Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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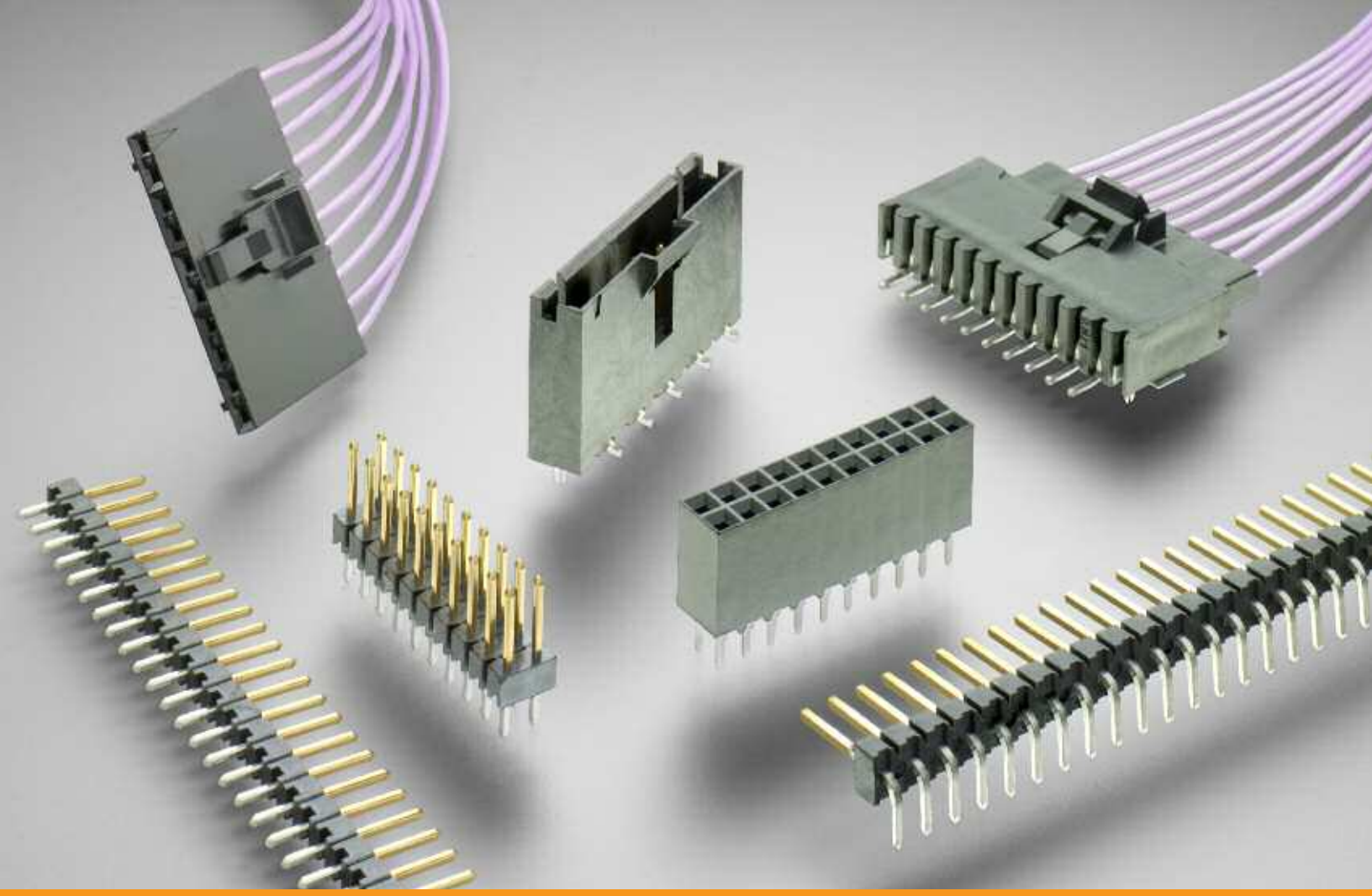

AMPMODU Interconnection System

RoHS Ready

TE connectivity

Table of Contents

1 PC/104 and PC/104-*Plus* Connectors
- Introduction 5
- PC/104, Press Fit 6, 7
- PC/104-*Plus*, Press Fit 8, 9
- PC/104, Solder 10
- PC/104-*Plus*, Solder 11
- Accessories, Kits 12

2 0.050 [1.27] x 0.050 [1.27] CENTERLINE
AMPMODU 50/50 Grid

Board-to-Board Vertical Receptacles and Headers:
- Introduction 13, 14
- Vertical Receptacles, Double Row 15
- Vertical Headers, Double Row 16
- Recommended PC Board Layouts 17

Board-to-Board Right-Angle Headers:
- Introduction 18
- Right-Angle Headers, Double Row, Latching and Non-Latching 19

Cable-to-Board Connectors:
- Introduction 20
- Receptacle Connectors, Double Row, With and Without Latch 21
- Cable Connector Terminating Cover, Double Row 22
- IDC (Insulation Displacement Crimp) Tooling 23

Performance Specifications 24
Technical Documents 24

3 .050 [1.27] x 0.100 [2.54] CENTERLINE
AMPMODU System 50 25

Board-to-Board Connectors, Thru-Hole:
- Introduction 26
- Headers, Shrouded and Unshrouded 27-35
- Introduction 36
- Receptacles 37-40
- PC Board Hole Layouts 41, 42

Board-to-Board Connectors, Surface-Mount:
- Introduction 43
- Headers 44
- Receptacles 45

Cable-to-Board Connectors, FFC Cable:
- Introduction 46
- Flexible Flat Conductor Cable 47
- FFC Contacts 48
- Receptacle Housings 49-52
- ZIF-Line Connectors 53, 54

Cable-to-Board Connectors, Ribbon Cable:
- Introduction 55
- Ribbon Cable Receptacles 56
- Paddleboard Receptacles 57
- Flat Ribbon Cable 58, 59
- Application Tooling for Flex Film Contacts 60

Application Tooling 60-62
Performance Specifications 63
Technical Documents 64

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Table of Contents (Continued)

4 AMPMODU 2mm Connectors

AMPMODU 2mm Connectors (Board to Board) 65
Headers, Unshrouded, Double Row, Thru-Hole Mount 66, 67
Breakaway Headers, Unshrouded, Double Row, Thru-Hole Mount 68-70
Breakaway Headers, Unshrouded, Double Row, Surface Mount 71, 72
Stacking Header, Unshrouded, Double Row, Thru-Hole Mount 73
Headers, Shrouded, Double Row, Thru-Hole, Right-Angle Mount 74, 75
Headers, Shrouded, Double Row, Surface Mount 76, 77
Headers, Shrouded, Double Row, Thru-Hole Mount with Cable Shrouds 78, 79
Receptacles, Double Row, Thru-Hole, Vertical Mount 80, 81
Receptacles, Double Row, Surface Mount, Right-Angle Mount 82
Receptacles, Double Row, Thru-Hole, Right-Angle Mount 83
Receptacles, Double Row, Surface Mount, Vertical Mount 84

5 .100 [2.54] x .100 [2.54] CENTERLINE

Introduction 85-87
Terms Explained 87
Wire Sizes 88
Contact Platings 88
Mating Post Lengths 88
Application Tooling 88
Board-to-Board Solutions Guides, .100[2.54] Centerline Products 89
Wire-to-Board Solutions Guide, .100[2.54] Centerline Products 89
Mating Post Selection Guide 90
Parallel Stacking Guide for Board-to-Board Applications 91

Board-to-Board Products:

Unshrouded Headers 92-100
Breakaway and Retention Headers-Unshrouded 101-105
Reeled Breakaway Headers 106, 107
Surface Mount Breakaway Headers 108-110
Unshrouded Stacking Headers- Breakaway 111-113
Shrouded Headers 114-140
Standard Profile 114-133
Low Profile 134-140
Shrouded Stacking Headers 141-144
ACTION PIN Headers 145-149
ACTION PIN Press-Fit Posts 150, 151
Application Tooling for ACTION PIN Posts 152, 153
ACTION PIN Stacking Connectors 154-161
Application Tooling for AMP ACTION PIN Stacking Connectors 162
0.025 [0.64] Square Posts 163
0.025 [0.64] Square Continuous Posts 164, 165
0.045 [1.14] Square Continuous Posts 166, 167
Horizontal Mount Receptacle Assemblies, Mod II 168-173
Vertical Mount Receptacle Assemblies, Mod II & Mod IV 174-184
Surface Mount Vertical Receptacles, Mod IV 185-192
Two-Piece Printed Circuit Board Connectors 193-202
Accessories 203-205

Wire-to-Board Products:

Locking Clip Contacts and Housings 206-209
Mod IV Contacts and Housings 210-220
Short Point Contacts and Housings 221-224
MTE Interconnection System 225-250
Surface Mount MTE Headers (Right-Angle & Vertical) 251, 252
Interchangeable Contacts, Wire Crimp (Snap-In) 253, 254
MT and Shielded MT Connectors 255-265
Mini-Tandem Spring Receptacle Contacts 266-269

Application Tooling 270-275
Technical Documents 276-278

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Table of Contents (Continued)

6 .125 [3.18] x .125 [3.18] CENTERLINE
Wire-to-Board Product:
Level V IDC Connectors 279-282

7 .156 [3.96] CENTERLINE
Mod I 0.031 x 0.062 Interconnection System
Introduction 283, 284
Receptacles, Vertical and Horizontal Board Mount 285, 286
Receptacle Assemblies, Vertical and Horizontal Board Mount 287-289
Receptacles, Crimp Snap-In (Wire Applied) 290
Receptacle Housings, Standard Profile-Unkeyed (With/Without Strain Relief) ...291, 292
Receptacle Housings, Low Profile-Keyed 293
Posts, Machined Applied 294
Headers:
Straight Post, Keyed 295, 296
Right-Angle, Keyed 297
Locking Clip Contacts, Crimp Snap-In (Wire Applied) 298
Locking Clip Connector Housings, Single Row, Crimp Snap-In 299
Application Tooling 300-304
Performance Specifications 305
Technical Documents 305

8 Shunts
Dual In-Line Package DIP Shunts 306, 307
Post Shunts 308-310
Performance Specifications 311
Technical Documents 311

Part Number Index 313-316

Restriction on the use of Hazardous Substances (RoHS)

At TE Connectivity (TE) , 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
- So whatever your questions when it comes to RoHS, we have the answers at www.te.com/leadfree

RoHS Customer Support Center

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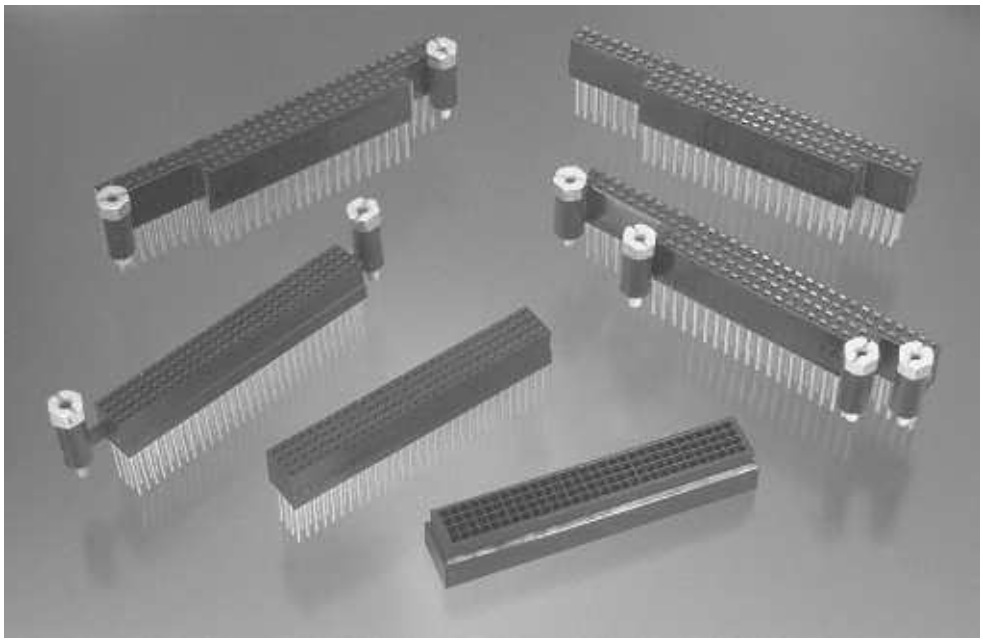
PC/104 and PC/104-*Plus* Connectors

Product Facts

- **Press fit design — eliminates hand soldering**
- **Unitized PC/104 connector assembly — eliminates two piece (64 pin & 40 pin) configuration**
- **Integral board spacers with captive hardware — eases & improves assembly efficiency while minimizing stocked hardware**
- **"Flat-rock" insertable — no need for complex insertion tooling**
- **Recognized by Underwriters' Laboratories to US and Canadian standards file No. E28476**
- **Fully compliant with PC104 & PC104-*Plus* standards**
- **Solutions available for lead free processes (ie. ENIG and silver immersion plated PCB's)**



The PC/104 and PC/104-*Plus* connectors are industry standard product offerings which comply with the interconnection requirements defined by the PC/104 organization (http://www.pc104.org)

Both products are designed specifically for "flat-rock" press-fit installation for ease of application. Solder version is also available.

