

INELCO[®]
THE DISTINCTION

compu-shield[®]

sfp series

20 - 01 - 2016



INELCO the home of unparalleled quality and service in Interconnection and Electronic Components is a European driven company, manufacturing European ideas, solutions and quality in Asia. INELCO's mission is to fulfill the requirements of their partners and customers and remains the best choice for cost-effective solutions. INELCO is the supplier of interconnection and electronic components and systems for networking, telecommunications and industrial applications. INELCO's product range includes modular (Western) plugs and jacks (modcon[®]), with and without integrated transformers (intrajack[®]), shielded and unshielded as well as terminals (voice services[®]), SFPs (compu-shield[®]), M12 (circon[®]), discrete components (discom[®] transformers, coils and inductors), USBs and other additional products and services.



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compu-shield® - sfp

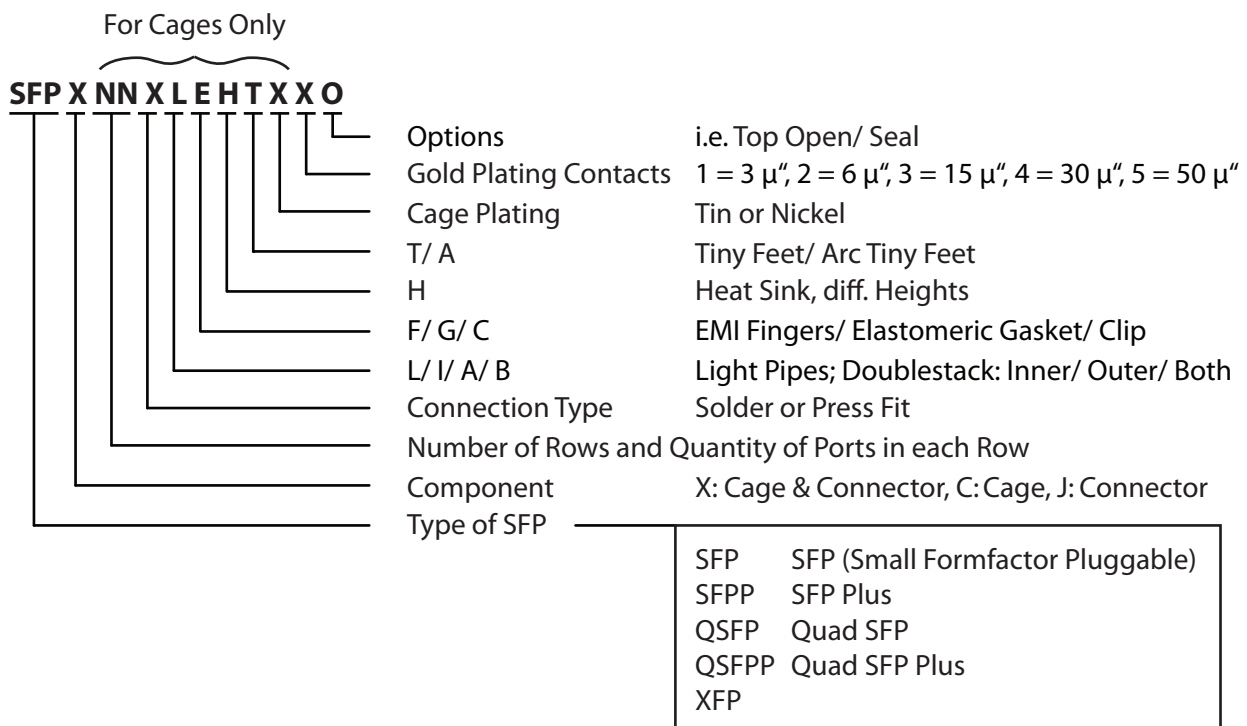
SFP: Small Formfactor Pluggable

Small Formfactor Pluggable I/O Products support the hot swap of various fiber optic and copper based transceivers and cable assemblies into host equipment.

FEATURES:

- Compliant with Small Form-Factor Pluggable (SFP) Multi-Source Agreement (MSA)
- Tin-plated copper alloy cage
- Robust one-piece Construction
- Accommodates Copper & SFP Transceivers for:
 - Fiber Channel
 - Gigabit Ethernet
 - Infiniband
 - Routers, Switches, Hubs and Host Bus Adapters
 - Servers, Network and External Storage Systems
 - High Performance Computing (HPC) Applications
 - Data Center Networking
- Allows for mounting in belly-to-belly applications
- Single port and multi-port designs for added density in single row and double row configurations
- Cages include two-point spring contacts for improved EMI grounding

Part Numbers



compu-shield® - sfp

Specification

If not declared otherwise, the relevant specifications are the following:

Cage Materials

- Base Material Copper Alloy
- Plating Nickel or Tin
- EMI Ground Tabs Beryllium Copper
- Front Flange (XFP) Zinc Alloy
- Front EMI Gasket (XFP) Copper Alloy

Optional

- Tiny feet/ Arc Tiny Feet
- EMI Springs/ Fingers Beryllium Copper
- EMI Clip Beryllium Copper/ Copper Alloy
- Elastomeric Gasket Conductive Rubber
- Heat Sink Aluminium Alloy/ Copper
- Heat Sink Clip Stainless Steel/ Aluminium
- Light Pipe (Round) Optical Grade Polycarbonate
- Dust Cover Thermoplastic
- Mylar Tape

Connector Materials

- Contact Base Material Copper Alloy
- Contact Plating Gold on Mating Area, Matte Tin on Termination
- Housings LCP, UL94V-0/ Glass Reinforced
Lead-Free Solder Reflow Process Compatible Thermoplastic

Electrical Characteristics

- Hot Swappable
- Operation Voltage 3.3 V
- Operation Current 0.5 A
- Differential Impedance 100 Ω ±10 Ω
- Diel. Withst. Voltage 300 V AC
- Insulation Resistance 1000 MΩ min.
- Contact Resistance 70 mΩ max.

QSFP, QSFP+ Signal Integrity Characteristics

- Return Loss 12 dB
- Near End Isolation 30 dB (Frequencies up to 3 GHz)
- Insertion Loss 1 dB max.
- Rise Time Impedance Measurement 35 ps
- Within Pair Skew 1ps
- NEXT ≤ 2%

Mechanical

- Durability 250 Cycles min.
- Insertion Force 40 N max.
- Extraction Force 11.5 N max.

QSFP+/ XFP

- 40 N max. (Cage and Connector)
- 30 N max. (Cage and Connector)
- XFP Cage Retention 180 N min. (Latch Strength)

Temperature Rating

- Operating Temperature -40°C to +85°C
- Storage Temperature -55°C to +105°C

Standards

In Compliance with ROHS, MSA Agreement INF-8074i and Industry Standard EIA-364.

- SFP+** SFF-8081, SFF-8083, SFF-8431, Ganged Cages comply with SFF-8433
- QSFP+** SFF-8436
- zQSFP+** QSFP28 SFF-8665
- XFP** MSA Agreement INF-8077i, SFF-8436

SFP

SFP

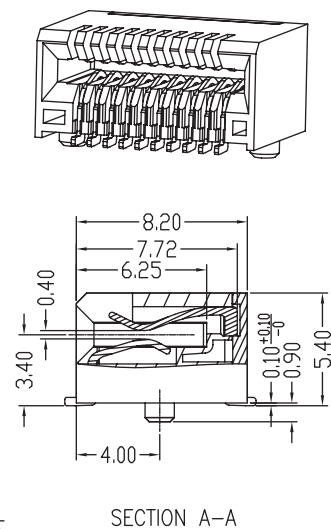
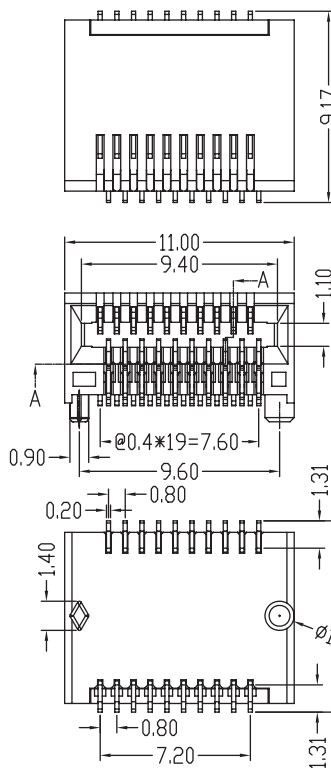
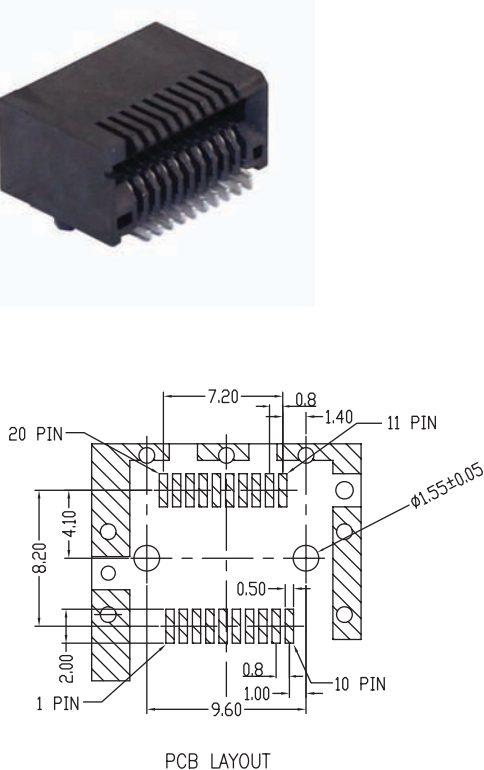
interconnect system consists of a 20 position connector enclosed in a metal cage mounted to a host PCB. Single port SFP connectors are rated up to 6 Gbps. The connector accepts multiple transceivers per INF-8074i and combines, transmits and receives functions in a low cost, compact and flexible format. The cages have a two-piece construction with enhanced transceiver mating tabs available in press-fit or solder-tail version. Longer and shorter pins are available as well as custom options.

