

# Mini-GBIC SFP Transceivers

Small Form-factor Pluggable  
Transceiver Modules



## OVERVIEW

The IFS family of Small Form-factor Pluggable (SFP) Transceiver Modules are designed for high performance integrated duplex data transmission over optical fiber. These SFP transceiver modules are compliant with the industry's SFP Multi-source Agreement (MSA) standard.

The IFS SFP Transceiver Modules offer the ability to enable the SFP ports on any Ethernet equipment that have a built-in SFP Mini-GBIC interface. These modules are hot-swappable without any interruption of the host equipment operation.

These SFP modules are available in 100Base-FX/BX or 1000Base-TP/FX/BX configurations allowing for use of either one fiber or two fiber transmission over single mode or multi-mode optical fiber.

Additionally, certain SFPs are available as wide-temperature versions for use in industrial equipment deployed in harsh environments.

## STANDARD FEATURES

### Design

- Plug-and-play capability for easy installation
- Hot-swappable
- Low power dissipation

### Optical Performance

- Available in wide-temperature versions for harsh industrial applications
- Data rates of 100Mbps or 1.25Gbps
- Single mode or multi-mode fiber
- 1 or 2 fiber configurations
- RJ-45 1.25Gbps SFP available

### Standards Compliance

- Mini-GBIC Interface compliant
- Multi-source Agreement (MSA) compliant
- Class 1 laser safety standard IEC 60825 compliant

### Warranty

- 3-year warranty

## Specifications

Pin	Signal Name	Description
1	VeeT	Transmitter Ground
2	TX_FAULT	Transmitter Fault Indication
3	TX_DISABLE	Transmitter Disable
4	MOD_DEF (2)	SDA Serial Data Signal
5	MOD_DEF (1)	SCL Serial Clock Signal
6	MOD_DEF (0)	TTL Low to indicate the SFP is present
7	RATE_SELECT	Not Connected (Open Circuit)
8	LOS	Receiver Loss of Signal
9	VeeR	Receiver Ground
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inv. Received Data Out (Differential PECL, AC coupled)
13	RD+	Received Data Out (Differential PECL, AC coupled)
14	VeeR	Receiver Ground
15	VccR	Receiver Power Supply
16	VccT	Transmitter Power Supply
17	VeeT	Transmitter Ground
18	TD+	Transmit Data In (Differential PECL, AC coupled)
19	TD-	Inv. Transmit Data In (Differential PECL, AC coupled)
20	VeeT	Transmitter Ground

### Electrical and Mechanical

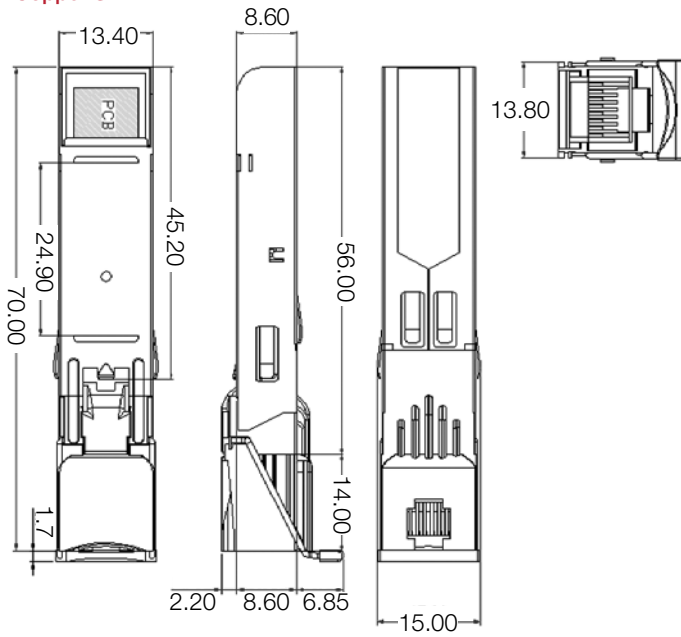
Input Voltage	3.3V DC
Dimensions (W x D x H)	2.20 x 0.59 x 0.49 in. (59 x 15 x 12.4 mm)
Weight (ounces, grams)	0.6 oz, 18g
Storage Temperature	-40 ~ 85° C
Relative Humidity	5% ~ 95% (non-condensing)
Reliability	>50,000 hrs @ 25° C

