Introduction

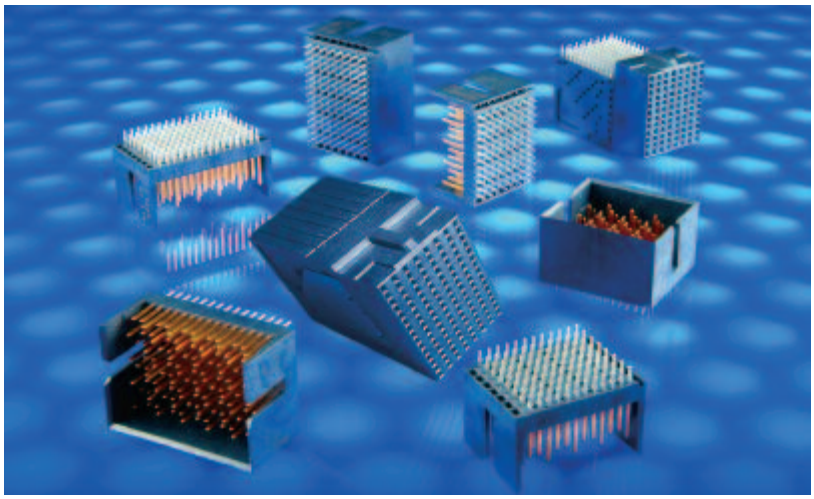
Product Facts

- **10+ Gbps performance**
- **100 ohm Impedance for Differential Pair configuration**
- **5 pair version offers 26 pairs/10mm [66 differential pairs/inch] fitting within a 25.40 [1.00] card slot pitch**
- **4 pair version offers 21 pairs/10mm [53 differential pairs/inch] fitting within a 20.30 [.800] card slot pitch**
- **3 pair version offering 16 pairs/10mm [40 differential pairs/inch] fitting within a 16.25 [.625] card slot pitch**
- **Right angle pin headers (coplanar) in 3 pair, 4 pair, and 5 pair versions**
- **Reliable, redundant contact design on every signal contact**
- **Modular system offered in various column versions**
- **Meets Industry reliability requirements of Bellcore/ Telcordia**
- **Sequencing for ground and signal contacts**
- **RoHS Compliant**

Future Product Extensions

- **Vertical receptacles**
- **High speed cable assemblies and hardware**

RoHS Ready



The Z-PACK TinMan backplane connector family is a cost-effective solution for customers searching for a high density, high performance backplane interconnect system.

The Z-PACK TinMan connector design follows proven industry backplane convention by offering a fully protected right-angle receptacle for use on daughtercards where handling damage can be a concern when mating to a vertical male header. This connector permits field repairability at either the module or single pin levels.

Ground contacts positioned within each column of the connector, combined with unique contact lead frame arrangements, enable the Z-PACK TinMan connector to achieve low crosstalk and high through-put performance levels. Reliability is provided with a dual point of contact mating interface and compliant pin interface to the printed circuit board.

Industry Applications

Ideally designed for cost pressured, high signal density applications requiring interconnection between two printed circuit boards, such as those typically found in server, storage, switch, router, and similar applications. The Z-PACK TinMan connector product family is suited to meet the demands of today's modular system designs by offering a variety of configurations. The product family includes configurations to fit 20.32 [.800] and 25.40 [1.00] card slot spacing.

Technical Documents

Product Specification 108-2303
Application Specification 114-13202
Routing Guide Report #27GC001-1

Material and Finish

Signal Contact — High Strength Copper Alloy
Ground Contact — High Strength Copper Alloy
Housing — Liquid Crystal Polymer
Platings — Telcordia compliant interface, Nickel underplate
Compliant Pin Plating — RoHS Compliant

Ratings

Temperature Range — -65°C to +90°C
Current Rating — 0.5 A/contact @ < 30°C T-Rise
Durability — 200 cycles
Dielectric Withstanding Voltage — 560 VAC
Operating Voltage — 250 VAC max.

Signal Integrity

Characteristic Impedance — Differential @ 100 ohms ±10%
Crosstalk — Multi-pair differential crosstalk: 2.1% @ 50ps
Insertion Loss — -2 dB @ 10 GHz

For additional information visit:
http://www.tycoelectronics.com/zpacktinman

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Revised 7-07

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Introduction (Continued)

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Technical Support is staffed with specialists well versed in Tyco Electronics products. They can provide you with:

- Technical support
- Catalogs
- Technical Documents
- Product Samples
- Authorized Distributor Locations

Restriction on the use of Hazardous Substances (RoHS)

At Tyco Electronics, we're ready to support your RoHS requirements. We've assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where any change was required to eliminate the restricted materials. Part numbers in this catalog are identified as:

RoHS Compliant — Part numbers in this catalog are RoHS Compliant, unless marked otherwise. These products comply with European Union Directive 2002/95/EC as amended 1 January 2006 that restricts the use of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE in certain electrical and electronic products sold into the EU as of 1 July 2006.

NOTE: For purposes of this Catalog, included within the definition of RoHS Compliant are products that are clearly "Out of Scope" of the RoHS Directive such as hand tools and other non-electrical accessories.

NOTE: Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced at right.

Getting the Information You Need

Our comprehensive on-line RoHS Customer Support Center provides a forum to answer your questions and support your RoHS needs. A RoHS FAQ (Frequently Asked Questions) is available with links to more detailed information. You can also submit RoHS questions and receive a response within 24 hours during a normal work week. The Support Center also provides:

- Cross-Reference from Non-compliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog
- Downloadable Technical Data Customer Information Presentation
- More detailed information regarding the definitions used above

RoHS Customer Support Center

- So whatever your questions when it comes to RoHS, we've got the answers at www.tycoelectronics.com/leadfree

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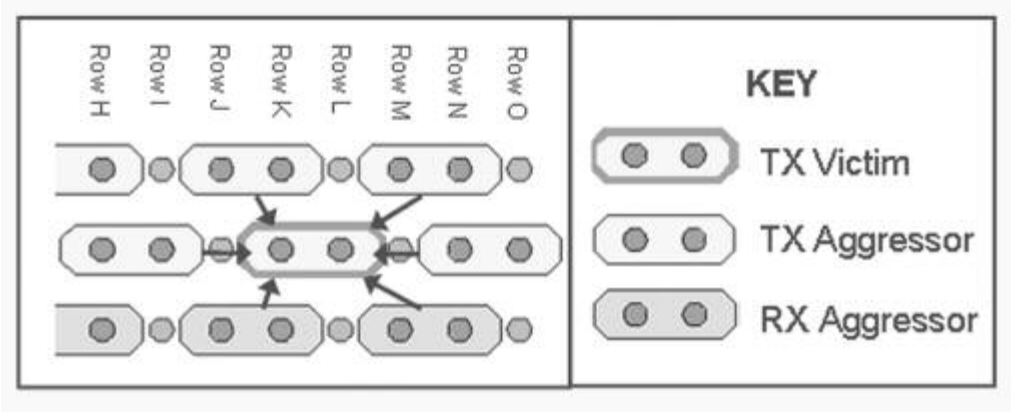
Introduction (Continued)

Noise Table

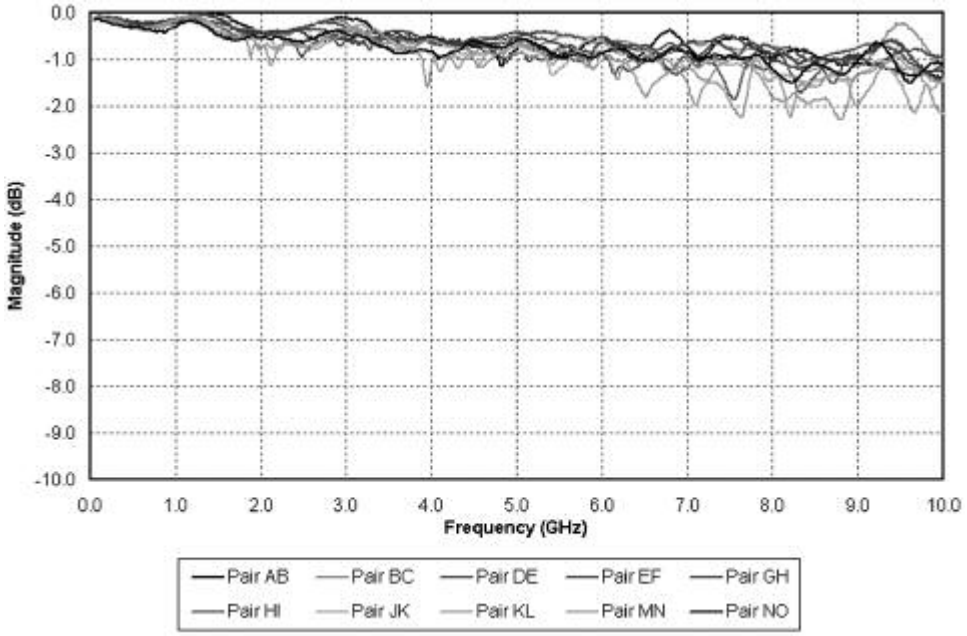
■ **Maximum, multiple source crosstalk**

Victim Pair	Total Peak Receiver Noise for Recommended Pin-Out
AB9	0.8%
BC8	1.6%
DE9	1.9%
EF8	1.9%
GH9	2.0%
HI8	2.0%
JG9	2.0%
KL8	2.1%
MN9	1.7%
NO8	0.8%

Note: Data includes PCB vias of both backplane and daughtercard connectors. Single mated connector pair 50 ps (20-80%) edge rate



Insertion Loss Plot



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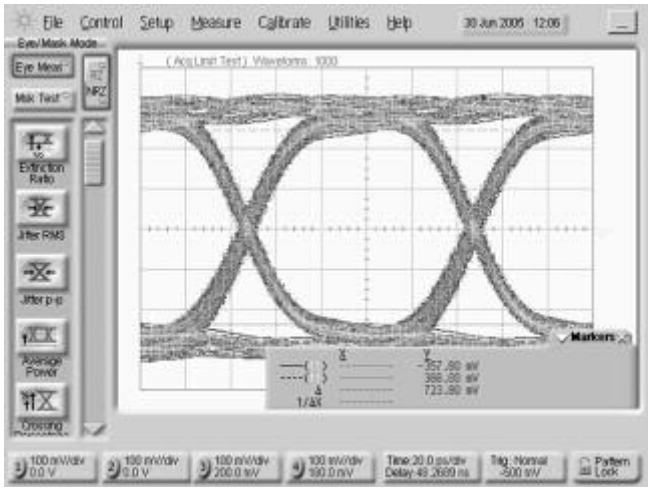
Introduction (Continued)

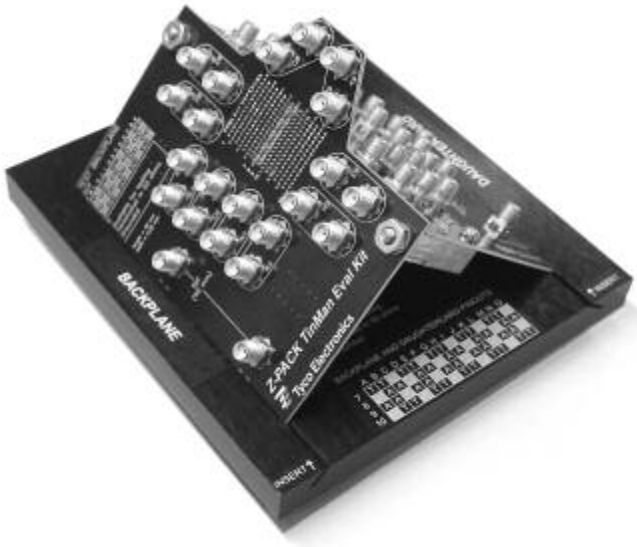
Representative Eye Pattern

- 10.0 Gbps data rate
- 2^7-1 PRBS
- Unequalized Signal



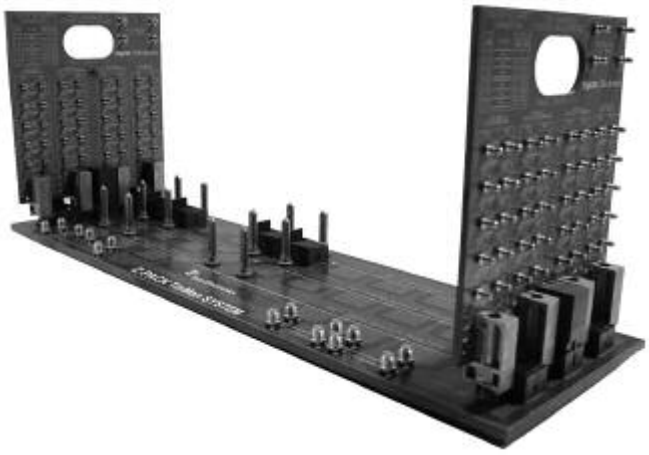
Customer Connector Evaluation Kit

- Connector characterization
- Available for loan — contact your local Tyco Electronics Sales Engineer
- Time and frequency domain testable
- Testable to 18+ GHz (25+ Gb/s)
- Multiple calibration options
- Convenient SMA interface



Customer System Evaluation Kit

- System characterization
- Available for loan — contact your local Tyco Electronics Sales Engineer
- Time and frequency domain testable
- Testable to 18+ GHz (25+ Gb/s)
- Multiple system lengths
- Convenient SMA interface



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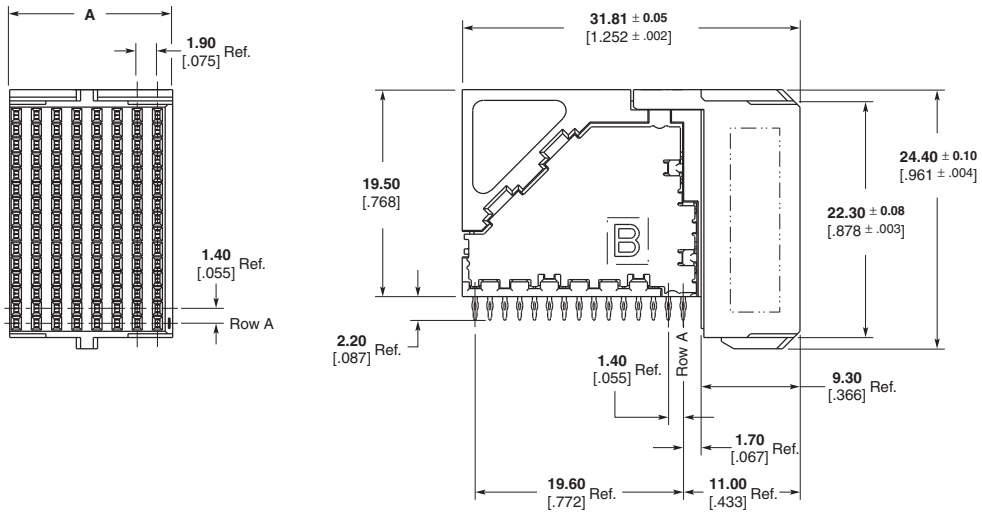
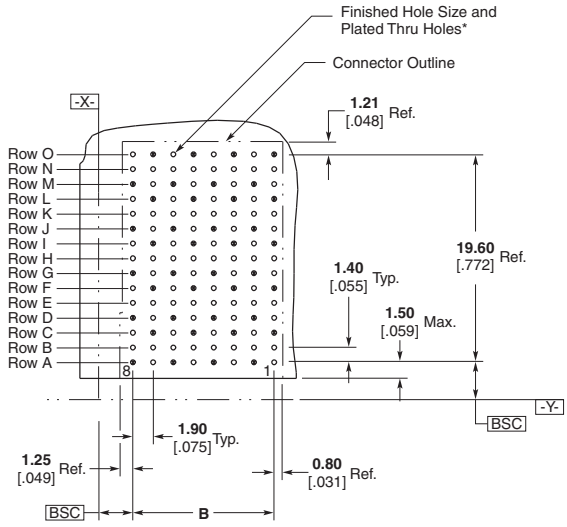
5 Pair Right Angle Receptacle Assemblies

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934218-1	**15.35** .604	**13.30** .524	*	1934269-1,(R) 1934272-1,(L) 1934273-1, 1934271-1, 1934349-1, 1934350-1
16	1934221-1	**30.55** 1.203	**28.50** 1.122	*	1934331-1, 1934334-1, 1934333-1, 1934332-1, 1934347-1, 1934348-1

* Custom tooling not required. Utilizes flat-rock insertion tooling. Reference Application Specification 114-13202.





