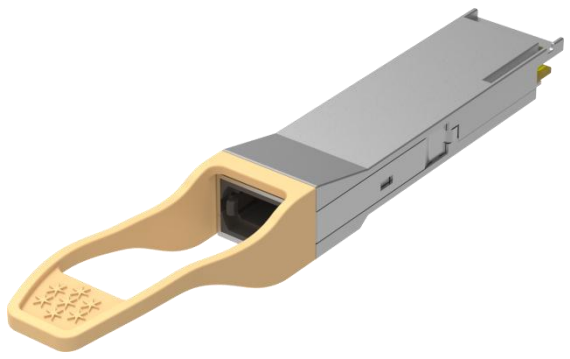
InfiniBand 4xEDR 100m QSFP28 Transceiver (I-temp)

Features

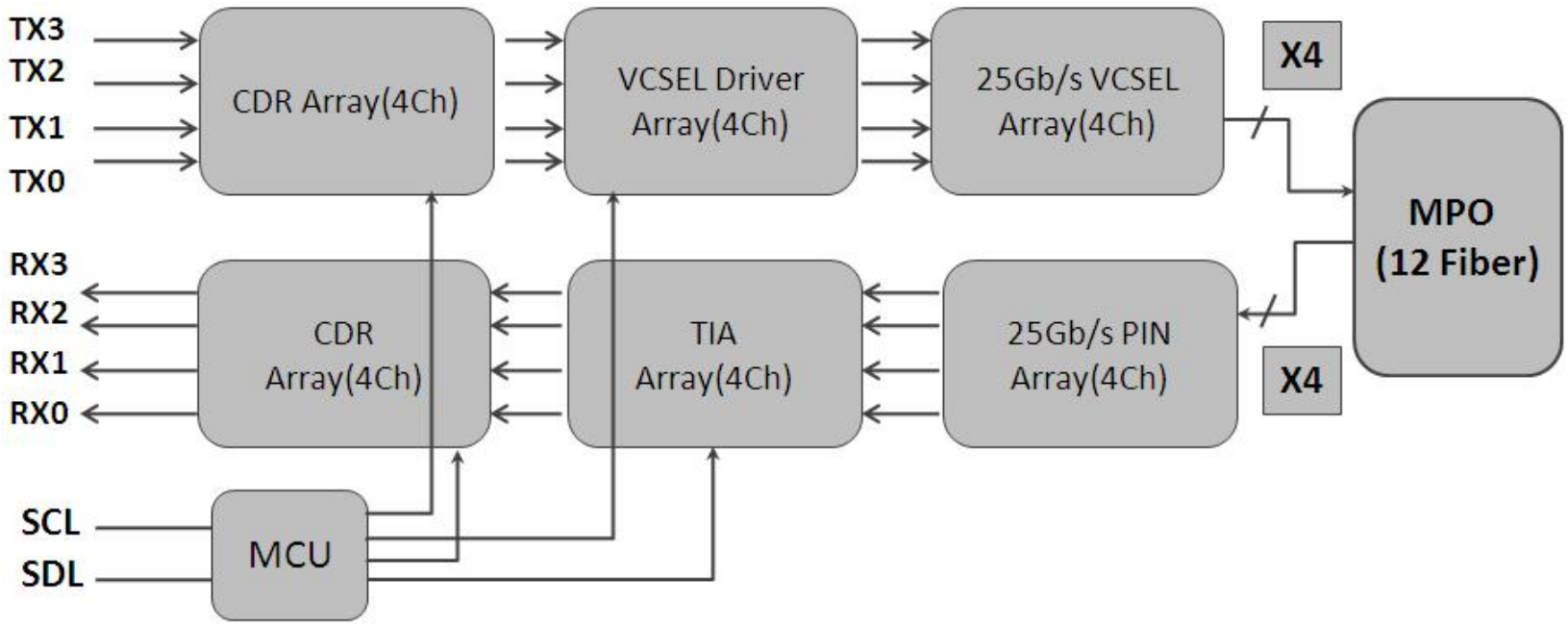
- Hot-pluggable QSFP28 form-factor
- 4 channels full-duplex transceiver module
- 4x 850nm VCSEL array and PIN photo-detector array
- Internal CDR on both transmitter and receiver channels
- Supports CDR by pass
- Compliant with QSFP28 MSA and IEEE 802.3bm 100GBASE-SR4
- Compliant with InfiniBand 4xEDR
- Data rate up to 103.125Gbps
- Reach up to 70m (OM3) or 100m (OM4) over MMF
- Power consumption < 2W
- MPO12 receptacle
- Built-in digital diagnostic functions
- Operating case temperature range from -40°C to +85°C
- 3.3V power supply voltage
- RoHS compliant (lead free)



