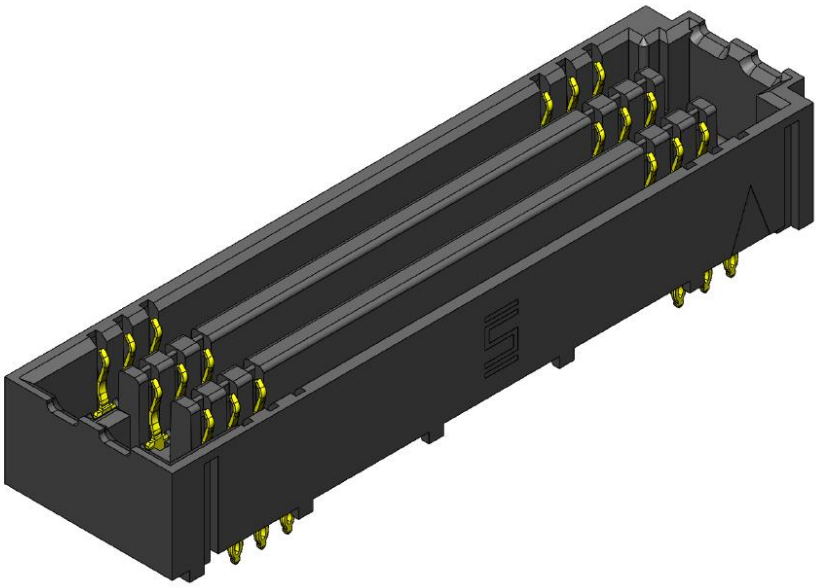
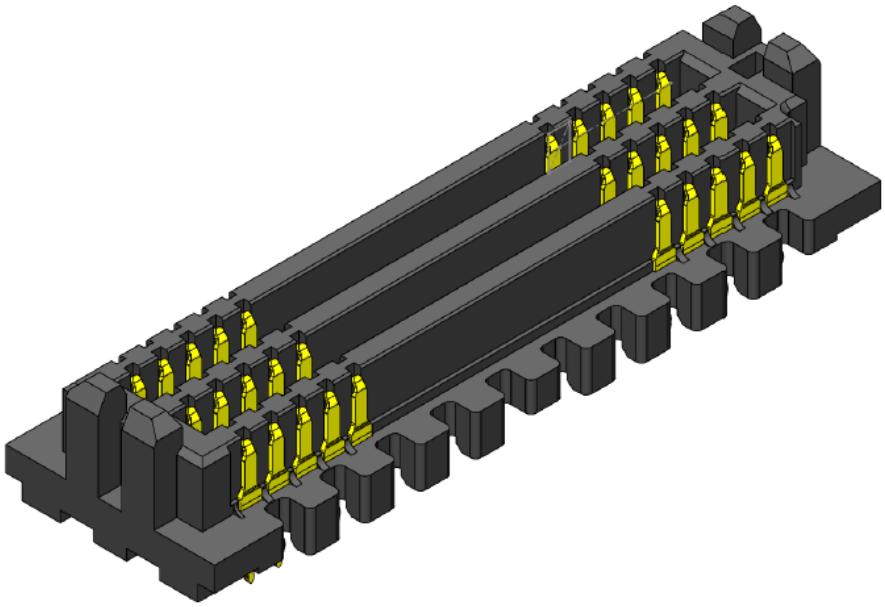
Series: SEAMP / SEAFP .050” (1,27 mm) SEARAY™ High-Speed High-Density Open-Pin-Field Array, Press-Fit

SEAFP Series – Socket, Vertical Orientation



SEAMP Series – Terminal, Vertical Orientation



Other configurations available for:

Co-planar and perpendicular board-to-board applications

See www.samtec.com for more information.

Series: SEAMP / SEAFP .050" (1,27 mm) SEARAY™ High-Speed High-Density Open-Pin-Field Array, Press-Fit

1.0 SCOPE

1.1 This specification covers performance, testing and quality requirements for Samtec's SEAM/SEAF Series .050" SEARAY™ High-Speed, High-Density Open-Pin-Field Array, Press Fit connectors. All information contained in this specification is for .062" (1.57mm) thickness PCB unless otherwise noted.

2.0 DETAILED INFORMATION

2.1 Product prints, footprints, catalog pages, test reports and other specific, detailed information can be found at https://www.samtec.com/products/seamp and https://www.samtec.com/products/seafp.

