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Introduction

Overview

Modern electronic system designs continue to demand higher density, higher speed, and more cost effective packaging and interconnection solutions. The Winchester MetCon-2® 2mm hard metric connector system answers today's tough design challenges.

The Winchester MetCon-2® 2mm hard metric connector is a 5+2 row interconnect system for high-density high performance backpanel / daughtercard applications. The MetCon-2® connector system consists of 9 different signal modules. Each module contains 5-rows of signal contacts plus an optional 2-rows of ground contacts for EMI/RFI shielding. Winchester MetCon-2® 2mm hard metric connectors are designed to the requirements of IEC 1076-4-101 and are the connector style used in CompactPCI® and VME64 Extensions applications (VME64x).

MetCon-2® 2mm hard metric connectors are modular and end-to-end stackable, providing designers with flexibility to create custom connector columns using standard off-the-shelf components. Vertical pin headers incorporate 12 unique contact lengths - 3 mating pin heights on the primary side, and 4 tail lengths, including a stub tail and 3 extended tails for rear plug-up applications. Right angle female socket connectors are offered as unshielded or with a preassembled top shield. An optional bottom shield is sold separately. All modules are press-fit and utilize industry proven "Eye-of-the-Needle" compliant pin technology.

General Features and Benefits

- High-density backpanel / daughtercard interconnect system.
- Completely modular system offers maximum design flexibility and minimizes time-to-market.
- High performance Eye-of-the-Needle compliant pin contacts provide a dependable gas-tight connection.
- 2.50mm minimum contact wipe for reliable performance.
- Designed to international standard IEC 1076-4-101.
- Meets the requirements of the CompactPCI® specifications as defined by PICMG.
- Meets the requirements of ANSI / VITA 30-2000 - American National Standard for 2mm Connector Practice for Euroboard Systems.
- Meets requirements for ANSI / VITA 1.1 - 1997 - American National Standard for VME64 Extensions.

Socket Features and Benefits

- Female socket connectors utilize a robust tuning-fork style contact design for high reliability.
- Female socket contact beams are offset from the contact body to provide clearance for mating pins.
- Female socket insulators contain unique molded-in features to help prevent "pin stubbing" caused by mis-aligned pins.
- Simple and inexpensive insertion tools press-on-the-insulator to seat sockets into PCBs.

Header Features and Benefits

- Three pin heights provide hot-plug capability and first-make-last-break (FMLB) contact sequencing on both primary and rear plug-up mating sides of the connector.
- Rear plug-up headers have a Mylar alignment guide to ease connector placement into PCBs.
- Four different shroud heights available to accommodate PCB thickness range of 2.80mm to 5.60mm.
- Simple and inexpensive insertion tools press on contact shoulders to seat pin headers into PCBs.

Introduction

Specifications - Modules

Materials

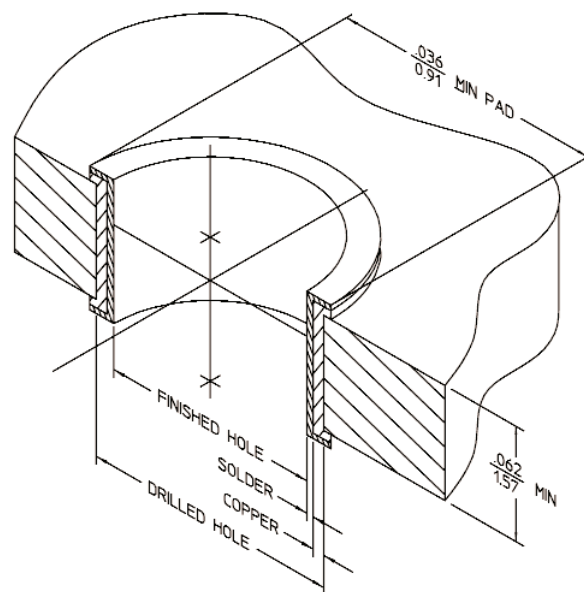
Contact Pitch.....	2.0 mm
Insulators.....	Polyester (PBT) Glass filled. UL 94V-0
Contacts & Shields.....	Phosphor Bronze
Contact Plating	
Performance Level II (250 mating cycles):	
Male Headers (Mating Zone).....	0.76 µm minimum Au over 1.2 µm minimum Ni underplate
Female Sockets (Mating Zone).....	0.76 µm minimum Au over 1.2 µm minimum Ni underplate

Performance Characteristics

Insulation Resistance.....	10 ⁴ MΩ minimum
Contact Resistance.....	20 mΩ maximum
Dielectric Withstanding Voltage.....	750 Vrms in rows, 1500 Vrms between rows
Creepage and Clearance.....	0.6 mm minimum (receptacles) 0.8 mm minimum (pin headers)
Current Rating (Fully loaded).....	1.5 amps @ 20°C, 1.0 amp @ 70°C
Operating Temperature Range.....	-55°C to +125°C
Mating Engagement Force	
Signal Contacts.....	0.75 Newtons maximum per contact pair
Shield Contacts.....	1.0 Newtons maximum per contact pair
Mating Withdrawal Force	
Signal Contacts.....	0.15 Newtons minimum per contact pair
Shield Contacts.....	0.15 Newtons minimum per contact pair

Specifications - Plated Thru Hole

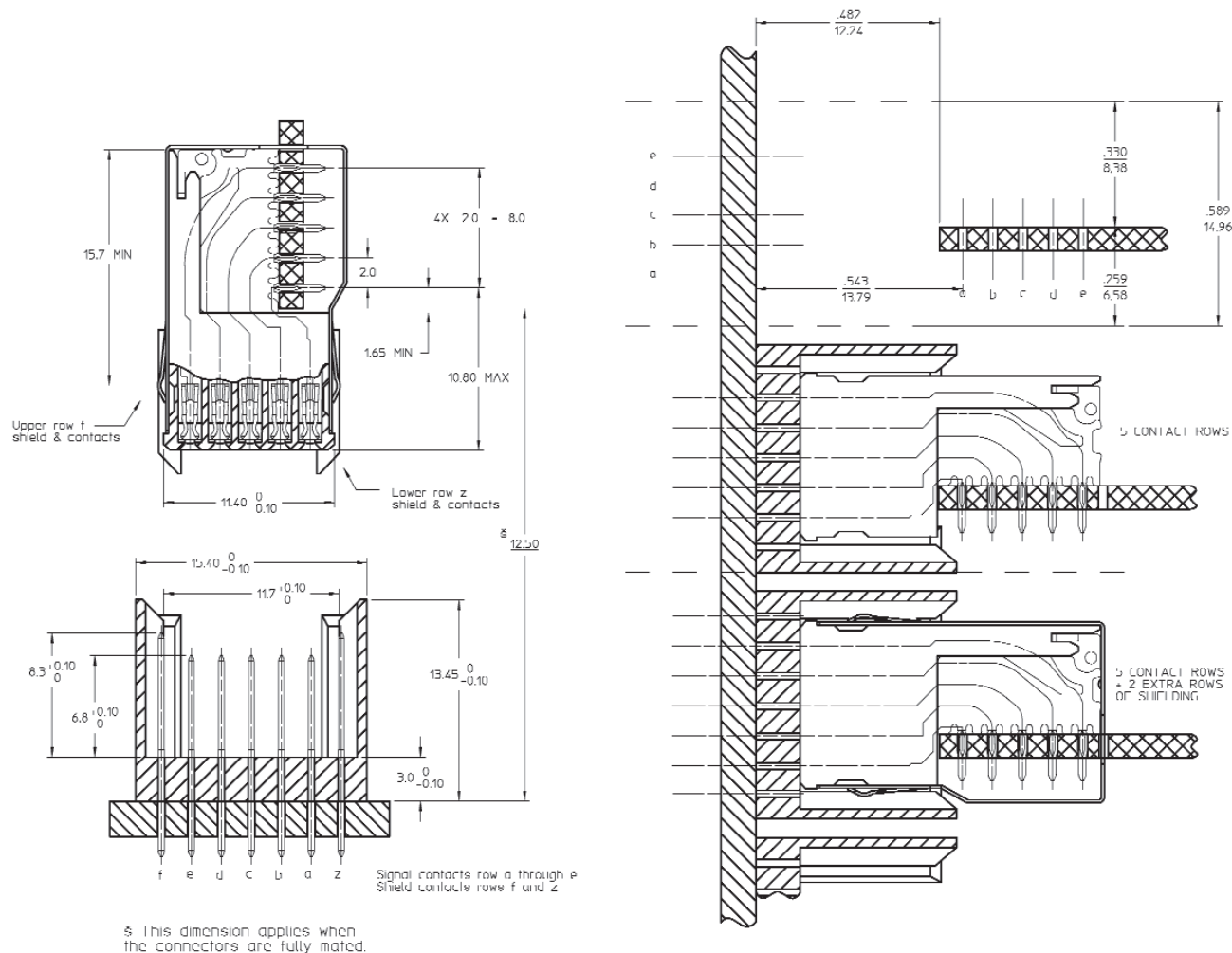
Ø Drilled Hole	$\frac{.0267 - .0284}{0.680 - 0.720}$
Copper Thickness	$\frac{.0010}{0.025 \text{ MIN}}$
Solder Thickness	$\frac{.0004}{0.010 \text{ MAX}}$
Ø Finished Hole	$\frac{.0216 - .0256}{0.550 - 0.650}$



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

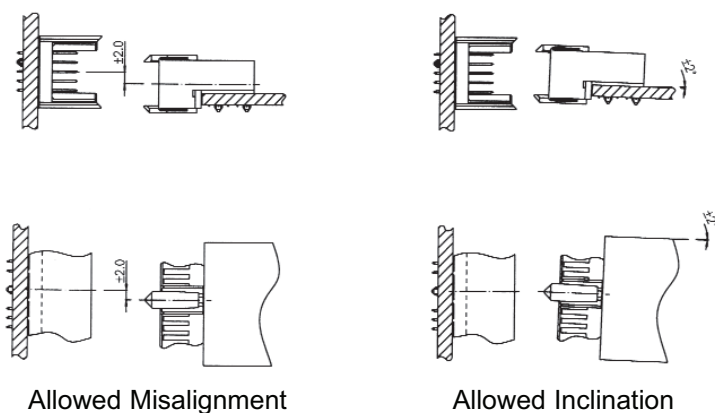
Introduction

Mechanical Features



Alignment Features

Alignment features are provided by A and AB modules, which feature integral guide posts. MetCon-2® connector modules accept misalignment of ± 2 mm in both transverse and longitudinal axes of the connector. The centering and guiding of integral guide posts allows an initial angular misalignment of $\pm 2^\circ$.

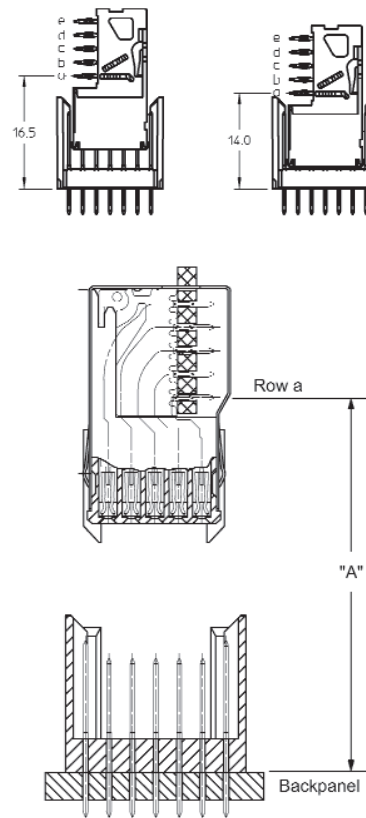
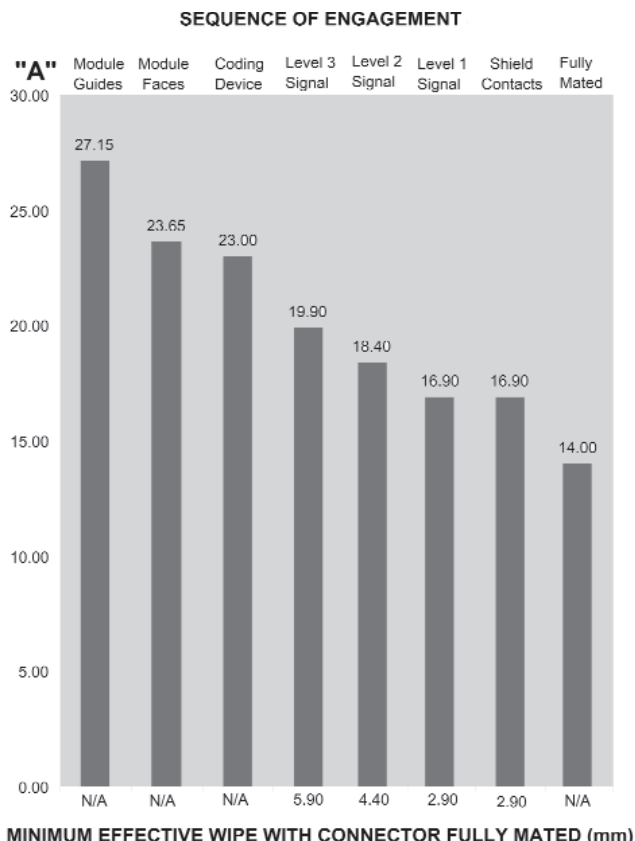


Note: Dimensions are shown in millimeters. Dimensions are for reference only.

Introduction

Contact Sequencing

The MetCon-2® connector system features an extended contact range of 2.5 mm minimum for even the shortest level 1 contact. This ensures reliable performance in less than ideal mating conditions.



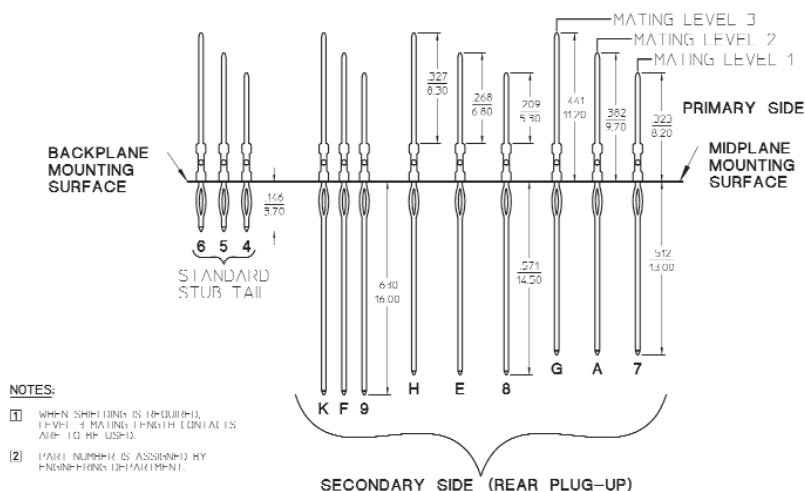
Mating Pin Length

Three Mating Levels for Signal Contacts

Level 1 is the standard mating pin length for MetCon-2® pin headers.

Level 2 is provided primarily for applications requiring First-Make-Last-Break (FMLB) signal pin arrangements or when extended wipe is desired.

Level 3 pins provide advanced contact for the ground reference shields in rows f and z. They can also provide a third level of contact sequencing for signals



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

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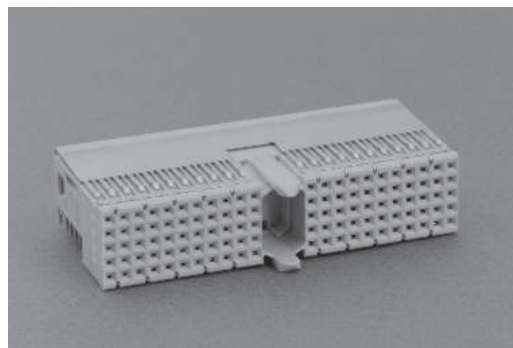
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MC-5

Style A Socket

Introduction

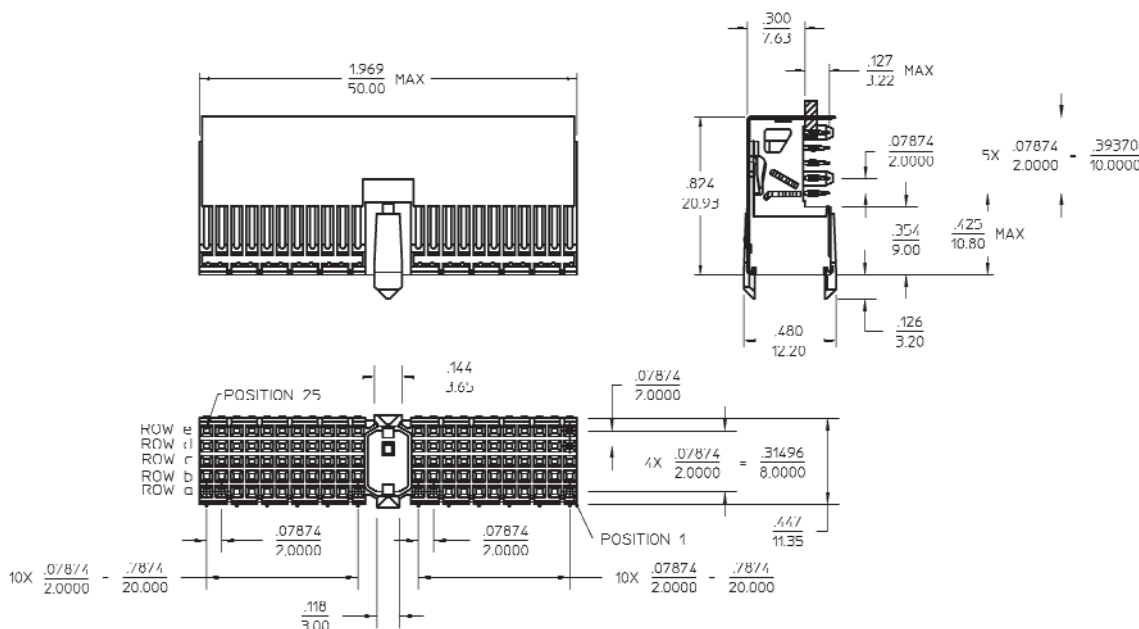
- 110 signal contacts
- 44 ground shield contacts
 - Available with or without preassembled top shield
 - Optional bottom shield sold separately
- Multi-purpose center
 - Polarized pre- alignment guide posts
 - Accepts optional code keys
- Optional location pegs for PCB mounting
- 50mm length



Ordering Information

Unshielded		Shielded	
No Pegs	Pegs	No Pegs	Pegs
NX6A0AE01A0AF	NX6A1AE01A0AF	NX6A0AE01A1AF	NX6A1AE01A1AF

Outline (Shielded version with Mounting Pegs shown)