Optional integral standoffs minimize the customer's system assembly time.

The TE offering of the standard PC/104 product is a unitized connector rather than the two piece, 40 and 64 position connectors currently on the market. Customer needs to stock and apply only one part number rather than two.

Performance Specifications

Electrical Characteristics

Meets requirements of PC/104 and PC/104-*Plus* standards

Nominal Resistance — 10 milliohms maximum, Δ R

Insulation Resistance — 1000 megohms minimum

Dielectric Withstanding Voltage — 500 VAC for 1 min. at sea level

Mechanical Characteristics

Meets requirements of PC/104 and PC/104-*Plus* standards

Current — Signal application only

Temperature — –55° to 105°C

Material and Finish

Housing — Black Thermoplastic, UL 94V-0

Contact — Phosphor Bronze, Full Gold all over Nickel (stackthrough), Gold on mating end, Tin or Tin-lead on PCB tail all over Nickel (non-stackthrough)

Need more information?

Call Technical Support 1-800-522-6752:

Technical Support is staffed with specialists well versed in all TE products. The Center can provide you with:

- Technical Support
- Catalogs
- Technical Documents
- TE Authorized Distributor Locations

Technical Documents

Product Specifications
108-1956

Application Specifications
114-13021

Connector	Centerline	Position
PC/104	**.100** 2.54	104*
PC/104-*Plus*	**.079** 2.0	120**

*Two circuits plugged per PC/104 specification. Other options available.

**One circuit plugged per PC/104-*Plus* specification. Other options available.

1307819
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PC/104, Press-Fit

Material and Finish

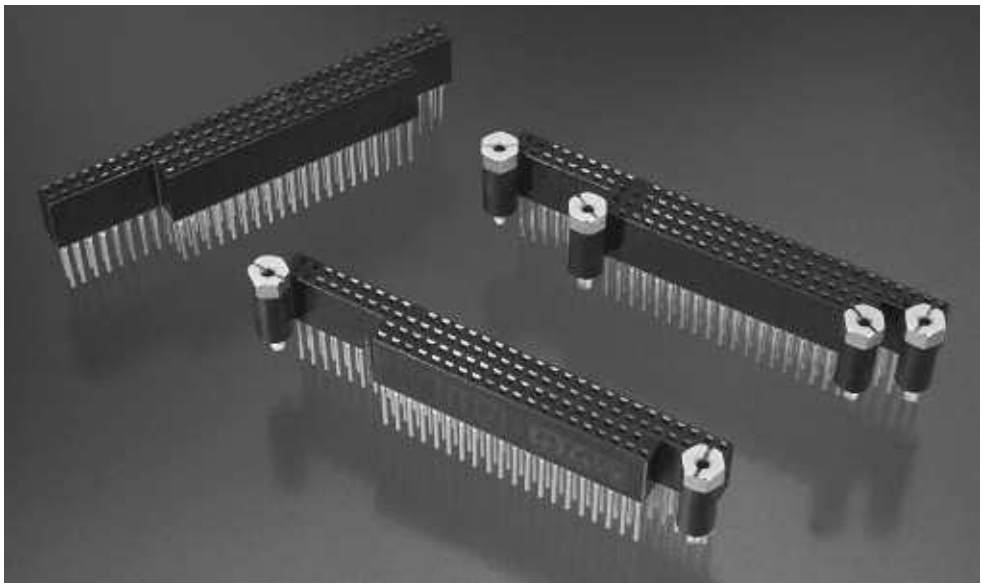
Housing — Glass filled thermoplastic, Black, 94V-0 rated

Contacts

Stackthrough — Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000005 [0.000130] min. Gold on remainder, all over .000050 [0.00127] Nickel
or
Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000100-.000200 [0.000254-.00508] matte tin on compliant section, .000005 {0.000130] min. Gold on remainder of post, all over .000050 [0.00127] Nickel

Non-Stackthrough — Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000100 [0.00254] matte tin or tin-lead on remainder, all over .000050 [0.00127] Nickel

Screwlocks — Steel, Clear Chromate over Zinc

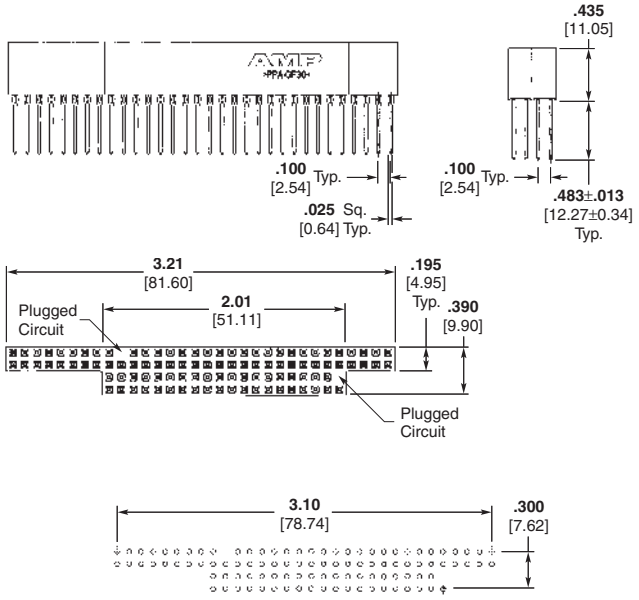


Stackthrough, No Standoffs

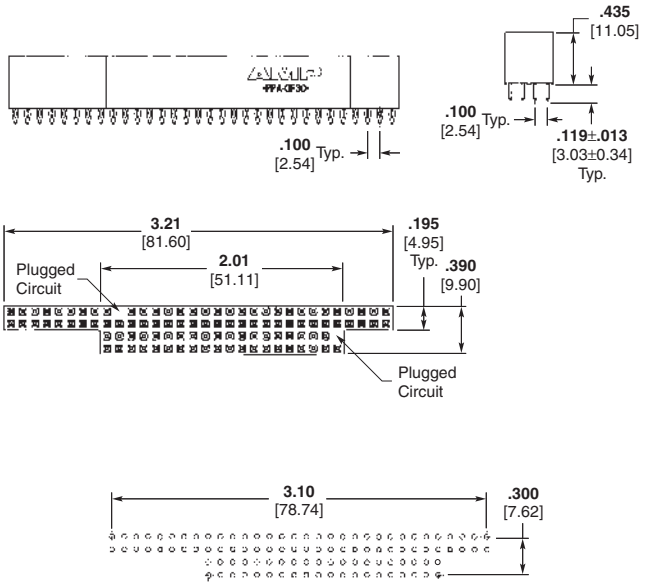
Gold plated contacts*
Part No. 1375795-1 (keyed), **Part No. 1375795-2** (unkeyed)
Gold plated contacts with Tin plated compliant pin section**
Part No. 1375795-3 (keyed), **Part No. 1375795-4** (unkeyed)

Non-Stackthrough, No Standoffs

Tin-lead plated tails*
Part No. 1375796-1 (keyed), **Part No. 1375796-2** (unkeyed)
Matte tin plated tails**
Part No. 1375796-3 (keyed), **Part No. 1375796-4** (unkeyed)



Keyed



Unkeyed

Recommended PC Board Layout
See Customer Drawing for
Hole Geometry and Recommended Plating.

Note: All part numbers are RoHS compliant.

* For RoHS exempt Tin-lead processes (including ENIG Plated PCB's)

** for Silver Immersion processes or where a total lead free solution is desired

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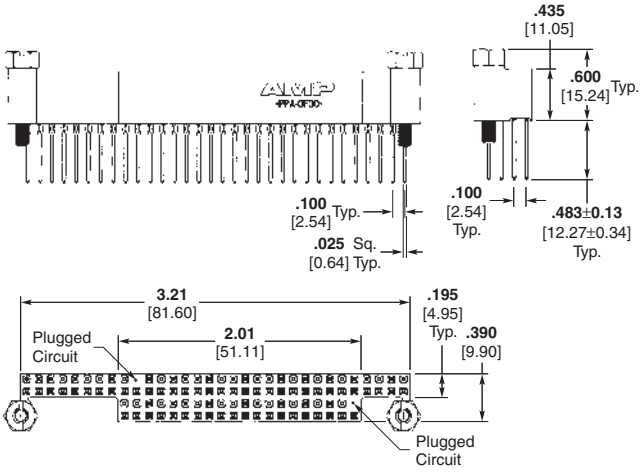
PC/104, Press-Fit (Continued)

Stackthrough, 2 Standoffs

Gold plated contacts*
Part No. 1375793-1 (keyed), **Part No. 1375793-2** (unkeyed)

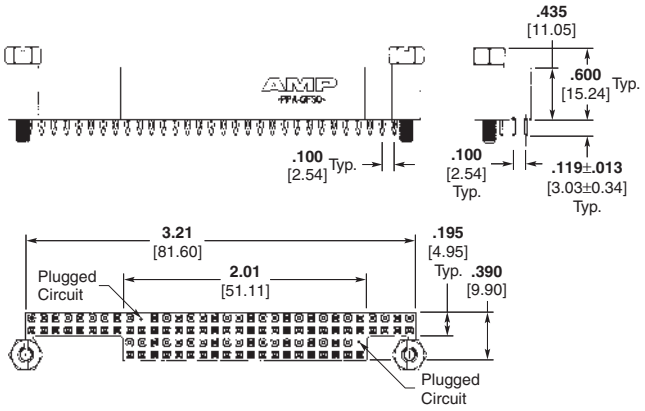
Gold plated contacts with Tin plated compliant pin section**
Part No. 1375793-3 (keyed), **Part No. 1375793-4** (unkeyed)



Non-Stackthrough, 2 Standoffs

Tin-lead plated tails*
Part No. 1375794-1 (keyed), **Part No. 1375794-2** (unkeyed)

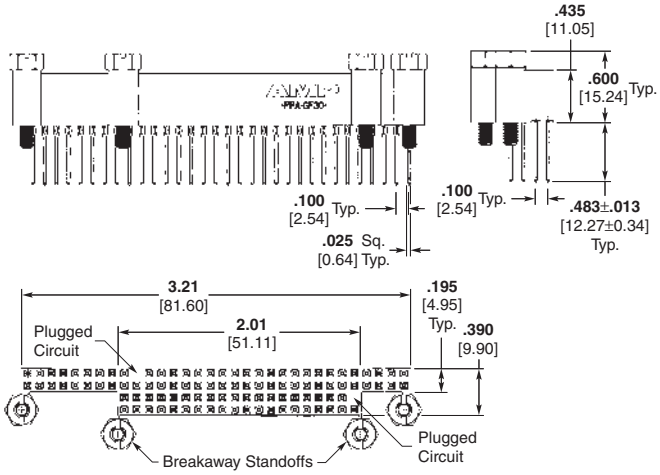
Matte tin plated tails**
Part No. 1375794-3 (keyed), **Part No. 1375794-4** (unkeyed)



Stackthrough, 4 Standoffs

Gold plated contacts*
Part No. 1375791-1 (keyed), **Part No. 1375791-2** (unkeyed)

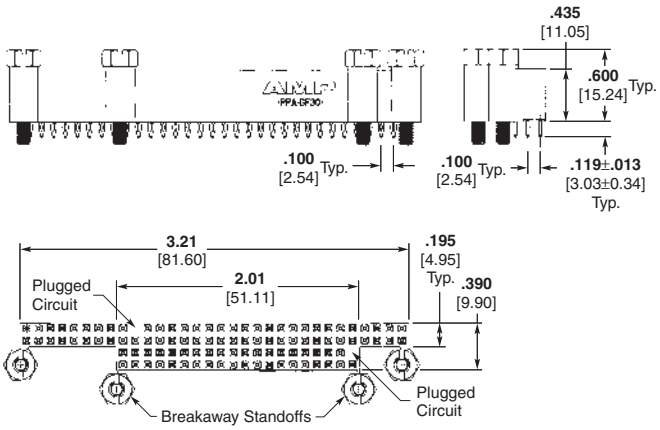
Gold plated contacts with Tin plated compliant pin section**
Part No. 1375791-3 (keyed), **Part No. 1375791-4** (unkeyed)

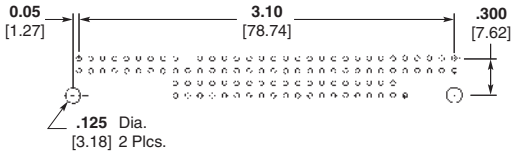


Non-Stackthrough, 4 Standoffs

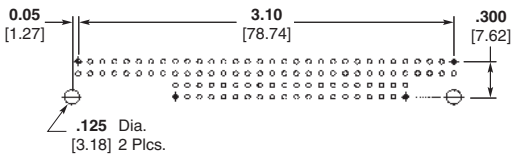
Tin-lead plated tails*
Part No. 1375792-1 (keyed), **Part No. 1375792-2** (unkeyed)

Matte tin plated tails**
Part No. 1375792-3 (keyed), **Part No. 1375792-4** (unkeyed)





Keyed



Unkeyed

Recommended PC Board Layout
See Customer Drawing for
Hole Geometry and Recommended Plating.