### Standards Compliance

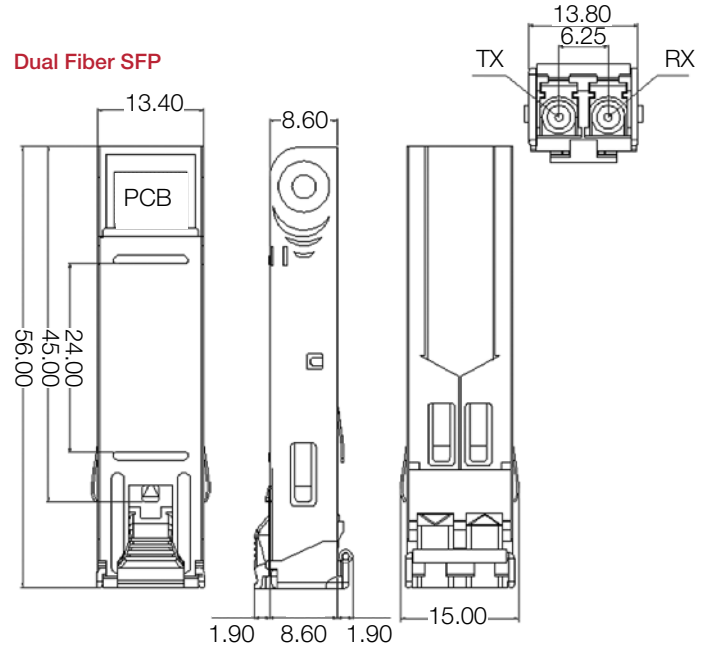
EMI	EN 55022 CLASS A:2006+A1 : 2007 EN61000-3-2:2006 EN61000-3-3: 1995+A1:2001+A2:2005
EMS	55024:1998+A1:2001+A2:2003 IEC 61000-4-2:Edition 1.2 2001-04 IEC 61000-4-3:Edition 3.0 2006 IEC 61000-4-4:2004 IEC 61000-4-5:Edition 2.0 2005 IEC 61000-4-6:Edition 2.2 2006 IEC 61000-4-8:Edition 1.1 2001-03 IEC 61000-4-11:Second Edition : 2004-03 IEC/EN 60950-1 AS/NZS CISPR 22 : 2006
Regulatory Standards	FCC Part 15 Class B, CE

## Dimensional Diagrams

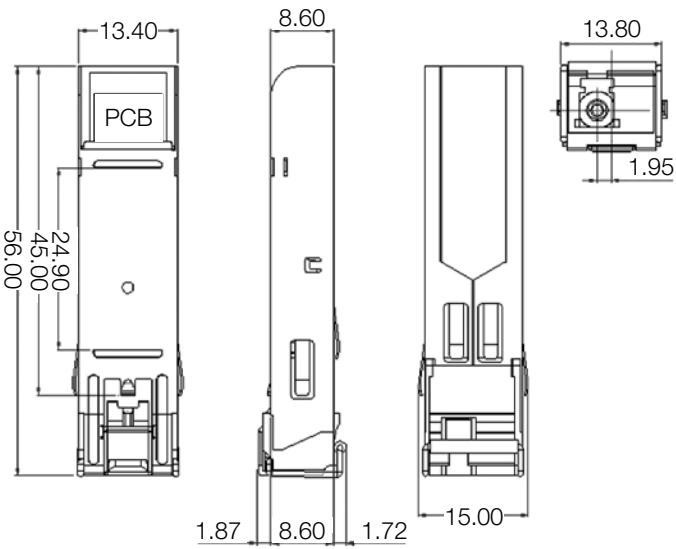
### Copper SFP



### Dual Fiber SFP



### Single Fiber SFP



Dimensions are in millimeters.  
All dimensions are  $\pm 0.20\text{mm}$  unless otherwise specified.

