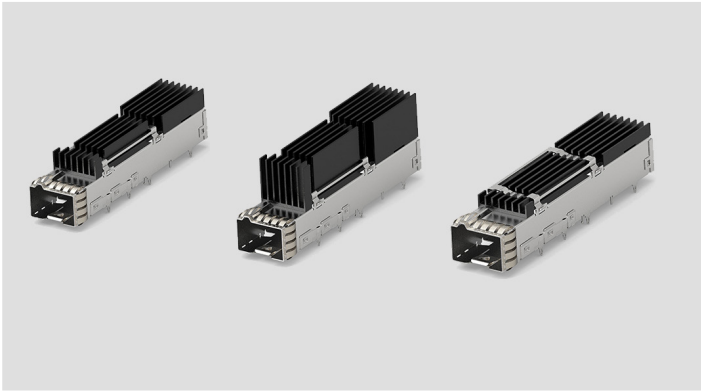
SMALL FORM-FACTOR PLUGGABLE DOUBLE DENSITY (SFP-DD) INPUT/ OUTPUT (I/O) INTERCONNECTS

TWO-LANE 28G NRZ or 56G PAM-4 I/O INTERCONNECT SOLUTION

Address your demand for port density and scalability in next generation applications with high-speed data transmission and better thermal management

NEXT GENERATION SFP SOLUTION



TE Connectivity's (TE) small form-factor pluggable double density (SFP-DD) products for I/O interconnect include cages, surface mount connectors and cable assemblies. This product portfolio is developed in accordance with the SFP-DD multi-source agreement (MSA) specification. SFP-DD is one of the smallest industry standard of small form-factor today which helps data center systems to enable doubled port density with faster data transfer rates and can offer mechanical interoperability for module components produced by different manufacturers.

The "double density" product line can offer two rows of electrical pins that can enable two-channel data transmission, instead of the traditional one-channel in an SFP architecture.

SFP-DD interconnect solutions can address server challenges generated by underpopulated lanes. They can be capable of being a natural complement to quad small form-factor pluggable double density (QSFP-DD) interfaces which are commonly utilized by top-of-rack (TOR) switch to address the evolving bandwidth demands, supporting networking to offer optimal performance by taking advantage of their high density.

SFF-DD connectors feature a 2-lane interface and can provide data rates up to 28G NRZ modulation or 56G PAM-4 modulation, up to 56 Gbps or 112 Gbps aggregate.

Our SFP-DD interconnect solution can offer superior thermal management with TE's innovative **thermal bridge technology**. According to MSA specification, SFP-DD interconnect solution can offer 3.5W thermal management (current SFP interconnect solution: 1.5W) with SFP-DD cages, having a longer structure to leave more space for heat dissipation.

SFP-DD INTERCONNECT SOLUTION OVERVIEW

Key Benefits

2-lane interconnect with higher density and better signal integrity

- Concept leverages QSFP-DD surface mount technology (SMT) design
- Compared to SFP28/SFP56 solution, density increases and speeds reach up to 200 Gbps via 2 channels, 2x better
- Designed for both 28G NRZ and 56G PAM-4 protocols, with a roadmap for 112G PAM-4

Backwards compatible

- SFP-DD cages and connectors are backwards compatible to existing SFP products, can provide an easy upgrade solution for existing SFP series applications

Space saving

- Free up more space of PCB and faceplate as compared to QSFP28/QSFP56 solution
- One port with upgraded functions: extend to two channels 28G NRZ and 56G PAM-4

Offer design flexibility with customized solutions and stacked configurations

- Support standard light pipe & heatsink
- Support customized light pipe & heatsink
- Support interleaved plate thermal bridge
- Available with solder tail & press fit cage
- Cable assemblies can be customized
- Stacked version design is in development

Compact and efficient interconnect

- Can address challenges generated by underpopulated lanes as a natural complement to QSFP-DD interfaces

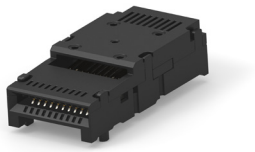
Superior thermal management can be realized

- Support interleaved plate thermal bridge

Featured Markets & Applications

- Networking
- Data center
- Wireless infrastructure
- Switches
- Servers
- Routers
- Storage equipment
- Base stations
- Other applications that requires high speed input/output data transmission

SFP-DD SMT CONNECTORS



Standard Part Number : 2325864-1

Belly-to-Belly Part Number : 2325864-2

Mechanical

0.8mm pitch

40-circuit SMT connector

Matting/Un-mating force:
40 N /30 N maximum

Durability : 100 Rate: max 12.7mm/min

Electrical

Voltage (max.): 30 VDC

Current (max.): 0.5A

Physical

Housing: LCP, Black, UL 94

V-0 Contact: Copper alloy

Plating: Contact Area — 0.762µm (15 or 30µ") Gold

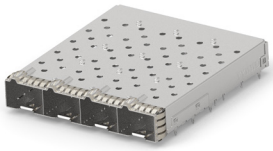
Solder Tail Area — Tin

Underplating — Nickel

PCB Thickness: 1.57mm/Single
sided; 2.2mm/Double sided

Operating Temperature: -55 to +85°C

SFP-DD CAGES



1X1 Cage

EMI spring version available now

Heat sink opening version available now

Standard version heat sink available now

Heatsink with light pipes in development

Support customized requirements

1XN Cage

1X6 & 1X8 in development

Other configurations
depend on request

1X4 Cage

EMI spring version available now

Heat sink opening version available now

Standard version heat sink in development

Heatsink with light pipes in development

Support customized requirements

GENERAL PART NUMBER OFFERING

CAGES

EMI Suppression	Light Pipe Option	Heatsink Option	Part Number				
			1x1	1x2	1x4	1x6	1x8
EMI Spring Fingers	*	No	2335809-1	**	2344508-1	2345214-1*	2364488-1*
	*	Optional (top cage open)	2335809-2*	**	2-2344508-1*	*	2364488-3*
	*	PCI	2359845-1	**	*	2365464-1*	
	*	SAN	2359845-2	**	*	2365464-2*	
	*	Networking	2359845-3	**	*	2365464-3*	
	*	Thermal Bridge	2359292-1*	**	*	*	

Tooling in process** * Not yet tooled but planned**

CONNECTORS

Part Number	Application
2325864-1	Standard
2325864-2	Belly-to-Belly

HEATSINK CLIP

Heatsink Clip	Light Pipe Option
1-2347515-1*	Single
1-2356211-1*	Dual
1-2348556-1*	No

CONNECT WITH US

Visit www.te.com/support to chat with a Product Information Specialist.

te.com

8-1773983-6 08/20 Original