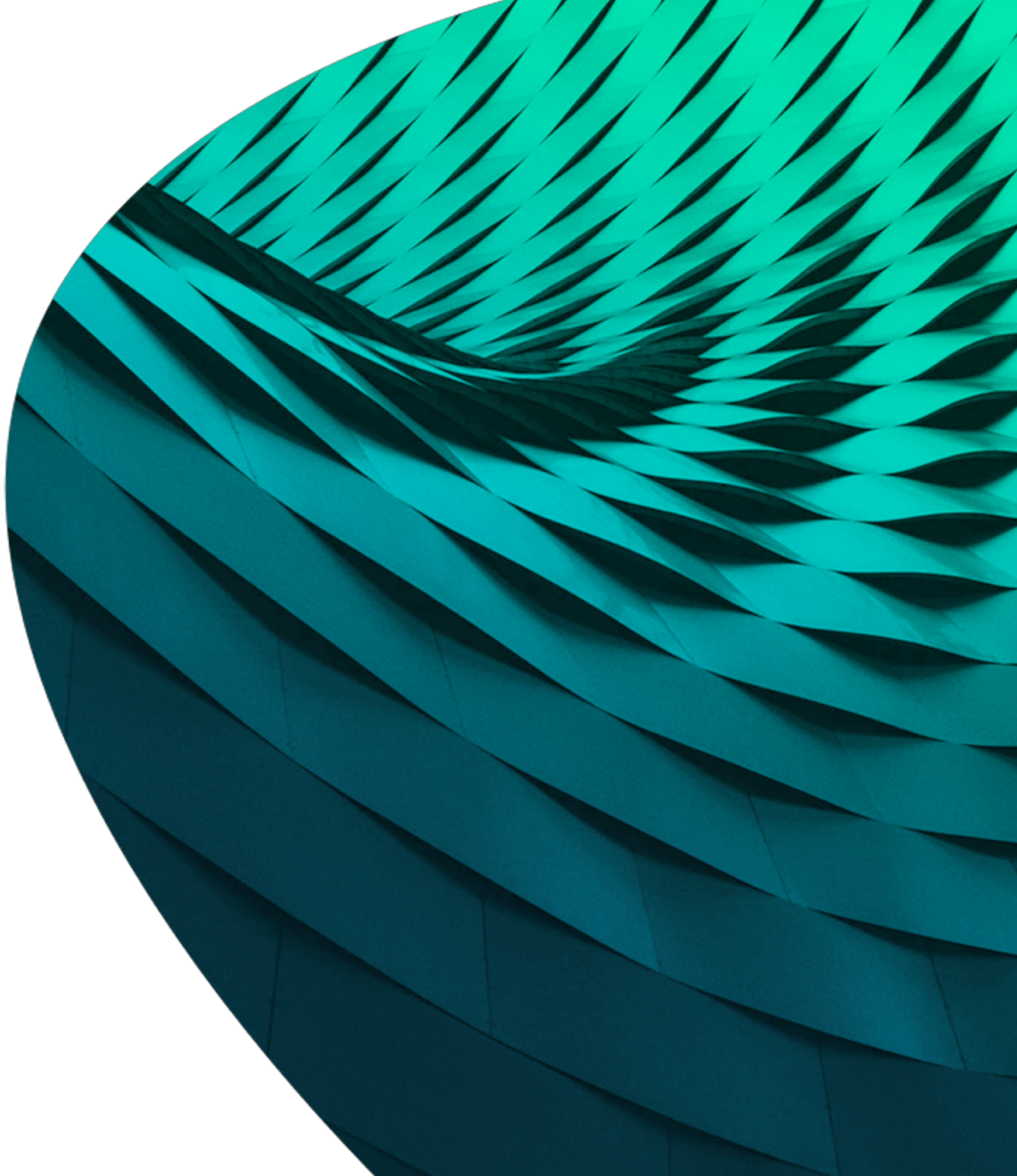
pureoptics

Datasheet

SFP-1G-T-PO



01

Product features

- Up to 1.25Gb/s bi-directional data links
- Compliant with IEEE 802.3z, IEEE 802.3u, IEEE 802.3ab
- Compliant with SFP MSA
- Hot-pluggable SFP footprint
- Support 10/100/1000BASE-T operation in host systems with SGMII interface
- RJ-45 connector
- Auto-sense MDI/MDIX
- Single power supply 3.3V
- RoHS Compliant
- Operating temperature range: 0◦C to 70◦C

02

Applications

- 1.25Gb/s Gigabit Ethernet

03

Description

SFP-1G-T-PO is a small, hot-swappable RJ45 electrical port module, compliant with Gigabit Ethernet standards and

SFP Multi-Source Agreement (MSA) standards,supporting 10M/100M/1000M transmission rate. CAT5 class network cable transmission distance of up to 100 meters, low power consumption (less than 1W), good electromagnetic compatibility, compatible with various brands of hosts, widely used in data centers and enterprise networks. Access to the PHY chip registers is via the I2C interface. Meet the certification requirements such as RoHS.

