

DATA SHEET

MODULETEK:SFP-5G-T-D10

5GBASE-T SFP+ Copper Transceiver

SFP-5G-T-D10 Overview

ModuleTek's SFP-5G-T-D10 is a small hot-pluggable RJ45 electrical port module, compliant with SFP Multi-Source Agreement (MSA) standards, supporting 5GBASE-T and 2.5GBASE-T, it is also backward compatible with 10/100/1000Base-T applications. 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.

The 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 lowcost alternative to Ethernet upgrades.

Product Features

- 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 :
 - 2.5W TYP @5Gbps 70m
 - 1.9W TYP @2.5Gbps 100m
- Auto-sense MDI/MDIX
- Compliant with IEEE 802.3bz
- Compliant with SFF-8431 and SFF-8432 MSA
- Compliant with RoHS 2.0, Reach, CE, FCC standards
- Operating temperature range:0°C to 70°C



Applications

- 1.25 Gigabit Ethernet
- 2.5/5 Gigabit Ethernet
- 802.11ac Wave-2 Access Point Connectivity

Ordering Information

Part Number	Description
SFP-5G-T-D10	10M/100M/1000M/2.5G/5GBase-T SFP+ Copper RJ-45 Connector
Note: 1. Rx_LOS report copper interface link status. 2. A0 and A2 table 00/01 with write protection function.	
For More Information: ModuleTek Limited Web: www.moduletek.com Email: sales@moduletek.com	

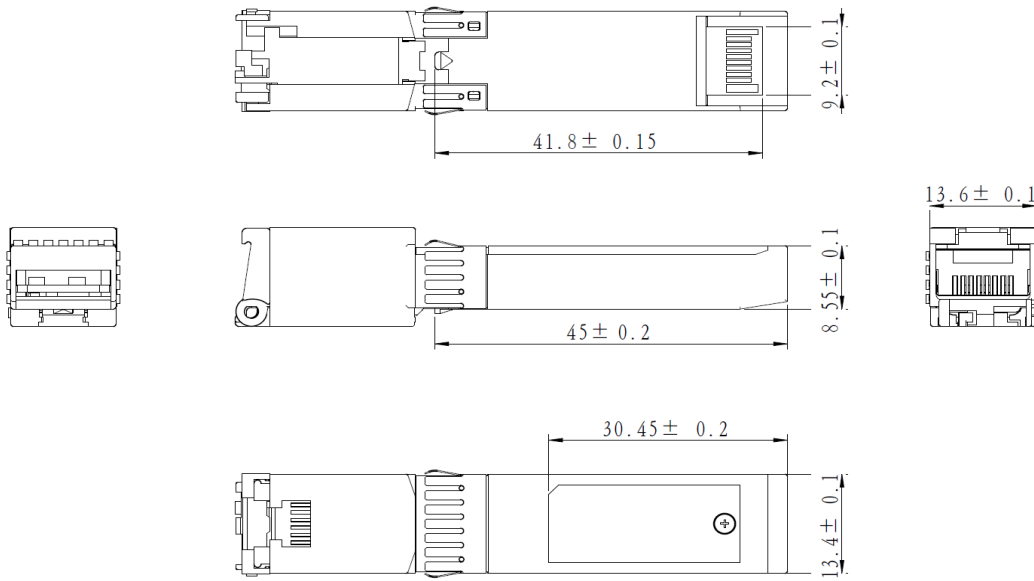
General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Data Rate	DR		5		Gb/s	1
Bit Error Rate	BER			10^{-12}		
Operating Temperature	T _C	0		70	°C	2
Storage Temperature	T _{STO}	-40		85	°C	3
Supply Current	I _{CC}		760	780	mA	4
Input Voltage	V _{CC}	3.14	3.3	3.46	V	
Maximum Voltage	V _{MAX}	-0.5		4	V	
Surge Current	I _{surge}			30	mA	

Notes:

