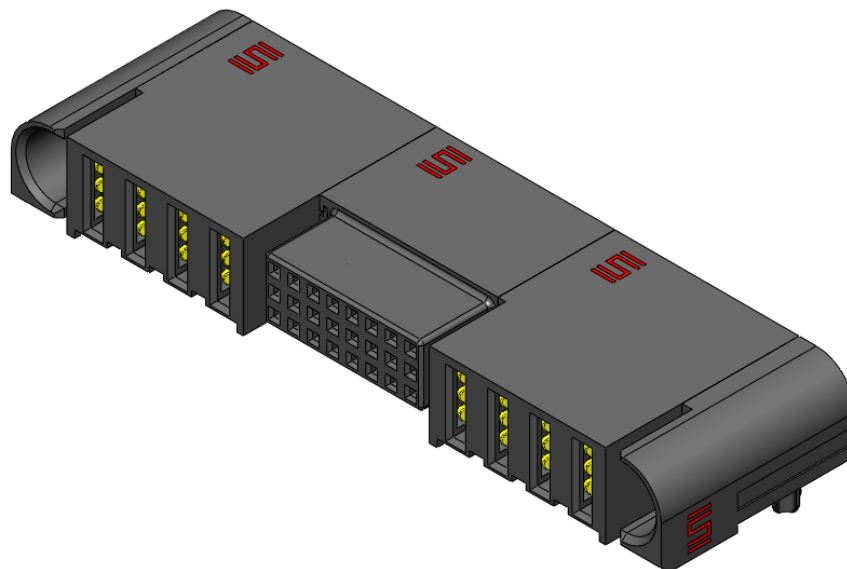
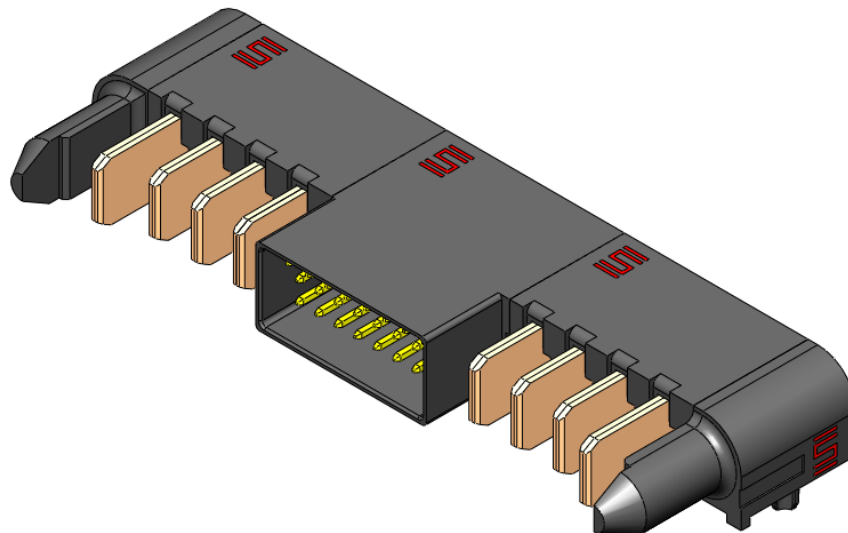


Series: **ET60S / ET60T** EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

ET60S Series – Socket, Right Angle Orientation



ET60T Series – Terminal, Right Angle Orientation



Other configurations available for:

Vertical applications (Through-hole / Press Fit)

See www.samtec.com for more information.

Series: [ET60S](#) / [ET60T](#) EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

1.0 SCOPE

1.1 This specification covers performance, testing and quality requirements for Samtec ET60S/ET60T Series EXTreme Ten60Power™ .100" (2,54 mm) Signal / .217" (5,50 mm) Power Combo Connector. All information contained in this specification is for a Right Angle socket / Right Angle terminal coplanar mated configuration unless otherwise noted. Vertical Socket / Right Angle terminal mated configuration is available on www.samtec.com.

2.0 DETAILED INFORMATION

2.1 Product prints, footprints, catalog pages, test reports and other specific, detailed information can be found at www.samtec.com?ET60S and www.samtec.com?ET60T.

