

HI SPEED CONNECTORS



INFINITY
(4X/12X)



MINI-SAS



VHDCI



SFP

Amphenol[®]

Data / Telecom Products

www.amphenolcanada.com

HI SPEED CONNECTORS

INFINITY (4X/12X)

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VHDCI

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SFP

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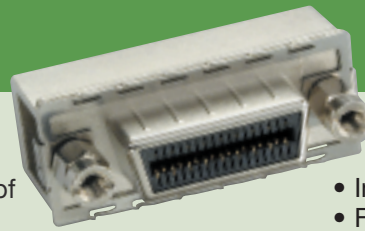
Mini-SAS

FS Series	18-19
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Amphenol[®]

Data / Telecom Products

www.amphenolacp.com



INFINITY Amphenol's INFINITY (4X/12X) series of connectors facilitate data speeds up to 75 Gbps total bandwidth, as required by InfiniBand™, Fibre Channel and Serial Attached SCSI Trade Associations, with superior EMI performance. INFINITY connectors are high-density, hot pluggable and meet SFF-8470 specifications. A variety of receptacles are available that will fit multiple connectors into a 1U form factor and PCI bracket. All receptacles are available with standard or RoHS compliant materials.

- InfiniBand™
- Fibre Channel
- 10Gb Ethernet
- SAS, External (Serial Attached SCSI)
- SFF-8470
- CX4

APPLICATIONS

- Datacom Devices
- HCAs (Host Controller Adapters)
- High Speed Routers and Switches
- Storage Devices
- SANs (Storage Area Networks)
- Servers
- RAID
- XAUI

ORDERING INFORMATION

Contact Amphenol for additional options

Infinity Receptacle

U65 - X XX - X X X X - X

INFINITY RECEPTACLE

STYLE

- B** - 2 Locating Posts and 2 or 4 Solder Posts
- E** - 2 Locating Posts and 2 or 4 Screw Mounting Holes
- F** - Belly-to-Belly (2 Locating Posts and Through-Hole Mounting)
- P** - 2 Locating/Friction Posts and 2 Screw Mounting Holes***

CONNECTOR TYPE

- 04** - 4X
- 12** - 12X

CONTACT PLATING

- 1** - 50µ" Gold plating
- 2** - 30µ" Gold plating
- 4** - 50µ" Gold plating (RoHS Compliant)
- 5** - 30µ" Gold plating (RoHS Compliant)

HARDWARE OPTION

Lanyard Application

- 0** - Lock Plate
- 1** - One-Piece Lock Plate
- 2** - Without Lock Plate

Screwlock Application

- 0** - Standard screw (Bulk packed)
- 1** - Self-locking screw (Bulk packed)
- 2** - Without screws (Order separately)

PACKAGING

- Blank** - Tray Packaging
- T** - Tape and Reel Packaging
- C** - Rear Cover (bulk packed)
- CT** - Rear Cover (bulk packed) with Tape and Reel Packaging

KEYING OPTION:

- 0** - No Keying

APPLICATION:

- 1** - Lanyard Latch - (Without arms)
Applications: InfiniBand™
- 2** - Screwlock - (Without arms)
Applications: Fibre Channel / SAS / 10Gb Ethernet
- 6** - Lanyard Latch - (With arms)
Applications: InfiniBand™
- 7** - Lanyard Latch - (With arms and top mounting ear)
Applications: InfiniBand™
- 8** - Screwlock - (With arms)
Applications: Fibre Channel / SAS / 10Gb Ethernet

INFINITY RECEPTACLE ACCESSORIES (ORDER SEPARATELY)

- U65-404-21-P** = 4X One-piece Lock Plate*
- U65-404-60-P** = 4X Optional Rear Cover
- U65-404-61-P** = 4X Belly-To-Belly Optional Rear Cover
- U65-412-21-P** = 12X One-piece Lock Plate*
- U65-412-60-P** = 12X Optional Rear Cover
- U65-404-40-P** = Thumbscrews (Standard)**
- U65-404-41-P** = Thumbscrews (Self-locking w/Nylok)**

NOTES

- * Lanyard Application Only
- ** Screwlock Application Only
- *** Screwlock 12X Application Only

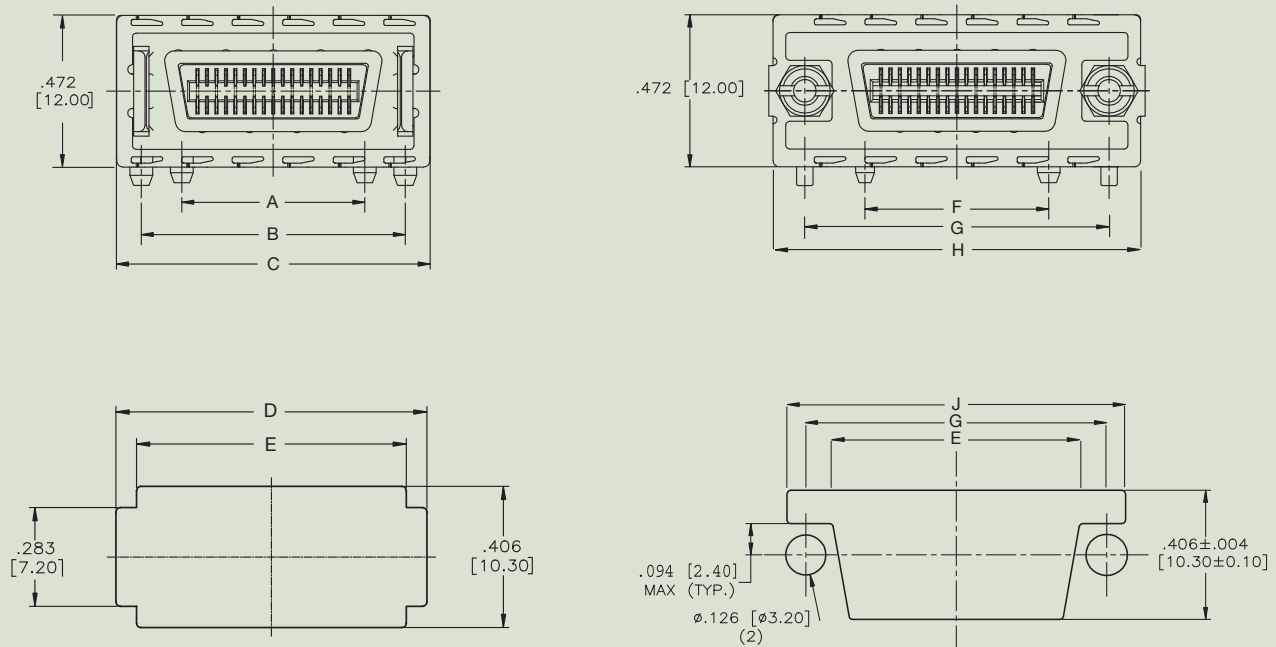
MATERIAL SPECIFICATIONS

Plastic Insert	High temperature resistant nylon; Flammability rating – UL94V-0
Contacts	Phosphor bronze; 50μ” [1.27μm] or 30μ” [0.76μm] gold plating over nickel on mating area and tin-lead plating over nickel (standard) or 2μ” [0.05μm] gold plating over nickel (RoHS compliant) on PCB terminations
Shield	Die cast; Nickel plated

ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS

Current Rating	0.5 Amps maximum/contact	DWV	30 VAC
Contact Resistance	80mΩ maximum initial	Operating Temperature	-40°C to +85°C
Insulation Resistance	1000MΩ minimum	Durability	250 mating cycles