Note: All part numbers are RoHS compliant.

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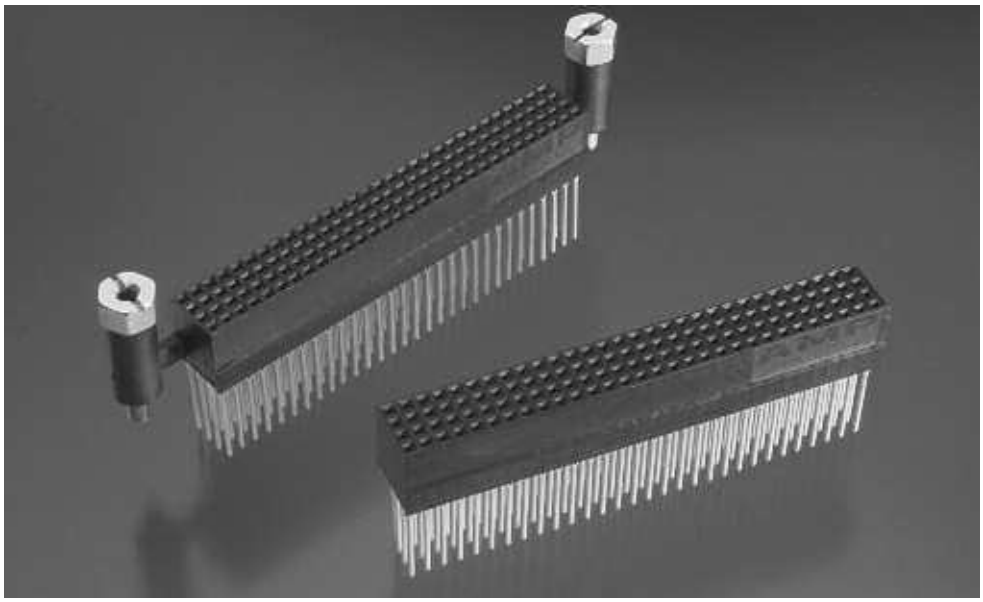
PC/104-*Plus*, Press-Fit



Material and Finish

Housing — Glass filled thermoplastic, Black, 94V-0 rated

Contacts

Stackthrough — Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000005 [0.000130] min. Gold on remainder, all over .000050 [0.00127] Nickel
or
Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000100-.000200 [0.000254-.00508] matte tin on compliant section, .000005 {0.000130] min. Gold on remainder of post, all over .000050 [0.00127] Nickel

Non-Stackthrough — Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000100 [0.00254] matte tin or tin-lead on remainder, all over .000050 [0.00127] Nickel

Screwlocks — Steel, Clear Chromate over Zinc

Stackthrough, No Standoffs

Gold plated contacts*

- **Part No. 1375799-1** (unkeyed)
- **Part No. 1375799-2** (keyed-A1) per PC/104-*Plus* specification
- **Part No. 1375799-3** (keyed-D30) per PC/104-*Plus* specification

Gold plated contacts with Tin plated compliant pin section**

- **Part No. 1375799-4** (unkeyed)
- **Part No. 1375799-5** (keyed-A1) per PC/104-*Plus* specification
- **Part No. 1375799-6** (keyed-D30) per PC/104-*Plus* specification

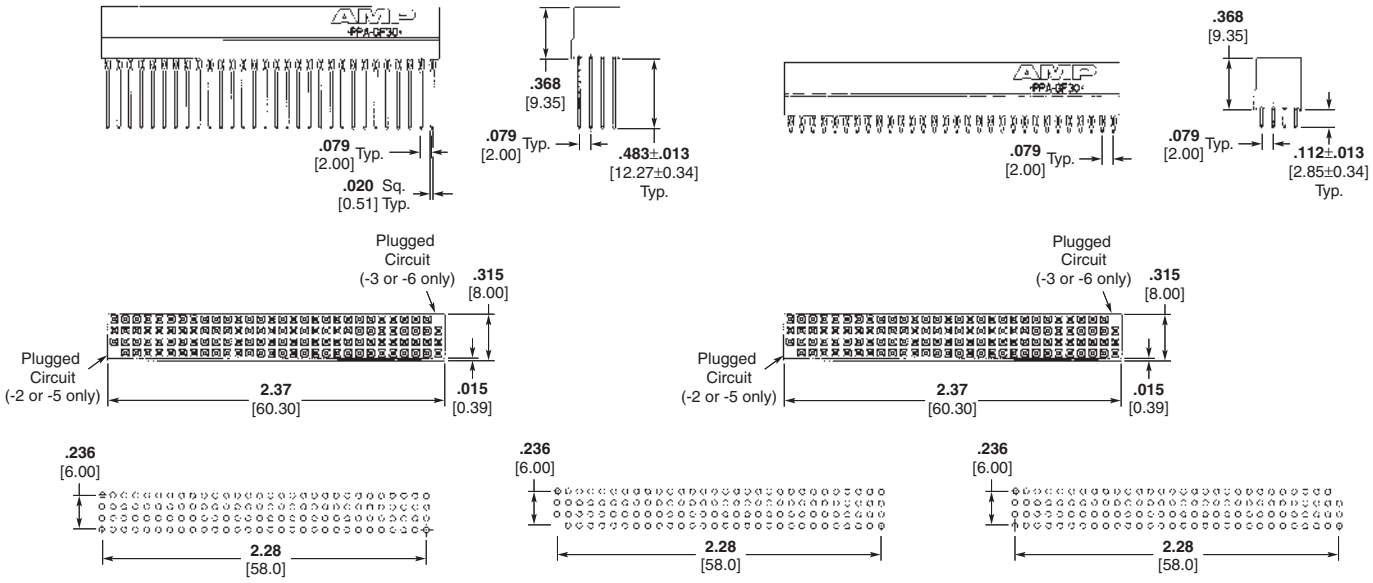
Non-Stackthrough, No Standoffs

Tin-lead plated tails*

- **Part No. 1375800-1** (unkeyed)
- **Part No. 1375800-2** (keyed-A1) per PC/104-*Plus* specification
- **Part No. 1375800-3** (keyed-D30) per PC/104-*Plus* specification

Matte tin plated tails**

- **Part No. 1375800-4** (unkeyed)
- **Part No. 1375800-5** (keyed-A1) per PC/104-*Plus* specification
- **Part No. 1375800-6** (keyed-D30) per PC/104-*Plus* specification



Recommended PC Board Layout for 1375799-1, 1375799-4, 1375800-1, 1375800-4

Recommended PC Board Layout for 1375799-2, 1375799-5, 1375800-2, 1375800-5

Recommended PC Board Layout for 1375799-3, 1375799-6, 1375800-3, 1375800-6

See Customer Drawing for Hole Geometry and Recommended Plating. (Including ENIG plated PCB's)

Note: All part numbers are RoHS compliant.

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PC/104-*Plus*, Press-Fit (Continued)

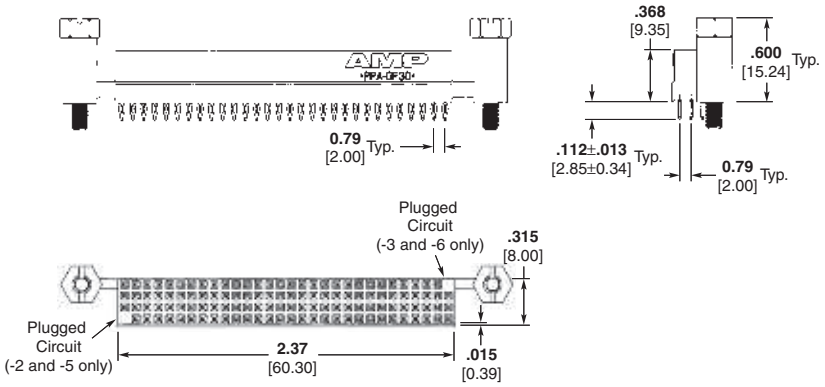
Non-Stackthrough, 2 Standoffs

Tin-lead plated tails*

Part No. 1375798-1 (unkeyed)
Part No. 1375798-2 (keyed-A1)
per PC/104-*Plus* specification
Part No. 1375798-3 (keyed-D30)
per PC/104-*Plus* specification

Matte tin plated tails**

Part No. 1375798-4 (unkeyed),
Part No. 1375798-5 (keyed-A1)
per PC/104-*Plus* specification
Part No. 1375798-6 (keyed-D30)
per PC/104-*Plus* specification



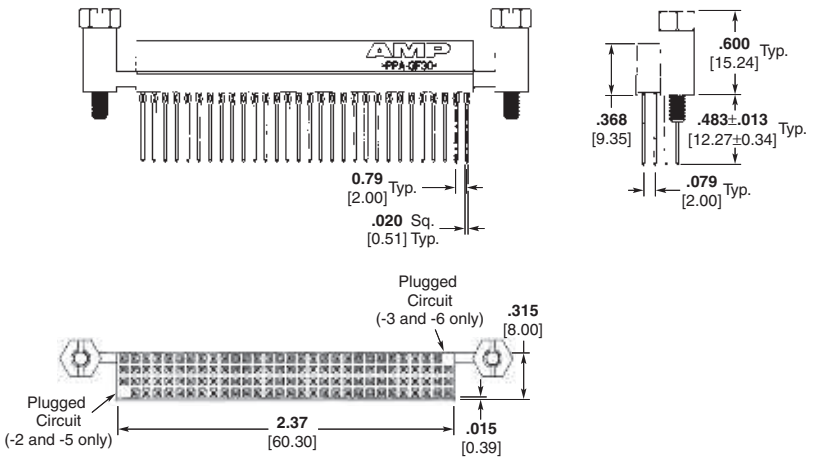
Stackthrough, 2 Standoffs

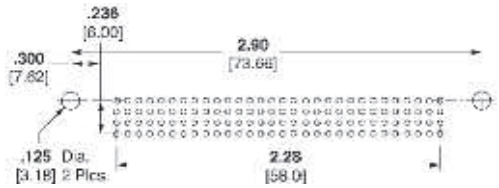
Gold plated contacts*

Part No. 1375797-1 (unkeyed)
Part No. 1375797-2 (keyed-A1)
per PC/104-*Plus* specification
Part No. 1375797-3 (keyed-D30)
per PC/104-*Plus* specification

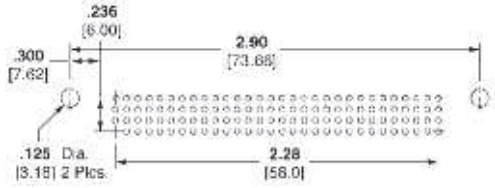
Gold plated contacts with Tin plated compliant pin section**

Part No. 1375797-4 (unkeyed)
Part No. 1375797-5 (keyed-A1)
per PC/104-*Plus* specification
Part No. 1375797-6 (keyed-D30)
per PC/104-*Plus* specification

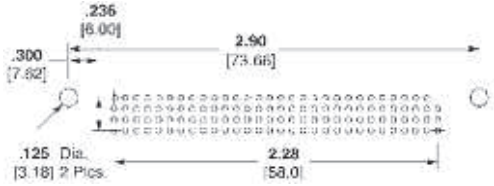




Recommended PC Board Layout for 1375797-1, 1375797-4, 1375798-1, 1375798-4



Recommended PC Board Layout for 1375797-2, 1375797-5, 1375798-2, 1375798-5



Recommended PC Board Layout for 1375797-3, 1375797-6, 1375798-3, 1375798-6

See Customer Drawing for Hole Geometry and Recommended Plating.