3.0 TESTING

3.1 **Current Rating:** 60A (Power) / 24A (Signal)

3.1.1 **Current Carrying Capacity:** tested per EIA-364-70

3.1.2 **Current Cycling:** tested per EIA-364-55

3.2 **Voltage Rating:** 300 VAC

3.3 **Operating Temperature Range:** -40°C to +105°C

3.4 **Electrical:**

ITEM	TEST CONDITION	REQUIREMENT	STATUS
Withstanding Voltage	EIA-364-20 (No Flashover, Sparkover, or Breakdown)	900 VAC	Pass
Insulation Resistance	EIA-364-21 (1000 MΩ minimum)	10,000 MΩ	Pass
Contact Resistance (LLCR)	EIA-364-23	Δ 15 mΩ maximum (Samtec defined)/ No damage	Pass

3.5 **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	Visual Inspection: No Damage LLCR: Δ 15 mΩ maximum Event Detection: No interruption > 50 nanosecond	Pass
Mechanical Shock	EIA-364-27 100 G, 6 milliseconds, sawtooth wave, 11.3 fps, 3 shocks/direction, 3 axis (18 total shocks)	Visual Inspection: No Damage LLCR: Δ 15 mΩ maximum Event Detection: No interruption > 50 nanosecond	Pass
Normal Force	EIA-364-04	30 grams minimum for gold interface	Pass

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3.6 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: 900 VAC IR: >10,000 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 DWV: 900 VAC IR: >10,000 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: 900 VAC IR: >10,000 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:

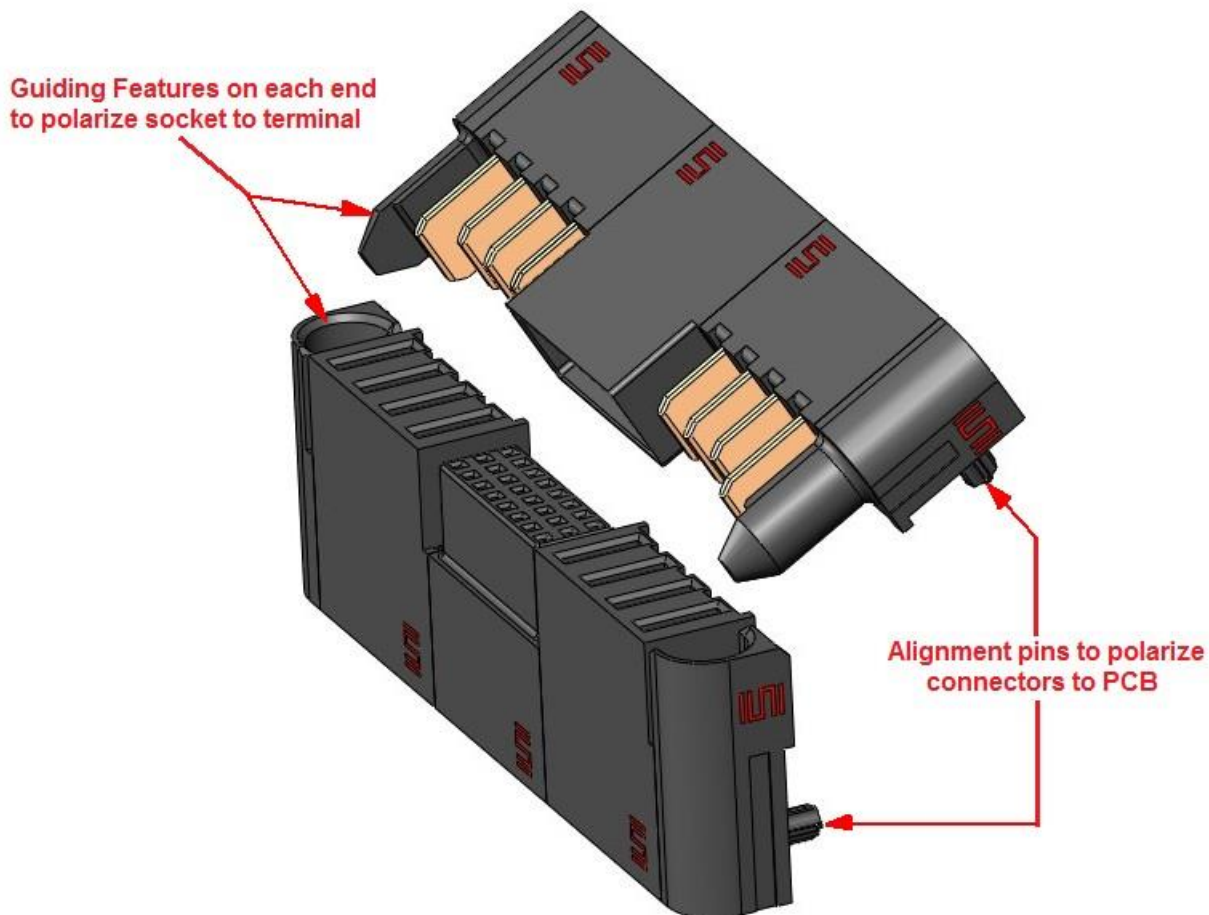
<http://www.samtec.com/documents/webfiles/cpdf/ET60X%20Mated%20Document.pdf>

