

Fibre Channel Transceiver, VCSEL - (DC Coupled)



Features & Benefits

- Compliant with Fibre Channel 100-M5-SN-1 requirements
- Data rates up to 1.0625 Gbps
- Industry standard 1 by 9 pin configuration & duplex SC connectors
- Link distances up to 500m
- Single +5V power supply
- ECL/PECL compatible
- Size: 25.91mm by 39.62mm by 9.78mm
- TUV certified product
- DC coupled data inputs & outputs
- AC coupled version also available
- Metallized & unmetallized casing available

Applications

- Data communication networks
- Telecommunication networks
- Broadband deployments
- Cross-connects
- ATM switches
- Disk array links
- Workstation & mainframe backbones
- Network interface cards

Molex VCSEL Fibre Channel transceivers are compact optical transceivers capable of serial gigabit transmission over inexpensive multimode fiber for distances up to 500m. These optical links transmit data at speeds of 100 Mbps to 1.0625 Gbps, enabling use in Fibre Channel, ATM and proprietary data interconnect systems. They feature an industry standard 1 by 9 pin configuration and duplex SC connectors. Molex also offers an AC coupled version of this device. Molex's emphasis on safety allows this product to meet all CDRH and IEC 825-1 Class 1 eye safety requirements without requiring cumbersome "Open Fiber Control" monitor circuits. Product is certified by TUV (certificate number R9771077).