Note: All part numbers are RoHS compliant.

* For RoHS exempt Tin-lead processes (including ENIG Plated PCB's)

** for Silver Immersion processes or where a total lead free solution is desired

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L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

PC/104, Solder

Material and Finish

Housing — Glass filled thermoplastic, Black, 94V-0 rated

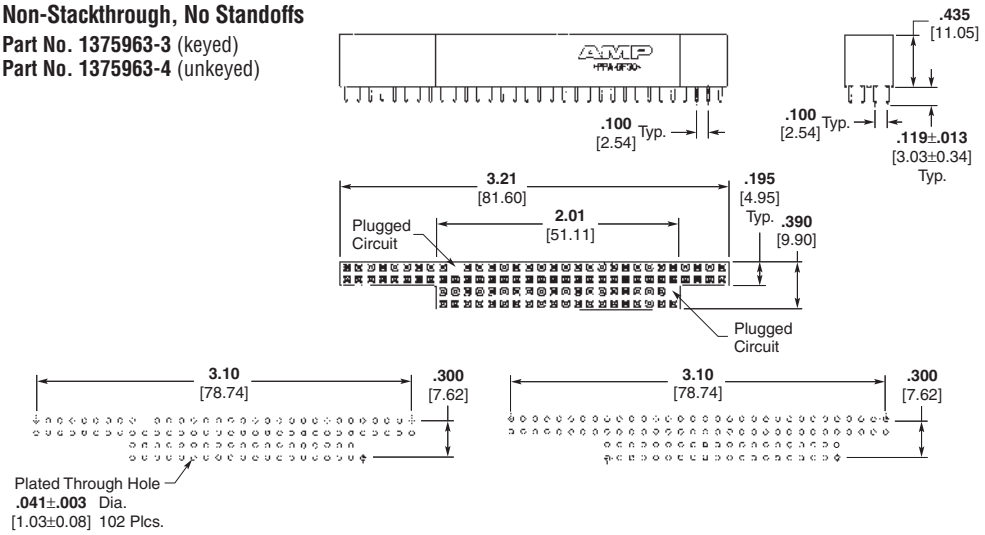
Contacts

Non-Stackthrough — Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000100 [0.00254] matte tin on remainder, all over .000050 [0.00127] Nickel

Screwlocks — Steel, Clear Chromate over Zinc

Non-Stackthrough, No Standoffs

Part No. 1375963-3 (keyed)
Part No. 1375963-4 (unkeyed)

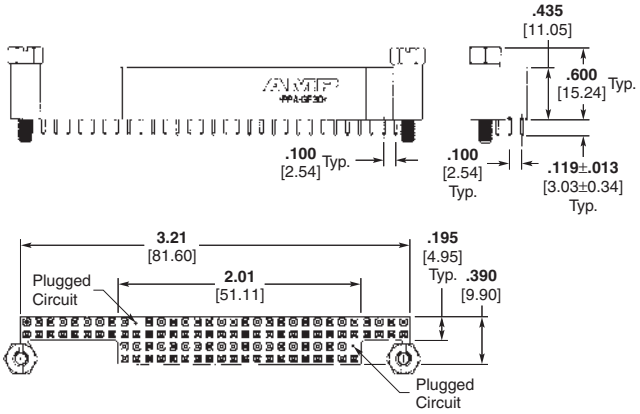


Keyed **Unkeyed**

Recommended PC Board Layout

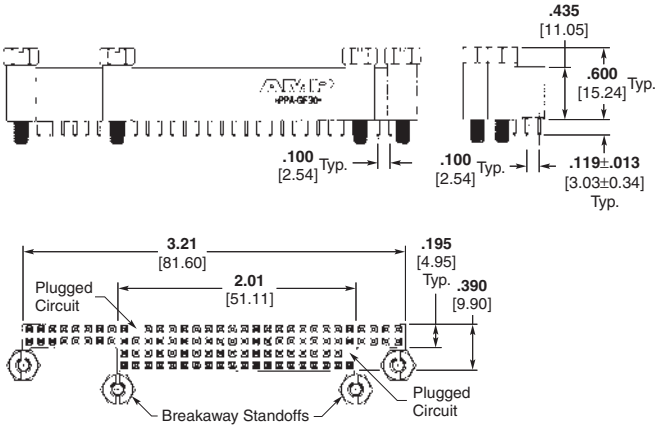
Non-Stackthrough, 2 Standoffs

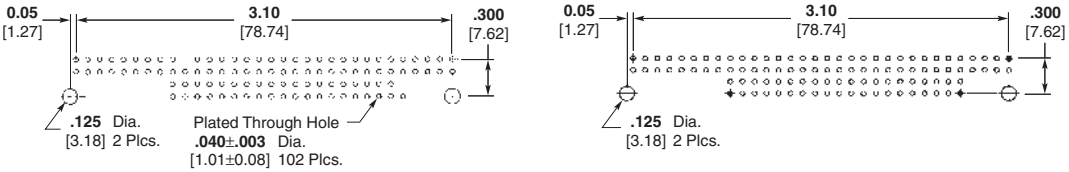
Part No. 1375961-3 (keyed)
Part No. 1375961-4 (unkeyed)



Non-Stackthrough, 4 Standoffs

Part No. 1375959-3 (keyed)
Part No. 1375959-4 (unkeyed)





Keyed **Unkeyed**

Recommended PC Board Layout

Note: All part numbers are RoHS compliant.

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China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

PC/104-*Plus*, Solder

Material and Finish

Housing — Glass filled thermoplastic, Black, 94V-0 rated

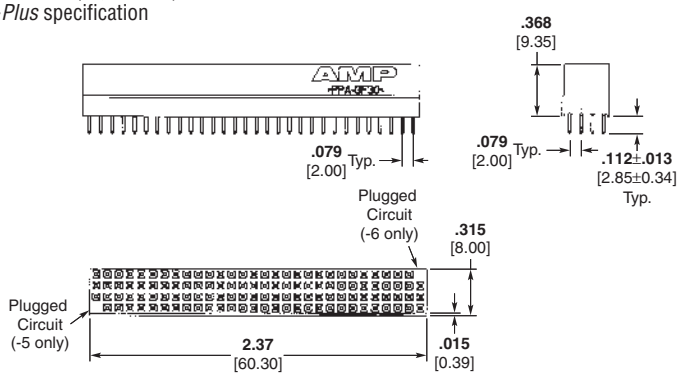
Contacts

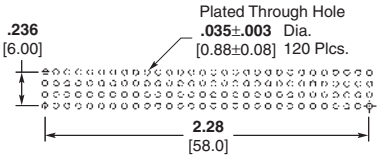
Non-Stackthrough — Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000100 [0.00254] matte tin on remainder, all over .000050 [0.00127] Nickel

Screwlocks — Steel, Clear Chromate over Zinc

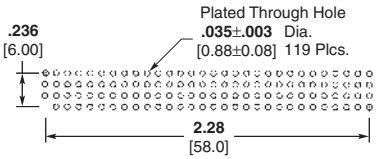
Non-Stackthrough, No Standoffs

Part No. 1375967-4 (unkeyed)
Part No. 1375967-5 (keyed-A1)
per PC/104-*Plus* specification
Part No. 1375967-6 (keyed-D30)
per PC/104-*Plus* specification

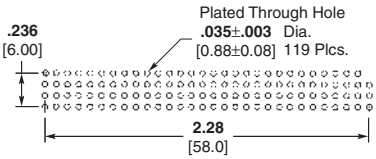




Recommended PC Board Layout for 1375967-4



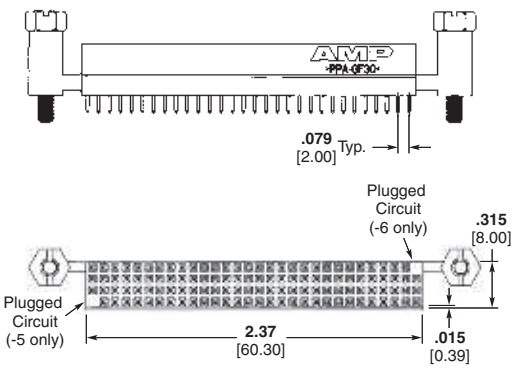
Recommended PC Board Layout for 1375967-5

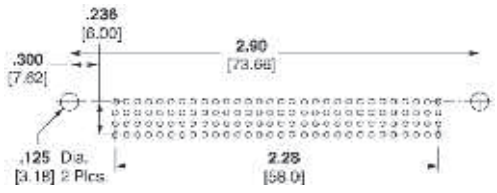


Recommended PC Board Layout for 1375967-6

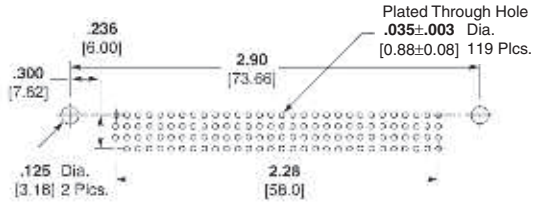
Non-Stackthrough, 2 Standoffs

Part No. 1375965-4 (unkeyed)
Part No. 1375965-5 (keyed-A1)
per PC/104-*Plus* specification
Part No. 1375965-6 (keyed-D30)
per PC/104-*Plus* specification

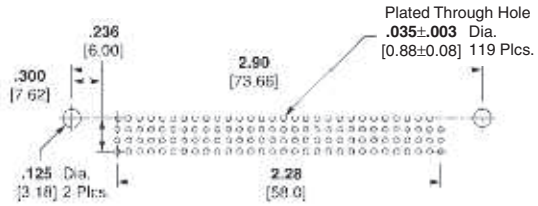




Recommended PC Board Layout for 1375965-4



Recommended PC Board Layout for 1375965-5



Recommended PC Board Layout for 1375965-6

Note: All part numbers are RoHS compliant.

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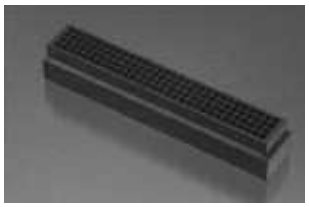
UK: 44-800-267-666

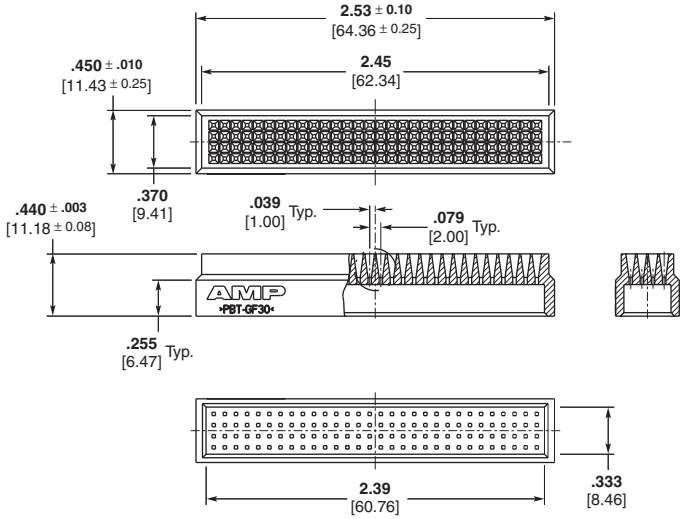
Accessories

Shroud, PC/104-*Plus*

Part No. 1375801-1

Material — PBT, Black

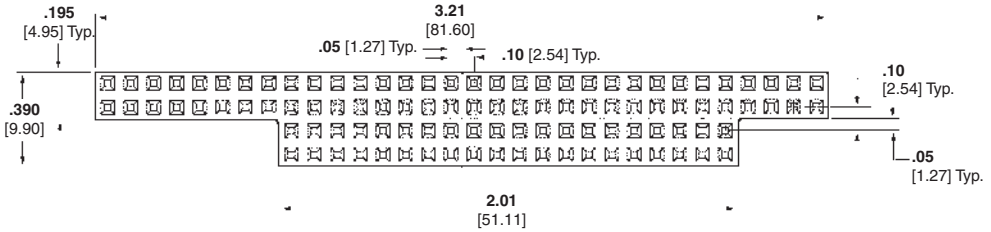




Organizer, PC/104

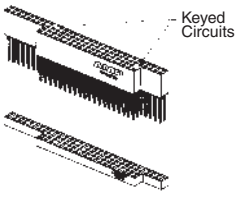
Part Number 1445251-1

Material — Polyester, PBT, Black

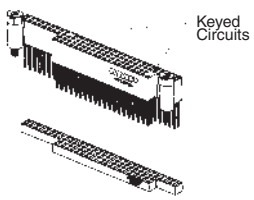


Kit Packaging Part Numbers

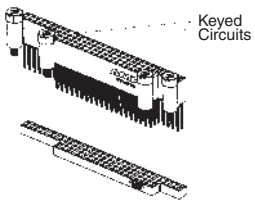
Part Number	Component Part Number		Style
	Connector Assembly	Organizer	
1445441-3	1375795-3	1445251-1	Keyed
1445441-4	1375795-4	1445251-1	Unkeyed
1445440-3	1375793-3	1445251-1	Keyed
1445440-4	1375793-4	1445251-1	Unkeyed
1445439-3	1375791-3	1445251-1	Keyed
1445439-4	1375791-4	1445251-1	Unkeyed



Part No. 1445441-3



Part No. 1445440-3



Part No. 1445439-3

Note: All part numbers are RoHS compliant.