5.0 CREEPAGE AND CLEARANCE DISTANCES

	Clearance	Creepage
ET60S-VT	1.87mm (.074")	2.18mm (.086")
ET60S-RA	1.87mm (.074")	3.02mm (.119")
ET60T-RA	1.87mm (.074")	2.64mm (.104")

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6.0 POLARIZING FEATURES

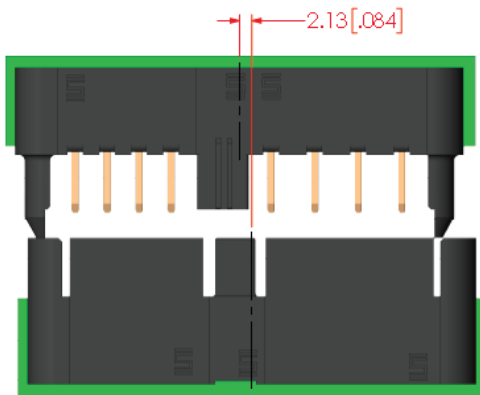


Series: **ET60S / ET60T** EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

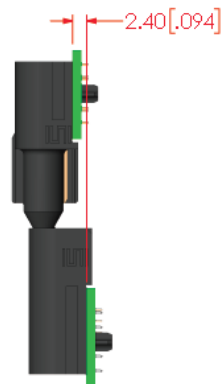
7.0 PROCESSING RECOMMENDATIONS

7.1 Mating Alignment Requirements: ET60T Right Angle to ET60S Right Angle

7.1.1 Allowable initial linear misalignment



INITIAL X AXIS LINEAR MISALIGNMENT



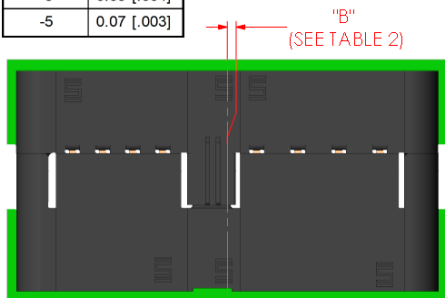
INITIAL Y AXIS LINEAR MISALIGNMENT

NON APPLICABLE

INITIAL Z AXIS LINEAR MISALIGNMENT

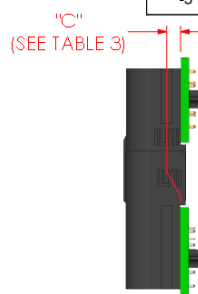
7.1.2 Allowable final linear misalignment.

TABLE 2	
SIGNAL ROWS	"B"
-0	0.18 [.007]
-3	0.09 [.004]
-5	0.07 [.003]



FINAL X AXIS LINEAR MISALIGNMENT

TABLE 3	
SIGNAL ROWS	"C"
-0	0.13 [.005]
-3	0.09 [.004]
-5	0.07 [.003]



