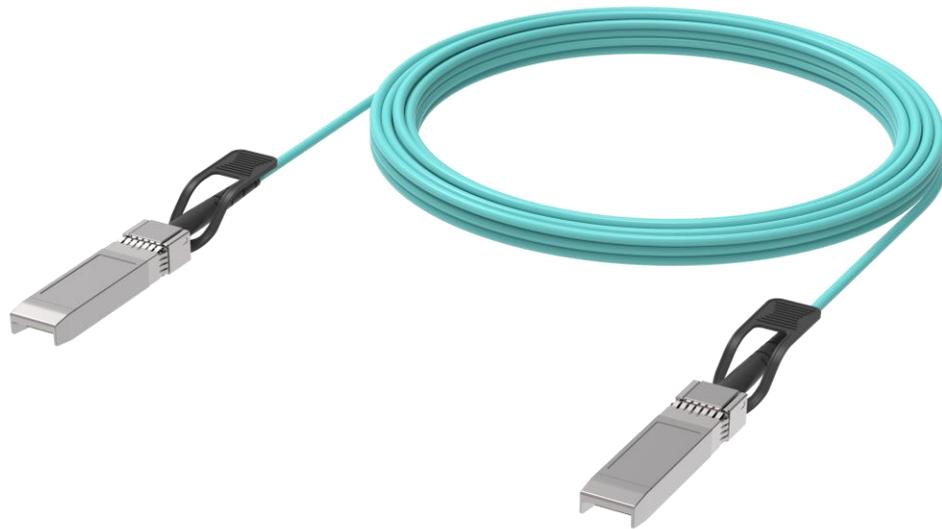


## Product Datasheet

### 10G SFP+ Active Optical Cable



#### Application

- Data center & Networking Equipment
- Servers/Storage Devices
- High Performance Computing (HPC)
- Switches/Routers
- Telecom Central Offices (CO)
- Test and Measurement Equipment

#### Features

- up to 10.3125 Gb/s bit rate
- Available in lengths of 1 to 100m
- Single 3.3V power supply
- Low power dissipation
- RoHS-6 compliant
- Operating case temperature range:  
0°C to 70°C

#### Standards Compliance

- SFP+ MSA
- SFF-8472

## 1.0 Product Specification

### 1.1 Absolute Maximum Ratings (TC=25°C, unless otherwise noted)

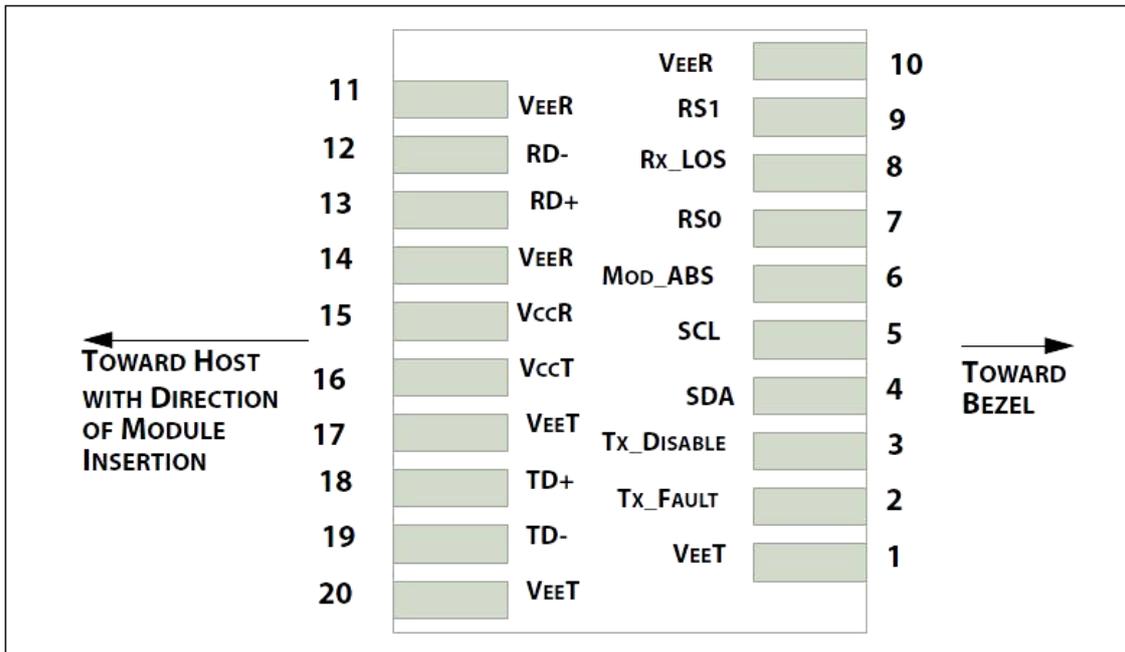
Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings will cause permanent damage and/or adversely affect device reliability.

