

## zSFP+ 28 Gbps Pluggable I/O Interconnect

The zSFP+ interconnect is currently one of the fastest single-channel I/O connectors on the market today, transferring data at 28 Gbps with possible expansion to 40 Gbps. Through a design that is backward-compatible to SFP/SFP+ products, the interconnect is hot-swappable with existing SFP+ connectors for fast system upgrades of 28-40 Gbps. Alternatively, users can design-in the zSFP+ connector for 10-16 Gbps data rates, establishing a progressive path to higher speeds—an upgradeability that can result in long-term cost savings as this would eliminate the need to fully redesign for higher performance.

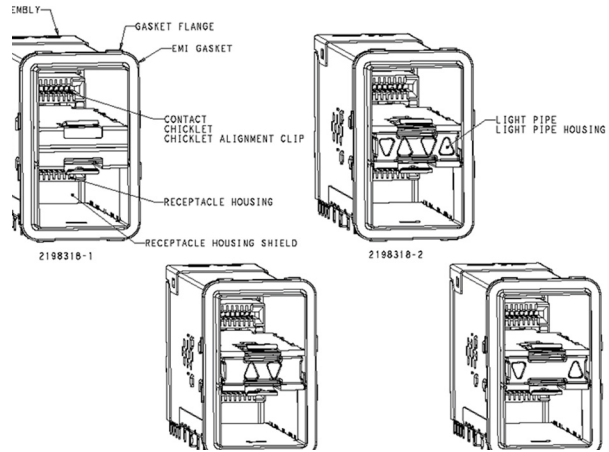
The zSFP+ interconnect is compliant to SFF-8402 and has been adopted for Fibre Channel 32G (28.05 Gbps line rate). The entire product family is offered as a dual source option with Molex Incorporated.

**FEATURES**

- **Data Rates:** 28 Gbps (with possible expansion to 40 Gbps), 10 Gbps Ethernet and 16 Gbps Fibre Channel
- Surface-mount connector design for single high 1xN cages
- Press-fit 1xN cages and stacked assemblies (connector and cage) for one-step, easy PCB placement
- Coupled, narrow-edged, blanked- and formed-contact beam geometry and insert molding for superior signal integrity, mechanical and electrical performance
- Backwards-compatibility: Shares same mating interface and cage dimensions with the SFP+ connector (connector/single high cages are also PCB footprint-compatible)
- Elastomeric gasket or spring finger options for EMI containment
- Single high cages (1xN) for design flexibility; accommodates belly-to-belly applications for increased density and PCB space savings; available in 1x1, 1x2, 1x4 or 1x6 port configurations
- Stacked assemblies offered in 2x1, 2x2, 2x4, 2x6, 2x8 or 2x12 port
- Heat sinks, LEDs and plating choices offered

**APPLICATIONS**

- **Telecommunications:** Cellular infrastructure, central office uplink equipment, optical transport equipment, switches/routers, access equipment (CMTS, PON, DSL, etc)
- **Data Center:** Data center switches and routers, servers, storage
- **Medical:** Medical diagnostic equipment
- **Networking:** Network interface, switches, routers
- **Test and Measurement Equipment**



**20-Pin Surface-Mount Connector**

**Electrical**

- Voltage (max.): 120V AC
- Current (max.): 0.5A
- Dielectric Withstanding Voltage: 300V AC between contacts

**Mechanical**

- Mating Force: 25N
- Unmating Force: 11.5N
- Durability (min.): 250 cycles

**Physical**

- High-temperature thermoplastic housing (glass-filled, UL 94V-0 black)
- High-performance copper alloy contacts
- Plating:
  - Nickel underplating; Tin plating on solder tail area; Gold plating on mating area
  - Plating options: 15 and 30 μ" Gold or Palladium Nickel
- Operating Temperature: -40 to +85C