Recommended PC Board Layout
Daughterboard
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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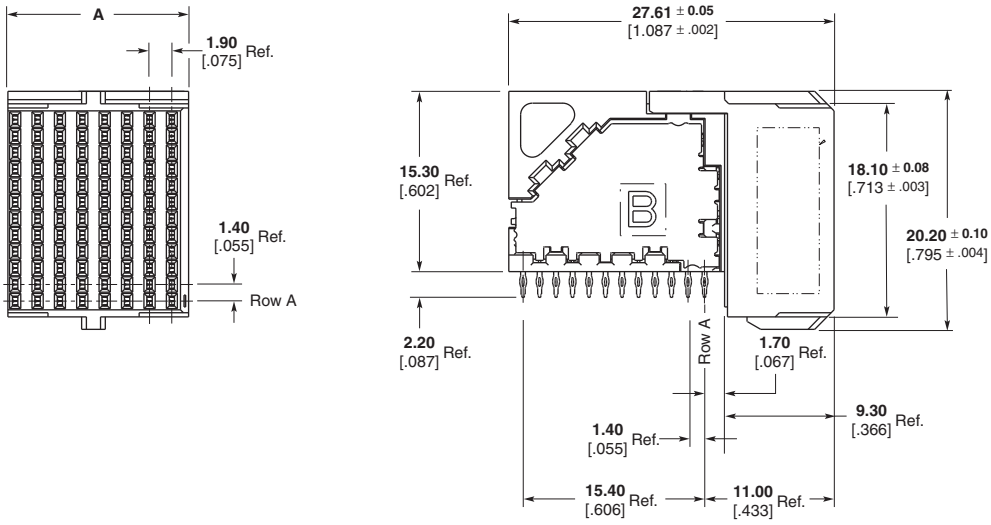
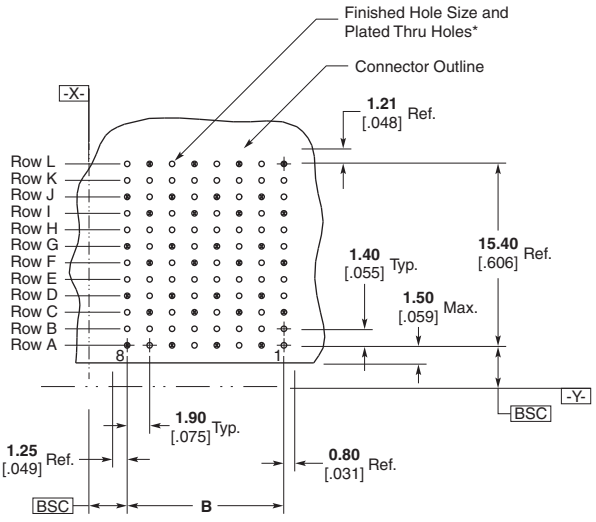
4 Pair Right Angle Receptacle Assemblies

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934222-1	**15.35** .604	**13.30** .524	*	1934226-1, 1934304-1, 1934303-1, 1934306-1, 1934225-1, 1934354-1,
16	1934225-1	**30.55** 1.203	**28.50** 1.122	*	1934315-1, 1934318-1, 1934317-1, 1934316-1, 1934351-1, 1934352-1,

* Custom tooling not required. Utilizes flat-rock insertion tooling. Reference Application Specification 114-13202.





Recommended PC Board Layout
Daughterboard
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
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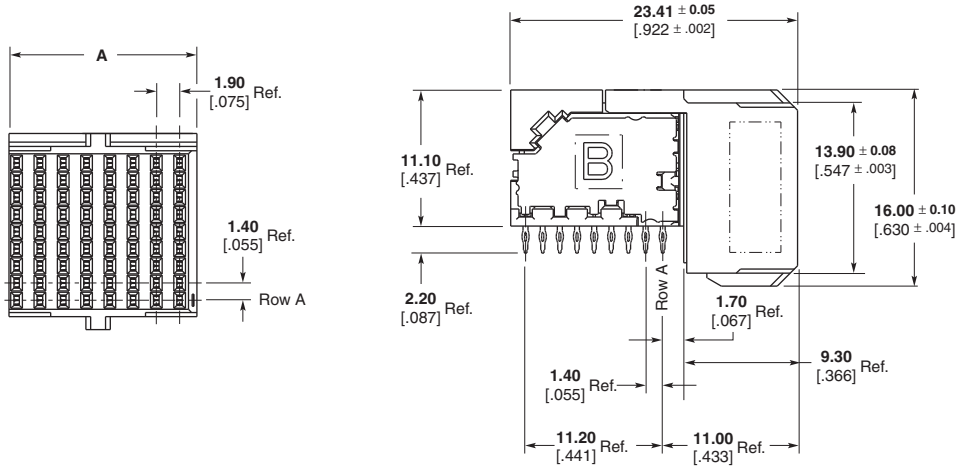
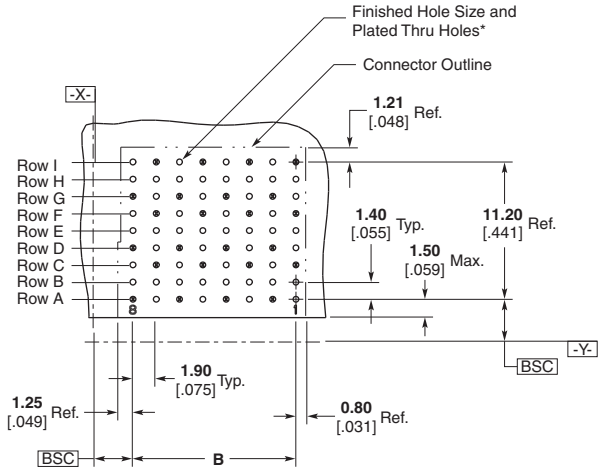
3 Pair Right Angle Receptacle Assemblies

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934226-1	**15.35** .604	**13.30** .524	*	1934299-1, 1934300-1, 1934301-1, 1934302-1, 1934359-1, 1934360-1,
10	1934228-1	**19.15** .754	**17.10** .673	*	1934339-1, 1934341-1, 1934340-1, 1934342-1, 1934357-1, 1934358-1,
16	1934229-1	**30.55** 1.203	**28.50** 1.122	*	1934339-1, 1934340-1, 1934345-1, 1934346-1, 1934355-1, 1934356-1,

* Custom tooling not required. Utilizes flat-rock insertion tooling. Reference Application Specification 114-13202.





Recommended PC Board Layout
Daughterboard
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
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Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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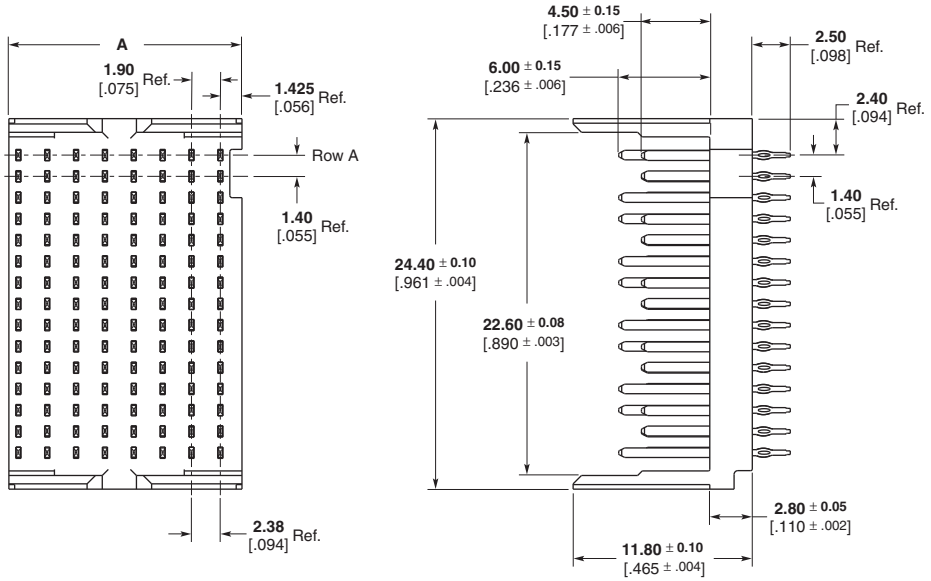
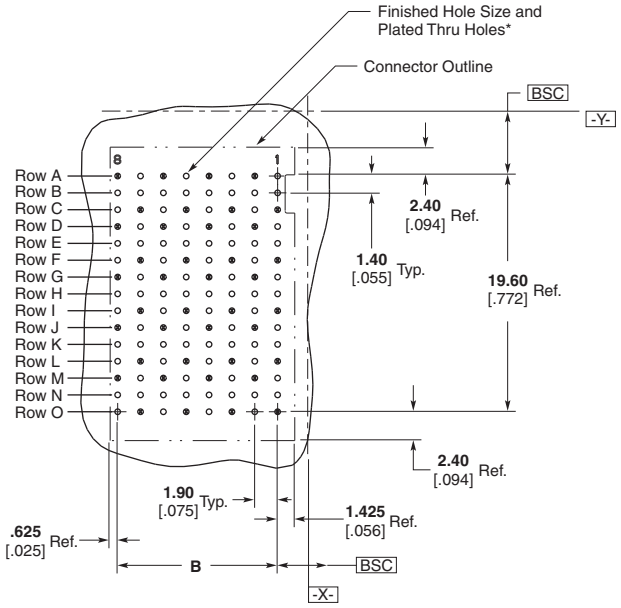
5 Pair Vertical Header Assemblies

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934269-1	**15.35** .604	**13.30** .524	1-1804791-1	1934218-1
16	1934331-1	**30.55** 1.203	**28.50** 1.122	1-1804791-2	1934221-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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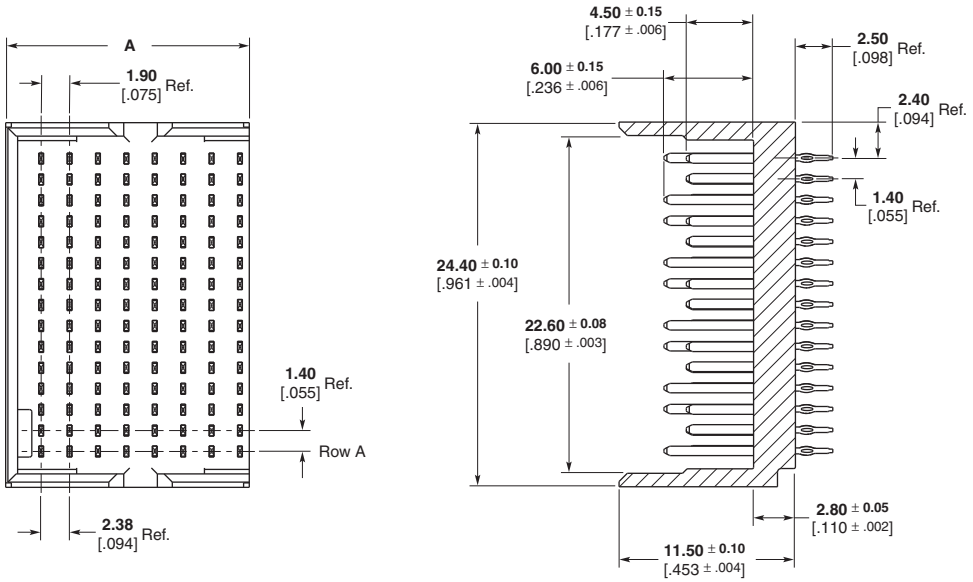
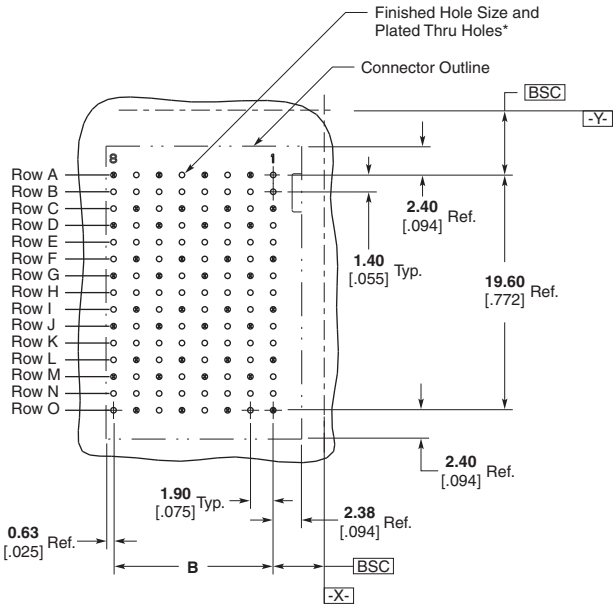
5 Pair Vertical Header Assemblies — Left End Wall

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934272-1	**16.30** .642	**13.30** .524	1-1804791-1	1934218-1
16	1934333-1	**31.50** 1.240	**28.50** 1.122	1-1804791-2	1934221-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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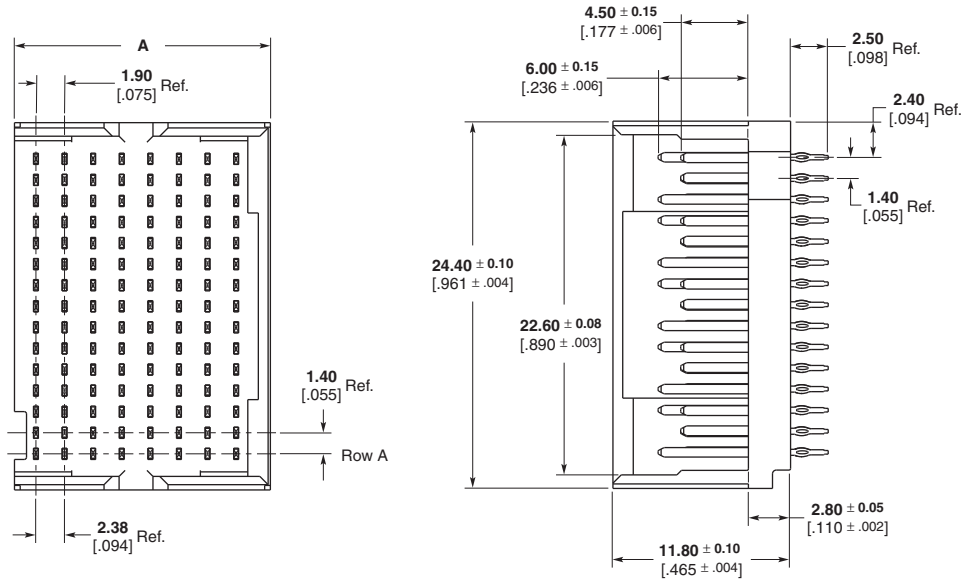
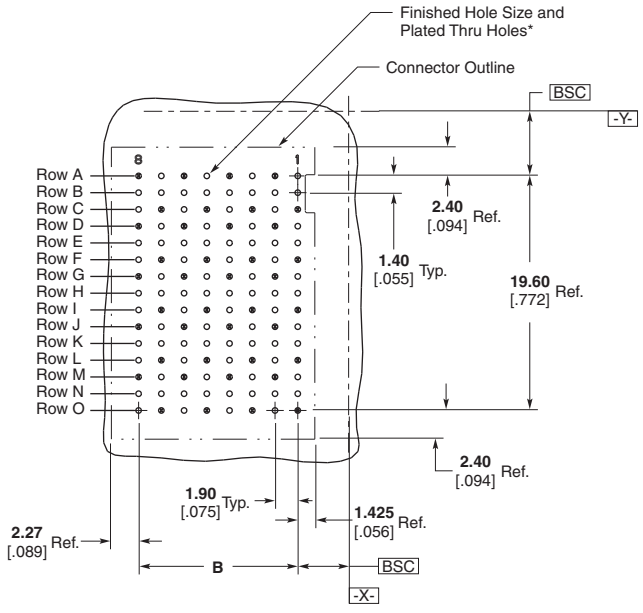
UK: 44-8706-080-208

