Features:

- QSFP-DD MSA Compliant

- Compliant with IEEE 802.3cd and CEI-56-G-VSR-PAM

- Built in Analog CDR

- Low latency for high performance computing application

- Enabled by 850nm VCSEL

- Operating case temperature: 0 to 70℃

- Hot pluggable

- Power consumption 7.2W in 400G QSFP-DD

- Transmission distance up to 100m with OM3 MM fiber

- Laser Eye Safety Class 1

- Management interface based on CMIS 3.0 (QSFP-DD)

- RoHS compliant

Applications:

- 400G interconnection

- Data center

1. General Description

Approved Networks' 400G Active Optical Cables (AOCs) fill the need for short- range, cost-effective connectivity. In high-capacity interconnections, AOCs provide a power-efficient, easy-to-use replacement for optical transceivers and fiber jumper cables. These cables are fully compliant with EEPROM and memory map requirements to assure proper system identification and interoperability.

2. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40	-	85	℃	
Relative Humidity	RH	5	-	85	%	
Power Supply Voltage	VCC	-0.3	-	3.6	V	

3. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0		70	⁰C	
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Data Rate	BR		53.125		Gbps	TX Rate/RX Rate per lane
Transmission Distance	TD			100	m	
Total power consumption			7.2		W	
Coupled fiber	Single mode fiber					OM3 fiber

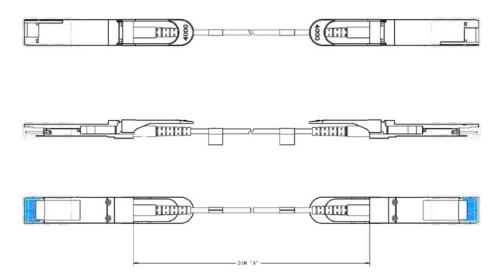## 4. Electrical Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Transmitter Fault Output-High	VFaultH	2	-	Vcc+0.3	V	
Transmitter Fault Output-Low	VFaultL	0	-	0.8	V	
Transmitter Disable Voltage- High	VDisH	2	-	Vcc+0.3	V	
Transmitter Disable Voltage- Low	VDisL	0	-	0.8	V	
Differential input impedance		90	100	110	Ohm	
DC common mode voltage		-350		2850	mV	
Differential eye height				900	mVdpp	
Receiver						
LOS Output Voltage-High	VLOSH	2	-	Vcc+0.3	V	
LOS Output Voltage-Low	VLOSL	0	-	0.8	V	
Differential output impedance		90	100	110	Ohm	
Differential eye height		228		900	mVdpp	
DC common mode voltage		-350		2850	mV	
AC common mode noise				17.5	mVrms	
Eye height @ 1e-5 (all PAM4 eyes)		70			mV	
Eye width @ 1e-5 (all PAM4 eyes)		0.265			UI	

5. Cable Specifications

Parameter	Value	Note
Type	OM3 MM Loose tube fiber	
Minimum bending radius (mm)	30	
Cable outer diameter (mm)	3.8 +/- 0.15 (16core)	
Cable length (m)	100 (max)	Customized length available

6. Outline Dimensions

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.

7. Contact Information

Approved Networks is the industry authority on enterprise class, third-party networking products for the smart data center. For over a decade our technical expertise has allowed us to consistently deliver first-to-market compatibility solutions in the most rigorous, optical networking environments. Headquartered in Southern California, Approved Networks provides technical, logistical and sales support to over 3,000 clients in 30 countries.

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