Applications

- Data Center Network
- High-Performance Computing (HPC)

Module Block Diagram



Ordering Information

Part Number	Product Description
FST-100G-SR4H-I	InfiniBand 4xEDR 100m QSFP28 Transceiver (I-temp)

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.3	3.6	V
Input Voltage	Vin	-0.3	Vcc+0.3	V
Storage Temperature	Ts	-20	85	℃
Case Operating Temperature	Tc	-40	85	℃
Humidity (non-condensing)	Rh	5	95	%

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Operating Case Temperature	Tc	-40		85	℃
Data Rate Per Lane	fd		25.78125		Gb/s
Humidity	Rh	5		85	%
Power Dissipation	Pm			2	W
Fiber Bend Radius	Rb	3			cm

Electrical Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Differential Input Impedance	Zin	90	100	110	ohm
Differential Output Impedance	Zout	90	100	110	ohm
Differential Input Voltage Amplitude1	ΔVin	300		1100	mVp-p
Differential Output Voltage Amplitude2	ΔVout	500		800	mVp-p
Skew	Sw			300	ps
Bit Error Rate	BER		5×10-5		
Input Logic Level High	VIH	2.0		Vcc	V
Input Logic Level Low	VIL	0		0.8	V
Output Logic Level High	VOH	Vcc-0.5		Vcc	V
Output Logic Level Low	VOL	0		0.4	V

Notes:

1. Differential input voltage amplitude is measured between TxnP and TxnN.
2. Differential output voltage amplitude is measured between RxnP and RxnN.