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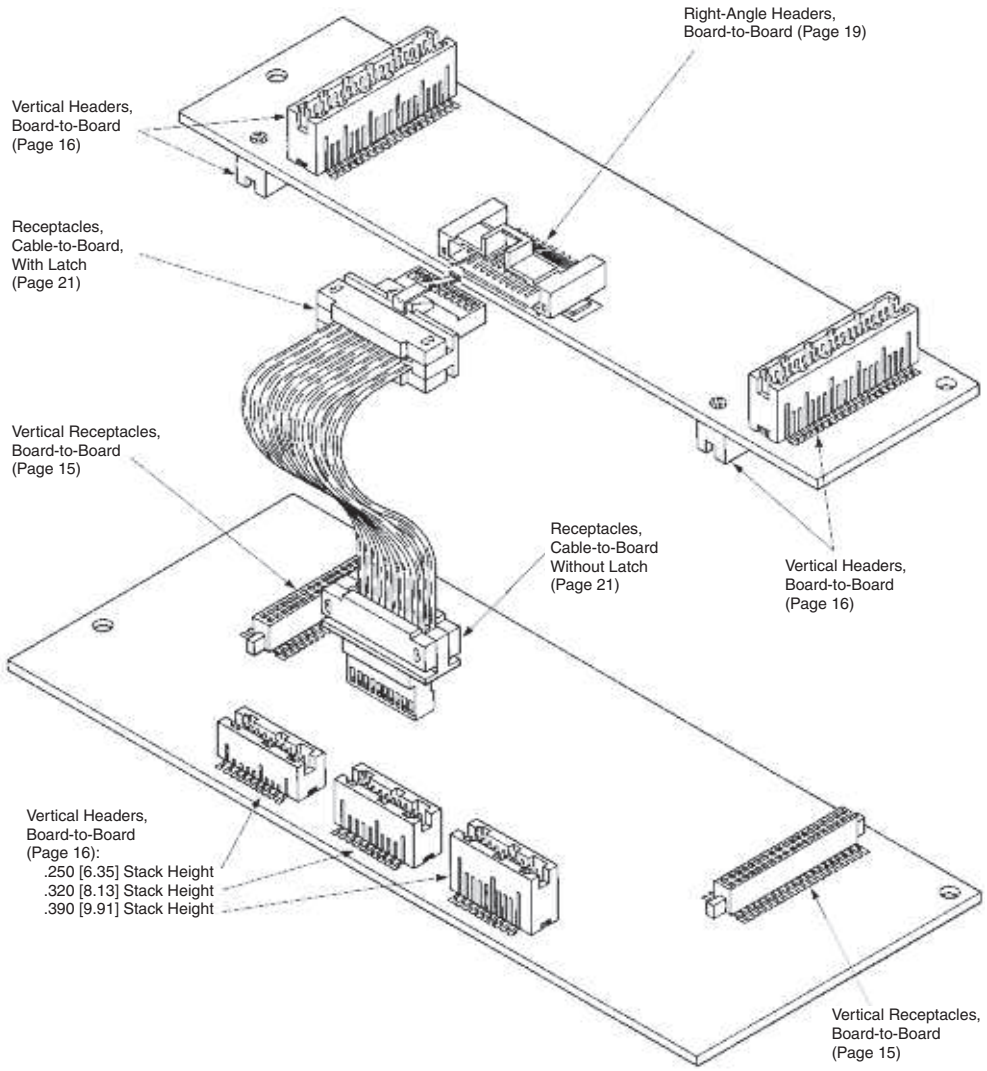
AMPMODU 50/50 Grid Connector System



Produced under a Quality Management System certified to ISO 9001

A copy of the certificate is available upon request.

ISO 9001 Certified

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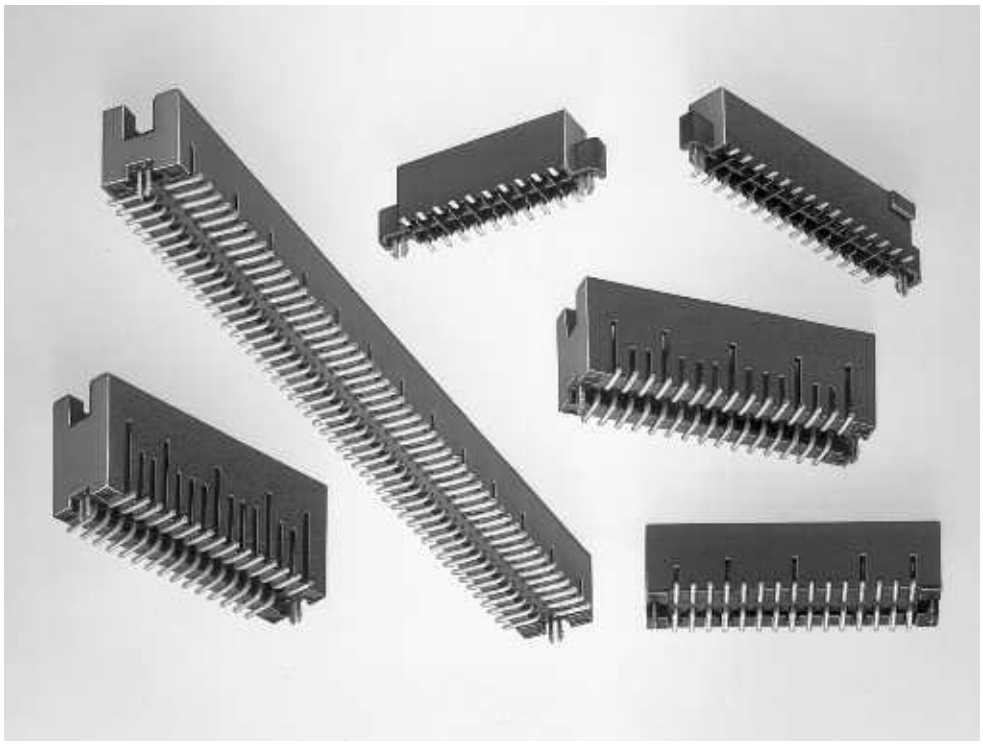
Board-to-Board Vertical Receptacles and Headers

Product Facts

- **Surface-mount products for parallel board-to-board applications, as well as right-angle board-to-board and cable-to-board applications**
- **High density .050 x .050 [1.27x1.27] centerline grid**
- **Three board-to-board stack heights: .250 [6.35], .320 [8.13] and .390 [9.91]**
- **Non-protrusive metallic holddowns**
- **Reliable dual beam receptacle contacts for redundant contact**
- **Duplex plated receptacle and post contacts; gold plated on mating areas, tin plated on tails**
- **Compatible with standard surface-mount processing (VPR and IR)**
- **Receptacle and header allow for drainage of processing fluids**
- **Tape and reel packaging available. Contact TE for details**
- **Polarized header and receptacle assemblies**
- **Sizes of 10, 20, 30, 40, 50, 60, 70, 80 and 100 positions**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association File No. LR7189**



AMPMODU 50/50 Grid Vertical Headers and Receptacles are designed for parallel board-to-board stacking in high density applications.

Right-angle board-to-board and cable-to-board applications are also possible, since the vertical receptacles also mate with non-latching right-angle headers (page 19) and the vertical headers also mate with non-latching cable connectors.

Available are double row, vertical shrouded headers and receptacles in sizes ranging from 10 through 100 positions (in 10 position increments).

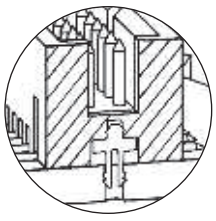
Parallel board-to-board stack heights of .250 [6.35], .320 [8.13] and .390 [9.91] are achievable by selection of the appropriate header. The receptacle is the same for all three stack height headers.

Non-protrusive metallic holddowns are designed for use in .062 [1.57] or thicker PC boards and allow surface mounting to both sides of the board. In addition to providing retention during processing, the holddowns are soldered during reflow and therefore provide long-term strain relief for the solder joints.

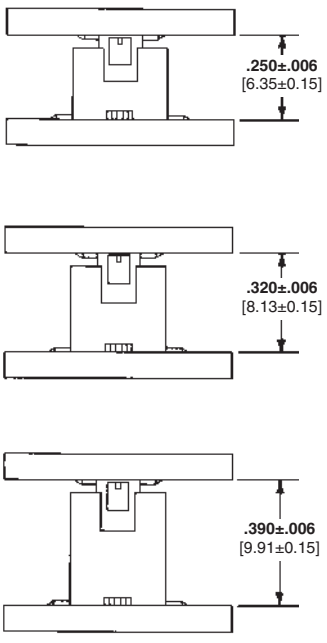
AMPMODU 50/50 Grid Vertical Headers and Receptacles are designed to be compatible with standard surface-mount processes; IR (infrared) and VPR (vapor phase reflow). The surface-mount connectors have been designed so that dimensioning, tolerances, referenced datums, holddown characteristics and packaging methods result in a system that is compatible with robotic assembly.

The headers and receptacles feature polarization to prevent misalignment.

Non-Protrusive Metallic Holddowns



Three Board Stack Heights



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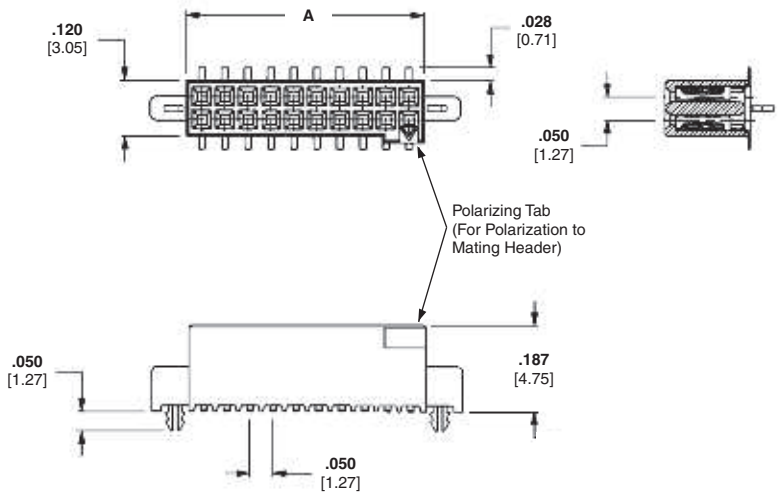
Board-to-Board Vertical Receptacles, Double Row, .050 x .050 [1.27 x 1.27] Centerline



Material and Finish

Housing—Glass-filled thermoplastic, black, 94V-0 rated

Contacts—Copper alloy; duplex plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin on solder tail, with entire contact underplated .000050 [0.00127] nickel

Holddown—Copper alloy; plated .000150 [0.00381] tin over .000050 [0.00127] nickel

Related Product Data

Mating Headers — pages 16, 19

PC Board Layouts — page 17

Performance Specifications — page 24

Technical Documents — page 24

Product Specification 108-1332

Application Specification 114-7010

Packaging: Tube or Tape and Reel

No. of Pos.	Dimension A	Receptacle Part Numbers		
		Tube	Tape and Reel*	No Hold Down w/Vacuum Cover
10	**.266** [6.75]	5-104652-1	5-147384-1	5-147413-1
20	**.516** [13.11]	5-104652-2	5-147384-2	5-147413-3
30	**.766** [19.46]	5-104652-3	5-147384-3	5-147413-4
40	**1.016** [25.81]	5-104652-4	5-147384-4	—
50	**1.266** [32.16]	5-104652-5	5-147384-5	5-147413-2
60	**1.516** [38.51]	5-104652-6	5-147384-6	—
70	**1.766** [44.86]	5-104652-7	5-147384-7	—
80	**2.016** [51.21]	5-104652-8	5-147384-8	—
100	**2.516** [63.91]	6-104652-0	5-147384-9	—

* Parts packaged in tape and reel have vacuum pick and place cover.
See PC Board Layout on page 17.

