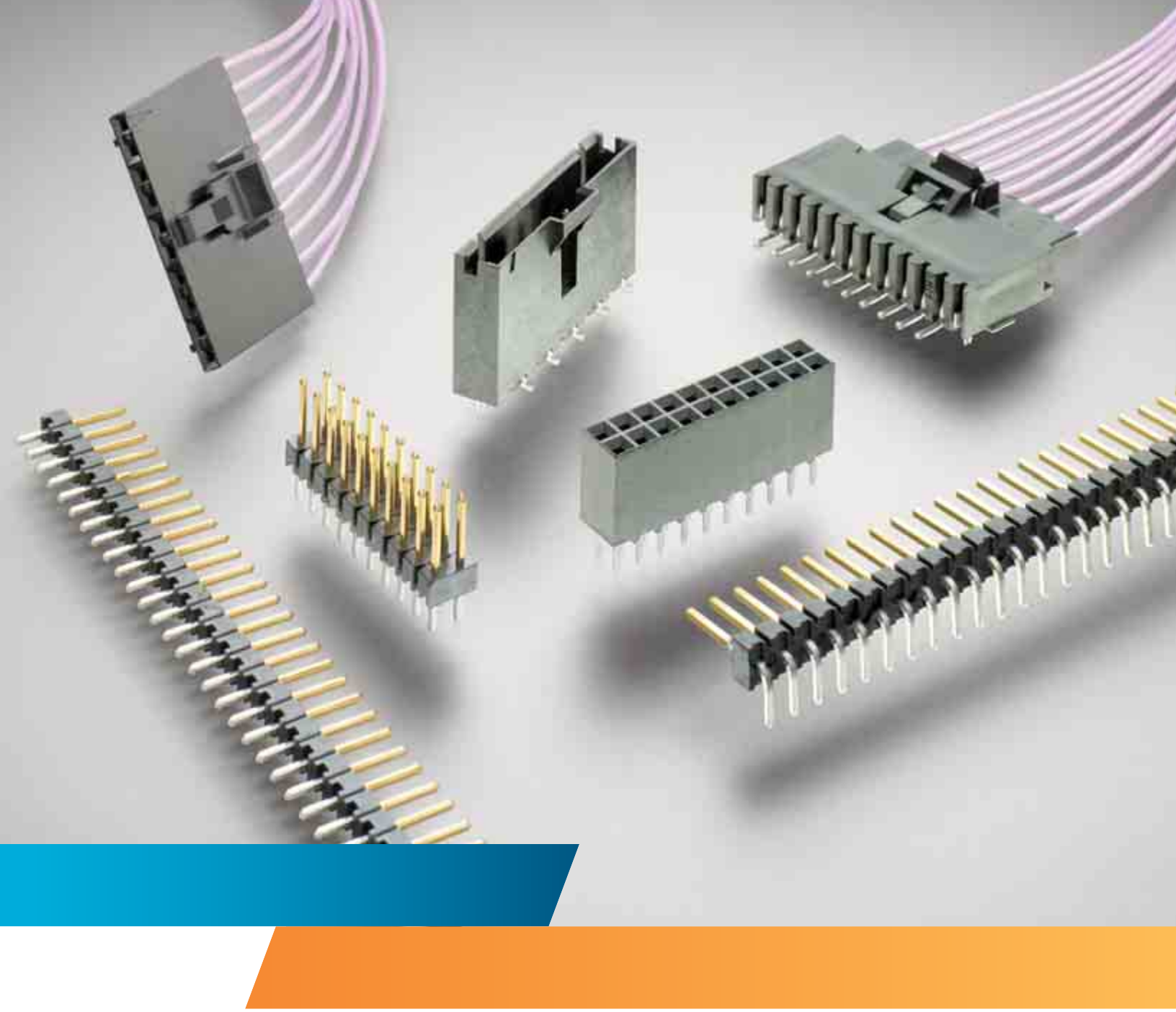


AMPMODU Interconnection System

RoHS Ready

Tyco Electronics

Our commitment. Your advantage.

