

## Features

- 4 channels full-duplex transceiver modules
- Supports 100Gbps total data rate
- 4 channels 850nm VCSEL array
- 4 channels PIN photo detector array
- Low power consumption <3.5W
- Hot Pluggable QSFP form factor
- Maximum link length of 70m on OM3 Multimode Fiber (MMF) and 100m on OM4 MMF
- Single MPO connector receptacle
- Built-in digital diagnostic functions
- Operating case temperature 0°C to +70°C
- 3.3V power supply voltage
- RoHS 6 compliant (lead free)



## Applications

- IEEE 802.3bm 100GBASE SR4
- Infiniband EDR

## 1. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temperature	TS	-20	85	°C
Operating Case Temperature	TOP	0	70	°C
Power Supply Voltage	VCC	-0.3	3.6	V
Relative Humidity (non-condensation)	RH	5	95	%
Input Voltage	Vin	-0.3	Vcc+0.3	V

## 2. Recommended Operating Conditions and Power Supply Requirements

Parameter	Symbol	Min	Typical	Max	Units
Operating Case Temperature	TOP	0		70	°C
Power Supply Voltage	VCC	3.13	3.3	3.47	V
Data Rate, each Lane			25.78125		Gb/s
Humidity	Rh	5		85	%
Power Dissipation	Pm			3.5	W
Fiber Bend Radius	Rb	3			cm

## 3. 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 amplitude	$\Delta V_{in}$	300		1100	mVp-p
Differential output voltage amplitude	$\Delta V_{out}$	500	8	00	mVp-p
Skew	Sw			300	ps
Bit Error Rate	BER			E-12	
Input Logic Level High	V <sub>IH</sub>	2.0		VCC	V
Input Logic Level Low	V <sub>IL</sub>	0		0.8	V
Output Logic Level High	V <sub>OH</sub>	VCC-0.5		VCC	V
Output Logic Level Low	V <sub>OL</sub>	0		0.4	V

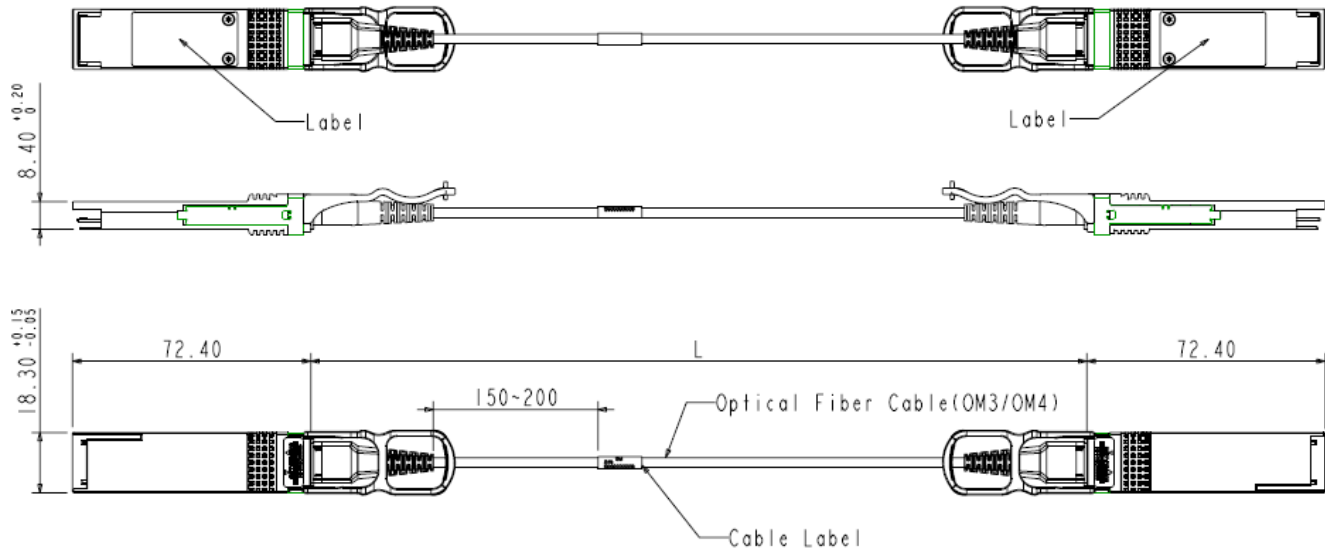
### Notes:

1. BER=10<sup>-12</sup>; PRBS 2<sup>31</sup>-1@25.78125Gbps.
2. Differential input voltage amplitude is measured between TxnP and TxnN.
3. Differential output voltage amplitude is measured between RxnP and RxnN.