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Storage Temperature	TS	0	-	+70	°C	
Maximum Supply Voltage	Vcc	-0.5	-	3.6	V	
Operating Relative Humidity	RH	+5	-	+85	%	No condensation

### 1.2 General Specifications (TC=25°C, unless otherwise noted)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	Tc	0	-	70	°C	
Power Supply Voltage	Vcc	3.14	3.3	3.47	V	
Power Consumption (per end)		-	-	0.65	W	
Lane Baud Rate	BR <sub>LANE</sub>		10.3125		Gbps	
Bit Error Ratio	BER			1E-12		
Data Speed Tolerance	ΔDR	-100	-	+100	ppm	

**1.3 PIN Descriptions**



**Figure 1 – Pin Definitions**

Pin	Symbol	Name/Description	Ref.
1	VeeT	Transmitter Ground, Common with Receiver Ground in Module	
2	TX Fault	Transmitter fault, pulled to VeeT in Module	
3	TX Disable	Transmitter disable, pulled to VccT with 4.7k to 10k ohm in Module	
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I/O	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I	
6	Mod_ABS	Module Absent, Connect to VeeT or VeeR in Module.	
7	RS0	N/A	
8	LOS	Receiver loss of signal, pulled to VeeR in Module	
9	RS1	N/A	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Receiver Inverted DATA out, AC Coupled, CML-I	
13	RD+	Receiver Non-inverted DATA out, AC Coupled, CML-I	
14	VeeR	Receiver Ground	
15	VccR	Receiver Power Supply	
16	VccT	Transmitter Power Supply	

Pin	Symbol	Name/Description	Ref.
17	VeeT	Transmitter Ground	
18	TD+	Transmitter Non-Inverted DATA in. DC Coupled, CML-O	
19	TD-	Transmitter Inverted DATA in. DC Coupled, CML-O	
20	VeeT	Transmitter Ground	

### 1.4 Electrical Characteristics

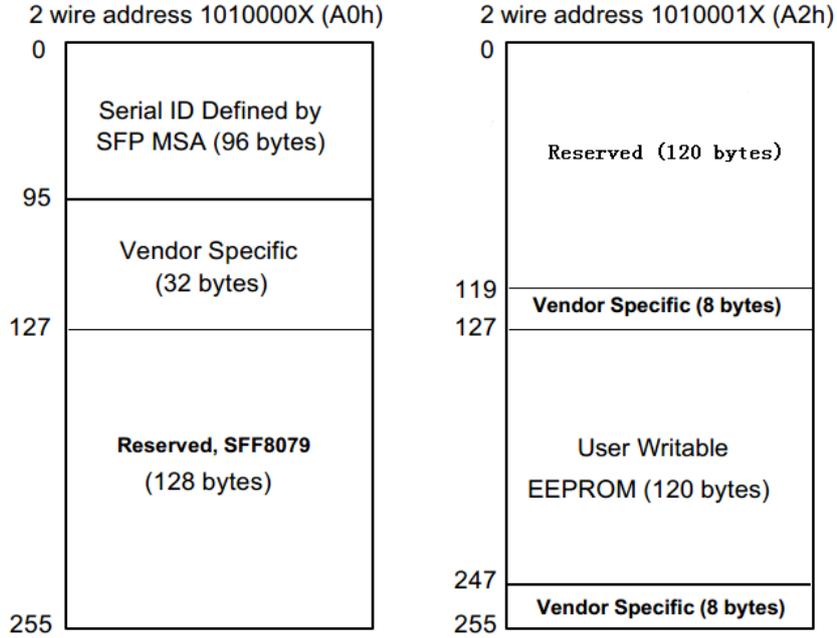
Parameter	Symbol	Min	Typical	Max	Units	Notes
Differential input impedance	Zin	90	100	110	ohm	
Differential Output impedance	Zout	90	100	110	ohm	
Differential input voltage amplitude	$\Delta V_{in}$	100	-	1800	mVp-p	
Differential output voltage amplitude	$\Delta V_{out}$	400	-	800	mVp-p	
Bit Error Ratio	BER			$10^{-12}$		
Input Logic Level High	V <sub>IH</sub>	2.0	-	VCC	V	
Input Logic Level Low	V <sub>IL</sub>	0	-	0.8	V	

