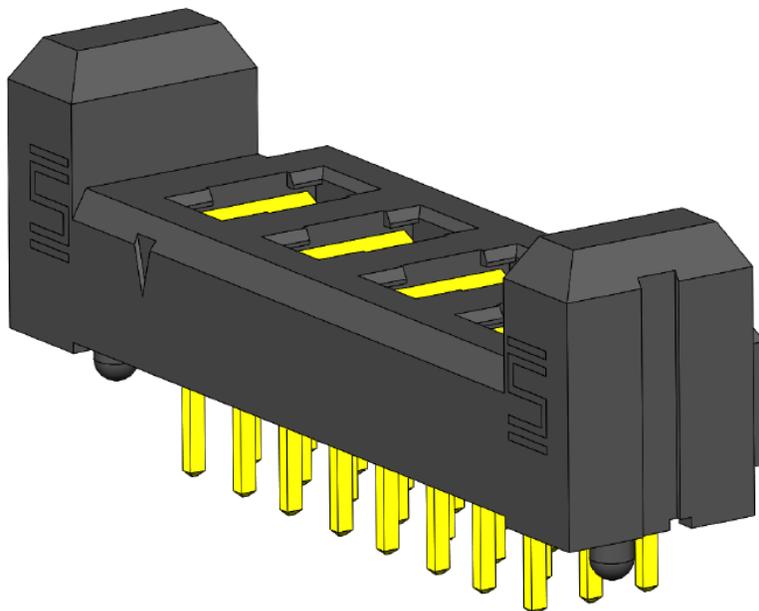
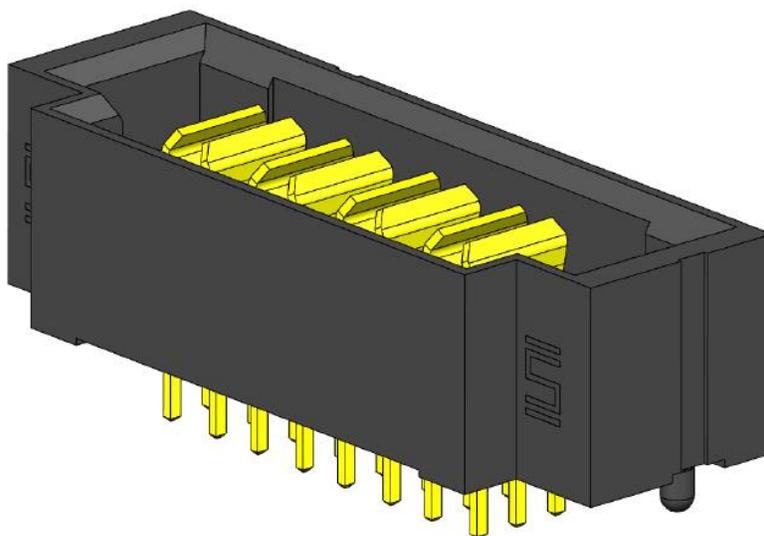


Series: UPT/UPS .150" (3.81 mm) Power Strip™/20 A Dual Blade Power Terminal / Socket Strip

UPS-DV Series



UPT-DV Series



Other configurations available for:

Perpendicular board-to-board applications, Press Fit, Locking Clip, Packaging options

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's .150" (3.81 mm) Power Strip™/20 A Dual Blade Power Terminal / Socket Strip Connector in a vertical orientation.

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/upt> & <https://www.samtec.com/products/ups>

3.0 TESTING

3.1 Current Rating: 23A Tin (One Pin Powered)

3.2 Voltage Rating: 438 VAC

3.3 Operating Temperature Range:

-55°C to +105°C with Tin;

-55°C to +125°C with Gold

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)	1313 VAC	Pass
Insulation Resistance	EIA-364-21 (5000 MΩ minimum)	100,000 MΩ	Pass
Contact Resistance (LLCR)	EIA-364-23	Δ 15 mΩ (Samtec defined)/ No damage	Pass

3.6 Mechanical:

ITEM	TEST CONDITION	REQUIREMENT	STATUS
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 maximum 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 Event	Pass
Normal Force	EIA-364-04	30 grams minimum for Gold	Pass

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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 m Ω DWV: 1313 VAC IR: >100,000 M Ω	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 m Ω	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 m Ω DWV: 1313 VAC IR: >100,000 M Ω	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 m Ω	Pass

4.0 MATED SYSTEM

Mated view information can be found at link below:

