XMULTIPLE
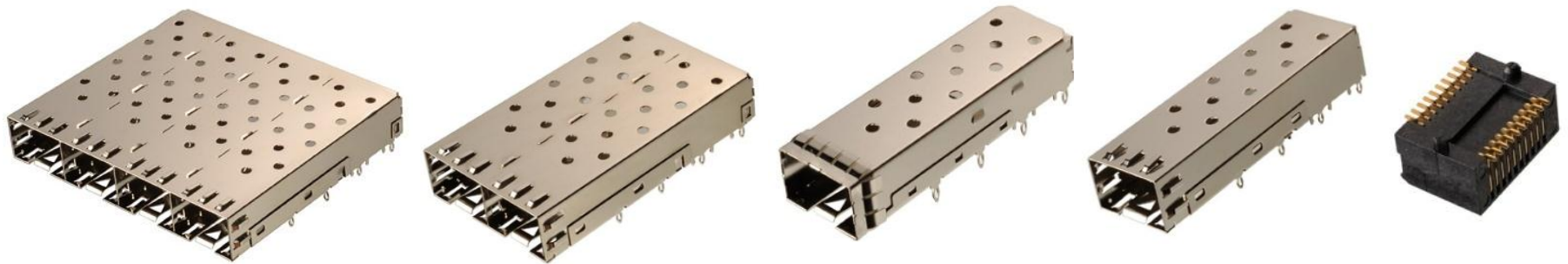## XSFP Series of Small Form-Factor Pluggable SFP, SFP + EMI Cages and Connectors

Xmultiple Technology
SFP Products Information

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SFP Products

- ❑ **Fiber Channel**
- ❑ **InfiniBand**
- ❑ **Ethernet**

SFP Product Types

- ❑ **Optic Modules**
- ❑ **SFP System**
- ❑ **Copper HSSDC2 Module**
- ❑ **HSSDC2 Cable Assemblies**
- ❑ **PT Connectors**

SFP History

- **Specification released 1999**
- **50% size of GBIC**
- **1,2,4 Gb/s capable**
- **PT 20 Pin connector**
- **Stamped metal guide/cage**
- **Optical Modules   LC/ MTRJ**
- **Copper Modules**
- **HSSDC2**
- **Stacked Cages**

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APPLICATIONS:

Equipment
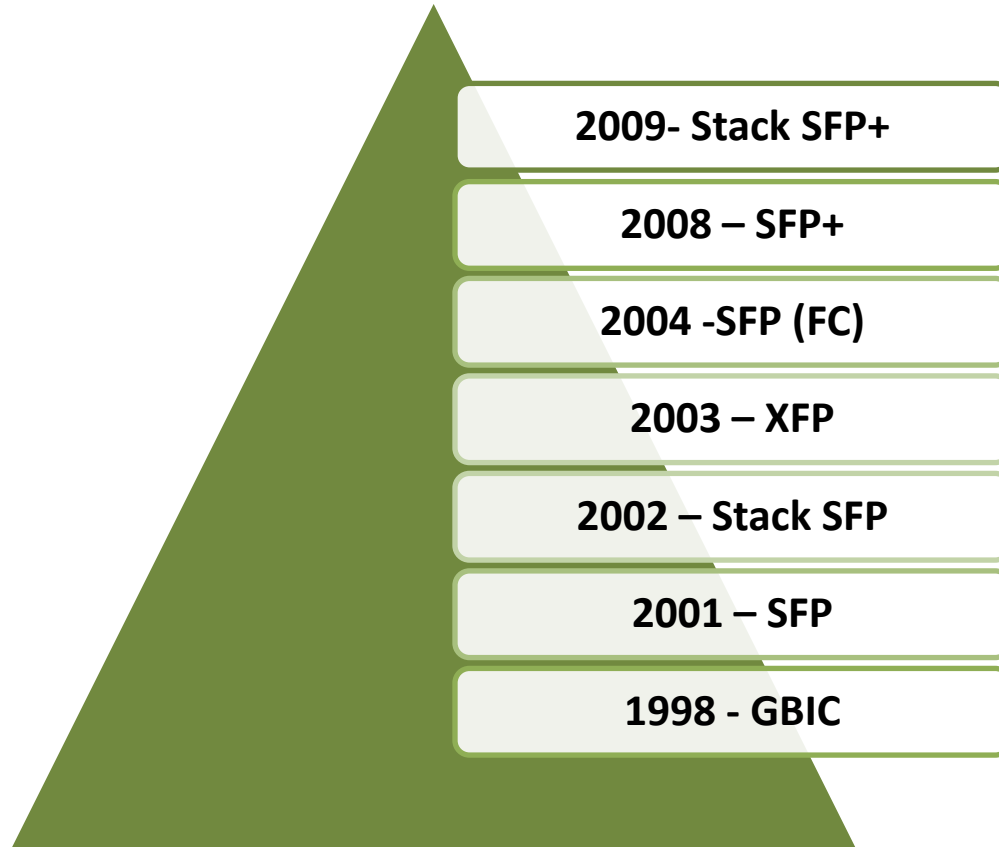- Routers/Bridges/Hubs
- Switches
- Host Bus Adapters
- Storage
- NIC (Network Interface Card)