SFP Systems can be used with any SFP MSA compliant optic or copper module. The Cage System is a copper module and is used in conjunction with a connector, that supports data rates beyond 10 Gbps. Chassis grounds for pass through EMI protection to 12.5 Gbps.

Single and double row SFP products allow for high density port designs to maximize the horizontal L/O space. The design allows for belly-to-belly orientation to increase port density. The lateral port-to-port spacing is minimized to 14.25 mm.

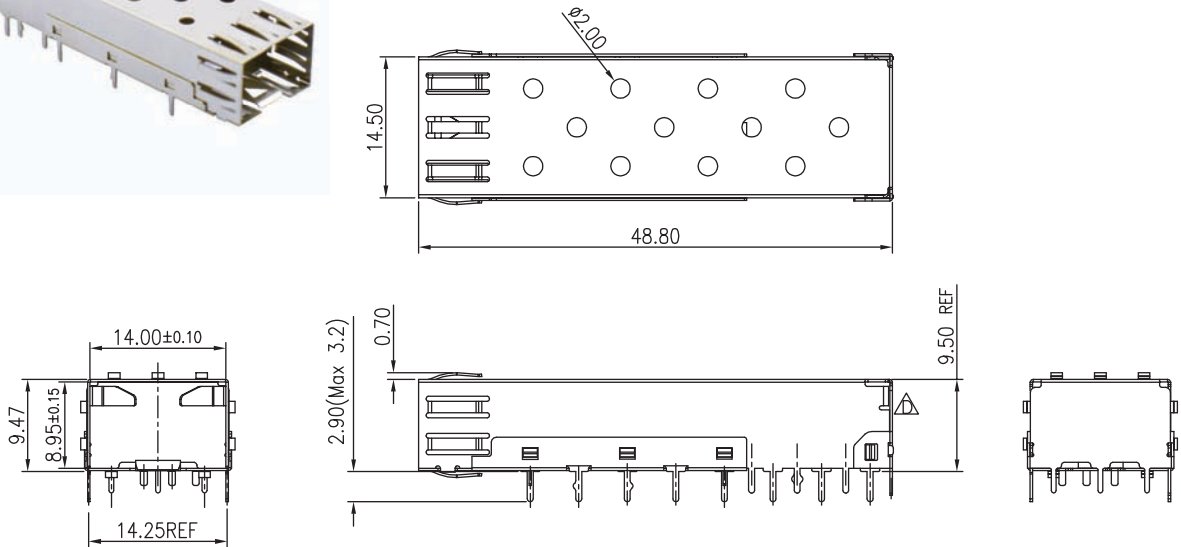
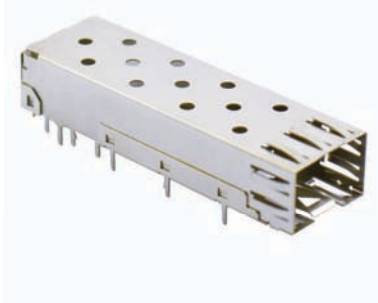
SFP Connector

SFPC



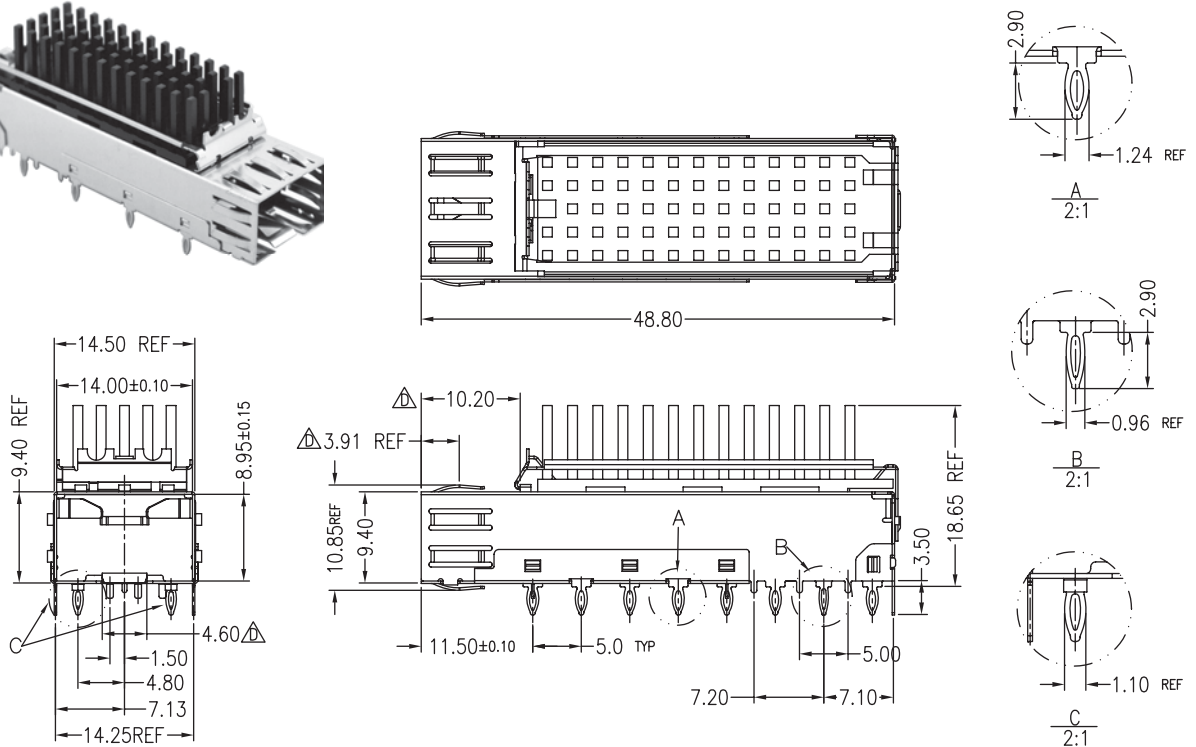
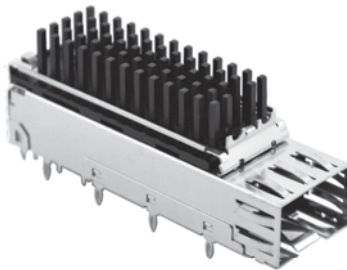
SFP 1x1 for Soldering with Tiny Feet