FINAL Y AXIS LINEAR MISALIGNMENT

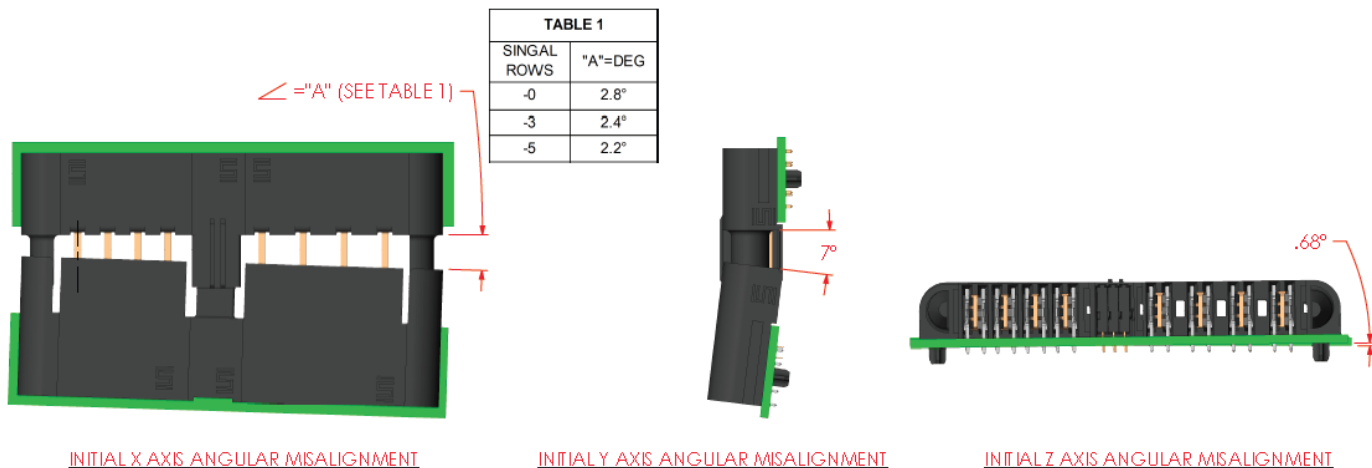
SEE MATED VIEW

FINAL Z AXIS LINEAR MISALIGNMENT

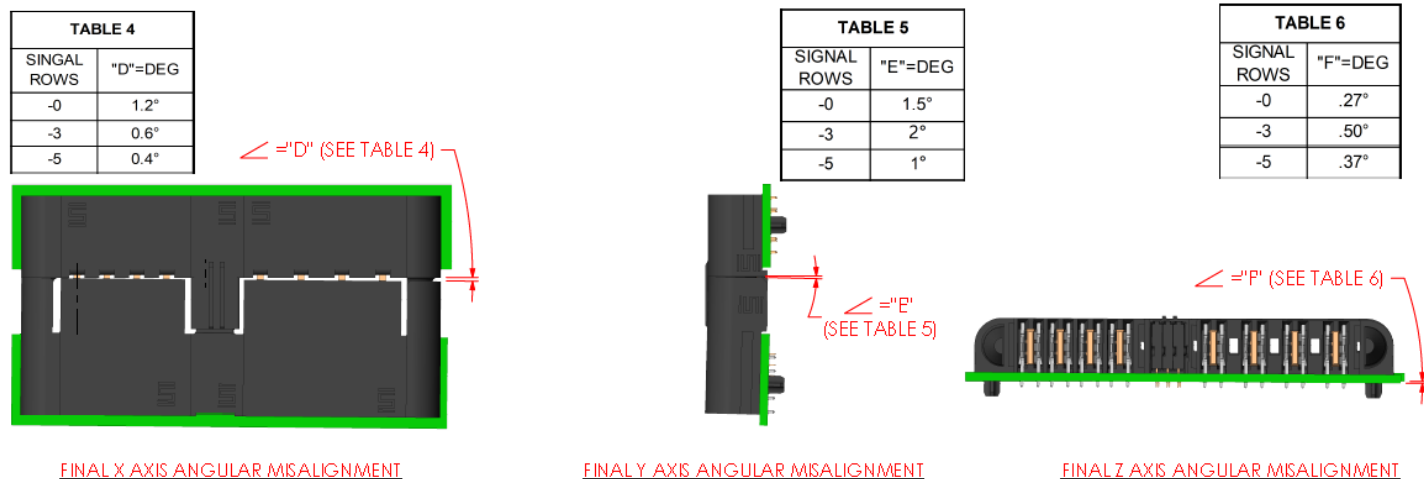
Series: ET60S / ET60T EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