Markets
- Telecom
- Datacom
- Networking
- Industrial Computer
- Storage Area *Networks (SAN)*

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SFP Roadmap (Years):

2009- Stack SFP+

2008 – SFP+

2004 -SFP (FC)

2003 – XFP

2002 – Stack SFP

2001 – SFP

1998 - GBIC

How It All Fits Together:

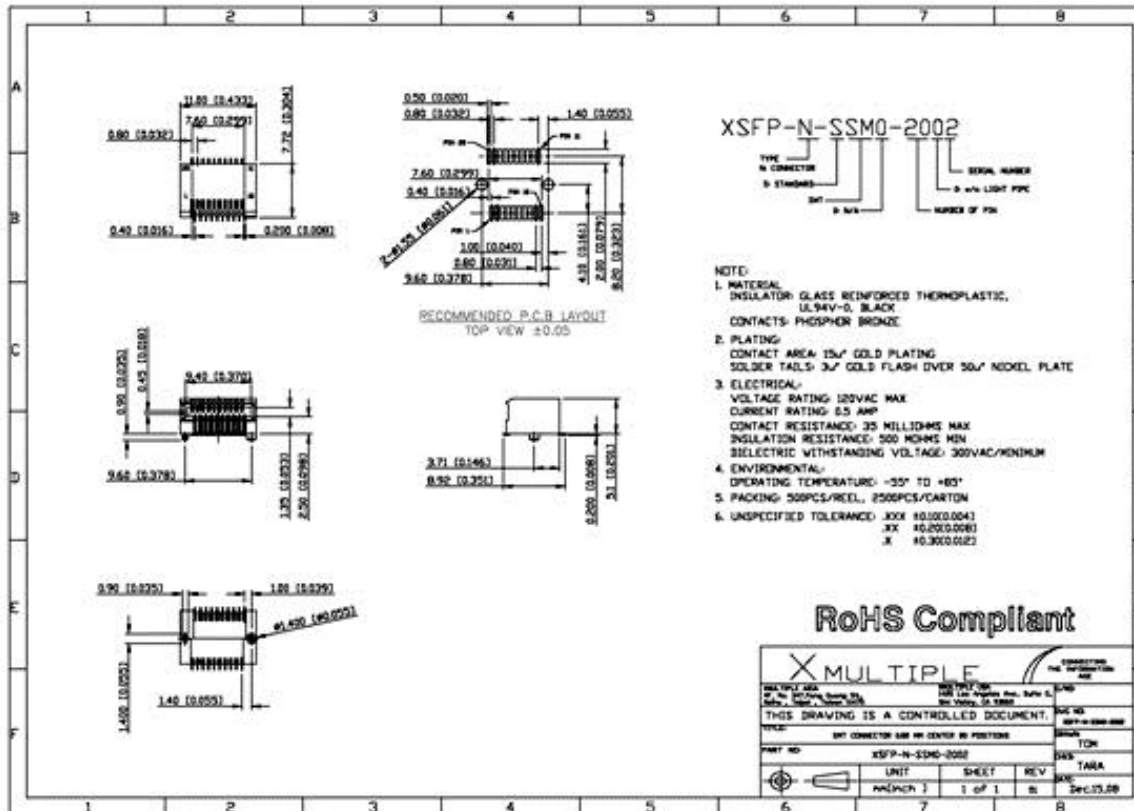| EMI Cages	SFP Connectors	SFP Loopback	HSSDC-2 Cables	SFP PatchCords	SFP Module with HSSDC-2 Interface