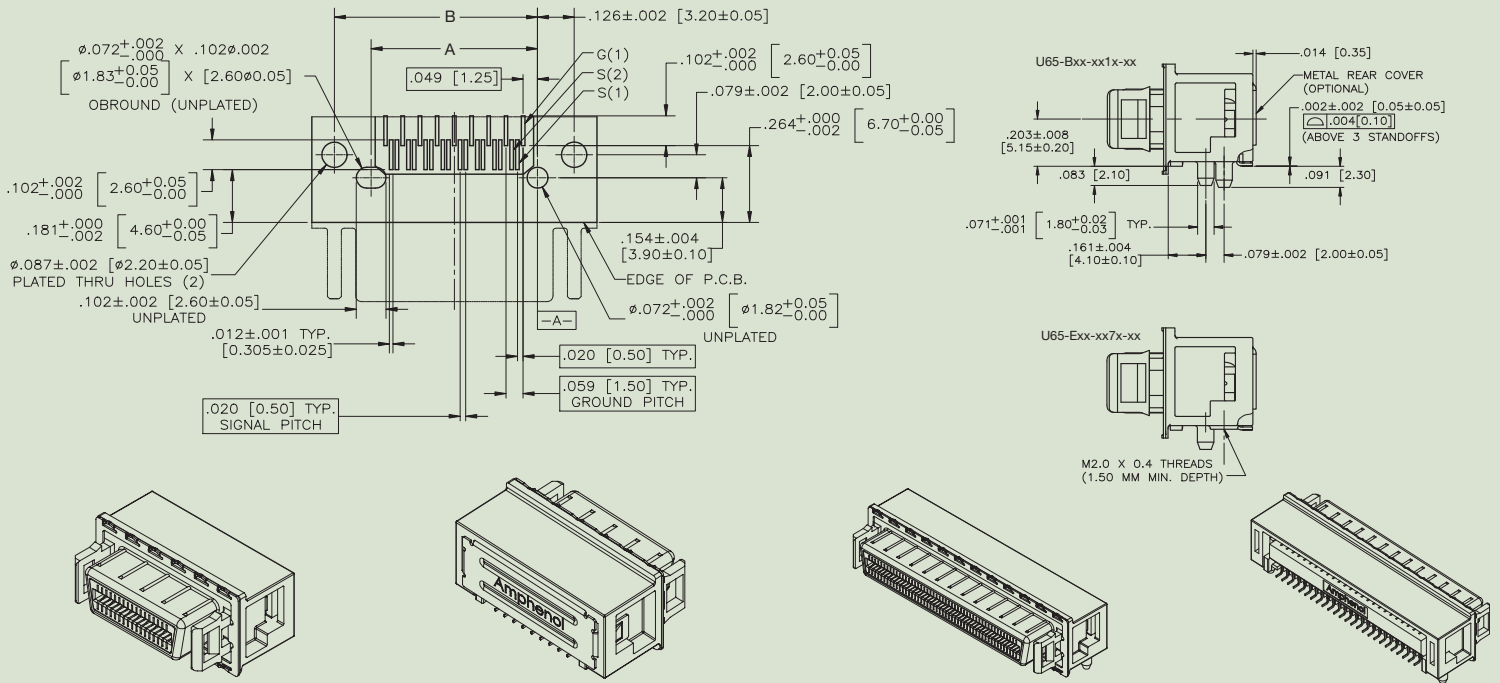
TECHNICAL SPECIFICATIONS



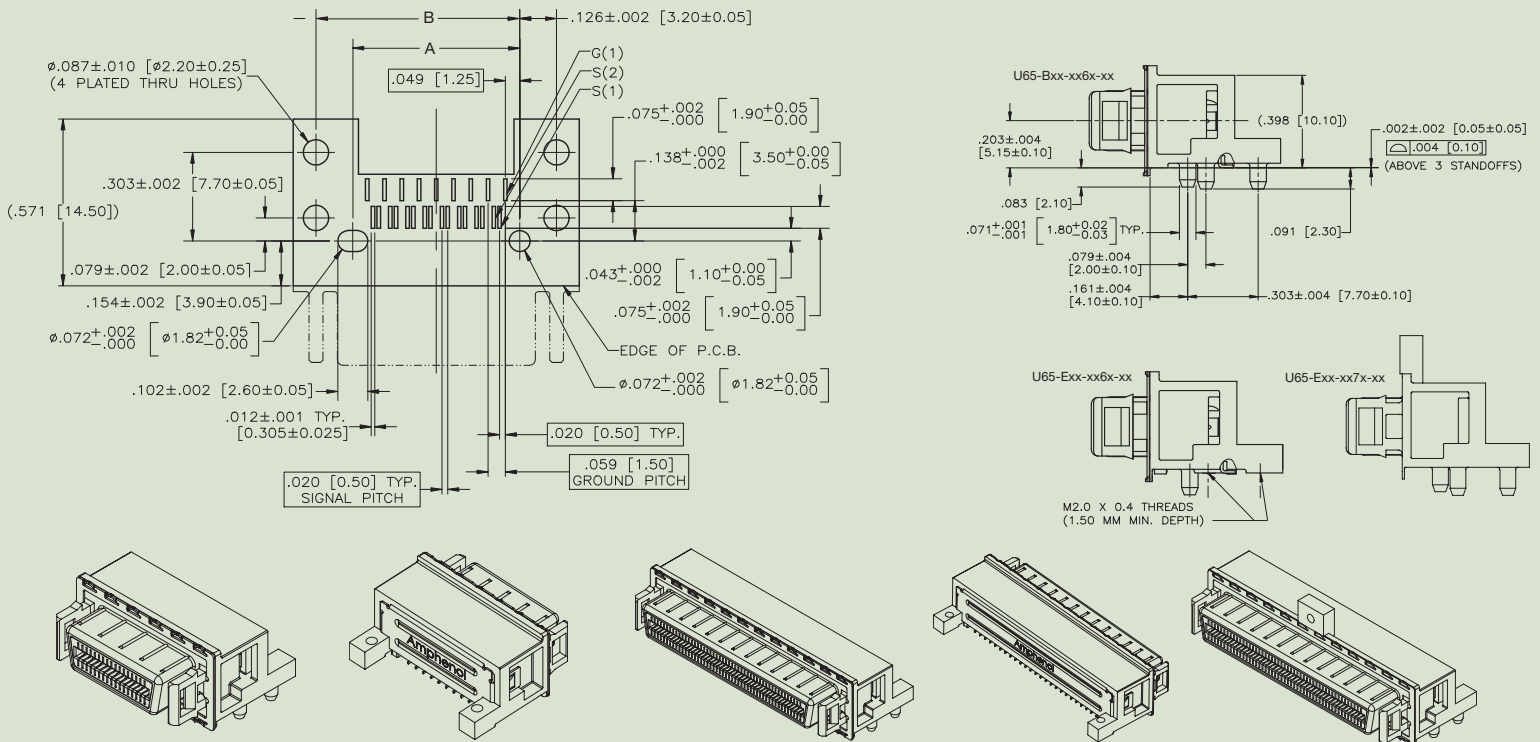
INFINITY RECEPTACLE	A	B	C	D	E	F	G	H	J
4X	0.571 [14.50]	0.823 [20.90]	0.978 [24.85]	0.894 [22.70]	0.776 [19.70]	0.571 [14.50]	0.945 [24.00]	1.169 [29.70]	1.063 [27.00]
12X	1.516 [38.50]	1.768 [44.90]	1.923 [48.85]	1.839 [46.70]	1.720 [43.70]	1.516 [38.50]	1.890 [48.00]	2.114 [53.70]	2.008 [51.00]

TOLERANCE: ± 0.005 [± 0.13] DIMENSIONS TO BE USED AS REFERENCE ONLY PLEASE REFER TO SALES DRAWINGS FOR DETAILED DIMENSIONS SPECIFICATIONS SUBJECT TO CHANGE