3.0 TESTING

3.1 Current Rating: 1.9A (6 Pins Powered)
3.2 Voltage Rating: 255 VAC
3.3 Operating Temperature Range: -55°C to +125°C
3.4 Operating Humidity Range: up to 95% (Per EIA-364-31)
3.5 Electrical:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Withstanding Voltage	EIA-364-20 (No Flashover, Sparkover, or Breakdown)	765 VAC	Pass
Insulation Resistance	EIA-364-21 (1000 MΩ minimum)	50,000 MΩ	Pass
Contact Resistance (LLCR)	EIA-364-23	Δ 15 mΩ maximum (Samtec defined)/ No damage	Pass

3.6 Mechanical:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Durability	EIA-364-09C	1000 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, sawtooth wave, 11.3 fps, 3 shocks/direction, 3 axis (18 total shocks) Nanosecond Event Detection: EIA-364-87	Visual Inspection: No Damage LLCR: Δ 15 mΩ No Events	Pass
Normal Force	EIA-364-04	30 grams minimum for gold interface	Pass

Series: SEAMP / SEAFP .050” (1,27 mm) SEARAY™ High-Speed High-Density Open-Pin-Field Array, Press-Fit

3.7 Environmental:

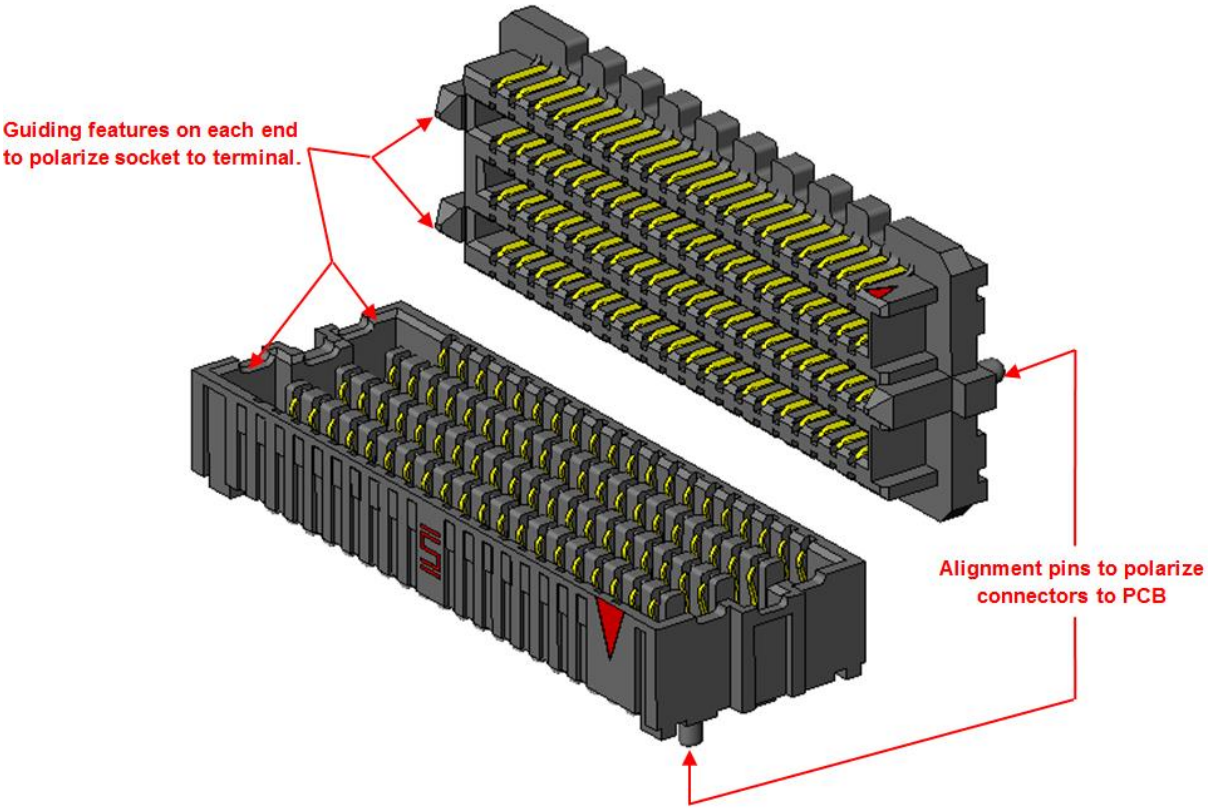
ITEM	TEST CONDITION	REQUIREMENT	STATUS
Thermal Shock	EIA-364-32 Thermal Cycles: 100 (30 minute dwell) Hot Temp: 85°C Cold Temp: -55°C Hot/Cold Transition: Immediate	Visual Inspection: No Damage LLCR: Δ 15 mΩ DWV: 765 VAC IR: >50,000 MΩ	Pass
Thermal Aging (Temp Life)	EIA-364-17 Test Condition 4 @ 105°C 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: 765 VAC IR: >50,000 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