7.2 Mating Angle Requirements: ET60T Right Angle to ET60S Right Angle

7.2.1 Allowable initial angular misalignment



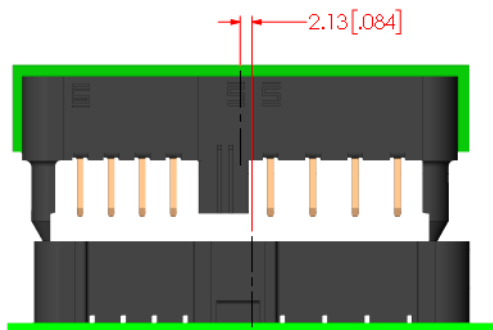
7.2.2 Allowable final angular misalignment



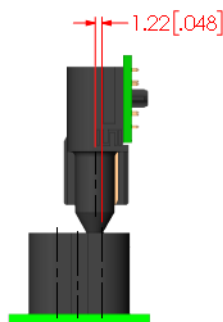
Series: ET60S / ET60T EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

7.3 Mating Alignment Requirements: ET60T Right Angle to ET60S Vertical

7.3.1 Allowable initial linear misalignment



INITIAL X AXIS LINEAR MISALIGNMENT



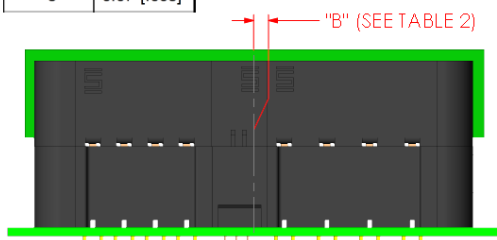
INITIAL Y AXIS LINEAR MISALIGNMENT

NON APPLICABLE

INITIAL Z AXIS LINEAR MISALIGNMENT

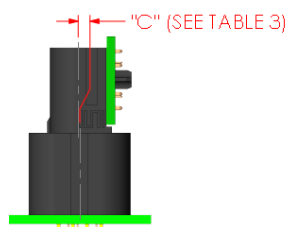
7.3.2 Allowable final linear misalignment

SIGNAL ROWS	"B"
-0	0.18 [.007]
-3	0.09 [.004]
-5	0.07 [.003]



FINAL X AXIS LINEAR MISALIGNMENT

SIGNAL ROWS	"C"
-0	0.15 [.006]
-3	0.09 [.004]
-5	0.07 [.003]