LANYARD WITHOUT ARMS



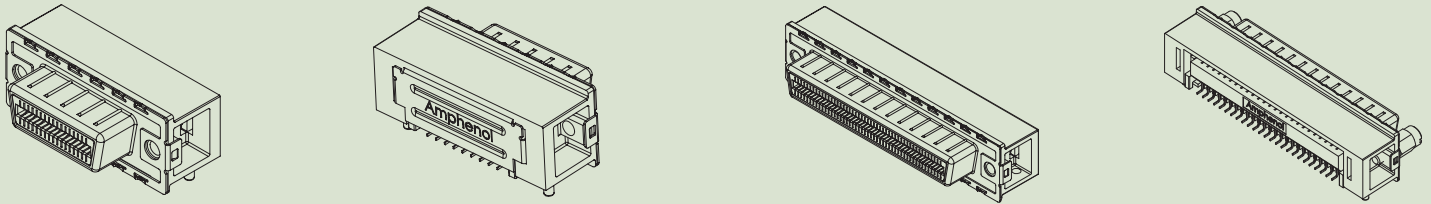
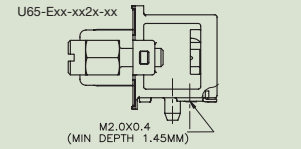
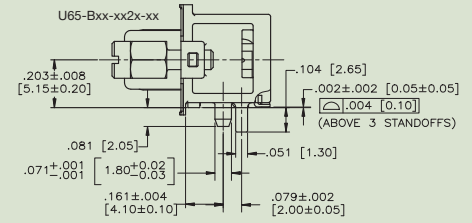
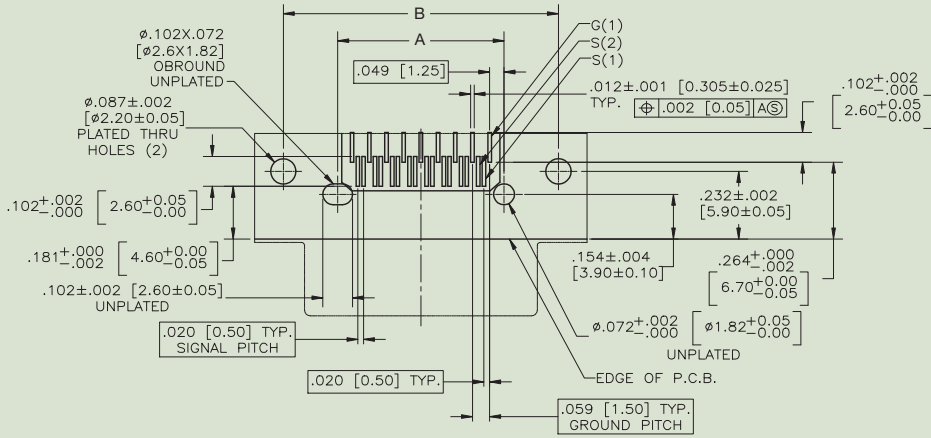
LANYARD WITH ARMS



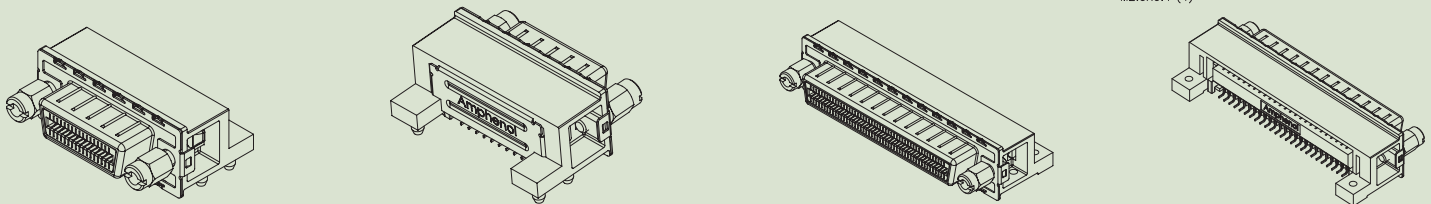
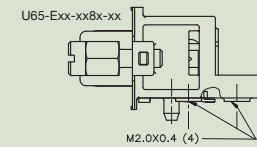
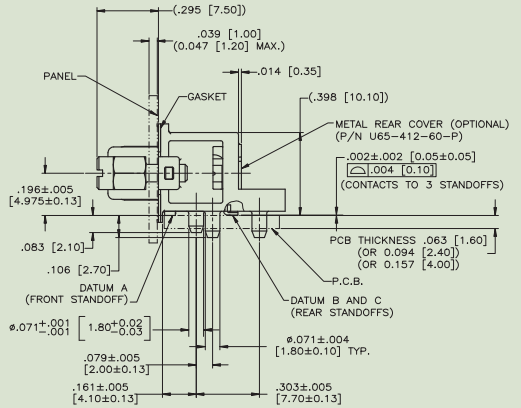
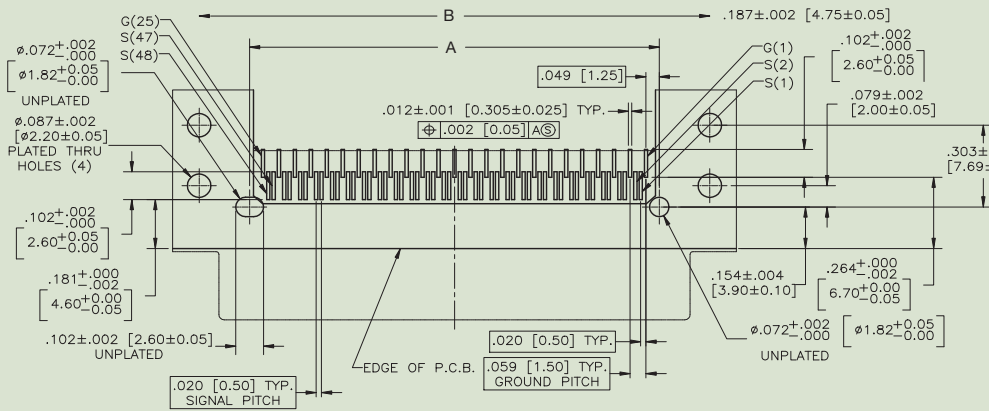
LANYARD RECEPTACLE	A	B
4X	0.571 [14.50]	0.697 [17.70]
12X	1.516 [38.50]	1.642 [41.70]

TOLERANCE: $\pm 0.005 [\pm 0.13]$
 DIMENSIONS TO BE USED AS REFERENCE ONLY
 PLEASE REFER TO SALES DRAWINGS FOR DETAILED DIMENSIONS
 SPECIFICATIONS SUBJECT TO CHANGE

SCREWLOCK WITHOUT ARMS



SCREWLOCK WITH ARMS



SCREWLOCK RECEPTACLE	A	B
4X	0.571 [14.50]	0.945 [24.00]
12X	1.516 [38.50]	1.890 [48.00]

TOLERANCE: ± 0.005 [± 0.13]
 DIMENSIONS TO BE USED AS REFERENCE ONLY
 PLEASE REFER TO SALES DRAWINGS FOR DETAILED DIMENSIONS
 SPECIFICATIONS SUBJECT TO CHANGE

INFINITY Amphenol's INFINITY (4X) series of plugs facilitate data speeds up to 75 Gbps total bandwidth, as required by InfiniBand™, Fibre Channel and Serial Attached SCSI Trade Associations. INFINITY plug and connector systems are high-density, hot pluggable and meet SFF-8470 specifications. Plug kits are available with a variety of cable size options as well as a unique low profile version that will allow for connection to two receptacles – one on top of the other – in a 1U form factor chassis.