Series: SEAMP / SEAFP .050” (1,27 mm) SEARAY™ High-Speed High-Density Open-Pin-Field Array, Press-Fit

4.0 MATED SYSTEM

Mated view information can be found at link below:
http://www.samtec.com/documents/webfiles/cpdf/SEAX%20Mated%20Document-MKT.pdf

5.0 POLARIZING FEATURES



6.0 HIGH SPEED PERFORMANCE

6.1 Based on a 3 dB insertion loss

Stack Height	Single-Ended Signaling	Differential Pair Signaling
7 mm	10.50 GHz	10.50 GHz

Note: For other stack heights SI data, please see Samtec series webpage.

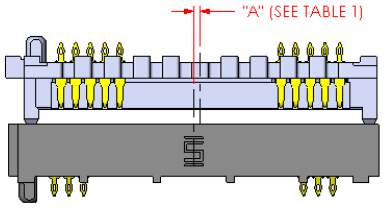
6.2 System Impedance: 50 ohm for single-ended and 100 ohm for differential pair

6.3 Mating Alignment Requirements:

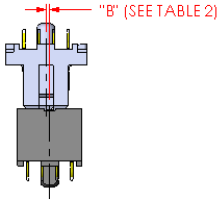
6.3.1 Allowable initial linear misalignment.

TABLE 1			
ROWS	"A" (SEAMP-V to SEAFP-V)	"A" (SEAMP-V to SEAFP-RA)	"A" (SEAMP-V to SEAFP-RA) WITH -GP OPTION
-04	.023 [0.58]	.028 [0.71]	.073 [1.85]
-06	.033 [0.84]	.028 [0.71]	.073 [1.85]
-08	.033 [0.84]	.028 [0.71]	.073 [1.85]
-10	.033 [0.84]	.028 [0.71]	.073 [1.85]

TABLE 2			
ROWS	"B" (SEAMP-V to SEAFP-V)	"B" (SEAMP-V to SEAFP-RA)	"B" (SEAMP-V to SEAFP-RA) WITH -GP OPTION
-04	.013 [0.33]	.020 [0.51]	.075 [1.91]
-06	.020 [0.51]	.020 [0.51]	.075 [1.91]
-08	.022 [0.56]	.020 [0.51]	.075 [1.91]
-10	.022 [0.56]	.020 [0.51]	.075 [1.91]



INITIAL X AXIS LINEAR MISALIGNMENT

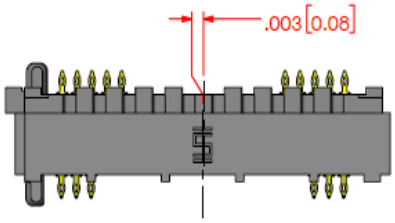


INITIAL Y AXIS LINEAR MISALIGNMENT

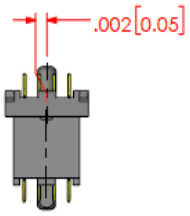
NON APPLICABLE

INITIAL Z AXIS LINEAR MISALIGNMENT

6.3.2 Allowable final linear misalignment.



FINAL X AXIS LINEAR MISALIGNMENT



FINAL Y AXIS LINEAR MISALIGNMENT

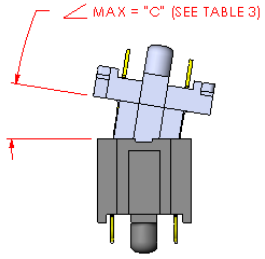
SEE MATED VIEWS DOCUMENT

FINAL Z AXIS LINEAR MISALIGNMENT

6.4 Mating Angle Requirements

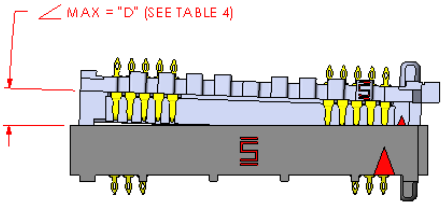
6.4.1 Allowable initial angular misalignment

