Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!
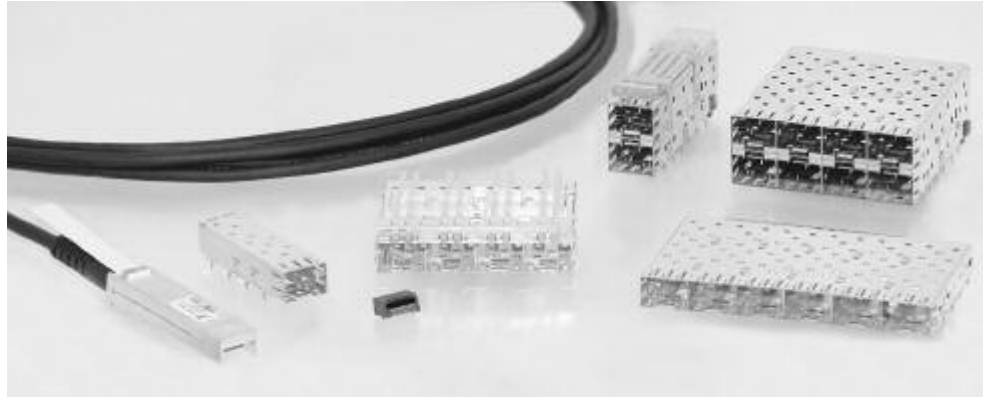
Contact us

SFP (Small Form-factor Pluggable) Products

As a founding member and innovator for the Small Form-factor Pluggable (SFP) Multi-Source Agreement (MSA), TE supports the market with a full range of SFP products. SFP products include zSFP+, SFP+, SFP+ Enhanced and SFP connectors, cage assemblies and connector assemblies.

From the original 20 position pluggable transceiver (PT) connector and single port cage, the product has expanded rapidly to include many other options to increase functionality and meet increasing bandwidth demands. The newly released zSFP+ product line takes data rates to 25G/s.

Lightpipes:

TE provides a complete line of lightpipes for single cages, ganged (single row), and stacked (double row) cages across all the SFP products.

Enhanced EMI:

As the data rates using the SFP form factor increase, the need for increased EMI suppression becomes imperative. Addressing both cabinet and module generated noise, the SFP products offer both external spring or elastomeric gasket options for EMI suppression.

Heat Sinks:

TE addresses the need for increased thermal dissipation by incorporating patented riding heat sink technology. The riding heat sinks use direct contact to the pluggable module to draw heat away from its source.

SFP Single Port Cages and Connectors

Product Facts

- Full metal shield for grounding and EMI suppression
- Solder and Press Fit cage configurations available
- Single piece and two piece cages available
- Used in conjunction with 20 pin SMT SFP Connector
- Hot Swappable
- Compatible with SFP MSA Compliant Modules
- UL/CSA Report File E28476
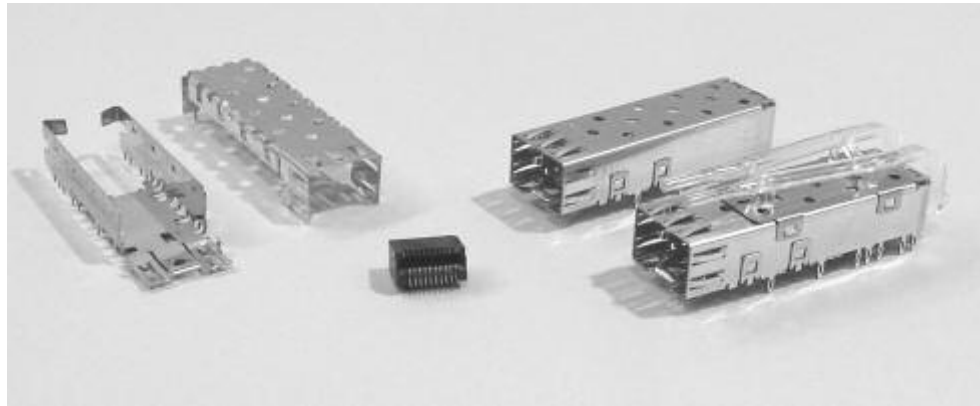
TE offers various termination options for SFP cages, including press-fit, wave solder and IR reflow compatible with tape and reel packaging. The connector is a reliable 20 position interface offered in 0.38 µm (15 µinch) and 0.76 µm (30 µinch) gold plating thicknesses. The connector is packaged in tape and reel for pick and place SMT application.

