Table of Contents

Z-DOK and Z-DOK + Connectors 163-176
Product Line Overview 164
Electrical Performance and Applications 165-167
Z-DOK +2 Connector 168, 169
Z-DOK +4 Connector 170, 171
Z-DOK +6 Connector 172-174
Sequencing Chart 175
Work Sheet 176

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

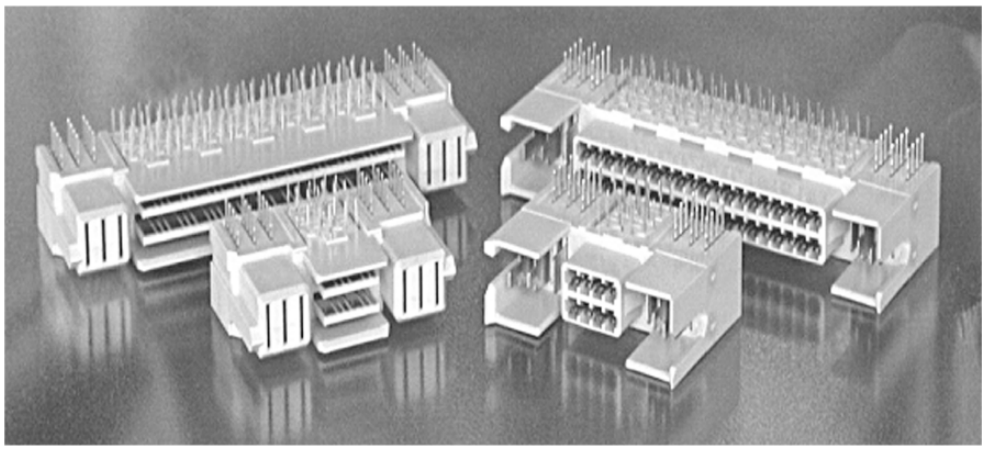
Product Line Overview

Product Facts
Z-DOK Connector

- **Data rates up to 10+ Gb/s**
- **Familiar robust blindmate design derived from CHAMP .050 Series connector family**
- **Maximizes data throughput while minimizing pair to pair crosstalk and impedance discontinuities**
- **Available in size increments of 8 to 72 differential pairs**
- **Sequenced mating of ESD, ground and signal circuits to insure proper initialization of the mating cards**
- **Unique ESD contact system to insure dissipation of ESD in a make first break last mating sequence**

Product Facts
Z-DOK + Connector

- **The CHAMP Z-DOK + connector is the latest addition to the CHAMP connector family**
- **Includes high speed and utility contacts in one connector**
- **Operating bandwidth up to 10+ Gb/s**
- **Robust 4 row, blindmate design**
- **Utilizes TRI-Q differential pair contact system providing 2 to 1 signal to ground ratio**
- **Uniform 100 ohm impedance with less than 3% crosstalk**
- **Available in 8 pair increments from 8 to 72 pair**
- **Utility contacts can be arranged on either end of the connector**
- **Utility contacts are available in 4 lengths to accommodate power, ground, ESD and sensing design requirements**



The CHAMP Z-DOK connector system includes two options for system designers. The first option is the Z-DOK connector, which provides the following features:

1. Robust, blind-mateable, high speed connector
2. Data rates in excess of 10+ Gb/s (Double XAUI speeds)
3. Differential pair, 100 ohm, low crosstalk
4. Available with and without sensing contacts
5. Position sizes from 8 to 72 differential pair in increments of 8 differential pair modules
6. Unique TRI-Q contact system that provides a 2 to 1 signal to ground ratio for maintaining superior signal integrity

The second option is the CHAMP Z-DOK + connector, which includes a high speed section with the same features as standard the Z-DOK connector and adds up to 3 “Utility” modules to each side of the connector. Each “Utility” module provides flexibility for systems designers to include power, ground, ESD and sensing functions to I/O adapter cards and docking applictions.

The Z-DOK + connector system can be provided in the same position sizes as the standard Z-DOK connector (8 to 72 differential pair). The Utility modules can be added to either side of the high speed section with a maximum of three (3) on each side. This arrangement will provide a total of six (6) positions for the power, ground, ESD and sensing functions. Four different length contacts can be loaded into the “Utility” modules to provide the ultimate design flexibility.

Applications

- **The Z-DOK and Z-DOK + connector systems are suitable for use in high speed, co-planar docking applications.**
  - **Enterprise Switching Equipment**
  - **High Speed Telecommunications Equipment**
  - **Mid Range and High End Servers**
  - **Storage Area Networks**
  - **High Speed Custom Platforms**
- **The Z-DOK connector TRI-Q contact arrangement is well suited for high speed serial switching architectures and the robust design assures a highly reliable interconnect between host and media adapter cards. Z-DOK connectors can handle escalating data rates without sacrificing line density to achieve higher signal integrity. If I/O flexibility is what you seek, the Z-DOK connector will help insure the longevity of your packaging scheme through ease in changeability.**

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Electrical Performance and Applications

Availability

Fully validated SPICE models: E-mail requests to modeling@tycoelectronics.com

Samples: E-mail requests to zdok@tycoelectronics.com

Pro/E models and IGES models: E-mail requests to TycoCAD@tycoelectronics.com

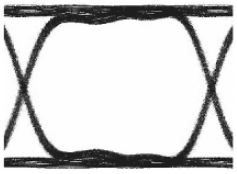
Application Specification 114-13068

Product Specification Design Objectives 108-1985

http://zdok.tycoelectronics.com

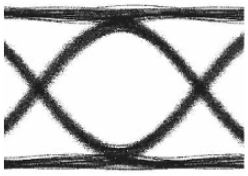
Z-DOK + Connector Electrical Performance

3.125 Gb/s over 6″ of FR4



Maximum Opening — 89.2%
Jitter — 2.2% U.I.

