

Features:

- QSFP Module compliant to SFF-8665
- InfiniBand HDR compatible
- Transmission data rate up to PAM4 53.125Gbps per channel
- Enabled 200Gb/s Transmission
- Supporting 28Gbaud line rate with highly liner equalization
- Maximum link length up to 7m
- Enabled Auto-Negotiation and Link Training
- Low latency <10ps
- Supports device programming by MCU with I2C
- 3.3V Power supply



- Low power consumption
- Operating case temperature 0°C to +70°C
- RoHS2.0 compliant

1. Absolute Maximum Ratings

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	-0.3	3.3	3.6	V
Storage temperature	Ts	-40		85	°C
Operating Case temperature	Tc	0		70	°C
Humidity	Rh	5		85	%
Data Rate			200		Gbps

2. Physical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit
Length	L	2		7	M
AWG		32		27	AWG
Jacket material		HAIRTAIL Technology Net, Red			

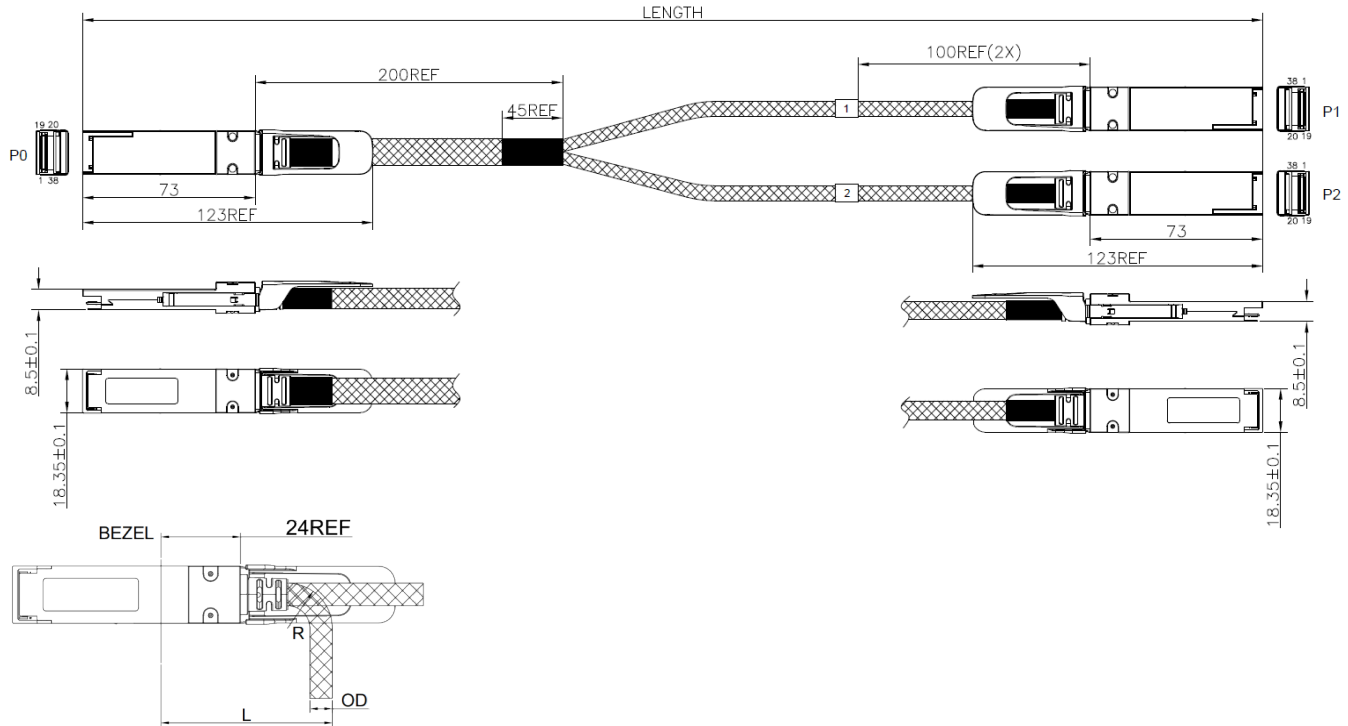
3. Electrical Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Power supply voltage	VCC	3.1	3.3	3.5	V
Input Amplitude		800		1200	mVpp
Input LOW Voltage	VIL	-0.3		0.35*VCC	V
Input HIGH Voltage	VIH	0.65* VCC		VCC +0.3	V
Output Logic LOW	VOL			0.25* VCC	V
I2C Master Mode Output Frequency			400		kHz
200G End Power consumption			0.6	0.7	W
100G End Power consumption			0.3	0.4	W

4. High-Speed Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Raw cable impedance	Zca	90	100	110	ohm
Mated connector Impedance	Zmated	85	100	115	ohm
Insertion loss at 13.28 GHz	SDD21	6		14	dB
Return loss	SDD11/22	$\text{Return_loss}(f) \geq \begin{cases} 11 & 0.05 \leq f < 26.5625/7.5 \\ 6.0 - 9.2 \lg(15f / 5.5 * 7 26.5625) & 26.5625/7.5 \leq f \leq 26.5 \end{cases}$			dB
Differential to commonmode return loss	SDD11/22	$\text{Return_loss}(f) \geq \begin{cases} -25 + (20/26.5625)f & 0.05 \leq f < 26.5625/2 \\ -18 + (6/26.5625)f & 26.5625/2 \leq f \leq 26.5625 \end{cases}$			dB
Differential to commonmode conversion loss	SCD21-SDD21	$\text{Conversion_loss}(f) - \text{IL}(f) \geq \begin{cases} 10 & 0.01 \leq f < 12.89 \\ 27 - (29/22)f & 12.89 \leq f < 15.7 \\ 6.3 & 15.7 \leq f \leq 19 \end{cases}$			dB
Minimum COM	COM	3			dB
BER				2.4x10 ⁻⁴	

5. Mechanical Diagram



QSFP-DD				QSFP56			
Gauge	OD	Bend Radius R	Min. Bend Radius R	Gauge	OD	Bend Radius R	Min. Bend Radius R
30AWG	5.7MM	12MM	46MM	5.1MM	10MM	45MM	80MM
28/27AWG	7.0MM	14MM	50MM	6.3MM	13MM	50MM	90MM

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

OEM	Part Number	OEM	Part Number
Nvidia/Mellanox	MCA7J50-H003R-A	Nvidia/Mellanox	MCA7J50-H005R-A
Nvidia/Mellanox	MCA7J50-H004R-A		

7. Contact Information

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