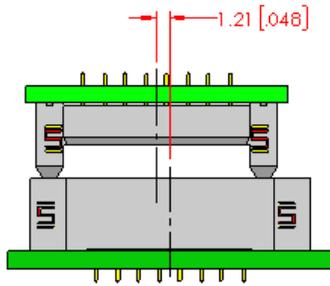
http://suddendocs.samtec.com/prints/upx_mated_document

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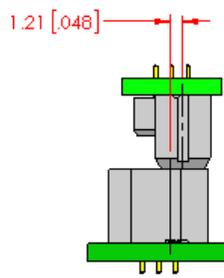
5.0 PROCESSING RECOMMENDATIONS

5.1 Mating Alignment Requirements:

5.1.1 Allowable initial linear misalignment



INITIAL X AXIS LINEAR MISALIGNMENT



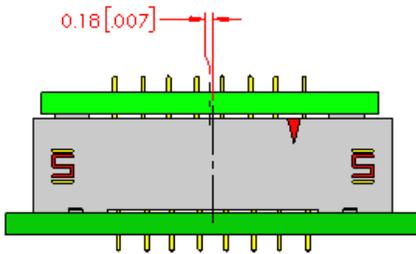
INITIAL Y AXIS LINEAR MISALIGNMENT

NON APPLICABLE

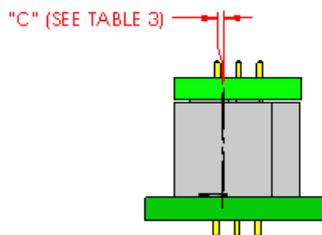
INITIAL Z AXIS LINEAR MISALIGNMENT

5.1.2 Allowable final linear misalignment

TABLE 3	
OPTION	"C"
UPS-V to UPT-V	0.11 [.004]
UPS-V to UPT-RA	0.18 [.007]
UPS-RA to UPT-V	0.11 [.004]
UPS-RA to UPT-RA	0.18 [.007]



FINAL X AXIS LINEAR MISALIGNMENT



FINAL Y AXIS LINEAR MISALIGNMENT

SEE MATED DOCUMENT

FINAL Z AXIS LINEAR MISALIGNMENT

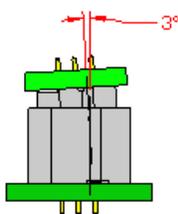
Series: UPT/UPS .150" (3.81 mm) Power Strip™/20 A Dual Blade Power Terminal / Socket Strip

5.2 Mating Angle Requirements

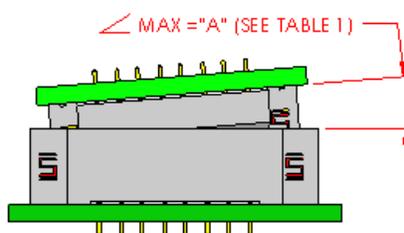
5.2.1 Allowable initial angular misalignment

NO OF POS	"A" = DEG
-02	7.5
-04	5.1
-06	3.1
-08	2.2

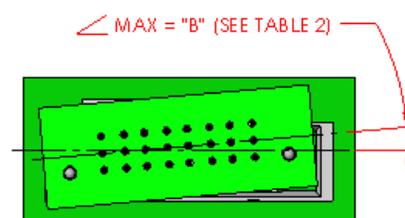
NO OF POS	"B" = DEG
-02	7.5
-04	5.1
-06	3.1
-08	2.2



INITIAL X AXIS ANGULAR MISALIGNMENT



INITIAL Y AXIS ANGULAR MISALIGNMENT

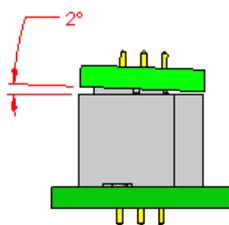


INITIAL Z AXIS ANGULAR MISALIGNMENT

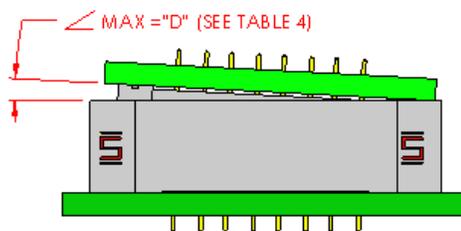
5.2.2 Allowable final angular misalignment

NO OF POS	"D" = DEG			
	(UPS-V to UPT-V)	(UPS-V to UPT-RA)	(UPS-RA to UPT-V)	(UPS-RA to UPT-RA)
-02	5.5	4.5	5.5	4.5
-04	3.7	3.0	3.7	3.0
-06	2.2	1.8	2.2	1.8
-08	1.6	1.3	1.6	1.3

