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Molex launches the first complete zSFP+ Interconnect System for 25 Gbps serial channels, delivering unparalleled signal integrity with superior EMI protection for next-generation Ethernet and Fibre Channel applications

Molex's complete zSFP+ connector solutions support 25 Gbps applications, with backward compatibility for 10 Gbps Ethernet and 16 Gbps Fibre Channel applications. The zSFP+ connector shares the same mating interface and EMI cage dimensions as the SFP+ form factor.

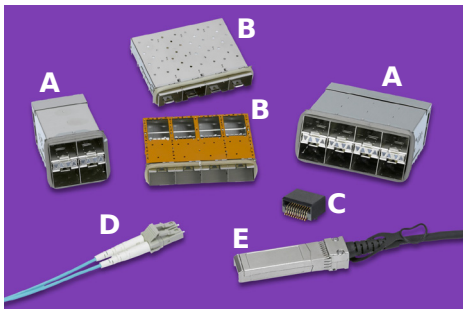
zSFP+ SMT 20-circuit connectors and cage assemblies provide excellent signal integrity and Electro Magnetic Interference (EMI) protection. Single-port and 1x ganged cages are available to support multiple-port-count applications. Single-port cages feature press-fit, solder-post and PCIe (1°) versions. The cages provide options for use with various board thicknesses and assembly processes to accommodate server and switch applications at a cost comparable to SFP+ cages.

The press-fit tails accommodate belly-to-belly applications for both single and ganged cages to ensure the best use of PCB space. Cages offer optional rear- and side-mounted lightpipe cover assemblies to allow for flexibility of PCB signal routing for light emitting diodes (LEDs).

LC duplex cable assemblies, with optical mode 3 and 4 (OM3, OM4) fiber, are used with zSFP+ optical modules. LC duplex assemblies offer a high-performance interconnect solution with customization options for cable length and strain-relief boots including straight, 45° and 90°. LC duplex cables with OM3 and OM4 fiber offer enhanced launch bandwidth required in next-generation zSFP+ devices. Contact Molex to specify custom cable lengths and labeling. LC loopback assemblies provide a stable and convenient means for testing SFP and SFF devices in many applications.

zSFP+ (Small Form-factor Pluggable Plus) 25 Gbps Interconnect System

170382	zSFP+ SMT 20 Circuit Connectors
111111	zSFP+ Ganged Cages
170071 **171224**	zSFP+ Stacked, Ganged Integrated Connectors and Cages
Custom	LC Duplex Custom Cable Assemblies
106052	LC Loopback Asssemblies



zSFP+ Interconnect System

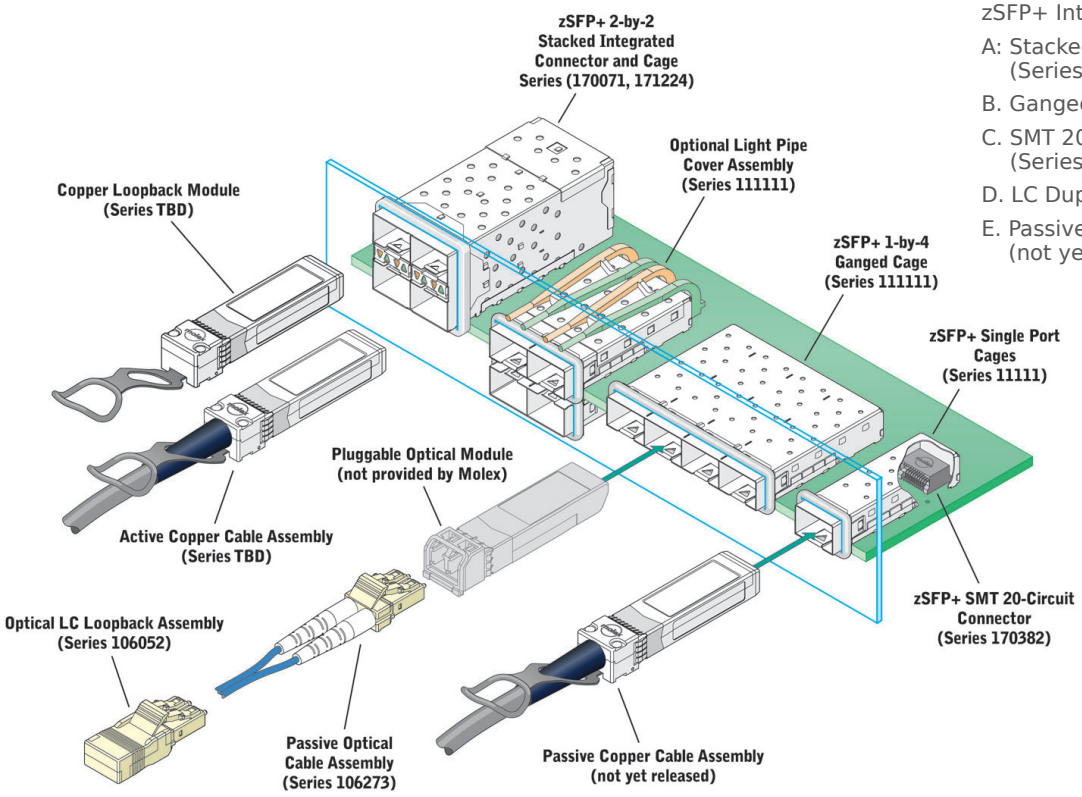
A: Stacked Integrated Connector and Cage (Series 170071)