SFPJ11S000T



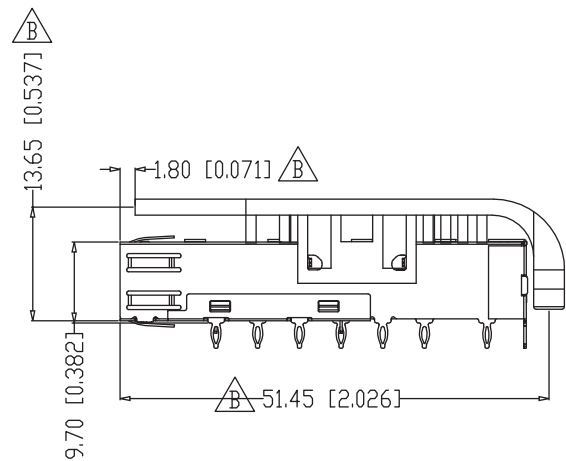
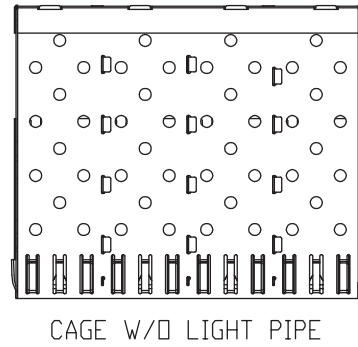
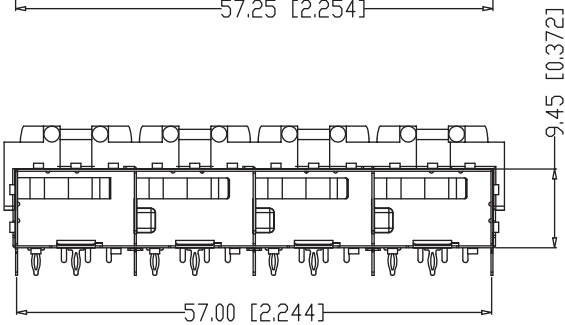
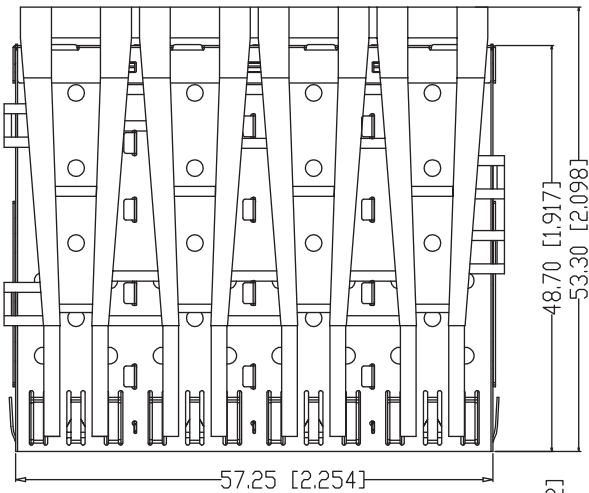
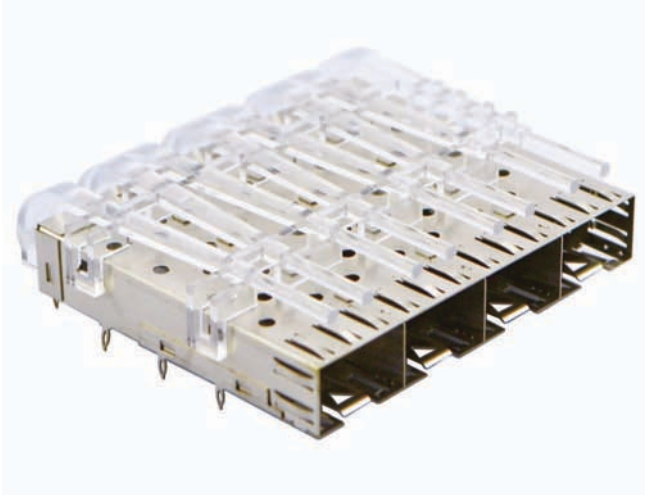
SFP 1x1 Press Fit with Heat Sink and Tiny Feet

SFPJ11P00HT



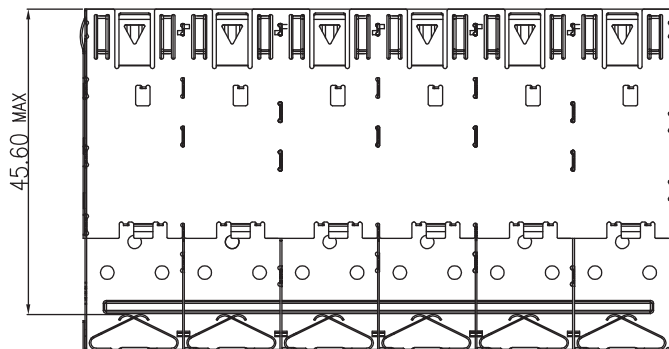
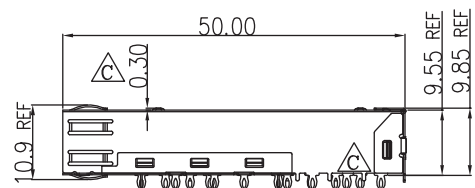
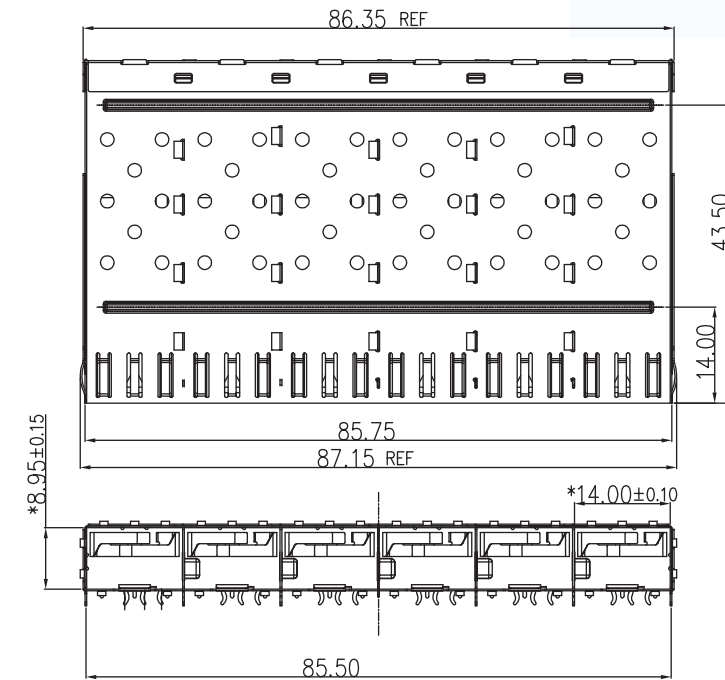
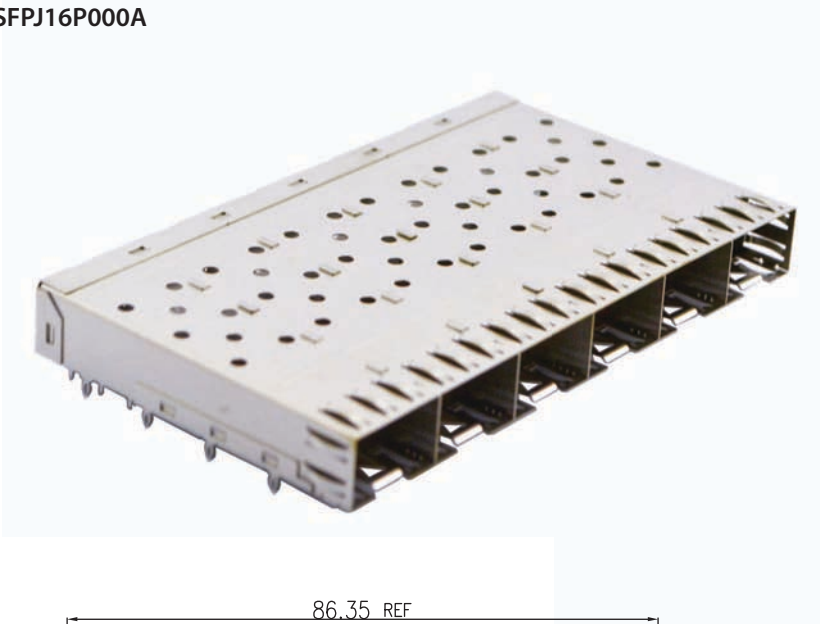
SFP 1x4 Press Fit with Light Pipes and Tiny Feet

SFPJ14PL00T



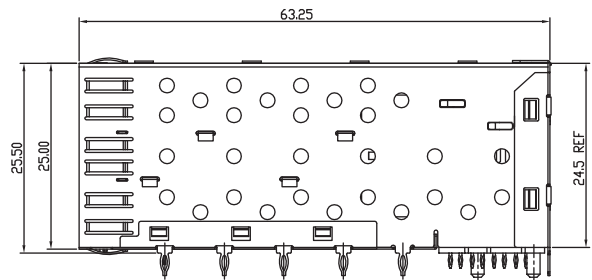
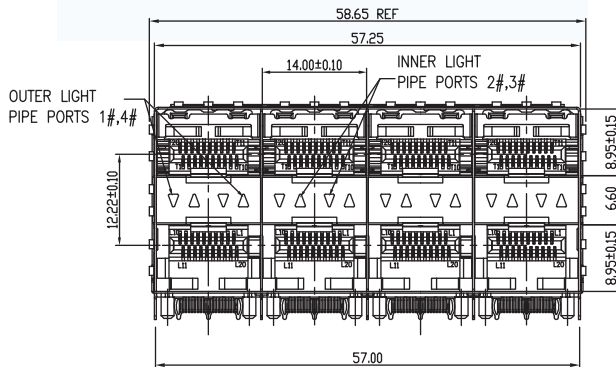
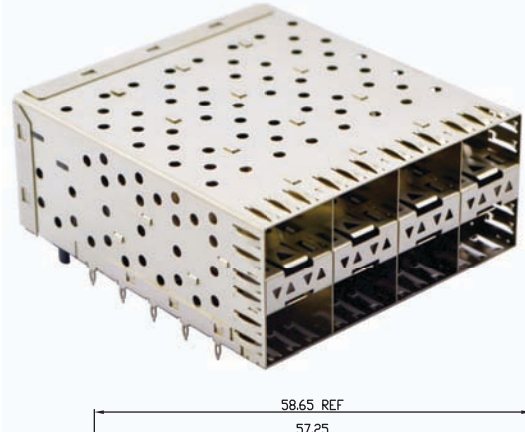
SFP 1x6 Press Fit (Low Profile) with Arc Tiny Feet

