SFT00P10GE0A – SFP Copper Transceiver
Copper / 100m / 1000Base-T

For your product safety, please read the following information carefully before any manipulation of the transceiver:

ESD
This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.

1. Overview

SFT00P10GE0A is a high performance transceiver module for Gigabit Ethernet data links over Category 5 UTP cable. The maximum reach[1] is 100m. The transceiver supports 1000BASE-T operation in host systems.

This transceiver module is compliant with the Small Form-factor Pluggable (SFP) Multisource Agreement (MSA) and hot pluggable. Always contact Skylane Optics commercial agents for compatibility with different equipment platforms.

2. Features

- SFP Multi-Source Agreement compliant (SFF-8074)
- Hot-Pluggable SFP Footprint
- Serial ID functionality supported according to (SFF-8074)
- Compact RJ-45 Connector Assembly
- Fully Metallic Enclosure for Low EMI
- Access to Physical Layer IC via 2-Wire Serial Bus
- 100m reach over Cat5 UTP cable
- Support 1000BASE-T Operation in Host Systems
- Operating Case Temperature : 0°C - 70°C
- Low Power Dissipation (<1.2W)
- Auto-negotiation function implemented



Figure 1. SFP Copper
(non-binding illustration)

3. Applications

- LAN 1000Base-T
- Gigabit Ethernet over Cat 5 Cable
- Switch to Switch Interface
- Router/Server Interface

4. Technical parameters

4.1. Recommended Operating Conditions

Parameter	Min	Typ	Max	Units	Notes
Storage temperature	-40		85	°C	
Operating Case Temperature	0		70	°C	
Relative Humidity	5		85	%	Non-Condensing
Power Supply Voltage	3.13	3.3	3.47	V	
Power Supply Current		300	350	mA	

4.2. General Specifications

Parameter	Min	Typ	Max	Units	Notes
Data Rate		1000		Mbps	
Distance			100	m	1

1. Category 5 UTP cable, BER≤10^{-12}

4.3. High-speed Electrical Interface, Host to SFP

Parameter	Min	Typ	Max	Units	Notes
TD+, TD- Input voltage Swing	250		1200	mV	3
RD+, RD- Output voltage Swing	350		800	mV	3
Rise/Fall Time		175		ps	2
Tx Input Impedance		50		Ω	3
Rx Output Impedance		50		Ω	3

2. 20% to 80% value
3. Single ended

4.4. High-speed Electrical Interface, Cable to SFP

Parameter	Min	Typ	Max	Units	Notes
Transmission Frequency		125		MHz	4
Tx Output Impedance		100		Ω	5
Rx Output Impedance		100		Ω	5

4. Five-level coding as per IEEE 802.3
5. Differential, 1 to 125MHz

5. Transceiver Electrical Pad Layout

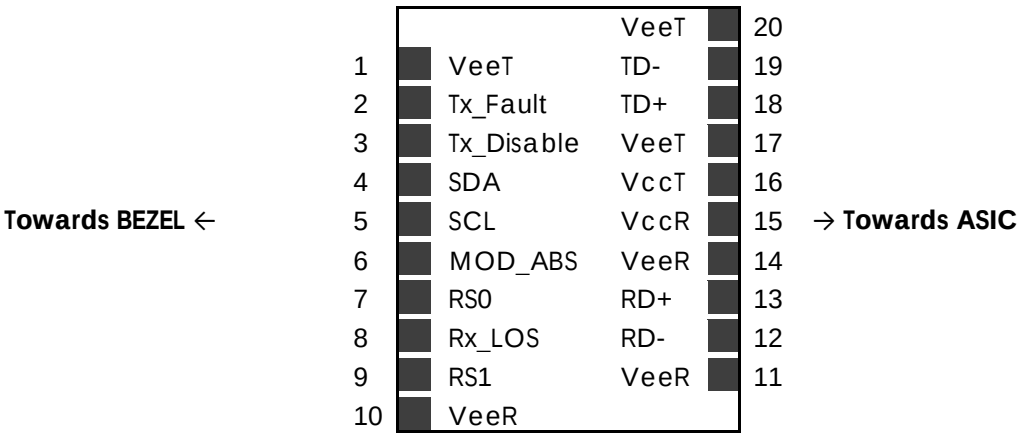

Figure 2. Transceiver Electrical Pad Layout

6. Pin Functions Definitions

Pin Number	Name	Function
1	VeeT	Transmitter Ground
2	TX_Fault	Transmitter Fault Indication
3	TX_ Disable	Transmitter Disable
4	SDA	2-Wire Serial Interface Data (SDA)
5	SCL	2-Wire Serial Interface Clock (SCL)
6	MOD_ABS	Grounded within the module
7	RS0	Not Connected
8	Rx_LOS	Loss of signal
9	RS1	Receiver Ground
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inverted received data output
13	RD+	Received data output
14	VeeR	Receiver Ground
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	VeeT	Transmitter Ground
18	TD+	Transmit data input
19	TD-	Inverted transmit data input
20	VeeT	Transmitter Ground

7. EEPROM

MSA compliant (SFF-8074)

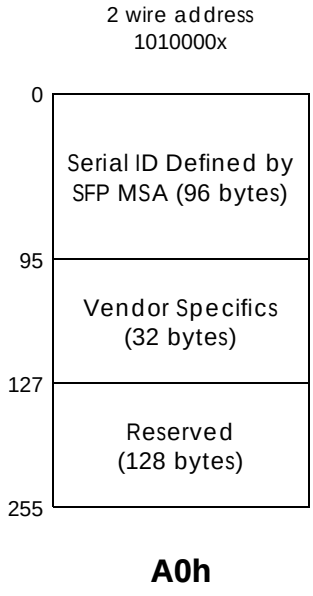

Figure 3. EEPROM of a SFP Copper

8. Ordering information

Part Number	Description
SFT00P10GE0A	SFP copper, RJ45 connector, protocols: 1000Base-T, max reach 100m on Cat 5 UTP cable, 0°C to 70°C

Skylane Optics® supplies a broad range of optical transceivers. Our engineers work closely with our customers to find the best solutions for every application. We are committed to provide high quality products and services to our customers.

For questions on this product please contact:
support@skylaneoptics.com