B. Ganged Cage (Series 111111)

C. SMT 20-Circuit Connector (Series 170382)

D. LC Duplex Custom Cable Assemblies

E. Passive Copper Cable Assembly (not yet released)



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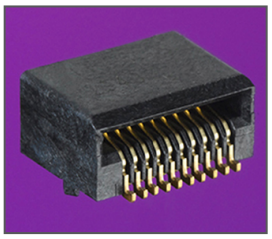
zSFP+ (Small Form-factor Pluggable Plus) 25 Gbps Interconnect System

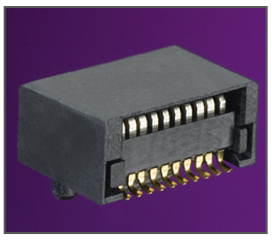
170382 zSFP+ SMT 20-Circuit Connector

Features and Benefits

Patent-pending preferential coupling design uses a narrow-edge, coupled, blanked- and formed-contact geometry and insert molding	Superior signal integrity (SI), mechanical and electrical performance
Capable of handling 25 Gbps data rates	Supports current 10 Gbps Ethernet and 16 Gbps Fibre Channel applications with additional margin without changing the host board design (for the SMT version)
Backward compatible with SFP+ form factor connectors	Ensures the same PCB footprint, mating interface and EMI cage dimensions
Utilizes industry-standard footprint	Can be used as a drop-in replacement for current SFP+ designs
High-temperature thermoplastic housing	Withstands lead-free processing
Second sourced by TE Connectivity	Provides a fully tested, intermateable solution with performance compatibility



zSFP+ SMT 20-Circuit Connector
Front View (Mating Side)