SFPJ16P000A



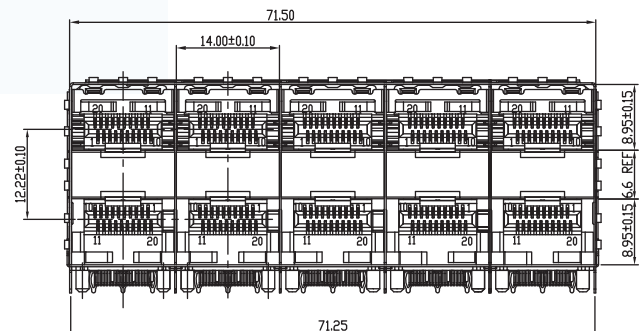
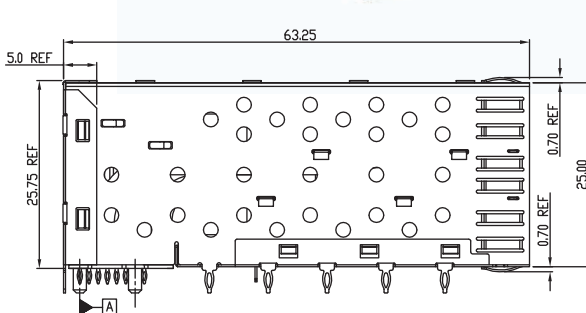
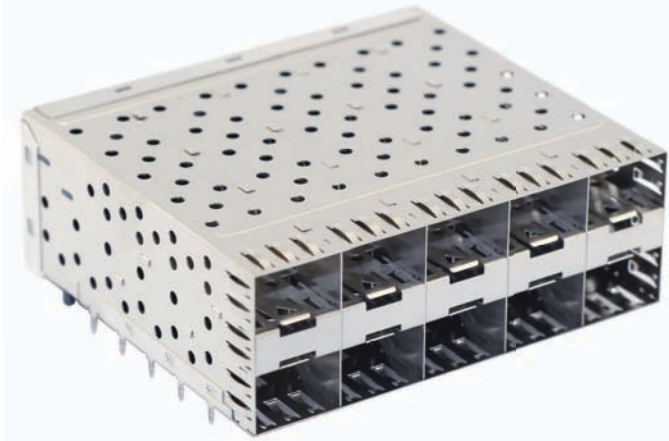
SFP 2x4 Press Fit with Both (Inner and Outer) Light Pipes

SFPJ24PB0000



SFP 2x5 Press Fit

SFPJ25P00000



SFP+

SFP+

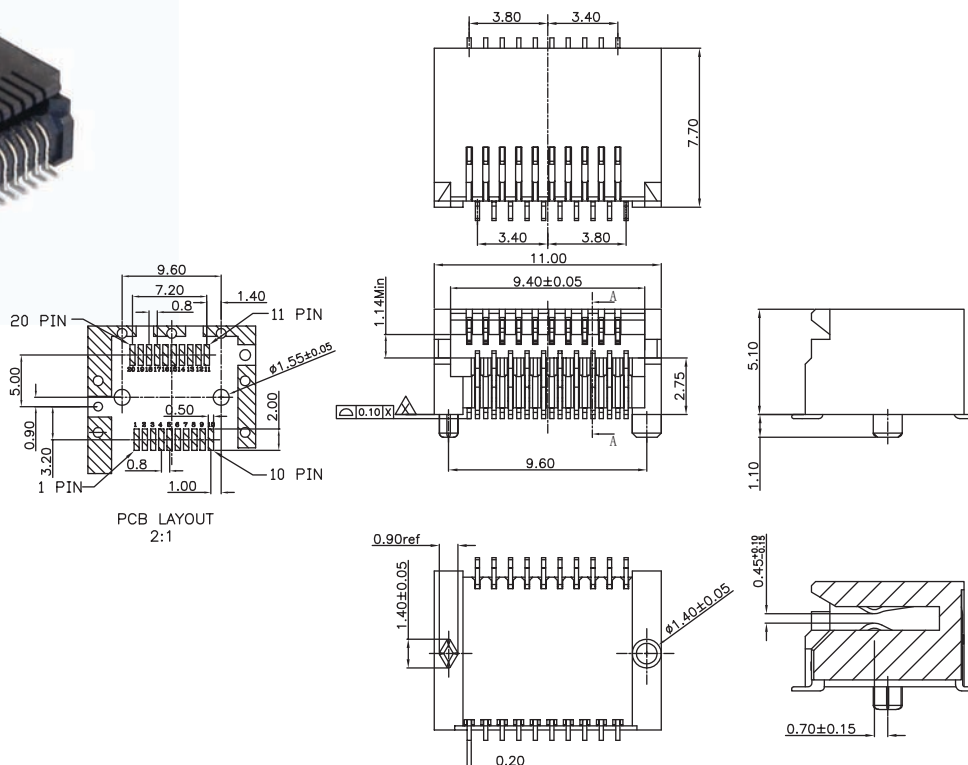
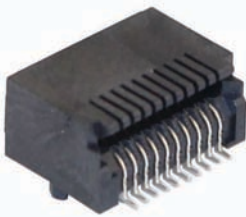
interconnect system is comprised of 20-position, 0.8 mm pitch SFP+ connectors and cage assembly with all press-fit construction. SFP+ connector, when combined with the SFP+ cage, provides data transfer speed of up to 25 Gbps. Its design minimizes impedance discontinuities and reflections at high data rates and provides a 10 to 20 dB improvement in Near-End Crosstalk. The unique SFP+ cage construction features EMI shielding available in the form of metal spring fingers or elastomeric gaskets. These cages also eliminate ventilation holes near the front of the cage to prevent potential catch points for the mating module EMI springs.

As data rates exceed 25 Gbps, there is a need for higher EMI suppression. Enhanced EMI gaskets are added to the existing SFP product line to meet extended EMI requirements for higher data rates. The SFP cages with enhanced EMI gaskets are fully compatible to the existing SFP panel cutout. The enhanced EMI gasket deliver increased surface area for improved EMI suppression. EMI gaskets are double sided to reduce emissions between cage and panel, as well between cage and SFP module. Testing shows a 20 dB improvement on EMI suppression.

We offer passive cable assemblies tailored to meet specific cable length while meeting all performance requirements. THE SFP+ cable assembly supports the bandwidth transmission requirements as defined by 10 Gigabit Ethernet (10G Base-CU), 8G Fiber Channel (FC) and 10G Fiber Channel over Ethernet (FCoE) signaling protocols.