5 Pair Vertical Header Assemblies — Right End Wall

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934273-1	**17.00** .669	**13.30** .524	1-1804791-1	1934218-1
16	1934334-1	**32.20** 1.268	**28.50** 1.122	1-1804791-2	1934221-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

Catalog 5-1773447-9
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Hong Kong: 852-2735-1628
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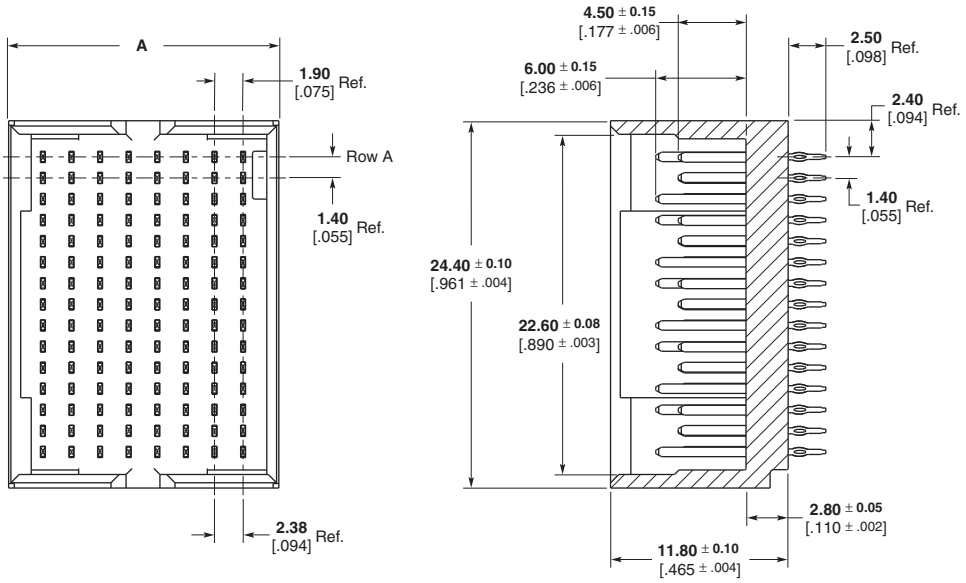
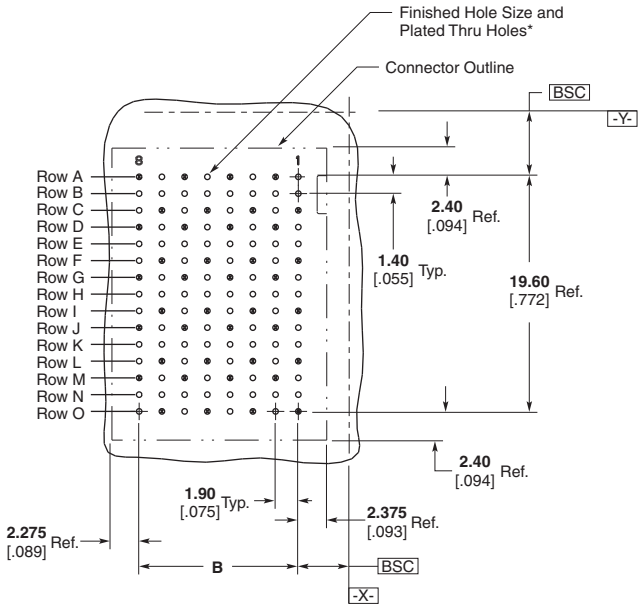
UK: 44-8706-080-208

5 Pair Vertical Header Assemblies — Double End Walls

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934271-1	**17.95** .707	**13.30** .524	1-1804791-1	1934218-1
16	1934332-1	**33.15** 1.305	**28.50** 1.122	1-1804791-2	1934221-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
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Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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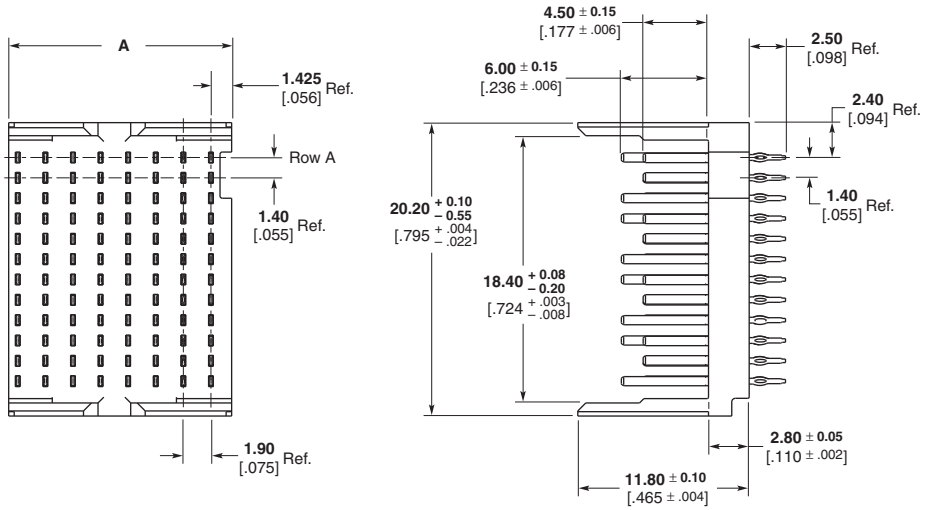
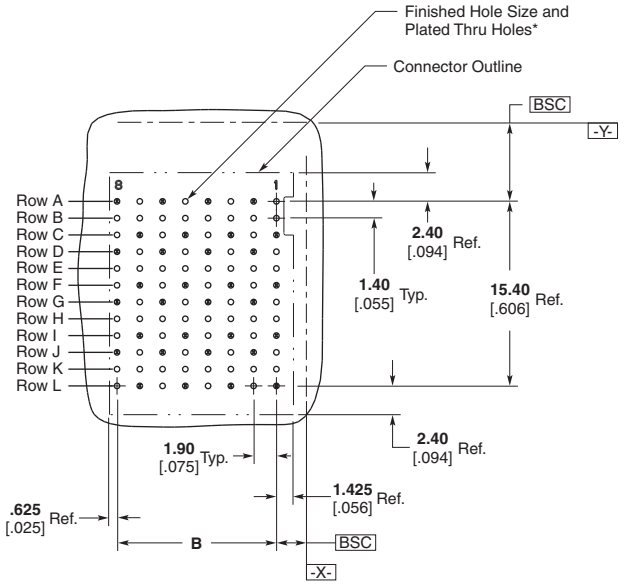
4 Pair Vertical Header Assemblies

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934305-1	**15.35** .604	**13.30** .524	1-1804790-1	1934222-1
16	1934315-1	30.55 1.202	**28.50** 1.122	1-1804790-3	1934225-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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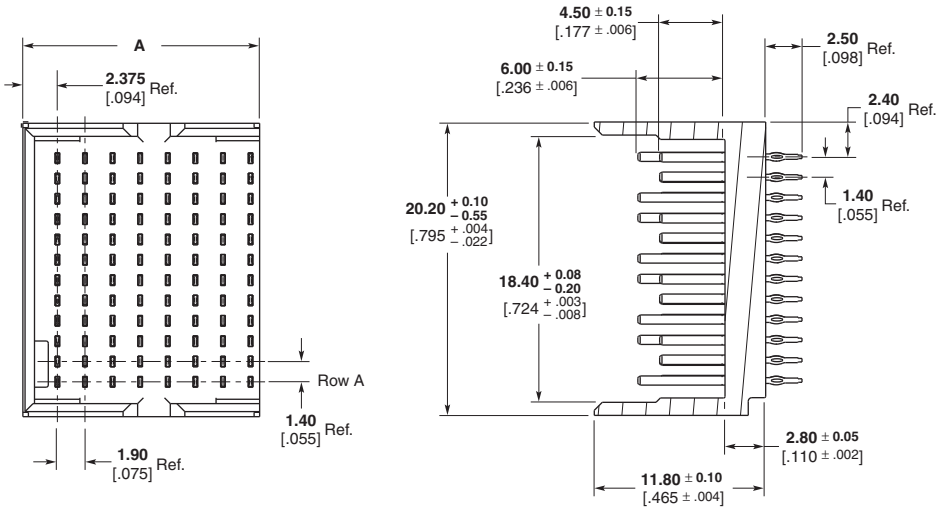
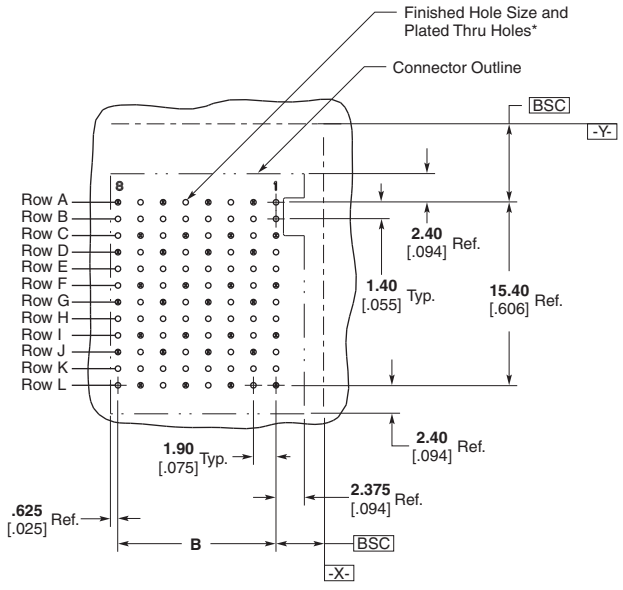
4 Pair Vertical Header Assemblies — Left End Wall

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934303-1	**17.00** .669	**13.30** .524	1-1804790-1	1934222-1
16	1934317-1	**31.50** 1.240	**28.50** 1.122	1-1804790-3	1934225-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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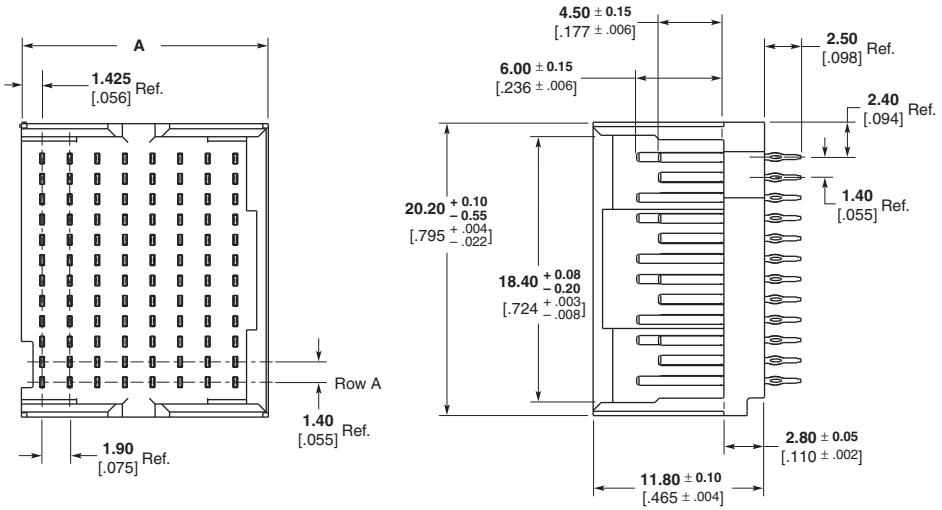
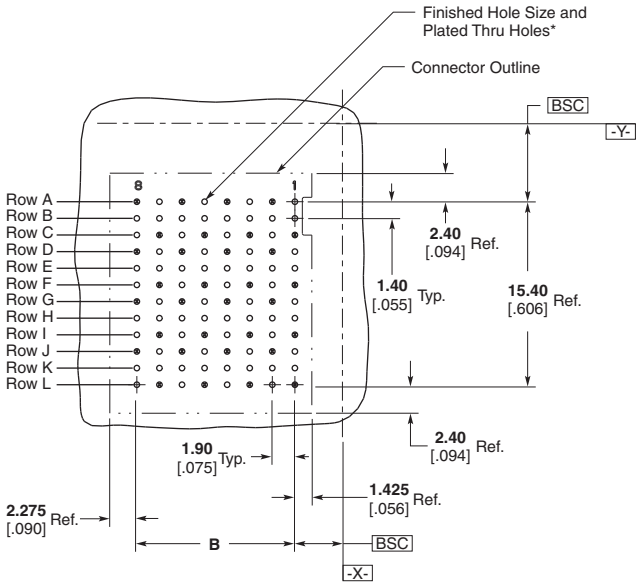
4 Pair Vertical Header Assemblies — Right End Wall

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934304-1	**16.30** .642	**13.30** .524	1-1804790-1	1934222-1
16	1934318-1	**32.20** 1.268	**28.50** 1.122	1-1804790-3	1934225-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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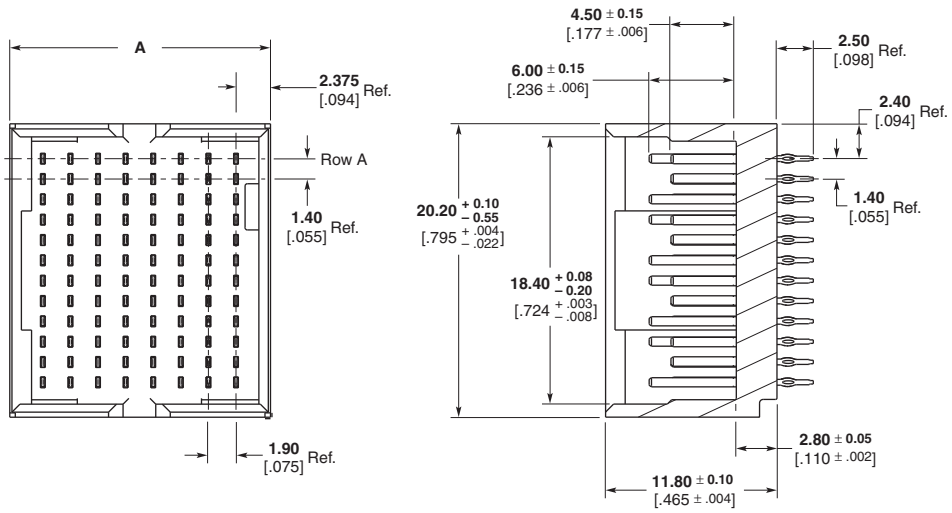
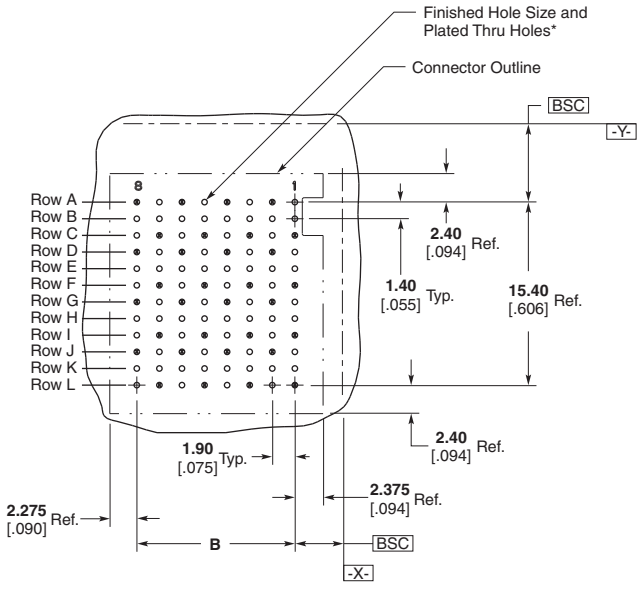
4 Pair Vertical Header Assemblies — Double End Walls