FINAL Y AXIS LINEAR MISALIGNMENT

SEE MATED VIEW

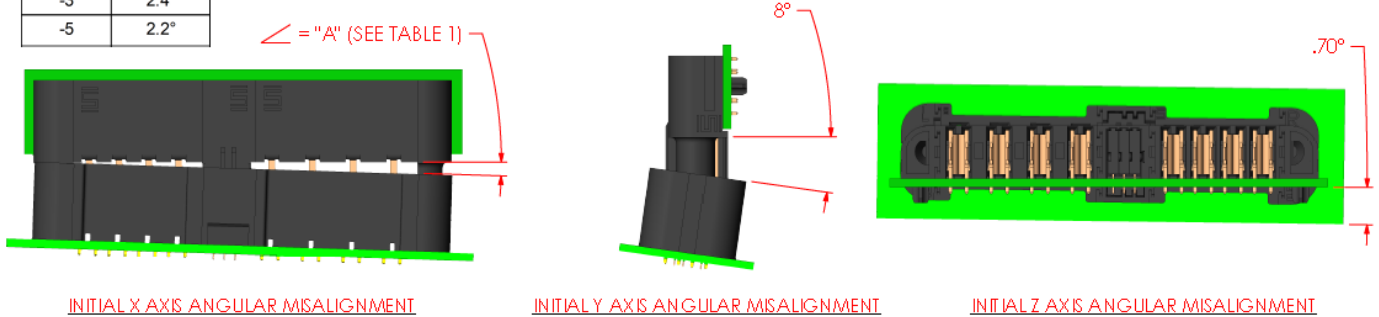
FINAL Z AXIS LINEAR MISALIGNMENT

Series: ET60S / ET60T EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

7.4 Mating Angle Requirements: ET60T Right Angle to ET60S Vertical

7.4.1 Allowable initial angular misalignment

SINGAL ROWS	"A"=DEG
-0	2.8°
-3	2.4°
-5	2.2°

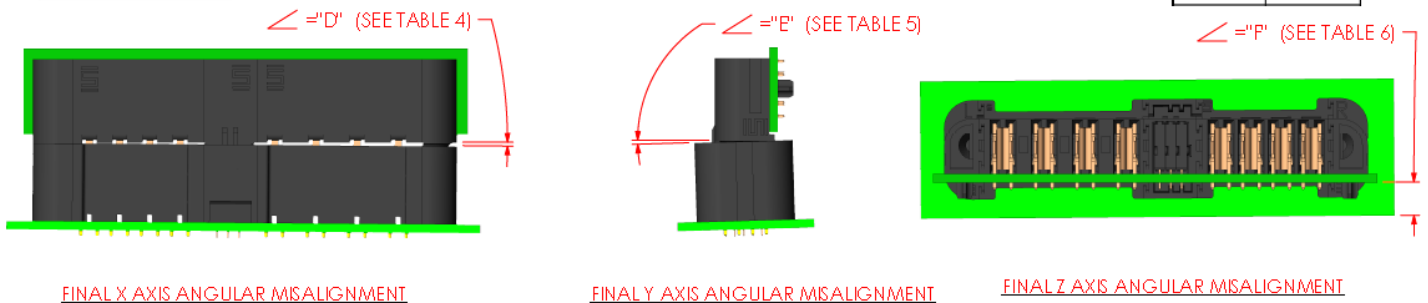


7.4.2 Allowable final angular misalignment

SINGAL ROWS	"D"=DEG
-0	1.2°
-3	0.6°
-5	0.4°

SINGAL ROWS	"E"=DEG
-0	3°
-3	2°
-5	1.6°

SINGAL ROWS	"F"=DEG
-0	.35°
-3	.50°
-5	.37°



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7.5 Intermateability: Information on Samtec's Intermateability with Molex is available at http://suddendocs.samtec.com/testreports/234464_report_rev_3.pdf

7.6 Board Insertion Procedure for Press Fit Connector

7.6.1 Support Tool Description

1. Flat rock upper tooling and a simple board support is required to terminate the connectors into the PCB unless otherwise noted; The bottom support tool is to contain clearance holes or thru slots to receive the leads as they pass through the PCB; If the PCB thickness is greater than the lead length, no under board support tooling is necessary; These tools are not provided by Samtec due to their simplicity, they can be easily sourced from a tool room or small machine shop.
2. A Samtec upper tool is required for **ET60S 3 Signal Rows** option (see figure 4 for detail); The P/N is CAT-PT-ES-XXX-3-XX-XXX-V, the "XXX" & "XX" in the P/N should follow the specific connector power & signal positions.

7.6.2 Procedure for ET60X Right Angle

- 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.

