

## **SFP-1000BASE-T-I-J-OPC**

Juniper Networks® Compatible TAA 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45, -40 to 85C)

### **Features**

- INF-8074 Compliance
- RJ-45 Connector
- Copper Media Type
- Industrial Temperature -40 to 85 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



### **Applications:**

- 1000Base Ethernet
- Access and Enterprise

### **Product Description**

This Juniper Networks® compatible SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. It is guaranteed to be 100% compatible with the equivalent Juniper Networks® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of Juniper Networks®, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR	10		1000	Mb/sec	2
Cable Length	CL			100	m	3
Bit Error Rate	BER			10		
Operating Temperature	TOP	-40		85	°C	4
Storage Temperature	TSTO	-40		85	°C	5
Supply Current	IS		320	375	mA	6
Input Voltage	VCC	3.14	3.3	3.46	V	7
Maximum Voltage	VMAX			4	V	6

### Notes:

1. IEEE 802.3 compatible
2. Category 5 UTP
3. Case Temperature
4. Ambient Temperature
5. For electrical power interface
6. Referenced to GND. For electrical power interface

## Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
High Speed Electrical Interface Host-SFP							
Single ended Input Swing		VIN	250		1200	mV	1
Single ended output Swing		VOUT	275		800	mV	1
Rise time (20%-80%)		TR		175		ps	
Fall Time (20%-80%)		TF		175		ps	
Tx Input Impedance		ZIN		50		ohm	1
Rx Output Impedance		ZOUT		50		ohm	1
High Speed Electrical Interface Transmission Line-SFP							
Line Frequency		FL		125		MHz	2
Tx Output Impedance Differential		ZOUT_TX		100		Ohm	3
Rx Input Impedance Differential		ZIN_RX		100		Ohm	3
Low Speed Electrical Signal							
SFP Output	Low	VOL	0		0.5	V	4
	High	VOH	Host_Vcc –0.5		Host_Vcc +0.3	V	4
SFP Input	Low	VIL	0		0.8	V	4
	High	VIH	2		VCC + 0.3	V	4

### Notes:

1. Single ended
2. 5-level encoding
3. For all frequencies between 1MHz and 125MHz
4. External 4.7-10k ohm pull-up resistor required

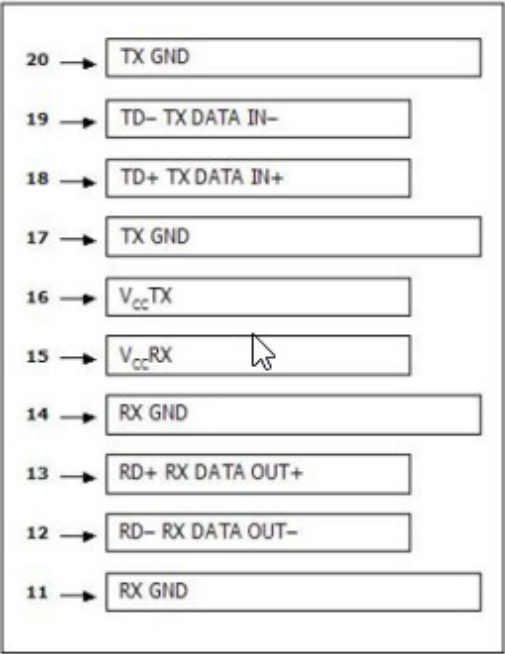
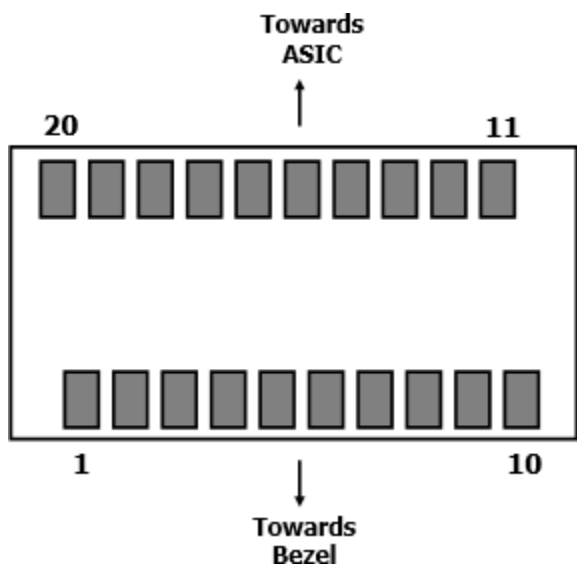
## Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
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	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	RX_LOS	Loss of Signal	
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	
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