04

General Specifications

Parameter	Symbol	Min	Typical	Max	Units	Notes
Data Rate	DR	10		1000	Mb/s	1
Cable Length	CL			100	M	2
Bit Error rate	BER			10^{-12}		
Operating T°	Tc	0		70	° C	3
Storage T°	Ts	-40		85	° C	4
Supply Current			320	375	mA	
Input Voltage		3.14	3.3	3.46	V	
Max Voltage				4	V	

NOTES

1. IEEE 802.3 compatible
2. Category 5 UTP
3. Case temperature
4. Ambient temperature

05

High Speed Electrical Interface Host-SFP

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Single ended output swing	Voutpp	275		800	mV	
Single ended input swing	Vinpp	250		1200	mV	
Rise/Fall Time (20/80%)	Tr/Tf		175		ps	
Tx input impedance	Zin		50		ohm	1
Rx output impedance	Zout		50		ohm	1

NOTES

1. Single ended

06

High Speed Electrical Interface Transmission Line-SFP

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Line frequency	FL		125		Mhz	1
Tx Output Impedance Differential	Zout		100		Ohm	2
Rx input Impedance Differential	Zin		100		Ohm	2

NOTES

1. 5-level encoding
2. 2. For all frequencies between 1MHz and 125MHz

07

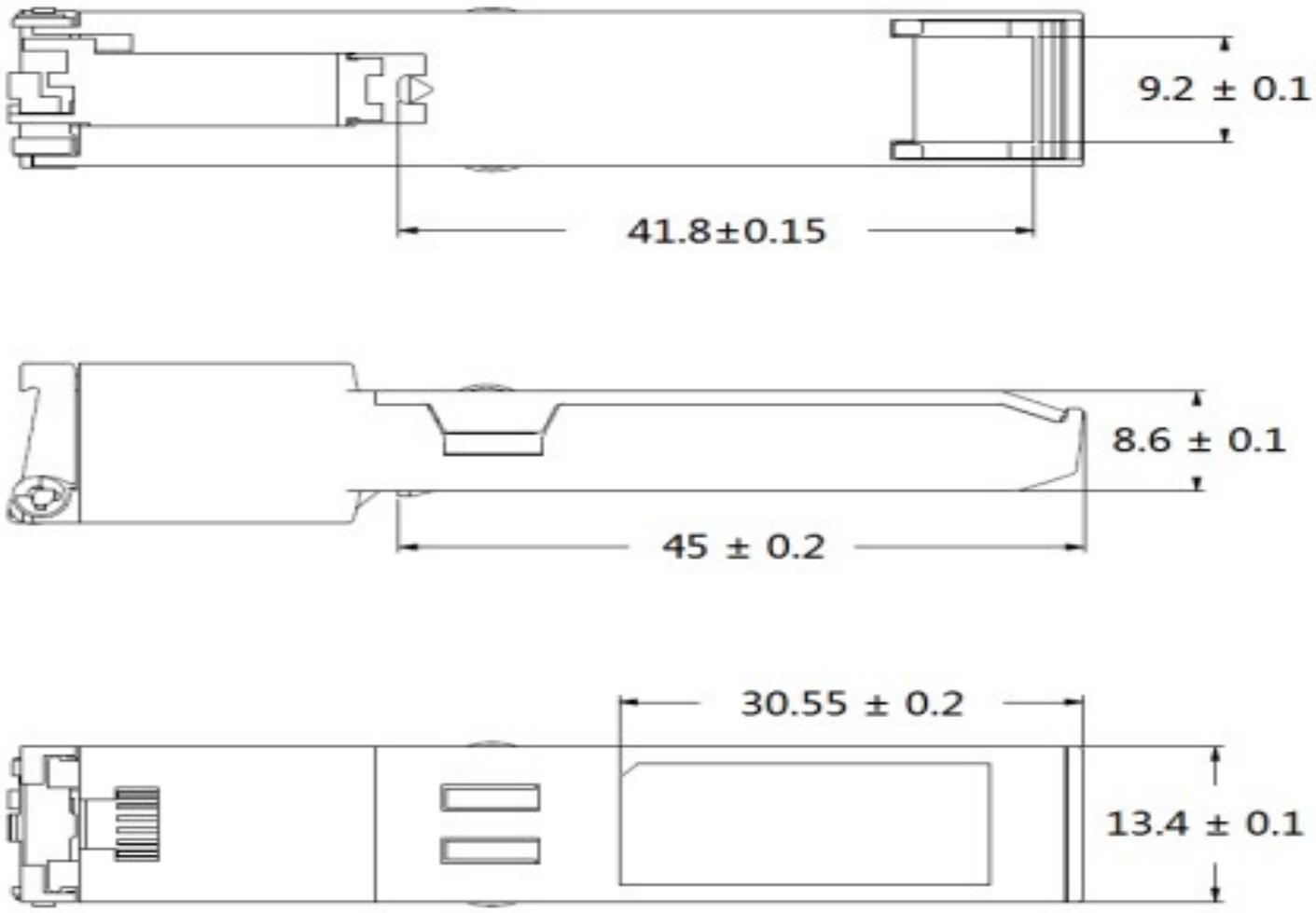
Low Speed Electrical Signal

Parameter	Symbol	Min	Typical	Max	Unit	Notes
SFP Output Low	VOL	0		0.5	V	1
SFP Output High	VOH	Host_VCC-0.5		Host_VCC+0.3	V	1
SFP Input Low	VIL	0		0.8	V	1
SFP Input High	VIH	2		VCC+0.3	V	1