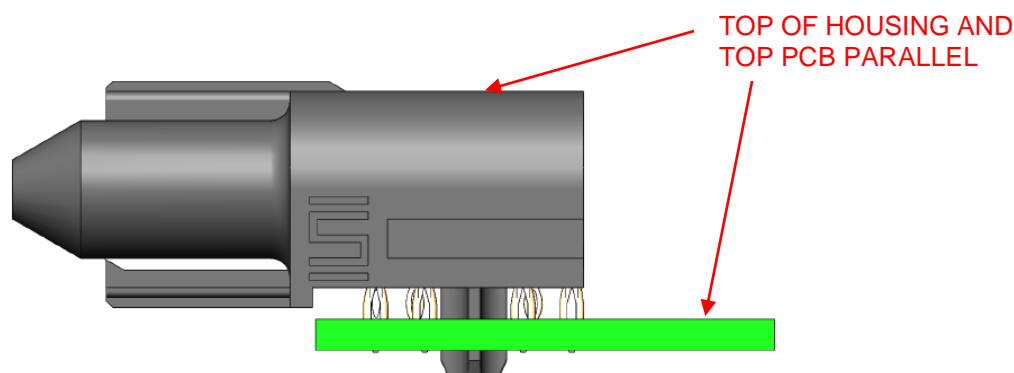


Figure 1: Connector Parallel to Top of PCB and EONs Aligned

- Apply and uniformly load the flat rock tool as shown in figure 2

Series: ET60S / ET60T EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

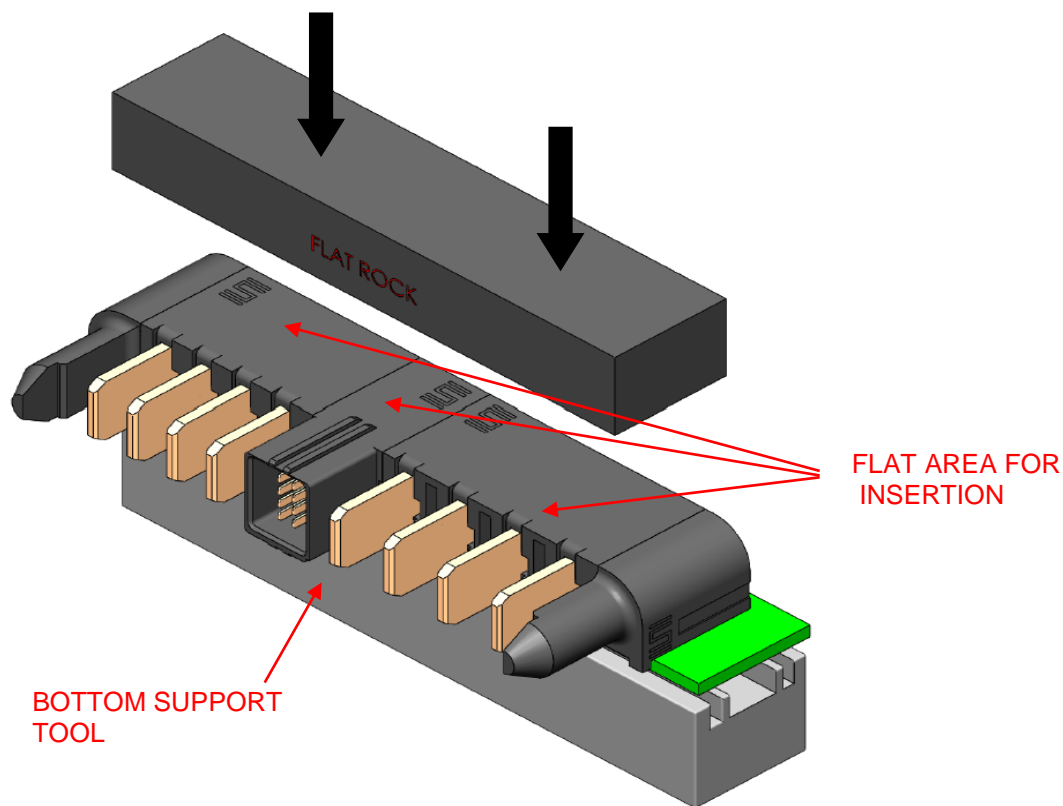


Figure 2: Flat Rock & Bottom Support Tool Application to Seat Connector

7.6.3 Procedure for ET60S Vertical

- 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 3.

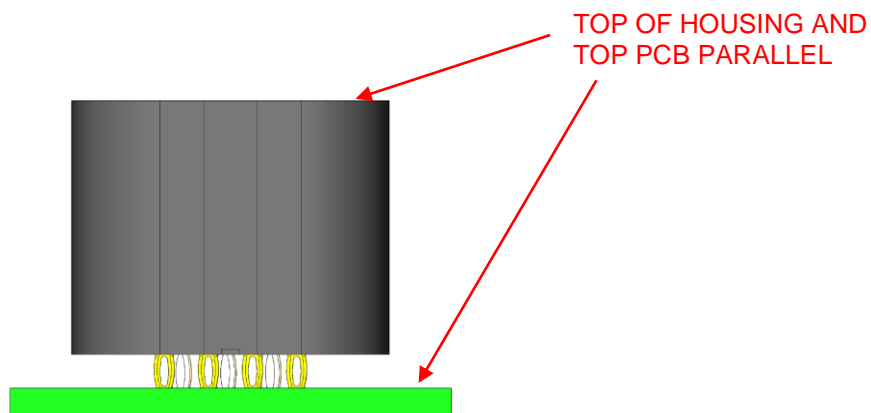


Figure 3: Connector Parallel to Top of PCB and EONs Aligned

Series: [ET60S](#) / [ET60T](#) EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

- Using an upper tool (for 3 signal rows) or a flat rock surface (for 5 signal rows), a bottom support tool & two insertion press, apply force to the flat area of tool as shown in figure 4.