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934306-1	**17.95** .707	**13.30** .524	1-1804790-1	1934222-1
16	1934316-1	**33.15** 1.305	**28.50** 1.122	1-1804790-3	1934225-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Backplane
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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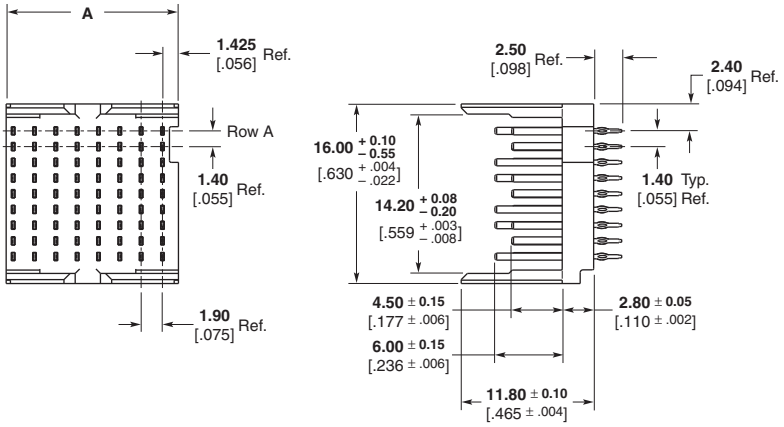
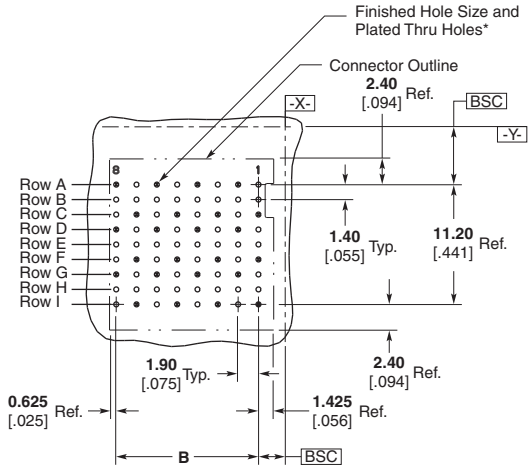
3 Pair Vertical Header Assemblies

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934299-1	**15.53** .611	**13.30** .524	1-1901457-1	1934226-1
10	1934339-1	**19.15** .754	**17.10** .673	1-1901457-2	1934228-1
16	1934343-1	**30.55** 1.203	**28.50** 1.122	1-1901457-3	1934229-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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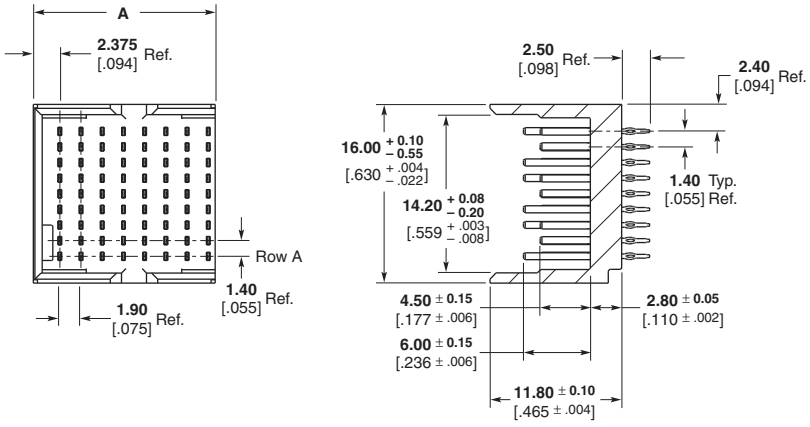
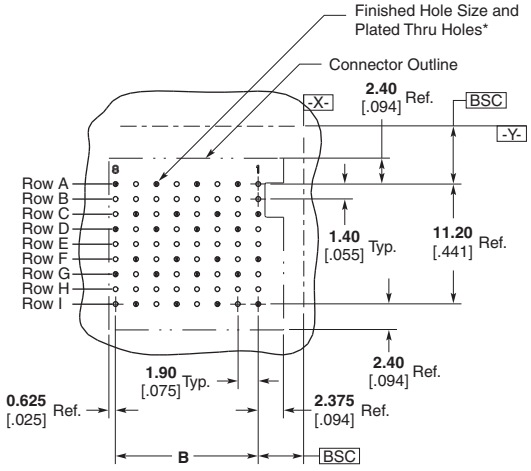
3 Pair Vertical Header Assemblies — Left End Wall

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934300-1	**16.30** .642	**13.30** .524	1-1901457-1	1934226-1
10	1934340-1	**20.10** .791	**17.10** .673	1-1901457-2	1934228-1
16	1934344-1	**31.50** 1.240	**28.50** 1.122	1-1901457-3	1934229-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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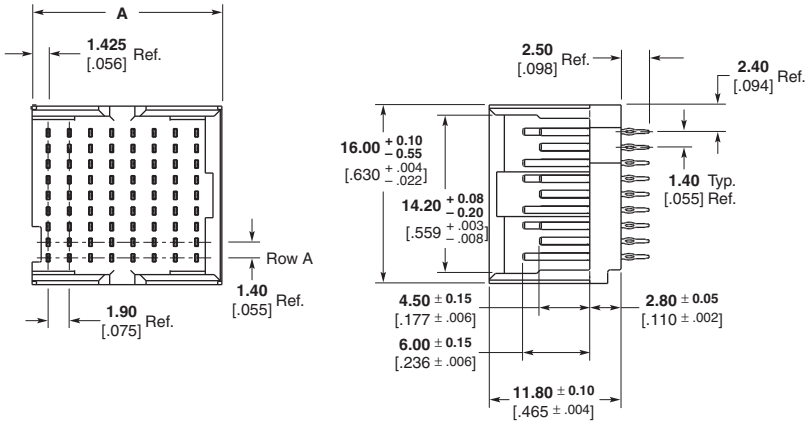
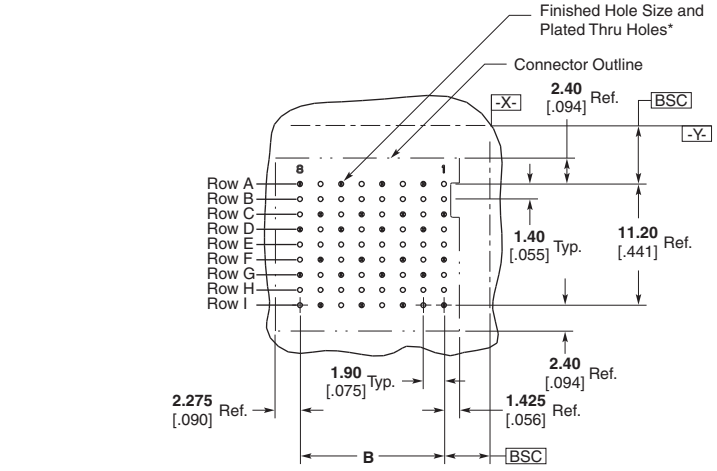
3 Pair Vertical Header Assemblies — Right End Wall

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934301-1	**17.00** .669	**13.30** .524	1-1901457-1	1934226-1
10	1934341-1	**20.08** .791	**17.10** .673	1-1901457-2	1934228-1
16	1934345-1	**32.20** 1.268	**28.50** 1.122	1-1901457-3	1934229-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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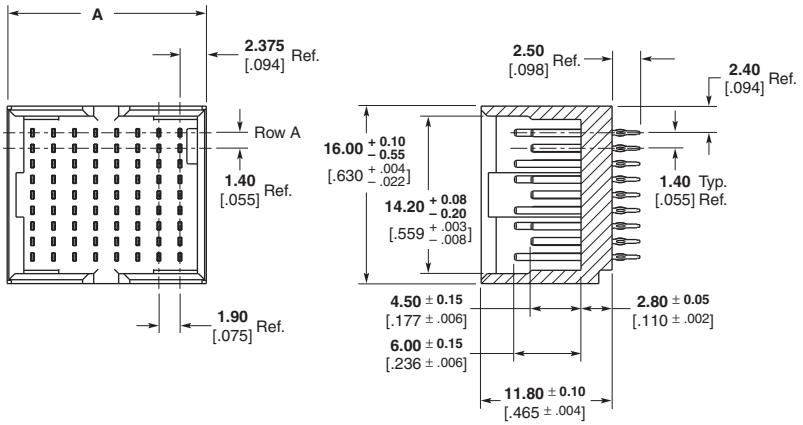
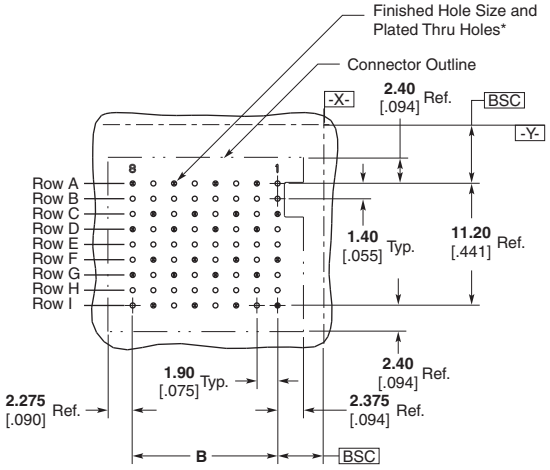
3 Pair Vertical Header Assemblies — Double End Walls

Column	Part Number	Dimension		Application Tooling*	Mates With
		A	B		
8	1934302-1	**17.95** .707	**13.30** .524	1-1901457-1	1934226-1
10	1934342-1	**21.75** .856	**17.10** .673	1-1901457-2	1934228-1
16	1934346-1	**33.15** 1.305	**28.50** 1.122	1-1901457-3	1934229-1

* Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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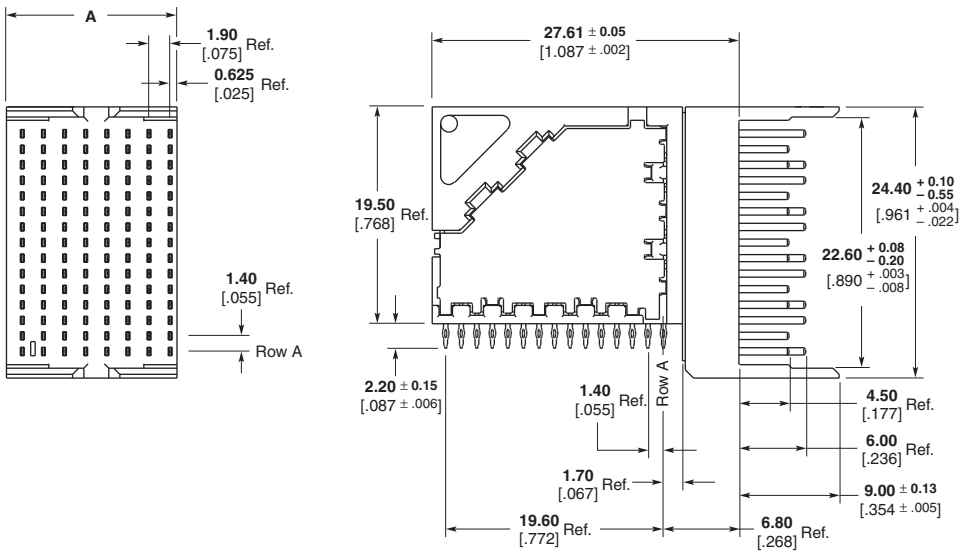
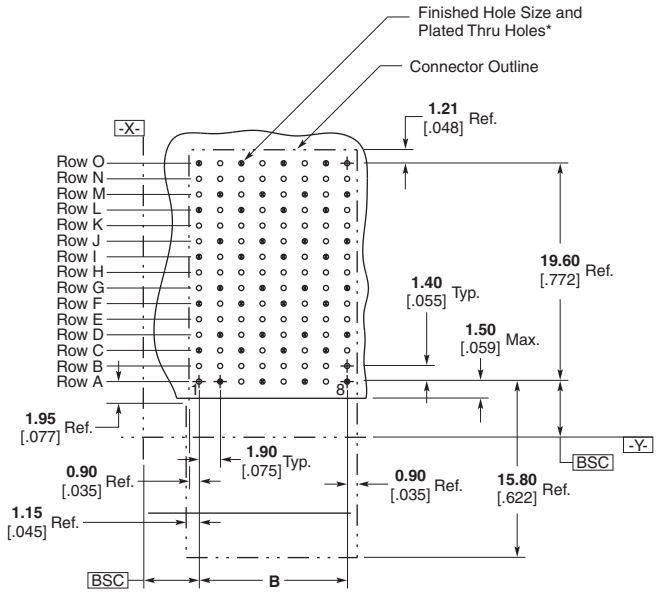
UK: 44-8706-080-208

5 Pair Right Angle Pin Header Assemblies

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934349-1	**15.35** .604	**13.30** .524	*	1934218-1
16	1934347-1	**30.55** 1.203	**28.50** 1.122	*	1934221-1

* Custom tooling not required. Utilizes flat-rock insertion tooling.
Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
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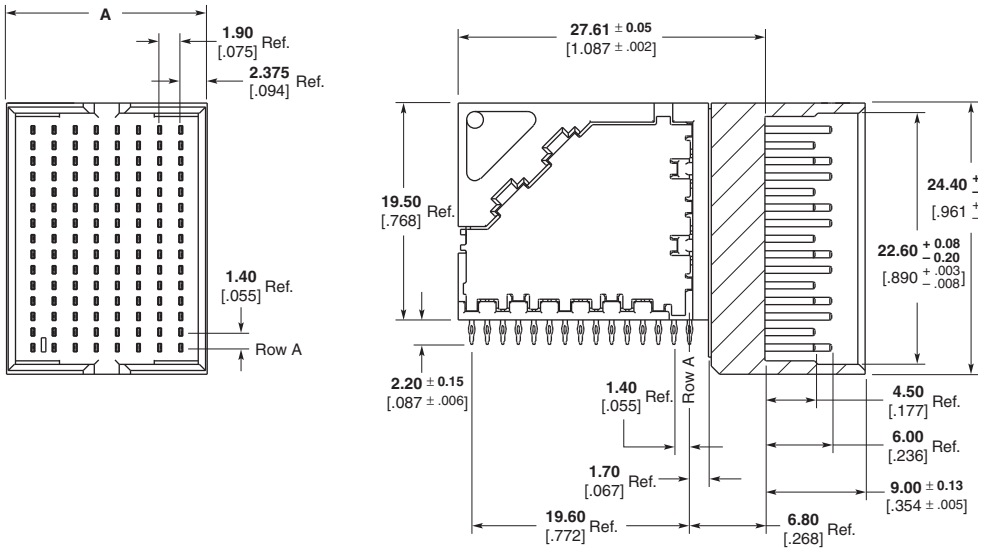
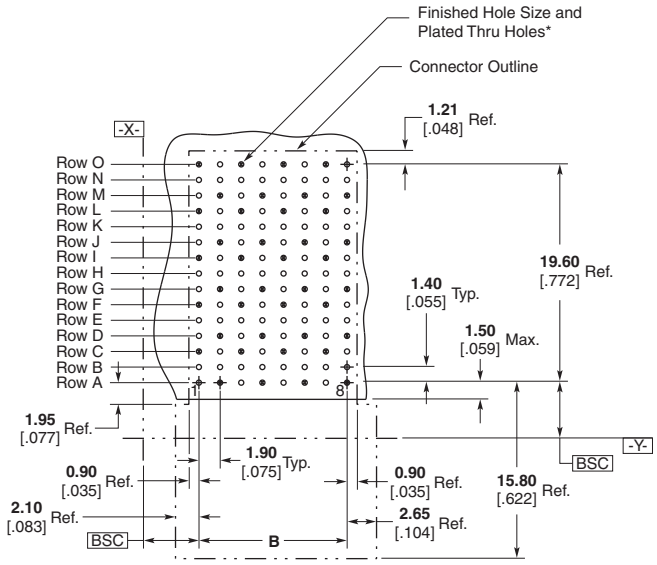
Japan: 81-44-844-8013
UK: 44-8706-080-208