Differential Return Loss





Connector P/N	EMI Suppression	Light Pipe Option	1X1	1X2	1X4	1X6
2170088-1 (30 μ" in Au or Au Flash Over PdNi); 2170088-2 (15 μ" in Au or Au Flash Over PdNi)	EMI gasket	No	2198709-1	2198720-1	2198722-1	2198724-1
		Yes	2198708-1	2198719-1	2198721-1	2198723-1
2170088-1 (30μ" in Au or Au Flash Over PdNi); 2170088-2 (15μ" in Au or Au Flash Over PdNi)	EMI Spring Fingers	No	2274001-1	2227728-1	2227730-1	2227732-1
		Yes	2274000-1	2227727-1	2227729-1	2227731-1

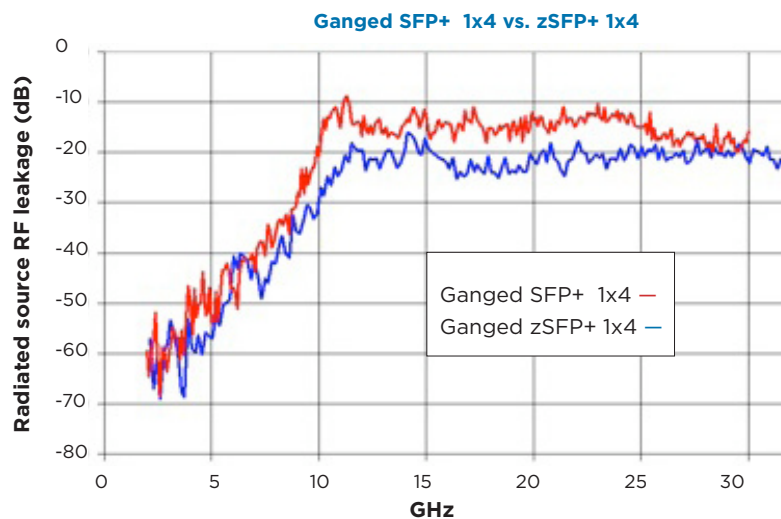
### Ganged 1xN Cages

#### Mechanical

- Transceiver insertion force (max.): 34 N without heat sink and clip; 45.37 N with heat sink and clip
- Transceiver extraction force (max.): 12.5 N without heat sink and clip; 14.36 N with heat sink and clip
- Cage press fit insertion force (max.): 44.5 N for single port cage, 54.3 N for ganged cage
- Cage press fit extraction force (min.): 8.9 N for single port and ganged cages
- Durability (min.): 100 cycles

#### Physical

- Cage material: Nickel Silver
- PCB thickness (min.): 1.50mm in single sided applications; 2.25mm (EMI springs) or 3.0mm (elastomeric gasket) in belly-to-belly applications
- Operating Temperature: -40 to +85C



Stacked 2xN Assemblies

Electrical

- Voltage (max.) 120V AC
- Current (max.) 0.5A
- Dielectric Withstanding Voltage: 300V AC between contacts