- InfiniBand™
- Fibre Channel
- 10Gb Ethernet
- SAS, External (Serial Attached SCSI)
- SFF-8470
- CX4

APPLICATIONS

- Datacom Devices
- HCAs (Host Controller Adapters)
- High Speed Routers and Switches
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- SANs (Storage Area Networks)
- Servers
- RAID
- XAUI

ORDERING INFORMATION

Contact Amphenol for additional options

Infinity Plug

U66 - X XX - X X X X

INFINITY PLUG KIT

PLATING OPTION

- N - 50µ" Gold with PCB
- L - 30µ" Gold with PCB

CABLE TYPE

04 - 4X

CABLE SIZE

- 1 - 24 AWG*
- 2 - 26/28 AWG**
- 3 - 28 AWG***

KEYING OPTIONS

0 - All Keying slots (Standard)

APPLICATION

- 1 - Lanyard Latch for 24AWG wire only
Applications: InfiniBand™
- 2 - Thumbscrew
Applications: Fibre Channel / SAS / 10Gb Ethernet
- 3 - Lanyard Latch Style - Low Profile (26/28 AWG only)
Applications: InfiniBand™

FERRULE OPTION

- 0 - No Ferrule
- 1 - Ferrule ****

NOTES

- * Lanyard 4X application or Thumbscrew 4X application
- ** Cable build-up required for 28 AWG
- *** Thumbscrew application only
- **** 4X application only

www.infinityconnectors.com

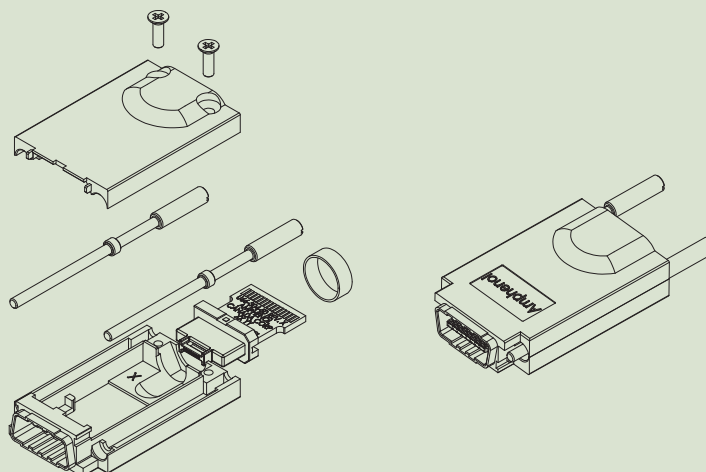
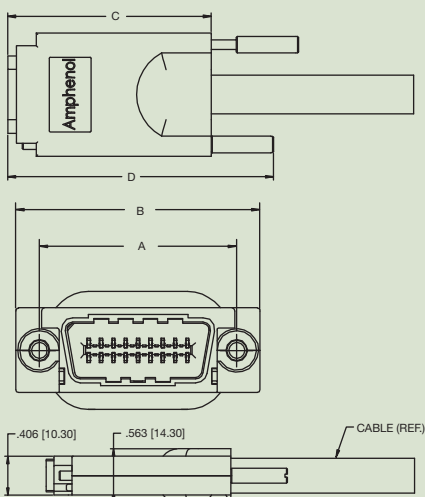
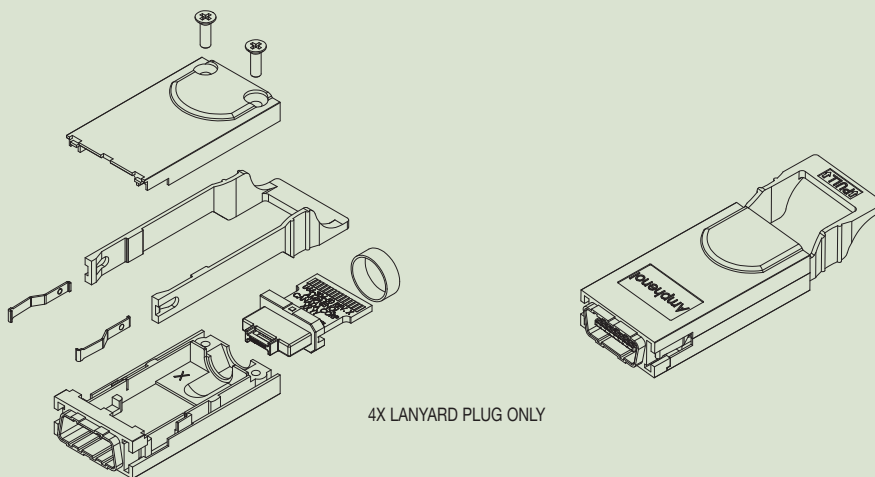
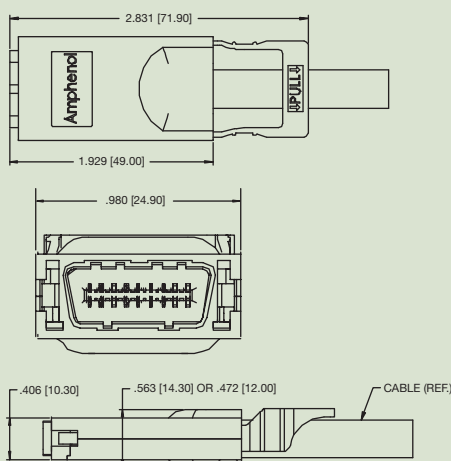
MATERIAL SPECIFICATIONS

Plastic Insert	High temperature resistant nylon; Flammability rating – UL94V-0
Contacts	Phosphor bronze; 50μ” [1.27μm] or 30μ” [0.76μm] gold plating over nickel on contact mating area and tin-lead plating over nickel on termination area
Shield	Die cast; Nickel plated

ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS

Current Rating	0.5 Amps maximum/contact	DWV	30 VAC
Contact Resistance	80mΩ maximum initial	Operating Temperature	-40°C to +85°C
Insulation Resistance	1000MΩ minimum	Durability	250 mating cycles

TECHNICAL SPECIFICATIONS / ISOMETRIC VIEWS



THUMBSCREW PLUG	A	B	C	D
4X	0.945 [24.00]	1.169 [29.70]	1.929 [49.00]	2.620 [64.00]

TOLERANCE: ± 0.005 [± 0.13] DIMENSIONS TO BE USED AS REFERENCE ONLY PLEASE REFER TO SALES DRAWINGS FOR DETAILED DIMENSIONS SPECIFICATIONS SUBJECT TO CHANGE



VHDCI Very High Density Cable Interconnect provides interconnections where space limitations and high performance are key requirements. Designed to be compact, these fully shielded connectors support ESD/EMI protection, are capable of transferring data up to 80 Gbps and meet EIA700A0AF specifications. Receptacles are available in both right angle and straddle-mount configurations with or without shield EMI tabs.

APPLICATIONS

- Ultra-SCSI
 - Ultra-320
 - SFF-8441
 - EA1700A0AF
-
- RAID
 - Disk Drives/Systems
 - Servers
 - SANs (Storage Area Networks)
 - Routers

ORDERING INFORMATION

Contact Amphenol for additional options

VHDCI Receptacle

H11 - XXX - XXX - X* - XX*

VHDCI RECEPTACLE

H11 - Standard receptacle
HE11 - RoHS receptacle

STYLE

RAA - Right Angle, Single Port
RDA - Straddle Mount, Single Port

OPTIONS

100 - No Screwlocks, Standard Shell
101 - Screwlocks Bulk Packed, Standard Shell
110 - No Screwlocks (Standard), Shell without EMI Tabs
111 - Screwlocks Bulk Packed, Shell without EMI Tabs

STRADDLE MOUNT PACKAGING

C - Plug Cover and Tube Packaging*
T - Tape & Reel Packaging*
CT - Plug Cover and Tape & Reel Packaging*

CONTACT OPTIONS

Blank - Standard**
1 - 0.125* contact tails**
3 - 0.062* PCB Thickness*
4 - 0.093* PCB Thickness*

