

Features

- Supports 10GBase-T using 30m Cat 6a/7 cable
- Supports 5GBase-T using 70m Cat 5e cable
- Supports 2.5GBase-T using 100m Cat 5e cable
- Supports 10/100/1000Base-T using 100m Cat 5e cable
- Low power consumption (2.3W TYP @10Gbps 30m)
- Auto-sense MDI/MDIX
- Compliant with IEEE 802.3az
- Compliant with SFF-8431 and SFF-8432 MSA
- Compliant with RoHS 2.0, Reach, CE, FCC standards



Applications

- 10 Gigabit Ethernet

Description

This product is a small hot-pluggable RJ45 electrical port module, compliant with 10Giga-bit Ethernet standards and SFP Multi-Source Agreement (MSA) standards, supporting 10G transmission rate, transfer distances up to 30 meters using Cat 6a/ 7 network cable, it is also backward compatible with 10/100/1000M/2.5G/5GBase-T applications. Low power consumption (2.3W TYP @10Gbps 30m), compatible with various brands of hosts, widely used in data centers and enterprise networks. Comply with certification requirements such as RoHS 2.0 Reach, CE and FCC.

This product is based on a standard RJ45 interface, compatible with traditional networks, the Ethernet transfer rates can be increased without changing existing wiring. It is a low cost alternative to Ethernet upgrades.

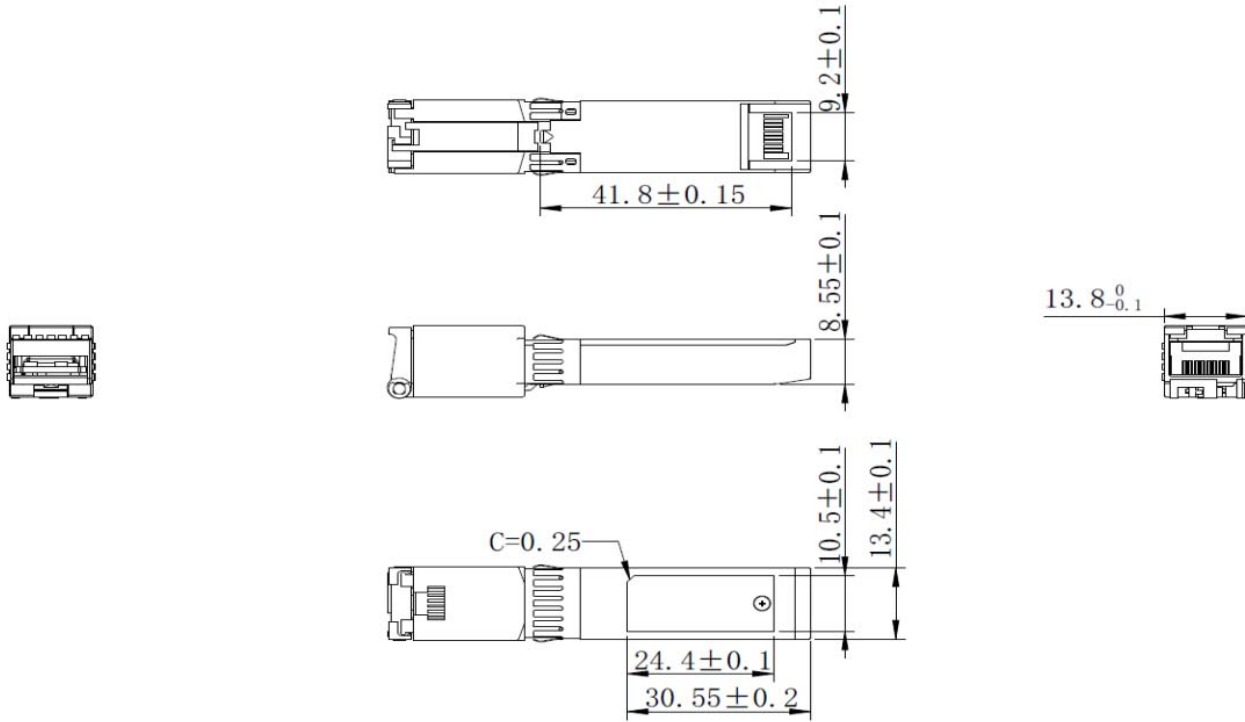
General Specifications

<i>Parameter</i>	<i>Symbol</i>	<i>Min.</i>	<i>Typ.</i>	<i>Max.</i>	<i>Units</i>	<i>Note</i>
Data Rate	<i>DR</i>		10		Gb/s	1
Bit Error Rate	<i>BER</i>			10^{-12}		
Storage Temperature	<i>T_{STO}</i>	-40		85	°C	2
Supply Current	<i>I_{CC}</i>		700	750	mA	3
Input Voltage	<i>V_{CC}</i>	3.14	3.3	3.46	V	
Maximum Voltage	<i>V_{MAX}</i>	-0.5		4	V	
Surge Current	<i>I_{surge}</i>			30	mA	