Note: All part numbers are RoHS compliant.

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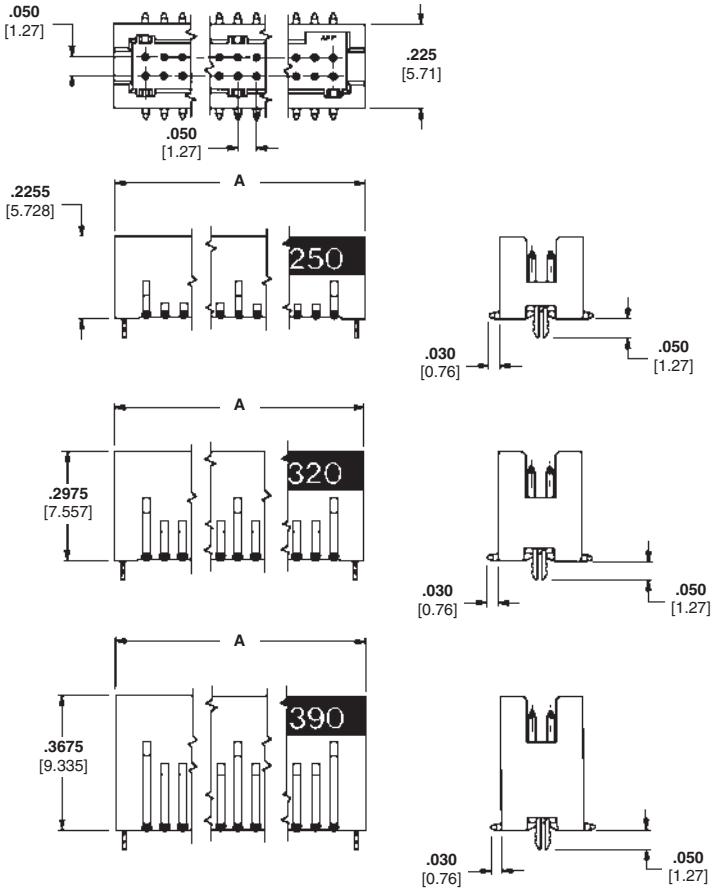
Japan: 81-44-844-8013
UK: 44-800-267-666

Board-to-Board Vertical Headers, Double Row, .050 x .050 [1.27 x 1.27] Centerline

For .250 [6.35] Mated Height

For .320 [8.13] Mated Height

For .390 [9.91] Mated Height



Material and Finish

Housing—Glass-filled thermoplastic, black, 94V-0 rated

Contacts—Copper alloy; duplex plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin on solder tail, with entire contact underplated .000050 [0.00127] nickel

Holddown—Copper alloy; plated .000150 [0.00381] tin over .000050 [0.00127] nickel

Related Product Data

Mating Receptacles — page 15, 21 (without latch only)

PC Board Layouts — page 17

Performance Specifications — page 24

Technical Documents — page 24

Product Specification 108-1332

Application Specification 114-7010

Packaging: Tube or Tape and Reel

No. of Pos.	Dimension A	Header Part Numbers							
		.250 [6.35] Mated Height			.320 [8.13] Mated Height		.390 [9.91] Mated Height		
		Tubes	Tape & Reel*		Tubes	Tape & Reel*	Tubes		Tape & Reel*
			Hold Down	No Hold Down			Hold Down	No Hold Down	
10	**.372** [9.44]	5-104655-1	5-147381-1	5-147121-1	5-104656-1	5-147382-1	5-104693-1	—	5-147383-1
20	**.622** [15.79]	5-104655-3	5-147381-2	5-147121-2	5-104656-2	5-147382-2	5-104693-2	—	5-147383-2
30	**.872** [22.14]	5-104655-4	5-147381-3	—	5-104656-3	5-147382-3	5-104693-3	—	5-147383-3
40	**1.122** [28.49]	5-104655-5	5-147381-4	—	5-104656-4	5-147382-4	5-104693-4	—	5-147383-4
50	**1.372** [34.84]	5-104655-6	5-147381-5	—	5-104656-5	5-147382-5	5-104693-5	—	5-147383-5
60	**1.622** [41.19]	5-104655-7	5-147381-6	—	5-104656-6	5-147382-6	5-104693-6	—	5-147383-6
70	**1.872** [47.54]	5-104655-8	5-147381-7	—	5-104656-7	5-147382-7	5-104693-7	—	5-147383-7
80	**2.122** [53.89]	5-104655-9	5-147381-8	—	5-104656-8	5-147382-8	5-104693-8	—	5-147383-8
90	**2.372** [60.24]	—	—	—	5-104656-9	—	5-104693-9	—	—
100	**2.622** [66.59]	6-104655-1	5-147381-9	—	6-104656-0	5-147382-9	6-104693-0	5-147503-1	5-147383-9

*Parts packaged in tape and reel have vacuum pick and place cover.
See PC Board Layout on page 17.

Note: All part numbers are RoHS compliant.

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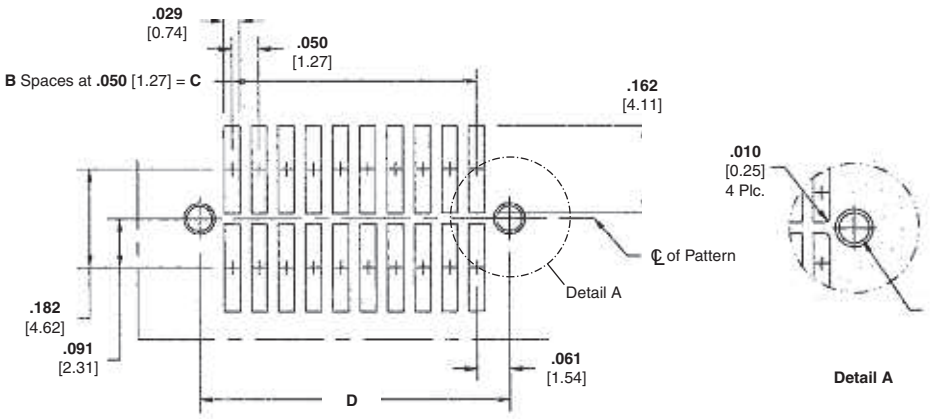
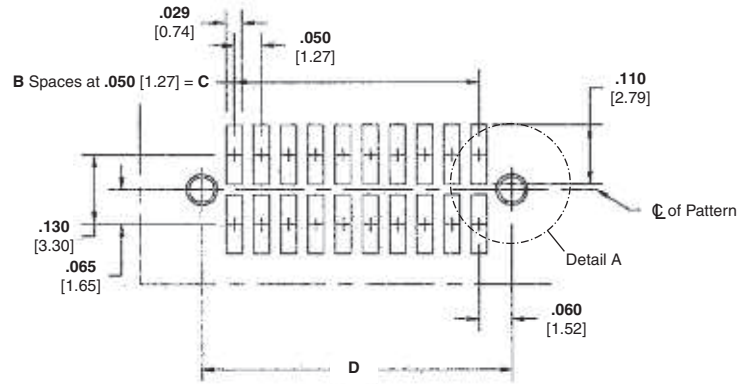
Recommended PC Board Layouts for Vertical Connectors

Headers



Receptacles



No. of Pos.	Receptacle Dimensions			Header Dimensions		
	B	C	D	B	C	D
10	4	**.200** [5.08]	**.320** [8.12]	4	**.200** [5.08]	**.322** [8.17]
20	9	**.450** [11.43]	**.570** [14.48]	9	**.450** [11.43]	**.572** [14.52]
30	14	**.700** [17.78]	**.820** [20.83]	14	**.700** [17.78]	**.822** [20.87]
40	19	**.950** [24.13]	**1.070** [27.19]	19	**.950** [24.13]	**1.072** [27.22]
50	24	**1.200** [30.48]	**1.320** [33.53]	24	**1.200** [30.48]	**1.322** [33.57]
60	29	**1.450** [36.83]	**1.570** [39.88]	29	**1.450** [36.83]	**1.572** [39.92]
70	34	**1.700** [43.18]	**1.820** [46.23]	34	**1.700** [43.18]	**1.822** [46.27]
80	39	**1.950** [49.53]	**2.070** [52.58]	39	**1.950** [49.53]	**2.072** [52.62]
90	44	**2.200** [55.88]	**2.320** [58.93]	44	**2.200** [55.88]	**2.322** [58.97]
100	49	**2.450** [62.23]	**2.570** [65.28]	49	**2.450** [62.23]	**2.572** [65.32]

Note: Refer to TE Customer Drawings for additional PC board layout information and dimensional tolerances.

Note: All part numbers are RoHS compliant.

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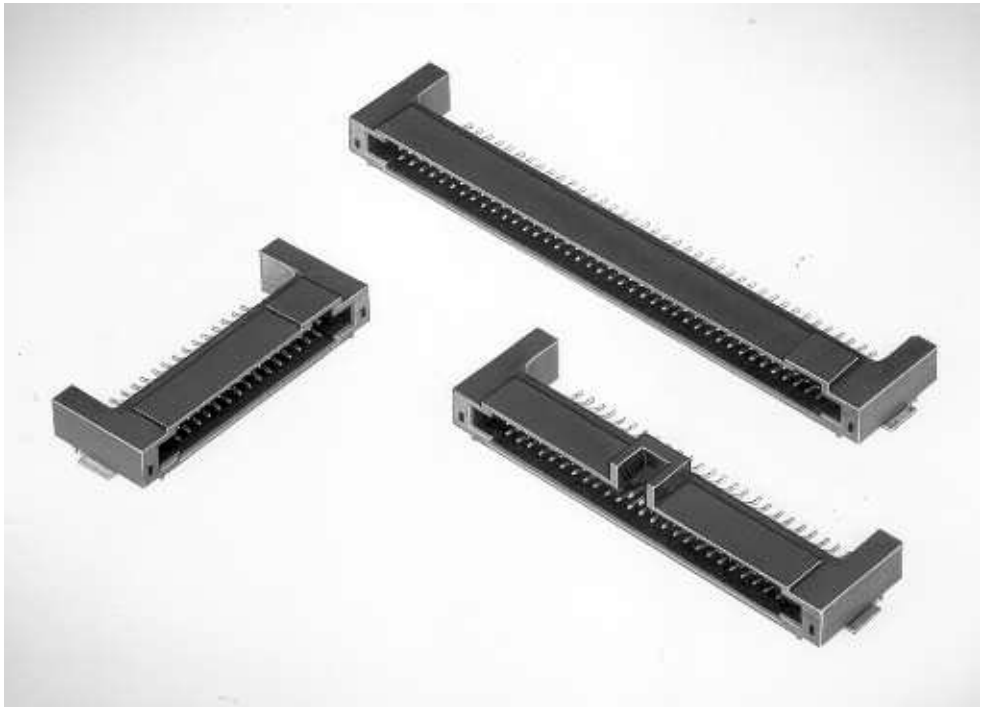
USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

Board-to-Board Right-Angle Headers

Product Facts

- **Surface-mount products for right-angle board-to-board and cable-to-board applications**
- **Double-row, right-angle shrouded headers**
- **High density .050 x .050 [1.27 x 1.27] centerline grid**
- **Latching and non-latching versions available**
- **Non-protrusive metallic holddowns**
- **Metallic tabs, when soldered to PC board pad, provide added mechanical support**
- **Duplex plated post contacts; gold plated on mating area, tin plated on tails**
- **Compatible with standard surface-mount processing (VPR and IR)**
- **Standoffs on header housings allow for drainage of processing fluids**
- **All headers are polarized**
- **Sizes of 10, 20, 30, 40, 50, 60, 70, 80 and 100 positions**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association File No. LR7189**



AMPMODU 50/50 Grid Right-Angle Headers will accommodate a variety of high density packaging applications; right-angle board-to-board applications when mated with vertical receptacles (page 15) and right-angle cable-to-board applications when mated with cable connectors (page 21). The small .050 x .050 [1.27 x 1.27] centerline contact spacing allows efficient use of the PC board area.

Mechanical support of the headers to the PC board is provided by non-protrusive metallic holddowns designed for .062 [1.57] or thicker PC boards. These holddowns are of the same design as those used in the vertical headers (page 16) and receptacles (page 15). There are also metallic tabs that are soldered to the surfaces of the PC board pads for added support.