NOTES

- * RDA Style Only
- ** RAA Style Only

www.vhdc.com

MATERIAL SPECIFICATIONS

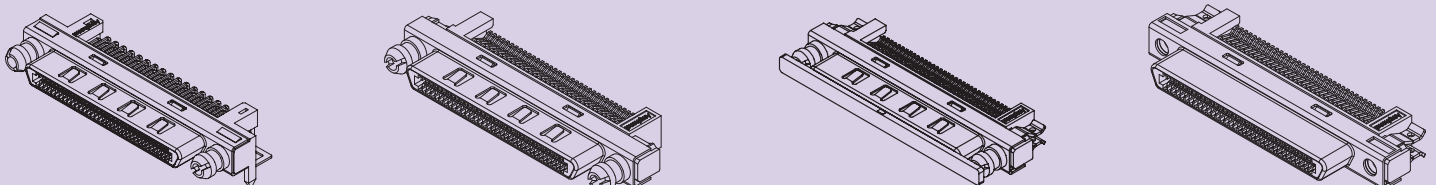
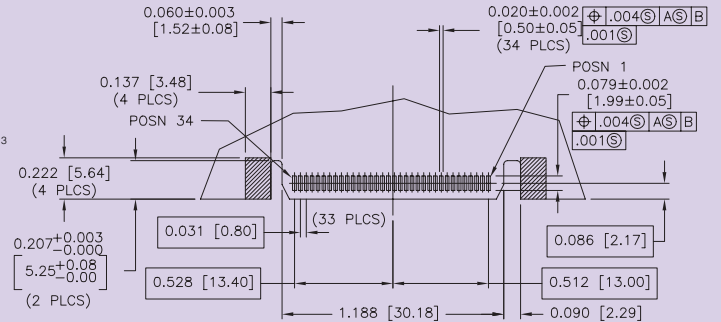
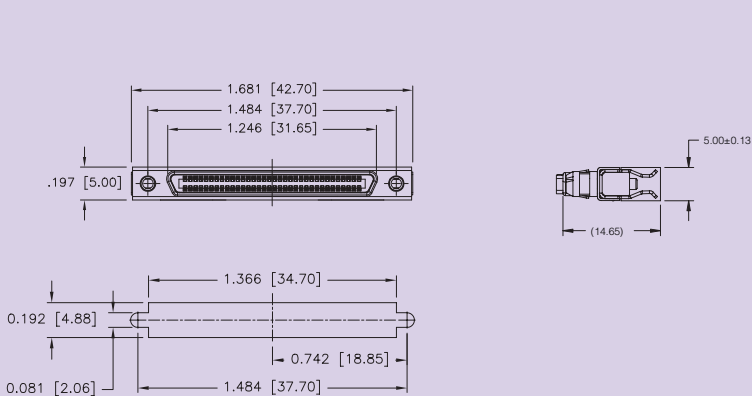
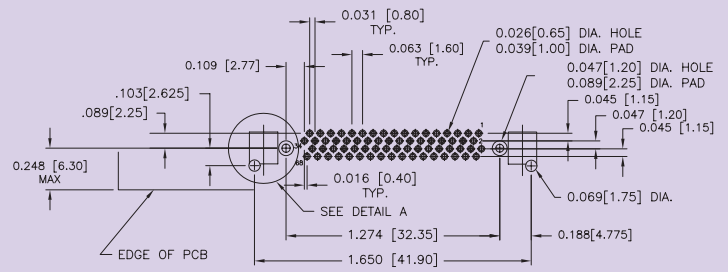
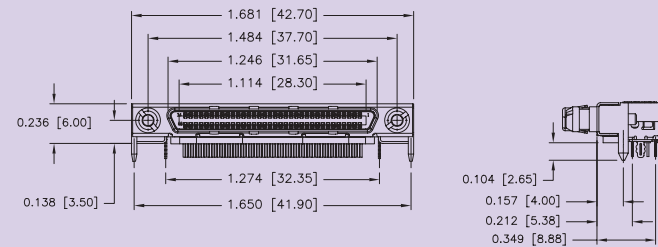
Plastic Insulator	Thermoplastic Flammability rating - UL94V-0
Contacts	Phosphor bronze 30µ" [0.76µm] gold plating over nickel on mating area and tin-lead or tin plating over nickel on PCB termination
Shell	Steel; Nickel plated

Ground Clips	Steel; Tin plated
Nuts	Brass; Bright zinc plated
Screw-Locks	Steel; Nickel plated

ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS

Current Rating	1.5 Amp maximum/contact (single contact) 0.5 Amp maximum/contact (34 contacts energized) 0.3 Amp maximum/contact (68 contacts energized)	Insulation Resistance	500 MΩ minimum
Contact Resistance	60mΩ maximum	Rated Voltage	30 V rms
		Operating Temperature	-55°C to +85°C
		Durability	2000 mating cycles

TECHNICAL SPECIFICATIONS / ISOMETRIC VIEWS

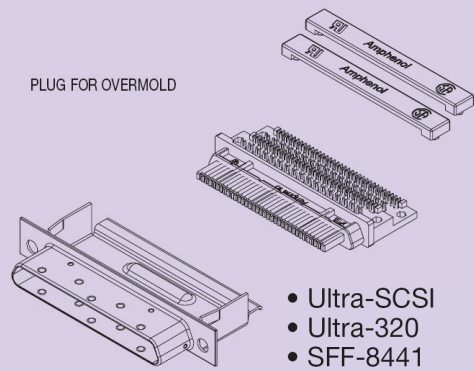


TOLERANCE: ± 0.005 [± 0.13] DIMENSIONS TO BE USED AS REFERENCE ONLY PLEASE REFER TO SALES DRAWINGS FOR DETAILED DIMENSIONS SPECIFICATIONS SUBJECT TO CHANGE

VHDCI

PLUG

VHDCI Very High Density Cable Interconnect provides interconnections where space limitations and high performance are key requirements. Designed to be compact, these fully shielded connectors support ESD/EMI protection, are capable of transferring data up to 80 Gbps and meet EIA700A0AF specifications. Plugs are available without a back shell for over-molding purposes.



APPLICATIONS

- Ultra-SCSI
 - Ultra-320
 - SFF-8441
 - EA1700A0AF
-
- RAID
 - Disk Drives/Systems
 - Servers
 - SANs (Storage Area Networks)
 - Routers

ORDERING INFORMATION

Contact Amphenol for additional options

VHDCI Plug

H12 - XXX - XXX

VHDCI PLUG KIT (IDC contacts)

STYLE _____

PBA - Overmolding Purpose (No Back Shell)

SHELL OPTIONS

100 - No Back Shell (For Overmolding)*

NOTES

* No Back Shell Option for PBA Style

www.vhdci.com

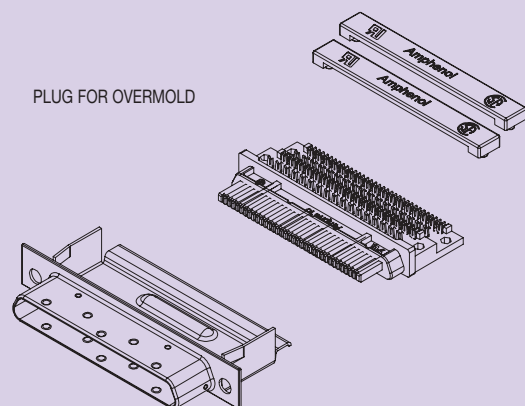
MATERIAL SPECIFICATIONS

Plug Insulator	LCP Flammability rating – UL94V-0
Contacts	Phosphor bronze; 3μ" [0.076μm] gold flash over palladium-nickel on mating area and tin-lead plating over nickel on termination area
Strain Relief	PBT; Flammability rating – UL94V-0
Front Shell	Steel; Tin-lead plated

ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS

Current Rating	1.5 Amp maximum/contact (single contact)	Insulation Resistance	500 MΩ minimum
	0.5 Amp maximum/contact (34 contacts energized)	Rated Voltage	30 V rms
	0.3 Amp maximum/contact (68 contacts energized)	Operating Temperature	-55°C to +85°C
Contact Resistance	60mΩ maximum	Durability	2000 mating cycles

ISOMETRIC VIEWS



SPECIFICATIONS SUBJECT TO CHANGE

SFP

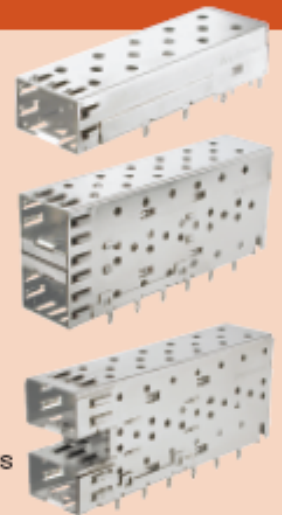
SINGLE PORT MULTI-PORT GANGED

SFP Amphenol's SFP connector series is a 20 position connector and cage combo for mounting to a host PCB with a metal cage enclosing the connector. These connectors are similar to the Gigabit Interface Converter Interface (GBIC), but they are smaller in size and operate at much faster data transfer rates. Amphenol single port version is rated up to 4.125 Gbps data rates and stacked version up to 8 Gbps. They are available in standard RoHS compliant or non-RoHS compliant versions. The cages are a one-piece construction with enhanced transceiver mating tabs presently available in press-fit version, with solder version and longer or shorter pins available as custom options. Amphenol Canada plans to have a full suite of SFP, XFP and next generation pluggable modules connectors and cages available in the near future.