The cage material is a copper alloy with nickel subplate and a matte tin finish.

Technical Documents

Instruction Sheet

408-8495   SFP Connector and
           Cage Assembly

Application Specification

114-13017 SFP Connector and
          2-piece Cage Assembly
114-13120 SFP Connector and Press
          Fit Cage Assy

Product Specifications

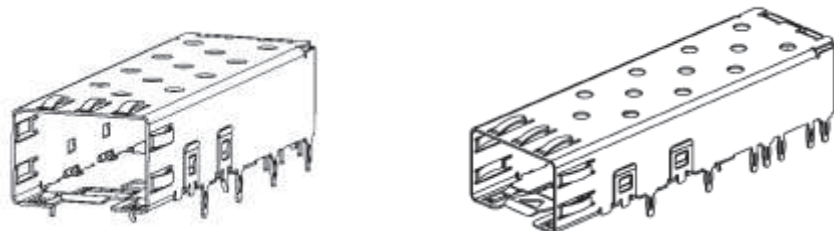108-1949   SFP Connector
108-1950   SFP Cage

SFP Standard

SFF Document INF-8074

Cages

Part Number	Description	Belly-to-Belly Applications
6367034-1	SFP Cage Bottom (Reflow Solder)	Yes
6367035-1	SFP Cage Top	
1489669-1	Press Fit, 8 Pins	Yes
1489779-1	Press Fit, 20 Pins	No
1489962-1	Relow or Wave Solder, 3.55 mm Tail	No
1489962-3	Relow or Wave Solder, 1.8 mm Tail	No
1367629-1	Press Fit w/ Lightpipes	No
1932002-1	Reflow or Wave Solder, 1.10 mm Tail	No

Connectors and Dust Plugs

Part Number	Description
1367073-1	20 pin, surface mount connector; 0.38 µm (15 µin) gold plating
1367073-2	20 pin, surface mount connector; 0.76 µm (30 µin) gold plating
1658197-1	20 pin, surface mount connector; 0.76 µm (30 µin) gold plating with contact surface treatment
1888247-1	20 pin, surface mount connector; 0.76 µm (30 µin) higher speed SFP+ compliant
1888247-2	20 pin, surface mount connector; 0.38 µm (15 µin) higher speed SFP+ compliant
1367147-1	SFP Dust Plug with AMP product logo
1367147-3	SFP Dust Plug without AMP product logo

Note: All part numbers are RoHS compliant.

SFP Single Port Cages and Connectors (Continued)

**SFP Cage Top
Part Number 6367035-1**

Cage top attached after bottom is soldered

**SFP Cage Bottom
Part Number 6367034-1**

Cage bottom supplied in tape and reel packaging for SMT processing

2 Piece Cage System
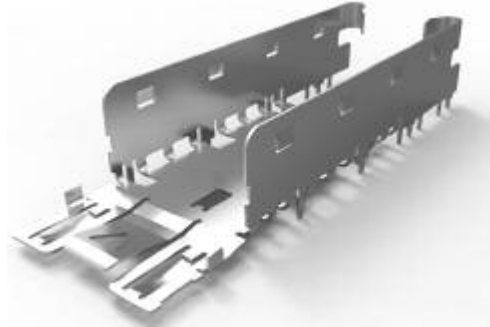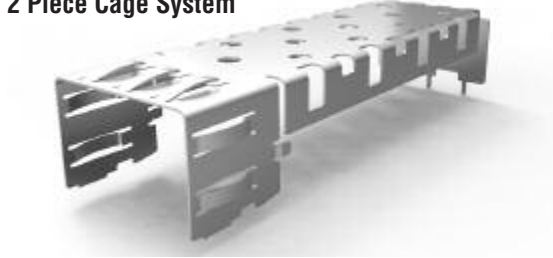
**SFP Press Fit
Cage Assembly
Part Number 1489669-1**

**SFP Press Fit Cage with
Lightpipe Assembly
Part Number 1367629-1**

**Connector
Part Number 1367073-1**

**Dust Plug
Part Number 1367147-1**

Note: All part numbers are RoHS compliant.