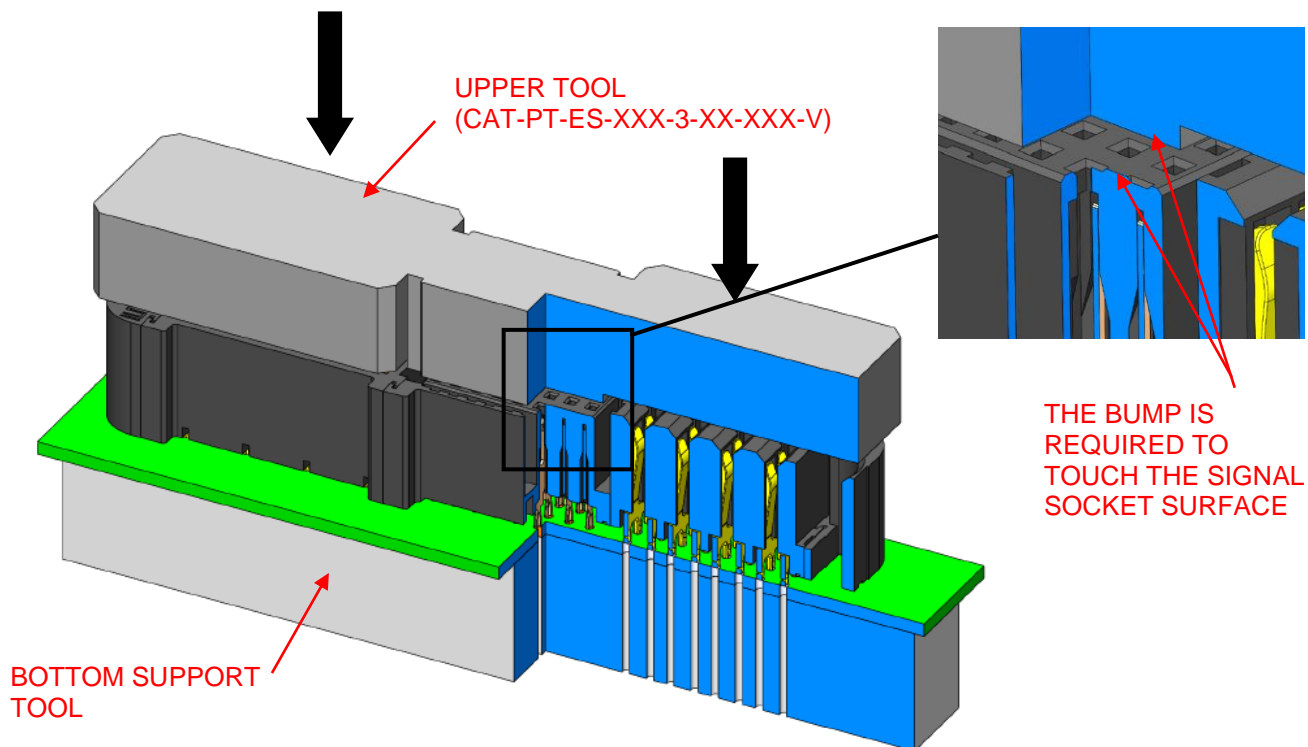


Figure 4: Top & Bottom Support Tool Application to Seat Connector

7.6.4 Termination Requirements and Inspection

- There will be no buckling of the pins under the connector.
- There will be no excessive movement of contact.
- The connector will be flush to .005" above PCB and the Pins will be the appropriate depth into the PCB.
- None of the plated mating surface have been scratched.

8.0 ADDITIONAL RESOURCES

- For additional mechanical testing or product information, contact our Customer Engineering Support Group at CES@samtec.com
- For additional information on high speed performance testing, contact our Signal Integrity Group at SIG@samtec.com
- For additional processing information, contact our Interconnect Processing Group at IPG@samtec.com.
- For RoHS, REACH or other environmental compliance information, contact our Product Environmental Compliance Group at PEC@samtec.com

Series: ET60S / ET60T EXTreme Ten60Power™ 60 Amp Signal/Power Combo Connector

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.**

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