- Fibre Channel
- Gigabit Ethernet
- InfiniBand™

APPLICATIONS

- Servers
- Routers
- Storage Devices
- Switches
- Optical Devices
- Networking Devices



ORDERING INFORMATION

Contact Amphenol for additional options



SFP Electrical Connector

(non-RoHS) U75
(RoHS) UE75 - A XX - X 000 T

SIZE
20 = 20 Position - SFP
30 = 30 Position - XFP

PACKAGING
T = Tape & Reel

CONTACT PLATING
(Mating end / Solder tails)

For U75 (non-RoHS)

1 = 30 u" Gold / Sn-Pb
4 = 15 u" Gold / Sn-Pb

For UE75 (RoHS)

2 = 30 u" Gold / Gold Flash
3 = 30 u" Gold / Matte Tin
5 = 15 u" Gold / Gold Flash
6 = 15 u" Gold / Matte Tin



SFP Single Row Cages U77 - A X X 1 X - X X 0 X

CAGE TYPE
A = Single Row
C = Single Row + Light Pipe
E = Single row + Heat Sink

PORTS
1 = 1x1 Port
4 = 1x4 Ports
6 = 1x6 Ports

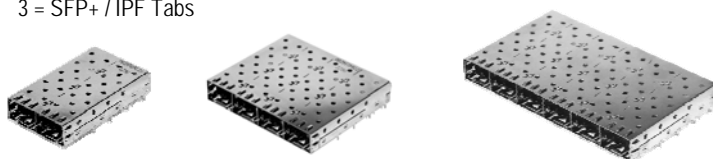
CAGE GROUNDING
1 = Tab Grounding
2 = Enhanced EMI Tabs
3 = SFP+ / IPF Tabs

PACKAGING
1 = Tray
T = Tape & Reel (1x1 and 1x2 Only)

OPTIONAL DUST COVER
0 = Without Dust Cover
D = With Dust Cover

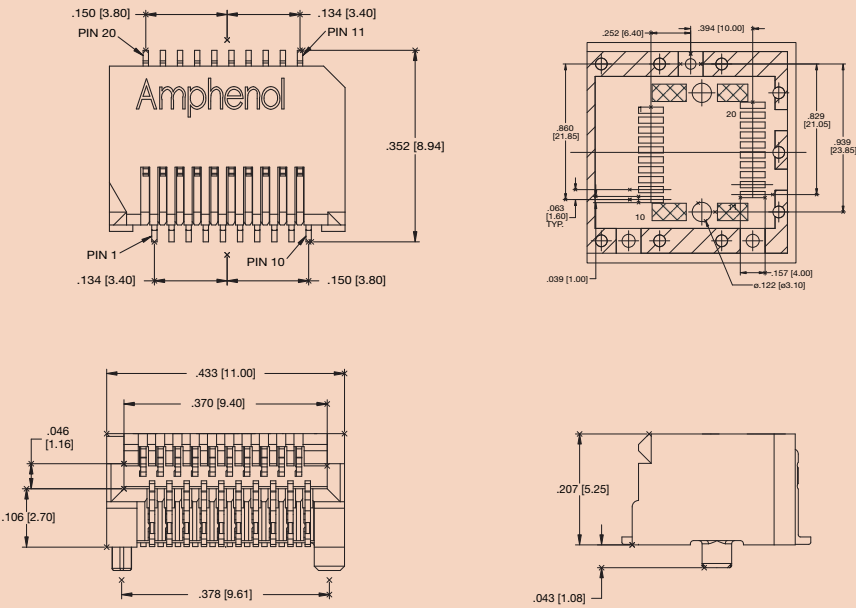
PLATING
1 = Tin
2 = Nickel

CAGE MOUNTING
1x1 Cage (Single Port):
2 = 20 Solder Pins 1.2mm
3 = 20 Solder Pins 3.3 mm
4 = 20 Solder Pins 1.8mm
8 = 8 Press Fit / 12 EMI Pins
1xN Cage (Multiport):
0 = Press Fit, No Rear Compliant Pins
4 = Pres Fit, With resr Compliant Pins

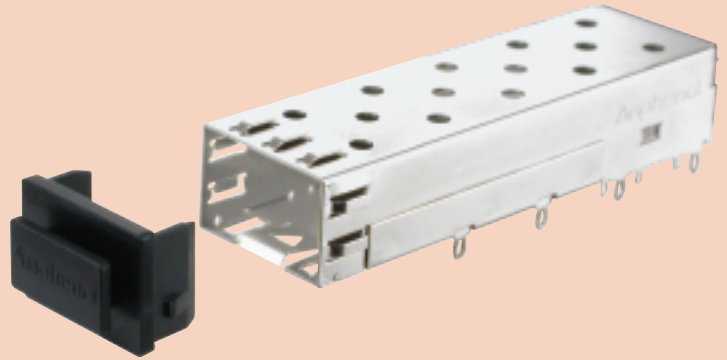
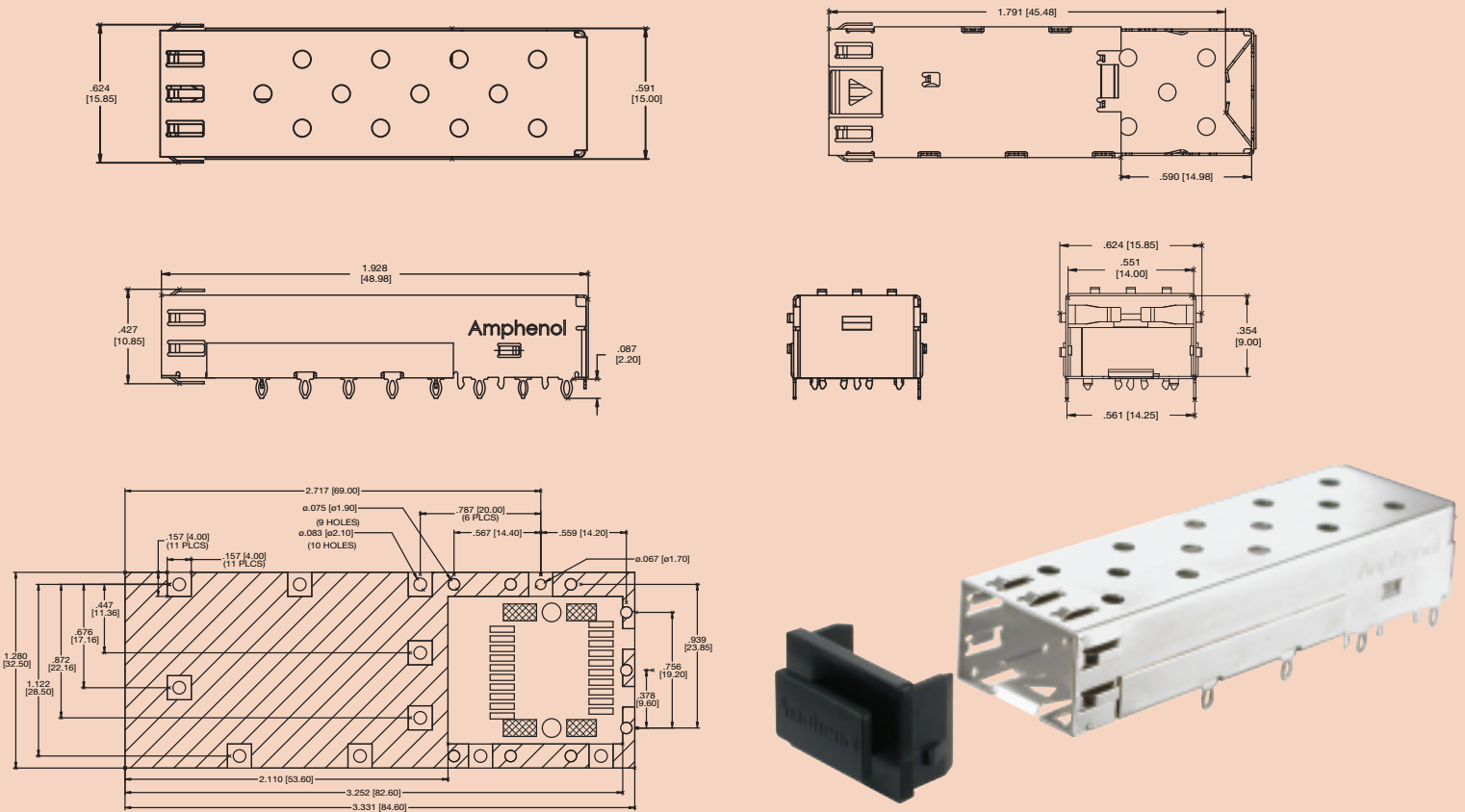