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

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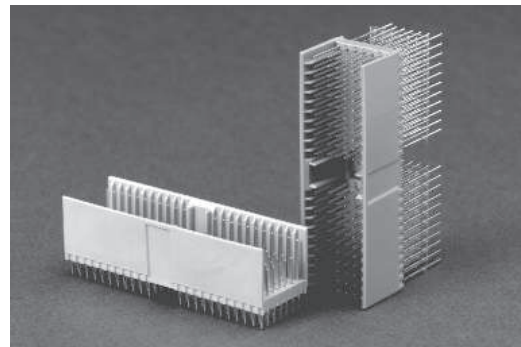
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Style A Header

Introduction

- 110 signal contacts
- 44 ground contacts
- Multi-purpose center
 - Polarized alignment channels
 - Accepts optional code keys
- Location peg to ensure correct orientation to PCB
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- 50mm length



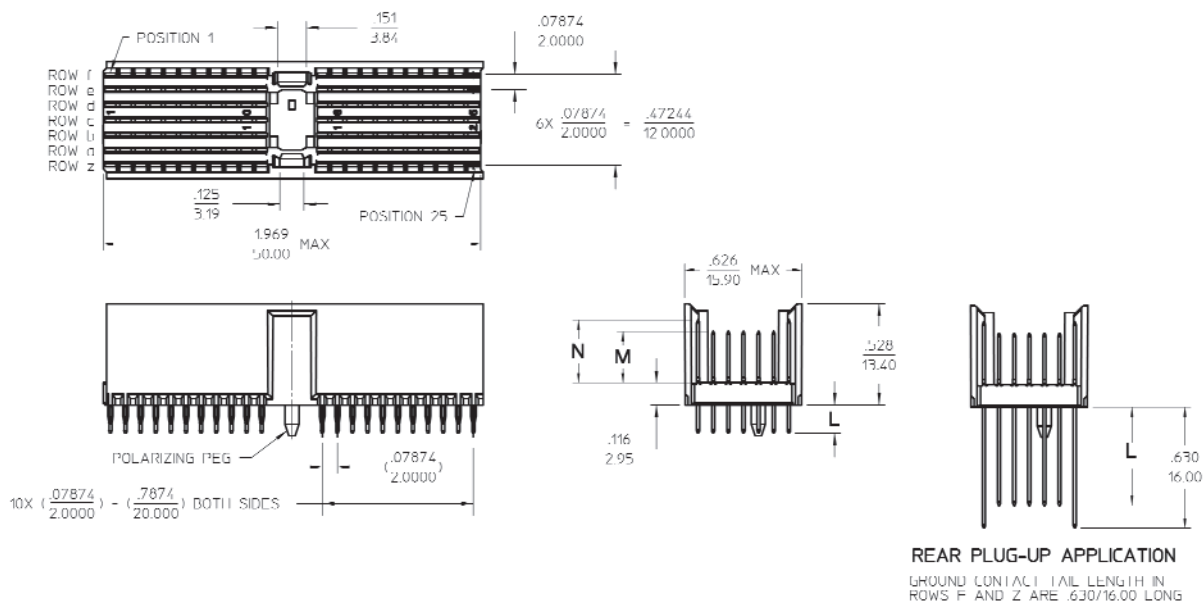
Ordering Information

	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
Tail Length L =	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5A0AE01A10AA	NX5A0AE01A50AA	NX5A0AE01A11AA	NX5A0AE01A51AA
13.00mm *	NX5A0AE01C10CA	NX5A0AE01C50CA	NX5A0AE01C14CA	NX5A0AE01C54CA
14.50mm *	NX5A0AE01D10CA	NX5A0AE01D50CA	NX5A0AE01D14CA	NX5A0AE01D54CA
16.00mm *	NX5A0AE01E10CA	NX5A0AE01E50CA	NX5A0AE01E14CA	NX5A0AE01E54CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline



Note: Dimensions are shown in inches .Dimensions are for reference only.
millimeters

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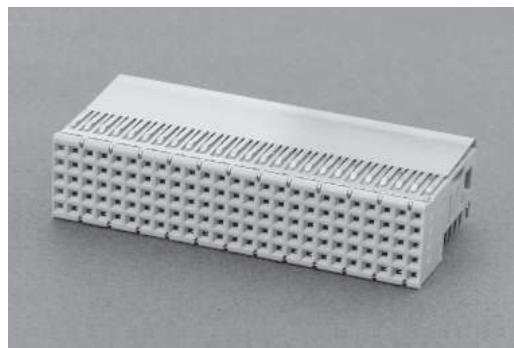
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MC-7

Style B25 Socket

Introduction

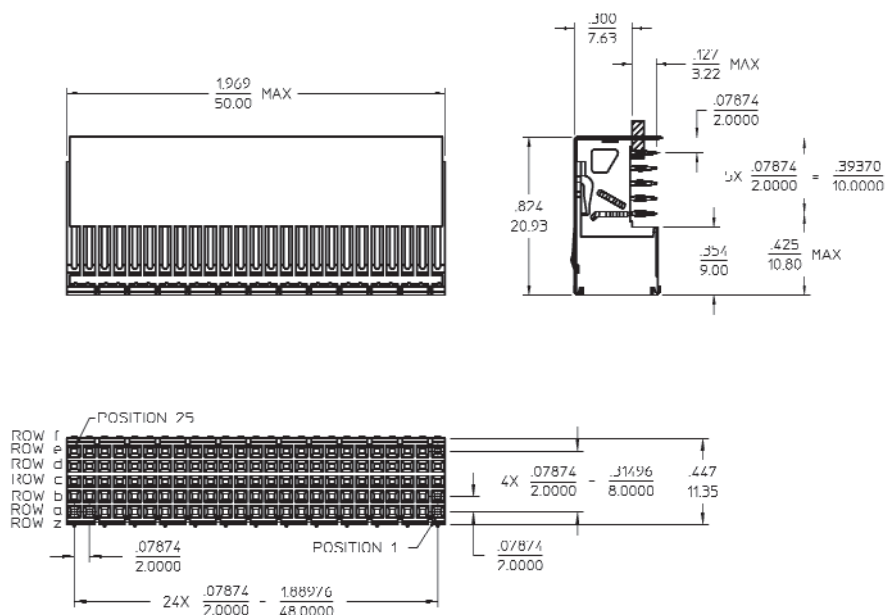
- 125 signal contacts
- 50 ground shield contacts
 - Available with or without preassembled top shield
 - Optional bottom shield sold separately
- 50mm length



Ordering Information

Unshielded	Shielded - With Top Shield
NX6B0AE01A0AF	NX6B0AE01A1AF

Outline (Shielded version shown)



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

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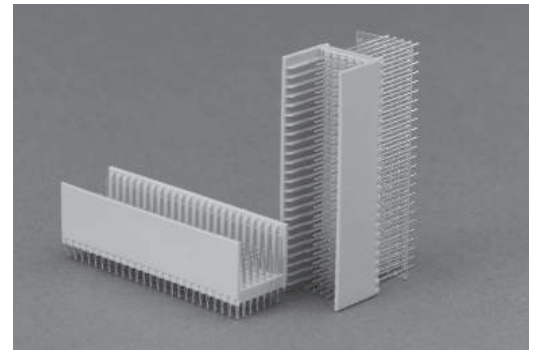
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Style B25 Header

Introduction

- 125 signal contacts
- 50 ground contacts
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- 50mm length



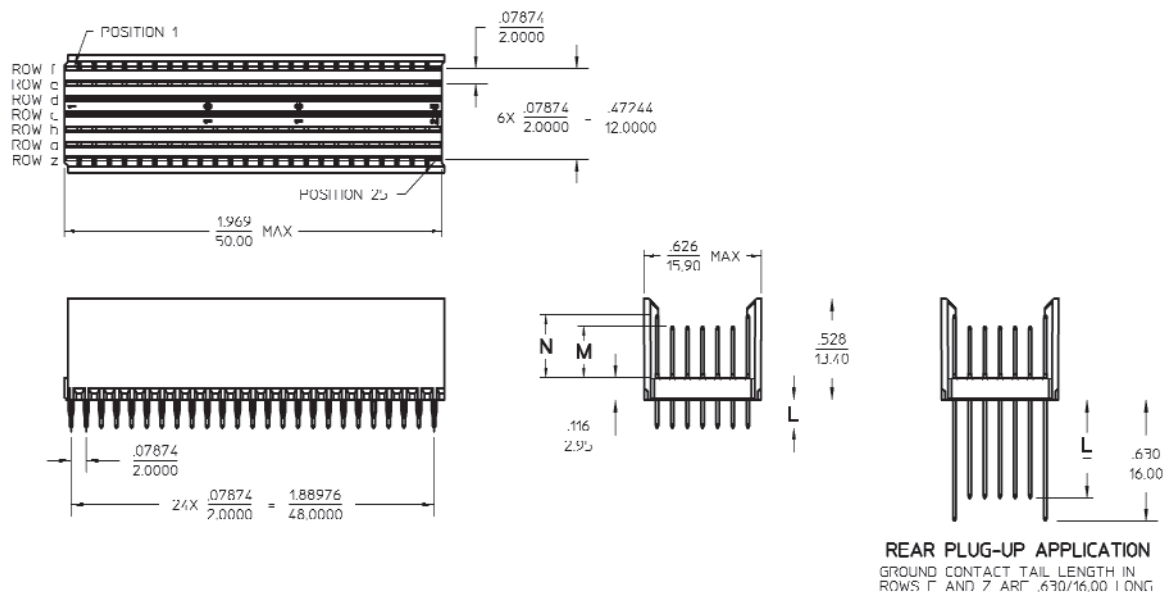
Ordering Information

Tail Length L =	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5B0AE01A10AA	NX5B0AE01A50AA	NX5B0AE01A11AA	NX5B0AE01A51AA
13.00mm *	NX5B0AE01C10CA	NX5B0AE01C50CA	NX5B0AE01C14CA	NX5B0AE01C54CA
14.50mm *	NX5B0AE01D10CA	NX5B0AE01D50CA	NX5B0AE01D14CA	NX5B0AE01D54CA
16.00mm *	NX5B0AE01E10CA	NX5B0AE01E50CA	NX5B0AE01E14CA	NX5B0AE01E54CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline



Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

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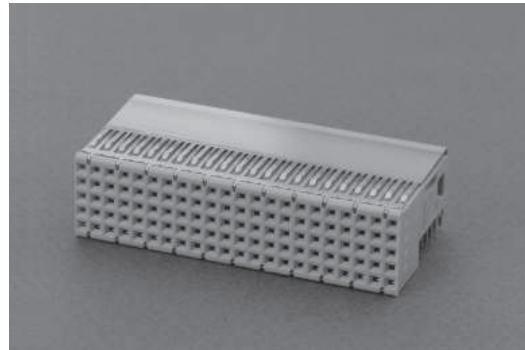
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MC-9

Style B22 Socket

Introduction

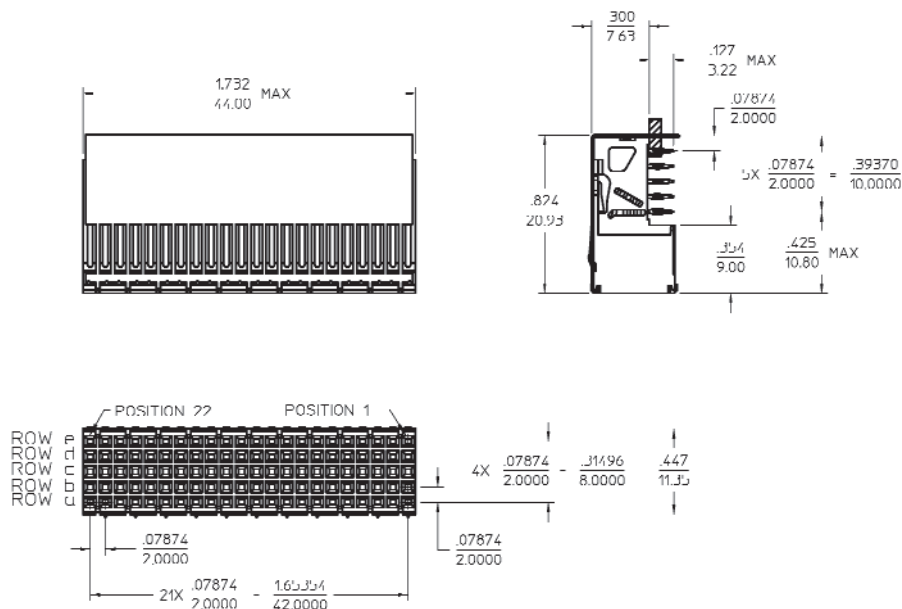
- 110 signal contacts
- 44 ground shield contacts
 - Available with or without preassembled top shield
 - Optional bottom shield sold separately
- 44 mm length



Ordering Information

Unshielded	Shielded - With Top Shield
NX6B0BA10A0AF	NX6B0BA12A1AF

Outline (Shielded version shown)

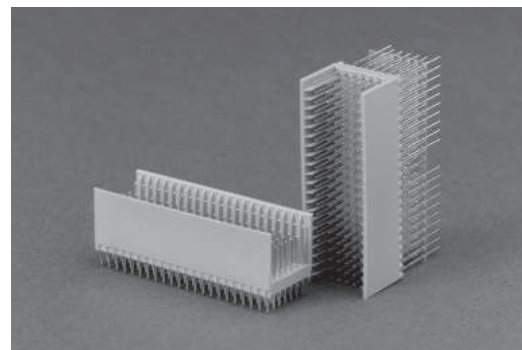


Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

Style B22 Header

Introduction

- 110 signal contacts
- 44 ground contacts
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- 44mm length



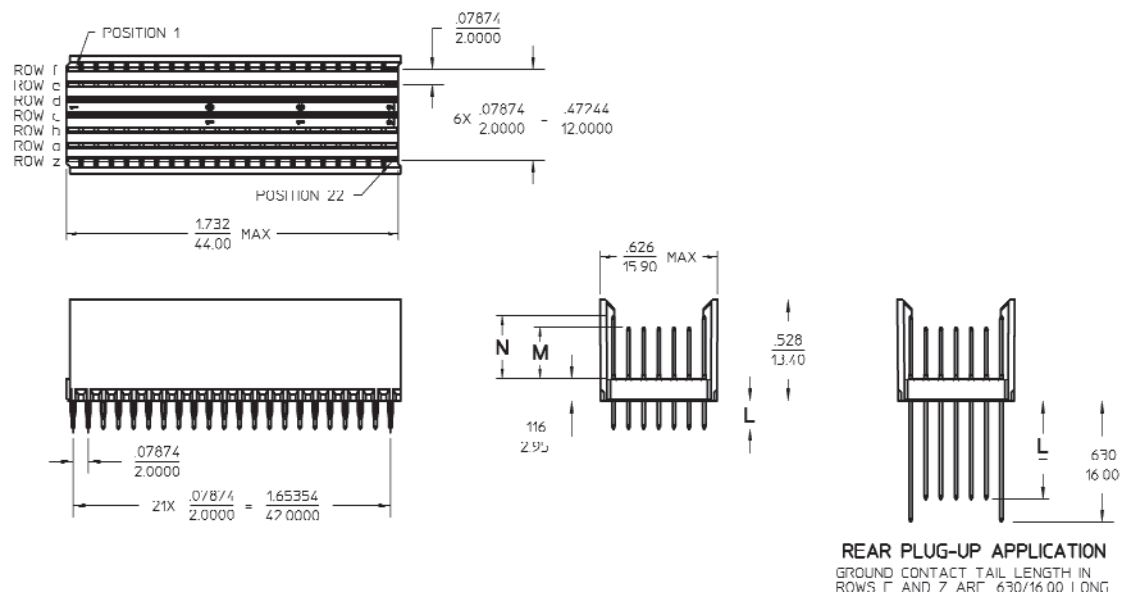
Ordering Information

Tail Length L =	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5B0BC79X00AA	NX5B0BC81X00AA	NX5B0BC84X01AA	NX5B0BA22X04AA
13.00mm *	NX5B0BC87X00CA	NX5B0BD11X00CA	NX5B0BC94X04CA	NX5B0BD19X04CA
14.50mm *	NX5B0BC91X00CA	NX5B0BD15X00CA	NX5B0BC98X04CA	NX5B0BA89X04CA
16.00mm *	NX5B0BD23X00CA	NX5B0BD24X00CA	NX5B0BC75X04CA	NX5B0BA26X04CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline

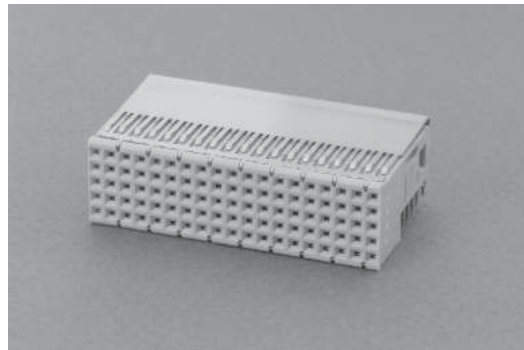


Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Style B19 Socket

Introduction

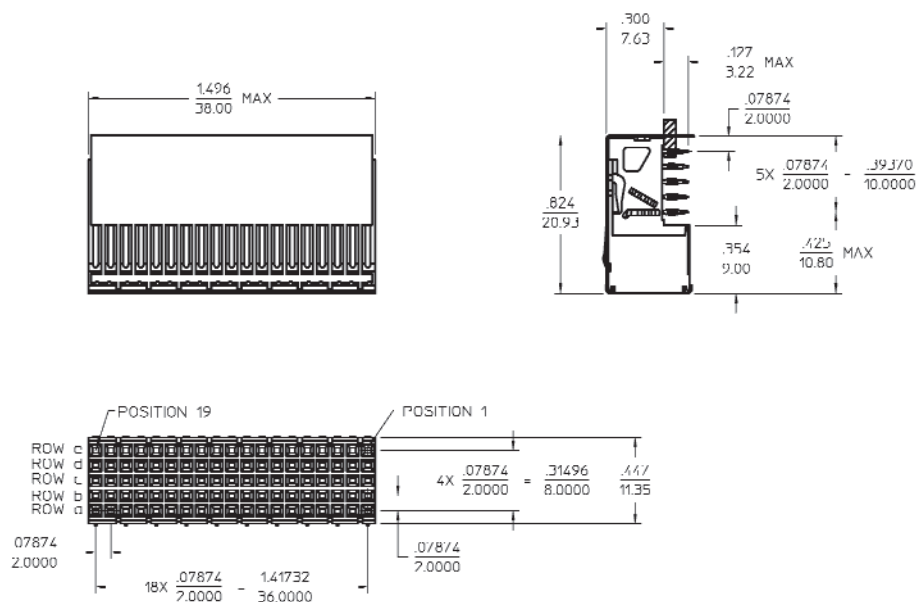
- 95 signal contacts
- 38 ground shield contacts
 - Available with or without preassembled top shield
 - Optional bottom shield sold separately
- 38mm length



Ordering Information

Unshielded	Shielded - With Top Shield
NX6B0BA14A0AF	NX6B0BA11A1AF

Outline (Shielded version shown)