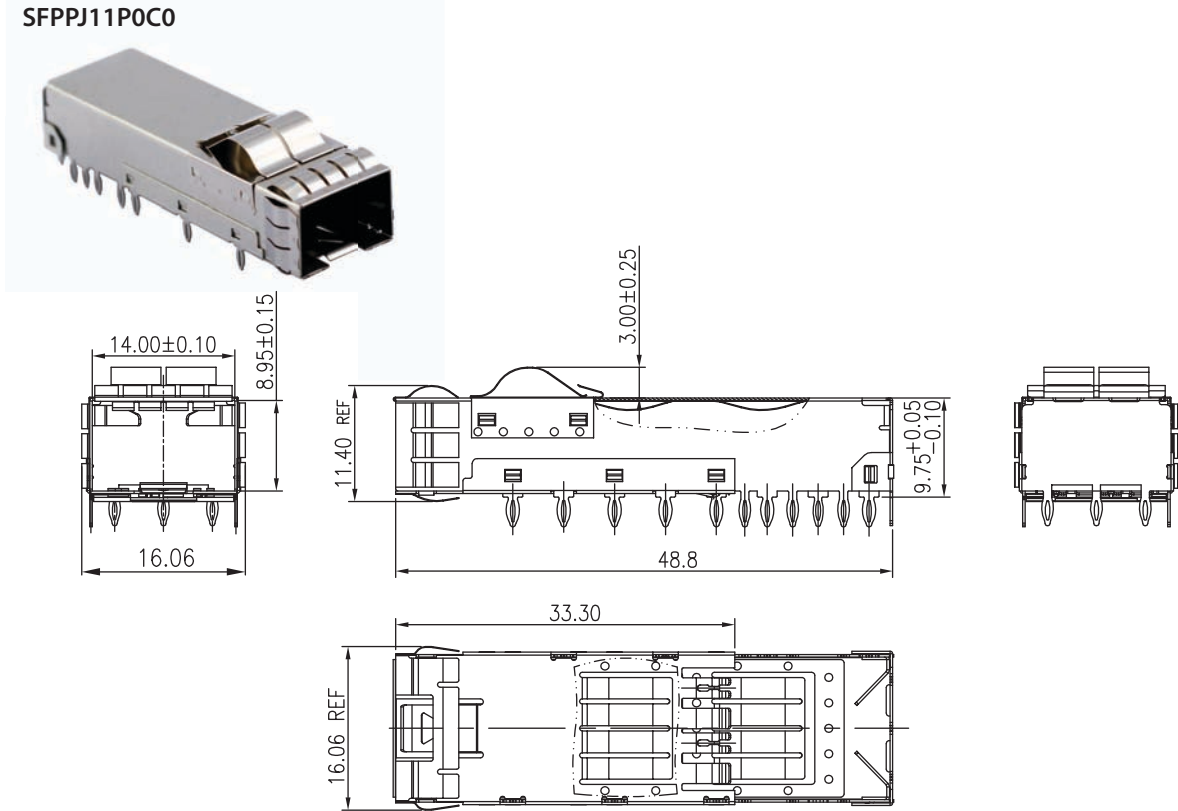
SFP+ Connector

SFPCC



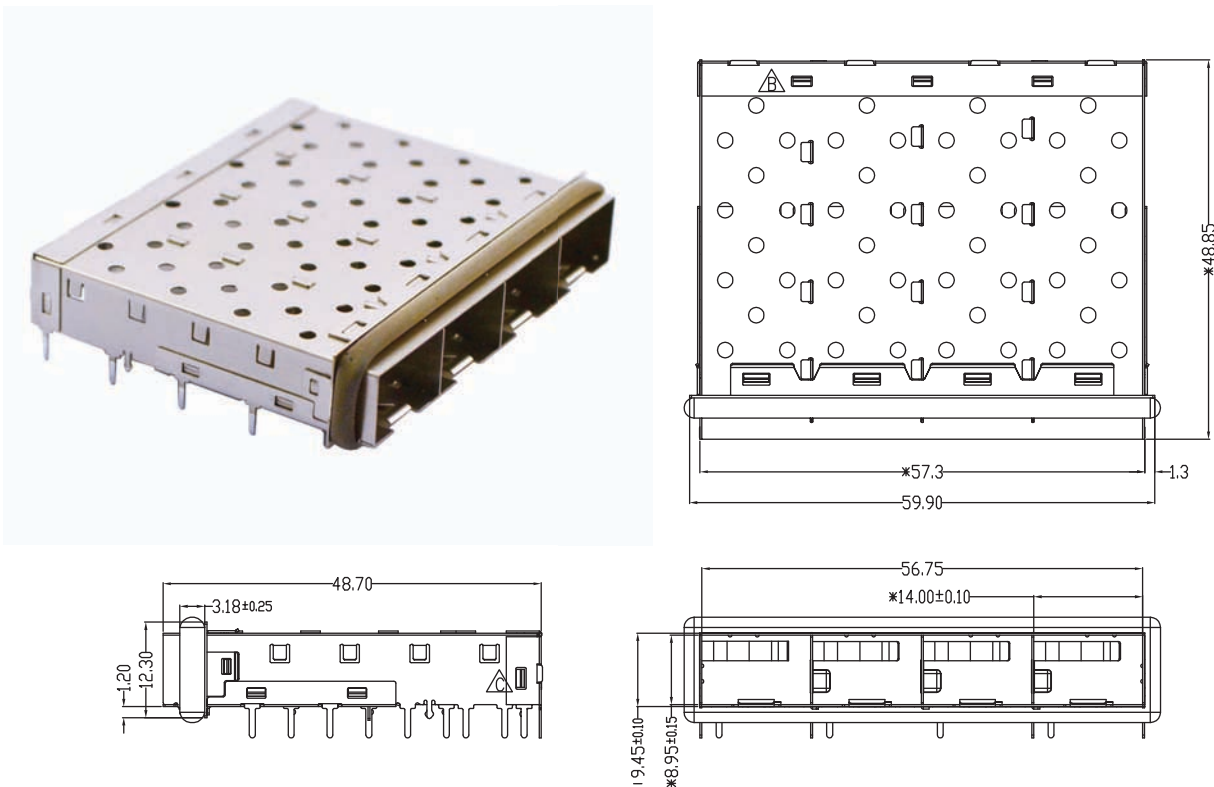
SFP+ 1x1 Press Fit with EMI Clip

SFPPJ11P0C0



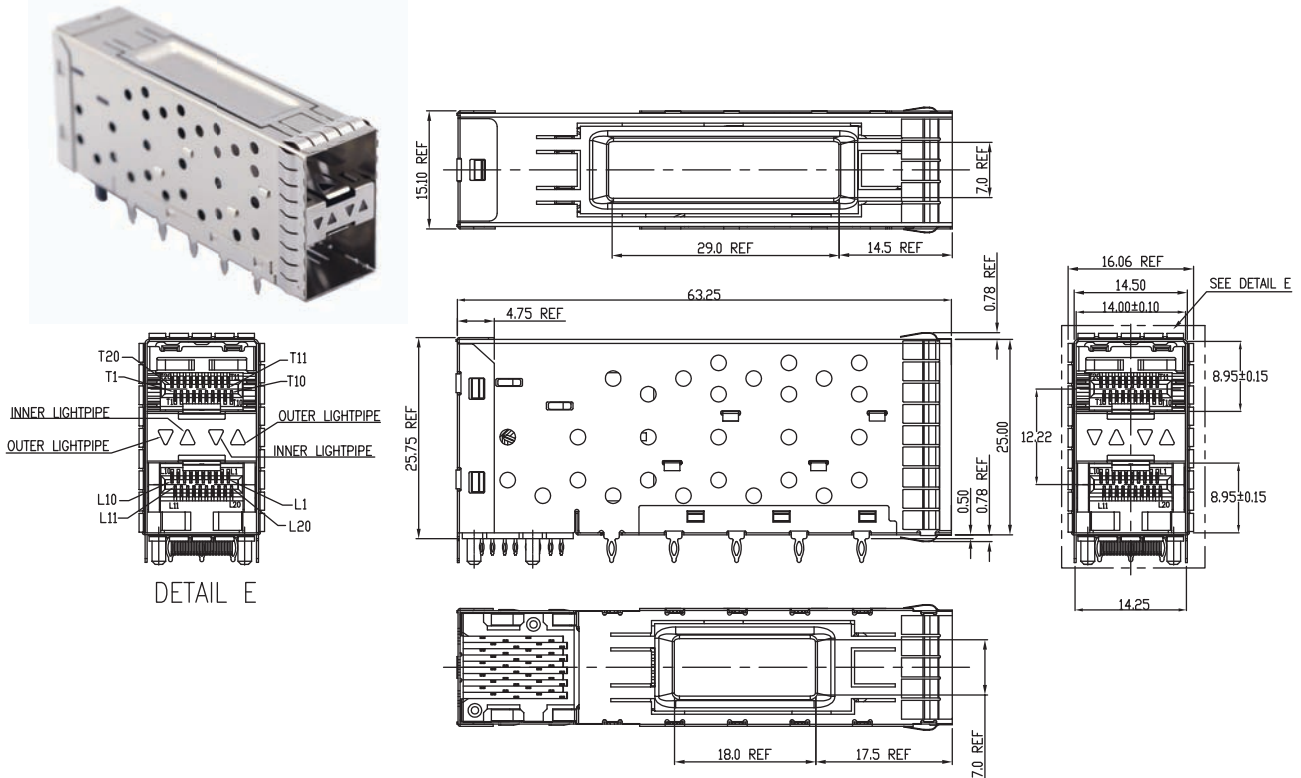
SFP+ 1x4 for Soldering with Elastomeric Gasket and Tiny Feet

SFPPJ14S0G0T



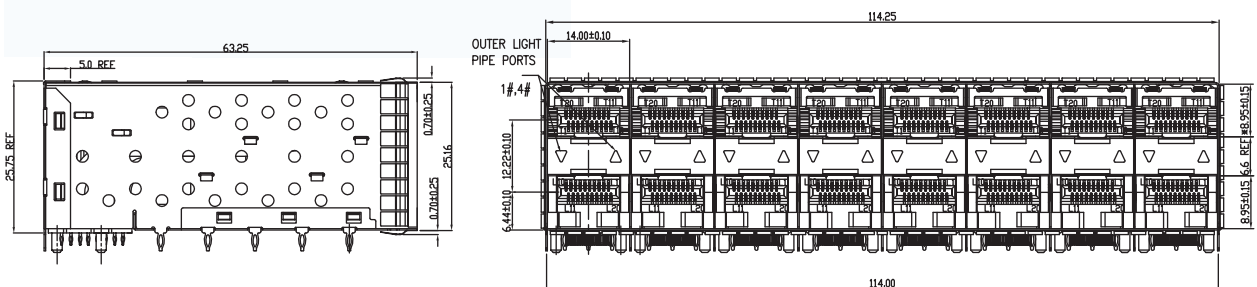
SFP+ 2x1 Press Fit with Inner and Outer Light Pipes

SFPPJ21PB000



SFP+ 2x8 Press Fit with Outer Light Pipes

SFPPJ28PA000



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QSFP+

QSFP+

interconnect system is comprised of a 38-position 0.8 mm pitch SMT connector and a press-fit cage designed to comply with the Quad Small Form-factor Pluggable (QSFP) Transceiver intended for external connections.

