

SFP-TC



SFP Copper Transceiver for 10/100/1000BASE-T



Features

- 10/100/1000BASE-T
- Distance 100m over Cat 5 UTP Cable

Applications

- LAN 10/100/1000Base-T
- Switch to Switch Interface
- Router/Server Interface

Product Description

SFP-TC is a 10/100/1000BASE-T Copper Small Form Pluggable (SFP), which is based on the SFP Multi Source Agreement (MSA). It is compliant with the Gigabit Ethernet standard as specified in IEEE STD 802.3 and can fully satisfy the 10/100/1000BASE-T application.

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Opticonnect SYSTEMS B.V., an Optical Networking vendor with its headquarters in the Netherlands, provides Optical Transport solutions and Optical Transceivers at the best price performance ratio possible. Our goal is to simplify the planning, deployment and maintenance of

complex Optical Networks. This is achieved by our user friendly planning apps and information, sophisticated products and transparent support. Relying on our superior product quality, all items are supplied with life time warranty.

Ordering Information

Part No.	Data Rate	Link type	Distance	Connector	Temperature
SFP-TC	10/100/1000Mbps	Cat5	100m	RJ45	Standard

Regulatory Compliance

Feature	Standard	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883G Method 3015.7	Class 1C (>1000V)
Electrostatic Discharge to the enclosure	EN 55024:1998+A1+A2 IEC-61000-4-2 GR-1089-CORE	Compatible with standards
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN55022:2006 CISPR 22B :2006 VCCI Class B	Compatible with standards Noise frequency range: 30MHz to 6GHz. Good system EMI design practice required to achieve Class B margins. System margins are dependent on customer host board and chassis design.
Immunity	EN 55024:1998+A1+A2 IEC 61000-4-3	Compatible with standards. 1KHz sine-wave, 80% AM, from 80MHz to 1GHz. No effect on transmitter/receiver performance is detectable between these limits.
RoHS6	2002/95/EC 4.1&4.2 2005/747/EC 5&7&13	Compliant with standards ^{note1}

Note 1: For update of the equipments and strict control of raw materials, Opticonnect has the ability to supply the customized products since Jan 1, 2007, which meet the requirements of RoHS6 (Restrictions on use of certain Hazardous Substances) of European Union. In light of item 5 in RoHS exemption list of RoHS Directive 2002/95/EC, Item 5: Lead in glass of cathode ray tubes, electronic components and fluorescent tubes. In light of item 13 in RoHS exemption list of RoHS Directive 2005/747/EC, Item13: Lead and cadmium in optical and filter glass. The three exemptions are being concerned for Opticonnect's transceivers, because Opticonnect's transceivers use glass, which may contain Pb, for components such as lenses, windows, isolators, and other electronic components.

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max
Maximum Supply Voltage	V_{cc}	-0.5		4.0
Storage Temperature	T_s	-40		85

Normal operating condition

Parameter	Symbol	Min	Typ	Max	Units	Ref.
Operating Case Temperature	T_{op}	0		70	°C	Standard
		-40		85		Industrial
Supply Voltage	V_{cc}	3.15	3.3	3.45	V	

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
+3.3 Volt Electrical Power Interface						
Supply Current	I_{cc}		300	350	mA	
Input Voltage	V_{cc}	3.15	3.3	3.45	V	
Surge Current	I_{surge}			30	mA	
Low-Speed Signals, Electronic Characteristics						
SFP Output LOW	V_{OL}	0		0.5	V	4.7k to 10k pull-up to host V_{cc} , measured at host side of connector
SFP Output HIGH	V_{OH}	host $V_{cc}-0.5$		host_	V	4.7k to 10k pull-up to host V_{cc} , measured at host side of connector
SFP Input LOW	V_{IL}	0		0.8	V	4.7k to 10k pull-up to V_{cc} , measured at SFP side of connector
SFP Input HIGH	V_{IH}	2		$V_{cc} + 0.3$	V	4.7k to 10k pull-up to V_{cc} , measured at SFP side of connector
High-Speed Electrical Interface, Transmission Line-SFP						
Line Baud Rates	f_L		1250		MHz	5-level encoding, per IEEE 802.3
TX Output impedance	$Z_{out, TX}$		100		Ohm	Differential, for all frequencies between 1MHz and 1250MHz
RX Input Impedance	$Z_{in, RX}$		100		Ohm	Differential, for all frequencies between 1MHz and 1250MHz
High-Speed Electrical Interface, Host-SFP						
Single ended data input swing	V_{in}	250		1200	mV	Single ended
Single ended data output swing	V_{out}	350		800	mV	Single ended
Rise/Fall Time	T_r, T_f		175		psec	20%-80%
TX Input Impedance	Z_{in}		50		Ohm	Single ended
RX Output Impedance	Z_{out}		50		Ohm	Single ended

General specifications

Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Data rate		10		1000	Mbps	
Distance				100	m	Category 5 UTP. BER $<10^{-12}$