![TE connectivity logo]

SFP Ganged (Single Row) Cages

Product Facts

- **Full metal shield for grounding and EMI reduction**
- **Solder and Press Fit configurations available**
- **Used in conjunction with 20 pin SMT SFP Connector**
- **Hot Swappable**
- **Compatible with SFP MSA Compliant Modules**
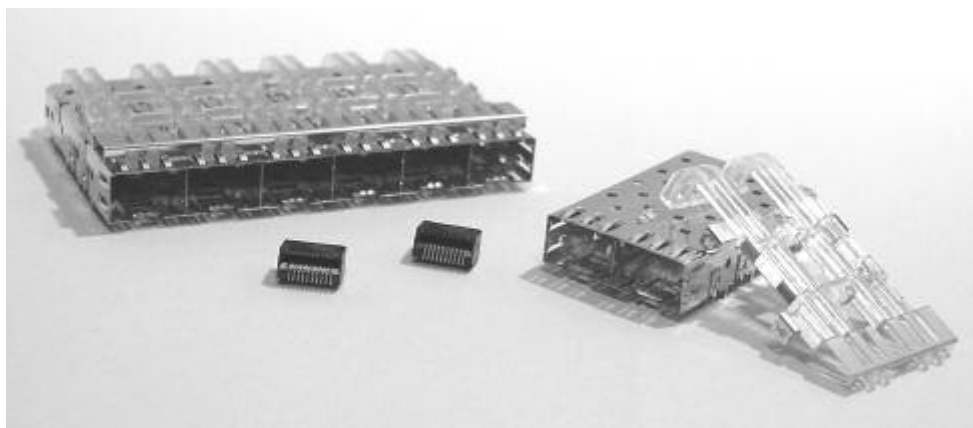- **UL/CSA Report File E28476**
- **Application tooling available for press fit SFP cages**

The Ganged SFP product line allows for single row, high density port designs to maximize the horizontal I/O space. The design allows for belly-to-belly orientation to maximize port density. The lateral port-to-port spacing is minimized to 14.25mm, compared to 16.25mm required spacing between single port cages. Port configurations include 1x2, 1x4 and 1x6, with lightpipes optional.

Application tooling is required for press fit configurations to provide support during insertion into the board.

Technical Documents

Instruction Sheet

408-8848	SFP Cage Assembly Seating Tool
408-8849	SFP Cage Assembly Extraction Tool

Application Specification

114-13017	SFP Connector and 2-piece Cage Assembly
114-13120	SFP Connector and Press Fit Cage Assy

Product Specifications

108-1949	SFP Connector
108-1950	SFP Cage

Part Number	Port Configuration	PCB Attachment	Belly-to-Belly Application	Lightpipes Included
1761014-1	1x2	Press Fit	Yes	No
1761007-1	1x2	Press Fit	No	Yes
1658744-1	1x4	Press Fit	Yes	No
1658723-1	1x4	Solder Tail	Yes	No
1761008-1	1x4	Press Fit	No	Yes
2143438-1	Angled 1x4	Press Fit	No	Yes
2149060-1	Angled 1x4	Press Fit	No	No
1761015-1	1x6	Press Fit	Yes	No
1658939-1	1x6	Press Fit	No	Yes
2110957-1	1x6	Press Fit (Rear Compliant Pins)	No	No
2007498-1	1x6	Press Fit	No	No

Lightpipe Assembly

Part Number	Port Configuration	PCB Attachment
1761011-1	1x2	Press Fit
1761012-1	1x4	Press Fit
1761013-1	1x6	Press Fit

Connectors and Dust Plugs

Part Number	Description
1367073-1	20 pin, surface mount connector; 0.38 µm (15 µin) gold plating
1367073-2	20 pin, surface mount connector; 0.76 µm (30 µin) gold plating
1658197-1	20 pin, surface mount connector; 0.76 µm (30 µin) gold plating with contact surface treatment
1888247-1	20 pin, surface mount connector; 0.76 µm (30 µin) higher speed SFP+ compliant
1888247-2	20 pin, surface mount connector; 0.38 µm (15 µin) higher speed SFP+ compliant
1761394-1	SFP Dust Plug

Note: All part numbers are RoHS compliant.

