FS

1000BASE-T SFP Copper RJ-45 100m Industrial Transceiver

SFP-GB-GE-T

Application

- LAN 1000Base-T
- Gigabit Ethernet over Cat 5/5e/6 Cable
- Switch to Switch Interface
- Router/Server Interface

Features

- Support 1000BASE-T Operation in Host Systems
- Support RX_LOS as Link indication function
- For 100m Reach Over UTP Cat 5/5e/6 Cable
- Hot-Pluggable SFP Footprint

- Fully Metallic Enclosure for Low EMI
- Low Power Dissipation (1.05W Typical)
- Compact RJ-45 Connector Assembly
- Access to Physical Layer IC via 2-Wire Serial Bus

- Detailed Product Information in EEPROM
- Compliant with MSA SFP
- Industrial Temperature Range:
  -40 to 85℃ (-40 to 185°F)
- Commercial Temperature Range：
  0~70℃
- Compliant with IEEE Std 802.3-2002

Description

SFP-GB-GE-T 1000BASE-T Copper Small Form Pluggable (SFP) modules are based on the SFP Multi Source Agreement (MSA). It is compliant with the Gigabit Ethernet and 1000BASE-T standards as specified in IEEE STD 802.3 and 802.3ab.

Product Specifications

I. General Specifications

Parameter	Symbol	Typ.	Min	Max	Units	Notes
Data rate		1000			Mbps	
Distance				100	m	Cat 5/5e/6

II. Absolute Maximum Ratings

Parameter	Symbol	Min	Typ.	Max	Unit
Maximum Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	Ts	-40		85	°C

III. Electrical Characteristics

Parameter	Symbol	Typ.	Min	Max	Unit	Notes/Conditions
+3.3 Volt Electrical Power Interface						
Supply Current	Icc		300	350	mA	
Input Voltage	Vcc	3.13	3.3	3.47	V	
Surge Current	Isurge			30	mA	
Low-Speed Signals, Electronic Characteristics						
SFP Output LOW	V_{OL}	0		0.5	V	4.7k to 10k pull-up to host_Vcc, measured at host side of connector

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SFP Output HIGH	V$_{OH}$	host_Vcc − 0.5		host_Vcc + 0.3	V	4.7k to 10k pull-up to host_Vcc, measured at host side of connector
SFP Input LOW	VIL	0		0.8	V	4.7k to 10k pull-up to Vcc, measured at SFP side of connector
SFP Input HIGH	VIH	2		Vcc + 0.3	V	4.7k to 10k pull-up to Vcc, measured at SFP side of connector

High-Speed Electrical Interface, Transmission Line-SFP

Line Frequency	f$_L$		125		MHz	5-level encoding, per IEEE 802.3
Tx Output impedance	Zout, TX		100		Ohm	Differential, for all frequencies between 1MHz and 125MHz
Rx Input Impedance	Zin, RX		100		Ohm	Differential, for all frequencies between 1MHz and 125MHz

High-Speed Electrical Interface, Host-SFP

Single ended data input swing	Vin	250		1200	mV	Single ended
Single ended data output swing	Vout	350		800	mV	Single ended
Rise/Fall Time	Tr,Tf		175		psec	20%-80%
Tx Input Impedance	Zin		50		Ohm	Single ended
Rx Output Impedance	Zout		50		Ohm	Single ended