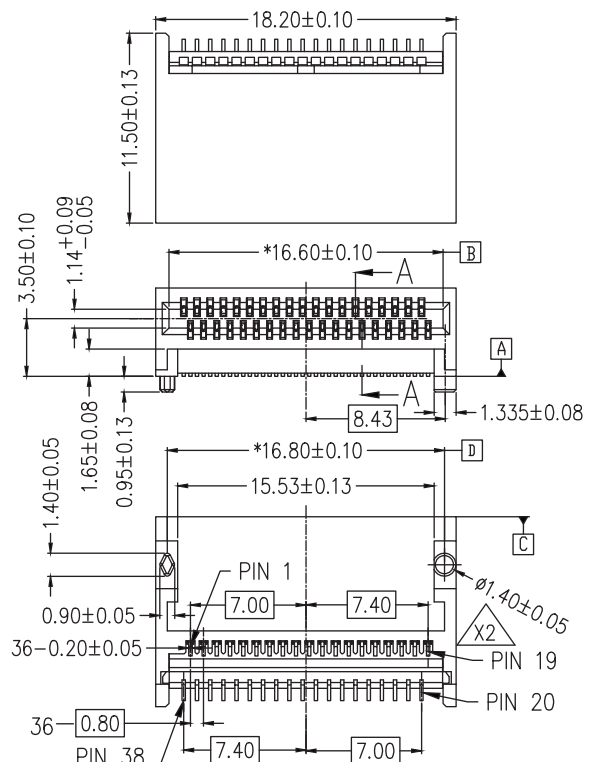
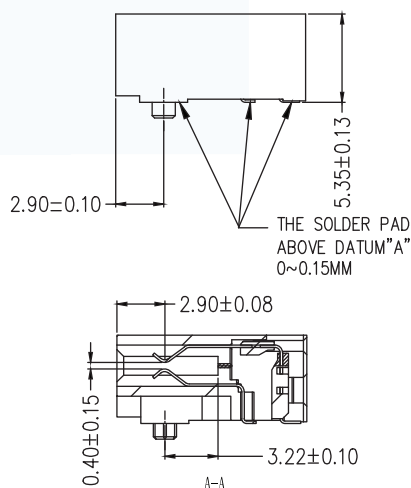
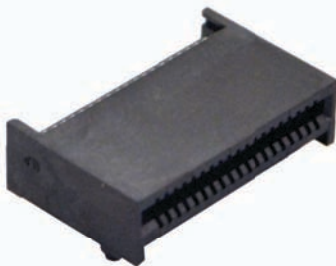
The connector system is capable of data rates up to 25 Gbps per channel (four channels) and is intended for external connectors. High speed serial interconnect applications include clusters, servers and storage devices. QSFP connector, cage and cable assemblies are designed to meet emerging data center and performance computing application needs for a high density cabling interconnect system, capable of delivering aggregate data bandwidths of 40 Gbps & 65 Gbps & 112 Gbps. This interconnect system is fully compliant with existing industry standard specifications such as the QSFP MSA and IBTA (InfiniBand Trade Association). The QSFP cables support the bandwidth transmission requirements as defined by IEEE 802.ba (40 Gbps) and IEEE 802.bj (100 Gbps) and InfiniBand QDR (4x10 Gbps per channel) and FDR (4x14 Gbps) and proposed EDR (4x28 Gbps per channel) specifications.

The 38 position SMT mounted edge card connector and the cable assemblies mating printed circuit card has been designed for the higher-bandwidth signal integrity requirements associated with 10 Gbps per channel transmission. The metal EMI cage along with the rigid diecast covers on the cable assembly assure proper EMI shielding effectiveness and termination

We offer passive cable assemblies that enable the use of a copper based interconnect system for applications with cable length up to 6 meters (10G) and 5 meters (28G).

