

10G SFP+ Copper Transceiver

PN: OP3901

Product Specification

Features:

- ✧ Up to 10Gb/s bi-directional data links
- ✧ Hot-pluggable SFP+ form factor
- ✧ Fully metallic enclosure for low EMI
- ✧ Low power dissipation
- ✧ Compact RJ-45 connector assembly
- ✧ Access to physical layer IC via 2-wire serial bus
- ✧ Supports Links up to 30m using Cat 6a/7 Cable
- ✧ RoHS Compliant
- ✧ Operating case temperature: 0°C to 70°C

Applications:

- ✧ 10 Gigabit Ethernet over Cat 6a/7 cable
- ✧ 5GBASE-T over Cat 5e cable
- ✧ 2.5GBASE-T over Cat 5e cable
- ✧ 1000M Ethernet over Cat 5e cable
- ✧ 100M Ethernet over Cat 5e cable
- ✧ 10M Ethernet over Cat 5e cable

Description:

OP3901 Copper Small Form Pluggable (SFP) transceivers are high performance, cost effective module compliant with the 10G Ethernet and 10GBASE-T standards as specified in IEEE 802.3az, which supporting 10Gbps data- rate up to 30 meters reach over unshielded twisted-pair category 6a/7 cables. The module provides standard serial ID information compliant with SFP+ MSA, which can be accessed with address of A0h via the 2wire serial EEPROM protocol.

● **Cable Length**

Line Port	Cable	Reach	Host Port
10Gbase-T	CAT6A/7	30m	10GBase-R
5Gbase-T	CAT5E	50m	10GBase-R
2.5Gbase-T	CAT5E	50m	10GBase-R
1000base-T	CAT5E	100m	10GBase-R
100base-Tx	CAT5E	100m	10GBase-R
10base-Tx	CAT5E	100m	10GBase-R

● **+3.3V Volt Electrical Power Interface**

The OP3901 has an input voltage range of +3.3V +/- 5%.

Table 1. +3.3V Volt electrical power interface

+3.3V volt Electrical Power Interface						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Supply Current	Is			900	mA	3.0W max power over full range of voltage and temperature. See caution note below
Input Voltage	Vcc	3.13	3.3	3.47	V	Referenced to GND
Maximum Voltage	Vmax			4	V	
Surge Current	Isurge			30	mA	Hot plug above steady state current. See caution note below

Caution: Power consumption and surge current are higher than the specified values in the SFP MSA.

● **General Specifications**

Table 2. General specifications

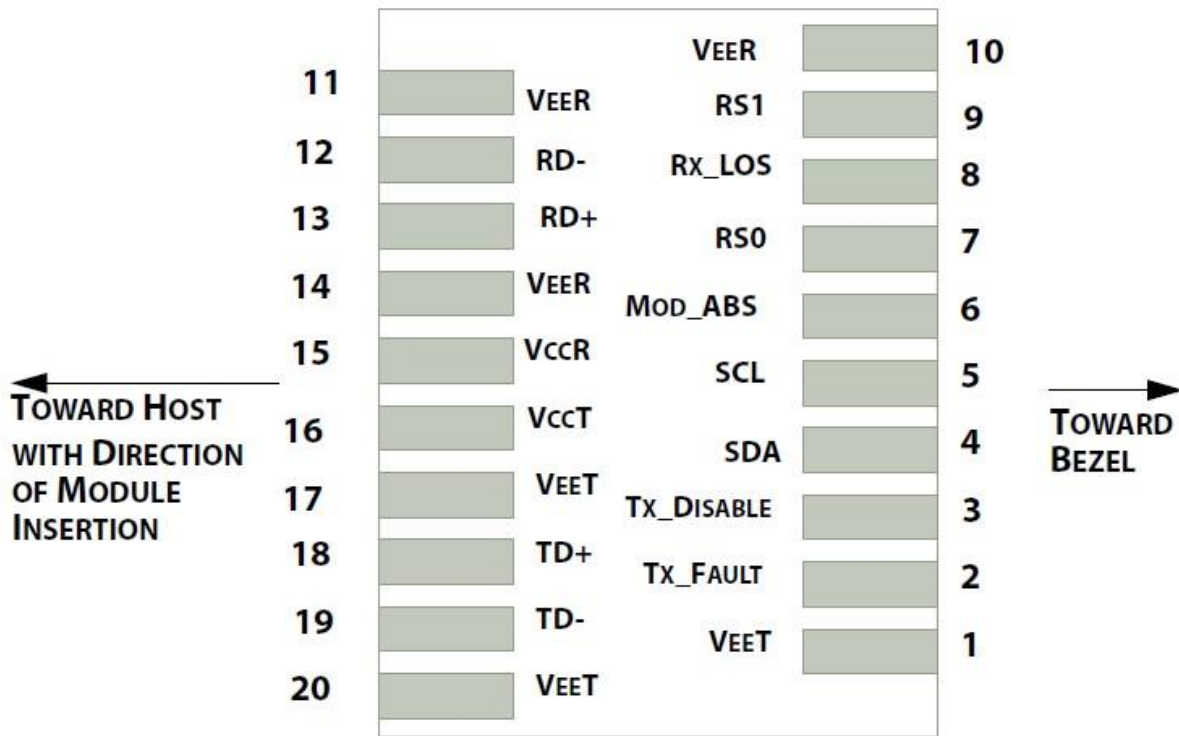
General						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Data Rate	BR		10.3		Gb/sec	IEEE 802.3 compatible.
Cable Length	L			30	m	Category 6a/7 UTP. BER <10-12