IV. Pin Description
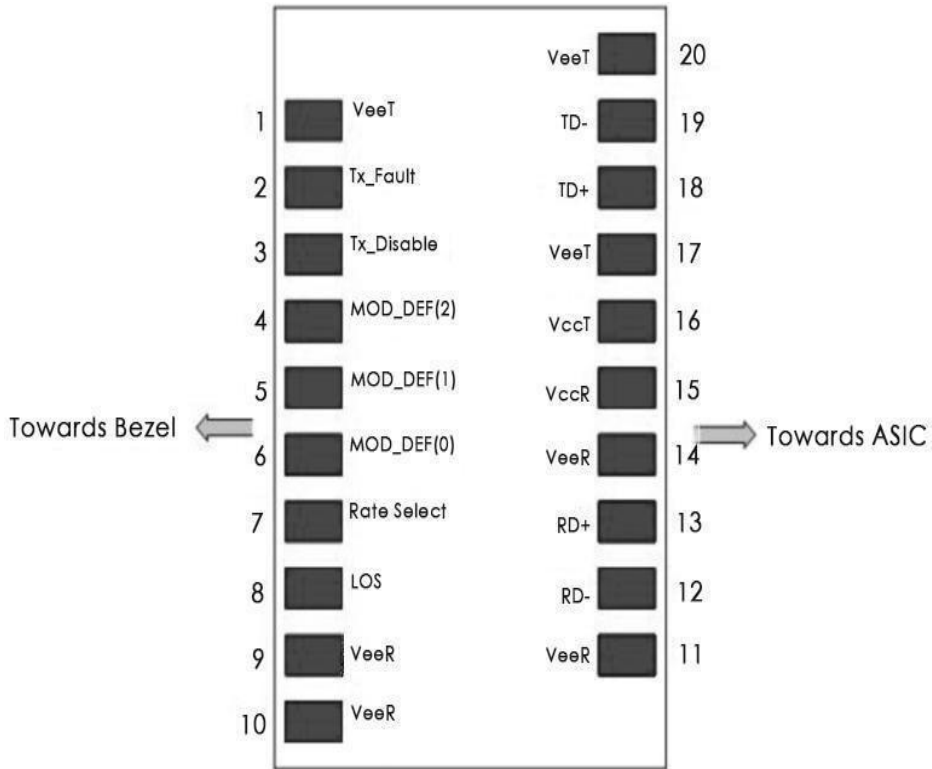
Pin No.	Name	Function	Plug Seq.	Notes
1	VeeT	Transmitter Ground	1	
2	TX Fault	Transmitter Fault Indication	3	Not used
3	TX Disable	Transmitter Disable	3	Note 1
4	MOD-DEF2	Module Definition 2	3	Note 2
5	MOD-DEF1	Module Definition 1	3	Note 2
6	MOD-DEF0	Module Definition 0	3	Note 2
7	Rate Select	Not Connected	3	
8	VeeR	Receiver Ground	1	

9	VeeR	Receiver Ground	1	
10	VeeR	Receiver Ground	1	
11	RD-	Inv. Received Data Out	3	
12	RD+	Received Data Out	3	
13	VeeR	Receiver Ground	1	
14	VccR	Receiver Power	2	
15	VccT	Transmitter Power	2	
16	VeeT	Transmitter Ground	1	
17	TD+	Transmit Data In	3	
18	TD-	Inv. Transmit Data In	3	
19	VeeT	Transmitter Ground	1	

Notes:

1. PHY disabled on TDIS > 2.0V or open, enabled on TDIS < 0.8V, used to reset the module.

2. Should be pulled up with 4.7k – 10k Ohm on host board to a voltage between 2.0 V and 3.6 V.MOD_DEF(0) pulls line low to indicate module is plugged in.

V. Mechanical Specifications

FS.COM Copper SFP transceivers are compliant with the dimensions defined by the SFPMulti-Sourcing Agreement (MSA).
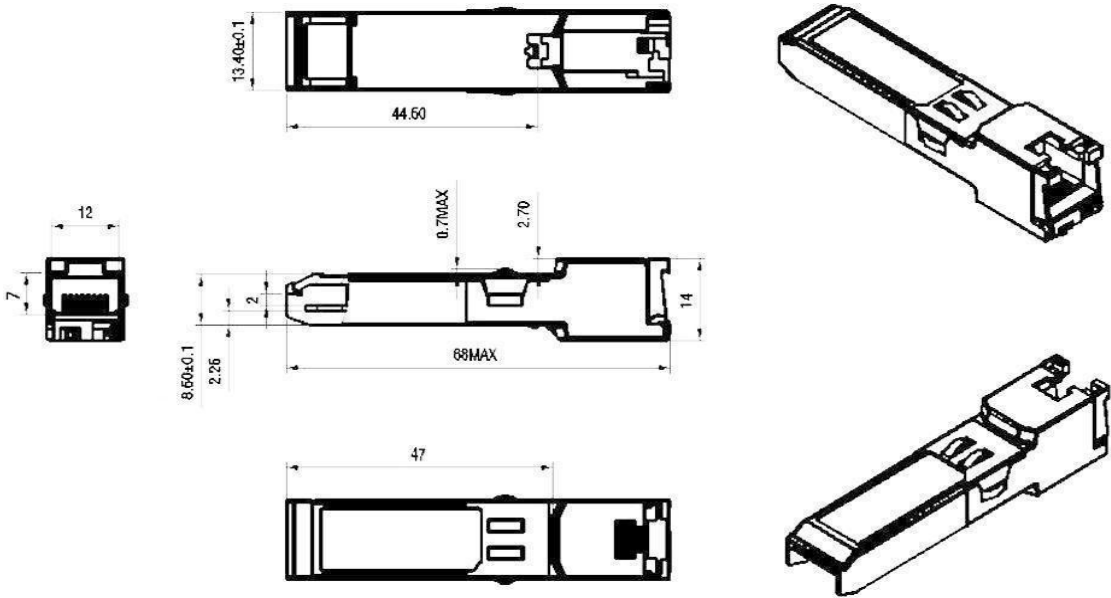
Test Center

FS.COM transceivers are tested to ensure connectivity and compatibility in our test center before shipped out. FS.COM test center is supported by a variety of mainstream original brand switches and groups of professional staff, helping our customers make the most efficient use of our products in their systems, network designs and deployments.