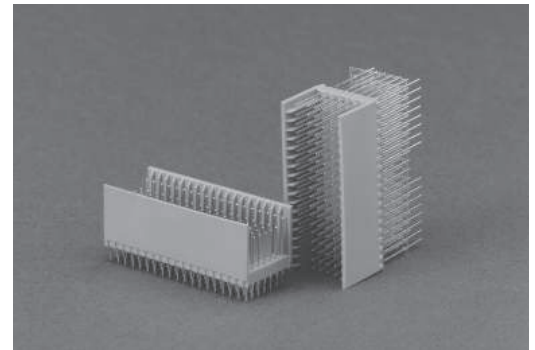


Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

Style B19 Header

Introduction

- 95 signal contacts
- 38 ground contacts
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- 38mm length



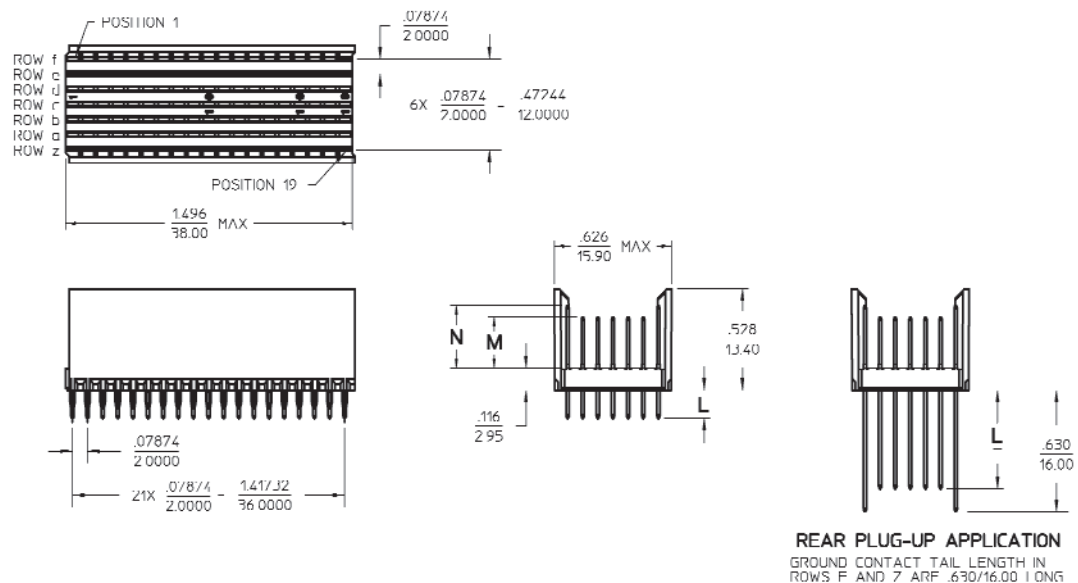
Ordering Information

Tail Length L =	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5B0BC80X00AA	NX5B0BC82X00AA	NX5B0BC10X01AA	NX5B0BA72X01AA
13.00mm *	NX5B0BC88X00CA	NX5B0BD12X00CA	NX5B0BC95X04CA	NX5B0BD20X04CA
14.50mm *	NX5B0BA71X00CA	NX5B0BD16X00CA	NX5B0BB51X04CA	NX5B0BA87X04CA
16.00mm *	NX5B0BD25X00CA	NX5B0BD26X00CA	NX5B0BA25X04CA	NX5B0BD27X04CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline

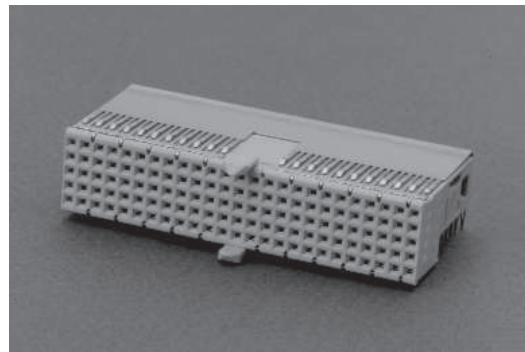


Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Style AB25 Socket

Introduction

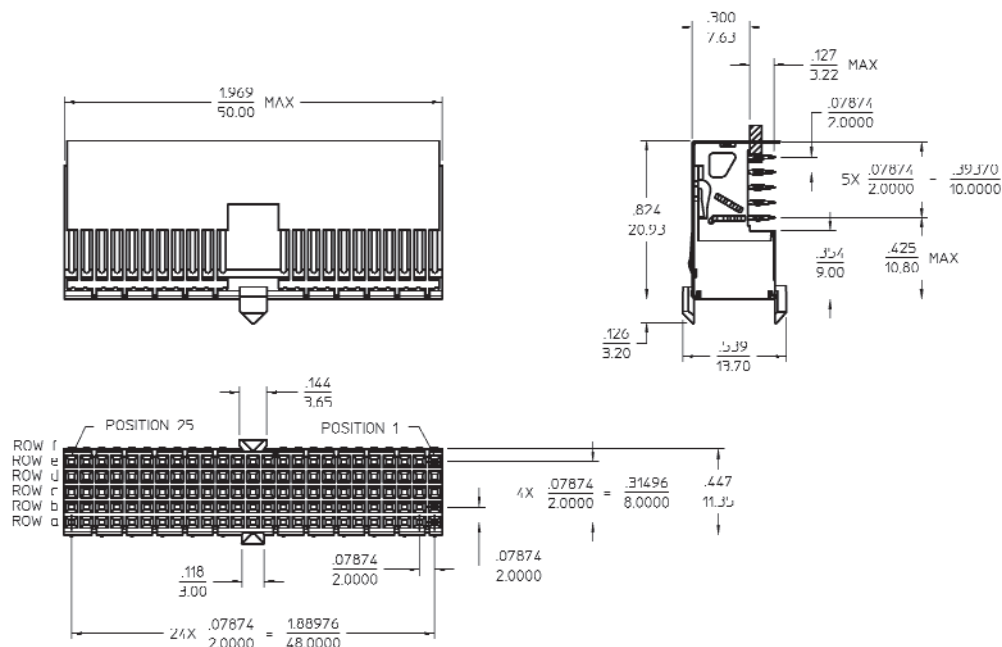
- 125 signal contacts
- 44 ground shield contacts
 - Available with or without preassembled top shield
 - Optional bottom shield sold separately
- Polarized pre-alignment guide posts
- Combines guidance features of "A" modules with signal density of "B25" modules
- 50mm length



Ordering Information

Unshielded	Shielded - With Top Shield
NX6ABAE01A0AF	NX6ABAE01A1AF

Outline (Shielded version shown)



Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

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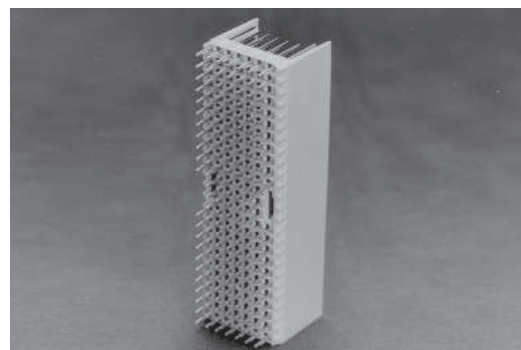
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Style AB25 Header

Introduction

- 125 signal contacts
- 44 ground contacts
- Polarized alignment channels
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- Combines guidance features of "A" modules with signal density of "B25" modules
- 50mm length



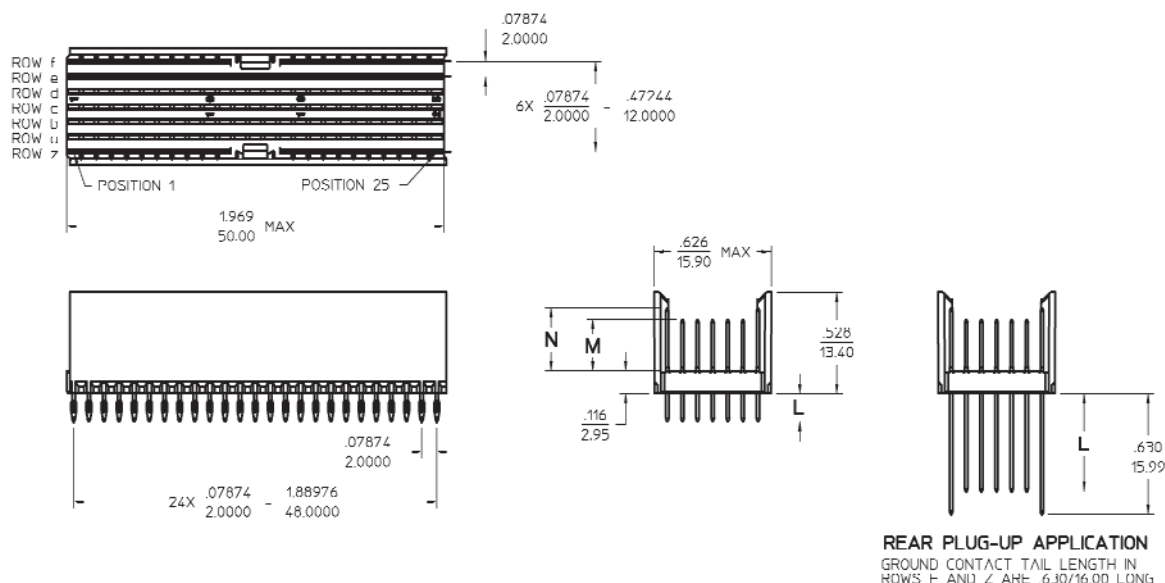
Ordering Information

Tail Length L =	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5ABAE01A10AA	NX5ABAE01A50AA	NX5ABAE01A11AA	NX5ABAE01A51AA
13.00mm *	NX5ABAE01C10CA	NX5ABAE01C50CA	NX5ABAE01C14CA	NX5ABAE01C54CA
14.50mm *	NX5ABAE01D10CA	NX5ABAE01D50CA	NX5ABAE01D14CA	NX5ABAE01D54CA
16.00mm *	NX5ABAE01E10CA	NX5ABAE01E50CA	NX5ABAE01E14CA	NX5ABAE01E54CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline



Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

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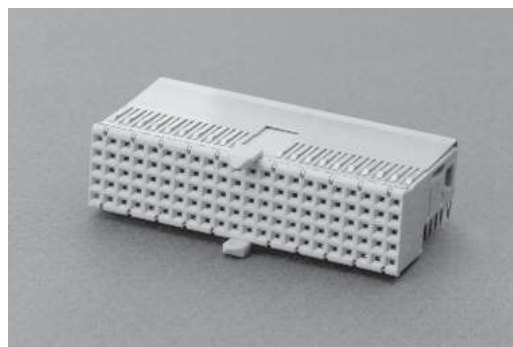
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MC-15

Style AB22 Socket

Introduction

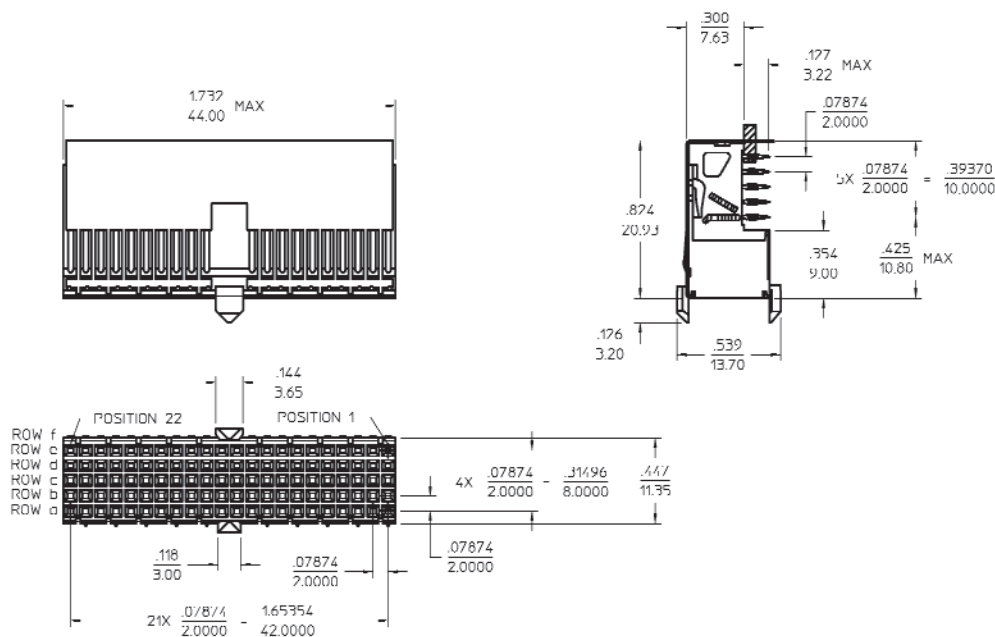
- 110 signal contacts
- 36 ground shield contacts
 - Available with or without preassembled top shield
 - Optional bottom shield sold separately
- Polarized pre-alignment guide posts
- Combines guidance features of "A" modules with signal density of "B22" modules
- 44mm length



Ordering Information

Unshielded	Shielded - With Top Shield
NX6ABBA10A0AF	NX6ABBA12A1AF

Outline (Shielded version shown)

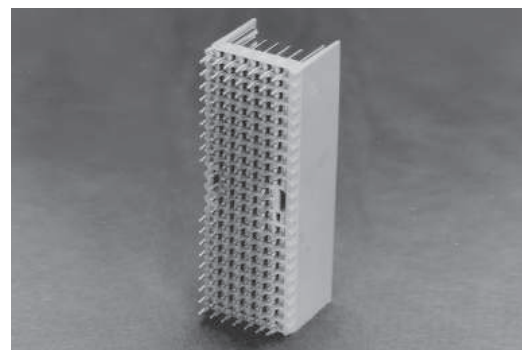


Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

Style AB22 Header

Introduction

- 110 signal contacts
- 36 ground contacts
- Polarized alignment channels
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- Combines guidance features of "A" modules with signal density of "B22" modules
- 44mm length



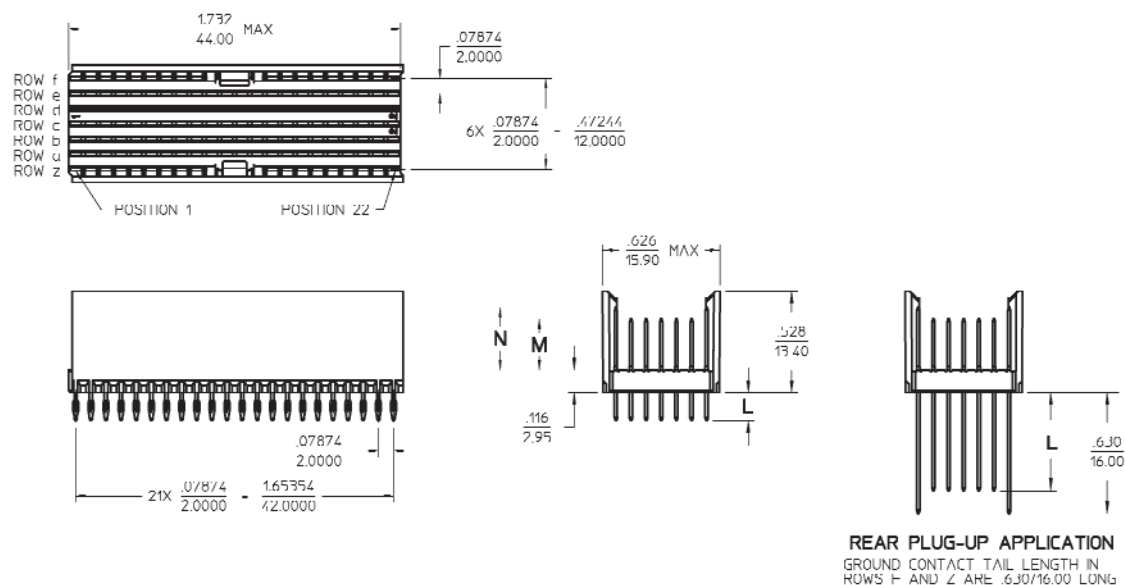
Ordering Information

Tail Length L =	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5ABBC77X00AA	NX5ABBC62X00AA	NX5ABBC11X01AA	NX5ABBB70X01AA
13.00mm *	NX5ABBC85X00CA	NX5ABBC99X00CA	NX5ABBC92X04CA	NX5ABBD17X04CA
14.50mm *	NX5ABBC89X00CA	NX5ABBD13X00CA	NX5ABBC96X04CA	NX5ABBD21X04CA
16.00mm *	NX5ABBD28X00CA	NX5ABBD30X00CA	NX5ABBD29X04CA	NX5ABBD31X04CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline

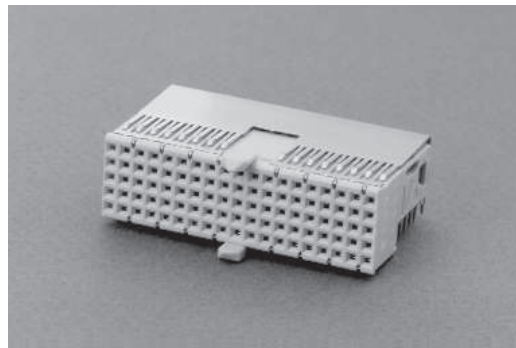


Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Style AB19 Socket

Introduction

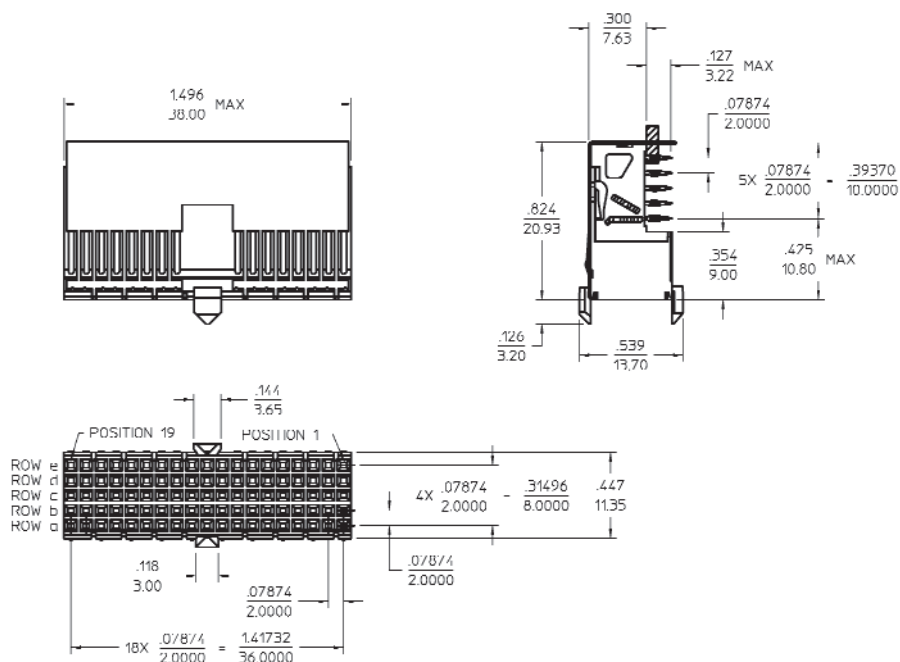
- 95 signal contacts
- 32 ground shield contacts
 - Available with or without preassembled top shield
 - Optional bottom shield sold separately
- Polarized pre-alignment guide posts
- Combines guidance features of "A" modules with signal density of "B19" modules
- 38mm length