5 Pair Right Angle Pin Header Assemblies — Double End Walls

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934350-1	**18.05** .711	**13.30** .524	*	1934218-1
16	1934348-1	**33.25** 1.309	**28.50** 1.122	*	1934221-1

* Custom tooling not required. Utilizes flat-rock insertion tooling.
Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

Catalog 5-1773447-9
Revised 7-07

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

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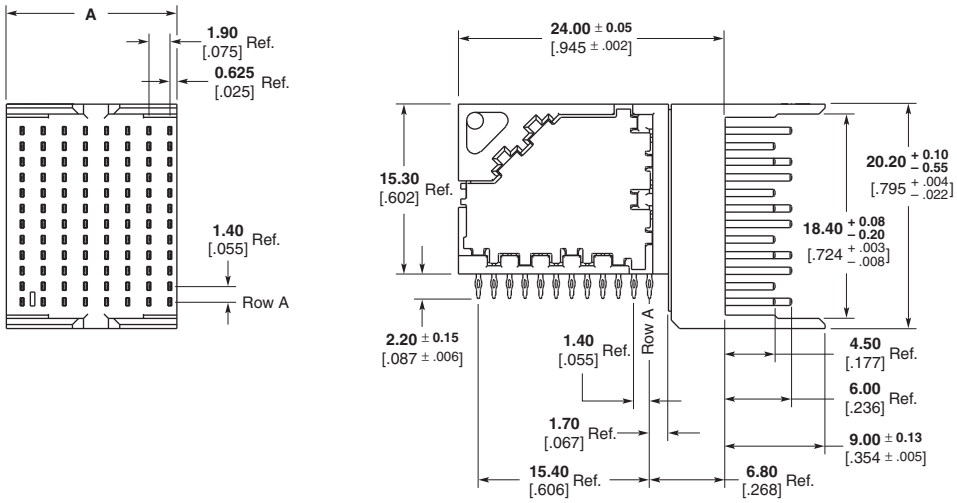
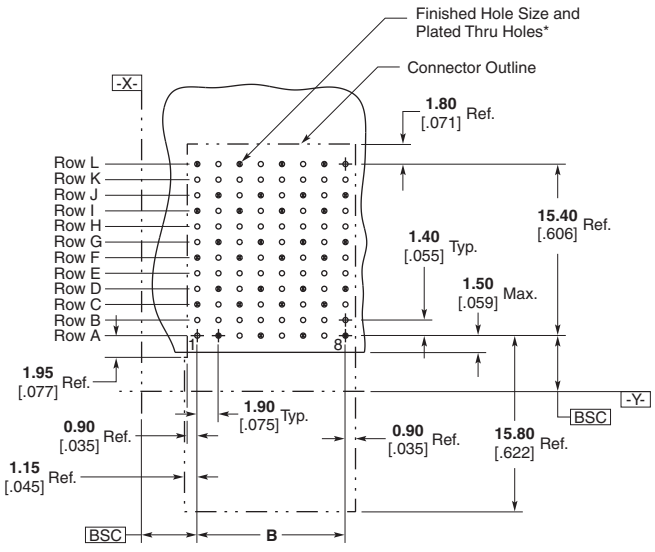
Japan: 81-44-844-8013
UK: 44-8706-080-208

4 Pair Right Angle Pin Header Assemblies

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934353-1	**15.35** .604	**13.30** .524	*	1934222-1
16	1934351-1	**30.55** 1.203	**28.50** 1.122	*	1934225-1

* Custom tooling not required. Utilizes flat-rock insertion tooling.
Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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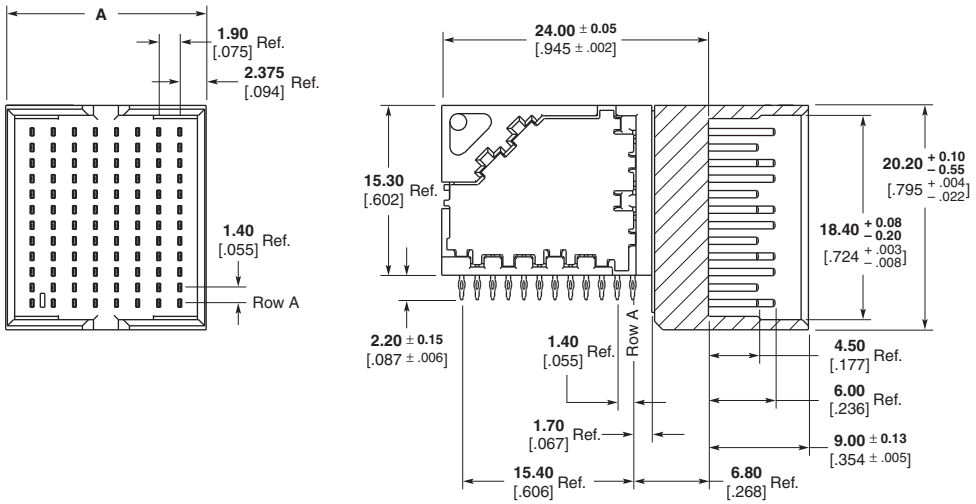
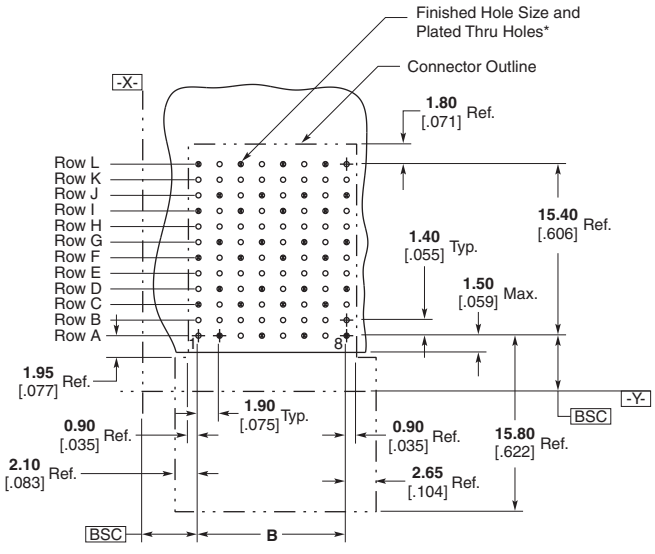
4 Pair Right Angle Pin Header Assemblies — Double End Walls

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934354-1	**18.05** .711	**13.30** .524	*	1934222-1
16	1934352-1	**33.25** 1.309	**28.50** 1.122	*	1934225-1

* Custom tooling not required. Utilizes flat-rock insertion tooling.
Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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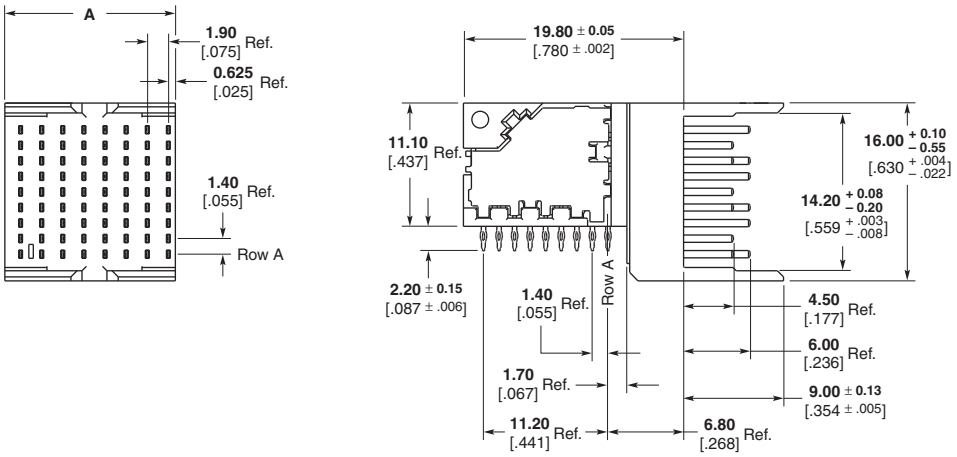
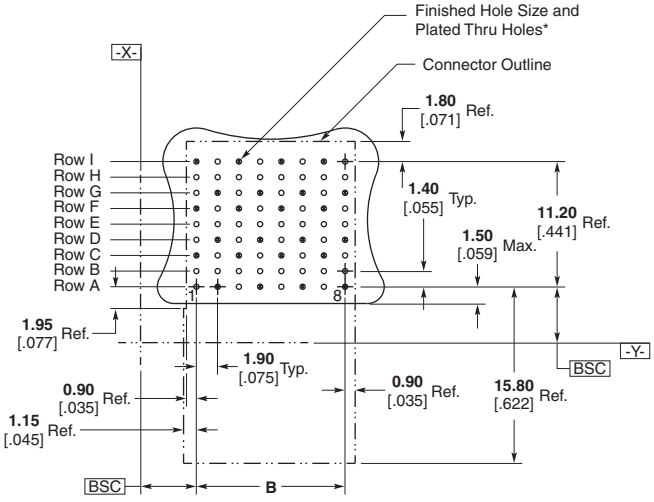
3 Pair Right Angle Pin Header Assemblies

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934359-1	**15.35** .604	**13.30** .524	*	1934226-1
10	1934357-1	**19.15** .754	**17.10** .673	*	1934228-1
16	1934355-1	**30.55** 1.203	**28.50** 1.122	*	1934229-1

* Custom tooling not required. Utilizes flat-rock insertion tooling.
Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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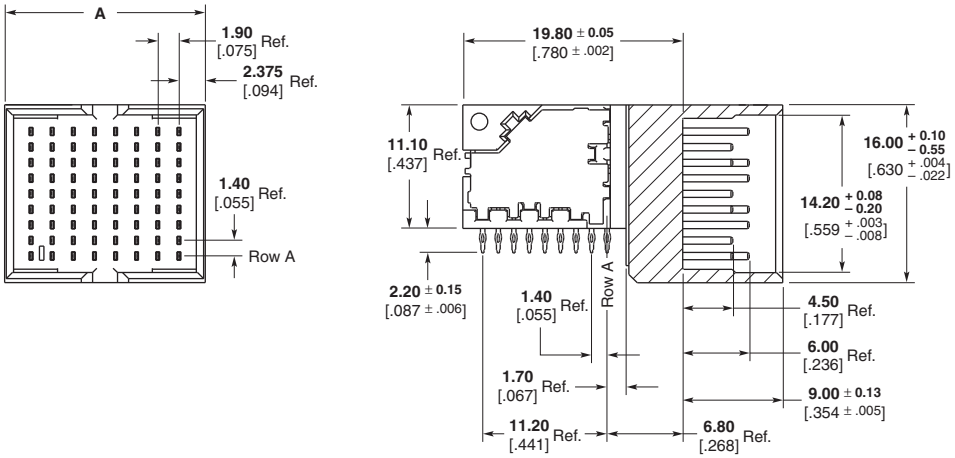
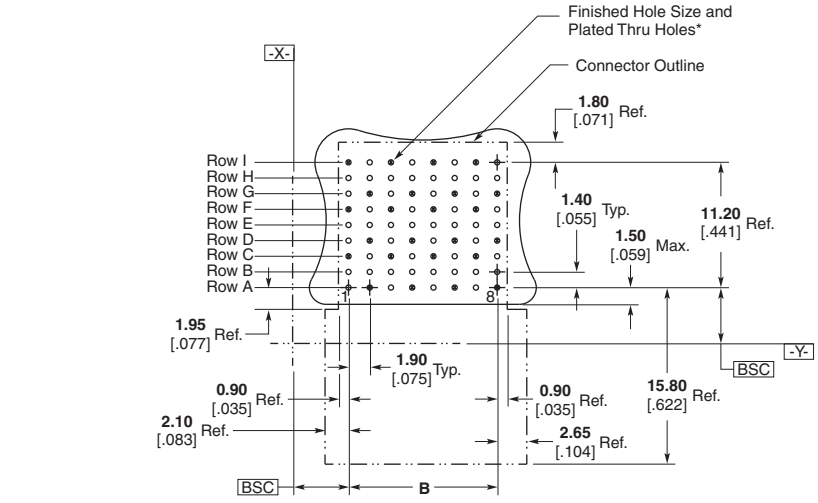
3 Pair Right Angle Pin Header Assemblies — Double End Walls

Column	Part Number	Dimension		Application Tooling	Mates With
		A	B		
8	1934360-1	**18.05** .711	**13.30** .524	*	1934226-1
10	1934358-1	**21.85** .860	**17.10** .673	*	1934228-1
16	1934356-1	**33.25** 1.309	**28.50** 1.122	*	19343229-1

* Custom tooling not required. Utilizes flat-rock insertion tooling.
Reference Application Specification 114-13202.





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC001-1.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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Z-PACK TinMan Mid-Plane (Orthogonal) Connector Overview

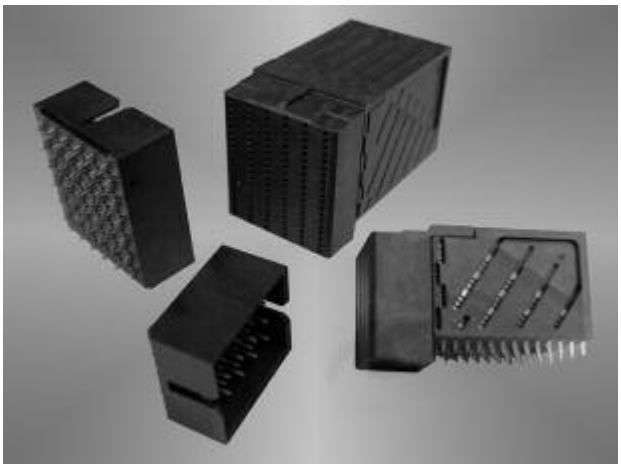
Product Facts

- **Scalable to 25 Gbps**
- **100 ohm impedance for differential pair configuration**
- **Very low noise**
- **Outstanding insertion loss through 2 connectors and vias**
- **Skewless differential pair in a 2-connector system**
- **Utilizes the same header and receptacle part on both sides of the mid-plane**
- **Compatible with standard Z-PACK TinMan connectors and accessories**
- **4 pair x 4 pair and 6 pair x 6 pair modules available**
- **Reliable, redundant contact design on all contacts**
- **Reliable press-fit style termination to PCB**
- **RoHS compliant**

Applications

The Z-PACK TinMan Mid-plane (orthogonal) connector is ideally designed for very demanding applications involving data rates in excess of 10 Gbps with many interconnections required. Such applications would include the following Telecom/Datacom equipment:

- **Switches**
- **Servers**
- **Routers**
- **Storage**



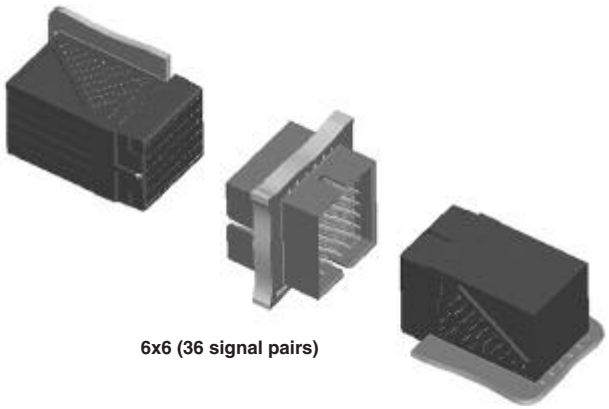
The Z-PACK TinMan mid-plane (orthogonal) connector is an extension of the Z-PACK TinMan connector product line, which includes perpendicular and coplanar interconnect solutions in 3 pair, 4 pair, and 5 pair versions.

This connector system is commonly referred to as an orthogonal connector system due to the orthogonal (perpendicular) orientation of the two system boards being connected on the front and rear side. It is built on the same technology and design approach as standard Z-PACK TinMan connectors with the same mating interface and lead-frame geometry.