TABLE 3	
OPTIONS	"C" = DEG
(SEAMP-V to SEAFP-V)	9.0
(SEAMP-V to SEAFP-RA)	12.0
(SEAMP-V to SEAFP-RA) WITH -GP OPTION	14.0



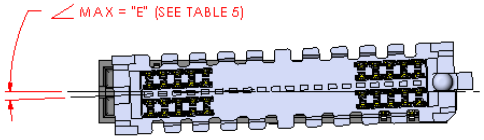
INITIAL X AXIS ANGULAR MISALIGNMENT

TABLE 4			
NO OF POS	"D" = DEG (SEAMP-V to SEAFP-V)	"D" = DEG (SEAMP-V to SEAFP-RA)	"D" = DEG (SEAMP-V to SEAFP-RA) WITH -GP OPTION
-10	3.8	N/A	N/A
-20	1.8	3.0	5.0
-30	1.2	2.0	3.3
-40	0.9	1.5	2.5



INITIAL Y AXIS ANGULAR MISALIGNMENT

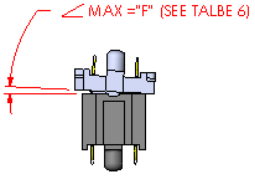
TABLE 5			
NO OF POS	"E" = DEG (SEAMP-V to SEAFP-V)	"E" = DEG (SEAMP-V to SEAFP-RA)	"E" = DEG (SEAMP-V to SEAFP-RA) WITH -GP OPTION
-10	3.0	N/A	N/A
-20	1.4	3.0	2.0
-30	0.9	1.9	1.3
-40	0.7	1.4	1.0



INITIAL Z AXIS ANGULAR MISALIGNMENT

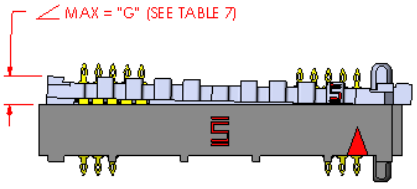
6.4.2 Allowable final angular misalignment

TABLE 6			
ROWS	"F" = DEG (SEAMP-V to SEAFP-V)	"F" = DEG (SEAMP-V to SEAFP-RA)	"F" = DEG (SEAMP-V to SEAFP-RA) WITH -GP OPTION
-04	2.8	3.0	3.0
-06	0.8	2.7	2.7
-08	2.0	2.7	2.7
-10	1.5	2.6	2.6



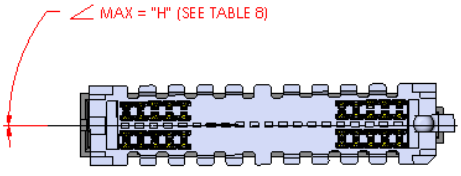
FINAL X AXIS ANGULAR MISALIGNMENT

TABLE 7			
NO OF POS	"G" = DEG (SEAMP-V to SEAFP-V)	"G" = DEG (SEAMP-V to SEAFP-RA)	"G" = DEG (SEAMP-V to SEAFP-RA) WITH -GP OPTION
-10	2.5	N/A	N/A
-20	1.2	1.2	0.5
-30	0.8	0.8	0.3
-40	0.6	0.6	0.2
-50	0.5	0.5	0.2



FINAL Y AXIS ANGULAR MISALIGNMENT

TABLE 8			
NO OF POS	"H" = DEG (SEAMP-V to SEAFP-V)	"H" = DEG (SEAMP-V to SEAFP-RA)	"H" = DEG (SEAMP-V to SEAFP-RA) WITH -GP OPTION
-10	0.5	N/A	N/A
-20	0.2	0.4	0.4
-30	0.15	0.3	0.3
-40	0.1	0.2	0.2
-50	0.1	0.2	0.2



FINAL Z AXIS ANGULAR MISALIGNMENT

6.5 Board Insertion Procedure for Press Fit Connector

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- Place press fit tails into holes on the PCB, the surface of the housing should be parallel with the top surface of PCB after all the tips have been properly inserted.
  See figure 1