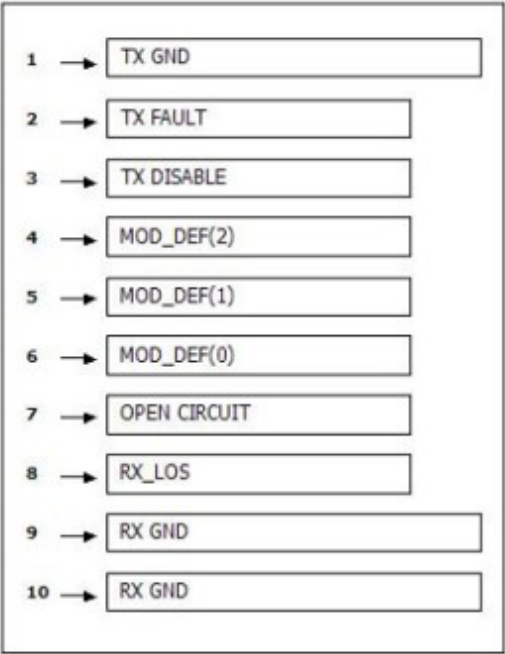
## Notes:

1. Circuit ground is connected to chassis ground
2. Disabled: TX\_DISABLE>2V or open, Enabled: TX\_DISABLE <0.8V
3. Should be pulled up with 4.7k-10k ohm on host board to a voltage between 2V and 3.6V

Electrical Pad Layout

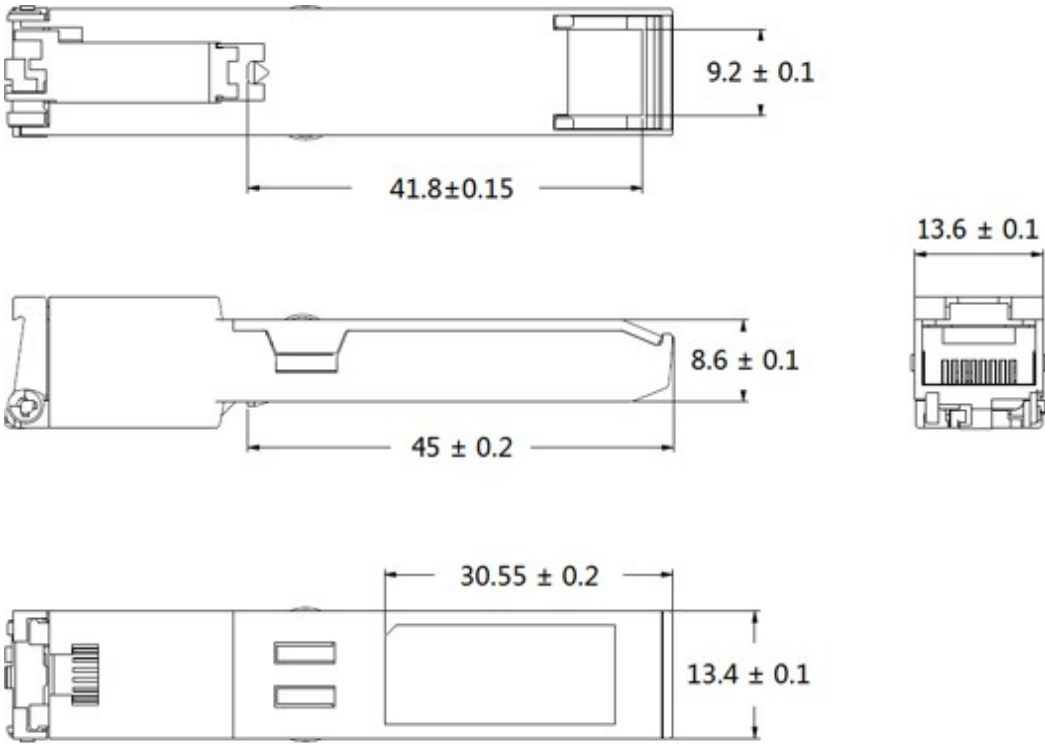


Top of Board



Bottom of Board

Mechanical Specifications



UNIT: mm