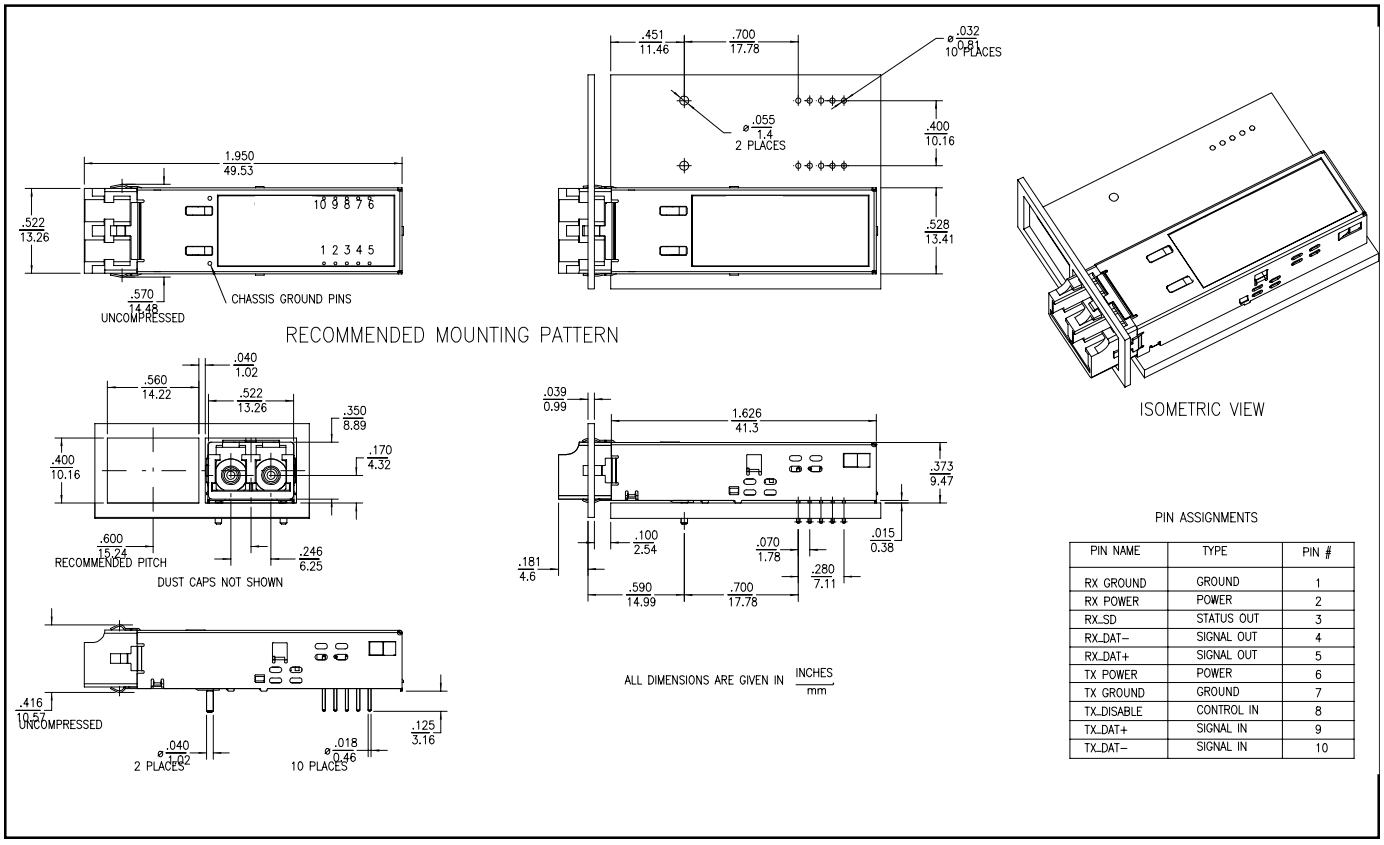
Mechanical Dimensions



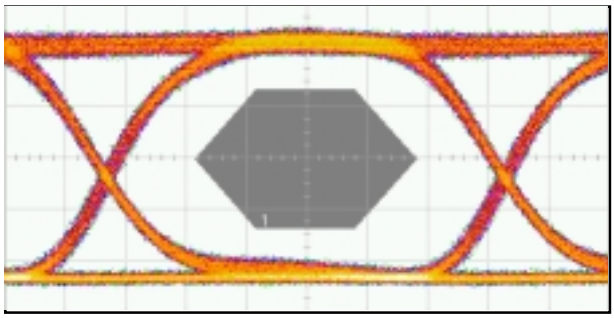
PIN ASSIGNMENTS

PIN NAME	TYPE	PIN #
RX GROUND	GROUND	1
RX POWER	POWER	2
RX_SD	STATUS OUT	3
RX_DAT–	SIGNAL OUT	4
RX_DAT+	SIGNAL OUT	5
TX POWER	POWER	6
TX GROUND	GROUND	7
TX_DISABLE	CONTROL IN	8
TX_DAT+	SIGNAL IN	9
TX_DAT–	SIGNAL IN	10

Eye Pattern

Typical Eye Pattern (Optical Eye)

Time Scale : 113 ps/div



1.25 Gbps

Ordering Information

Order Number	Description
86990-9078	Gigabit Ethernet Small Form Factor Transceiver, LC Duplex Interface, AC Coupled, 850nm VCSEL, 3.3V, Low EMI