Ordering Information

Unshielded	Shielded - With Top Shield
NX6ABBA14A0AF	NX6ABBA11A1AF

Outline (Shielded version shown)

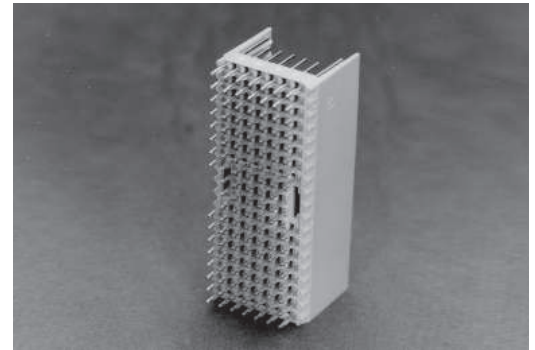


Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Style AB19 Header

Introduction

- 95 signal contacts
- 32 ground contacts
- Polarized alignment channels
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- Combines guidance features of "A" modules with signal density of "B19" modules
- 38mm length



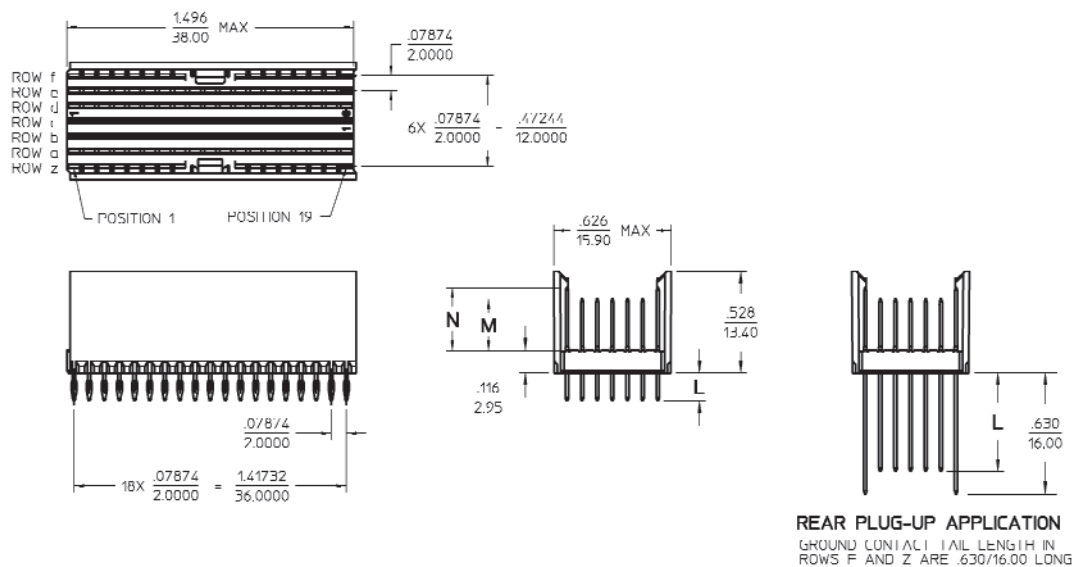
Ordering Information

Tail Length L =	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5ABBC78X00AA	NX5ABBC63X00AA	NX5ABBC83X01AA	NX5ABBB71X01AA
13.00mm *	NX5ABBC86X00CA	NX5ABBD10X00CA	NX5ABBC93X04CA	NX5ABBD18X04CA
14.50mm *	NX5ABBC90X00CA	NX5ABBD14X00CA	NX5ABBC97X04CA	NX5ABBD22X04CA
16.00mm *	NX5ABBD32X00CA	NX5ABBD34X00CA	NX5ABBD33X04CA	NX5ABBD35X04CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline



Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

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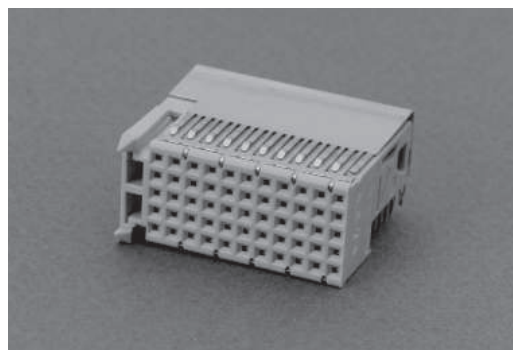
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MC-19

Style C Socket

Introduction

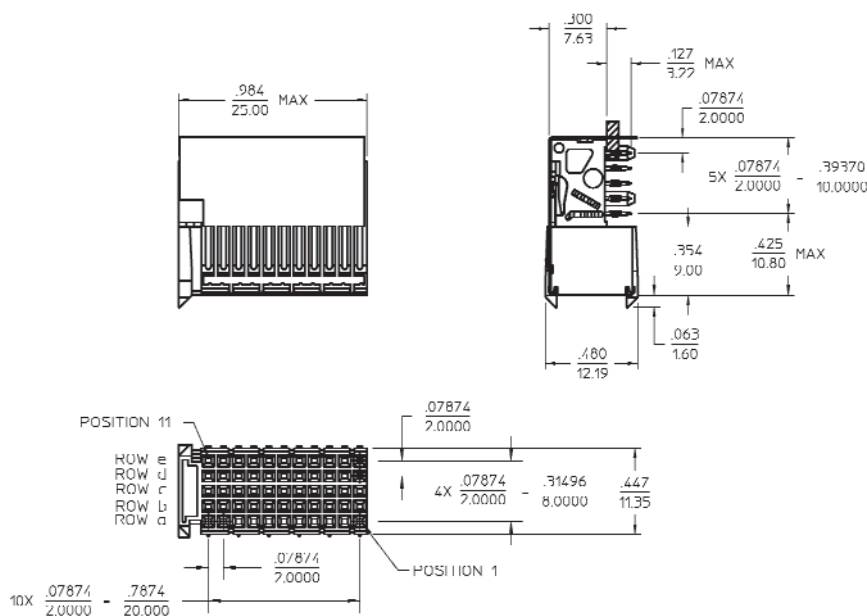
- 55 signal contacts
- 22 ground shield contacts
- Available with or without preassembled top shield
- Optional bottom shield sold separately
- Pre-alignment guide posts
- Used on bottom, end-positions of connector columns
- Optional location pegs for PCB mounting
- 25mm length



Ordering Information

Unshielded		Shielded	
No Pegs	Pegs	No Pegs	Pegs
NX6C0AE01A0AF	NX6C1AE01A0AF	NX6C0AE01A1AF	NX6C1AE01A1AF

Outline (Shielded version with Mounting Pegs shown)



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

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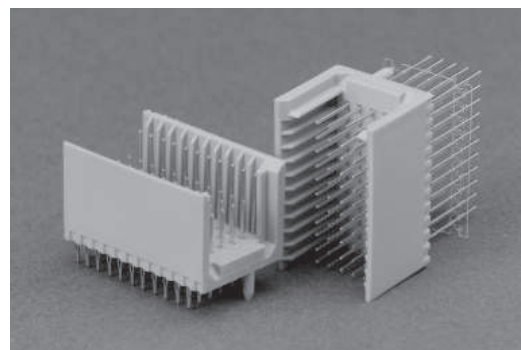
www.winchesterelectronics.com

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Style C Header

Introduction

- 55 signal contacts
- 22 ground contacts
- Polarized alignment channels
- Used on bottom, end-positions of connector columns
- Location peg to ensure correct orientation to PCB
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- 25mm length



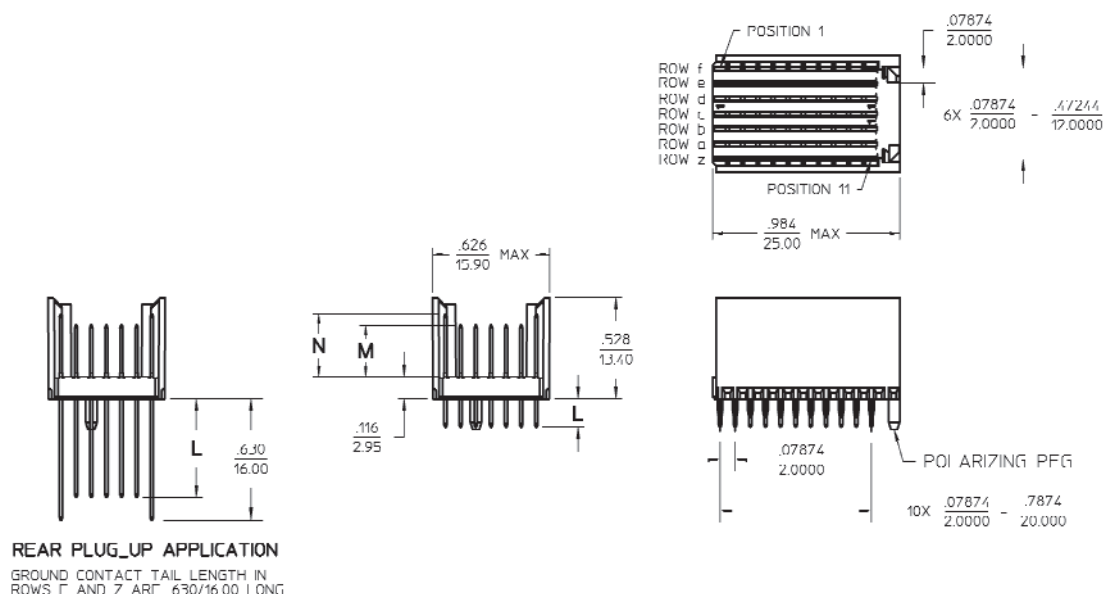
Ordering Information

	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
Tail Length L =	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5C0AE01A10AA	NX5C0AE01A50AA	NX5C0AE01A11AA	NX5C0AE01A51AA
13.00mm *	NX5C0AE01C10CA	NX5C0AE01C50CA	NX5C0AE01C14CA	NX5C0AE01C54CA
14.50mm *	NX5C0AE01D10CA	NX5C0AE01D50CA	NX5C0AE01D14CA	NX5C0AE01D54CA
16.00mm *	NX5C0AE01E10CA	NX5C0AE01E50CA	NX5C0AE01E14CA	NX5C0AE01E54CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

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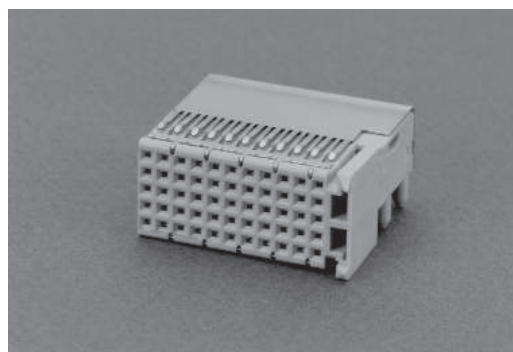
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MC-21

Style D Socket

Introduction

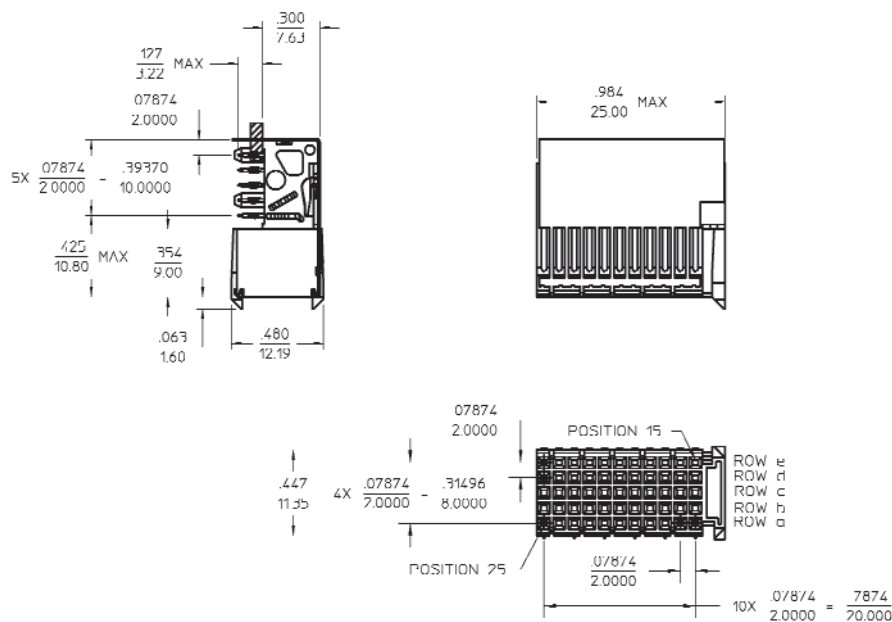
- 55 signal contacts
- 22 ground shield contacts
- Available with or without preassembled top shield
- Optional bottom shield sold separately
- Pre-alignment guide posts
- Used on top, end-positions of connector columns
- Optional location pegs for PCB mounting
- 25mm length



Ordering Information

Unshielded		Shielded	
No Pegs	Pegs	No Pegs	Pegs
NX6D0AE01A0AF	NX6D1AE01A0AF	NX6D0AE01A1AF	NX6D1AE01A1AF

Outline (Shielded version with Mounting Pegs shown)



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

Winchester Electronics

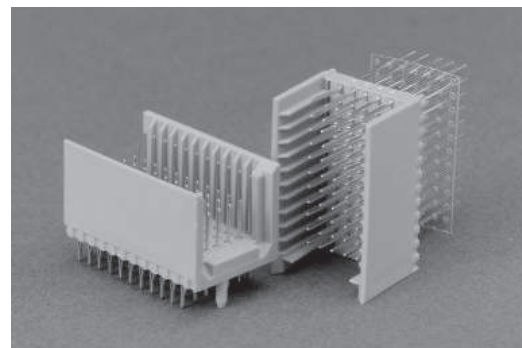
www.winchesterelectronics.com

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Style D Header

Introduction

- 55 signal contacts
- 22 ground contacts
- Polarized alignment channels
- Used on top, end-positions of connector columns
- Location peg to ensure correct orientation to PCB
- Connectors with 13.00mm, 14.50mm, and 16.00mm rear plug-up contacts include a Mylar alignment guide
- 25mm length



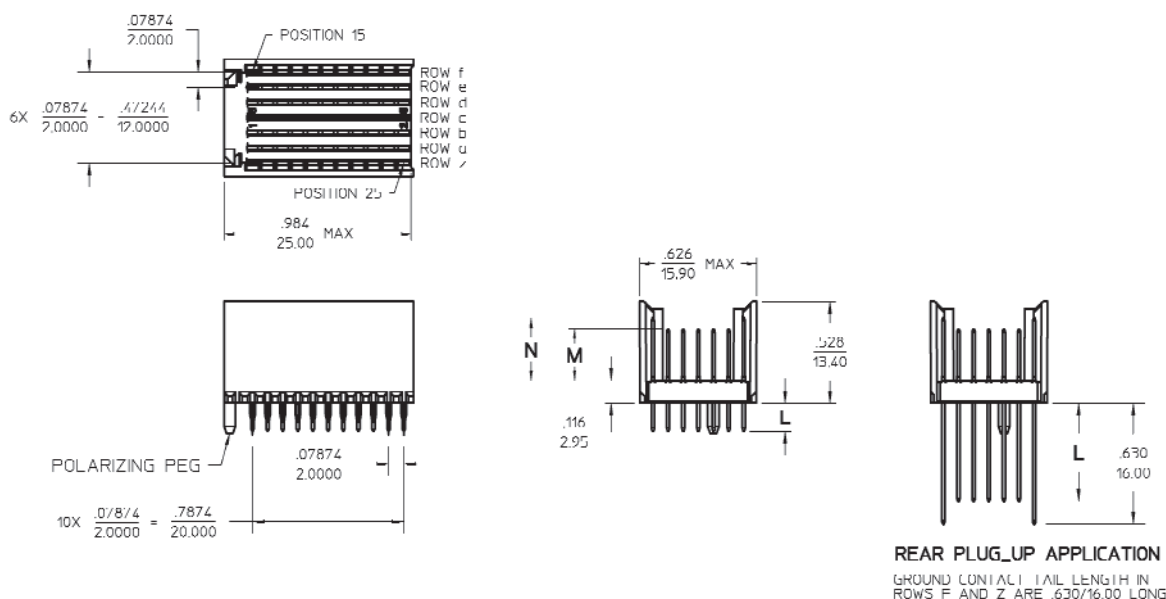
Ordering Information

Tail Length L =	No Ground Contacts		With Ground Contacts - Level 3 (N = 8.30mm)	
	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)	Level 1 Signal (M = 5.30mm)	Level 2 Signal (M = 6.80mm)
3.70mm	NX5D0AE01A10AA	NX5D0AE01A50AA	NX5D0AE01A11AA	NX5D0AE01A51AA
13.00mm *	NX5D0AE01C10CA	NX5D0AE01C50CA	NX5D0AE01C14CA	NX5D0AE01C54CA
14.50mm *	NX5D0AE01D10CA	NX5D0AE01D50CA	NX5D0AE01D14CA	NX5D0AE01D54CA
16.00mm *	NX5D0AE01E10CA	NX5D0AE01E50CA	NX5D0AE01E14CA	NX5D0AE01E54CA

* Rear Plug Up

Custom select load options are available. Please see pages 44-46 for instructions.

Outline



Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

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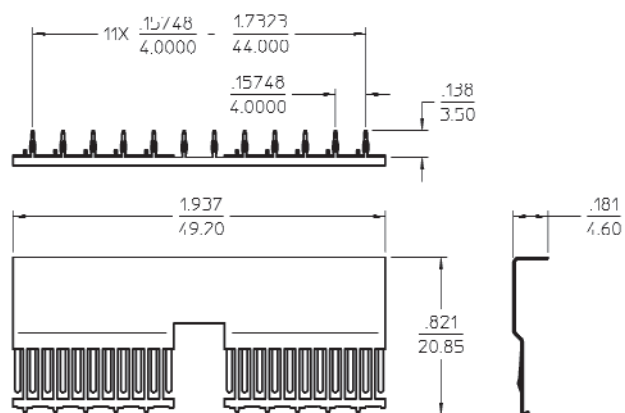
MC-23

Optional Bottom Shielding

Introduction

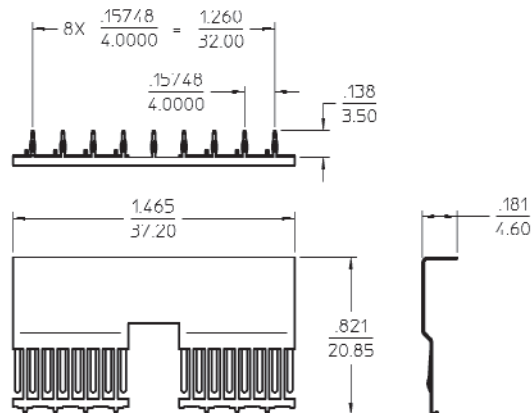
In addition to top shielding that can be ordered preinstalled on your connector, Winchester Electronics also offers optional bottom shielding. Bottom shielding provides enhanced cross talk control and EMI/RFI immunity. The assembly tool used to install the shield on a printed circuit board is catalog no. 10743957001.