NOTES

1. External 4.7-10k ohm pull-up resistor required

Mechanical Dimension



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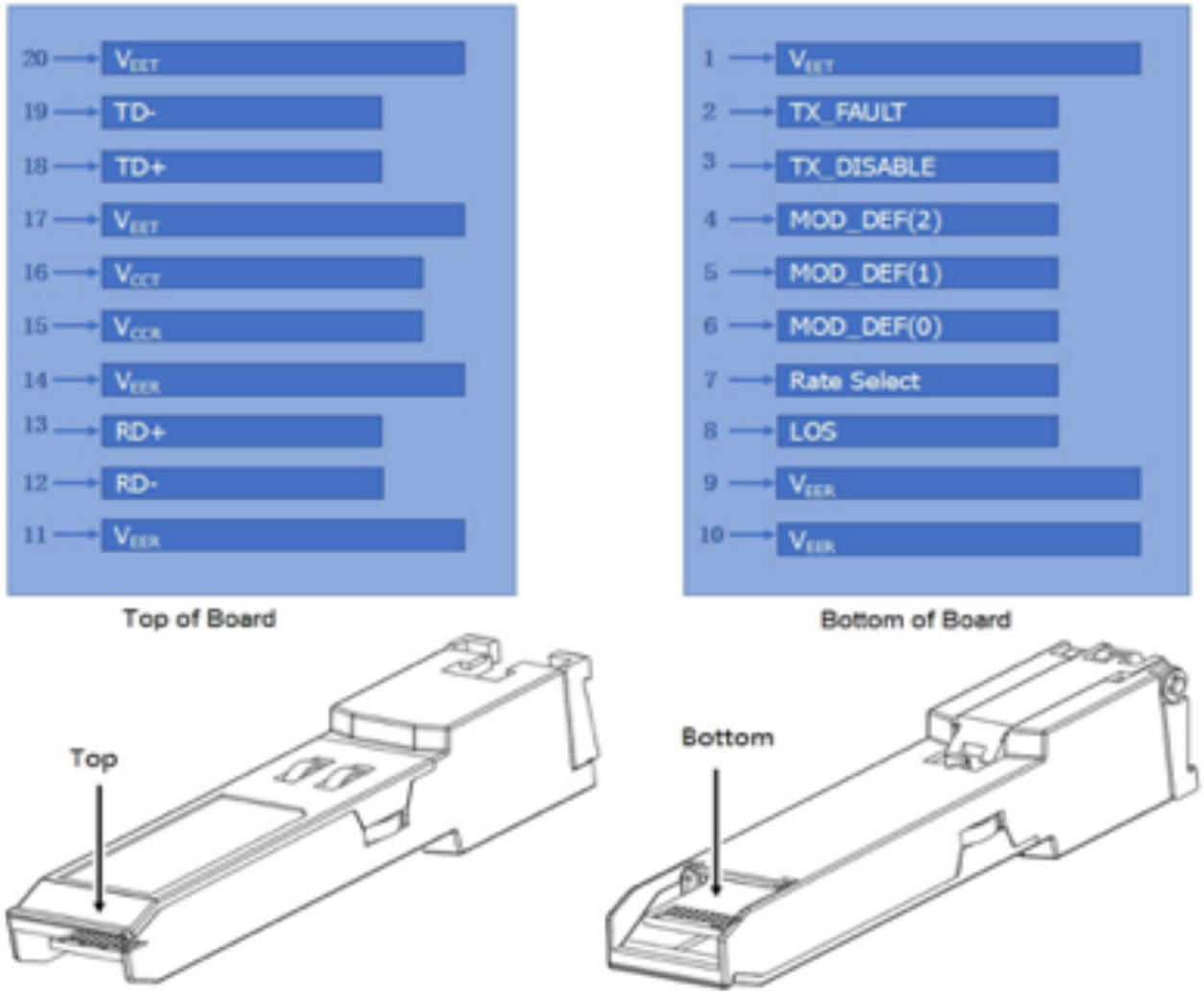
Pin Assignment and Description



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PIN Assignment

PIN #	Symbol	Description	Notes
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	
9	VEER	Receiver Ground (Common with Transmitter Ground)	1
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	

PIN #	Symbol	Description	Notes
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	VEER	Receiver Ground (Common with Transmitter 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: TDIS>2Vor open,Enabled:TDIS<0.8V
3. Should Be pulled up with 4.7k –10k ohm on host board to a voltage between 2V and 3.6V

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