10 Gb/s over 6″ of FR4



Maximum Opening — 69.8%
Jitter — 10.5% U.I.

IGES is a trademark of IAMBA Networks, Inc.
PRO/E is a trademark of Parametric Technology Corp.

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

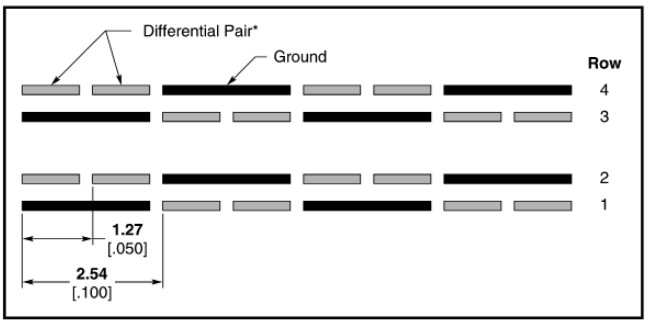
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

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

Electrical Performance and Applications (Continued)

TRI-Q Contact System

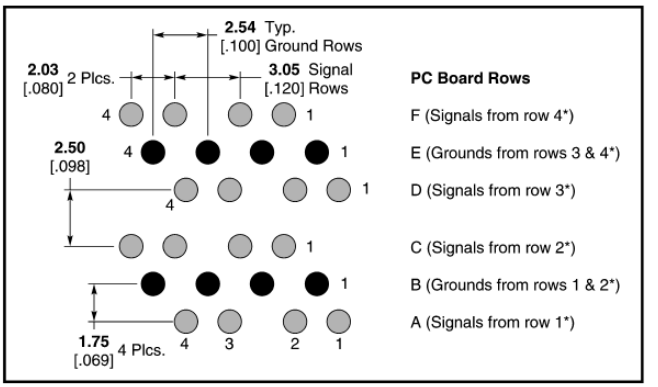
Each differential pair is carefully designed to be in close proximity to a dedicated ground, providing true symmetrical impedance and low noise in a 100 Ω system.



Contact Interface

* The differential pair contacts may be used for single ended lines. Consult Tyco Electronics for more information.

The ground contacts are confined to rows B & E to simplify trace routing, control pair-to-pair crosstalk, and to minimize impedance discontinuities at the connector to board interface.

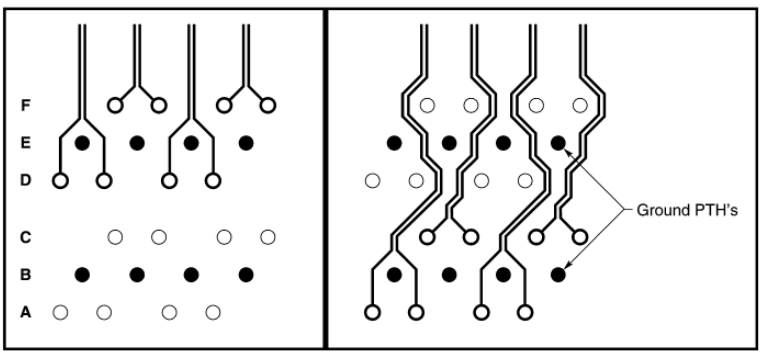


Host Board Layout

* Contact interface rows.

Host and Adapter Board Trace Routing

Suggested two-layer routing pattern



Layer 1 **Layer 2**

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

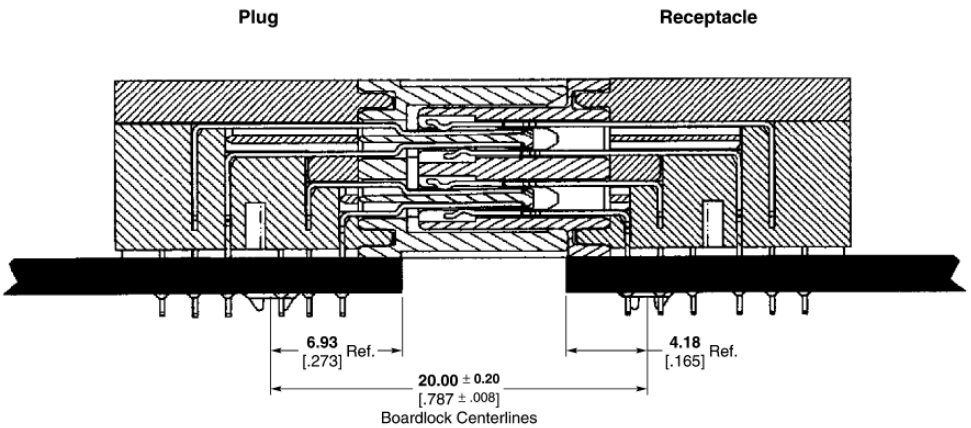
Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are U.S. equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

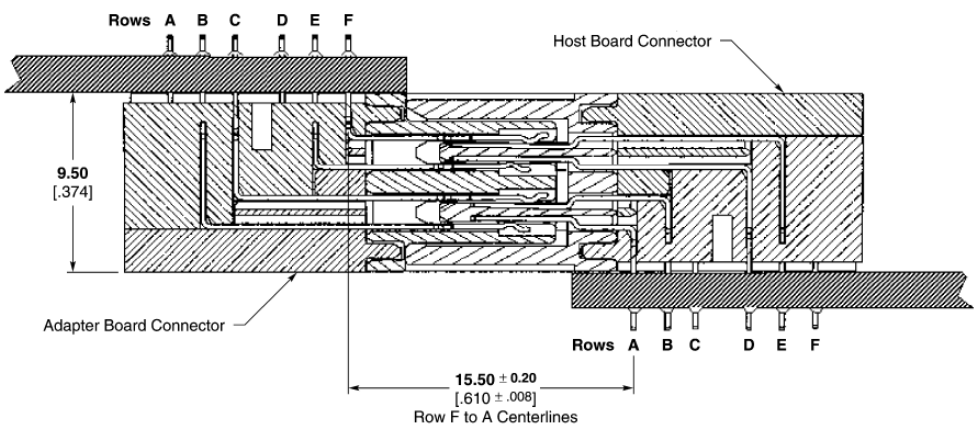
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