20 Position Connector

Right Angle SMT Receptacle

- **20 position, 0.8mm pitch**
- **Housing: UL 94V-O High Temperature Thermoplastic**
- **Plating: 15 or 30 micro inches gold over nickel option**
- **Coplanarity: Solder tail within 0.10mm**
- **Card entry slot to accept 1.0mm thick integrated circuit card**
- **Alignment posts provide stability for placement to PCB**
- **Tape & Reel packaging for SMT robotic placement (500/reel)**
- **Mates to copper patch cables and optical and copper modules**
- **Post design provides "belly-to-belly" board mounting option**

XFP 20 POS Connector

SFP EMI Cages Single & Ganged Type

•Available in Press-Fit or Solder-Post versions for various board
thicknesses and assembly processes

•Material: Tin or Nickel plated copper alloy

•Accepts copper and optical SFP modules for Fiber Channel, Gigabit Ethernet, and Infiniband applications

•PCI version has solder posts angled one degree for use in applications that specify PCI panels

•Two-point spring contacts for optimal EMI grounding

•Chamfered edges on cover to facilitate kit assembly to base

•Design allows two cages to be mounted on opposite sides of PCB for "belly-to-belly" applications

•Press fit Single Cage

•Solderable Single Cage

•Dual Port Cage with or without Lightpipes

•Quad Port Cage with or without Lightpipes
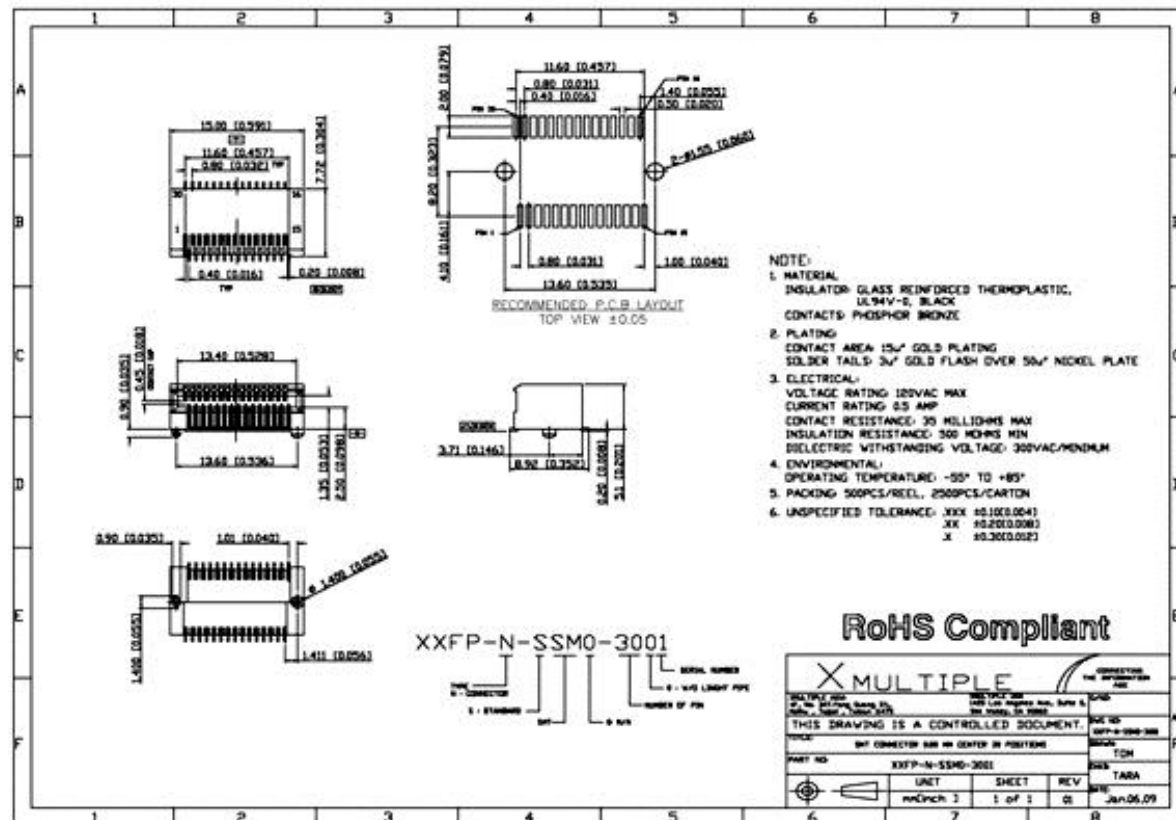
•Six Port Cage with or without Lightpipes