QSFP+ Connector

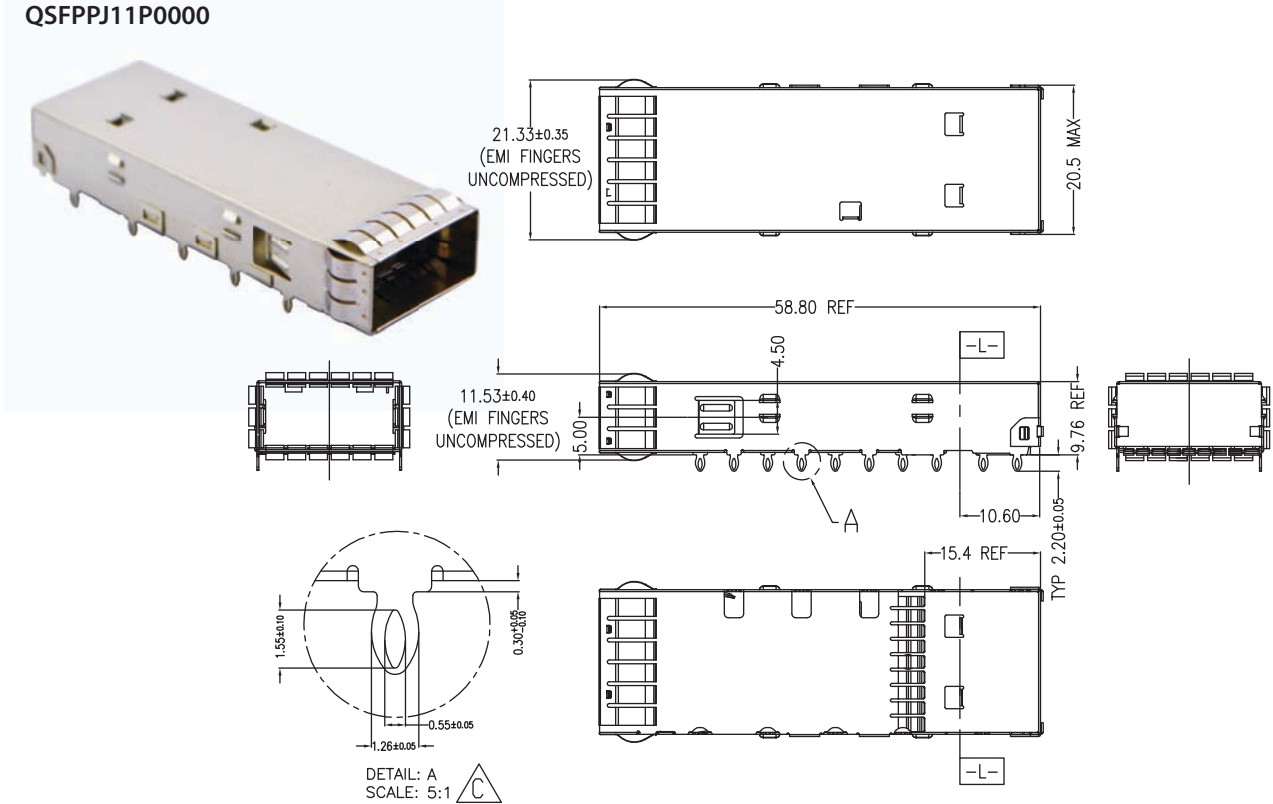
QSFPCC



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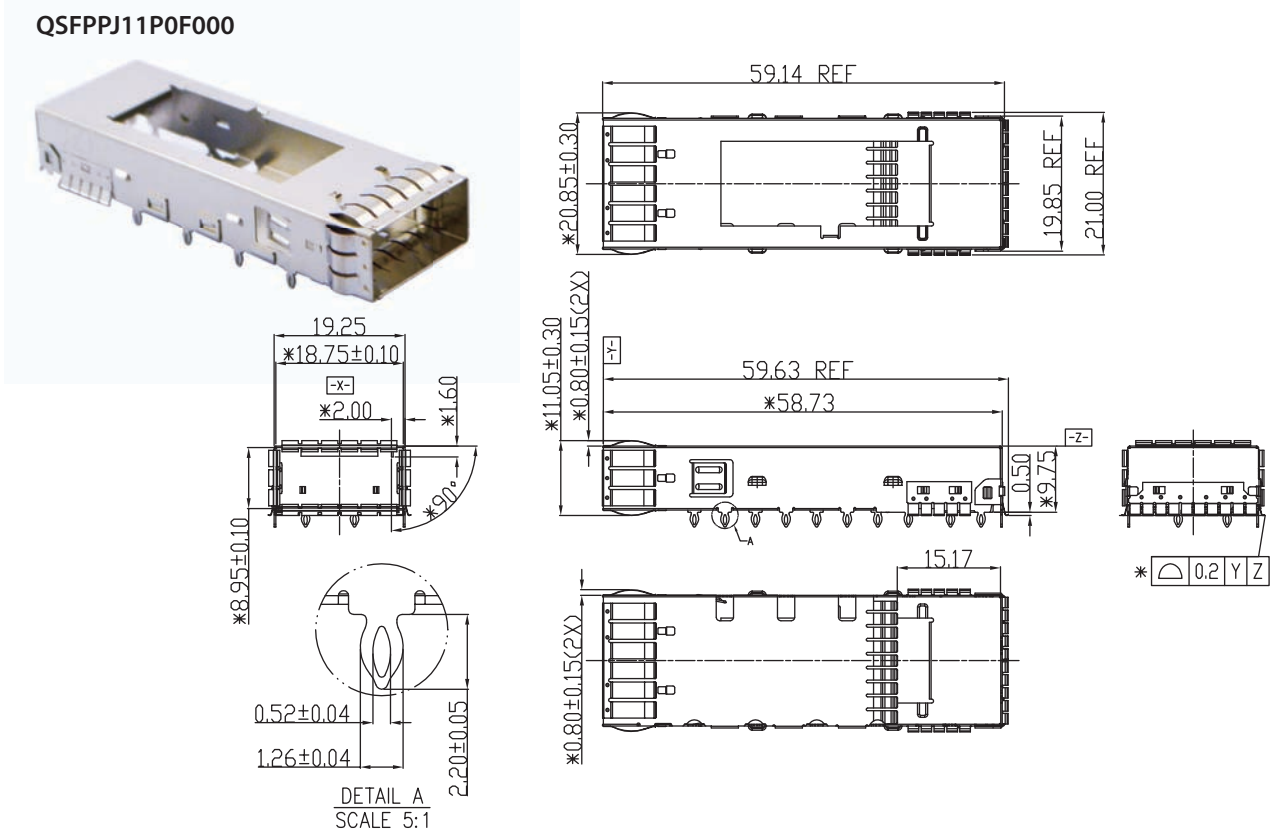
QSFP+ 1x1 Press Fit (Top Seal)

QSFPJ11P0000



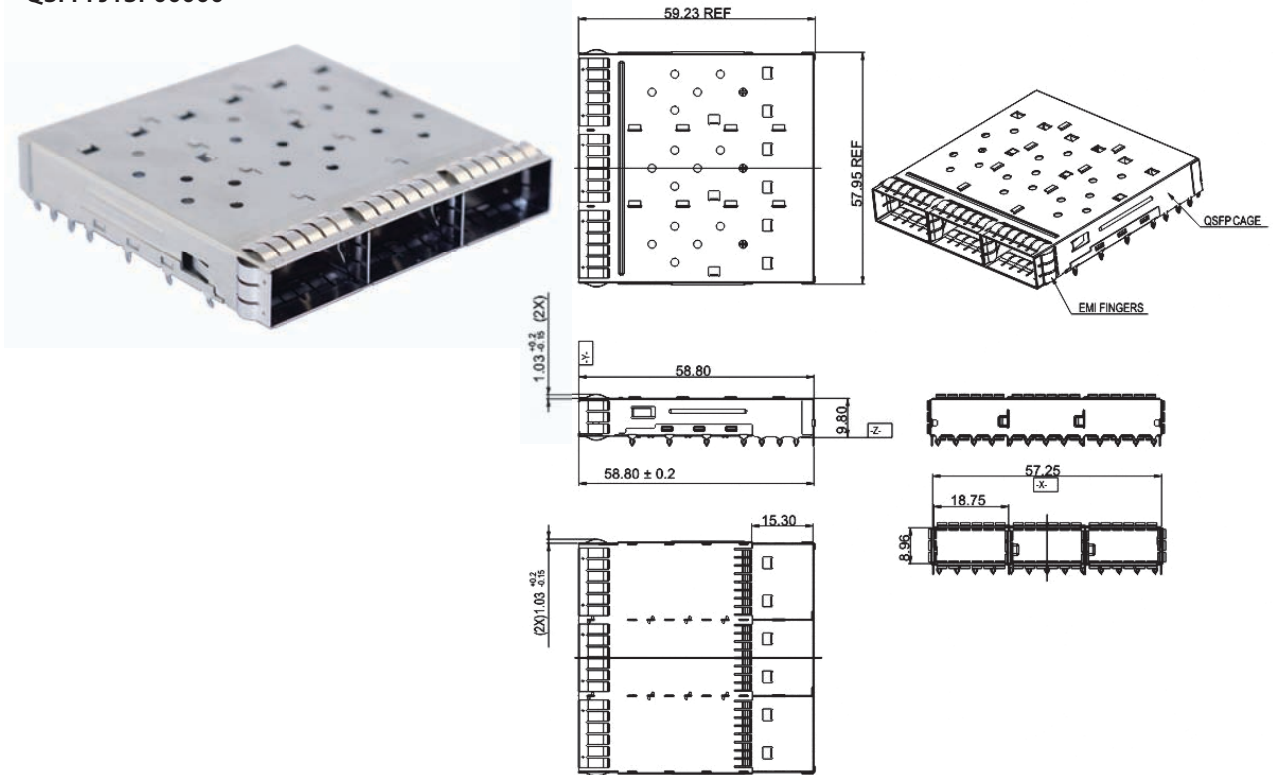
QSFP+ 1x1 Press Fit with EMI Fingers (Top Open)

QSFPJ11P0F000



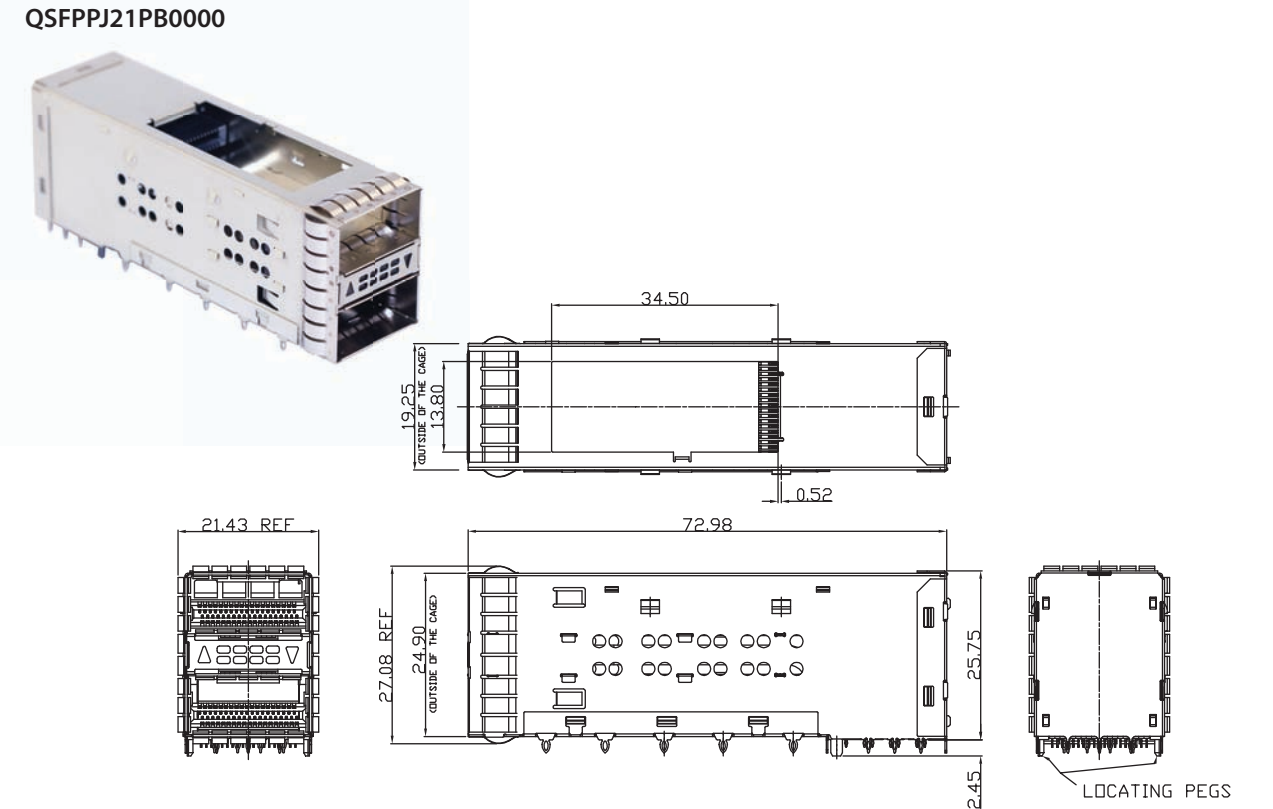
QSFP+ 1x3 Press Fit

QSFPJ13P00000



QSFP+ 2x1 Press Fit with Light Pipes

QSFPJ21PB0000



zQSFP+

zQSFP+

interconnect system is composed of a 38 pin connector and a pressure bonded cage. The zQSFP+ four channel plus solution for high density interconnect applications designed to meet the QSFP28 SFF-8665 Standard. zQSFP+ interconnect solutions are transmitted with the data transmission rate of 25 Gbps per serial channel and have excellent signal integrity (SI), electromagnetic interference (EMI) shielding function and heat dissipation.