Superior electrical performance is achieved for several reasons. The front board to rear board connection through the mid-plane makes the plated through hole (PTH) part of the signal transmission path eliminating the detrimental effects of via stubs. This construction also eliminates the need to route all the high speed signal lines along the backplane minimizing signal loss and significantly improving signal throughput. The wide column spacing establishes a connector footprint with improved impedance and reduced electrical noise. The in-line footprint version also provides ease of trace routing with wide channels and a connector interface compatible with the orthogonal receptacle. This permits the use of the same daughtercard in both mid-plane and backplane configurations.

The benefits are not limited to just signal integrity performance. The thinner mid-plane with fewer layers and significantly less complex routing is inherently less expensive. With trace routing typically limited to power distribution, low speed lines and potentially very few high speed links, the board can be fabricated from a cost effective material without the need to utilize techniques such as counter-boring or back-drilling.

All of this permits the implementation of small to large scale full mesh interconnects with significantly reduced complexity at a lower cost and with improved signal integrity.



6x6 (36 signal pairs)

For additional information visit:
http://www.tycoelectronics.com/zpacktinman

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Revised 7-07

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Z-PACK TinMan Mid-Plane (Orthogonal) Connector Overview (Continued)

Noise Table

■ **Maximum, multiple source crosstalk**

VICTIM	Total Peak Receiver Noise for Recommended Pin-Out
AB3	0.50%
CD3	1.00%
EF3	0.90%
GH3	0.80%
JK3	0.90%
LM3	0.60%

Note: Data includes PCB vias of both backplane and daughtercard connectors.
Single mated connector pair.
50 ps (20-80%) edge rate.

Technical Documents

Product Specification 108-2303
Application Specification 114-13202
Routing Guide Report #27GC002

Material and Finish

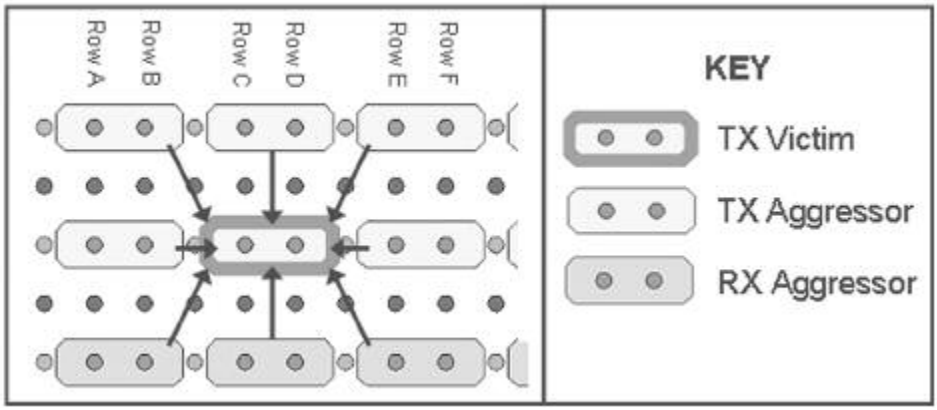
Signal Contact — High Strength Copper Alloy
Ground Contact — High Strength Copper Alloy
Housing — Liquid Crystal Polymer
Platings — Telcordia compliant interface, Nickel underplate
Compliant Pin Plating — RoHS Compliant

Ratings

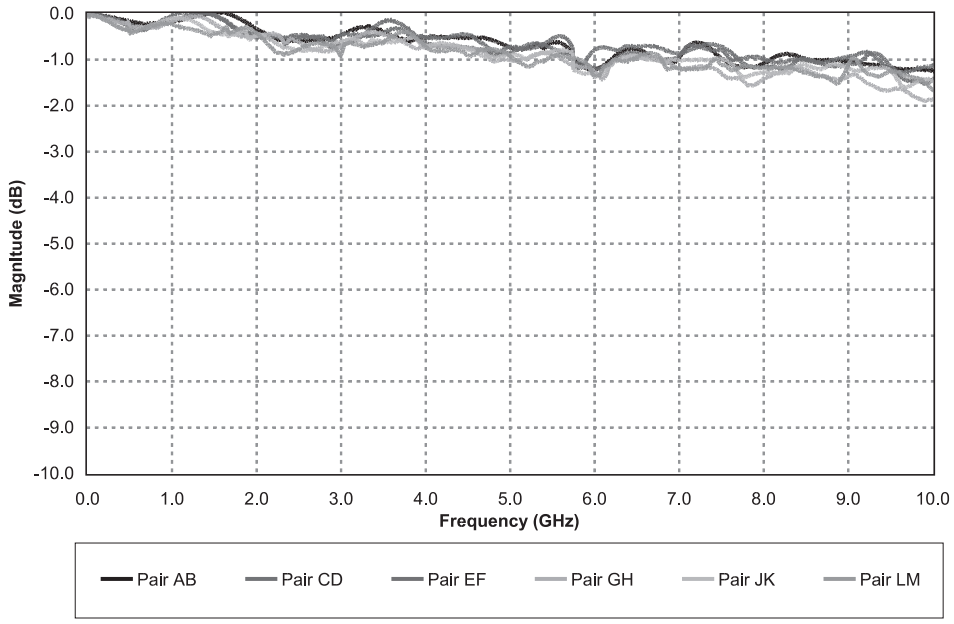
Temperature Range — -65°C to +90°C
Current Rating — 0.5 A/contact @ < 30°C T-Rise
Durability — 200 cycles
Dielectric Withstanding Voltage — 560 VAC
Operating Voltage — 250 VAC max.

Signal Integrity

Characteristic Impedance — Differential @ 100 ohms ±10%
Crosstalk — Multi-pair differential crosstalk: 1.0% @ 50ps
Insertion Loss — -2 dB @ 10 GHz



Insertion Loss Plot



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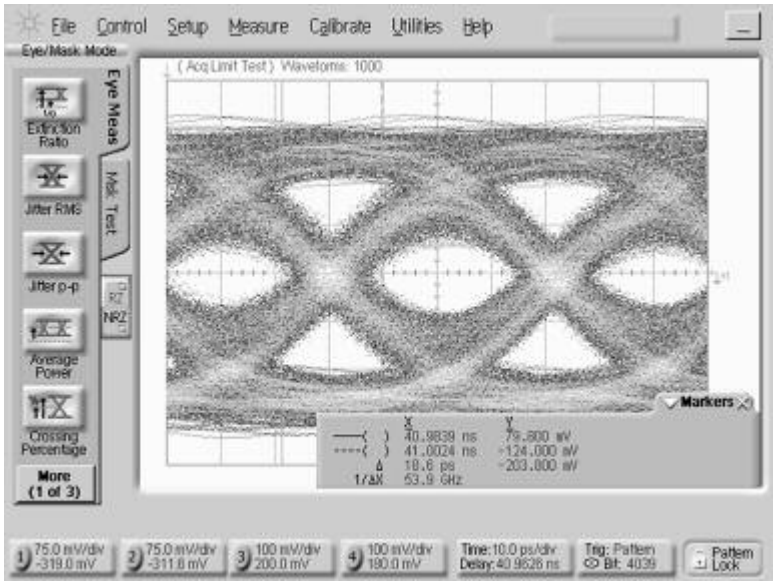
Z-PACK TinMan Mid-Plane (Orthogonal) Connector Overview (Continued)

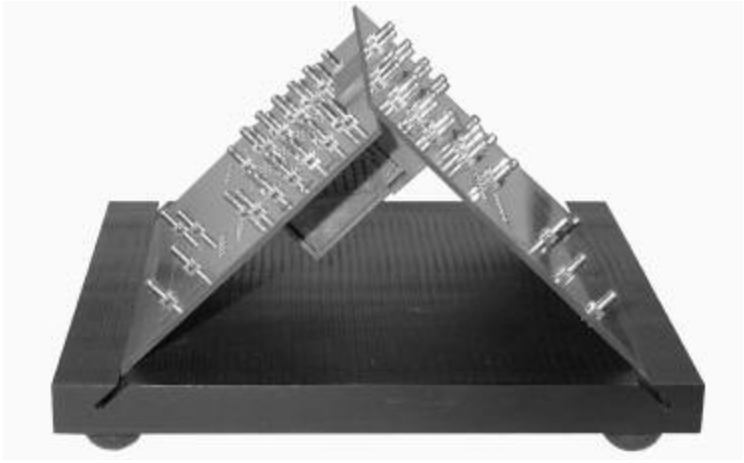
Representative Eye Pattern

- 10.0 Gbps data rate
- 2^7 -1 PRBS
- Unequalized Signal



Customer Connector Evaluation Kit

- Connector characterization
- Available for loan — contact your local Tyco Electronics Sales Engineer
- Time and frequency domain testable
- Testable to 18+ GHz (25+ Gb/s)
- Multiple calibration options
- Convenient SMA interface



Customer System Evaluation Kit

- System characterization
- Available for loan — contact your local Tyco Electronics Sales Engineer
- Time and frequency domain testable
- Testable to 18+ GHz (25+ Gb/s)
- Multiple calibration options
- Convenient SMA interface

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6 Pair Mid-Plane Assemblies

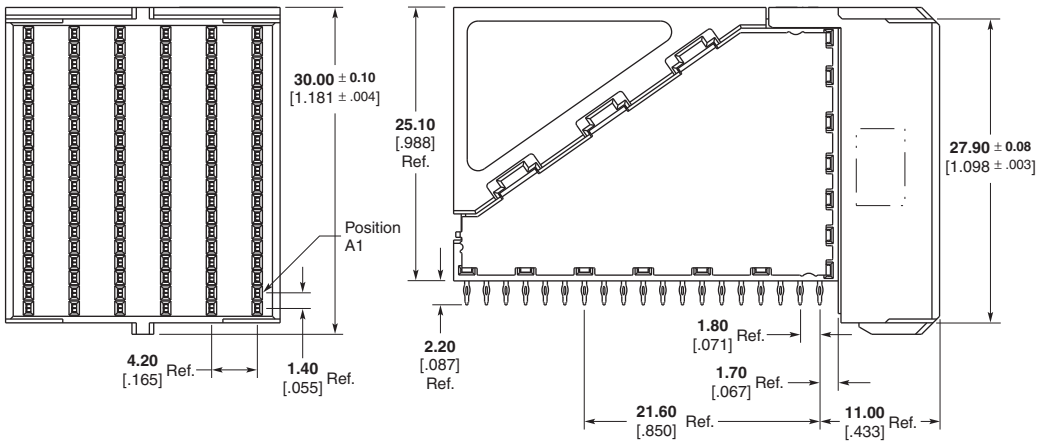
6 Pair Right Angle Receptacle Assembly

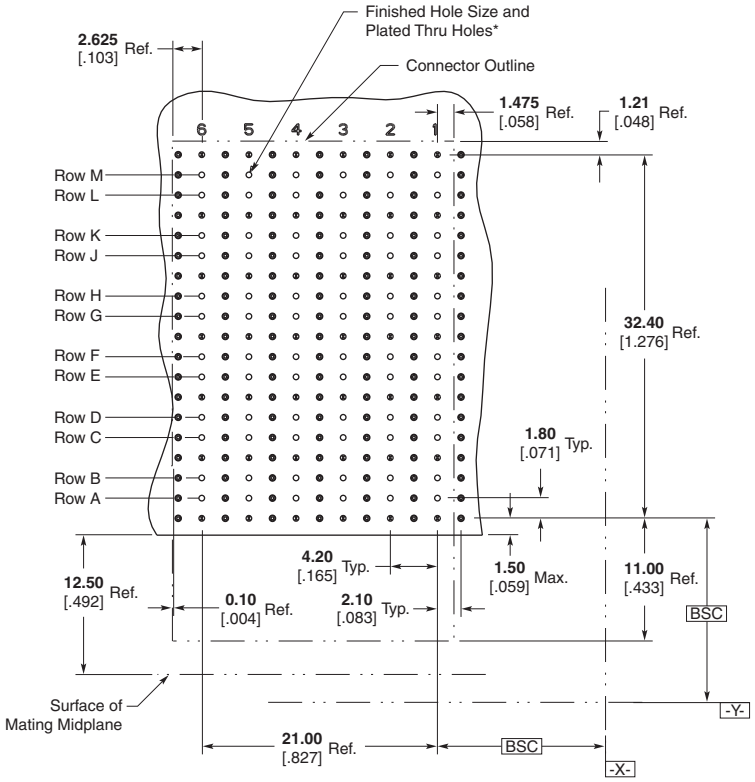
Part Number: 1934231-1

Custom tooling not required. Utilizes flat-rock insertion tooling.

Reference Application Specification 114-13202

Mates with: 1934364-1, 1934363- 1





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC002.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
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6 Pair Mid-Plane Assemblies (Continued)

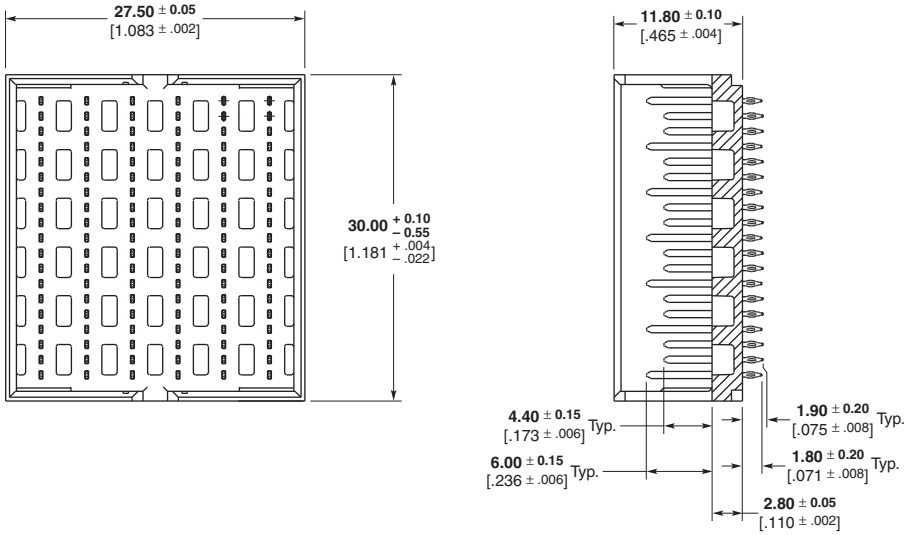
6 Pair Vertical Header Assembly

Part Number: 1934364-1

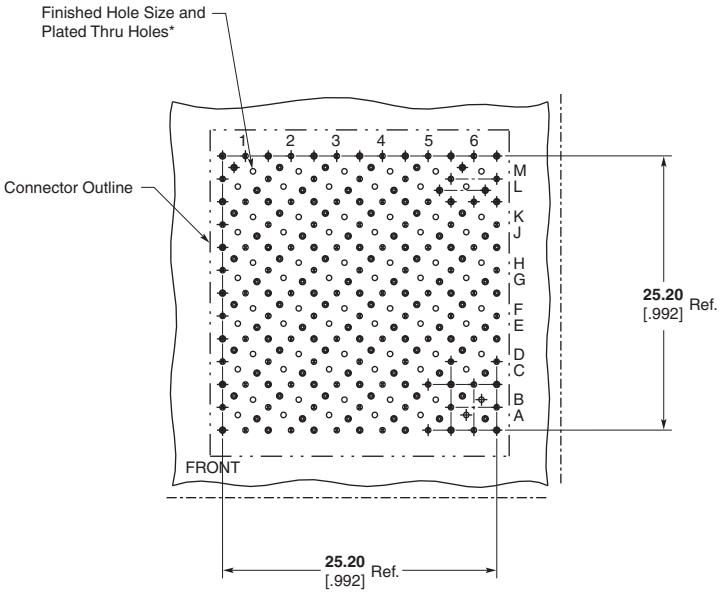
Insertion Tooling: Contact Tyco Electronics

Reference Application Specification 114-13202

Mates with: 1934231-1



Footprint shown for reference only. Contact Tyco Electronics engineering for details.



Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC002.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
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6 Pair Mid-Plane Assemblies (Continued)

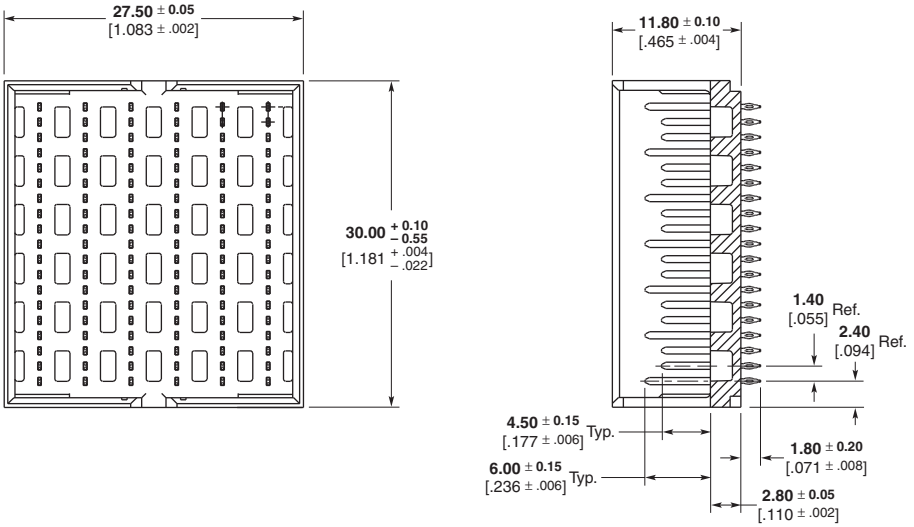
6 Pair Vertical Header Assembly — In Line Footprint

Part Number: 1934363-1

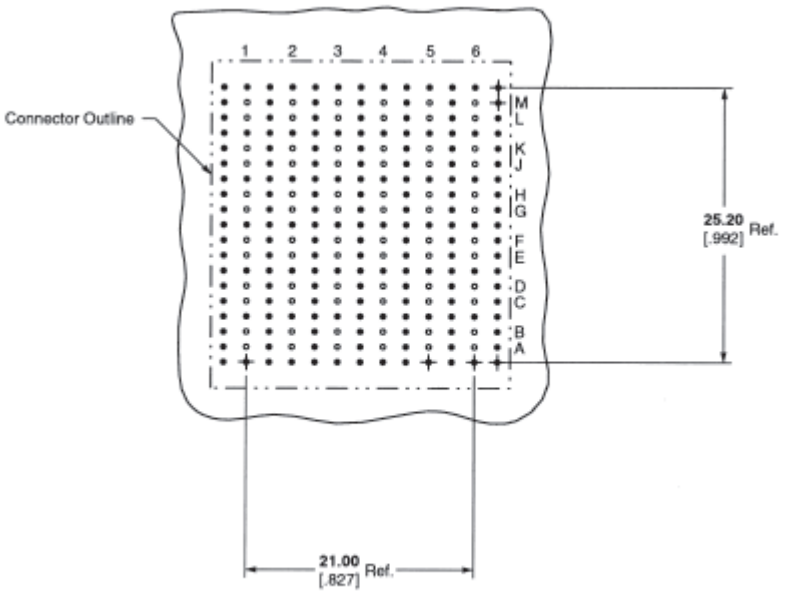
Insertion Tooling: Contact Tyco Electronics

Reference Application Specification 114-13202

Mates with: 1934231-1



Footprint shown for reference only. Contact Tyco Electronics engineering for details.



Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC002.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

Catalog 5-1773447-9
Revised 7-07

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C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

4 Pair Mid-Plane Assemblies

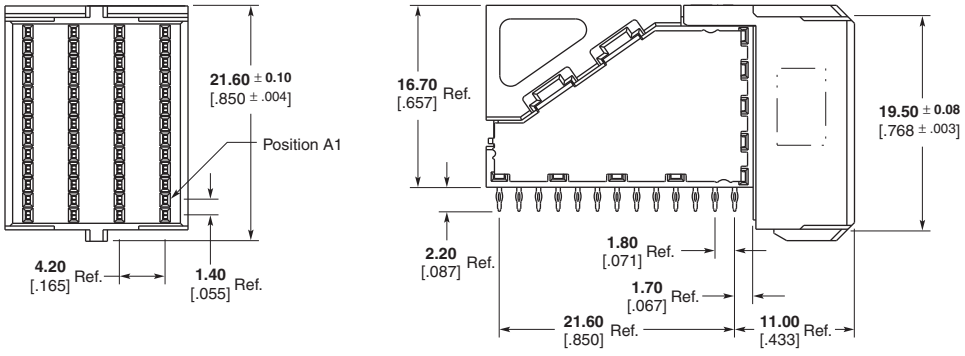
4 Pair Right Angle Receptacle Assembly

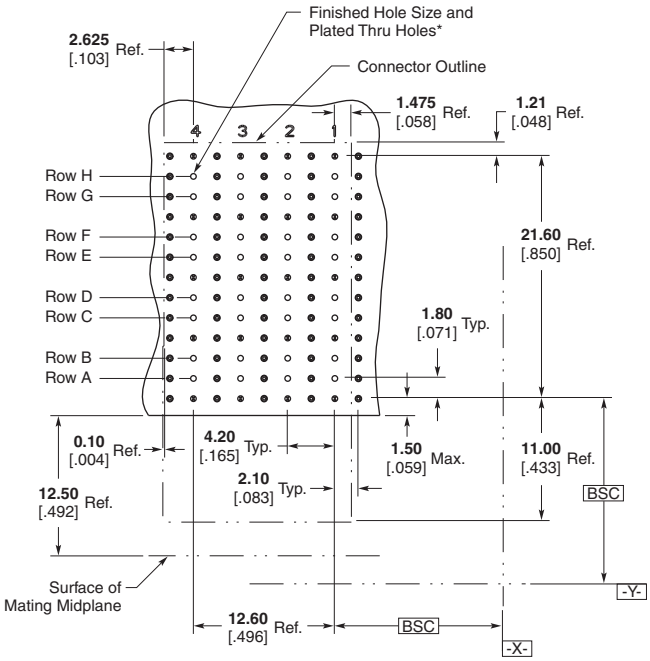
Part Number: 1934230-1

Custom tooling not required. Utilizes flat-rock insertion tooling.

Reference Application Specification 114-13202

Mates with: 1934362-1, 1934361-1





Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC002.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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4 Pair Mid-Plane Assemblies (Continued)

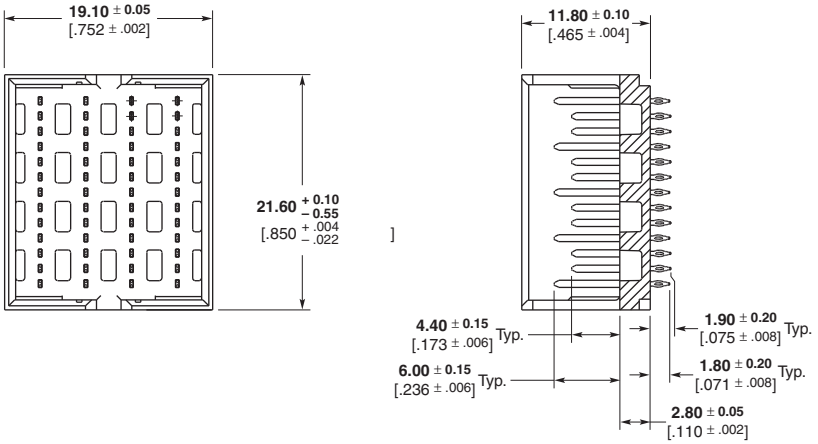
4 Pair Vertical Header Assembly

Part Number: 1934362-1

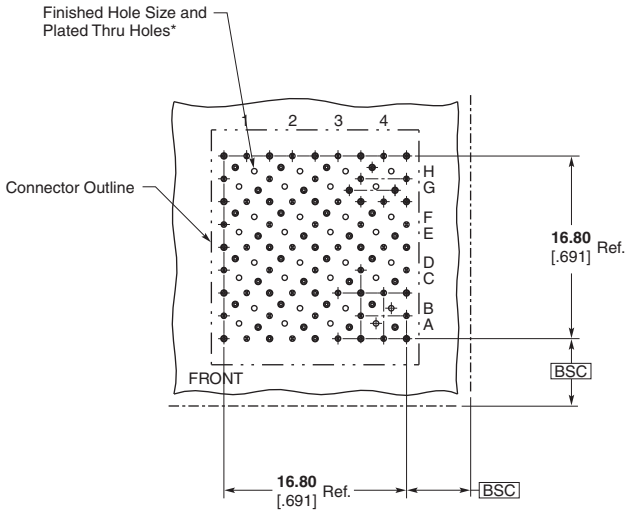
Insertion Tooling:
Contact Tyco Electronics

Reference Application Specification 114-13202

Mates with: 1934230-1



Footprint shown for reference only. Contact Tyco Electronics engineering for details.



Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC002.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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4 Pair Mid-Plane Assemblies (Continued)

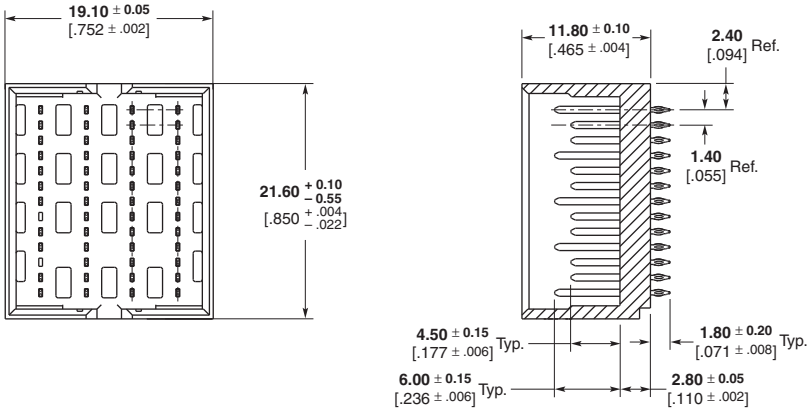
4 Pair Vertical Header Assembly — In Line Footprint

Part Number: 1934361-1

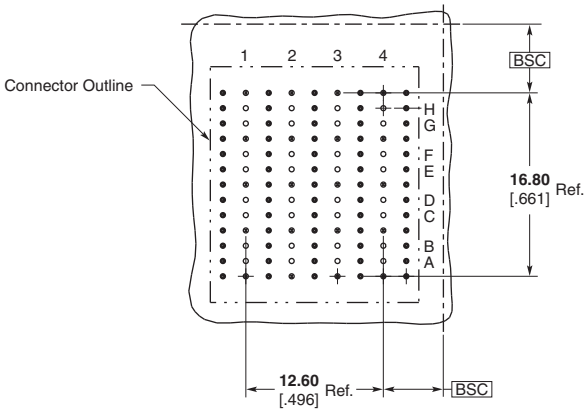
Insertion Tooling: Contact Tyco Electronics

Reference Application Specification 114-13202

Mates with: 1934230-1



Footprint shown for reference only. Contact Tyco Electronics engineering for details.



Recommended PC Board Layout
Component Side Shown

Note: For additional information on pcb routing guidelines, reference the Z-PACK TinMan Connector Routing Guide Report #27GC002.

* Finished Hole Diameter = **0.46 ±0.05** [.018 ±.002]
Drilled Hole Diameter = **0.55 ±0.02** [.022 ±.001]
Copper Thickness = **0.038 ±0.013** [.0015 ±.0005]
Tin-Lead Thickness = **0.008 ±0.004** [.0003 ±.0002]
Finishes other than Tin-Lead, See Appl. Spec. 114-13202

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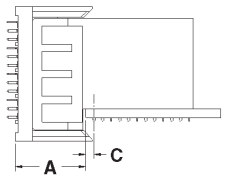
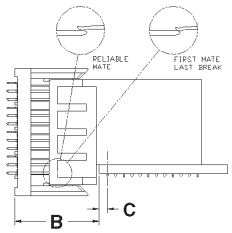
Z-PACK TinMan Product Mating Sequence Chart



Fully Mated



Reliable Mate

Product Family	Dim. C	Dim. A Fully Mated	Contact	Dim B. Reliable Mate	Dim B. First Mate Last Break	Fully Mated Wipe Length
Z-PACK HM-Zd Product	**1.50** .059	**12.50** .492	Ground Shield	**16.78** [.661]	**17.55** [.691]	**4.28** [.169]
			Signal Level 2	**15.41** [.607]	**15.85** [.624]	**2.91** [.115]
			Signal Level 1	**13.91** [.548]	**14.35** [.565]	**1.41** [.056]
Z-PACK HM-Zd Guide Hardware	**3.00** .118	**12.50** .492	24.0 mm Pin	**27.50** [1.083]	**33.40** [1.315]	N/A
			22.2 mm Pin	**25.70** [1.012]	**31.60** [1.244]	N/A
			Key Blocking Point	N/A	**22.03** [.867]	N/A
Z-PACK TinMan Product	**1.50** .059	**12.50** .492	Ground Pins	**16.44** [.647]	**17.13** [.674]	**3.94** [.155]
			Signal Level 2	**14.94** [.588]	**15.63** [.615]	**2.44** [.096]
			Signal Level 1	N/A	N/A	N/A
Z-PACK 2mm HM Product	**1.50** .059	**12.50** .492	Signal Level 3	**18.27** [.719]	**18.84** [.742]	**5.77** [.227]
			Signal Level 2	**16.77** [.660]	**17.34** [.683]	**4.27** [.168]
			Signal Level 1	**15.27** [.601]	**15.84** [.624]	**2.77** [.109]
MULTIGIG RT T1 Product	**2.50** .098	**12.50** .492	Ground	**18.00** [.709]	—	**5.50** [.217]
			Signal Level 3	**18.00** [.709]	—	**5.50** [.217]
			Signal Level 2	**16.50** [.650]	—	**4.00** [.157]
			Signal Level 1	**15.00** [.591]	—	**2.50** [.098]
MULTIGIG RT T2 Product	**2.25** .089	**12.50** .492	Ground	**18.00** [.709]	—	**5.50** [.217]
			Signal Level 3	**18.00** [.709]	—	**5.50** [.217]
			Signal Level 2	**16.50** [.650]	—	**4.00** [.157]
			Signal Level 1	**15.00** [.591]	—	**2.50** [.098]
MULTIGIG RT T3 Product	**2.25** .089	**12.50** .492	Ground	**16.50** [.650]	—	**4.00** [.157]
			Signal Level 1	**15.00** [.591]	—	**2.50** [.098]
MULTIGIG RT Power Module	**5.50** .217	**12.50** .492	Power Level 3	**23.75** [.935]	—	**11.25** [.443]
			Power Level 2	**22.25** [.876]	—	**9.75** [.384]
			Power Level 1	**20.75** [.817]	—	**8.25** [.325]
MULTIGIG RT Guide Hardware	N/A	**12.50** .492	Guide Pin Key	**33.25** [1.309]	N/A	**20.75** [.817]
			Guide ESD Contact	**30.75** [1.211]	—	**18.25** [.719]
Z-PACK HS3 Product	**1.50** .059	**12.50** .492	Ground	**17.08** [.672]	**17.60** [.693]	**4.78** [.188]
			Signal Level 2	**16.05** [.632]	**16.47** [.648]	**3.75** [.148]
			Signal Level 1	**14.55** [.573]	**14.97** [.589]	**2.25** [.089]
UPM	**3.50** .138	**12.50** .492	Power Level 3	**20.25** [.797]	**20.95** [.825]	**8.10** [.319]
			Power Level 2	**18.65** [.734]	**19.35** [.762]	**6.50** [.256]
			Power Level 1	**17.03** [.670]	**17.73** [.698]	**4.88** [.192]
UPM Guide Hardware	**5.75** .226	**12.50** .492	Guide Pin Key	**31.39** [1.236]	**36.16** [1.424]	N/A
			Keyed Guide Pin	**31.39** [1.236]	**36.16** [1.424]	N/A
			Keyed Guide Pin	**35.23** [1.387]	**40.00** [1.575]	N/A
MULTI-BEAM XL Right Angle Header to Vertical Receptacle	**5.08** .200	**14.73** .580	PreMate Power — Level 1	—	**16.84** [.663]	**5.61** [.221] Min.
			PostMate Power — Level 2	—	**17.81** [.701]	**4.34** [.171] Min.
			PreMate Signal — Level 2	—	**18.26** [.719]	**3.81** [.150] Min.
			PostMate Signal — Level 3	—	**19.53** [.769]	**2.54** [.100] Min.
MULTI-BEAM XL Right Angle Receptacle to Vertical Header	**3.81** .150	**13.21** .520	PreMate Power — Level 1	—	**15.32** [.603]	**5.61** [.221] Min.
			PostMate Power — Level 2	—	**16.28** [.641]	**4.34** [.171] Min.
			PreMate Signal — Level 2	—	**16.74** [.659]	**3.81** [.150] Min.
			PostMate Signal — Level 3	—	**18.01** [.709]	**2.54** [.100] Min.