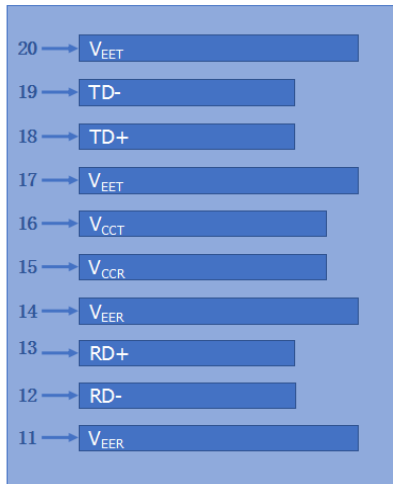
1. IEEE 802.3bz
2. Case temperature
3. Ambient temperature
4. Test at 5Gbps rate using 70m CAT 5e cable

Dimensions

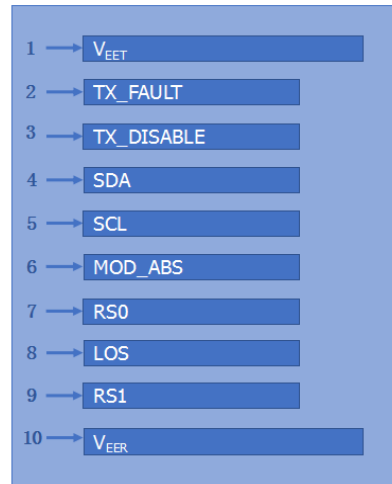
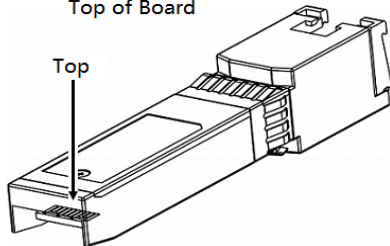


ALL DIMENSIONS ARE ± 0.2 mm UNLESS OTHERWISE SPECIFIED
UNIT: mm

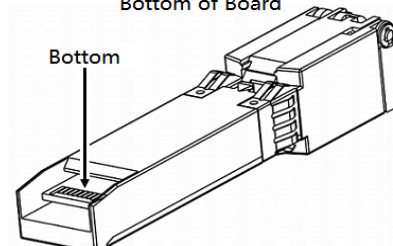
Electrical Pad Layout



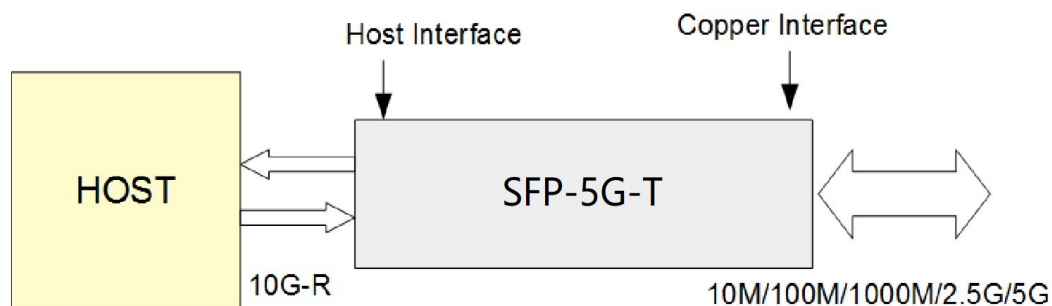
Top of Board



Bottom of Board



Compatible With Multiple Rates



1. Host Interface: Working in 10G-R mode, only be used on 10G switch port.
2. Copper Interface: Compatible with 10/100/1000M/2.5G/5G, auto-negotiates with remote module rate.
3. Supports 5GBase-T up to 70m using Cat 5E cable.
4. Supports 2.5GBase-T up to 100m using Cat 5E cable.
5. Supports 10/100/1000Base-T up to 100m using Cat 5E cable.

Pin Assignment

PIN #	Symbol	Description	Remarks
1	V _{EET}	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	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	4
9	RS1	No Connection Required	
10	V _{EER}	Receiver ground (common with transmitter ground)	1
11	V _{EER}	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	V _{EER}	Receiver ground (common with receiver ground)	1
15	V _{CCR}	Receiver power supply	
16	V _{CCT}	Transmitter power supply	
17	V _{EET}	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	V _{EET}	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
4. The LOS pin can indicate the connection status of the copper interface. When the copper interface is connected to the far end through the network cable, the LOS is low. Otherwise, when the network cable is disconnected, the LOS is high.