● **Environmental Specifications**

Table 3. Environmental specifications

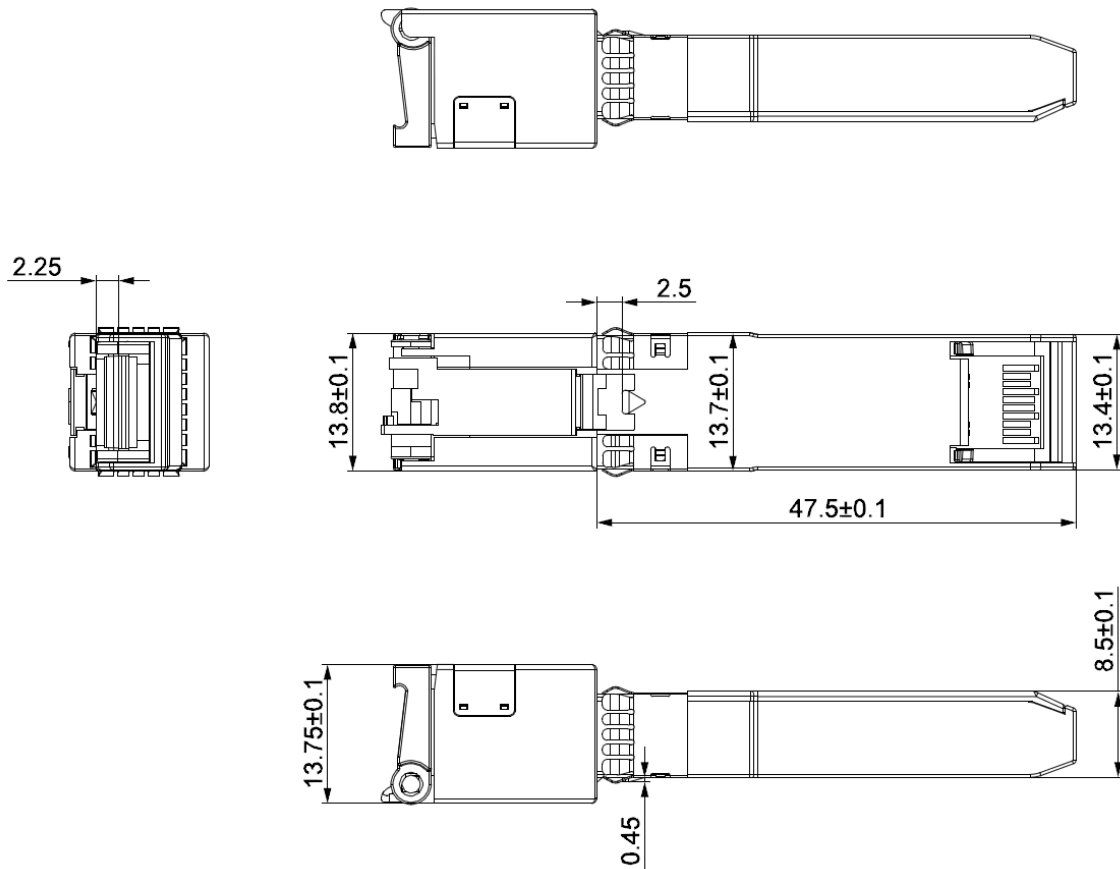
Environmental Specifications						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Operating Temperature	Top	0		70	°C	Case temperature
Storage Temperature	Tsto	-40		85	°C	Ambient temperature

● **Pin Descriptions**



Pin	Signal Name	Description	Plug Seq.	Notes
1	V _{EET}	Transmitter Ground	1	
2	TX FAULT	Transmitter Fault Indication	3	Not supported
3	TX DISABLE	Transmitter Disable	3	
4	SDA	SDA Serial Data Signal	3	
5	SCL	SCL Serial Clock Signal	3	
6	MOD_ABS	Module Absent. Grounded within the module	3	
7	RS0	Not Connected	3	
8	LOS	Loss of Signal	3	
9	V _{EER}	Receiver ground	1	
10	V _{EER}	Receiver ground	1	
11	V _{EER}	Receiver ground	1	
12	RD-	Inv. Received Data Out	3	
13	RD+	Received Data Out	3	
14	V _{EER}	Receiver ground	1	
15	V _{CCR}	Receiver Power Supply	2	
16	V _{cCT}	Transmitter Power Supply	2	
17	V _{EET}	Transmitter Ground	1	
18	TD+	Transmit Data In	3	
19	TD-	Inv. Transmit Data In	3	
20	V _{EET}	Transmitter Ground	1	

● **Mechanical Specifications(Unit:mm)**



● **Document Revision**

Version No.	Date	Reviser	Description
V1.0	2023-10-09	Kevin	Template update

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