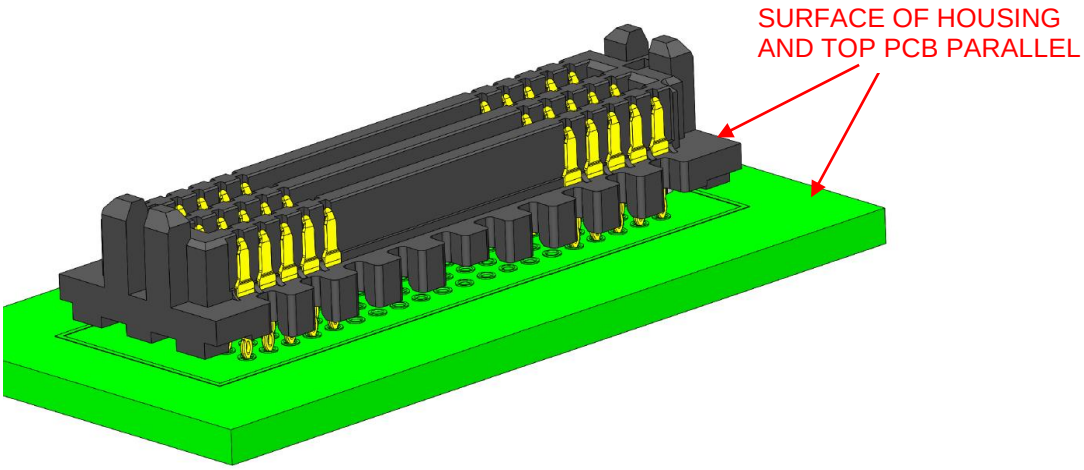

Figure 1: Connector Placed On to PCB

- Place insertion tool into the connector assembly, the tool should nest into the connector as shown in figure 2. No under board tooling is required as the connector leads do not exit the bottom surface of the PCB. (see Insertion Tool table for specific part number)

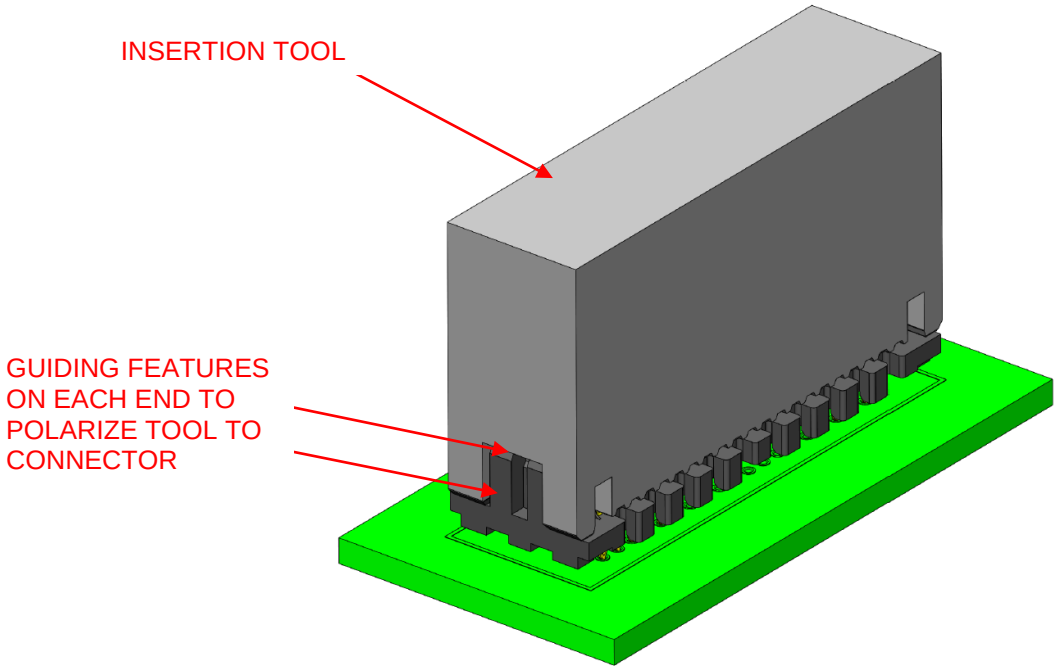

Figure 2: Align & Place Insertion Tool Onto Connector

- Uniformly load the top of the insertion tool as shown in figure 3.

