

SGT00P10DR00 – SFP Copper

Copper / 100m / 10/100/1000BASE-T / SGMII

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

SGT00P10DR00 is a high performance transceiver module for Fast Ethernet or Gigabit Ethernet data links over a category 5 UTP cable. The maximum reach is 100m. The transceiver supports 1000BASE-T operation in systems with SERDES interface. SGT00P10DR00 also supports 10/100/1000BASE-T operation in host systems with SGMII interface.

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]
- RJ45 Connector
- 100m, point-to-point transmission on category 5 UTP cabling
- 1000Base-T operation in SERDES host systems
- 10/100/1000BASE-T operation in host systems supporting SGMII
- Operating temperature range 0°C to 70°C
- Low power dissipation (1.15W max)
- Access to Physical Layer IC via Two-Wire Serial Bus



Figure 1. SFP Copper
(non-binding illustration)

3. Applications

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

4. Technical parameters

4.1. Recommended Operating Conditions					
Parameter	Min	Typ	Max	Unit	Notes
Storage temperature	-40		85	°C	
Operating Case Temperature	0		70	°C	
Relative Humidity	5		85	%	Non-Condensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current		300	350	mA	

4.2. General Specifications					
Parameter	Min	Typ	Max	Unit	Notes
Data Rate	10		1000	Mbps	1
Transmission Distance			100	m	2

1. 10/100/1000 BASE-T operation requires an SGMII interface with no clocks in the host system. With a SERDES interface only, the module will operate at 1000BASE-T
2. On Category 5 UTP cable, BER≤10⁻¹²

4.3. High-speed Electrical Interface, Host to SFP					
Parameter	Min	Typ	Max	Unit	Notes
TD+, TD- Input voltage Swing	250		1200	mV	4
RD+, RD- Output voltage Swing	350		800	mV	4
Rise/Fall Time		175		ps	3
Tx Input Impedance		50		Ω	4
Rx Output Impedance		50		Ω	4

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

4.4. High-speed Electrical Interface, Cable to SFP					
Parameter	Min	Typ	Max	Unit	Notes
Transmission Frequency		125		MHz	5
Tx Input Impedance		100		Ω	6
Rx Output Impedance		100		Ω	6

5. 4D-PAM-5 encoding per IEEE802.3: 2002
6. Differential for frequencies ranging from 1MHz to 125MHz

5. Transceiver Electrical Pad Layout

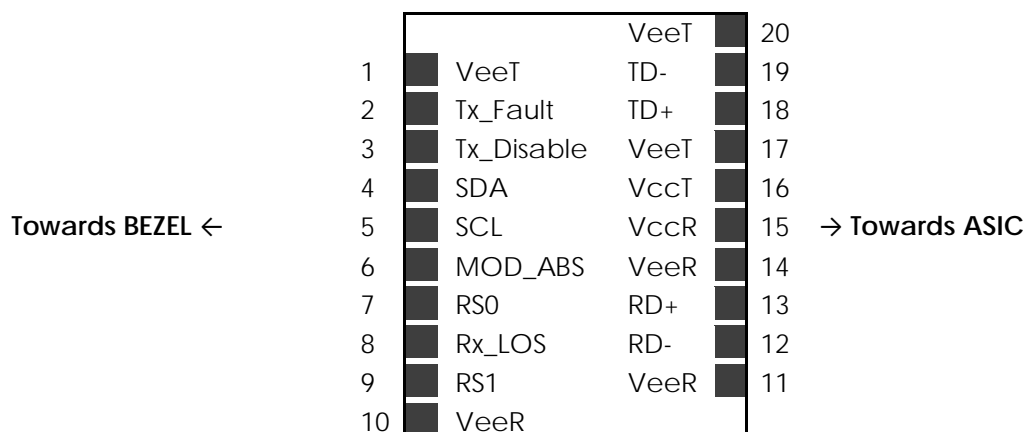


Figure 2. Transceiver Electrical Pad Layout

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	Function Not available
7	RS0	Rate Select 0 grounded
8	Rx_LOS	Loss of signal
9	RS1	Rate select 1 grounded
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]

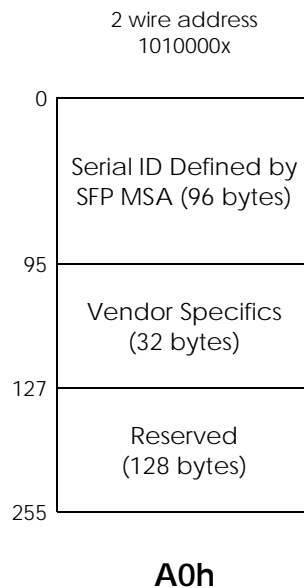


Figure 3. EEPROM of a SFP Copper

8. Ordering information

Part Number	Description
SGT00P10DR00	SFP copper, RJ45 connector, protocols: 10/100/1000Base-T, nominal reach 100m on Cat 5 UTP cabling, 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:
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