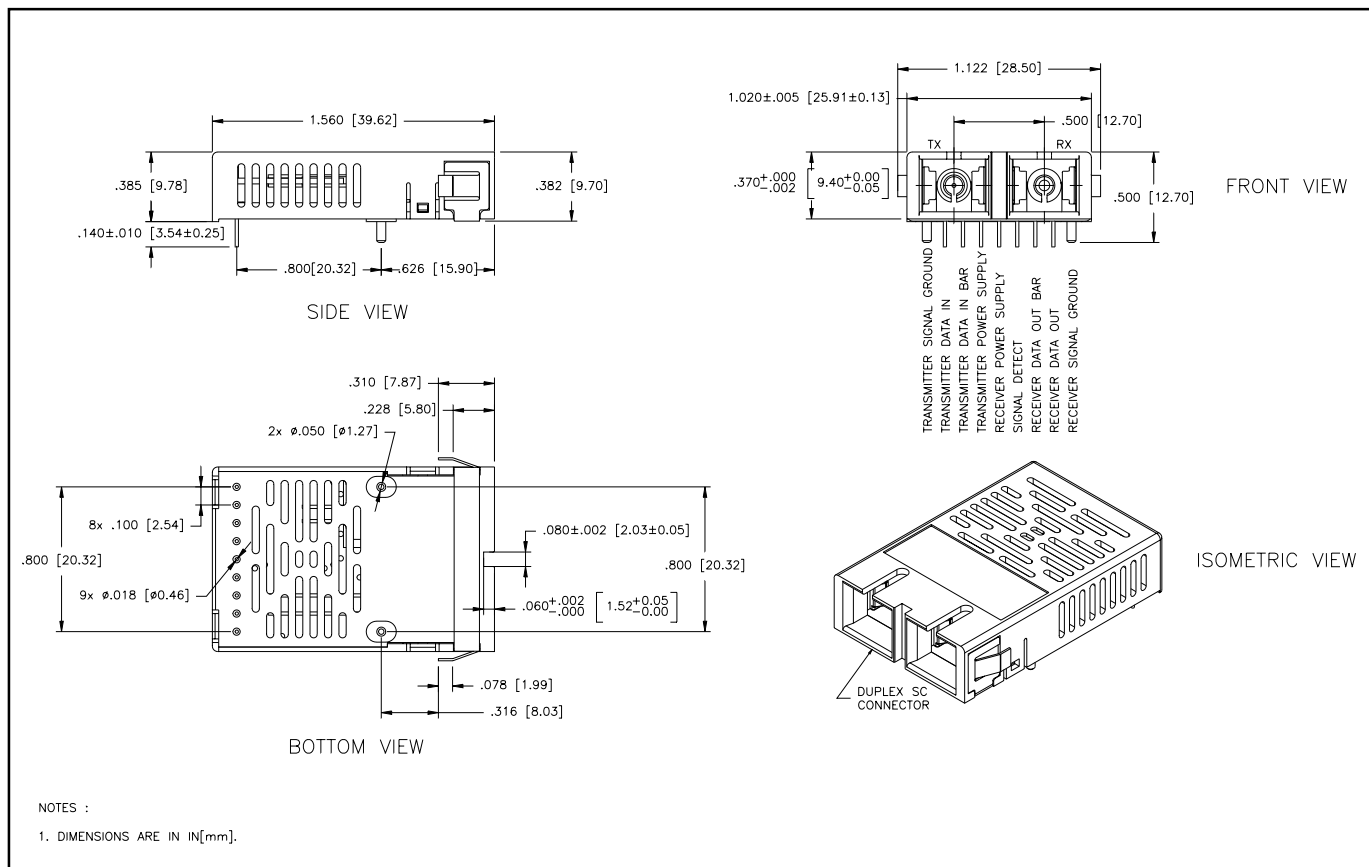
Optical Performance Specifications

Parameter	Symbol	Min	Typ	Max	Units	Notes / Conditions
Data Rate	-	0.100	-	1.0625	Gbps	-
Maximum Fiber Length	-	2	-	500	m	50μm core/500 MHz•km fiber
Input Voltage	V_{CC}	+4.75	+5	+5.25	V	V_{CC} referenced to GND
Supply Current (transmitter)	I_{TX}	-	-	125	mA	5.0V
Supply Current (receiver)	I_{RX}	-	-	75	mA	5.0V
Data In High	V_{INH}	$V_{CC}-1.165$	-	-	V	DC Coupled PECL Levels
Data In Low	V_{INL}	-	-	$V_{CC}-1.475$	V	DC Coupled PECL Levels
Data Out High	T_{OUT-H}	$V_{CC}-1.070$	-	-	V	DC Coupled PECL Levels
Data Out Low	V_{OUT-L}	-	-	$V_{CC}-1.570$	V	DC Coupled PECL 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	-10	-	-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 -16 dBm
Deterministic Jitter	DJ	-	-	20	%	Peak-to-Peak
Optical Input Wavelength	λ_{RX}	770	850	860	nm	-
Optical Input Sensitivity	P_i	-16	-	-	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	$P_a - P_d$	-	3	-	dB	-
Operating Temp	T_{OP}	0	-	70	°C	-
Storage Temp	T_{STORE}	-40	-	85	°C	-
Relative Intensity Noise	RIN	-	-	-116	dB/Hz	-
Eye Safety	-	-	-	-	-	Class 1 Laser Product

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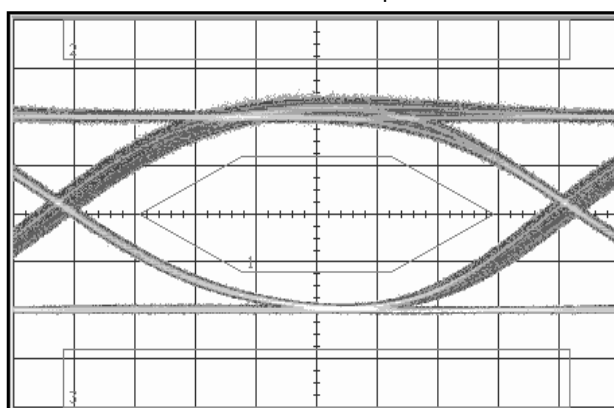
Mechanical Dimensions



Eye Pattern

Typical Eye Pattern (Optical Eye)

Time Scale : 113 ps/div



Standard Part Numbers

Order Number	Description
86990-9053	Fibre Channel transceiver, DC coupled, VCSEL, 5.0V
86990-9057	Fibre Channel transceiver, DC coupled, VCSEL, 5.0V, Low EMI with clip
86990-9081	Fibre Channel transceiver, DC coupled, VCSEL, 5.0V, Low EMI with flushmount shield