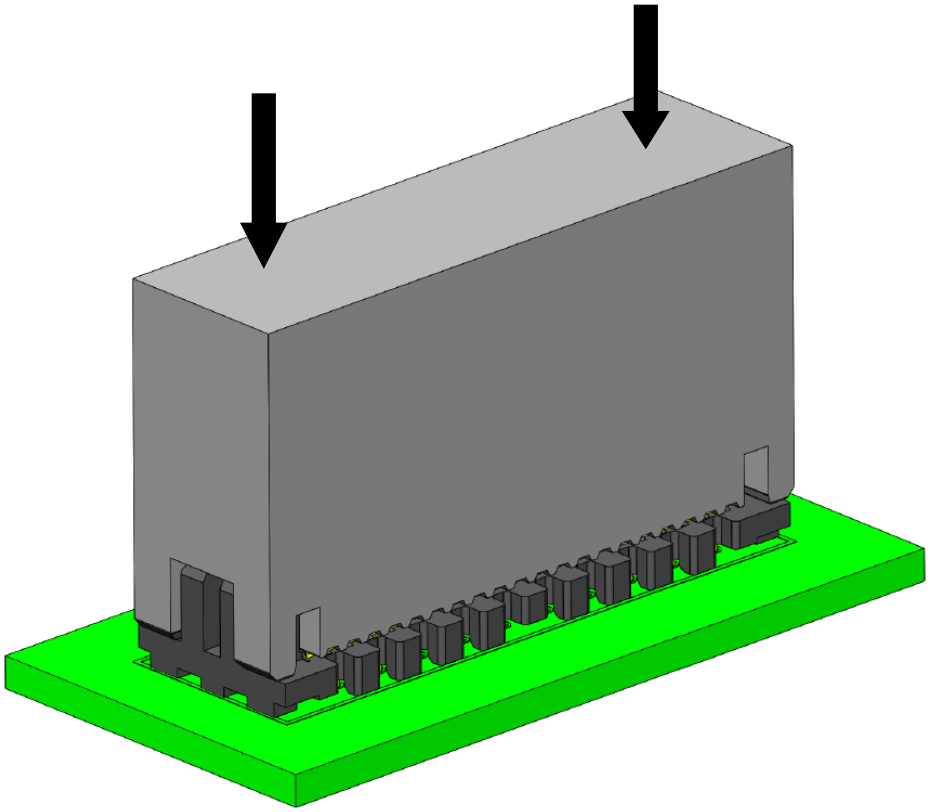

Figure 3: Insertion Tool Application to Seat Connector

6.6 Insertion Tool Description

The following are Samtec upper tool part numbers, the “XX” in the table should follow the specific connector positions.

Insertion Tools		
	PART NUMBER	
Rows	SEAFP Series	SEAMP Series
-04	CAT-SEAFP-XX-04	CAT-SEAMP-XX-04
-06	CAT-SEAFP-XX-06	CAT-SEAMP-XX-06
-08	CAT-SEAFP-XX-08	CAT-SEAMP-XX-08
-10	CAT-SEAFP-XX-10	CAT-SEAMP-XX-10

6.7 Termination Requirements and Inspection

A. There will be no bucking of the pins under the connector.
B. There will be no excessive movement of contact.
C. The connector will be flush to .005” above PCB and the Pins will be the appropriate depth into the PCB.
D. None of the plated mating surface have been scratched.

6.8 Hardware: Board-to-board standoffs are recommended to provide a robust mechanical connection. Samtec offers two different types:

6.8.1 Traditional Standoffs (SO) – Rigid design to statically support board-to-board applications. See options here: SO - Board Stacking Standoff

6.8.2 Jack Screw Standoffs (JSO) – Serve same function as traditional standoffs but unique, nested construction facilitates the mating and unmating process. This is especially helpful for multiple connector applications where the mating and unmating forces increase with the number of connectors used. See options here: JSO - Jack Screw Standoffs

6.9 Cleaning: Samtec, Inc. has verified that our connectors may be cleaned in accordance with the solvents and conditions designated in the EIA-364-11 standard.

For more detailed processing information, please visit the Technical Library on the SEAF Series Technical Specification page: http://www.samtec.com/technical-specifications/Default.aspx?SeriesMaster=SEAF

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**

Series: SEAMP / SEAFP .050” (1,27 mm) SEARAY™ High-Speed High-Density Open-Pin-Field Array, Press-Fit

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.**