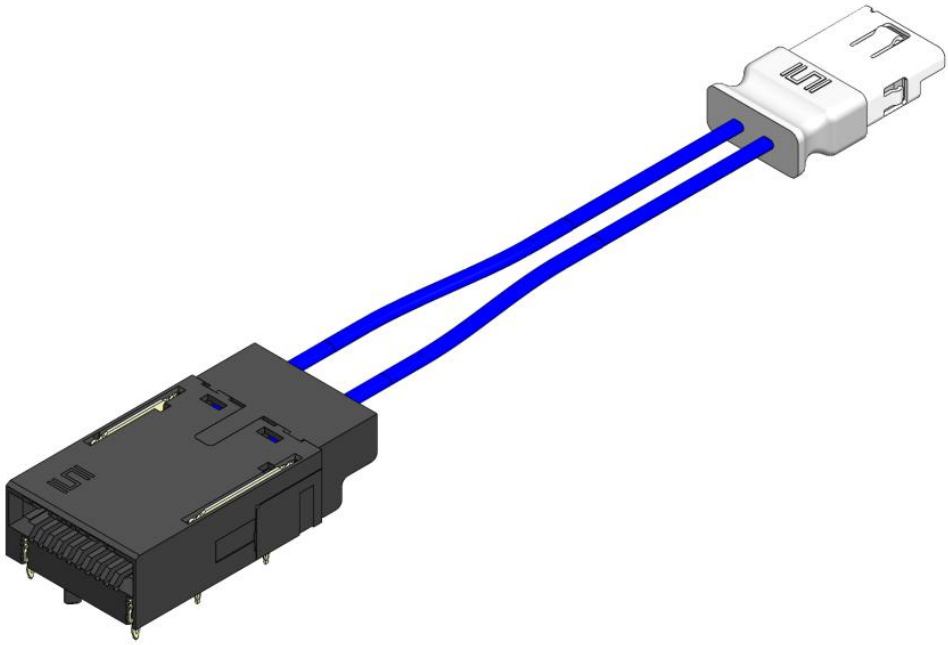
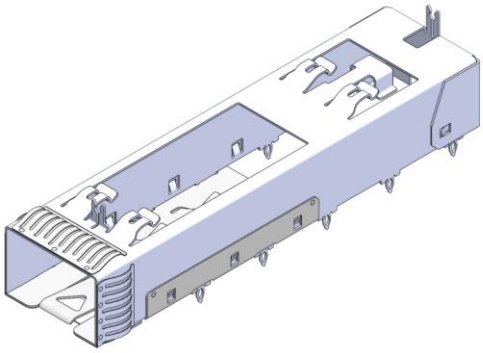
Series: FSFP Flyover SFP Cable System

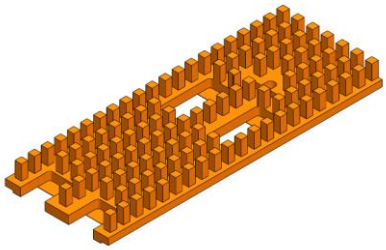
FSFP Cable Assembly (ARM6 on End 2)



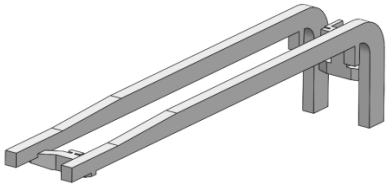
SFPC Cage



HS-SFP Heat Sink



LP-FSFP Light Pipe



Other configurations available for:

NVAC END 2.

See www.samtec.com for more information.

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1.0 SCOPE

1.1 This specification covers performance, testing and quality requirements for Samtec FSFP Flyover SFP Cable System.

2.0 DETAILED INFORMATION

2.1 Product prints, footprints, catalog pages, test reports and other specific, detailed information can be found at FSFP Cable Assembly: https://www.samtec.com/products/fsfp.
SFPC Cage: https://www.samtec.com/products/sfpc
HS-SFP Heat Sink https://www.samtec.com/products/hs-sfp
LP-FSFP Light Pipe: https://www.samtec.com/products/lp-fsfp

3.0 TESTING

3.1 Current Rating: 2.6A (2 Signal contacts powered)

3.2 Voltage Rating: 230 VAC

3.3 Operating Temperature Range: -25°C to +105°C

3.4 Operating Humidity Range: up to 95% (Per EIA-364-31)

3.5 Electrical:

ITEM	TEST CONDITION	REQUIREMENT
Withstanding Voltage	EIA-364-20 (No Flashover, Sparkover, or Breakdown)	700 VAC
Insulation Resistance	EIA-364-21 (1000 MΩ minimum)	>1550 MΩ
Contact Resistance (LLCR)	EIA-364-23	Δ 15 mΩ maximum (Samtec defined)/ No damage

3.6 Mechanical:

ITEM	TEST CONDITION	REQUIREMENT	RESULT
Durability	EIA-364-09C	100 cycles	PASS
Random Vibration	EIA-364-28 Condition V, Letter B 7.56 G 'RMS', 50 to 2000 Hz, 2 hours per axis, 3 axis total , PSD 0.04 Nanosecond Event Detection: EIA-364-87	Visual Inspection: No Damage LLCR: Δ 15 mΩ No Events	PASS
Mechanical Shock	EIA-364-27 100 G, 6 milliseconds, Half Sine wave, 12.3 fps, 3 shocks/direction, 3 axis (18 total shocks) Nanosecond Event Detection: EIA-364-87	Visual Inspection: No Damage LLCR: Δ 15 mΩ maximum	PASS
Normal Force	EIA-364-04	30 grams minimum for Gold interface	PASS