Style A & AB25



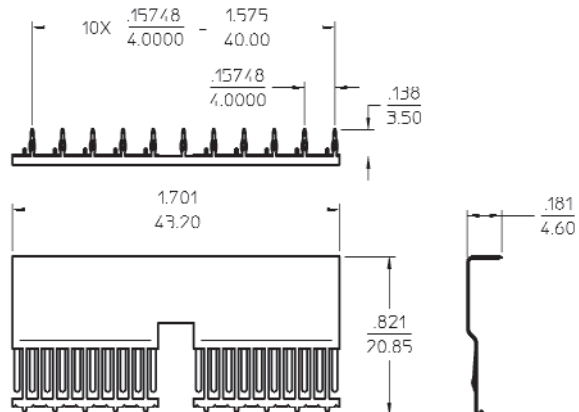
CATALOG No. 285295811 SHOWN

Style AB19



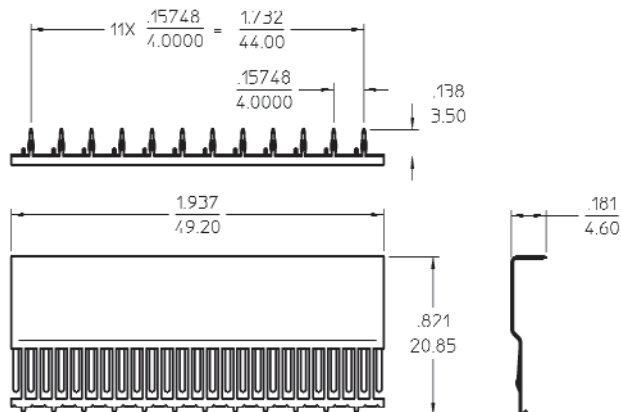
CATALOG No. 285295816 SHOWN

Style AB22



CATALOG No. 285295817 SHOWN

Style B25

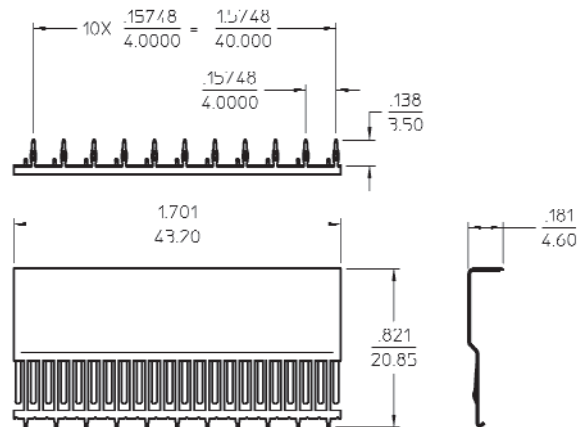


CATALOG No. 285295812 SHOWN

Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

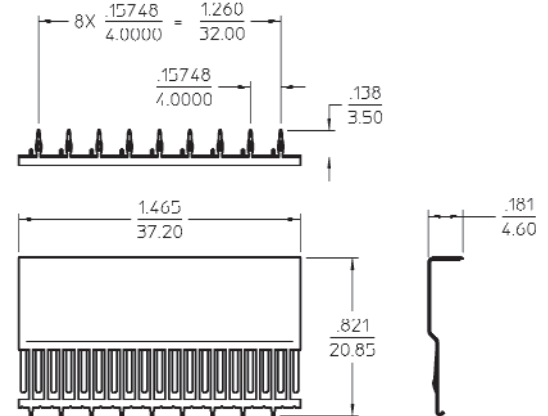
Optional Bottom Shielding

Style B22



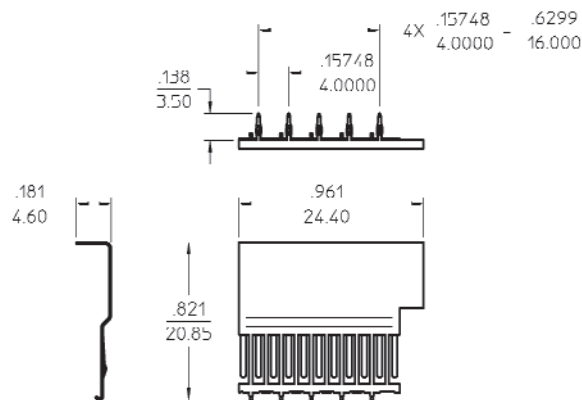
CATALOG No. 285295815 SHOWN

Style B19



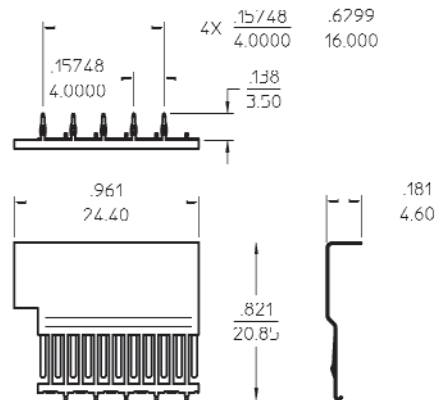
CATALOG No. 285295814 SHOWN

Style C



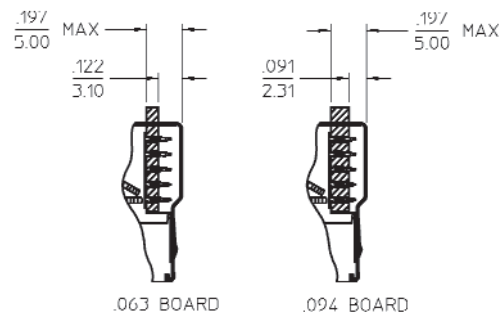
CATALOG No. 285295813 SHOWN

Style D



CATALOG No. 285295818 SHOWN

Mounting Dimensions



Note: Dimensions are shown in inches / millimeters. Dimensions are for reference only.

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MC-25

CompactPCI® and VME64x Connectors

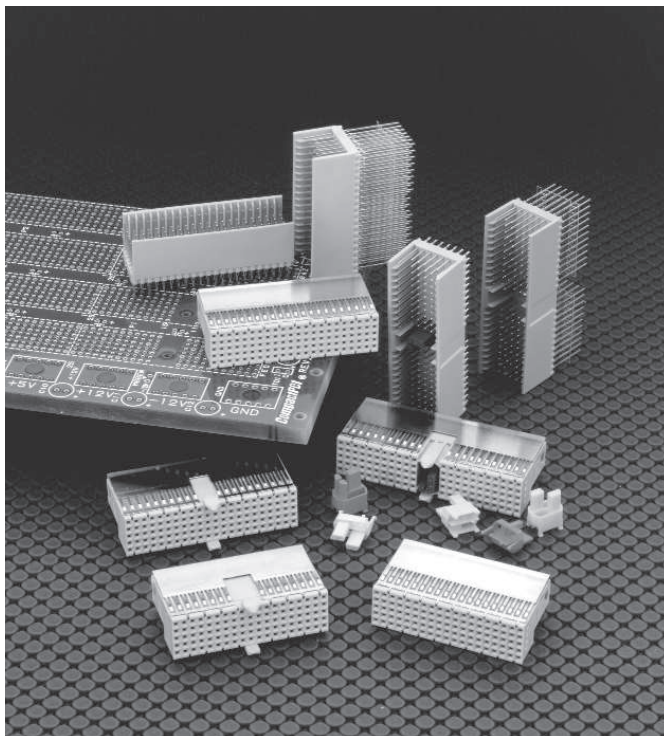
CompactPCI® is a bus architecture designed for industrial computing. CompactPCI® originated from the Peripheral Component Interconnect or PCI bus architecture developed in the early 1990s by Intel to connect high speed peripheral devices to desktop computer CPUs. PCI quickly became the bus architecture of choice in the desktop world providing OEMs a variety of standard high performance microprocessors and software products from which to choose.

Industrial computing requirements are much more rigorous than desktop computing. The need was readily apparent to have a more robust and ruggedized bus architecture suitable for industrial computing, yet still based on the well-established PCI chips and software. In 1994, a small group of embedded system manufacturers formed PICMG (PCI Industrial Computer Manufacturers Group) and created the CompactPCI® bus architecture to meet the demands of the industrial computing world. Today, PICMG has over 650 member companies who voluntarily work to improve the performance and value of CompactPCI® based systems. Key benefits of CompactPCI® include:

- Utilize existing PCI microprocessors and software
- Rugged VME Eurocard chassis
- Robust and versatile 2mm hard metric connectors
- Ability to insert and remove cards without powering the system down (Hot-Swap)
- Vertical card orientation for better cooling

Two board sizes are utilized in CompactPCI® systems - 3U and 6U. The 3U front plug-in board is 100mm high by 160mm long and uses two connectors for a total of 220 signal positions. The 6U front plug-in board is 233mm high by 160mm long and uses five connectors for a total of 535 signal positions. Standard CompactPCI® units contain 8-slots and additional slots can be added through PCI bridging. Code keys are used on type A connector modules to distinguish 5.0V, 3.3V, and Computer Telephony (CT) boards.

All CompactPCI® 2mm hard metric connectors are identified by the following nomenclature. Front plug-in board right angle female sockets with top shields are identified as J1...J5. Pin headers on backplanes are identified as P1...P5, and corresponding shrouds used for rear plug-up applications are identified as rP2...rP5. Rear-panel I/O board right-angle



CompactPCI® and VME64x Connectors

female sockets with top shields are identified as rJ2...rJ5.

The CompactPCI® "Core" specification, PICMG 2.0 R3.0, defines the use of AB19 and AB22 sockets and shrouds for rear plug-up applications in locations rJ2, rJ3, rJ5 and rP2, rP3, rP5. Earlier revisions specified using B19 and B22 modules. The specification was revised to include AB modules to increase the amount of alignment features on rear plug-in boards.

Earlier version rear-panel I/O boards using B19 and B22 socket modules will mate to CompactPCI® backpanels loaded with AB shrouds. However, rear-panel I/O boards using AB sockets will not mate to older backpanels loaded with B19 and B22 shrouds because the guide-posts on AB sockets interfere and prevent the connectors from mating. Front plug-in boards and mating pin headers still use B19 and B22 modules.

Winchester MetCon-2® B19 and B22 rear plug-up pin headers with 16.00mm contact tails are "AB compatible". B19 rear plug-up headers contain 3.70mm stub tail contacts in positions 9, 10, 11 and B22 rear plug-up headers contain 3.70mm stub tail contacts in positions 11,12. Stub tail contacts are used in these positions to allow rear panel AB sockets to mate. Long tail 16.00mm contacts extend into the "guide channels" of the AB shrouds, preventing rear panel AB sockets from mating.

The following section lists the Winchester MetCon-2® 2mm hard metric connectors that comply with the CompactPCI® and VME64x specifications. The CompactPCI® specifications for pin headers state that unless specified otherwise, all primary side signal contacts shall be mating level 2, all primary side ground contacts shall be mating level 3, and all rear plug-up signal and ground contacts shall be 16.00mm. Custom configurations that do not adhere to these requirements can be supplied. Please consult Winchester for your particular application.

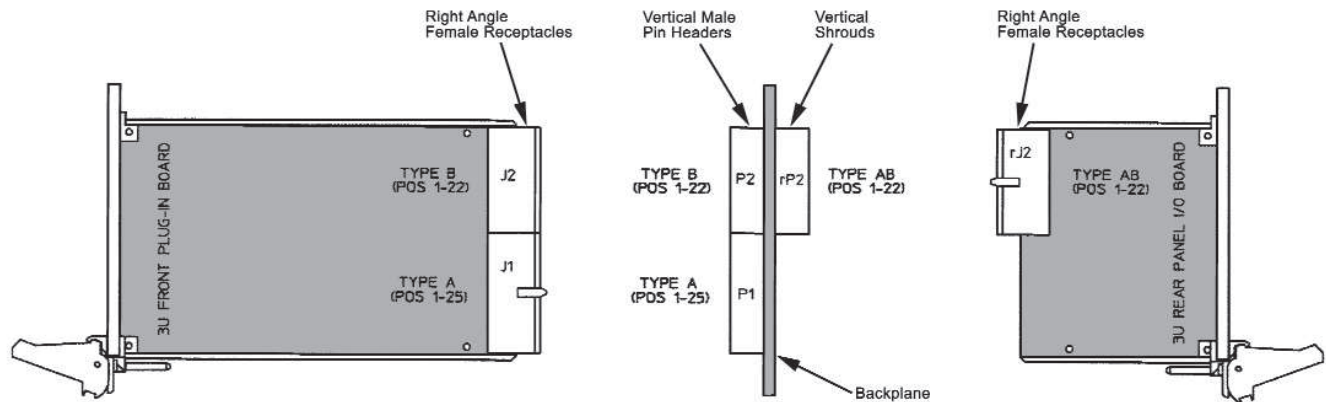
The American National Standard for VME64 Extensions (VME64x), ANSI / VITA 1.1 - 1997, is another popular bus architecture specifying 2mm hard metric connectors. B19 modules, designated J0, P0, and RJ0 are located between two 5-Row DIN 41612 connectors. VME64x states 2mm generic pin headers shall have level 1 signal contacts on the primary mating side, level 3 ground contacts on the primary mating side, and 16.00mm signal and ground contacts for rear plug-up applications. Shrouds for VME64x are style B19 and part numbers are listed in the shroud section of this catalog.



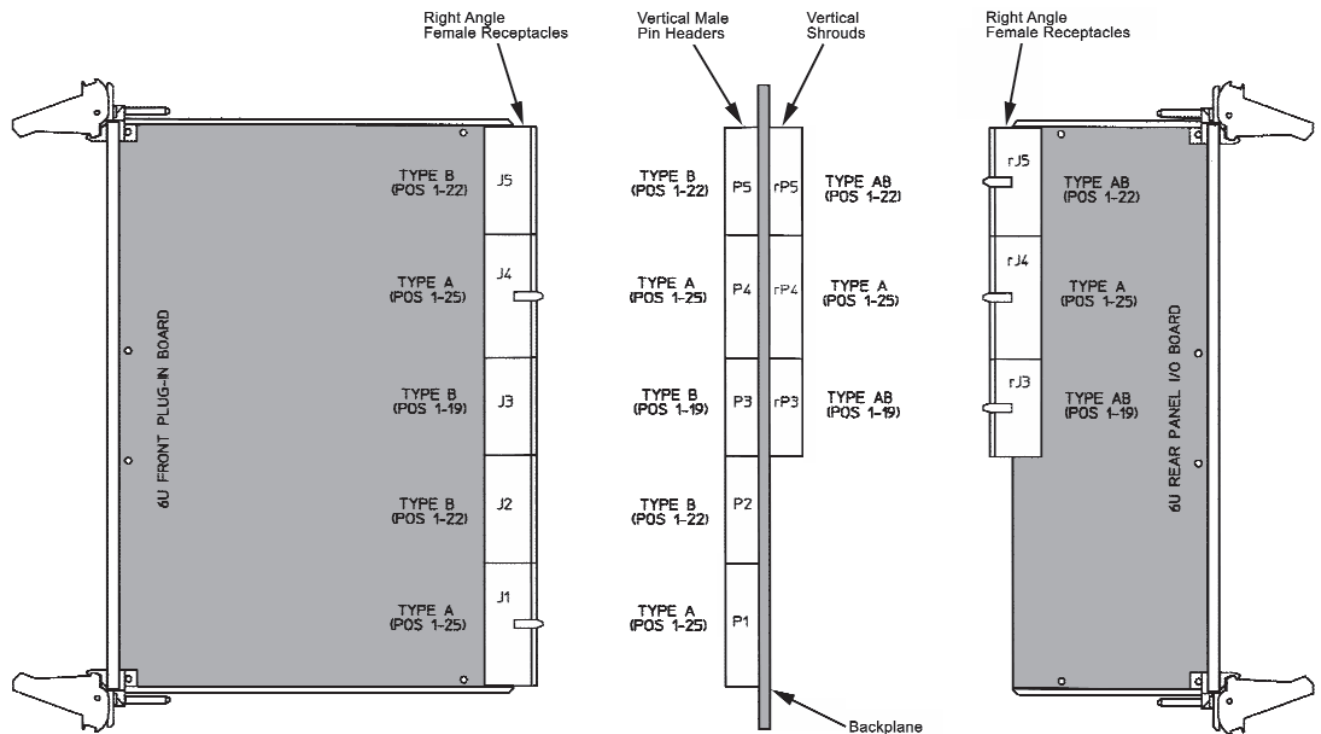
Winchester Electronics is an Executive Member of [PICMG](#).

CompactPCI® Connector Configuration

3U - Standard Form Factors



6U - Standard Form Factors



CompactPCI® Cross Reference

CompactPCI® Standard Connector Configurations per:

- PICMG 2.0 R3.0 - CompactPCI "Core" Specification 10/1/99
- PICMG 2.1 R2.0 - CompactPCI Hot Swap Specification 1/17/01
- PICMG 2.5 R1.0 - CompactPCI Computer Telephony Specification 4/3/98
- PICMG 2.16 R1.0 - CompactPCI Packet Switching Backplane Specification 9/5/01
- ANSI / VITA 30-2000 - American National Standard for 2mm Connector Practice for Euroboard Systems 8/00

PBC Location	Module	Tail Length	Application Notes	Backpanel Connector Part Number
P1	A	3.70mm	Meets Core and Hot Swap Specifications	NX5A0BA52X01AA
P2	B22	3.70mm	Meets Core and Hot Swap Specifications	NX5B0BA22X04AA
P2	B22	16.00mm	Compatible with AB22 Shrouds	NX5B0BB17X04CA
P3	B19	16.00mm	Compatible with AB19 Shrouds	NX5B0BB21X04CA
P3	AB19	16.00mm	Meets Packet Switching Backplane Specification	NX5ABBD35X04CA
P4	A	16.00mm		NX5A0AE01E54CA
P4 CT	A – no peg	3.70mm	Meets Computer Telephony Specification	NX5A0BA53X01AA
P5	B22	16.00mm	Compatible with AB22 Shrouds	NX5B0BB17X04CA
P5 CT	B22	16.00mm	Meets Computer Telephone Specification Compatible with with AB22 Shrouds	NX5B0BB20X04CA
PCB Location	Module		Application Notes	Front Board Socket Part Number
J1	A			NX6A0AE01A1AF
J2	B22			NX6B0BA12A1AF
J3	B19			NX6B0BA11A1AF
J3	AB19		Meets Packet Switching Backplane Specification	NX6ABBA11A1AF
J4	A			NX6A0AE01A1AF
J4 CT	A		Meets Computer Telephone Specification	NX6A0BA15A1AF
J5	B22			NX6B0BA12A1AF
PCB Location	Module		Application Notes	Rear Board Socket Part Number
rJ2	AB22		Mates with AB22 Shroud per Core Specification	NX6ABBA12A1AF
rJ3	AB19		Mates with AB19 Shroud per Core Specification	NX6ABBA11A1AF
rJ4	A			NX6A0AE01A1AF
rJ5	AB22		Mates with AB22 Shroud per Core Specification	NX6ABBA12A1AF
PCB Location	Code Key Color		Application Notes	Code Key Part Number
P1, P4	Brilliant Blue		5.0 Volt	1092951311
P1, P4	Cadmium Yellow		3.3 Volt	109295137
P4 CT	Strawberry Red		Computer Telephony	1092951317
J1, J4	Brilliant Blue		5.0 Volt	1092951312
J1, J4	Cadmium Yellow		3.3 Volt	109295138
J4 CT	Strawberry Red		Computer Telephony	1092951318

Continued on next page.....