zSFP+ SMT 20-Circuit Connector
Back View

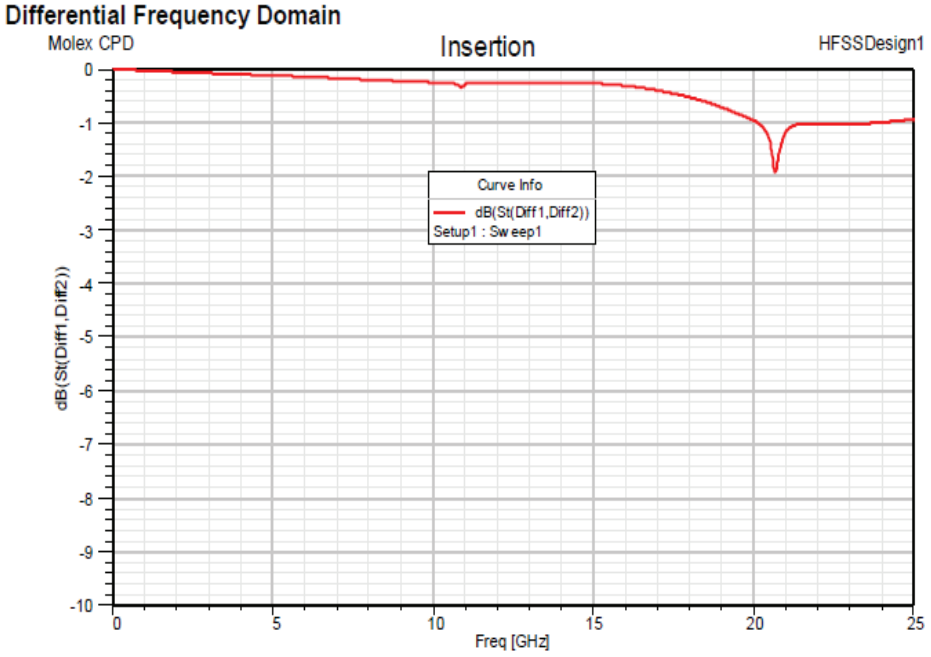
SPECIFICATIONS

Reference Information
Packaging: Tape and Reel
Mates With:
zSFP+ and SFP+ Pluggable Modules
Use With: 111111 series
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes

Electrical
Voltage (max.): 30V AC (RMS)/DC
Current (max.): 0.5A

Mechanical
Mating Force: 25N
Durability (min.): 250 cycles

Physical
Housing:
High-Temperature Thermoplastic
Glass Filled, UL 94V-0 Black
Contact: Copper Alloy
Plating:
Contact Area — 15 and 30µ" Gold
Solder Tail Area — Tin
Underplating — Nickel
Operating Temperature: -40 to +85°C



Reference results - Frequency Domain
Note: Insertion Loss is clean to 20 GHz

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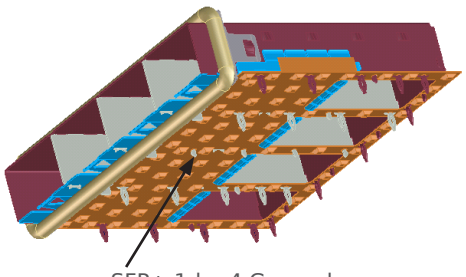
zSFP+ (Small Form-factor Pluggable Plus) 25 Gbps Interconnect System

111111 zSFP+ Ganged Cage

Features and Benefits

Newly designed EMI belly shield	Provides superior EMI shielding effectiveness over the SFP+ cage
Ganged cages are available with either 360° elastomeric gaskets or spring fingers	Elastomeric gaskets provide the most effective EMI shielding effectiveness and utilize a larger bezel cutout, allowing for tolerance stack up in high-port-density applications for easier assembly. Spring fingers require 1.25mm less space between adjacent cages than cages with elastomeric gaskets, enabling increased density
Staggered press-fit pins accommodate belly-to-belly applications	Maximizes PCB space by allowing the use of both sides of the PCB
Identical mechanical size as existing SFP+ cages	Customers can use current SFP+ application tooling in existing manufacturing processes. Provides backward-compatible legacy system connections
Single-port cages available in press-fit, solder-post and PCIe (1°) versions; ganged cages available in a press-fit version	Enables use with various PCB board thicknesses and assembly processes
Ganged cages available with two, four or six ports	Provides multiple design options
Optional rear and side-mounted lightpipe cover assemblies	Allow for flexibility of PCB signal routing of LEDs. Provides port status and activity feedback to the user or other customer-specific activity
Second sourced by TE Connectivity	Provides a fully tested, intermateable solution with performance compatibility



zSFP+ 1-by-4 Ganged Cage bottom view showcasing EMI belly shield

SPECIFICATIONS

Reference Information

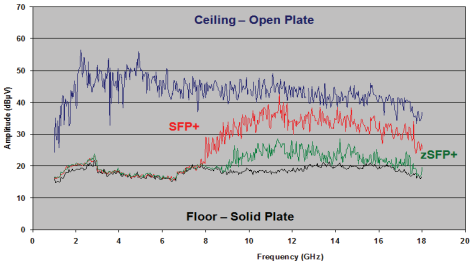
Packaging: Tray
Mates With:
zSFP+ , SFP+ and SFP Pluggable Modules
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes

Mechanical

Unmating Force (max.): 11.5N
Durability (min.): 100 cycles

Physical

Cage: Nickel Silver
Plating: 1.27 to 3.81µ Preplated Nickel
PCB Thickness (min.):
1.57mm single sided applications
Operating Temperature: -40 to +85°C



Shielding Effectiveness Comparison

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zSFP+ (Small Form-factor Pluggable Plus) 25 Gbps Interconnect System

170071 zSFP+ Stacked, Ganged Integrated Connectors and Cages with Elastomeric Gasket

171224 zSFP+ Stacked Ganged Integrated Connectors and Cages with Metal Spring Fingers

Features and Benefits

Next-generation terminal and host footprint design	Provides superior signal integrity (SI), mechanical and electrical performance and greatly reduced resonance over current SFP+ cages
Up to 25 Gbps data-rate performance	Supports current 10 Gbps Ethernet and 16 Gbps Fibre Channel applications and will meet future 25 Gbps data-rate requirements
Stacked integrated connector and cage	Offers compact space savings and ease-of-processing in press-fit applications . Eliminates reflow assembly
Accepts industry-standard cables and modules	Supports legacy infrastructure
Internal vertical Electro Magnetic Interference (EMI) shield	Provides unparalleled EMI reduction performance; approaches noise floor
Metal-finger version is laser spot welded	Increases retention of the fingers to the cage during panel insertion
Low-profile metal-finger version	Allows for tighter cage-to-cage pitch. Profile height is slightly lower than standard version
Second sourced by TE Connectivity	Provides a fully tested, intermateable solution with performance compatibility

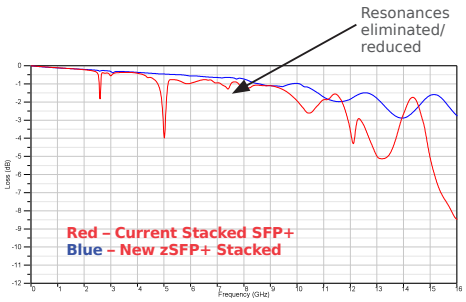
SPECIFICATIONS

Reference Information
Packaging: Tray
Mates With:
  zSFP+ and SFP+ Pluggable Modules
Designed In: Millimeters
RoHS: Yes
Halogen Free: Yes

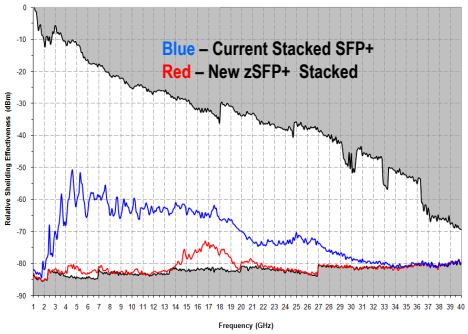
Electrical
Voltage (max.): 30V AC (RMS) /DC
Current (max.): 0.5A
Dielectric Withstanding Voltage: TBD

Mechanical
Insertion Force to PCB (max.): 35N
Mating Force (max.): 40N
Unmating Force (max.): 11.5N
Durability (min.): 100 cycles

Physical
Cage: Nickel Silver
Housing:
  Glass filled thermoplastic, UL 94V-0, Black
Contact:
  High-Performance Copper Alloy
Plating:
  Contact Area (min.) — 0.76µ Gold (Au)
  Solder Tail Area — 0.76 to 1.52µ Matte Tin
  Underplating — Nickel
PCB Thickness (min.): 1.57mm
Operating Temperature: -40 to +85°C



Typical Insertion Loss (IL) curve



Shielding effectiveness comparison

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zSFP+ (Small Form-factor Pluggable Plus) 25 Gbps Interconnect System