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3.7 Environmental:

ITEM	TEST CONDITION	REQUIREMENT	RESULT
Thermal Shock	EIA-364-32 Thermal Cycles: 100 (30 minute dwell) Hot Temp: 85°C Cold Temp: -55°C Hot/Cold Transition: Immediate	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 700 VAC IR: >1550 MΩ	PASS
Thermal Aging (Temp Life)	EIA-364-17 Test Condition 4 @ 105°C Condition B for 250 hours	Visual Inspection: No Damage LLCR: Δ 15 mΩ	PASS
Cyclic Humidity	EIA-364-31 Test Temp: 25°C to 65°C Relative Humidity: 90 to 95% Test Duration: 240 hours	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 700 VAC IR: >1550 MΩ	PASS
Gas Tight	EIA-364-36 Gas Exposure: Nitric Acid Vapor Duration: 60 min. Drying Temp.: 50°C +/- 3°C Measurements: Within 1 hour of Exposure	LLCR: Δ 15 mΩ	PASS

4.0 HIGH SPEED PERFORMANCE

4.1 Channel Simulation - Channel Performance Metric (CPM) for 0.5m long

112Gbps PAM4

Note: CPM is a channel simulation based approach to understanding connector performance. For further information on CPM please visit Introducing Channel Performance.

CPM is simulated using a Samtec specific channel. Connector performance may improve based on specific applications. Please email SIG Frontline SIGFrontline@samtec.com to determine performance in your system.

4.2 System Impedance: 92 Ohm for differential pair

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5.0 APPLICATION PROCEDURE

5.1 Connector Insertion Tooling

a. The FSFP cable system is intended to be applied utilizing a special insert tool for both the FSFP end and SFPC cage.

b. If a connector's press-fit tails are longer than the thickness of the printed circuit board that the connector is being applied to (press-fit tail length specification is 1.25 ± 0.15mm) a special bottom support tool will be necessary. This tool could be a PCB with oversized holes or a custom tool designed by the user.

5.2 PCB specifications

a. PCB geometry and materials comply with appropriate connector footprint drawing.

b. There is no maximum PCB thickness, but the footprint PTH details must be held for the depth at which the compliant pin will be inserted.

c. PCBs less than 1mm thickness are not recommended for mechanical reasons, there may additional SI limiting factors.

d. Any PCB PTH may be used up to three insertions.

e. Connectors are only good for one insertion.

5.3 Board Insertion Procedure for FSFP cable system

- **Application views**
  Application view information can be found at link below:
  https://suddendocs.samtec.com/prints/fsfp-xx-xx.x-x-mkt

5.4 The post-application inspection should consist of several simple checks to assure that the connector is applied properly and is not damaged.

- Visually assure that all press-fit tails are seated in the proper PCB holes and that none have been crushed during application.

- Visually check that the standoffs on the bottom of each assembly are seated flush and parallel with the PCB surface (see Figure 3 & 4). Once fully seated, there may be some minor gaps (<0.1 mm) due to component tolerances.

5.5 For correct press sizing plan for a termination force of:
FSFP-01-05.0-L-PF-4 (100 lbf)
SFPC-1-1-S-LP-F (150 lbf)
Please see Samtec Compliant Pin Termination Specifications for further processing recommendations

6.0 APPLICATION INFORMATION

6.1 Cable Management: Samtec recommends some form of cable management to prevent non-axial forces being applied to the connector.

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7.0 ADDITIONAL RESOURCES

7.1 For additional mechanical testing or product information, contact our Customer Engineering Support Group at **CES@samtec.com**

7.2 For additional information on high speed performance testing, contact our Signal Integrity Group at **SIG@samtec.com**

7.3 For additional processing information, contact our Interconnect Processing Group at **IPG@samtec.com.**

7.4 For RoHS, REACH or other environmental compliance information, contact our Product Environmental Compliance Group at **PEC@samtec.com**

USE OF PRODUCT SPECIFICATION SHEET

This Product Specification Sheet ("PSS") is a brief summary of information related to the Product identified. As a summary, it should only be used for the limited purpose of considering the purchase/use of Product. For specific, detailed information, including but not limited to testing and Product footprint, refer to Section 2.0 of this document and the links there provided to test reports and prints. This PSS is the property of Samtec, Inc. ("Samtec") and contains proprietary information of Samtec, our various licensors, or both. Samtec does not grant express or implied rights or license under any patent, copyright, trademark or other proprietary rights and the use of the PSS for building, reverse engineering or replication is strictly prohibited. By using the PSS, the user agrees to not infringe, directly or indirectly, upon any intellectual property rights of Samtec and acknowledges that Samtec, our various licensors, or both own all intellectual property therein. The PSS is presented "AS IS". While Samtec makes every effort to present excellent information, the PSS is only provided as a guideline and does not, therefore, warrant it is without error or defect or that the PSS contains all necessary and/or relevant information about the Product. The user agrees that all access and use of the PSS is at its own risk. **NO WARRANTIES EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY KIND WHATSOEVER ARE PROVIDED.**