CompactPCI® Cross Reference

CompactPCI® Standard Connector Configurations per:

- PICMG 2.0 R3.0 - CompactPCI "Core" Specification 10/1/99
- PICMG 2.1 R2.0 - CompactPCI Hot Swap Specification 1/17/01
- PICMG 2.5 R1.0 - CompactPCI Computer Telephony Specification 4/3/98
- ANSI / VITA 30-2000 - American National Standard for 2mm Connector Practice for Euroboard Systems 8/00

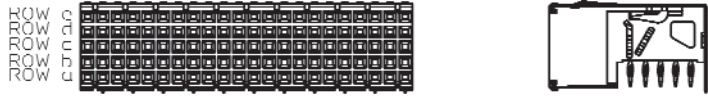
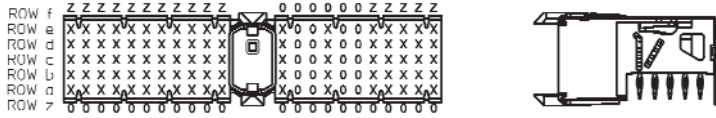
PCB Location	Module	Shroud Height (mm)	Shroud Part Number
rP2, rP5	AB22	13.35mm	NX5SH1200
rP2, rP5	AB22	14.15mm	NX5SH1209
rP2, rP5	AB22	14.95mm	NX5SH1215
rP2, rP5	AB22	15.35mm	NX5SH1219
rp3	AB19	13.35mm	NX5SH1100
rp3	AB19	14.15mm	NX5SH1109
rp3	AB19	14.95mm	NX5SH1115
rp3	AB19	15.35mm	NX5SH1119
rp3	AB19	13.35mm	NX5SH1100
rp3	AB19	14.15mm	NX5SH1109
rp3	AB19	14.95mm	NX5SH1115
rp3	AB19	15.35mm	NX5SH1119
rP4	A	13.35mm	NX5SH0100
rP4	A	14.15mm	NX5SH0109
rP4	A	14.95mm	NX5SH0115
rP4	A	15.35mm	NX5SH0119

VME64 Extensions (VME64x) per:

- ANSI / VITA 1.1 - 1997 - American National Standard for VME64 Extensions 10/7/98

PCB Location	Module	Tail Length	VME64x Connector Description	Backpanel Connector Part Number
P0	B19	3.70mm	Meets ANSI / VITA 1.1-1997	NX5B0BC10X01AA
P0	B19	16.00mm	Meets ANSI / VITA 1.1-1997	NX5B0BA25X04CA
PCB Location	Module	VME64x Connector Description		Free Board Connector Part Number
J0, RJ0	B19	Meets ANSI / VITA 1.1-1997		NX6B0BA11A1AF

CompactPCI® Socket Connectors

Mating Face & Side View	Module	CompactPCI Location	Part Number
	A	J1, J4, rJ4	NX6A0AE01A1AF
	B22	J2, J5	NX6B0BA12A1AF
	B19	J3	NX6B0BA11A1AF
	A	J4 - CT	NX6A0BA15A1AF *
	AB22	rJ2, rJ5	NX6ABBA12A1AF
	AB19	rJ3	NX6ABBA11A1AF

* Special select load socket for Computer Telephony (CT) application

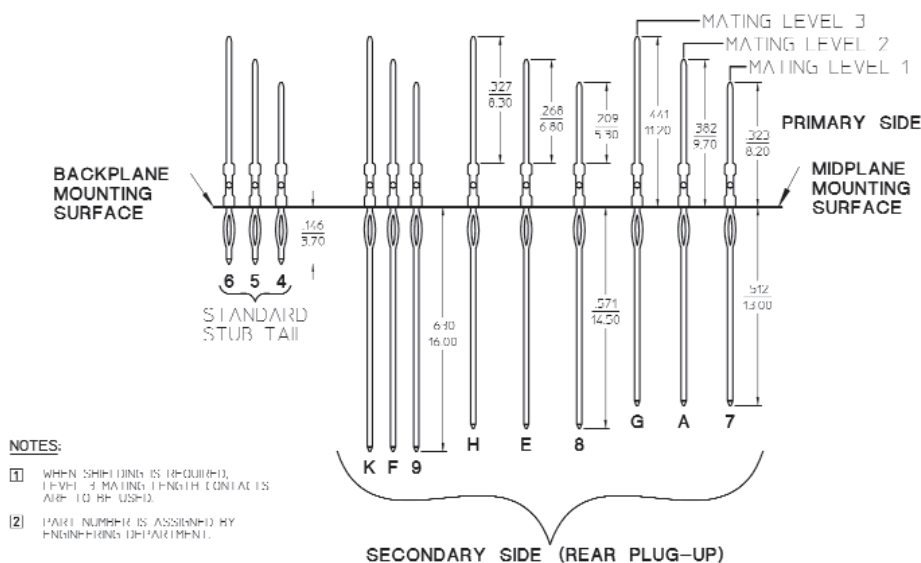
X = signal contact position loaded

0 = signal contact position not loaded

Z = ground contact position loaded (upper shield)

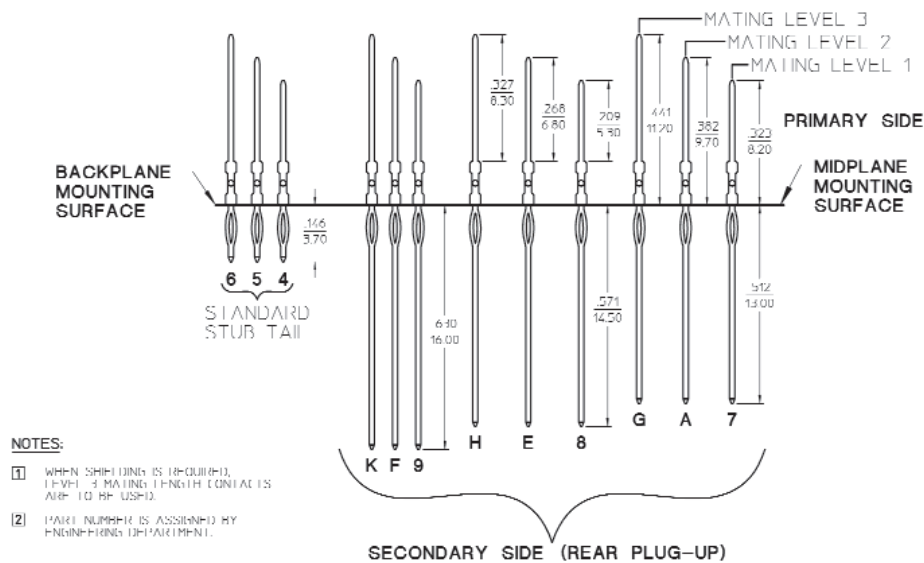
CompactPCI® Header Connectors

Load Pattern & End View	Module	Tail Length	CompactPCI Location	Part Number
	A	3.70mm	P1	NX5A0BA52X01AA
	B22	3.70mm	P2	NX5B0BA22X04AA
	B22	16.00mm	P2, P5	NX5B0BB17X04CA
	B19	16.00mm	P3	NX5B0BB21X04CA



CompactPCI® Header Connectors

Load Pattern & End View	Module	Tail Length	CompactPCI Location	Part Number
	A	16.00mm	P4	NX5A0AE01E54CA
	A No Peg	3.70mm	P4 -CT	NX5A0BA53X01AA
	B22	16.00mm	P5 - CT	NX5B0BB20X04CA



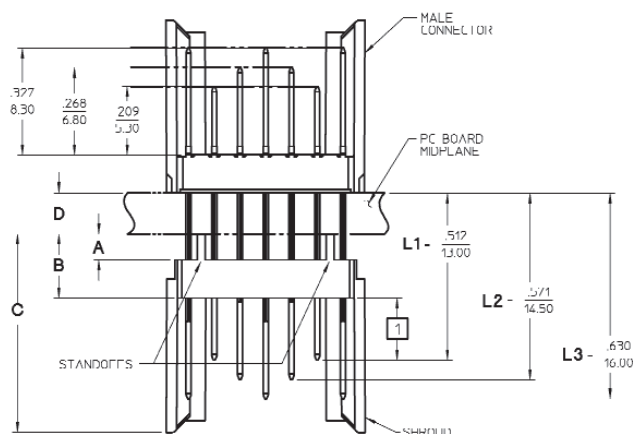
Shrouds

Introduction

Shroud insulators are used with rear plug-up MetCon-2® headers for midplane applications. Shroud insulators, when placed over rear plug-up contact tails, provide a connector interface for daughtercards to plug into from the rear of the unit. Shroud insulators are easily installed and use the same insertion tools as MetCon-2® headers.

Selection of Shroud Height Options

Four different shroud standoff heights are available for each module type to accommodate a PCB midplane thickness range of 2.50mm to 5.88mm. Selection of the appropriate shroud is dependent upon the thickness of the PCB midplane, rear plug-up contact tail lengths, desired mating pin heights, and the height of the shroud standoff. Please refer to the assembly drawing and table below to select the required shroud standoff height. Shroud part numbers are listed in tables on the following pages.



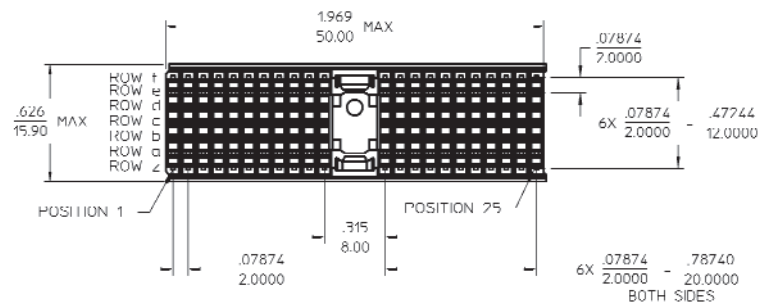
1 .191 / 4.85mm MINIMUM MATING PIN HEIGHT REQUIRED TO ENSURE .098 / 2.5mm MINIMUM CONTACT WIDTH

Shroud Standoff Height A	PC Board (Midplane) Thickness D		Shroud Height Dimensions	
	Minimum	Maximum	C	B
.079 / 2.00	.098 / 2.50	.118 / 3.00	.606 / 15.40	.195 / 4.95
.063 / 1.60	.122 / 3.10	.150 / 3.80	.591 / 15.00	.181 / 4.60
.031 / 0.80	.154 / 3.90	.181 / 4.60	.559 / 14.20	.148 / 3.75
.000 / 0.00 (No Standoff)	.185 / 4.70	.231 / 5.88	.528 / 13.40	.116 / 2.95

Note: Dimensions are shown in inches / millimeters. Dimensions are for reference only.

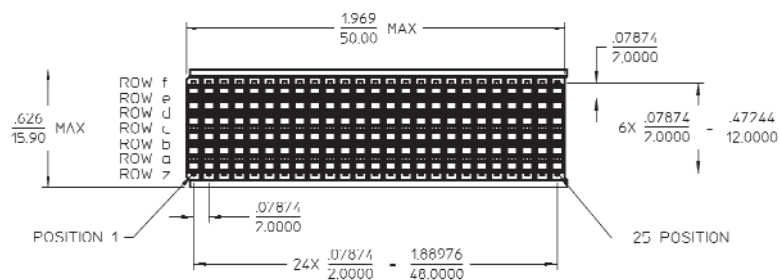
Shrouds

Style A Shroud



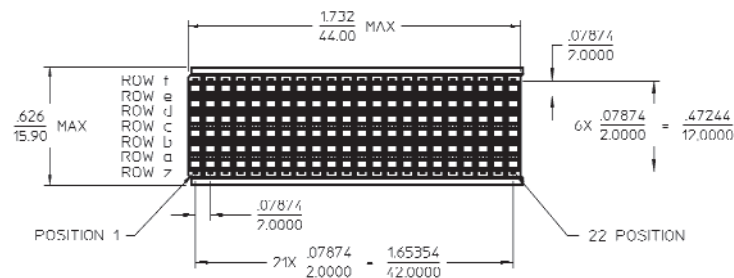
Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH0100	NX5SH0109	NX5SH0115	NX5SH0119

Style B25 Shroud



Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH0300	NX5SH0309	NX5SH0315	NX5SH0319

Style B22 Shroud

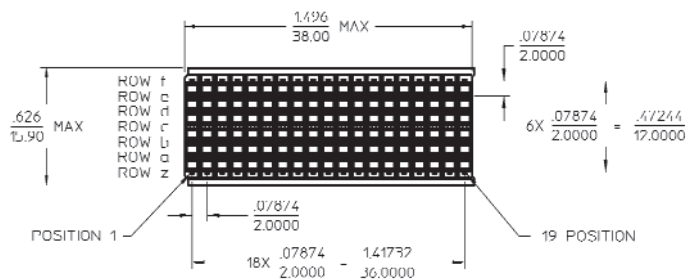


Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH0700	NX5SH0709	NX5SH0715	NX5SH0719

Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

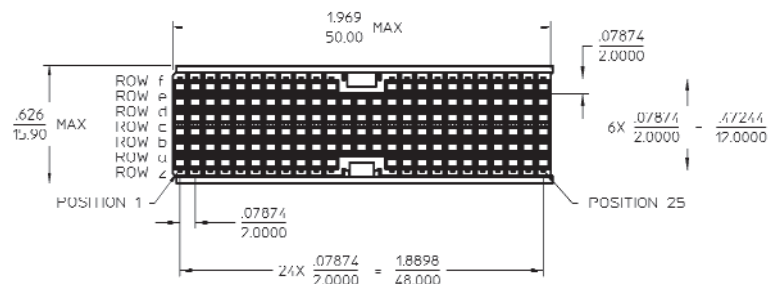
Shrouds

Style B19 Shroud



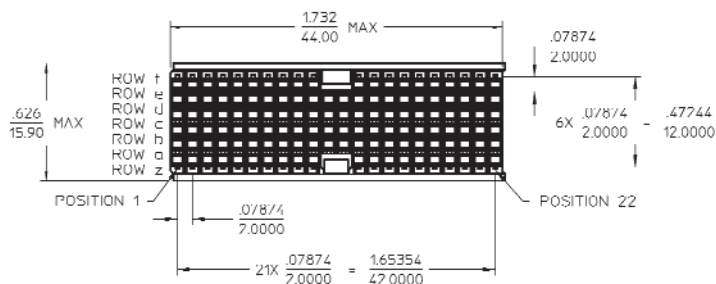
Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH0600	NX5SH0609	NX5SH0615	NX5SH0619

Style AB25 Shroud



Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH1300	NX5SH1309	NX5SH1315	NX5SH1319

Style AB22 Shroud

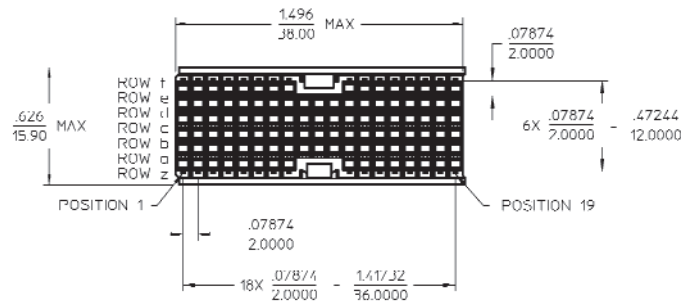


Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH1200	NX5SH1209	NX5SH1215	NX5SH1219

Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

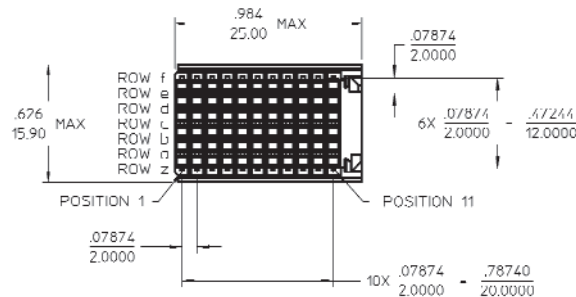
Shrouds

Style AB19 Shroud



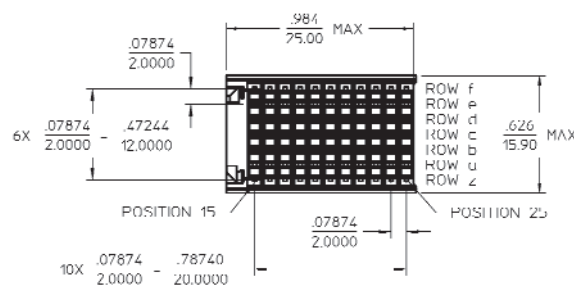
Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH1100	NX5SH1109	NX5SH1115	NX5SH1119

Style C Shroud



Shroud Standoff Height A =			
.000 (0.00mm)	.031 (0.80mm)	.063 (1.60mm)	.079 (2.00mm)
NX5SH0400	NX5SH0409	NX5SH0415	NX5SH0419

Style D Shroud



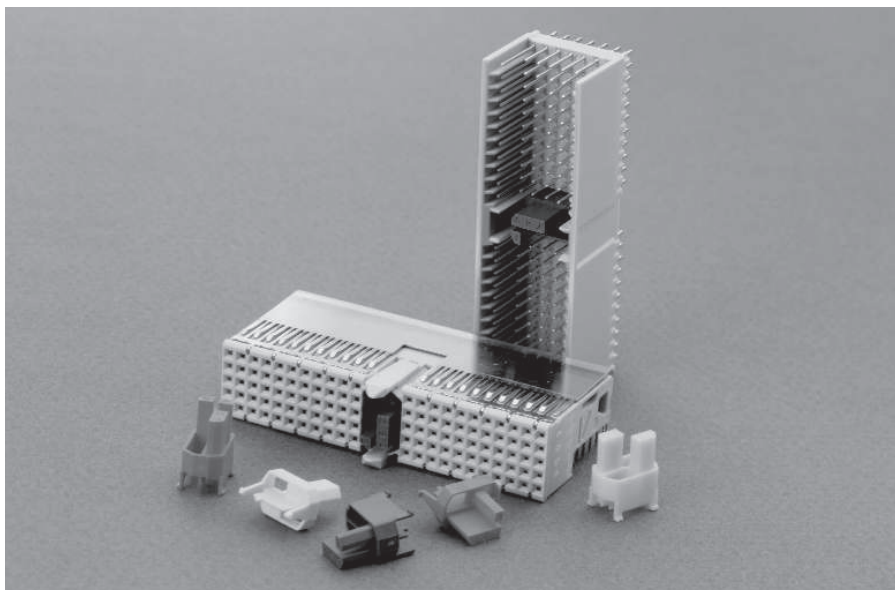
Shroud Standoff Height A =			
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NX5SH0500	NX5SH0509	NX5SH0515	NX52H0519

Note: Dimensions are shown in inches / millimeters. Dimensions are for reference only.