Custom LC Duplex Custom Cable Assemblies

106052 LC Loopback Assemblies

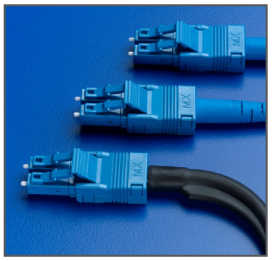
Features and Benefits

zSFP+ Optical LC Duplex Custom Cable Assemblies

Laser-optimized OM3 and OM4 50/125µm fiber	Supports high data rates and long distances, (OM4 fiber over 100m)
Multiple strain-relief boot options include straight, 45° and 90°	Provide design flexibility
Standard cable construction is 2.00mm aqua zipcord; single-boot versions offer a simplex cable with two, 900µm buffered fibers as an alternative cable	Provides duplex connectivity while optimizing cable-routing space
Tunable connector	Optimizes insertion loss performance
Meet EIA-TIA and FOCIS 10 standards	Compliant with MSA devices

zSFP+ Optical LC Loopback Assemblies, Series 106052

Designed to test Small Form Factor (SFF) and Small Form factor Pluggable (SFP) devices	Ensures quality performance in numerous applications
Compact size	Allows for testing of ganged devices with no interference
Contoured body design	For easy insertion and removal of the loopback
Available in singlemode and multimode versions	To accommodate a range of testing applications



LC Duplex Custom Cable Assemblies (with custom boots)

LC Duplex Custom Cable Assemblies (with standard boot)

LC Loopback Assembly

SPECIFICATIONS

LC Duplex Custom Cable Assemblies: Reference Information
Packaging: Bag
Designed In: Millimeters
Mates With:
LC Duplex Adapters (Series 106125, 106126, 106127, 106127)

Mechanical
Mating Durability:
Insertion Loss <0.2dB change over 200 cycles

Physical
Ferrule: Zirconia Ceramic
Housing and Boot:
UL 94V-0 Rated Polymer
Alignment Sleeves:
Zirconia Ceramic or Phosphor Bronze
Operating Temperature:
-40 to +85°C

LC Loopback Assemblies: Reference Information
Insertion Loss: <2.0dB (1.0dB typical)
Return Loss: Singlemode >50dB
Wavelength:
Singlemode 1300 or 1550nm
Multimode 850 or 1310nm

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zSFP+ (Small Form-factor Pluggable Plus) 25 Gbps Interconnect System

Applications

- Telecommunication and Datacommunication equipment
  - Switches, routers, hubs
  - Central office, cellular infrastructure and multiplatform service systems (DSL, Cable Data)
  - Storage

Ordering Information

zSFP+ SMT 20-Circuit Connector

Order No.	Contact Area Plating	Solder Tail Area Plating
170382-0001	15µ" Gold	Tin
170382-0002	30µ” Gold	

zSFP+ Ganged Cage

Order No.	Component	Port Size
111111-0410	Caged Assembly	1-by-4
111111-0041	Lightpipe Cover	

zSFP+ Stacked, Ganged Integrated Connectors and Cages

Order No.	Port Size	EMI Containment Style
170071-10XX*	2-by1	Elastomeric Gasket
170071-20XX*	2-by-2	
170071-40XX*	2-by-4	
170071-60XX*	2-by-6	
170071-80XX*	2-by-8	
171224-10XX	2-by1	Metal Finger
171224-20XX	2-by-2	
171224-40XX	2-by-4	
171224-60XX	2-by-6	
171224-80XX	2-by-8	

*Denotes lightpipe information:
-1001, -2001, -4001, -6001, -8001 = no lightpipe; -1011, -2011, -2012, -2013 = 2 per port; -1012, 2012, 4012, 6012, 8012 = 1 per port (inner); 1013, 2013, 4013, 6013, 8013 = 1 per port (outer)

LC Duplex Custom Cable Assemblies

Order No.	Component
Custom, contact Molex	Custom LC Duplex Cable Assemblies

LC Loopback Assemblies (Series 106052)

Order No.	Component	Mode	Fiber
106052-0010	LC	Multimode	50/125µm
106052-0030		Singlemode	9/125µm

www.molex.com/link/zsfp+.html