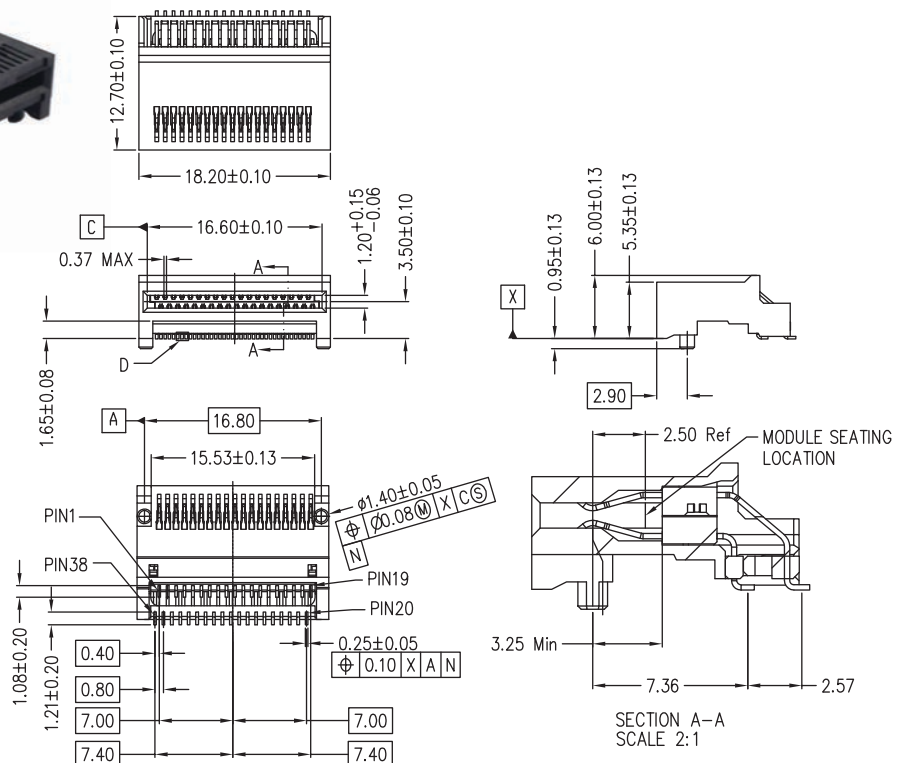
zQSFP connector, cage and cable assemblies are designed to deliver aggregate data bandwidths of 40 Gbps & 65 Gbps & 112 Gbps. This interconnect system is fully compliant with existing industry standard specifications such as the QSFP MSA and IBTA (InfiniBand Trade Association). The QSFP cables support the bandwidth transmission requirements as defined by IEEE 802.ba (40 Gbps) and IEEE 802.bj (100 Gbps) and InfiniBand QDR (4x10 Gbps per channel) and FDR (4x14 Gbps) and proposed EDR (4x28 Gbps per channel) specifications.

The 38 position SMT mounted edge card connector and the cable assemblies mating printed circuit card has been designed for the higher-bandwidth signal integrity requirements associated with 10 Gbps per channel transmission. The metal EMI cage along with the rigid diecast covers on the cable assembly assure proper EMI shielding effectiveness and termination

We offer passive cable assemblies that enable the use of a copper based interconnect system for applications with cable length up to 6 meters (10G) and 5 meters (28G).

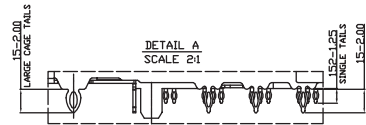
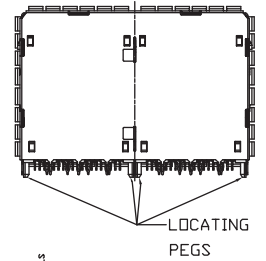
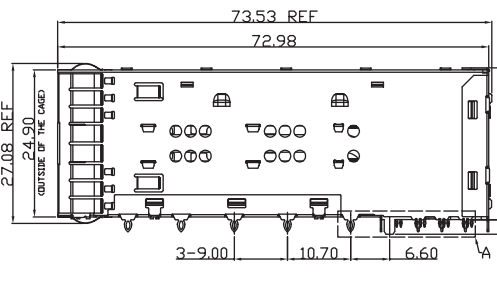
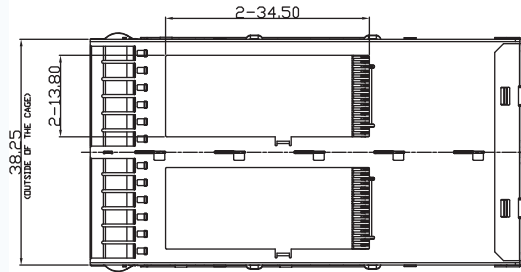
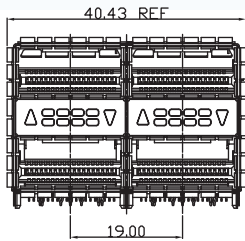
zQSFP+ Connector

zQSFPCC



zQSFP+ 2x2 Press Fit with Light Pipes

ZQSFPPJ22PB000



XFP/ XFP+

XFP

interconnect system is capable of a 10 Gbps data rate and is intended for external I/O connections. High speed serial interconnect applications include clusters, servers and storage devices. Its single row cage configuration requires less space and is a lower cost alternative to parallel-optics VSR. XFP also requires less than one-third the power and physical space of an MSA interconnect with parallel interface. It has a single foot print for all links and is hot-pluggable.

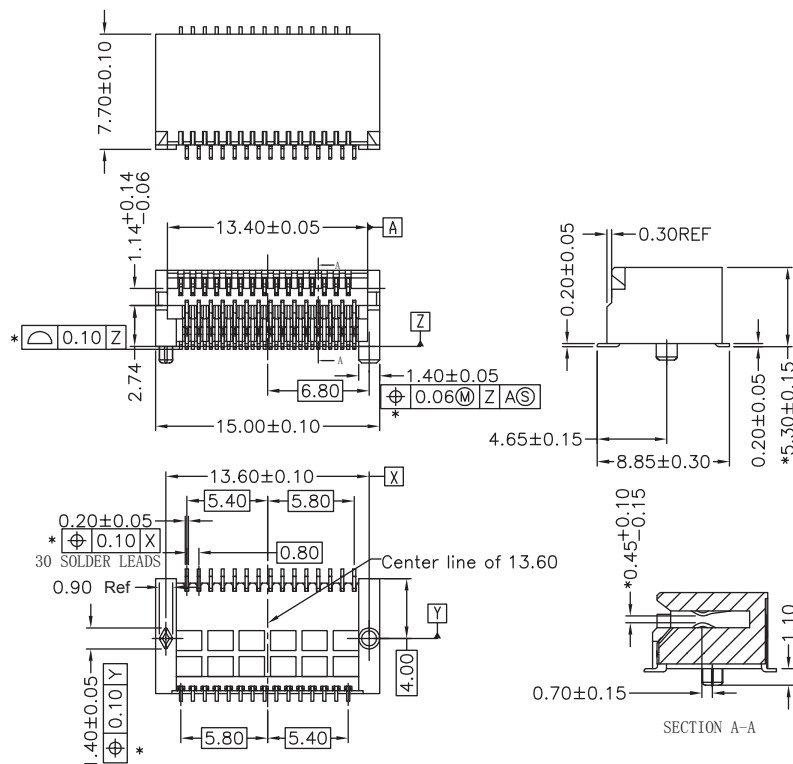
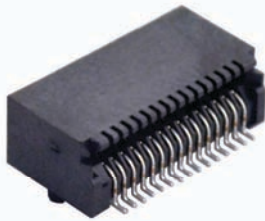
The XFP+ connector is designed to extend performance to 14 Gbps. Several EMI shielding options such as an elastomeric gasket or mylar tape are also available.

The interconnect systems are comprised of a press-fit cage assembly, which is used with 30-position, 0.8 mm pitch SMTconnectors complying with INF-8077i.

- Near End Isolation 40 dB
- Insertion Loss 1 dB max.

XFP Connector

XFPC



XFP

XFPJ11P0R00