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

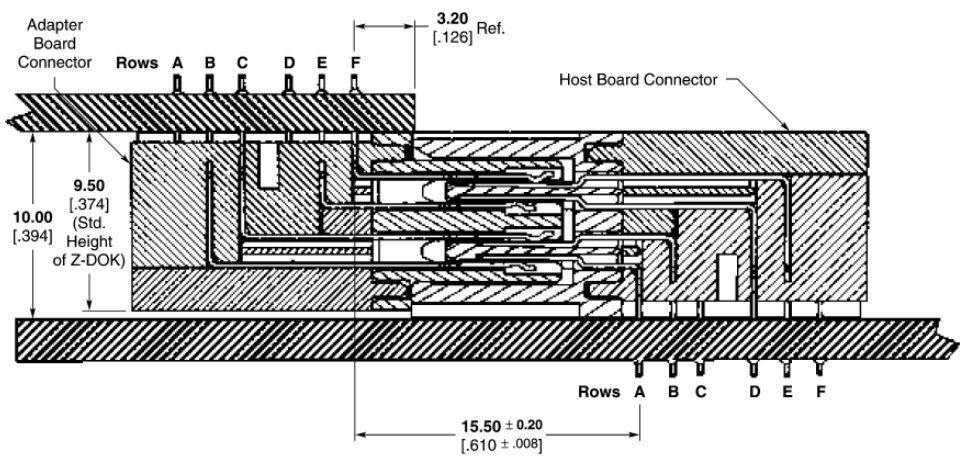
Electrical Performance and Applications (Continued)



Z-DOK + Connector Applications



Inverted Application



Inverted Mid-Board Application

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Z-DOK +2 Connector System

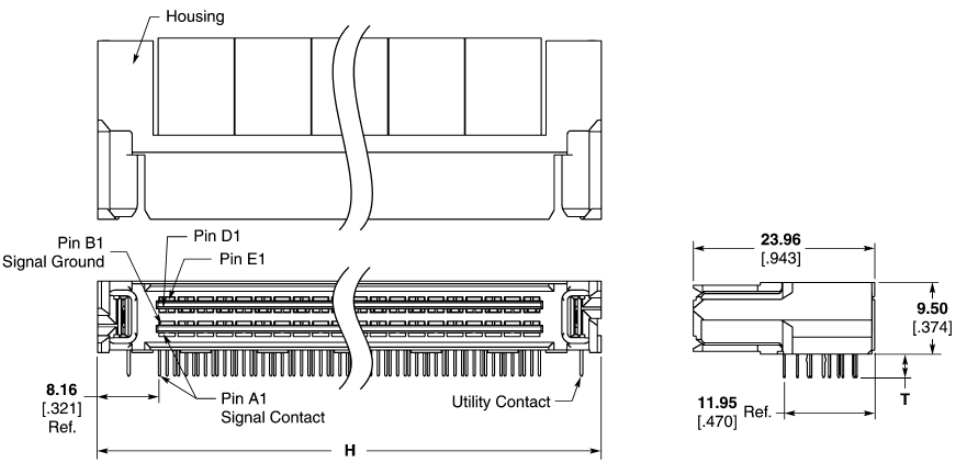
Host

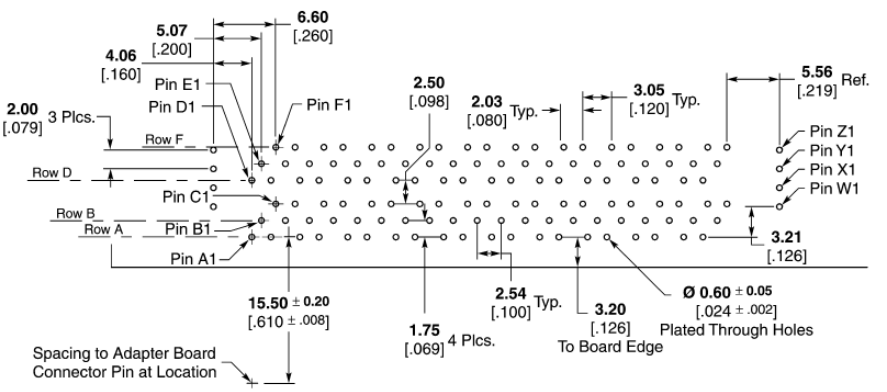
Material and Finish

Housings — Polyester, UL 94V-0 rated, natural color

Signal and Signal Ground Contacts — Copper alloy, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall

Utility Contacts — Phosphor bronze, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall





Recommended PC Board Footprint

Z-DOK +2 Host Connector Part Numbers

Type	Dim. H	Dim. T	Number of Utility Contacts	Number of Diff. Pairs	Part Number
Host Connector +2	**25.96** 1.022	**3.10** .122	2	8	6367590-1
	36.12 1.422	**3.10** .122	2	16	6367590-2
	46.28 1.822	**3.10** .122	2	24	6367590-3
	56.44 2.222	**3.10** .122	2	32	6367590-4
	66.60 2.622	**3.10** .122	2	40	6367590-5
	76.76 3.022	**3.10** .122	2	48	6367590-6
	86.92 3.422	**3.10** .122	2	56	6367590-7
	97.08 3.822	**3.10** .122	2	64	6367590-8
	107.24 4.222	**3.10** .122	2	72	6367590-9

Different Tail Lengths available upon request, contact Tyco Electronics.