Notes:

1. IEEE 802.3ae
2. Ambient temperature
3. Test at 10Gbps rate using 30m CAT 6A cable

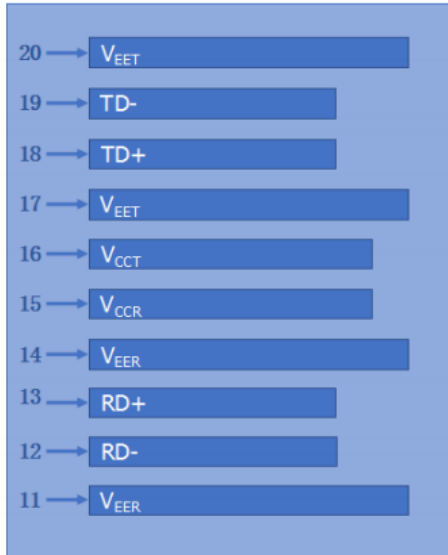
Dimensions



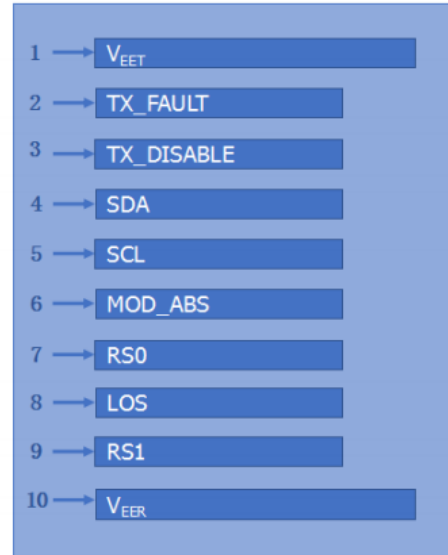
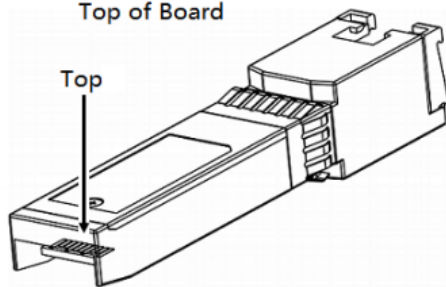
ALL DIMENSIONS ARE ± 0.2 mm UNLESS OTHERWISE SPECIFIED

UNIT: mm

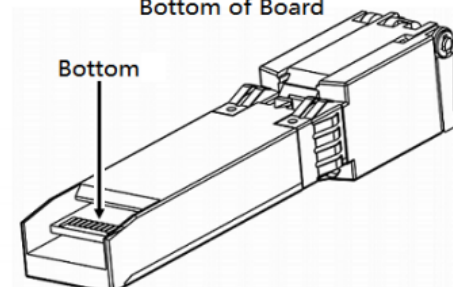
Electrical Pad Layout



Top of Board



Bottom of Board



Pin Description

PIN	Symbol	Description	Note
1	VEET	Transmitter ground (common with receiver ground)	1
2	TX_FAULT	Transmitter Fault. Not supported	
3	TX_DISABLE	Transmitter Disable. PHY disabled on high or open	2
4	SDA	2-wire Serial Interface Data Line	3
5	SCL	2-wire Serial Interface Clock Line	3
6	MOD_ABS	Module Absent. Grounded within the module	3
7	RS0	No Connection Required	
8	RX_LOS	Loss of Signal indication. Logic 0 indicates normal operation.	
9	RS1	No Connection Required	
10	VEER	Receiver ground (common with transmitter ground)	1
11	VEER	Receiver ground (common with transmitter ground)	1
12	RD-	Receiver Inverted DATA out. AC coupled	
13	RD+	Receiver Non-inverted DATA out. AC coupled	
14	VEER	Receiver ground (common with receiver ground)	1
15	VCCR	Receiver power supply	
16	VCCT	Transmitter power supply	
17	VEET	Transmitter ground (common with receiver ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC coupled	
19	TD-	Transmitter Inverted DATA in. AC coupled	
20	VEET	Transmitter ground (common with receiver ground)	1

Notes:

1. Circuit ground is connected to chassis ground
2. Disabled: $T_{DIS} > 2V$ or open, Enabled: $T_{DIS} < 0.8V$
3. Should Be pulled up with 4.7k –10k ohm on host board to a voltage between 2V and 3.6V

Ordering Information

<i>Model Number</i>	<i>Part Number</i>	<i>Description</i>	<i>Voltage</i>	<i>Temperature</i>
SFP-10G-TX	OPAT-TX1-00-CD1	10/100/1000M/2.5G/10GBase-T	3.3V	0°C to 70 °C
SFP-10G-TX-I	OPAT-TX1-00-ID1	10/100/1000M/2.5G/10GBase-T	3.3V	-40°C to 85 °C

Modification History

<i>Revision</i>	<i>Date</i>	<i>Description</i>
A1	June. 2022	Initial Release

Note: All information contained in this document is subject to change without notice.