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Restriction on the use of Hazardous Substances (RoHS)

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

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

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

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- 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.tycoelectronics.com/leadfree

RoHS Customer Support Center

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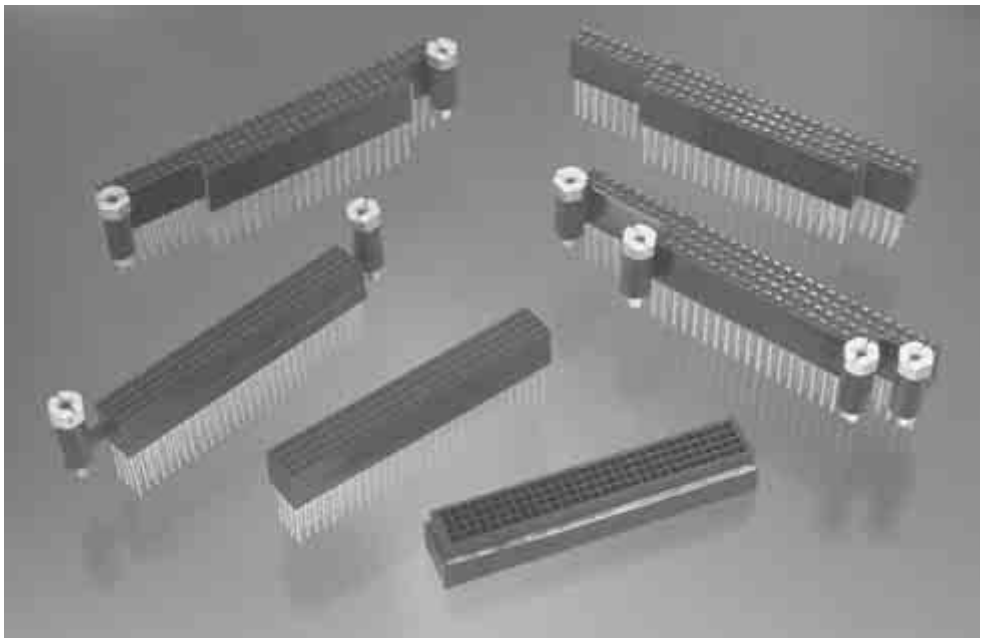
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PC/104 and PC/104-*Plus* Connectors

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 Tyco Electronics 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 Tyco Electronics products. The Center can provide you with:

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- Catalogs
- Technical Documents
- Tyco Electronics Authorized Distributor Locations

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.

Technical Documents

Product Specifications
108-1956

Application Specifications
114-13021

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PC/104, Press-Fit

Material and Finish

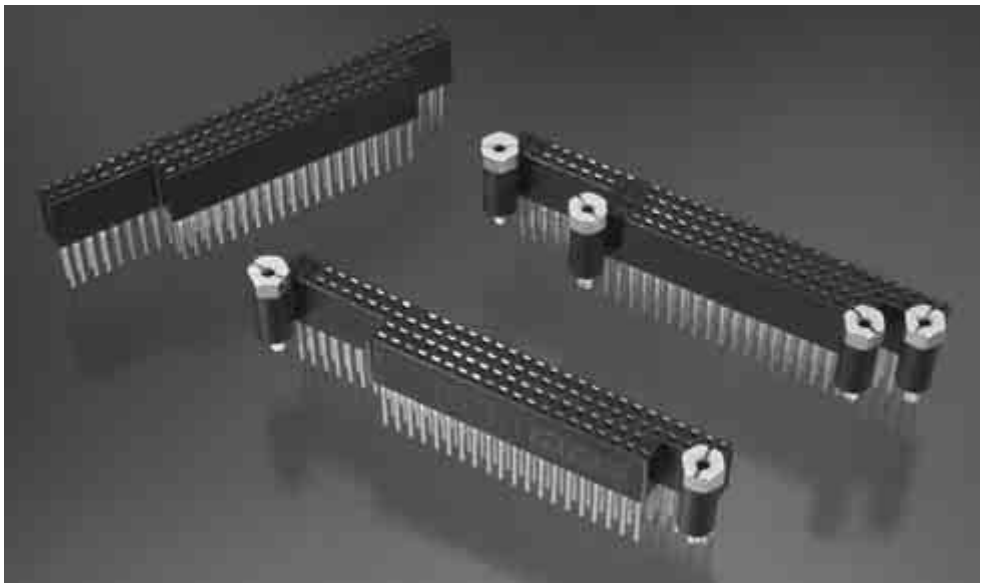
Housing — Glass filled thermoplastic, Black, 94V-0 rated