Code Keys

Type A modules, as specified in IEC 1076-4-101, contain multi-purpose centers to accept snap-in code keys. Code keys for pin headers have 4 mounting legs and keys for socket connectors have 2 mounting legs. In addition, all code keys have a polarizing leg to ensure proper orientation into the multi-purpose centers of the type A modules. Code keys are installed with a simple and inexpensive insertion tool.

There are a total of 8 keying positions for each key. For any given key, four key positions are filled with blocking pins and four are left open to receive pins from the mating key. MetCon-2® code key pairs are available in 10 unique colors to provide simple visual identification of the correct keying arrangement. When utilized, code keys differentiate mating connector pairs and prevent insertion of a daughtercard into the wrong slot.



CATALOG NUMBER	CODING DEVICE (PIN CONNECTOR)	CODING DEVICE (SOCKET CONNECTOR)	CATALOG NUMBER	RAL NUMBER AND COLOR	CATALOG NUMBER	CODING DEVICE (PIN CONNECTOR)	CODING DEVICE (SOCKET CONNECTOR)	CATALOG NUMBER	RAL NUMBER AND COLOR
109-29513-1			109-29513-2	2003 PASTEL ORANGE	109-29513-11			109-29513-12	5007 BRILLIANT BLUE
109-29513-3			109-29513-4	5011 STEEL BLUE	109-29513-13			109-29513-14	4005 BLUE LILAC
109-29513-5			109-29513-6	7015 SLATE GRAY	109-29513-15			109-29513-16	1024 OCHER YELLOW
109-29513-7			109-29513-8	1021 CADMIUM YELLOW	109-29513-17			109-29513-18	3018 STRAWBERRY RED
109-29513-9			109-29513-10	6011 RESEDA GREEN	109-29513-19			109-29513-20	8011 NUT BROWN

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Application Tooling

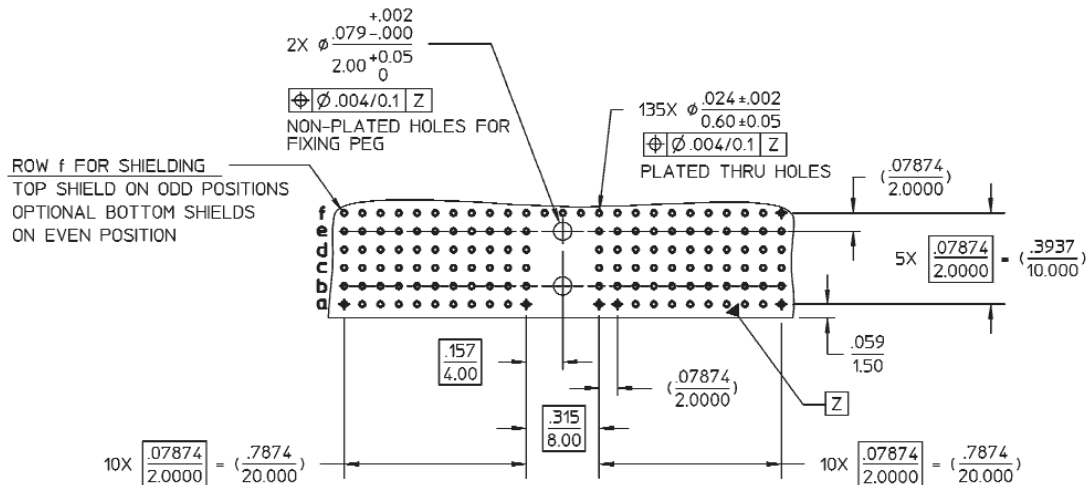
HEADER APPLICATION TOOLING					
DESCRIPTION	Style	CATALOG NUMBER	DRAWING NUMBER	INSTRUCTION SHEET	APPLICATION
Unit Holder, Header Insertion Tool		1074390101	43901	43500	Holds user defined combinations of Header Module Insertion Tools
Insertion Tool, Header & Shroud	A	1074389601	43896	43500	Used to install Header & Shroud Modules into PCB.
Insertion Tool, Header & Shroud	AB25	1074397602	43976	43500	Used to install Header & Shroud Modules into PCB.
Insertion Tool, Header & Shroud	AB19	1074397603	43976	43500	Used to install Header & Shroud Modules into PCB.
Insertion Tool, Header & Shroud	AB22	1074397601	43976	43500	Used to install Header & Shroud Modules into PCB.
Insertion Tool, Header & Shroud	B25	1074389701	43897	43500	Used to install Header & Shroud Modules into PCB.
Insertion Tool, Header & Shroud	B19	1074389702	43897	43500	Used to install Header & Shroud Modules into PCB.
Insertion Tool, Header & Shroud	B22	1074389703	43897	43500	Used to install Header & Shroud Modules into PCB.
Insertion Tool, Header & Shroud	C & D	1074389501	43895	43500	Used to install Header & Shroud Modules into PCB.
Extraction Tool, Signal & Shield Contacts	All Sizes	1074389801	43898	43503	Used to remove a single Signal or Shield Contact from PCB for repair.
Insertion Tool, Single Signal Contact	All Sizes	1074389901	43899	43504	Used to install a single Signal Contact into PCB for repair
Insertion Tool, Single Shield Contact	All Sizes	1074390001	43900	43505	Used to install a single Shield Contact into PCB for repair
Removal Tool, Shroud	All Sizes	1074395501	43955	43534	Used to remove shrouds from PCB for repair

SOCKET APPLICATION TOOLING					
Removal Tool	All Sizes	1074389301	43893	43498	Used to remove right angle press-fit socket connectors from PCB for repair.
Installation Tool, Bottom Shield (R/A)	All Sizes	10743957001	43957	43537	Used to install Bottom Shield over the Socket Connector after it is fitted into PCB.
Flat Rock Insertion Tool	A, B25 & AB25 R/A	1074392801	43928	43521	Used to install Styles A, B25 & AB25 Socket Modules into PCB.
Flat Rock Insertion Tool	C & D R/A	1074392802	43928	43521	Used to install Styles C & D Socket Modules into PCB.
Flat Rock Insertion Tool	B19 & AB19 R/A	1074392803	43928	43521	Used to install Styles B19 & AB19 Socket Modules into PCB.
Flat Rock Insertion Tool	B22 & AB22 R/A	1074392804	43928	43521	Used to install Styles B22 & AB22 Socket Modules into PCB.
PCB Assembly Fixture, Daughtercard	3U CPCI	10743926	43926	43521	PCB Backup Plate used to install Socket Modules into one standard 3U size daughtercard.
PCB Assembly Fixture, Daughtercard	6U CPCI	10743927	43927	43521	PCB Backup Plate used to install Socket Modules into one standard 6U size daughtercard or two standard 3U size daughtercards.

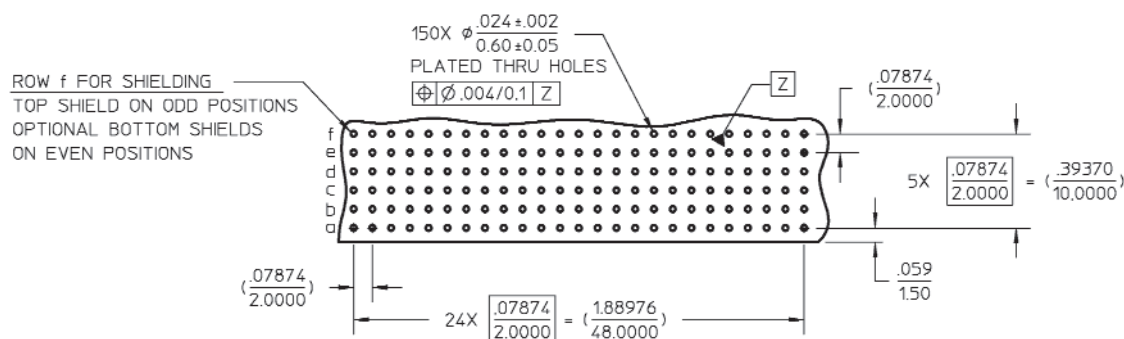
MISCELLANEOUS APPLICATION TOOLING					
Installation Tool Code Key	A	1074391301	43913	43511	Used to install code keys into service center of Style A Socket and Header Modules.

Socket PC Board Hole Patterns (component side shown)

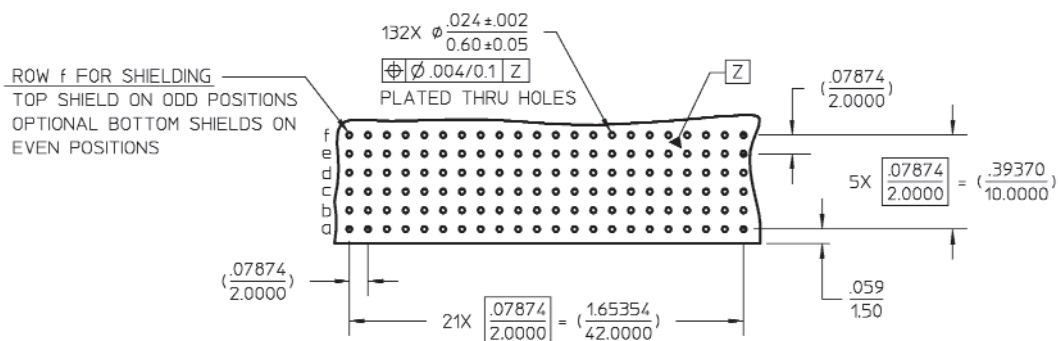
Style A



Style B25



Style B22



Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

Winchester Electronics

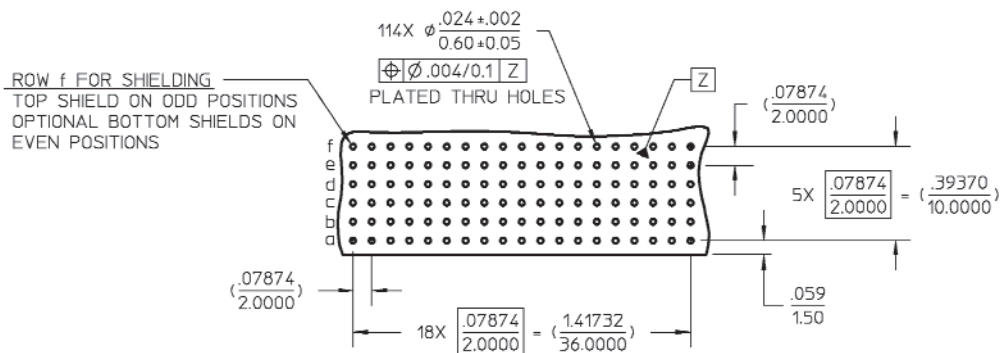
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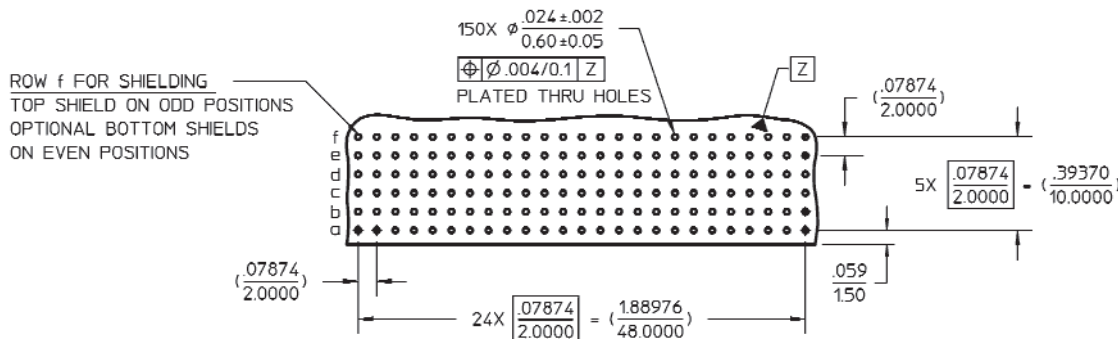
MC-40

Socket PC Board Hole Patterns (component side shown)

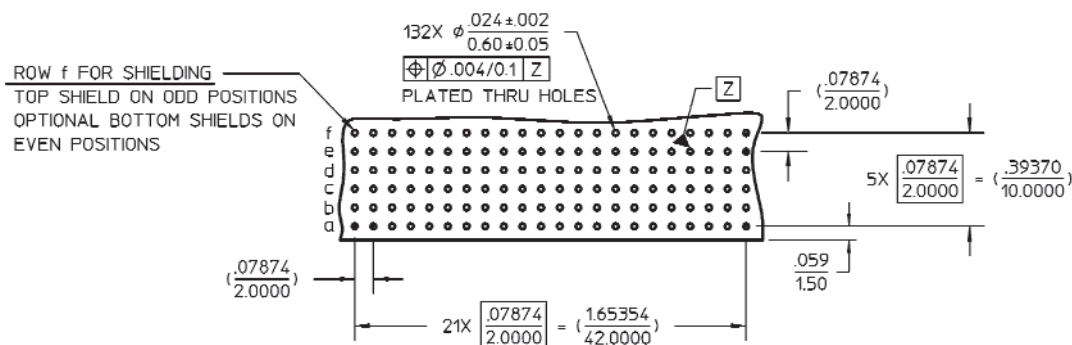
Style B19



Style AB25



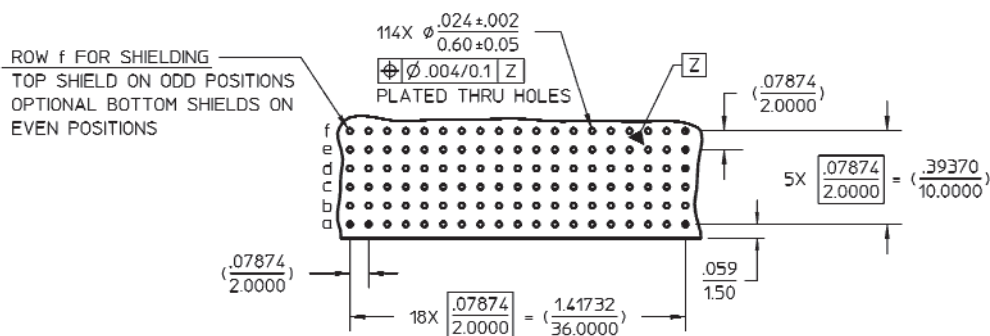
Style AB22



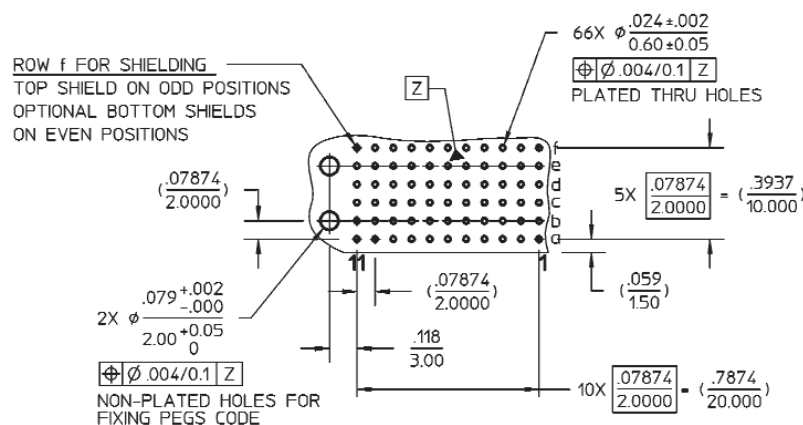
Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Socket PC Board Hole Patterns (component side shown)

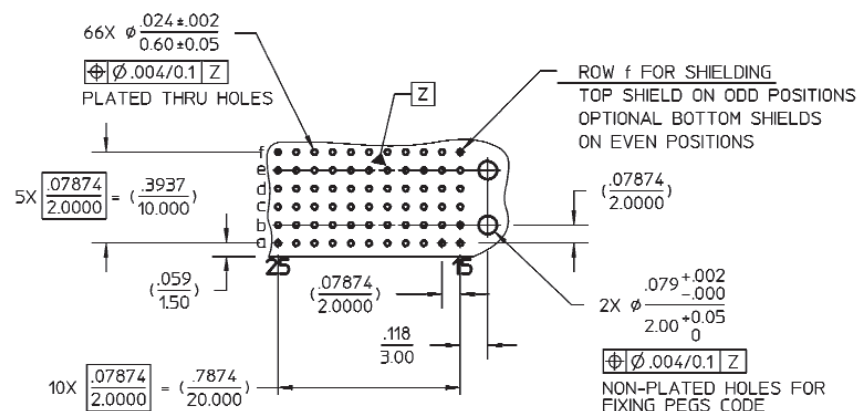
Style AB19



Style C



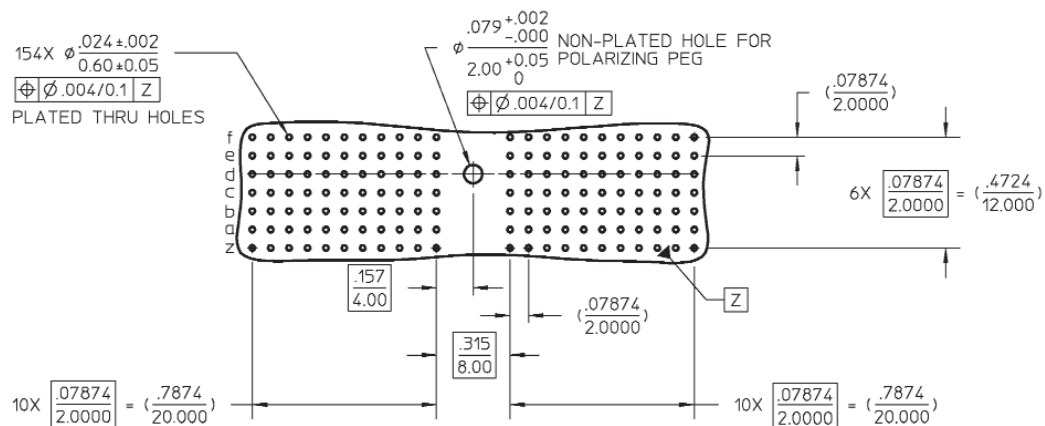
Style D



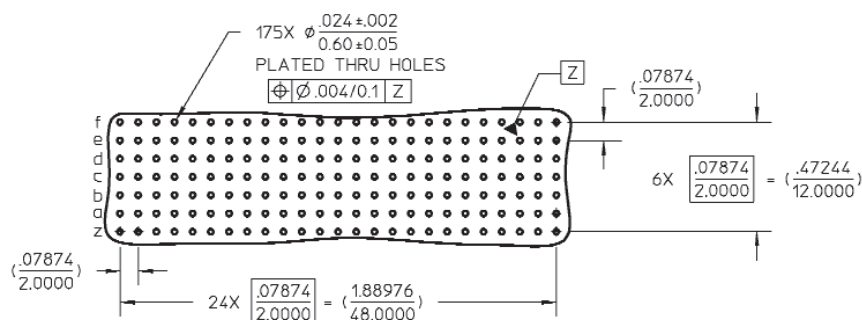
Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Header PC Board Hole Patterns (component side shown)