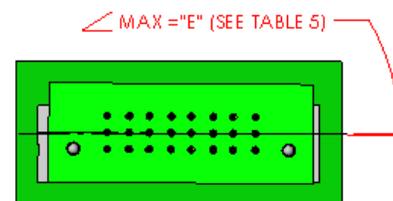
NO OF POS	"E"
-02	1.5
-04	0.5
-06	0.3
-08	0.2



FINAL X AXIS ANGULAR MISALIGNMENT



FINAL Y AXIS ANGULAR MISALIGNMENT



FINAL Z AXIS ANGULAR MISALIGNMENT

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5.3 Board Insertion Procedure for Press Fit Connector

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

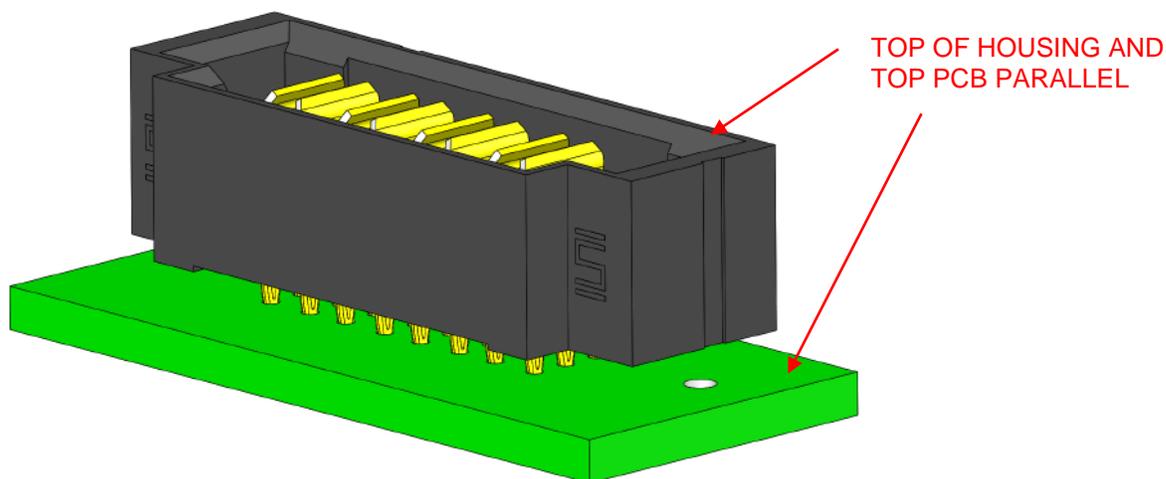


Figure 1: Connector Parallel to Top of PCB

- Using a bottom support tool (CAT-UPR-XX), seat the connector to the bottom support tool. Align the PCB hole to the slot of the tool. See figure 2.