AMPMODU 50/50 Grid Right-Angle Headers are available in double-row, in either latching or non-latching versions, and in sizes ranging from 10 through 100 positions (in 10 position increments). The latching version provides positive retention when mated with the latching cable connector (page 21). All headers feature polarization to help prevent misalignment during mating.

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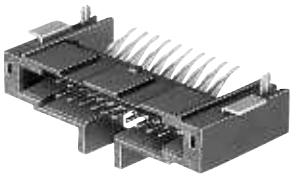
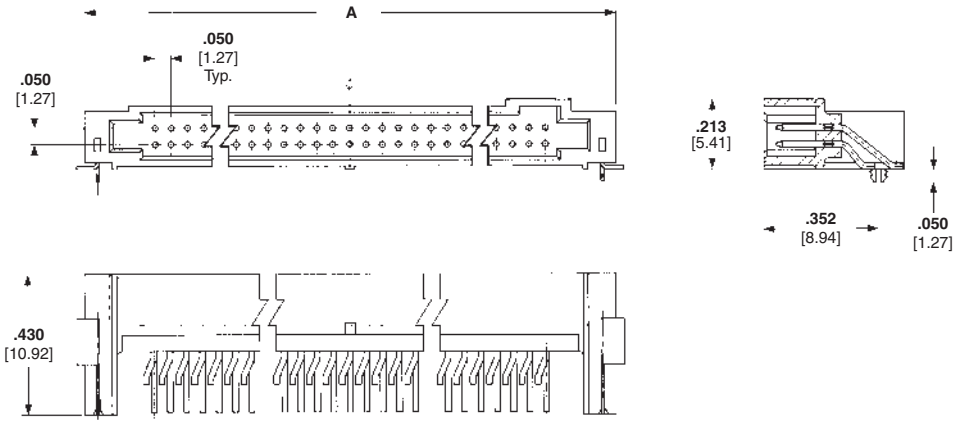
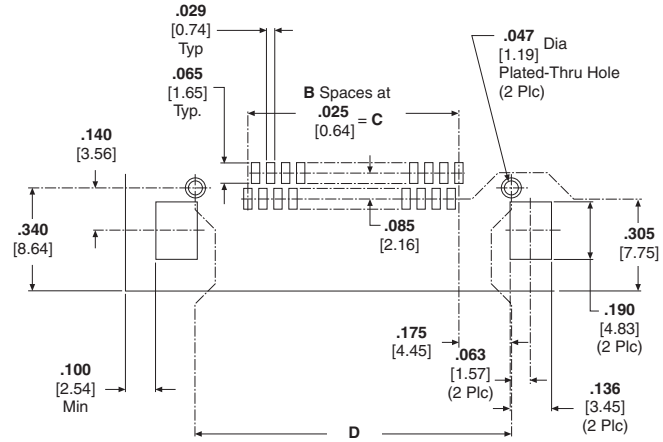
Board-to-Board Right-Angle Headers, Double Row, .050 x .050 [1.27 x 1.27] Centerline

Non-Latching Header

Latching Header







Recommended PC Board Layout

Note: Refer to TE Customer Drawings for additional PC board layout information and dimensional tolerances.

Material and Finish

Housing — Liquid crystal polymer, black, 94V-0 rated

Contacts — Copper alloy; duplex plated .000030 [0.00076] gold in mating area, .000150 [0.000381] tin on solder tail, with entire contact underplated .000050 [0.00127] nickel

Holddown — Copper alloy; plated .0000150 [0.00381] tin over .000050 [0.00127] nickel

Related Product Data

Mating Receptacles — page 15, 21

Performance Specifications — page 24

Technical Documents — page 24

Product Specification 108-1443

Application Specification 114-7010

Packaging: Tube

No. of Pos.	Dimensions				Header Part Numbers	
	A	B	C	D	Latching	Non-Latching
10	**.630** [16.00]	9	**.225** [5.72]	**.550** [13.97]	5-104895-1	5-104894-1
20	**.880** [22.35]	19	**.475** [12.07]	**.800** [20.32]	5-104895-2	5-104894-2
30	**1.130** [28.70]	29	**.725** [18.42]	**1.050** [26.67]	5-104895-3	5-104894-3
40	**1.380** [35.05]	39	**.975** [24.77]	**1.300** [33.02]	5-104895-4	5-104894-4
50	**1.630** [41.40]	49	**1.225** [31.12]	**1.550** [39.37]	5-104895-5	5-104894-5
60	**1.880** [47.75]	59	**1.475** [37.47]	**1.800** [45.72]	5-104895-6	5-104894-6
70	**2.130** [54.10]	69	**1.725** [43.82]	**2.050** [52.07]	5-104895-7	5-104894-7
80	**2.380** [60.45]	79	**1.975** [50.17]	**2.300** [58.42]	5-104895-8	5-104894-8
100	**2.880** [73.15]	99	**2.475** [62.87]	**2.800** [71.12]	6-104895-0	6-104894-0

Note: All part numbers are RoHS compliant.

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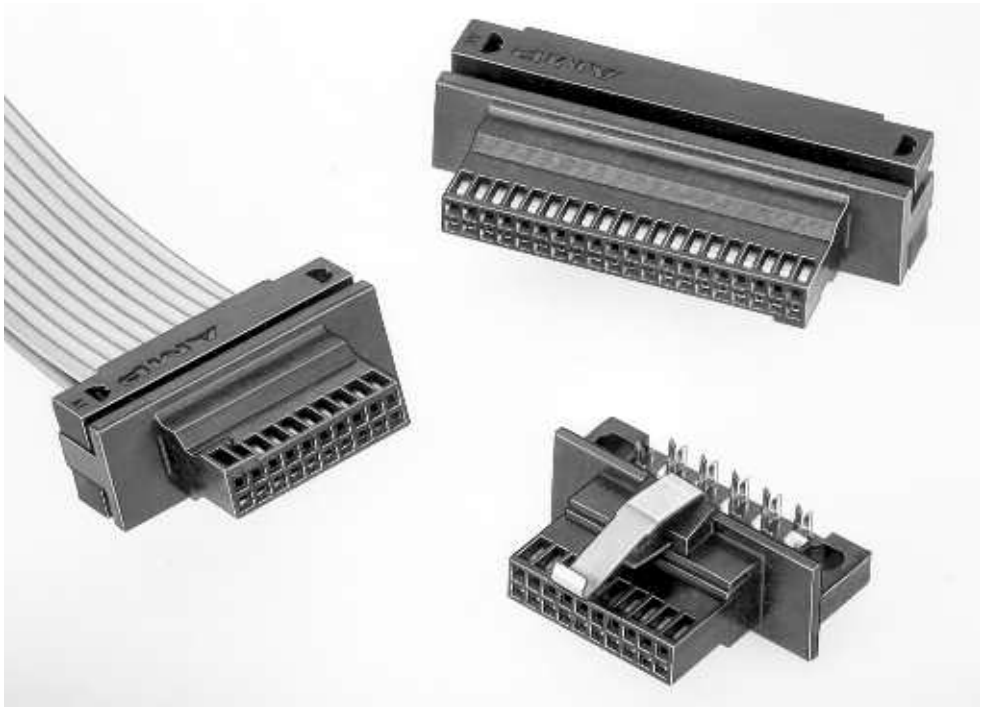
UK: 44-800-267-666

Cable-to-Board Connectors

Product Facts

- **Double-row receptacle connectors provide cable-to-board connection capabilities for vertical headers (non-latching) and right-angle headers (latching and non-latching)**
- **IDC (Insulation Displacement Crimp) mass termination of solid or stranded round conductor .050 [1.27] centerline ribbon cable with PVC or polyethylene insulation**
- **Accommodates ribbon cable conductor sizes of 28 AWG [0.08-0.09 mm^2] and 30 AWG [0.05 mm^2] and insulation diameters up to .036 [0.91] maximum**
- **Reliable single beam receptacle contact design**
- **Duplex plated receptacle contacts; gold plated in mating area, tin in termination area**
- **Terminating covers (sold separately) provide both strain relief and protection to the termination area**
- **Sizes of 10, 20, 30, 40, 50, 60, 70, 80 and 100 positions**
- **Connectors available with or without metal latch**
- **Connectors without latches are polarized to help prevent mismating**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association File No. LR7189**



These double-row cable connectors, with a .050 x .050 [1.27 x 1.27] centerline contact spacing, provide cable-to-board connection capabilities for the AMPMODU 50/50 Grid Connector System. Cable connectors without a latch will mate with the vertical headers (page 16), while cable connectors with or without a latch can be used to mate with the right-angle headers (page 19).

The cable connectors feature reliable single-beam IDC (insulation displacement crimp) contacts which are duplex plated with .000030 [0.00076] gold. These contacts can be mass terminated to either solid or stranded round conductor ribbon cable with conductor sizes of 28 AWG [0.08-0.09 mm^2] and 30 AWG [0.05 mm^2] and a maximum insulation diameter of .036 [0.91]. During termination, the terminating covers, which must be purchased separately, assist in guiding the wire into the IDC contacts, then provide strain relief when fully seated. Actual termination is accomplished with the TE manual tooling shown on page 23.

The latching version of the cable connector is equipped with a metal latch which provides positive retention of the receptacle cable connector when mated with a surface-mounted right-angle header. The cable connector without a metal latch features polarization to help prevent mismating. All connectors are available in sizes ranging from 10 through 100 positions (in 10 position increments).

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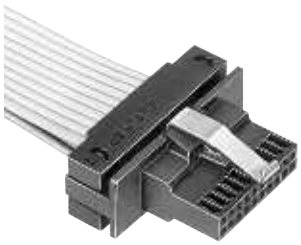
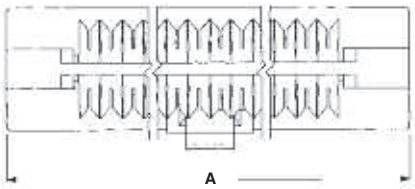
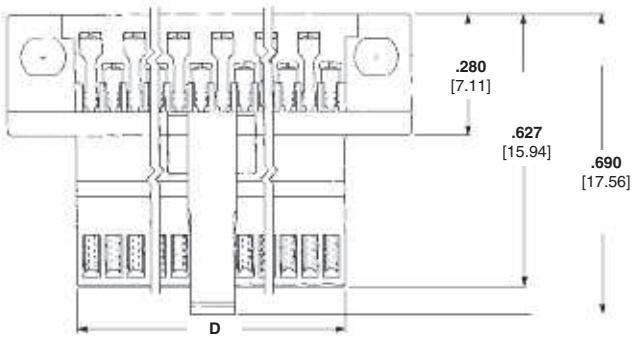
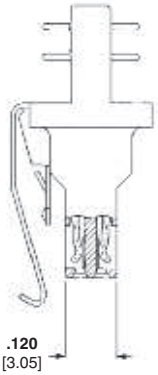
Japan: 81-44-844-8013
UK: 44-800-267-666

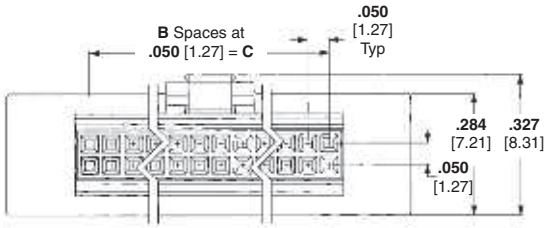
Cable-to-Board Receptacle Connectors, Double Row, .050 x .050 [1.27 x 1.27] Centerline











Material and Finish

Housing — Thermoplastic, black, 94V-0 rated

Latch — Stainless steel

Contacts — Phosphor bronze; duplex plated .000030 [0.00076] minimum gold in mating area, .000150 [0.00381] minimum tin on solder tail, with entire contact underplated .000050 [0.00127] minimum nickel

Related Product Data

Mating Headers — page 16, 19 (latching)

Terminating Covers (Must be Purchased Separately, 2 Required per Connector) — page 22

Termination Tooling — page 23

Performance Specifications — page 24

Technical Documents — page 24

Product Specification 108-1443

Application Specification 408-9817, 408-9909

Packaging: Tube

No. of Pos.	Dimensions				Receptacle Part Numbers	
	A	B	C	D	With Latch	Without Latch
10	**.578** [14.68]	4	**.200** [5.08]	**.266** [6.76]	5-104892-1	5-104893-1
20	**.828** [21.03]	9	**.450** [11.43]	**.516** [13.11]	5-104892-2	5-104893-2
30	**1.078** [27.38]	14	**.700** [17.78]	**.766** [19.46]	5-104892-3	5-104893-3
40	**1.328** [33.73]	19	**.950** [24.13]	**1.016** [25.81]	5-104892-4	5-104893-4
50	**1.578** [40.08]	24	**1.200** [30.48]	**1.266** [32.16]	5-104892-5	5-104893-5
60	**1.828** [46.43]	29	**1.450** [36.83]	**1.516** [38.51]	5-104892-6	5-104893-6
70	**2.078** [52.78]	34	**1.700** [43.18]	**1.766** [44.86]	5-104892-7	5-104893-7
80	**2.328** [59.13]	39	**1.950** [49.53]	**2.016** [51.21]	5-104892-8	5-104893-8
100	**2.828** [71.83]	49	**2.450** [62.23]	**2.516** [63.91]	6-104892-0	6-104893-0

Note: All part numbers are RoHS compliant.