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

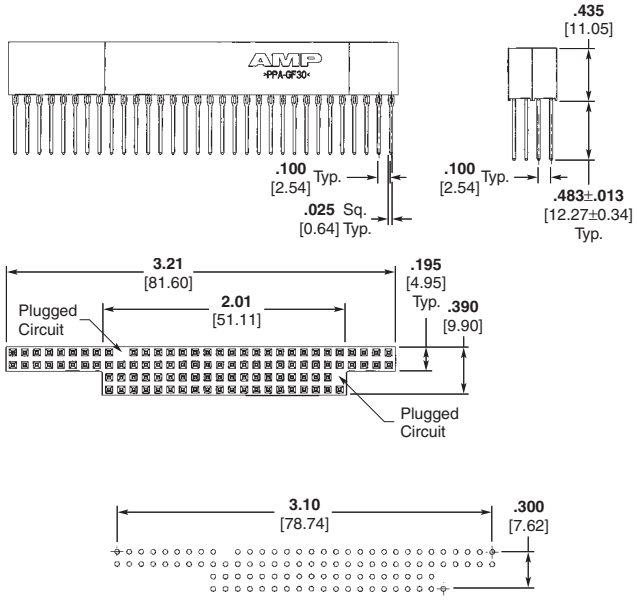


Stackthrough, No Standoffs

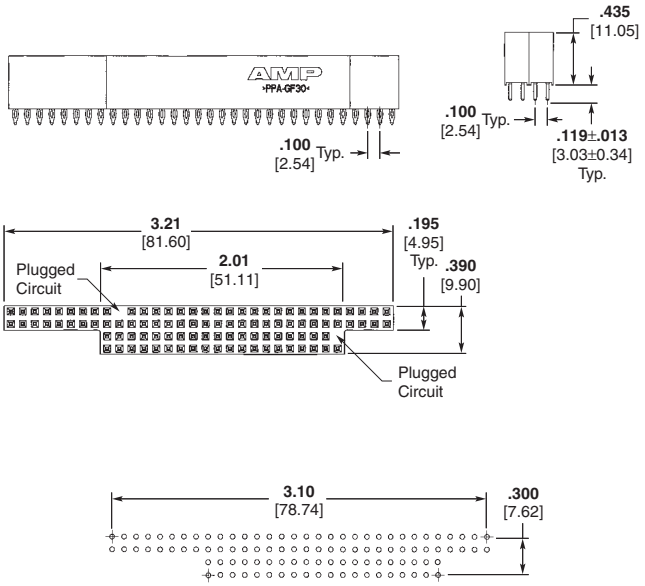
Gold plated contacts*
Part No. 1375795-1 (keyed), **Part No. 1375795-2** (unkeyed)
Gold plated contacts with Tin plated compliant pin section**
Part No. 1375795-3 (keyed), **Part No. 1375795-4** (unkeyed)

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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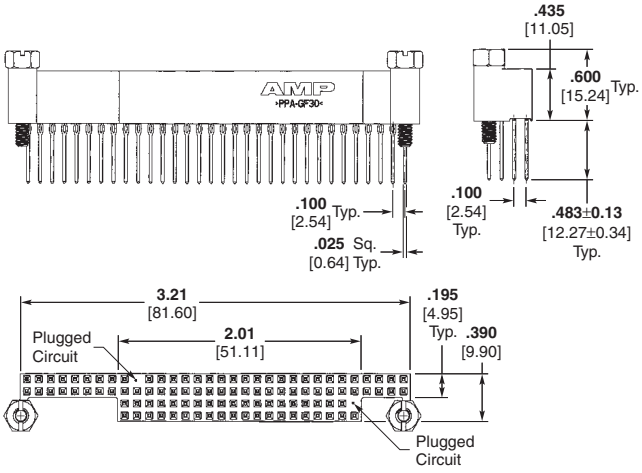
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PC/104, Press-Fit (Continued)

Stackthrough, 2 Standoffs

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

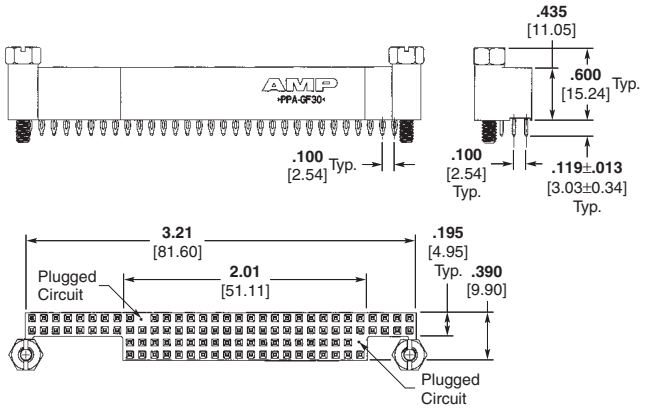
Gold plated contacts with Tin plated compliant pin section**
Part No. 1375793-3 (keyed), **Part No. 1375793-4** (unkeyed)