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XFP Products

XFP is being replaced by most companies with SFP Plus Technology. XFP used 30 pin SMT connectors. Heat Sinks and Dust/EMI Covers.

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XFP 30POS Connector

Available in Tape and Reel Packing

2x1 Cages Stacked Type

SFP 2X1 Cage Assembly – Belly to Belly Style Stackable Application

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2x4 Cages Stacked Type

SFP 2X4 Cage Assembly – Belly to Belly Style Stackable Application

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SFP+

DESCRIPTION

SFP+ extends the use of the Small Form- Factor Pluggable (SFP) interconnect up to 10 Gb/s. This system meets the performance requirements of SFF (Small Form-Factor) specification SFF-8431 and supports 8G Fibre Channel and 10G Ethernet applications. The SFP+ product family includes cages, connectors, and copper cable assemblies.

APPLICATIONS

- Storage
- Servers
- Networking
- Switches
- Routers
- Hubs
- Network Interface Cards (NICs)

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KEY FEATURES & BENEFITS

•SFP+ interconnect system supports data rates of 10 Gb/s
•Connector designed to support 10Gb/s+
signal speeds, backward compatible with SFP
•Both EMI spring and Elastomeric gasket options for cages provide excellent shielding
•All cage configurations are offered with lightpipes for LED applications
•Heatsink optional for single port cages
•Cages are available for PCI card applications (one degree mounting angle)
•Cages accommodate belly-to-belly mounting
•Active and passive copper cable assemblies provide a cost-effective solution for short reach applications

SFP+ 20 POS Host Connector

- High speed contact design provides excellent electrical performance
- Capable handling 10G/bps data rates to meet SFP+ industry standard requirements
- Available in 0.38 or 0.76 um (15u" or 30u" gold plating accommodating cost and performance preferences
- Tape & Reel packaging for SMT robotic placement (500/reel)
- Mates to copper patch cables and optical and copper modules
- Post design provides "belly-to-belly" board mounting option

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SFP + EMI Cages Single & Ganged Type

- Available in Press-Fit or Solder-Post versions for various board thicknesses and assembly processes
- Material: Tin or Nickel plated copper alloy
- Elastomeric or metal spring finger gasket provide two option for superior EMI protection
- Capable handling 10 Gbps data rates of copper and optical SFP+ modules for Fiber Channel, Gigabit Ethernet, and Infiniband applications
- All cage configurations are offered with lightpipes for LED applications
- Heatsink optional for single port cages
- PCI version has solder posts angled one degree for use in applications that specify PCI panels
- Chamfered edges on cover to facilitate kit assembly to base
- Design allows two cages to be mounted on opposite sides of PCB for "belly-to-belly" applications

- **High-speed contact wafer design supports data transmission up to 10 Gbps.**
- **Elastomeric or metal gasket provide two options for superior EMI protection**
- **Capable of handling 10 Gbps data rates to meet SFP+ industry requirements**
- **Integrated lightpipes for use with SMT Light Emitting Diode's (LEDs) provide port status and activity feedback to the user.**

- **Design integrates 2 (2-by-1), 4 (2-by-2), 8 (2-by-4), 10 (2-by-5) or 12 (2-by-6) SFP+ ports and lightpipes into one assembly to increase port density and reduces assembly labor**
- **Press-fit termination to PCB eliminates soldering, lowering the applied cost and avoiding solder-related issues.**
- **Modules oriented "belly-to-belly" when inserted provides ease of removal of the module from the port.**

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