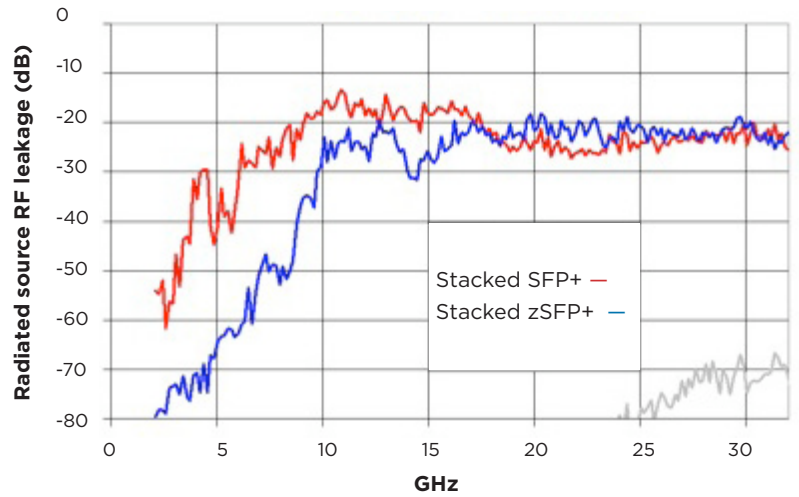
Mechanical

- Durability (min.): 100 cycles

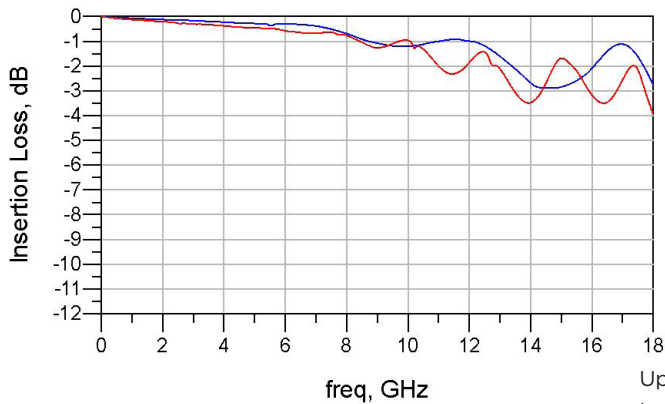
Physical

- Cage material: Nickel Silver
  - High-temperature thermoplastic housing (glass-filled, UL 94V-0 black)
  - High-performance copper alloy contacts
  - Plating: Nickel underplating; Tin plating on solder tail area; 30 μm Gold plating on mating area
- PCB thickness (min.): 1.57mm
- Operating Temperature: -40 to +85C

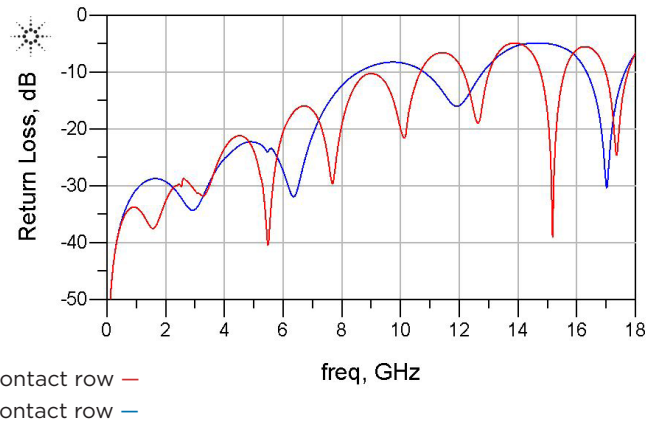
Stacked SFP+ vs. zSFP+



Differential Insertion Loss



Differential Return Loss



EMI Suppression	Light Pipe Configuration	2x1	2x2	2x4	2x6	2x8
		2198318-(x)	2198325-(x)	2180324-(x)	2198339-(x)	2198346-(x)
EMI gasket	None	2198318-1	2198325-1	2180324-1	2198339-1	2198346-1
	All 4	2198318-2	2198325-2	2180324-2	2198339-2	2198346-2
	Inner	2198318-3	2198325-3	2180324-3	2198339-3	2198346-3
	Outer	2198318-4	2198325-4	2180324-4	2198339-4	2198346-4
EMI spring fingers	None	2198318-5	2198325-5	2180324-5	2198339-5	2198346-5
	All 4	2198318-6	2198325-6	2180324-6	2198339-6	2198346-6
	Inner	2198318-7	2198325-7	2180324-7	2198339-7	2198346-7
	Outer	2198318-8	2198325-8	2180324-8	2198339-8	2198346-8

Note: 2x12 configurations will be available shortly

## Related Documents:

### Product Specifications

- SMT Connector: 108-60099
- 1xN Single High Cages: 108-2364
- Stacked Cages: 108-2481

### Application Specification

- SMT Connector and Single High 1xN Cages: 114-13120
- Stacked Cages: 114-13319

## FOR MORE INFORMATION

### TE Technical Support Center

USA:	+1 (800) 522-6752
Canada:	+1 (905) 475-6222
Mexico	+52 (0) 55-1106-0800
Latin/S. America:	+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

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\*as defined [www.te.com/leadfree](http://www.te.com/leadfree)

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1-1773707-6 CIS LUG PDF 06/2013

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Тел: +7 (812) 336 43 04 (многоканальный)  
Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)