SFP Stacked (Dual Row) Cage/Connector Assemblies

Product Facts

■ **Utilizes integrated stacked connector with patented wafer construction**

■ **Full metal shield for grounding and EMI reduction**

■ **Incorporates press fit eye-of-the-needle contacts for both mechanical cages and electrical connector**

■ **Hot Swappable**

■ **Compatible with SFP MSA Compliant Modules**

■ **Application tooling available**

■ **UL/CSA Report File E28476**
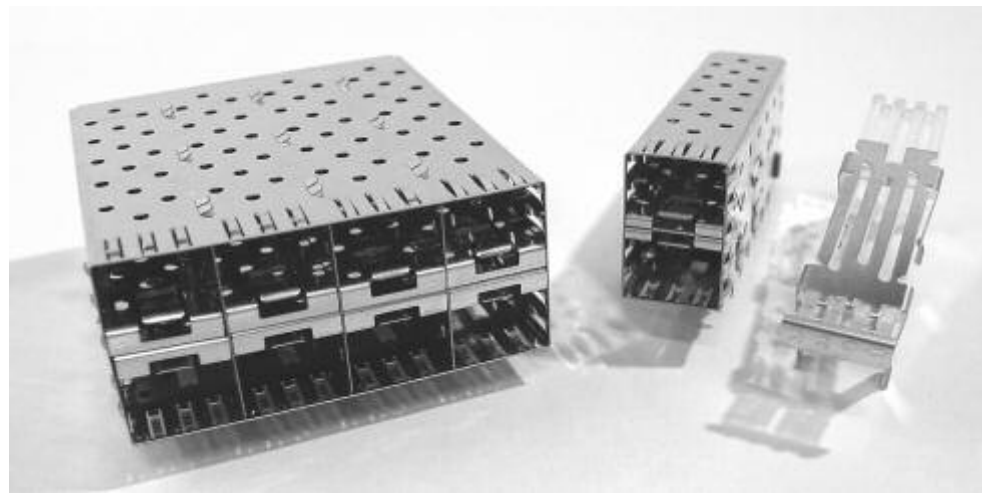
The Stacked SFP product maximizes port density by Taking advantage of the reduced port spacing of the ganged SFP cages, with an added upper port row. The connector is integrated into the cage assembly, using press-fit technology for one-step insertion for cage and connector. Two heights are offered for stacked SFP cages, and available in 2x1, 2x4, and 2x6 port configurations.

Technical Documents

Instruction Sheet
|	
408-8848	SFP Cage Assembly Seating Tool
408-8849	SFP Cage Assembly Extraction Tool
408-8850	Stacked SFP Connector Extraction Tool

Application Specification
114-13103	Stacked SFP Connector & Cage Assembly

Product Specifications
108-2161	SFP Connector & Cage Assemblies

SFP Stacked (Dual Row) Cage/Connector Assemblies (Continued)

**Standard Profile 2x4
Configuration
Part Number 1658390-1**

25.25 mm
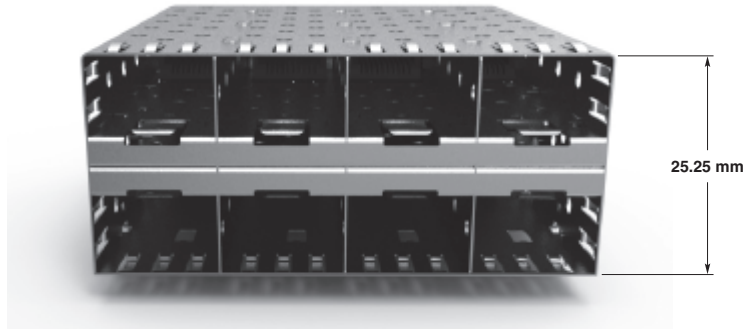
**Low Profile 2x4
Configuration
Part Number 1658629-1**

22.3 mm

Part Number	Port Configuration	Height Profile	Lightpipes Included
1658391-1	2x1	Standard	No
1658628-1	2x1	Low Profile	No
1658859-1	2x1	Low Profile	Yes
1658390-1	2x4	Standard	No
1658629-1	2x4	Low Profile	No
1658758-1	2x4	Low Profile	Yes
1761327-1	2x6	Standard	No
1658894-1	2x6	Low Profile	No
1658895-1	2x6	Low Profile	Yes

Note: TE lightpipe assemblies are packaged with the SFP cage assembly. The lightpipes attach to the top of the SFP cage for clear visibility in a high density application.

Related Products

Part Number	Description
1761394-1	SFP Dust Plug

Note: All part numbers are RoHS compliant.