Note: All part numbers are RoHS compliant.

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Z-DOK +2 Connector System (Continued)

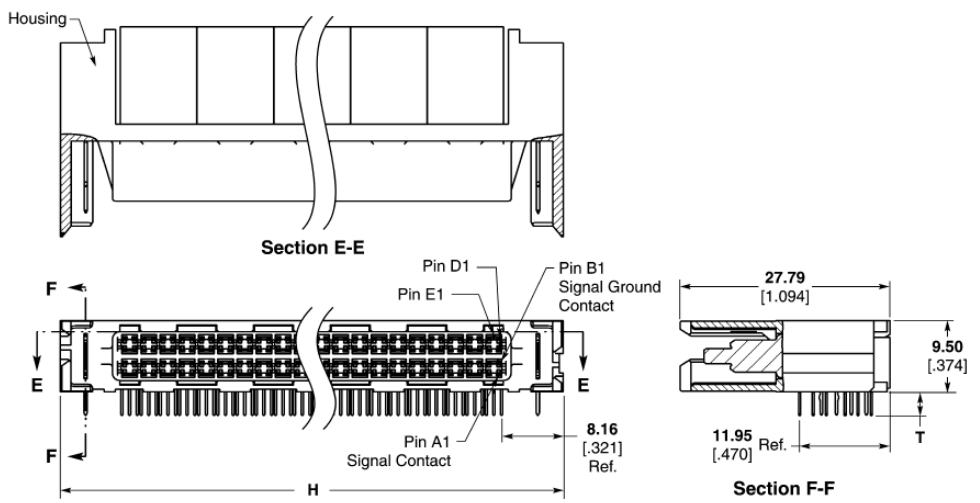
Adapter

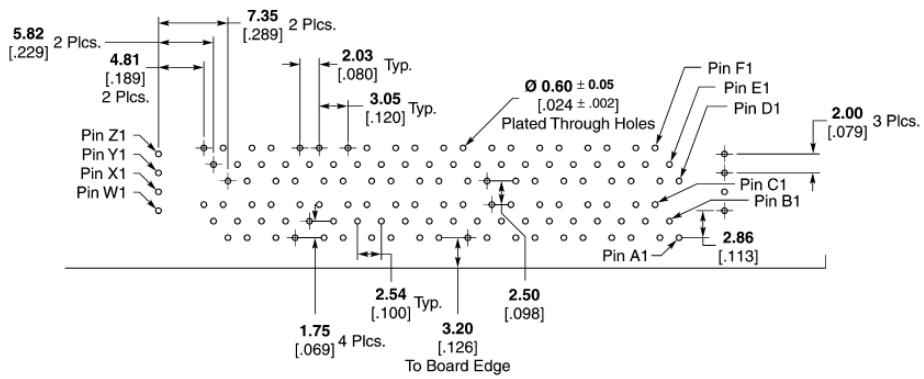
Material and Finish

Housings — Polyester, UL 94V-0 rated, natural color

Signal and Signal Ground Contacts — Copper alloy, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall

Utility Contacts — Phosphor bronze, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall





Recommended PC Board Footprint

Z-DOK +2 Adapter Connector Part Numbers

Type	Dim. H	Dim. T	Sequence for Utility Pin Loc. 1	Sequence for Utility Pin Loc. 2	Number of Utility Contacts	Number of Diff. Pairs	Part Number
Adapter Connector +2	**56.44** 2.222	**3.10** .122	4	4	2	32	6367594-1
	66.60 2.622	**3.10** .122	4	4	2	40	6367595-1

Different Tail Lengths available upon request, contact Tyco Electronics.

Note: All part numbers are RoHS compliant.