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Z-PACK MAX Connector to Z-PACK TinMan Connector Base Part Number Cross Reference*

Z-PACK MAX Connector Base Part Number	Z-PACK TinMan Connector Base Part Number	Description
1469659	1934218	Receptacle Assembly, 5 pair, Standard, 8 Column
1469660	1934269	Header Assembly, Open Ended, 5 Pair 8 Column
1469680	1934272	Header Assembly, Left Wall, 5 Pair 8 Column
1469680	1934273	Header Assembly, Right Wall, 5 Pair 8 Column
1469681	1934271	Header Assembly, Double Wall, 5 Pair 8 Column
1469687	1934315	Header Assembly, Open Ended, 4 Pair 16 Column
1469693	1934225	Receptacle Assembly, 4 pair, Standard, 16 Column
1469702	1934303	Header Assembly, Left Wall, 4 Pair 8 Column
1469702	1934304	Header Assembly, Right Wall, 4 Pair 8 Column
1469703	1934317	Header Assembly, Left Wall, 4 Pair 16 Column
1469703	1934318	Header Assembly, Right Wall, 4 Pair 16 Column
1469706	1934306	Header Assembly, Double Wall, 4 Pair 8 Column
1469707	1934316	Header Assembly, Double Wall, 4 Pair 16 Column
1469716	1934305	Header Assembly, Open Ended, 4 Pair 8 Column
1469717	1934222	Receptacle Assembly, 4 pair, Standard, 8 Column
1469735	1934349	Right Angle Header Assembly, Open Ended, 5 Pair 8 Column
1469737	1934350	Right Angle Header Assembly, Double Wall, 5 Pair 8 Column
1469753	1934331	Header Assembly, Open Ended, 5 Pair 16 Column
1469754	1934221	Receptacle Assembly, 5 pair, Standard, 16 Column
1469755	1934333	Header Assembly, Left Wall, 5 Pair 16 Column
1469755	1934334	Header Assembly, Right Wall, 5 Pair 16 Column
1469756	1934332	Header Assembly, Double Wall, 5 Pair 16 Column
1469768	1934305	Header Assembly, Open Ended, 4 Pair 8 Column
1469769	1934222	Receptacle Assembly, 4 pair, Standard, 8 Column
1469774	1934311	Header Assembly, Open Ended, 4 Pair 10 Column
1469775	1934224	Receptacle Assembly, 4 pair, Standard, 10 Column
1469784	1934362	4x4 Orthogonal Offset Header Assembly, Double Wall
1469785	1934230	Receptacle Assembly, 4x4, Orthogonal
1469786	1934364	6x6 Orthogonal Offset Header Assembly, Double Wall
1469787	1934231	Receptacle Assembly, 6x6, Orthogonal
1469788	1934311	Header Assembly, Open Ended, 4 Pair 10 Column
1469789	1934224	Receptacle Assembly, 4 pair, Standard, 10 Column
1469793	1934353	Right Angle Header Assembly, Open Ended, 4 Pair 8 Column
1469795	1934354	Right Angle Header Assembly, Double Wall, 4 Pair 8 Column
1469807	1934339	Header Assembly, Open Ended, 3 Pair 10 Column
1469809	1934228	Receptacle Assembly, 3 pair, Standard, 10 Column
1469827	1934339	Header Assembly, Open Ended, 3 Pair 10 Column
1469828	1934228	Receptacle Assembly, 3 pair, Standard, 10 Column
1469829	1934299	Header Assembly, Open Ended, 3 Pair 8 Column
1469831	1934226	Receptacle Assembly, 3 pair, Standard, 8 Column
1469853	1934335	Header Assembly, Open Ended, 3 Pair 6 Column
1469854	1934227	Receptacle Assembly, 3 pair, Standard, 6 Column
1469867	1934340	Header Assembly, Left Wall, 3 Pair 10 Column
1469867	1934341	Header Assembly, Right Wall, 3 Pair 10 Column
1469871	1934357	Right Angle Header Assembly, Open Ended, 3 Pair 10 Column
1469874	1934358	Right Angle Header Assembly, Double Wall, 3 Pair 10 Column
1469935	1934342	Header Assembly, Double Wall, 3 Pair 10 Column
1469945	1934300	Header Assembly, Left Wall, 3 Pair 8 Column
1469945	1934301	Header Assembly, Right Wall, 3 Pair 8 Column
1469946	1934302	Header Assembly, Double Wall, 3 Pair 8 Column
1469949	1934343	Header Assembly, Open Ended, 3 Pair 16 Column
1469950	1934344	Header Assembly, Left Wall, 3 Pair 16 Column
1469950	1934345	Header Assembly, Right Wall, 3 Pair 16 Column
1469951	1934346	Header Assembly, Double Wall, 3 Pair 16 Column
1469955	1934229	Receptacle Assembly, 3 pair, Standard, 16 Column
1469960	1934335	Header Assembly, Open Ended, 3 Pair 6 Column

*As announced on 6/20/07, Tyco Electronics now offers the Z-PACK TinMan product line as a form, fit and function replacement to the Z-PACK MAX product line. This chart will assist in finding the Z-PACK TinMan connector part number if you have a Z-PACK MAX connector part number.

Z-PACK MAX Connector to Z-PACK TinMan Connector Base Part Number Cross Reference* (Continued)

Z-PACK MAX Connector Base Part Number	Z-PACK TinMan Connector Base Part Number	Description
1469961	1934336	Header Assembly, Left Wall, 3 Pair 6 Column
1469961	1934337	Header Assembly, Right Wall, 3 Pair 6 Column
1469962	1934338	Header Assembly, Double Wall, 3 Pair 6 Column
1469966	1934227	Receptacle Assembly, 3 pair, Standard, 6 Column
1469974	1934359	Right Angle Header Assembly, Open Ended, 3 Pair 8 Column
1469977	1934360	Right Angle Header Assembly, Double Wall, 3 Pair 8 Column
1934007	1934321	Header Assembly, Open Ended, 5 Pair 6 Column
1934008	1934323	Header Assembly, Left Wall, 5 Pair 6 Column
1934008	1934324	Header Assembly, Right Wall, 5 Pair 6 Column
1934009	1934322	Header Assembly, Double Wall, 5 Pair 6 Column
1934010	1934219	Receptacle Assembly, 5 pair, Standard, 6 Column
1934018	1934347	Right Angle Header Assembly, Open Ended, 5 Pair 16 Column
1934021	1934348	Right Angle Header Assembly, Double Wall, 5 Pair 16 Column
1934026	1934351	Right Angle Header Assembly, Open Ended, 4 Pair 16 Column
1934029	1934352	Right Angle Header Assembly, Double Wall, 4 Pair 16 Column
1934034	1934355	Right Angle Header Assembly, Open Ended, 3 Pair 16 Column
1934037	1934356	Right Angle Header Assembly, Double Wall, 3 Pair 16 Column
1934106	1934313	Header Assembly, Left Wall, 4 Pair 10 Column
1934106	1934314	Header Assembly, Right Wall, 4 Pair 10 Column
1934107	1934312	Header Assembly, Double Wall, 4 Pair 10 Column
1934121	1934364	6x6 Orthogonal Offset Header Assembly, Double Wall
1934122	1934231	Receptacle Assembly, 6x6, Orthogonal
1934127	1934220	Receptacle Assembly, 5 pair, Standard, 10 Column
1934136	1934315	Header Assembly, Open Ended, 4 Pair 16 Column
1934137	1934317	Header Assembly, Left Wall, 4 Pair 16 Column
1934137	1934318	Header Assembly, Right Wall, 4 Pair 16 Column
1934141	1934363	6x6 Orthogonal In-Line Header Assembly, Double Wall
1934165	1934361	4x4 Orthogonal In-Line Header Assembly, Double Wall
1934171	1934275	Receptacle Assembly, 4 pair, Standard, 14 Column
1934194	1934325	Header Assembly, Open Ended, 5 Pair 10 Column
1934208	1934326	Header Assembly, Double Wall, 5 Pair 10 Column
1934210	1934327	Header Assembly, Left Wall, 5 Pair 10 Column
1934210	1934328	Header Assembly, Right Wall, 5 Pair 10 Column
N/A	1934223	Receptacle Assembly, 4 pair, Standard, 6 Column
N/A	1934274	Header Assembly 5 Pair Open Ended 8 Column Notched Wall
N/A	1934276	Receptacle Assembly, 5 pair, Standard, 14 Column
N/A	1934287	Header Assembly, Open Ended, 5 Pair 14 Column
N/A	1934288	Header Assembly, Open Ended, 4 Pair 14 Column
N/A	1934289	Header Assembly, Double Wall, 5 Pair 14 Column
N/A	1934290	Header Assembly, Double Wall, 4 Pair 14 Column
N/A	1934307	Header Assembly, Open Ended, 4 Pair 6 Column
N/A	1934308	Header Assembly, Double Wall, 4 Pair 6 Column
N/A	1934309	Header Assembly, Left Wall, 4 Pair 6 Column
N/A	1934310	Header Assembly, Right Wall, 4 Pair 6 Column
N/A	1934319	Header Assembly, Left Wall, 4 Pair 14 Column
N/A	1934320	Header Assembly, Right Wall, 4 Pair 14 Column
N/A	1934329	Header Assembly, Left Wall, 5 Pair 14 Column
N/A	1934330	Header Assembly, Right Wall, 5 Pair 14 Column

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Part Number Index

Note: This index lists all cataloged parts by base no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

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Tyco Electronics

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Phone: +52-55-1106-0800
+01-800-733-8926
Fax: +52-55-1106-0901

United States – Harrisburg, PA
Phone: +717-564-0100
Fax: +717-986-7575
Product Information Center: (Technical Support)
Phone: +800-522-6752
Fax: +717-986-7575

For Latin/South American Countries not shown
Phone: +54-11-4733-2015
Fax: +54-11-4733-2083

Asia/Pacific

Australia – Sydney
Phone: +61-2-9554-2600
Fax: +61-2-9502-2556
Product Information Center: (Technical Support)
Phone: +61-2-9840-8200
Fax: +61-2-9634-6188

India – Bangalore
Phone: +91-80-285-40800
Fax: +91-80-285-40820

Indonesia – Jakarta
Phone: +65-6482-0311
Fax: +65-6482-1012

Japan – Toyko
Phone: +81-44-844-8111
Fax: +81-44-812-3207
Product Information Center: (Technical Support)
Phone: +81-44-844-8013
Fax: +81-44-812-3200

Korea – Seoul
Phone: +82-2-3415-4500
Fax: +82-2-3486-3810

Malaysia – Kuala Lumpur
Phone: +60-3-78053055
Fax: +60-3-78053066

New Zealand – Auckland
Phone: +64-9-634-4580
Fax: +64-9-634-4586

Philippines – Makati City
Phone: +632-848-0171
Fax: +632-867-8661

People's Republic of China
Hong Kong
Phone: +852-2735-1628
Fax: +852-2735-0243

Shanghai
Phone: +86-21-2407-1588
Fax: +86-21-2407-1599

Taiwan – Taipei
Phone: +886-2-8768-2788
Fax: +886-2-8768-2268

Singapore – Singapore
Phone: +65-6482-0311
Fax: +65-6482-1012

Thailand – Bangkok
Phone: +66-2-955-0500
Fax: +66-2-955-0505

Vietnam and Indochina –
Ho Chi Minh City
Phone: +84-8 930-5546
Fax: +84-8 930-3443

Europe/Middle East/Africa

Austria – Vienna
Phone: +43-1 90 5 60-0
Fax: +43-1 90 5 60-1333

Belgium – Kessel-Lo
Phone: +32-16-35-23-00
Fax: +32-16-35-23-52

Bulgaria – Sofia
Phone: +359-2-971-2152
Fax: +359-2-971-2153

Czech Republic – Kurim
Phone: +420-5-41-162-111
Fax: +420-5-41-162-223

Denmark – Glostrup
Phone: +45-43-480-452
Fax: +45-43-441-414

Egypt – Cairo
Phone: +20-2-29 04 281
Fax: +20-2-41 92 334

Estonia – Tartu
Phone: +372-5138-274
Fax: +372-7400-779

Finland – Helsinki
Phone: +358-95-12-34-20
Fax: +358-95-12-34-250

France – Cergy-Pontoise
Phone: +33-1-3420-8888
Fax: +33-1-3420-8600
Product Information Center: (Technical Support)
Phone: +33-1-3420-8943
Fax: +33-1-3420-8623

Germany – Bensheim
Phone: +49-6251-133-0
Fax: +49-6251-133-1600
Product Information Center: (Technical Support)
Phone: +49-6251-133-1999
Fax: +49-6251-133-1988

Germany – Langen
Phone: +49-6103-709-0
Fax: +49-6103-709-1223

Germany – Speyer
Phone: +49-6232-30-0
Fax: +49-6232-30-2243

Germany - HTS Division – Neunkirchen
Phone: +49-2247-305-0
Fax: +49-2247-305-122

Greece – Athens
Phone: +30-210-9370-396/397
Fax: +30-210-9370-655

Hungary – Budapest
Phone: +36-1-289-1000
Fax: +36-1-289-1010

Ireland – Dublin
Phone: +353-1-820-3000
Fax: +353-1-820-9790

Israel – Yokneam
Phone: +972-4-959-0508
Fax: +972-4-959-0506

Italy – Collegno (Torino)
Phone: +39-011-4012-111
Fax: +39-011-4031116

Lithuania – Vilnius
Phone: +370-5-2131-402
Fax: +370-5-2131-403

Netherlands – 's-Hertogenbosch
Phone: +31-73-624-62-46
Fax: +31-73-621-23-65
Product Information Center: (Technical Support)
Phone: +31-73-6246-999
Fax: +31-73-6246-998

Norway – Nesbru
Phone: +47-66-77-8886
Fax: +47-66-77-8855

Poland – Warsaw
Phone: +48-22-45-76-700
Fax: +48-22-45-76-720

Romania – Bucharest
Phone: +40-21-311-3479/3596
Fax: +40-21-312-0574

Russia – Moscow
Phone: +7-495-926-5506/07/08/09
Fax: +7-495-926-5505

Russia – St. Petersburg
Phone: +7-812-718-8192
Fax: +7-812-718-8193

Slovenia – Ljubljana
Phone: +386-1561-3270
Fax: +386-1561-3240

South Africa – Port Elizabeth
Phone: +2741-503-4500
Fax: +2741-581-0440

Spain – Barcelona
Phone: +34-93-291-0330
Fax: +34-93-201-7879
Product Information Center: (Technical Support):
Phone: +34-93-291-0330
Fax: +34-93-200-3779

Sweden – Upplands Väsby
Phone: +46-8-50-72-50-00
Fax: +46-8-50-72-50-01

Switzerland – Steinach
Phone: +41-71-447-0447
Fax: +41-71-447-0444

Turkey – Istanbul
Phone: +90-212-281-8181/2/3
Fax: +90-212-281-8184

Ukraine – Kiev
Phone: +380-044-206-2265
Fax: +380-044-206-2264

United Kingdom – Swindon
Phone: +44-8706-080-208
Fax: +44-1793-572-516
Product Information Center: (Technical Support)
Freephone GB: 0800-267-666
Phone: +44-8706-080-208
Fax: +44-208-420-8081

For Middle East/African Countries Not Shown
Phone: +33-1-3420-8866
Fax: +33-1-3420-8300