www.sfpconnectors.com

CONNECTOR, SINGLE



CAGE, SINGLE

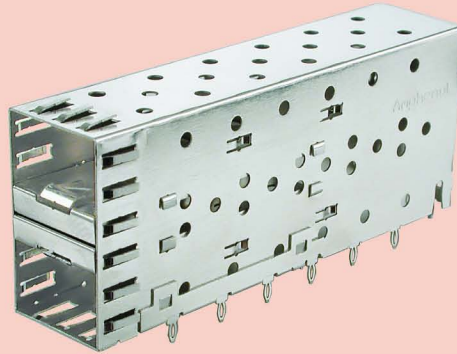


MATERIAL SPECIFICATIONS

Connector	Lead free solder reflow process compatible LCP, UL94V-0 rated, black
Contacts (mating area)	Phosphor bronze; 30µ" or 15µ" gold plating over 50µ" nickel on mating area
Contacts (PCB termination)	Tin-lead plating over 50µ" nickel
Cage	Copper alloy 150µ" nickel plating or 100µ" matte tin plating over 50µ" nickel under plating
Dust Cover	Black thermoplastic

ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS

Current Rating	0.5 Amps maximum/contact	DWV	300 VAC
Contact Resistance	35mΩ maximum	Operating Temperature	-55°C to +85°C
Insulation Resistance	1000MΩ minimum	Durability	250 mating cycles minimum (for 30µ" gold)
Differential Impedance	100Ω		



ORDERING INFORMATION

Contact Amphenol for additional options

SFP Stacked (cage & connector combo) U78 - BXX X X - XX X X X

OF PORT ACROSS

- B11 = 1 over 1
- B21 = 2 over 2
- B41 = 4 over 4
- B61 = 6 over 6

MOUNTING STYLE

- 2 = Press Fit

CAGE STYLE

- 6 - Standard (Belly-to-Belly, Standard profile)

OPTIONS

- 00 - Standard
- 0D - With Removable Dust Cover

PACKAGING

- 1 - Tray

PLATING FOR CAGE

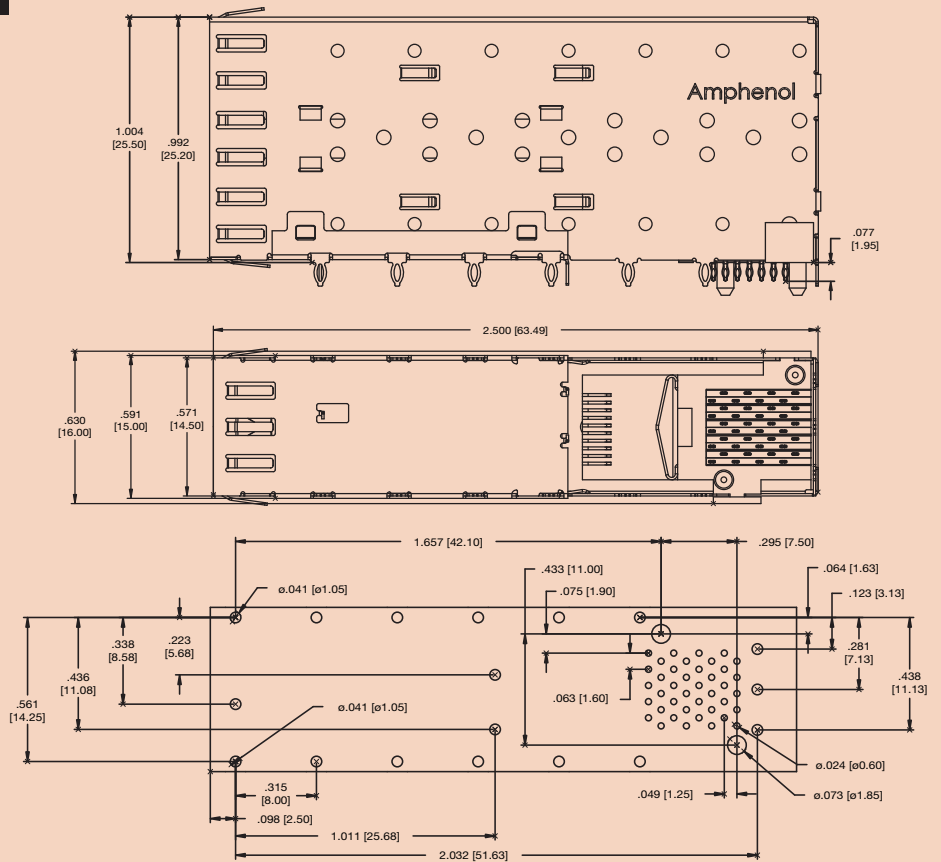
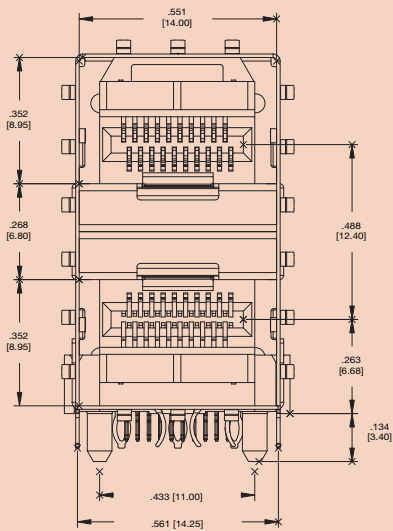
- 1 - Tin Plated
- 2 - Nickel Plated

PLATING FOR CONNECTOR

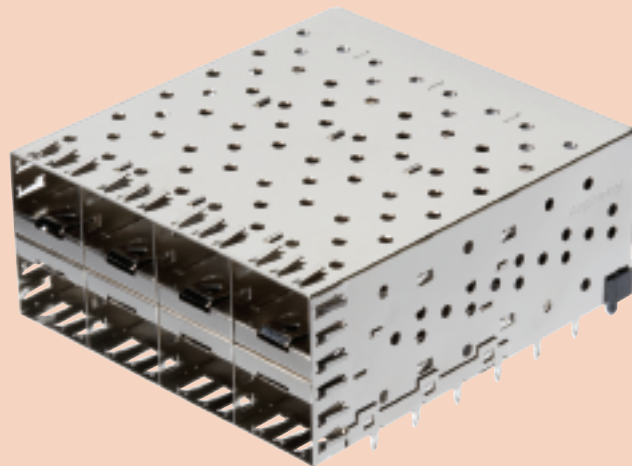
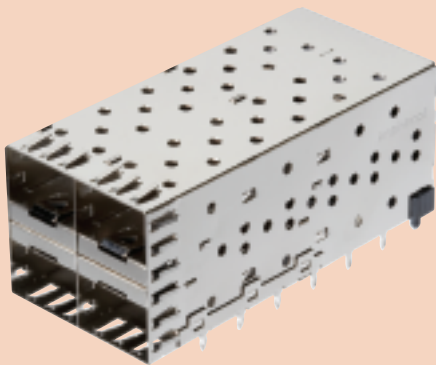
- (Mating End/Press Fit Terminations)
- 1 - 30µ" Gold plating / Sn/Pb plating
 - 4 - 15µ" Gold plating / Sn/Pb plating

www.sfpconnectors.com

2X1 STANDARD BELLY-TO-BELLY



2xN STACKED MULTI-PORT



ORDERING INFORMATION

Contact Amphenol for additional options

SFP Single Row Cage & Connector Combos

(non-RoHS) U78 - X X X 1 X - 0 X X X X
 (RoHS) UE78

CAGE TYPE

- A = Single Row
- C = Single Row + Light Pipe
- E = Single row + Heat Sink

PORTS

- 1 = 1x1 Port
- 2 = 1x2 Ports
- 4 = 1x4 Ports
- 6 = 1x6 Ports

CAGE GROUNDING

- 1 = Tab Grounding
- 2 = Enhanced EMI Tabs
- 3 = SFP+ / IPF Tabs

CAGE MOUNTING

1x1 Cage (Single Port):