The original switches could be found nowhere but at FS.COM test center, eg: Juniper MX960 & EX 4300 series, Cisco Nexus 9396PX & Cisco ASR 9000 Series, HP 5900 Series & HP 5406R ZL2 V3(J9996A), Arista 7050S-64, Brocade ICX7750-26Q & ICX6610-48, Avaya VSP 7000 MDA 2, etc.

Cisco ASR 9000 Series(A9K-MPA-X40GE)

ARISTA 7050S-64(DCS-7050S-64)

Juniper MX960

Brocade ICX 7750-26Q

Extreme Networks X670V VIM-40G4X

Mellanox M3601Q

Dell N4032F

HP 5406R ZL2V3(J9996A)

AVAYA 7024XLS(7002QQ-MDA)

Test Assured Program

FS.COM truly understands the value of compatibility and interoperability to each optics. Every module FS.COM provides must run through programming and an extensive series of platform diagnostic tests to prove its performance and compatibility. In our test center, we care of every detail from staff to facilities—professionally trained staff, advanced test facilities and comprehensive original-brand switches, to ensure our customers to receive the optics with superior quality.

Our smart data system allows effective product management and quality control according to the unique serial number, properly tracing the order, shipment and every part.
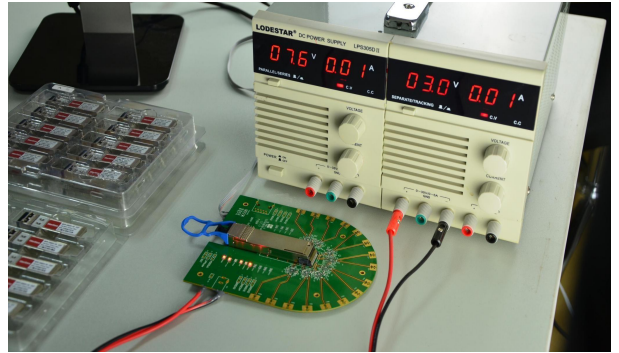
Our in-house coding facility programs all of our parts to standard OEM specs for compatibility on all major vendors and systems such as Cisco, Juniper, Brocade, HP, Dell, Arista and so on.

With a comprehensive line of original-brand switches, we can recreate an environment and test each optics in practical application to ensure quality and distance.

The last test assured step to ensure our products to be shipped with perfect package.

Order Information

Part Number	Description
SFP1G-SX- 85-I	SFP, 1000BASE-SX, 850nm, MMF, 550m, LC, DOM
SFP1G-SX-31-I	SFP, 1000BASE-SX,1310nm, SMF, 2km, LC, DOM
SFP1G-LX-31-I	SFP, 1000BASE-LX,1310nm, SMF, 10km, LC, DOM
SFP1G-LX-31-I	SFP, 1000BASE-LX,1310nm, SMF, 15km, LC, DOM
SFP1G-LX-31-I	SFP, 1000BASE-LX/LH,1310nm, SMF, 20km, LC, DOM
SFP1G-LH-31-I	SFP, 1000BASE-EX, 1310nm, SMF, 40km, LC, DOM
SFP1G-EX-55-I	SFP, 1000BASE-EX, 1550nm, SMF, 40km, LC, DOM
SFP1G-ZX-55-I	SFP, 1000BASE-EX, 1550nm, SMF, 60km, LC, DOM
SFP1G-ZX-55-I	SFP, 1000BASE-ZX, 1550nm, SMF, 80km, LC, DOM
SFP1G-EZX-55-I	SFP, 1000BASE-EZX, 1550nm, SMF, 100km, LC, DOM
SFP1G-EZX-55-I	SFP, 1000BASE-EZX, 1550nm, SMF, 120km, LC, DOM
SFP-GB-T-I	SFP, 10/100/1000Base-T, SERDES/SGMII Interface
SFP-GB-T-I	SFP, 10/100/1000Base-T, SERDES Interface

Note:

1G SFP transceiver module is individually tested on corresponding equipment such as Cisco, Arista, Juniper, Dell, Brocade and other brands, and passes the monitoring of FS.COM intelligent quality control system.

United Kingdom

Russia

Germany

United States

China

Singapore

Australia

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The information in this document is subject to change without notice. FS has made all efforts to ensure the accuracy of the information, but all information in this document does not constitute any kind of warranty.