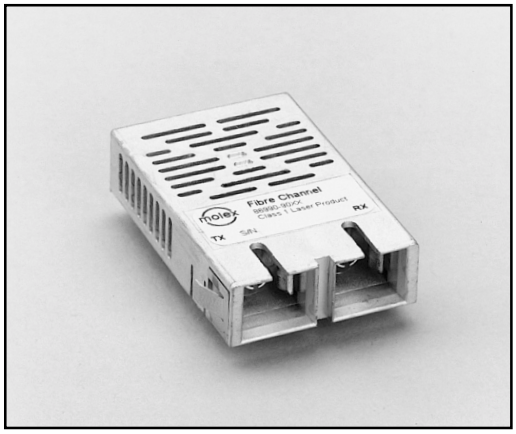
Fibre Channel Transceiver, VCSEL - (AC Coupled)



Features & Benefits

- Fully compliant with Fibre Channel 100-M5-SN-I &100-M6-SN-I requirements
- Data rates up to 1.0625 Gbps
- Industry standard 1 by 9 pin configuration & duplex SC connectors
- Link distances up to 500m
- Single +3.3V and +5.0V power supply
- ECL/PECL compatible
- TUV certified product
- AC coupled data inputs & outputs

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'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	+5.0	+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 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	-	-10	-	-4	dBm	Average Launch Power
Transmitter Extinction Ratio	-	9	-	-	dB	-
Transmitter Eye Opening	-	57	-	-	%	-
Duty Cycle	Po	-	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	-	-	-	-	-	-

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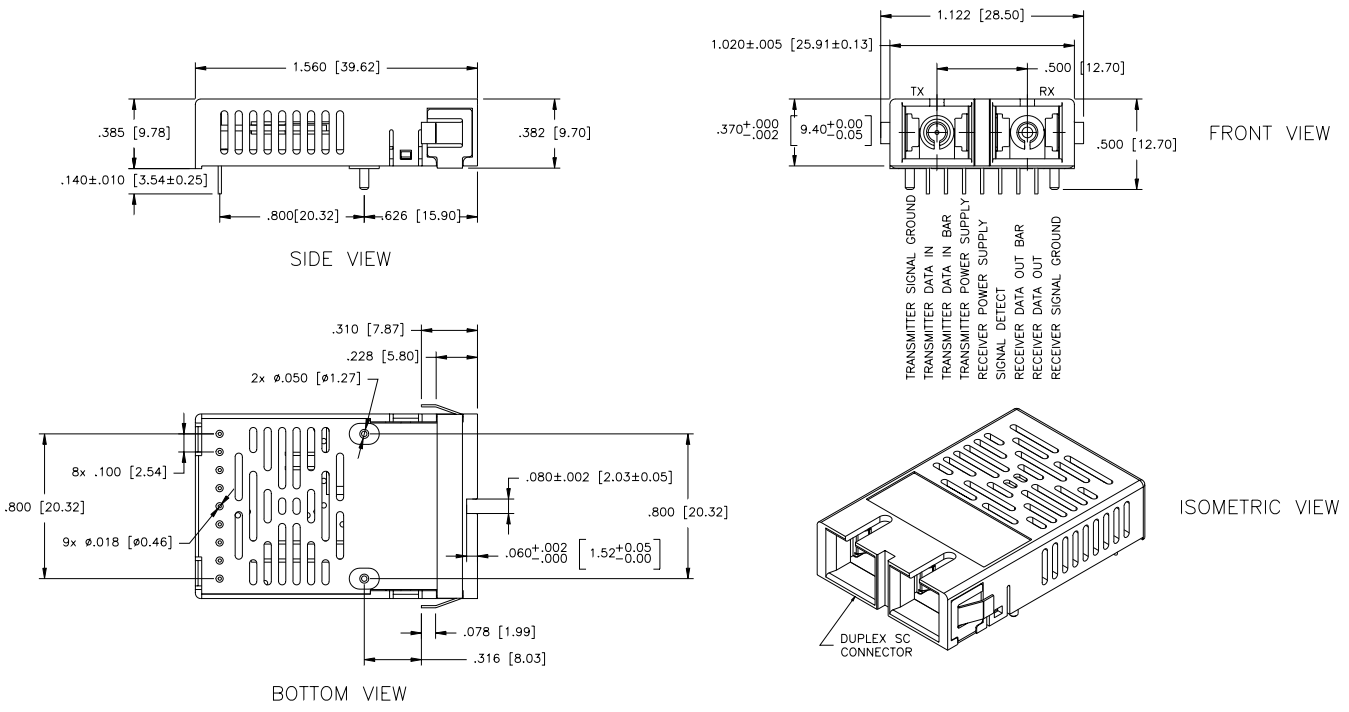
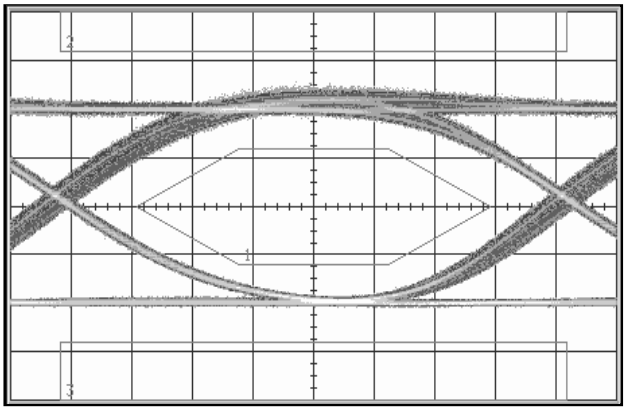
Mechanical Dimensions



Eye Pattern

Typical Eye Pattern (Optical Eye)

Time Scale : 113 ps/div



1.0625 Gbps

Standard Part Numbers

Order Number	Description
86990-9044	Fibre Channel transceiver, AC coupled, VCSEL, 3.3V, TTL signal detect
86990-9048	Fibre Channel transceiver, AC coupled, VCSEL, 3.3V, low EMI with clip, TTL signal detect
86990-9052	Fibre Channel transceiver, AC coupled, VCSEL, 5.0V
86990-9056	Fibre Channel transceiver, AC coupled, VCSEL, 5.0V, low EMI with clip
86990-9097	Fibre Channel transceiver, AC coupled, VCSEL, 5.0V, TTL signal detect