- 2 = 20 Solder Pins 1.2mm
- 3 = 20 Solder Pins 3.3 mm
- 4 = 20 Solder Pins 1.8mm
- 8 = 8 Press Fit / 12 EMI Pins

1xN Cage (Multiport):

- 0 = Press Fit, No Rear Compliant Pins
- 4 = Pres Fit, With resr Compliant Pins

PACKAGING

- T = Tape & Reel (Cage & Connector)*
- H = Tray for cage
- T&R for Connector

PLATING OPTIONS FOR CAGE

- 1 = Tin
- 2 = Nickel

PLATING OPTIONS FOR CONNECTOR

(Mating end / Solder tails)

For U78 (non-RoHS)

- 1 = 30 u" Gold / Sn-Pb
- 4 = 15 u" Gold / Sn-Pb

For UE78 (RoHS)

- 2 = 30 u" Gold / Gold Flash
- 3 = 30 u" Gold / Matte Tin
- 5 = 15 u" Gold / Gold Flash
- 6 = 15 u" Gold / Matte Tin

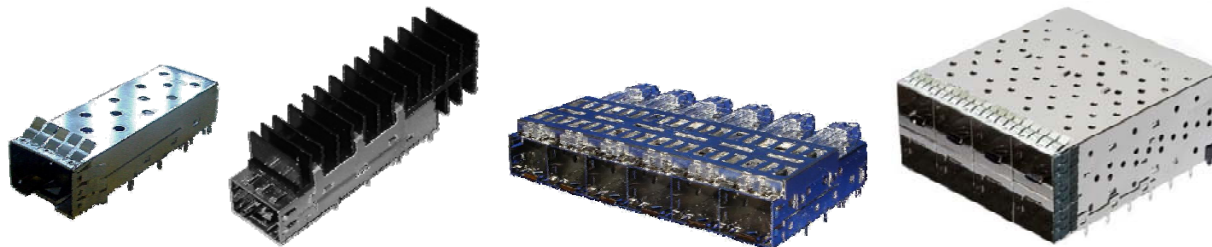
OPTIONAL DUST COVER

- 0 = Without Dust Cover
- D = With Dust Cover

*T&R Cage Packaging only available for 1x1 and 1x2 cages

www.sfpconnectors.com

For custom designs contact Sales.



www.sfpconnectors.com

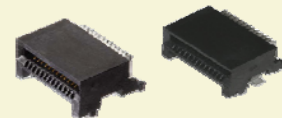
MINI-SAS

FS SERIES

Amphenol's latest addition to the high speed family, this connection system of the Compact MultiLane Connector is based on industry proven card edge style contacts.

This connector system is designed to satisfy the needs for gigabit serial data transmission applications with signal speeds across the connector interface at speeds of up to 10 Gigabits/second on both rows of contacts.

The cage is mounted separately to the body so that the stress imposed by insertion and removal of the cable plug does not affect the signal/body solder joints.



- SFF-8086
- SFF 8087
- SFF-8088

APPLICATIONS

- Servers
- Routers
- Storage Devices



ORDERING INFORMATION

Contact Amphenol for additional options

FS Series Part Numbers

Connector

FS1 - R XX - X 00 X

Type

R = Receptacle

Size

26 = 26 Position

38 = 38 Position (PCIe)

Mounting

0 = SMT Tails

1 = SMT Tails and
SMT Retention Tabs

Plating

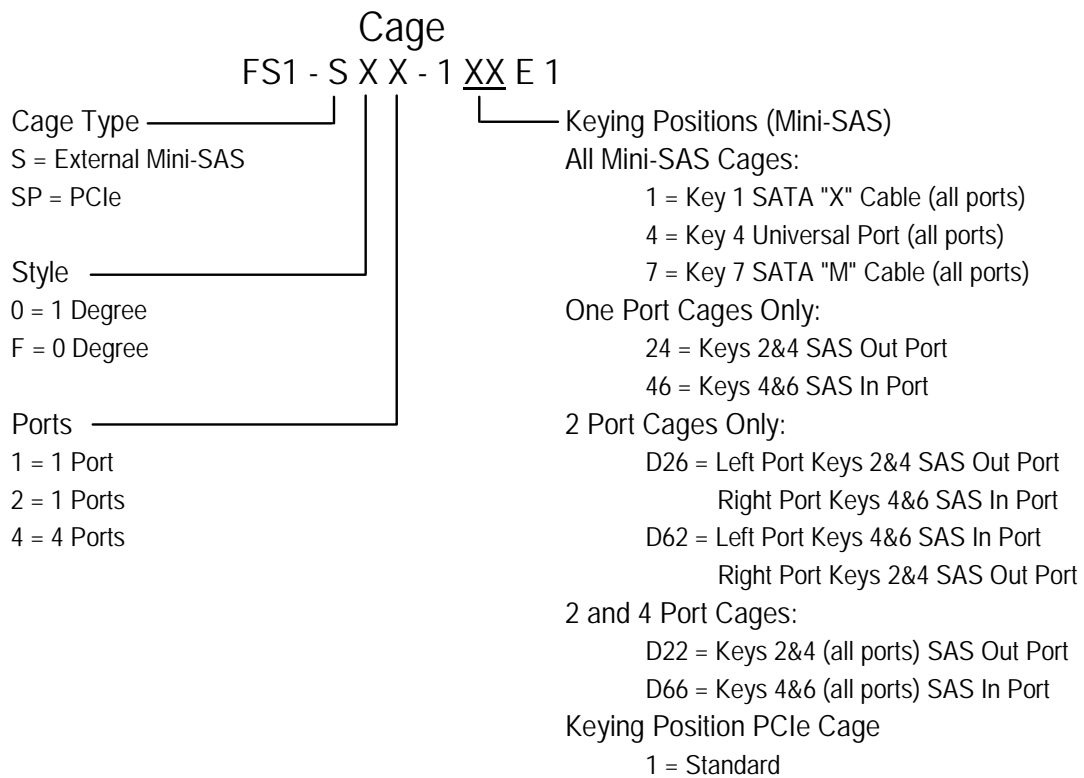
2 = 30 Microinches Gold

3 = 15 Microinches Gold

www.mini-sas.com

ORDERING INFORMATION

Contact Amphenol for additional options



MATERIAL SPECIFICATIONS

Cage	Zinc diecast shell with 150µ" of nickel plating EMC gasket: elastomer, UL94V-0 rated
Cover	Copper alloy with 150µ" of nickel plating
Housing	Solder reflow process compatible LCP, UL94V-0 rated
Contacts	Phosphor bronze
Plating	30µ" gold over 50µ" nickel in contact areas; 100µ" matte tin over 50µ" nickel in solder areas

PERFORMANCE

Electrical	0.5 Amps maximum/contact
Mechanical	250 Mating cycles minimum

www.mini-sas.com

HI SPEED CONNECTORS

For more information about INFINITY (4X/12X),
VHDCI, SFP, Mini-SAS or other High Speed products,
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