SFP Cages with Integrated Connectors

Product Facts

- **Utilizes fully integrated 20 position SFP connector**
- **Full metal shield for grounding and EMI reduction**
- **Incorporates press fit eye-of-the-needle contacts for both mechanical cages and electrical connector**
- **Hot Swappable**
- **Compatible with SFP MSA Compliant Modules**
- **Application tooling available**
- **UL/CSA Report File E28476**
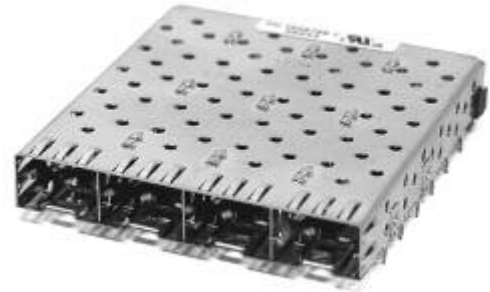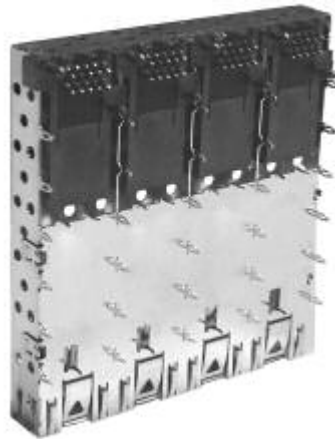
For increased flexibility, TE offers ganged (single Row) SFP cages with integrated connectors that are footprint compatible with its Stacked SFP product line. The connector uses the same press fit technology as incorporated in the stacked SFP cage/connector system, with one-step insertion in the board. Products currently offered are 1x1 and 1x4 configurations.

Part Number 1932068-1

Part Number 1932069-1

Technical Documents

Instruction Sheet

408-8848	SFP Cage Assembly Seating Tool
408-8849	SFP Cage Assembly Extraction Tool
408-8850	Stacked SFP Connector Extraction Tool

Application Specification

114-13121	SFP Ganged Press Fit Connector & Cage Assembly

Product Specifications

108-2161	SFP Connector & Cage Assembly

Part Number	Port Configuration	Footprint Compatible with Stacked SFP	Press Fit Exemption Tin Lead on I/O Contacts
1932068-1	1x1	1658391-1 1658628-1	Yes
1932069-1	1x4	1658390-1 1658629-1	Yes

Related Products

| Part Number	Description
1761394-1	SFP Dust Plug

Note: All part numbers are RoHS compliant.

SFP Cages with Riding Heat Sinks

Product Facts

- ■ **Designed for DWDM Switch applications**
- ■ **High Density application requiring additional Thermal Management**
- ■ **Riding heat sink technology addresses thermal management**
- ■ **Full metal shield for grounding and EMI reduction**
- ■ **Incorporates press fit eye-of-the-needle contacts for mechanical cages**
- ■ **Compatible with DWDM MSA compliant transceivers**
- ■ **Uses 20 pin SMT SFP Connector**
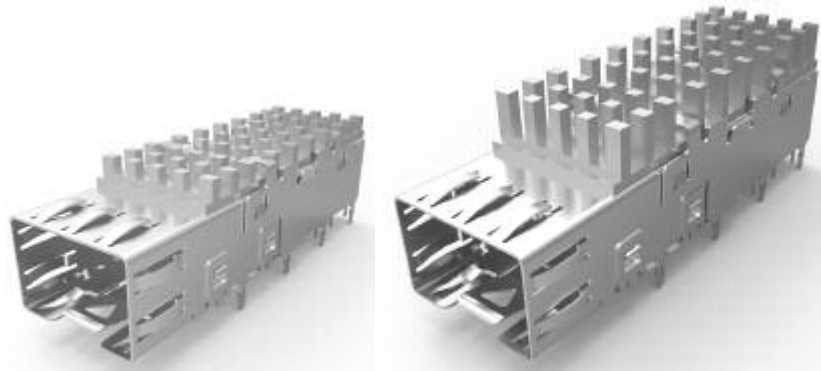
TE introduced an SFP system incorporating a riding heat sink to help manage excess heat when using SFP modules. This is especially suited for use with higher wattage transceivers, such as long reach applications like Dense Wavelength Division Multiplexing (DWDM).