### 1.5 Digital Diagnostic Specification

Parameter	Symbol	Accuracy	Units	Notes
Transceiver Case Temperature	DMI_TEMP	±5	°C	Over operating temp
Supply voltage monitor absolute error	DMI_VCC	±3	%	Full operating range
Channel Bias current monitor	DMI_IBIAS	±10	%	Per channel
Channel RX power monitor absolute error	DMI_RX	±3	dB	Per channel
Channel TX power monitor absolute error	DMI_TX	±3	dB	Per channel

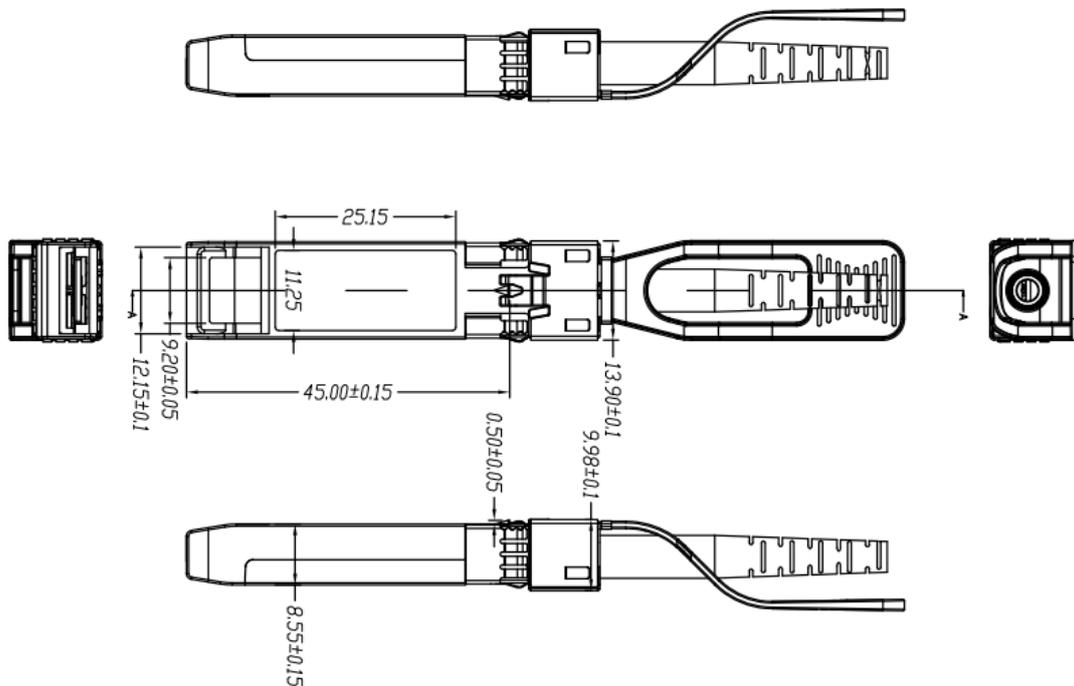
**1.6 EEPROM Information**

EEPROM memory map specific data field description is as below:



**1.7 Mechanical Specifications**

Unit: mm



**Figure 2 - Mechanical Specifications**

**2.0 Product Information**

Data Rate	Factor		Optical	Wavelength	Reach
10G	SFP+ to SFP+	AOC	N/A	850nm	1m~100m

**ESD Safety Cautions**

This transceiver is specified as ESD threshold 1KV for high speed data pins and 2KV for all others electrical input pins, tested per MIL-STD-883, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module. This transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

**Important Notice**

The performance figures, data, and any illustrative material presented in this datasheet are typical and must be explicitly confirmed in writing by ZHAOLONG before they are deemed applicable to any specific order or contract.

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### 3.0 Revision Record

Rev.	Comments	Author	Date
A01	Initial Release	James Chen	10/01/2023