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Z-DOK +4 Connector System

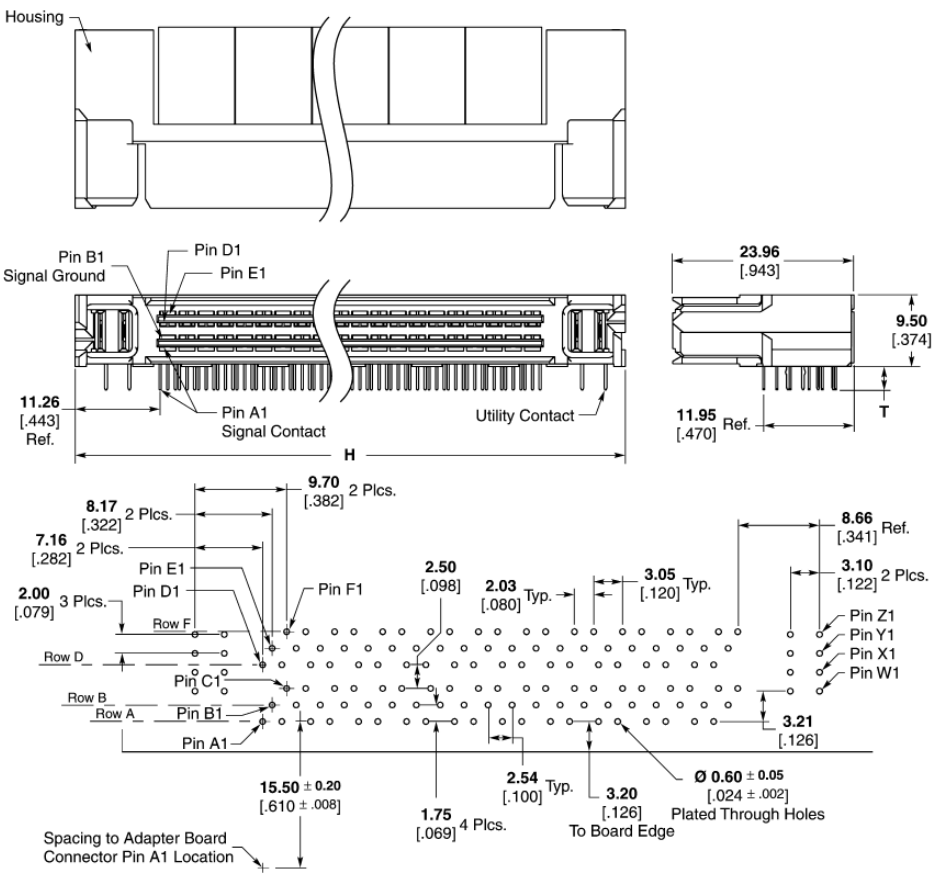
Host

Material and Finish

Housings — Polyester, UL 94V-0 rated, natural color

Signal and Signal Ground Contacts — Copper alloy, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall

Utility Contacts — Phosphor bronze, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall



Recommended PC Board Footprint

Z-DOK +4 Host Connector Part Numbers

Type	Dim. H	Dim. T	Number of Utility Contacts	Number of Diff. Pairs	Part Number
Host Connector +4	**32.16** 1.266	**3.10** .122	4	8	6367580-1
	42.32 1.666	**3.10** .122	4	16	6367580-2
	52.48 2.066	**3.10** .122	4	24	6367580-3
	62.64 2.466	**3.10** .122	4	32	6367580-4
	72.80 2.866	**3.10** .122	4	40	6367580-5
	82.96 3.266	**3.10** .122	4	48	6367580-6
	93.12 3.666	**3.10** .122	4	56	6367580-7
	103.28 4.066	**3.10** .122	4	64	6367580-8
	113.44 4.466	**3.10** .122	4	72	6367580-9

Different Tail Lengths available upon request, contact Tyco Electronics.

Z-DOK +4 Host Connector Part Numbers (Continued)

Type	Dim. H	Dim. T	Number of Utility Contacts	Number of Diff. Pairs	Part Number
Host Connector +4	**32.16** 1.266	**3.85** .152	4	8	6367680-1
	42.32 1.666	**3.85** .152	4	16	6367680-2
	52.48 2.066	**3.85** .152	4	24	6367680-3
	62.64 2.466	**3.85** .152	4	32	6367680-4
	72.80 2.866	**3.85** .152	4	40	6367680-5
	82.96 3.266	**3.85** .152	4	48	6367680-6
	93.12 3.666	**3.85** .152	4	56	6367680-7
	103.28 4.066	**3.85** .152	4	64	6367680-8
	113.44 4.466	**3.85** .152	4	72	6367680-9

Different Tail Lengths available upon request, contact Tyco Electronics.

Note: All part numbers are RoHS compliant.

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Z-DOK +4 Connector System (Continued)

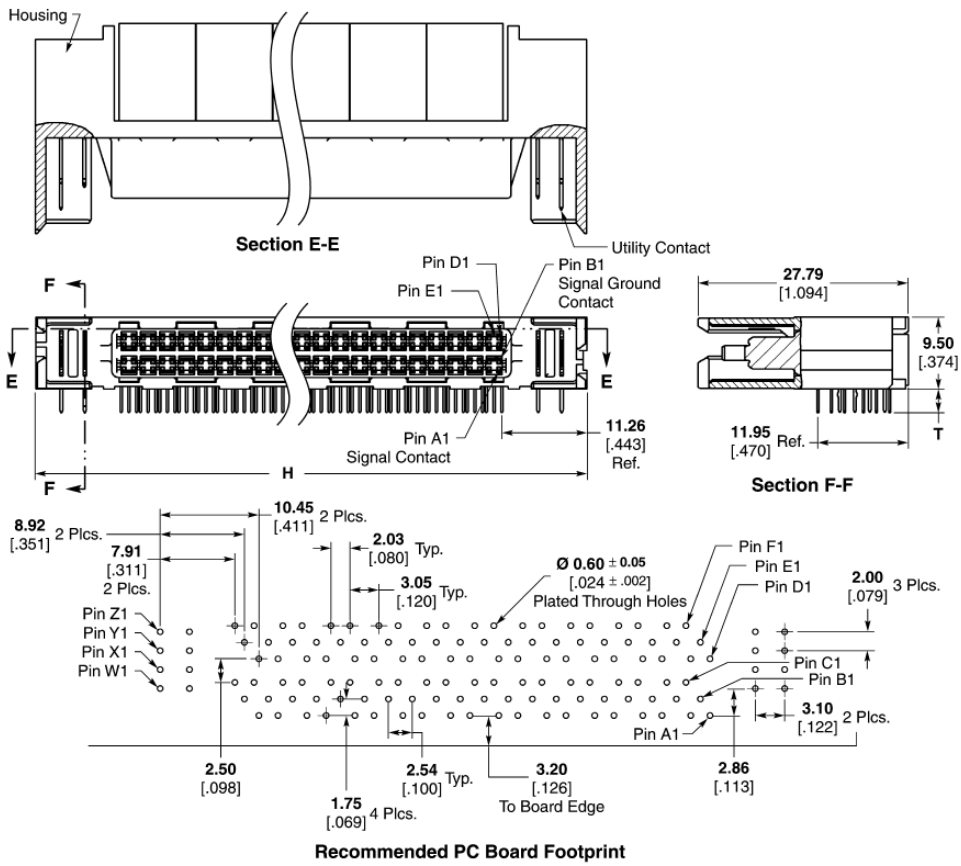
Adapter

Material and Finish

Housings — Polyester, UL 94V-0 rated, natural color

Signal and Signal Ground Contacts — Copper alloy, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall

Utility Contacts — Phosphor bronze, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall



Z-DOK +4 Adapter Connector Part Numbers

Type	Dim. H	Dim. T	Sequence for Utility Pin Loc. 1	Sequence for Utility Pin Loc. 2	Sequence for Utility Pin Loc. 3	Sequence for Utility Pin Loc. 4	Number of Utility Contacts	Number of Diff. Pairs	Part Number
Adapter Connector +4	**36.12** 1.422	**3.10** .122	4	3	3	4	4	16	6367582-1
	46.28 1.822	**3.10** .122	4	3	3	4	4	24	6367583-1
	56.44 2.222	**3.10** .122	4	3	3	4	4	32	6367584-1
	56.44 2.222	**3.10** .122	4	1	3	4	4	32	6367584-2
	56.44 2.222	**3.10** .122	3	2	2	3	4	32	6367584-3
	56.44 2.222	**3.10** .122	2	2	3	3	4	32	6367584-4
	76.76 3.022	**3.10** .122	4	3	3	4	4	48	6367586-1
	76.76 3.022	**3.10** .122	3	4	4	3	4	48	6367586-2
	76.76 3.022	**3.10** .122	1	4	3	2	4	48	6367586-3

Different Tail Lengths available upon request, contact Tyco Electronics.

Note: All part numbers are RoHS compliant.

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Z-DOK +6 Connector System

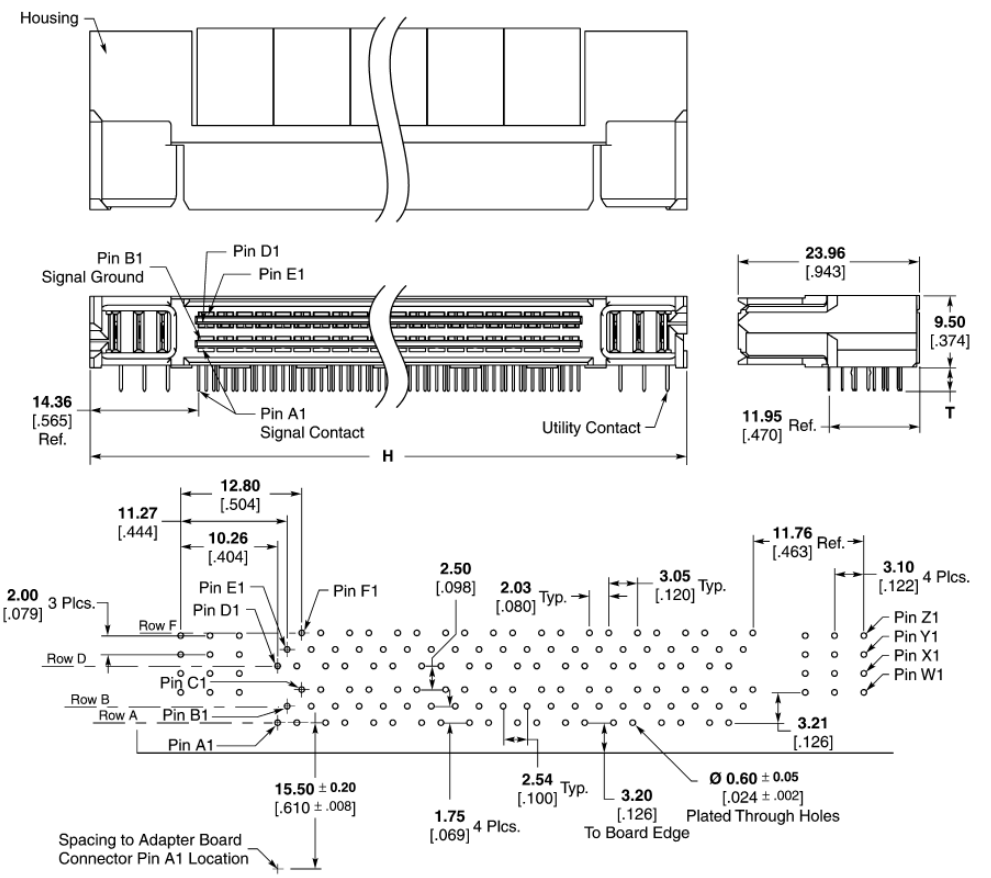
Host

Material and Finish

Housings — Polyester, UL 94V-0 rated, natural color

Signal and Signal Ground Contacts — Copper alloy, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall

Utility Contacts — Phosphor bronze, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall



Recommended PC Board Footprint

Z-DOK +6 Host Connector Part Numbers

Type	Dim. H	Dim. T	Number of Utility Contacts	Number of Diff. Pairs	Part Number
Host Connector +6	**38.36** 1.510	**3.10** .122	6	8	6367550-1
	48.52 1.910	**3.10** .122	6	16	6367550-2
	58.68 2.310	**3.10** .122	6	24	6367550-3
	68.84 2.710	**3.10** .122	6	32	6367550-4
	79.00 3.110	**3.10** .122	6	40	6367550-5
	89.16 3.510	**3.10** .122	6	48	6367550-6
	99.32 3.910	**3.10** .122	6	56	6367550-7
	109.48 4.310	**3.10** .122	6	64	6367550-8
	119.64 4.710	**3.10** .122	6	72	6367550-9

Different Tail Lengths available upon request, contact Tyco Electronics.

Note: All part numbers are RoHS compliant.