#### 4. Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
<b>Transmitter</b>						
Centre Wavelength	$\lambda_c$	840	850	860	nm	-
RMS spectral width	$\Delta\lambda$	-	-	0.6	nm	-
Average launch power, each lane	P <sub>out</sub>	-8.4	-	2.4	dBm	-
Optical Modulation Amplitude (OMA), each lane	OMA	-6.4		3	dBm	-
Transmitter and dispersion eye closure (TDEC),each lane	TDEC		4.3	dB		
Extinction Ratio	ER	3	-	-	dB	-
Average launch power of OFF transmitter, each lane				-30	dB	-
Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3	SPECIFICATION VALUES {0.3,0.38,0.45,0.35,0.41,0.5}				Hit Ratio = 5x10 <sup>-5</sup>	
<b>Receiver</b>						
Centre Wavelength	$\lambda_c$	840	850	860	nm	-
Stressed receiver sensitivity in OMA				-5.2	dBm	1
Maximum Average power at receiver, each lane				2.4	dBm	-
Minimum Average power at receiver, each lane				-10.3	dBm	
Receiver Reflectance				-12	dB	-
LOS Assert		-30			dBm	-
LOS De-Assert - OMA				-7.5	dBm	-
LOS Hysteresis		0.5			dB	-

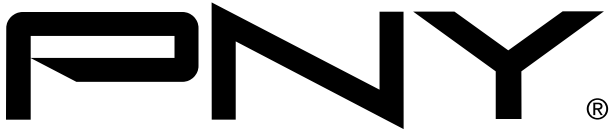
### 5. Mechanical Diagram



**Note:** External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

### 6. Ordering Information

PNY P/N	Mellanox Legacy P/N	Nvidia P/N	Product Description
PFA1A00-C003	MFA1A00-C003	980-91558-00N001	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 3m 5 Year Warranty
PFA1A00-C005	MFA1A00-C005	980-91630-00A002	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 5m 5 Year Warranty
PFA1A00-C010	MFA1A00-C010	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 10m 5 Year Warranty
PFA1A00-C015	MFA1A00-C015	980-91559-00N002	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 15m 5 Year Warranty
PFA1A00-C020	MFA1A00-C020	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 20m 5 Year Warranty
PFA1A00-C030	MFA1A00-C030	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 30m 5 Year Warranty



PFA1A00-C050	MFA1A00-C050	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 50m 5 Year Warranty
PFA1A00-C100	MFA1A00-C100	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 100m 5 Year Warranty
PFA1A00-C003-10	MFA1A00-C003	980-9I558-00N001	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 3m 10 Year Warranty
PFA1A00-C005-10	MFA1A00-C005	980-9I63O-00A002	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 5m 10 Year Warranty
PFA1A00-C010-10	MFA1A00-C010	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 10m 10 Year Warranty
PFA1A00-C015-10	MFA1A00-C015	980-9I559-00N002	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 15m 10 Year Warranty
PFA1A00-C020-10	MFA1A00-C020	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 20m 10 Year Warranty
PFA1A00-C030-10	MFA1A00-C030	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 30m 10 Year Warranty
PFA1A00-C050-10	MFA1A00-C050	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 50m 10 Year Warranty
PFA1A00-C100-10	MFA1A00-C100	N/A	100% Mellanox Compatible active fiber cable, ETH 100GbE, 100Gb/s, QSFP, LSZH, 100m 10 Year Warranty

**6. Contact Information**

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