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Small Form-factor Pluggable Transceiver Modules

## Ordering Information

### Fast (100Mbps)

Part No.	PHY Type	# of Fibers	Fiber Type	Connector	TX Wavelength	RX Wavelength	Max. Distance	Power (dBm)	RX Sen. (dBm)	Power Budget	Operating Temperature
<b>100Base-FX</b>											
S20-2MLC-2	100Base-FX	2	Multi-mode	LC	1310nm	1310nm	2km	-20 ~ -14	-32	12	0 ~ 50°C
S25-2MLC-2	100Base-FX	2	Multi-mode	LC	1310nm	1310nm	2km	-20 ~ -14	-32	12	-40 ~ 75°C
<b>100Base-LX</b>											
S20-2SLC-20	100Base-LX	2	Single mode	LC	1310nm	1310nm	20km	-15 ~ -8	-34	19	0 ~ 50°C
S25-2SLC-20	100Base-LX	2	Single mode	LC	1310nm	1310nm	20km	-15 ~ -8	-34	19	-40 ~ 75°C
<b>100Base-BX</b>											
S20-1SLC/A-20	100Base-BX20-U	1	Single mode	LC	1310nm	1550nm	20km	-14 ~ -8	-32	18	0 ~ 50°C
S20-1SLC/B-20	100Base-BX20-D	1	Single mode	LC	1550nm	1310nm	20km	-14 ~ -8	-32	18	0 ~ 50°C

### Gigabit (1000Mbps)

Part No.	PHY Type	# of Fibers	Fiber Type	Connector	TX Wavelength	RX Wavelength	Max. Distance	Power (dBm)	RX Sen. (dBm)	Power Budget	Operating Temperature
<b>Copper-RJ45</b>											
S30-RJ	SFP-1000T	-	Copper	RJ-45	-	-	100m	-	-	-	0 ~ 50°C
<b>1000Base-SX</b>											
S30-2MLC	1000Base-SX	2	Multi-mode	LC	850nm	850nm	220m/550m*	-9.5 ~ -4	-17	7.5	0 ~ 50°C
S35-2MLC	1000Base-SX	2	Multi-mode	LC	850nm	850nm	220m/550m*	-9.5 ~ -4	-17	7.5	-40 ~ 75°C
S30-2MLC-2	1000Base-SX2	2	Multi-mode	LC	1310nm	1310nm	2km**	-9 ~ -1	-19	10	0 ~ 50°C
<b>1000Base-LX/LHX/ZX</b>											
S30-2SLC-10	1000Base-LX	2	Single mode	LC	1310nm	1310nm	10km	-9.5 ~ -3	-20	10.5	0 ~ 50°C
S35-2SLC-10	1000Base-LX	2	Single mode	LC	1310nm	1310nm	10km	-9.5 ~ -3	-20	10.5	-40 ~ 75°C
S30-2SLC-30	1000Base-LHX	2	Single mode	LC	1310nm	1310nm	30km	-2 ~ +3	-23	21	0 ~ 50°C
S35-2SLC-30	1000Base-LHX	2	Single mode	LC	1310nm	1310nm	30km	-2 ~ +3	-23	21	-40 ~ 75°C
S30-2SLC-70	1000Base-ZX	2	Single mode	LC	1550nm	1550nm	70km	0 ~ +5	-24	24	0 ~ 50°C
S35-2SLC-70	1000Base-ZX	2	Single mode	LC	1550nm	1550nm	70km	0 ~ +5	-24	24	-40 ~ 75°C
<b>1000Base-BX</b>											
S30-1SLC/A-10	1000Base-BX10-U	1	Single mode	LC	1310nm	1490nm	10km	-9 ~ -3	-20	11	0 ~ 50°C
S30-1SLC/B-10	1000Base-BX10-D	1	Single mode	LC	1490nm	1310nm	10km	-9 ~ -3	-20	11	0 ~ 50°C
S30-1SLC/A-20	1000Base-BX20-U	1	Single mode	LC	1310nm	1490nm	20km	-8 ~ -2	-23	15	0 ~ 50°C
S30-1SLC/B-20	1000Base-BX20-D	1	Single mode	LC	1490nm	1310nm	20km	-8 ~ -2	-23	15	0 ~ 50°C
S30-1SLC/A-60	1000Base-BX60-U	1	Single mode	LC	1310nm	1490nm	60km	0 ~ +5	-24	24	0 ~ 50°C
S30-1SLC/B-60	1000Base-BX60-D	1	Single mode	LC	1490nm	1310nm	60km	0 ~ +5	-24	24	0 ~ 50°C

\*220m distance is based on 62.5/125 (OM1) fiber. 550m distance is based on 50/125 (OM2) fiber

\*\*Requires laser optimized 50/125 (OM3) fiber to achieve 2km distance. Fiber should be tested and verified to OM3 standard.

### Legend

#### SFP Type Heading

Standard SFP

Hardened SFP (wide-temp)



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