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Z-DOK +6 Connector System (Continued)

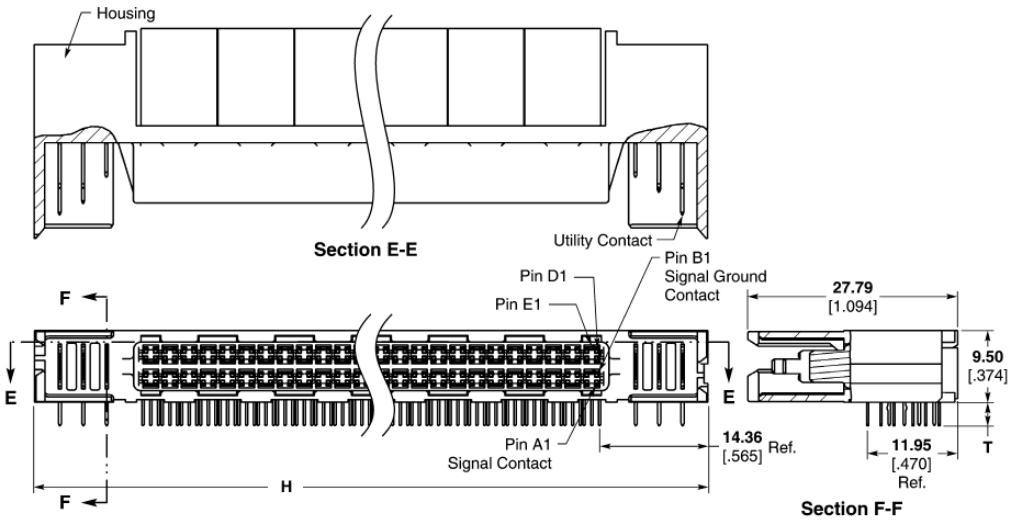
Adapter

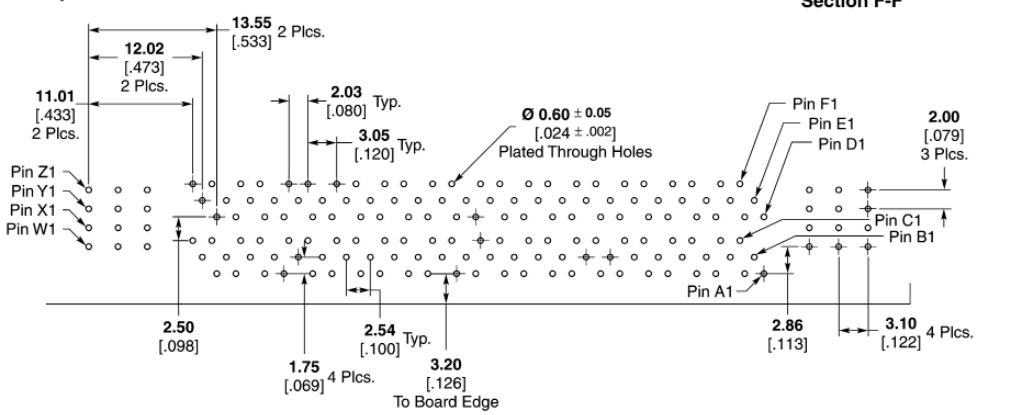
Material and Finish

Housings — Polyester, UL 94V-0 rated, natural color

Signal and Signal Ground Contacts — Copper alloy, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall

Utility Contacts — Phosphor bronze, 0.76 µm min. gold in contact area, 2.54 µm min. tin on PCB tails, over 1.27 µm min. nickel overall





Recommended PC Board Footprint

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Z-DOK +6 Connector System (Continued)

Z-DOK +6 Adapter Connector Part Numbers

Type	Dim. H	Dim. T	Sequence for Utility Pin Loc. 1	Sequence for Utility Pin Loc. 2	Sequence for Utility Pin Loc. 3	Sequence for Utility Pin Loc. 4	Sequence for Utility Pin Loc. 5	Sequence for Utility Pin Loc. 6	Number of Utility Contacts	Number of Diff. Pairs	Part Number
Adapter Connector +6	**38.36** 1.510	**3.10** .122	4	3	2	2	3	4	6	8	6367551-1
	38.36 1.510	**3.10** .122	1	2	4	4	2	2	6	8	6367551-2
	48.52 1.910	**3.10** .122	4	3	2	2	3	4	6	16	6367552-1
	79.00 3.110	**3.10** .122	4	3	2	2	3	4	6	40	6367555-1
	79.00 3.110	**3.10** .122	4	2	1	1	2	4	6	40	6367555-2
	79.00 3.110	**3.10** .122	1	2	3	3	2	1	6	40	6367555-3
	99.32 3.910	**3.10** .122	4	3	2	2	3	4	6	56	6367557-1
	99.32 3.910	**3.10** .122	4	2	2	2	2	4	6	56	6367557-2
	99.32 3.910	**3.10** .122	4	3	1	1	3	4	6	56	6367557-3
	99.32 3.910	**3.10** .122	2	3	4	4	3	2	6	56	6367557-4
	99.32 3.910	**3.10** .122	4	3	1	2	2	4	6	56	6367557-5
	109.48 4.310	**3.10** .122	4	3	2	2	3	4	6	64	6367558-1
	109.48 4.310	**3.10** .122	4	3	3	3	3	4	6	64	6367558-2
	109.48 4.310	**3.10** .122	4	3	1	1	3	4	6	64	6367558-3
	119.64 4.710	**3.10** .122	4	3	2	2	3	4	6	72	6367559-1
	119.64 4.710	**3.10** .122	2	3	4	3	2	1	6	72	6367559-2

Different Tail Lengths available upon request, contact Tyco Electronics.

Note: All part numbers are RoHS compliant.