The system features a press fit cage, a heat sink clip, and heat sink with various pin heights available.
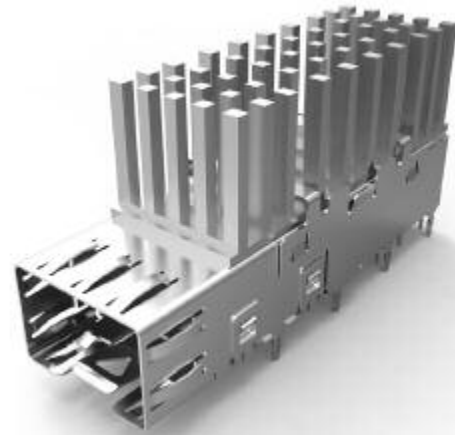
Cages, Heat Sinks, and Clips

Part Number	Product Description
1367643-1	1x1 SFP Cage for heat sink application
1367646-1	Heat Sink Clip
1829903-2	PCI Heat Sink (4.2mm)
1829904-2	SAN Heat Sink (6.5mm)
1829905-2	Networking Heat Sink (13.5mm)
1367645-1	Kit: Cage, Clip and PCI Heat Sink (4.2mm)
1367645-2	Kit: Cage, Clip and SAN Heat Sink (6.5mm)
1367645-3	Kit: Cage, Clip and Networking Heat Sink (13.5mm)

Connectors and Dust Plugs

Part Number	Description
1367073-1	20 pin, surface mount connector; 0.38 µm (15 µin) gold plating
1367073-2	20 pin, surface mount connector; 0.76 µm (30 µin) gold plating
1658197-1	20 pin, surface mount connector; 0.76 µm (30 µin) gold plating with contact surface treatment
1888247-1	20 pin, surface mount connector; 0.76 µm (30 µin) higher speed SFP+ compliant
1888247-2	20 pin, surface mount connector; 0.38 µm (15 µin) higher speed SFP+ compliant
1367147-1	SFP Dust Plug with AMP product logo
1367147-3	SFP Dust Plug without AMP product logo

Product Facts

- ■ **SFP angled cages provide better cable routing than the standard SFP cages**

SFP Angled Assemblies

Part Number	Port Configuration	Description
2143438-1	1x4	30 Degree with Lightpipes

PCI is a trademark of PCI-SIG.

Note: All part numbers are RoHS compliant.

Catalog 1773408-1
Revised 5-12

www.te.com

Dimensions are shown for reference purposes only. Specifications subject to change.

Dimensions are in millimeters unless otherwise specified.

USA: +1 (800) 522-6752

Canada: +1 (905) 475-6222
Mexico/C. Am.: +52 (0) 55-1106-0800
Latin/S. Am.: +54 (0) 11-4733-2200
Germany: +49 (0) 6251-133-1999

UK: +44 (0) 800-267666
France: +33 (0) 1-3420-8686
Netherlands: +31 (0) 73-6246-999
China: +86 (0) 400-820-6015

connectivity

Pluggable Input / Output Solutions

SFP Copper Cable Assemblies

Product Facts
- **SFF 20 position PCB interface**
- **Cable wire size 28 AWG**
- **Robust pull to release latch mechanism**
- **Various standard cable assembly lengths**
- **Compatible with MSA compliant SFP cages**
- **Uses MADISON CABLE brand TURBOTWIN copper cable**

Applications
- **Switches, routers and host bus adapters (HBA's)**
- **Enterprise storage**
- **High density I/O's**
- **Multiple channel interconnects**

The TE SFP copper cable assemblies are high speed, high performance solutions for 4.25 Gbps applications. The TE SFP copper assemblies provide a cost effective solution over Fiber for short reach I/O applications. These assemblies support multiple data transfer protocols such as Fibre Channel, InfiniBand Standard and Gigabit Ethernet.

SFP Direct Attach Cable Assembly Part Numbers

Description	Part Number	Length	Equalization
4.25 Gbps Passive	1948134-1	0.5 m	Unequalized
	1948134-2	1 m	Unequalized
	1948134-3	2 m	Equalized
	1948134-4	3 m	Equalized
	1948134-5	4 m	Equalized

Fibre Channel is a trademark of the Fibre Channel Industry Association.
INFINIBAND is a trademark of the InfiniBand Trade Association.

Note: All part numbers are RoHS compliant.

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Revised 5-12

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