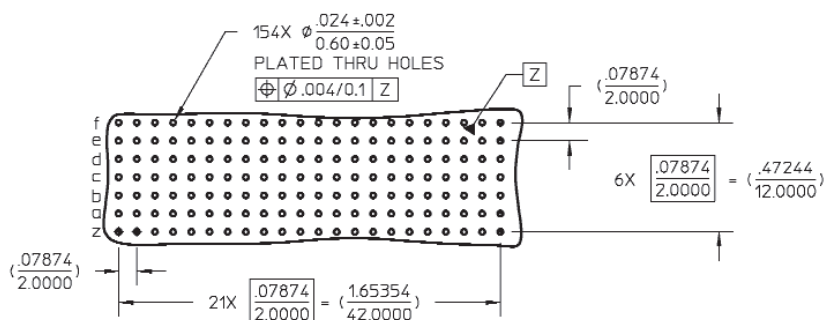
Style A



Style B25



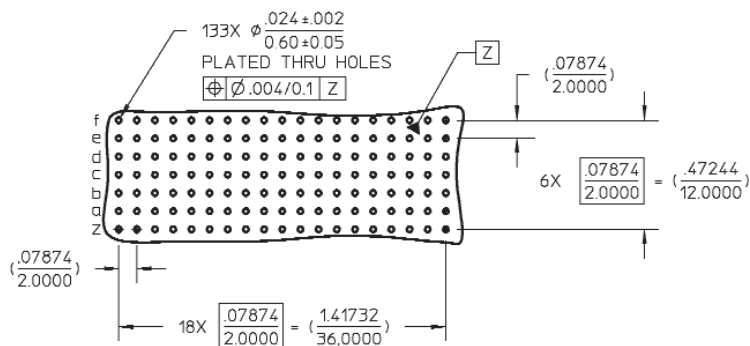
Style B22



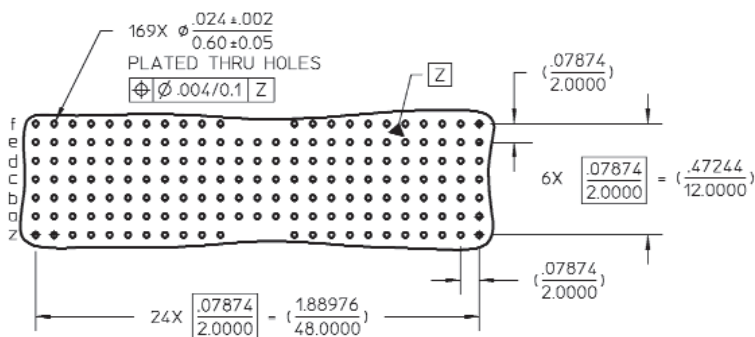
Note: Dimensions are shown in $\frac{\text{inches}}{\text{millimeters}}$. Dimensions are for reference only.

Header PC Board Hole Patterns (component side shown)

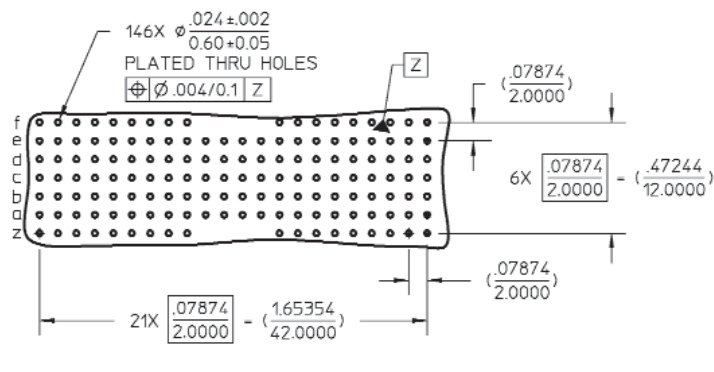
Style B19



Style AB25



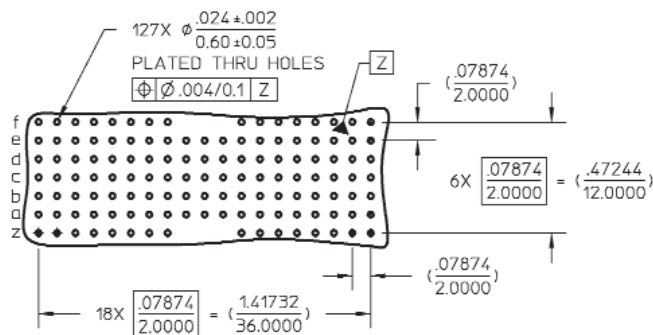
Style AB22



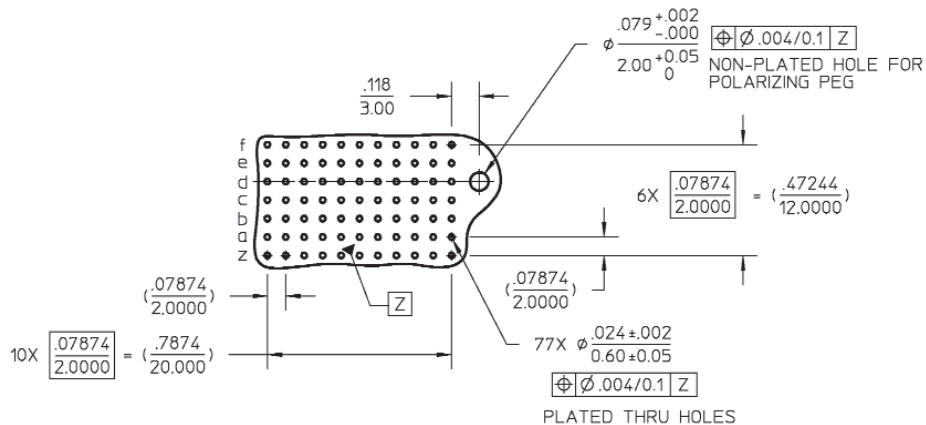
Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Header PC Board Hole Patterns (component side shown)

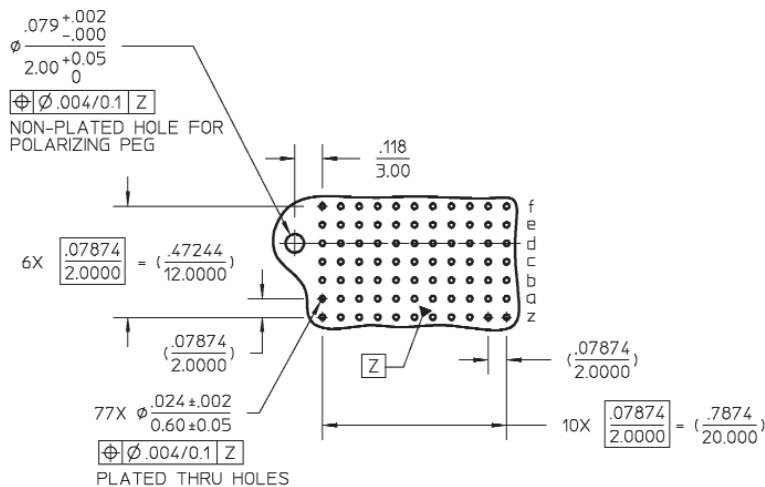
Style AB19



Style C



Style D



Note: Dimensions are shown in inches. Dimensions are for reference only.
millimeters

Fax Request For Special Configurations

For Header Modules with specific layouts, fill out this request along with the header layout(s) you are interested in and fax them both to the Winchester Electronics Product Information Department at (203) 741-5500.

Customer Information

Contact Name: _____	Company: _____
Contact Title: _____	Phone: _____ Fax: _____
Address: _____	Email: _____

Product Information

1	Customer P/N: _____	Estimated Annual Usage: _____
	Module Style: _____	Sample Quantity: _____
	New Winchester P/N: _____ (To Be Assigned By Winchester)	

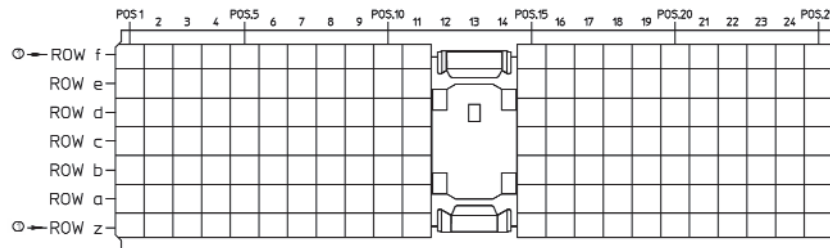
2	Customer P/N: _____	Estimated Annual Usage: _____
	Module Style: _____	Sample Quantity: _____
	New Winchester P/N: _____ (To Be Assigned By Winchester)	

3	Customer P/N: _____	Estimated Annual Usage: _____
	Module Style: _____	Sample Quantity: _____
	New Winchester P/N: _____ (To Be Assigned By Winchester)	

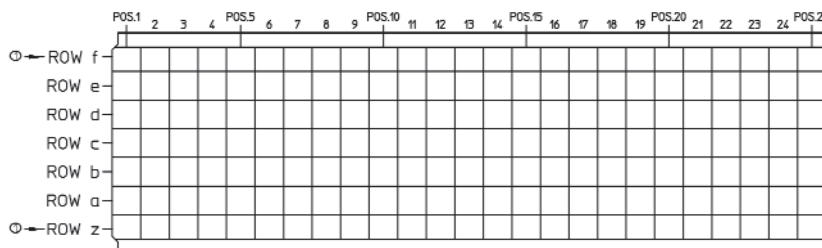
4	Customer P/N: _____	Estimated Annual Usage: _____
	Module Style: _____	Sample Quantity: _____
	New Winchester P/N: _____ (To Be Assigned By Winchester)	

Fax Request For Special Header Configurations

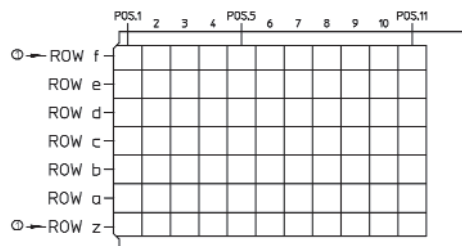
Style A



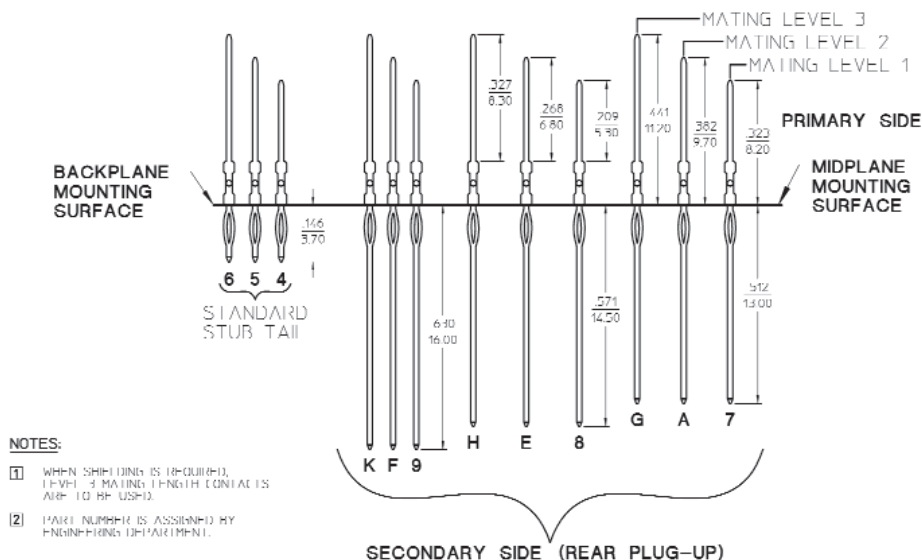
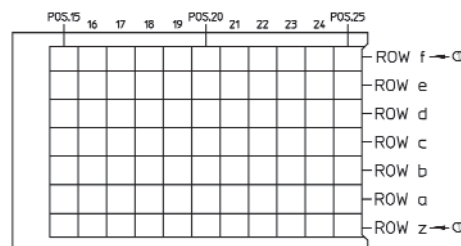
Style B25, B22, B19



Style C



Style D



Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

Winchester Electronics

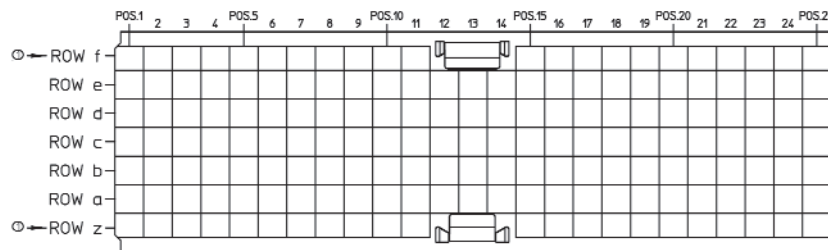
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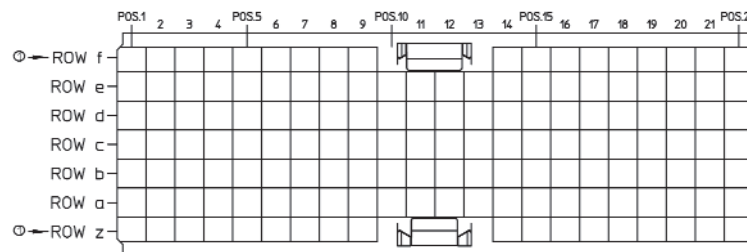
MC-47

Fax Request for Special Configurations

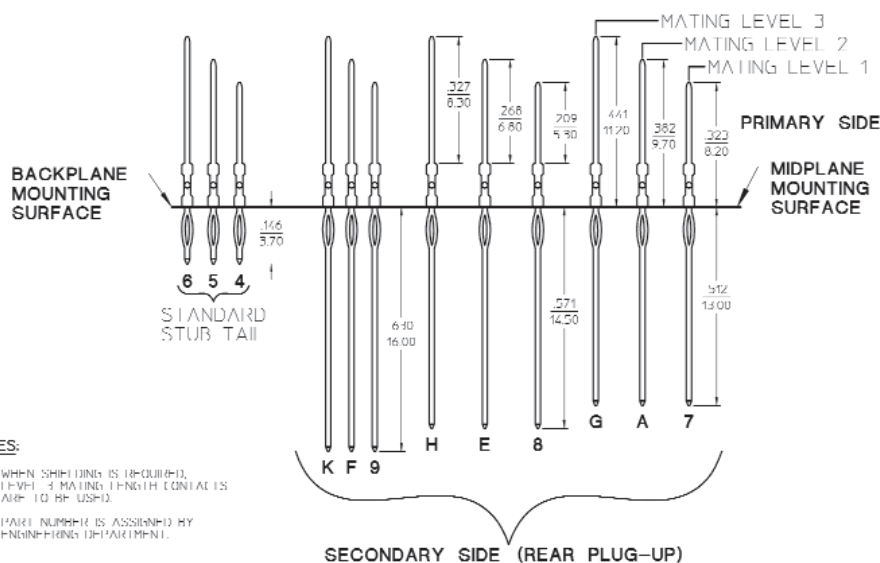
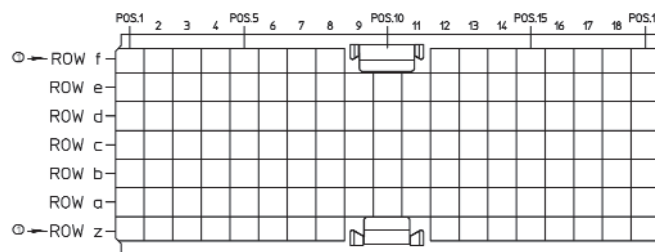
Style AB25



Style AB22



Style AB19



Note: Dimensions are shown in inches . Dimensions are for reference only.
millimeters

Part Number Index

10743926	39	NX5A0AE01A50AA	7	NX5ABBD17X04CA	17
10743927	39	NX5A0AE01A51AA	7	NX5ABBD18X04CA	19
109295131	38	NX5A0AE01C10CA	7	NX5ABBD21X04CA	17
109295132	38	NX5A0AE01C14CA	7	NX5ABBD22X04CA	19
109295133	38	NX5A0AE01C50CA	7	NX5ABBD28X00CA	17
109295134	38	NX5A0AE01C54CA	7	NX5ABBD29X04CA	17
109295135	38	NX5A0AE01D10CA	7	NX5ABBD30X00CA	17
109295136	38	NX5A0AE01D14CA	7	NX5ABBD31X04CA	17
109295137	38	NX5A0AE01D50CA	7	NX5ABBD32X00CA	19
109295138	38	NX5A0AE01D54CA	7	NX5ABBD33X04CA	19
109295139	38	NX5A0AE01E10CA	7	NX5ABBD34X00CA	19
285295811	24	NX5A0AE01E14CA	7	NX5ABBD35X04CA	19
285295812	24	NX5A0AE01E50CA	7	NX5B0AE01A10AA	9
285295813	25	NX5A0AE01E54CA	7	NX5B0AE01A11AA	9
285295814	25	NX5A0BA52X01AA	32	NX5B0AE01A50AA	9
285295815	25	NX5A0BA53X01AA	33	NX5B0AE01A51AA	9
285295816	24	NX5ABAE01A10AA	15	NX5B0AE01C10CA	9
285295817	24	NX5ABAE01A11AA	15	NX5B0AE01C14CA	9
285295818	25	NX5ABAE01A50AA	15	NX5B0AE01C50CA	9
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1074389901	39	NX5ABAE01D50CA	15	NX5B0AE01E50CA	9
1074390001	39	NX5ABAE01D54CA	15	NX5B0AE01E54CA	9
1074390101	39	NX5ABAE01E10CA	15	NX5B0BA22X04AA	11
1074391301	39	NX5ABAE01E14CA	15	NX5B0BA22X04AA	32
1074392801	39	NX5ABAE01E50CA	15	NX5B0BA25X04CA	13
1074392802	39	NX5ABAE01E54CA	15	NX5B0BA26X04CA	11
1074392803	39	NX5ABBB70X01AA	17	NX5B0BA71X00CA	13
1074392804	39	NX5ABBB71X01AA	19	NX5B0BA72X01AA	13
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1074397602	39	NX5ABBC63X00AA	19	NX5B0BB17X04CA	32
1074397603	39	NX5ABBC77X00AA	17	NX5B0BB20X04CA	33
1092951310	38	NX5ABBC78X00AA	19	NX5B0BB21X04CA	32
1092951311	38	NX5ABBC83X01AA	19	NX5B0BB51X04CA	13
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