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L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

Terminating Covers for Cable Connectors

Material

Glass-filled thermoplastic, black, 94V-0 rated

Related Product Data

Connectors used with Covers — page 21

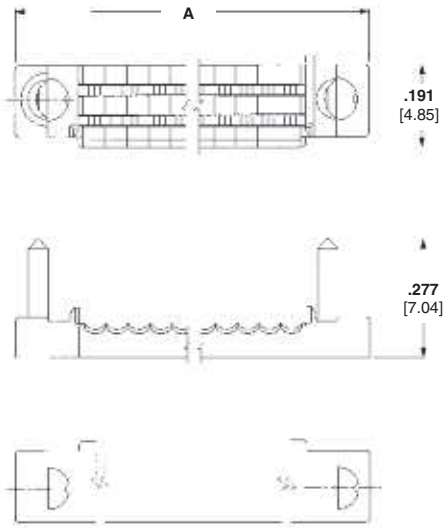
Termination Tooling — page 23

Technical Documents — page 24

Product Specification 108-1443

Application Specification 408-9817, 408-9909

Packaging: Plastic bag



No. of Pos.	Dimension A	Terminator Cover Part Numbers
10	**.565** [14.35]	104891-1
20	**.815** [20.70]	104891-2
30	**1.065** [27.05]	104891-3
40	**1.315** [33.82]	104891-4
50	**1.565** [39.75]	104891-5
60	**1.815** [46.10]	104891-6
70	**2.065** [52.45]	104891-7
80	**2.315** [58.80]	104891-8
100	**2.815** [71.50]	1-104891-0

Note: Terminating covers must be purchased separately, two are required for each cable connector.

Note: All part numbers are RoHS compliant.

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Application Tooling for Cable Connectors

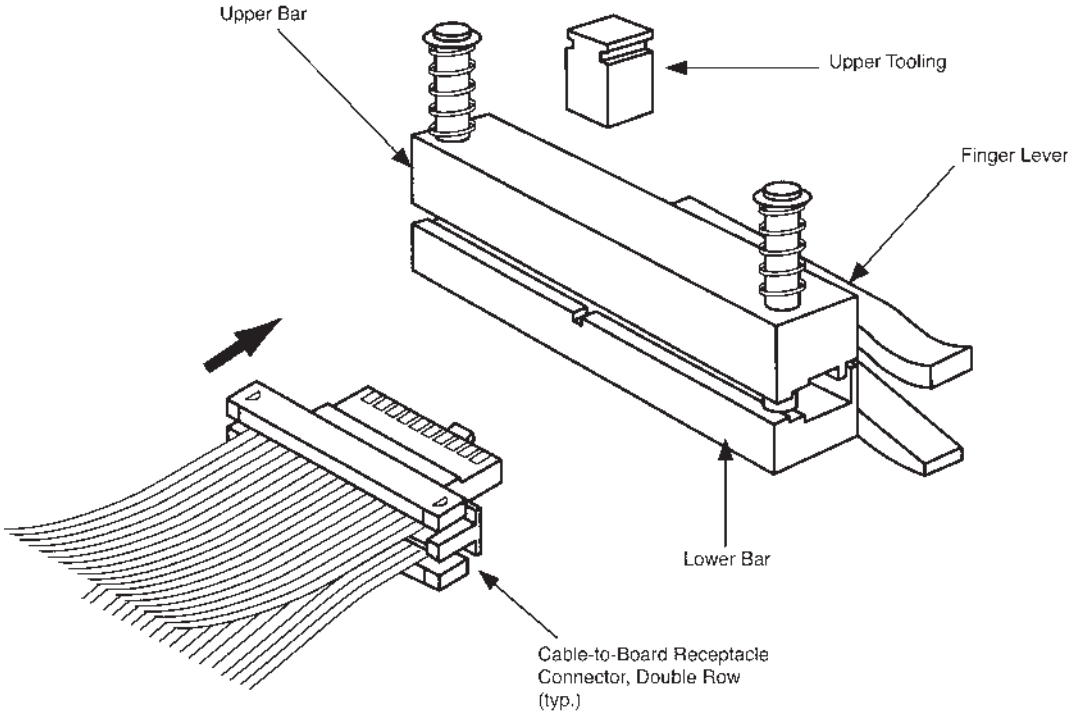
The Manual Miniature Application Frame Assembly 91295-1, equipped with a Cover Closing Kit 543518-1, is used for the IDC termination of ribbon cable to the cable connectors shown on page 21.

Prior to termination, the covers must be partially assembled onto a connector housing, the cable inserted between the covers and contacts and the covers preclosed by hand, clamping the cable in place.

In the Manual Miniature Application Frame Assembly, the covers are fully seated to complete the mass termination and provide strain relief for the completed connection.

For tooling information, call Technical Support Center **1-800-522-6752.**

Manual Miniature Application Frame Assembly 91295-1 with Cover Closing Kit 543518-1



Note: Refer to Tyco Electonics Instruction Sheets 408-9817 (Frame Assembly 91295-1) and 408-9909 (Cover Closing Kit 543518-1) for complete termination/tooling information.

Note: All part numbers are RoHS compliant.

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UK: 44-800-267-666

Performance Specifications

Board-to-Board Connectors, Vertical and Right-Angle

Mating Force: 6.4 oz (1.78 N] max. per contact
Unmating Force: 1.0 oz [0.28 N] min. per contact
Durability: Tested to 200 cycles min.
Current Rating: (30°C T rise): .5 ampere per contact
Operating Temperature Range: -65°C to +105°C
Termination Resistance: 16 milliohms max. (initial)
Insulation Resistance: 5000 megohms min. (initial)
Dielectric Withstanding Voltage: 300 VAC

Cable-to-Board Connectors

Mating Force: 6.4 oz (1.78 N] max. per contact
Unmating Force Without Latch: .5 oz [0.14 N] min. per contact
Durability: Tested to 200 cycles min.
Current Rating: (10°C T rise): .5 ampere per contact
Operating Temperature Range: -65°C to +105°C
Termination Resistance: 25 milliohms max. (initial and final)
Insulation Resistance: 5000 megohms min. (initial)
Dielectric Withstanding Voltage: 300 VAC

Technical Documents

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1332	AMPMODU 50/50 Grid Vertical Board-to-Board Connectors
108-1443	AMPMODU 50/50 Grid Right-Angle Board-to-Board and Cable Connectors

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-7010	AMPMODU 50/50 Grid Connector System

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

408-9817	Manual Miniature Application Frame Assembly 91295-1
408-9909	Cover Closing Kit 543518-1

Note: All part numbers are RoHS compliant.

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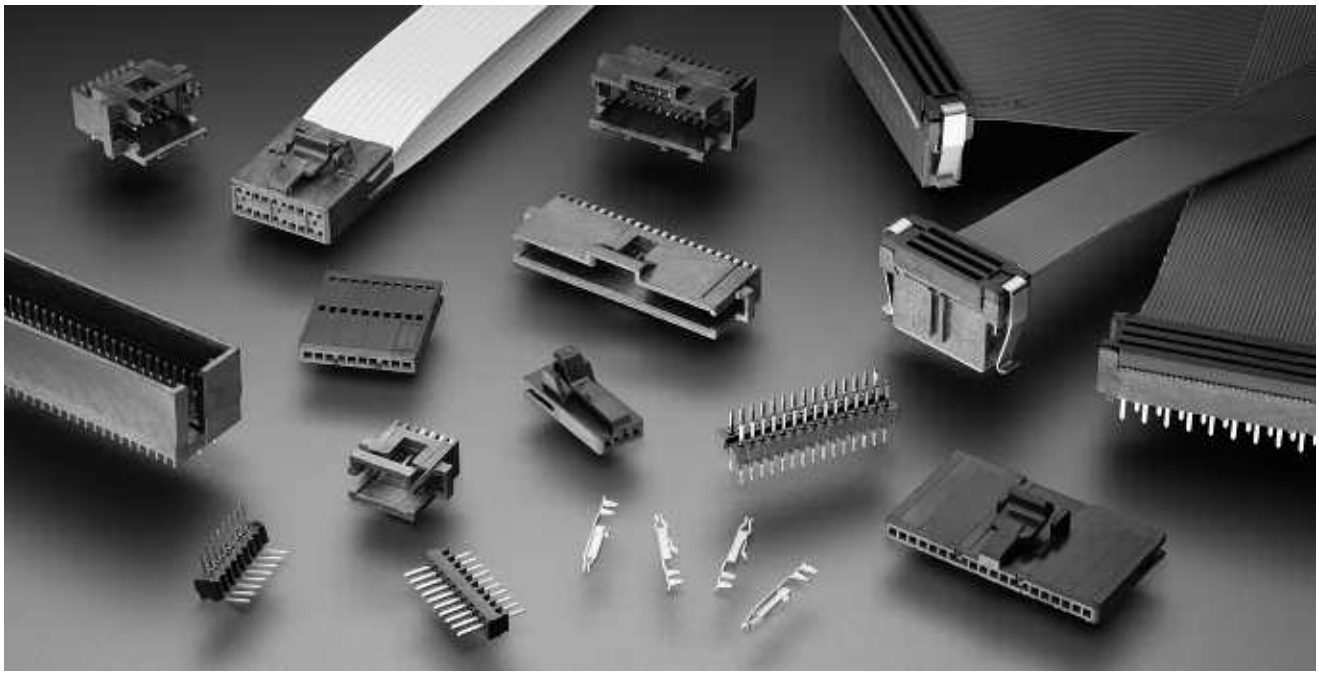
AMPMODU System 50 Connectors



The AMPMODU System 50 connector family includes a wide variety of high density board-to-board (thru-hole and surface-mount) and cable-to-board connectors. AMPMODU System 50 is composed of one- and two-row receptacles and post headers on .050 x .100 [1.27 x 2.54] spacing between contacts for extreme density and efficient use of printed circuit board area.

AMPMODU System 50 receptacles and header assemblies can be categorized in three groups: board-mount headers, board-mount receptacles and cable-to-board receptacles. Receptacle contacts and mating .015 [0.38] square posts are formed from high conductivity copper alloy and are selectively plated with gold to promote higher performance and reliability.

Board-mounted thru-hole post headers and receptacle connectors are available for right-angle and vertical mating configurations. Surface-mounted connectors are available in vertical, double row styles for parallel stacking applications. Shrouded post headers provide polarization to mating cable receptacles and aid alignment of mating connectors. Unshrouded headers allow close stacking of daughter cards. Vertical stacking connectors space parallel mated boards as shown in the illustration on page 63. Housings on all board-mount assemblies are made of high temperature tolerant materials and incorporate stand-offs for free drainage of flux cleaning solutions.

Cable-to-board connectors have integral latches for positive locking to shrouded mating headers (thru-hole or surface-mount). Ribbon cable connectors mass terminate 30 AWG [0.05 mm^2] solid and 32 AWG [0.03 mm^2] stranded, .025 [0.64] centerline ribbon cable with PVC or Teflon® insulation.

Connectors for mass termination to FFC cable or flexible etched circuitry have dual beam contacts; options include shielded cable and solder tabs. Both types of cable connectors are available as component parts and as completed assemblies.

The variety of components and application possibilities, combined with small size and outstanding quality, make AMPMODU System 50 suitable for high density systems.

- **Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476**
- **Certified by Canadian Standards Association*, File No. LR 7189**

*CSA certification pending on certain products, as noted.

Dimensioning:

Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Metric symbols used are:

mm (millimeter)
cm (centimeter)
m (meter)
mm^2 (square millimeter)
C (Celsius)
N (newton)
kg (kilogram)

- **Produced under a Quality Management System certified to ISO 9001**

A copy of the certificate is available upon request.

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