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

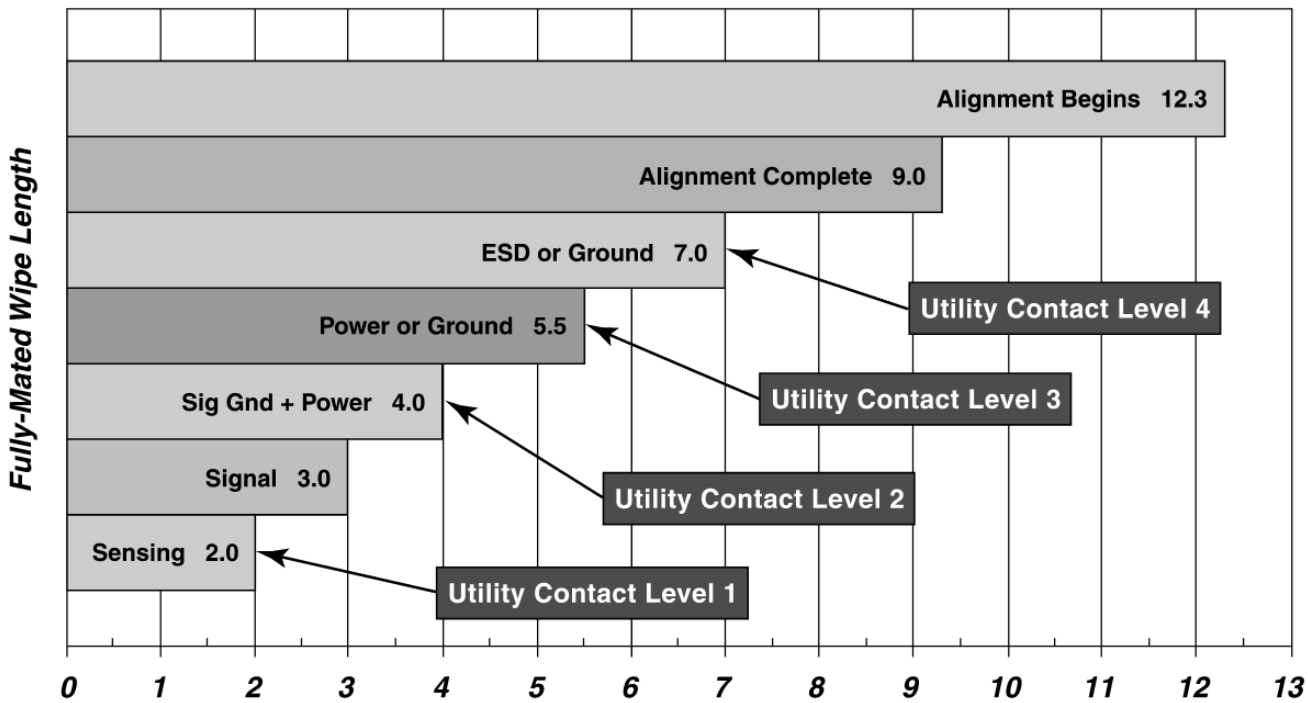
Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are U.S. equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

Sequencing Chart



("Fully-Mated Wipe Length" based on 15.5mm nominal separation of rows A-A or A-F)

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

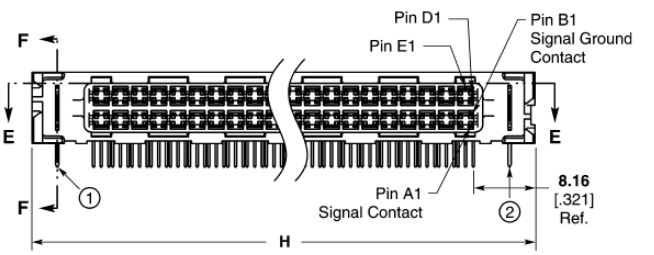
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

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

Z-DOK + Connector Sequencing Worksheet

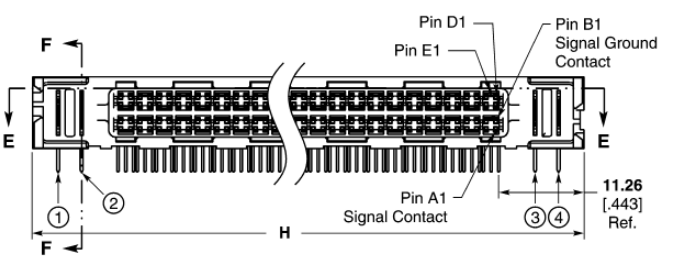
The Z-DOK + connector system allows you to choose the sequencing for the utility contacts. This is accomplished placing the desired pin length in each location on the adapter board side connector. The locations for each version; Z-DOK +2, Z-DOK +4, and Z-DOK +6 connectors are shown below. Using the sequencing chart from page 175, **fill in your desired sequence in the location of your choice**. Contact your Tyco Electronics representative to have the next dash number on the drawing released.

Z-DOK +2 Connector



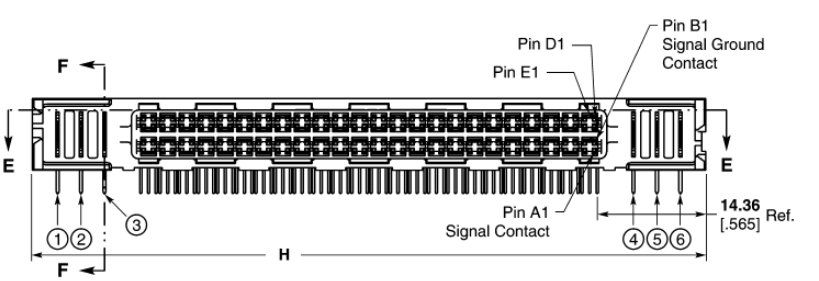
Location	①	②
Sequence		

Z-DOK +4 Connector



Location	①	②	③	④
Sequence				

Z-DOK +6 Connector



Location	①	②	③	④	⑤	⑥
Sequence						

Catalog 1773095
Revised 12-08

www.tycoelectronics.com

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

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
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

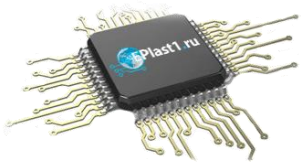
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.