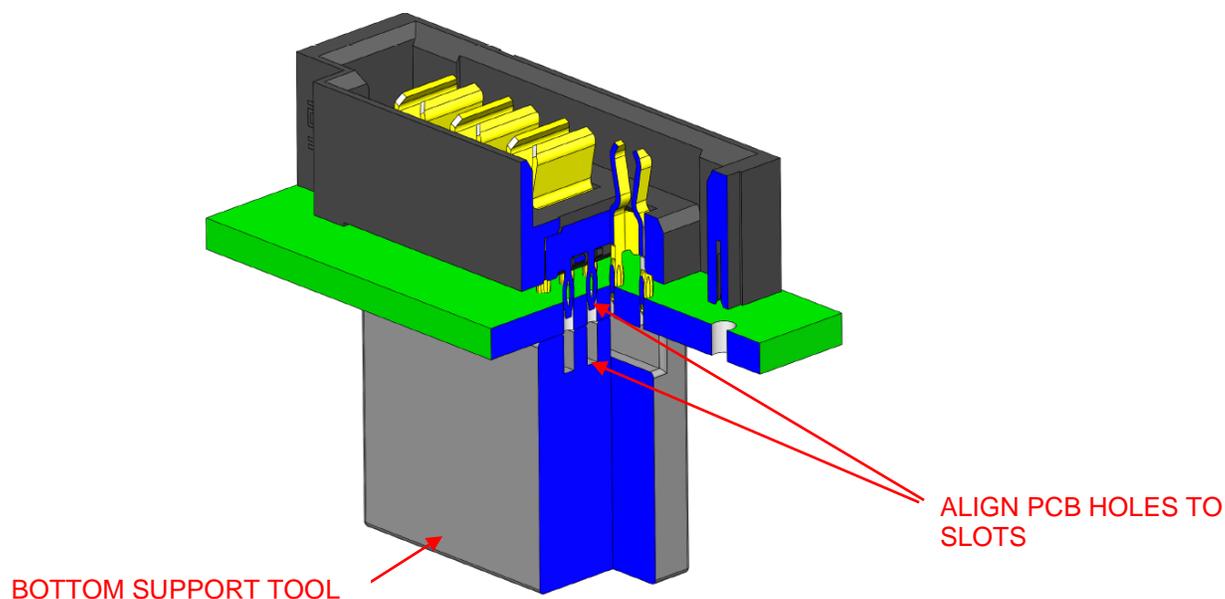


Figure 2: Align & Seat PCB to Bottom Support Tool

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- Using a top support tool (CAT-UPTT-XX) & a insertion press, apply force to the top support tool as shown in figure 3.

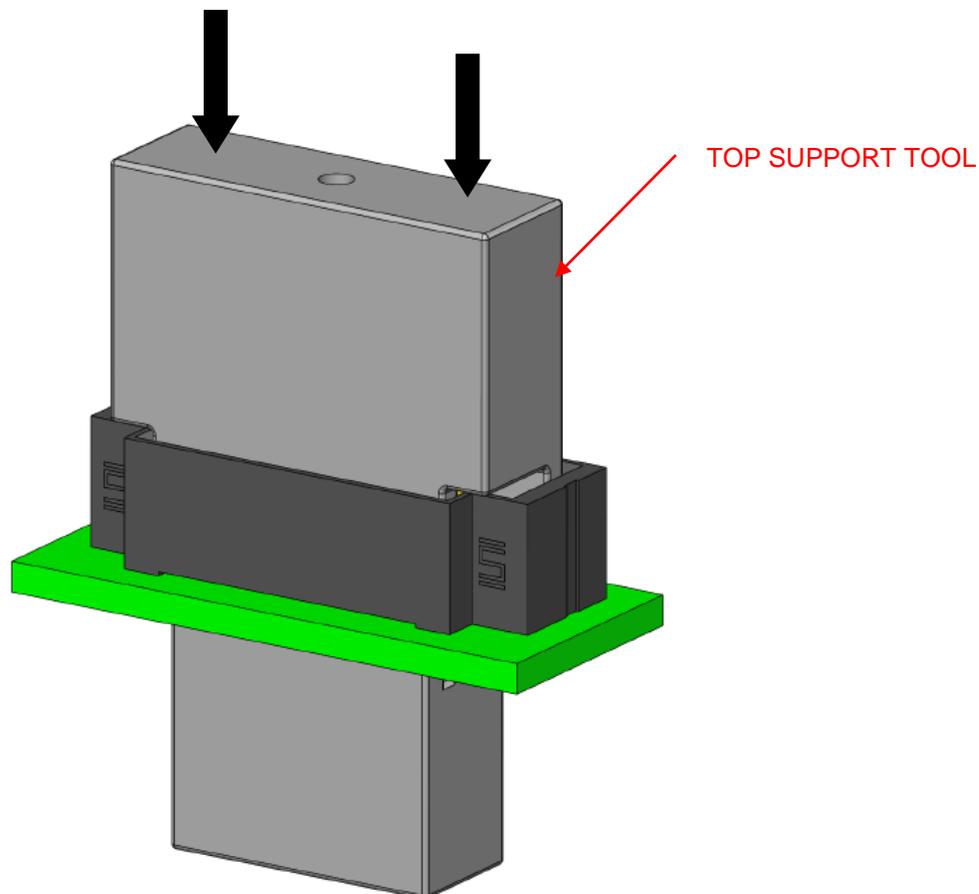


Figure 3: Top Support Tool Application to Seat Connector

5.4 Support Tool Description

The connector support tools are used to press the connector into the PCB. Both support tools are required to support around the connector during the pressing process. The following are Samtec support tool part numbers for different options. The “XX” in the table should follow the connector positions.

Support Tools		
No. OF Positions	Part Number	
	Top Tool	Bottom Tool
-02	CAT-UPTT-02	CAT-UPR-02
-04	CAT-UPTT-04	CAT-UPR-04
-06	CAT-UPTT-06	CAT-UPR-06
-08	CAT-UPTT-08	CAT-UPR-08

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5.5 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 has been scratched.

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

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

5.6.2 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](#)

5.7 Power and Signal Application:

Example: When using multiple connectors please reference our multiple connector processing recommendation guide along with following each connector (power and signal) mating misalignment tolerances. http://suddendocs.samtec.com/processing/multi-connector_applications.pdf

5.8 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.

6.0 ADDITIONAL RESOURCES

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

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

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

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



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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.**