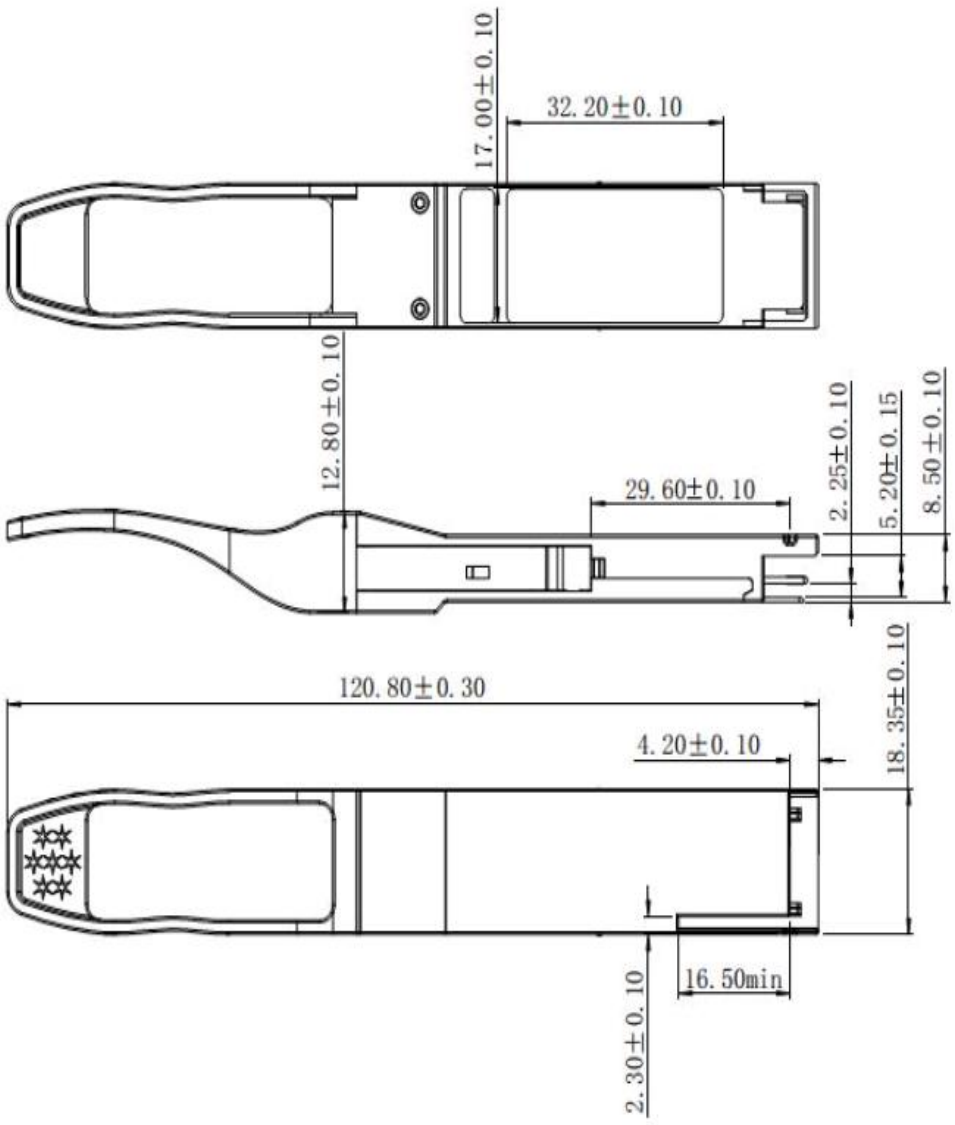
Optical Characteristics

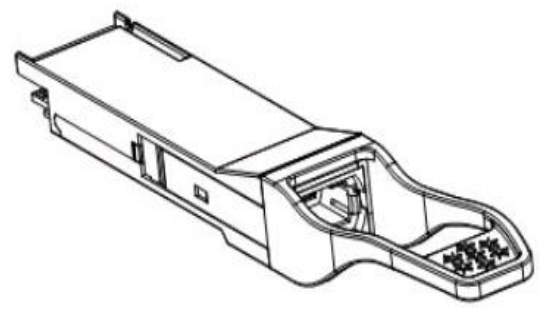
Parameter	Symbol	Min	Typical	Max	Unit
Transmitter					
Center Wavelength	λc	840	850	860	nm
RMS Spectral Width	Δλ			0.6	nm
Average Launch Power (each lane)	Pout	-8.4		4.0	dBm
Optical Modulation Amplitude (each lane)	OMA	-6.4		3	dBm
Transmitter and Dispersion Eye Closure (each lane)	TDEC			4.3	dB
Extinction Ratio	ER	3			dB
Average Launch Power of OFF Transmitter (each lane)	Poff			-30	dB
Eye Mask Coordinates1: X1, X2, X3, Y1, Y2, Y3	{0.3, 0.38, 0.45, 0.35, 0.41, 0.5}				
Receiver					
Center Wavelength	λc	840	850	860	nm
Stressed Receiver Sensitivity in OMA2				-5.2	dBm
Average Power at Receiver Input (each lane)		-10.3		2.4	dBm
Receiver Reflectance	RR			-12	dB
LOS Assert	LOSA	-30			dBm
LOS De-Assert – OMA	LOSD			-7.5	dBm
LOS Hysteresis	LOSH	0.5			dB

Notes:

1. Hit Ratio = 5×10^{-5}
2. Measured with conformance test signal at TP3 for BER=5E-5

Mechanical Dimensions





unit:mm