Non-Stackthrough, 2 Standoffs

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

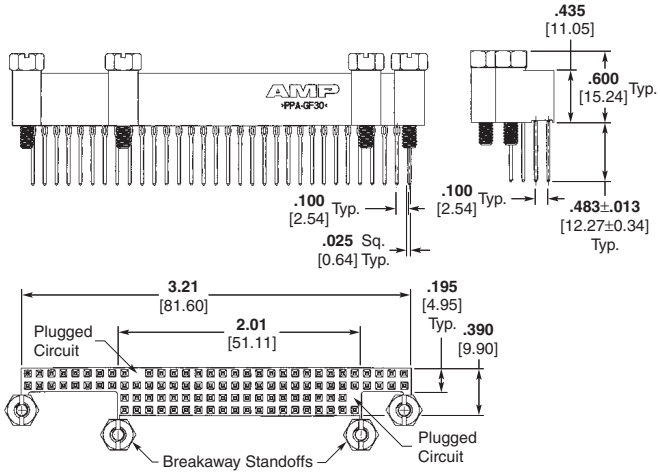
Matte tin plated tails**
Part No. 1375794-3 (keyed), **Part No. 1375794-4** (unkeyed)



Stackthrough, 4 Standoffs

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

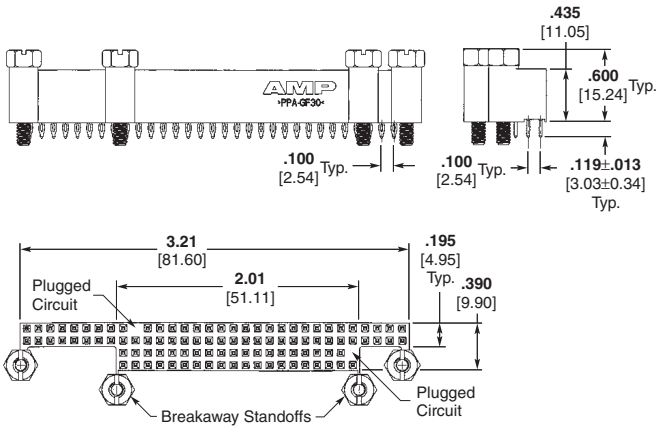
Gold plated contacts with Tin plated compliant pin section**
Part No. 1375791-3 (keyed), **Part No. 1375791-4** (unkeyed)

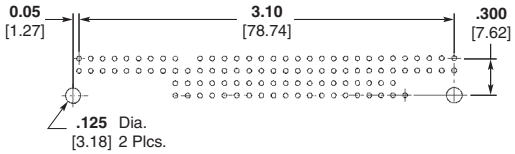


Non-Stackthrough, 4 Standoffs

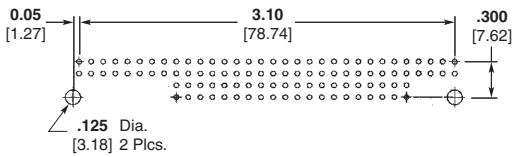
Tin-lead plated tails*
Part No. 1375792-1 (keyed), **Part No. 1375792-2** (unkeyed)

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.

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

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PC/104-*Plus*, Press-Fit

Material and Finish

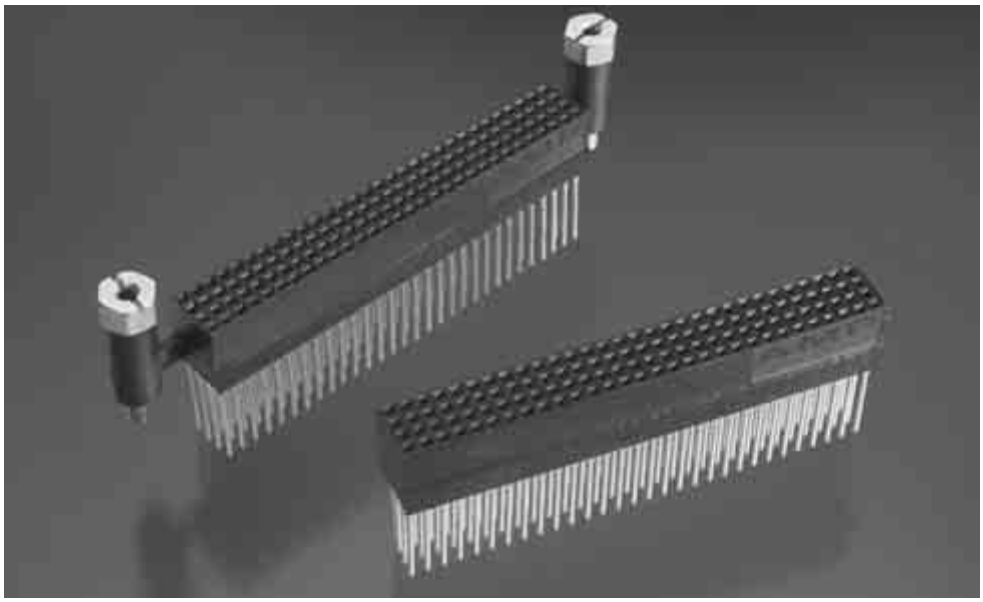
Housing — Glass filled thermoplastic, Black, 94V-0 rated

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

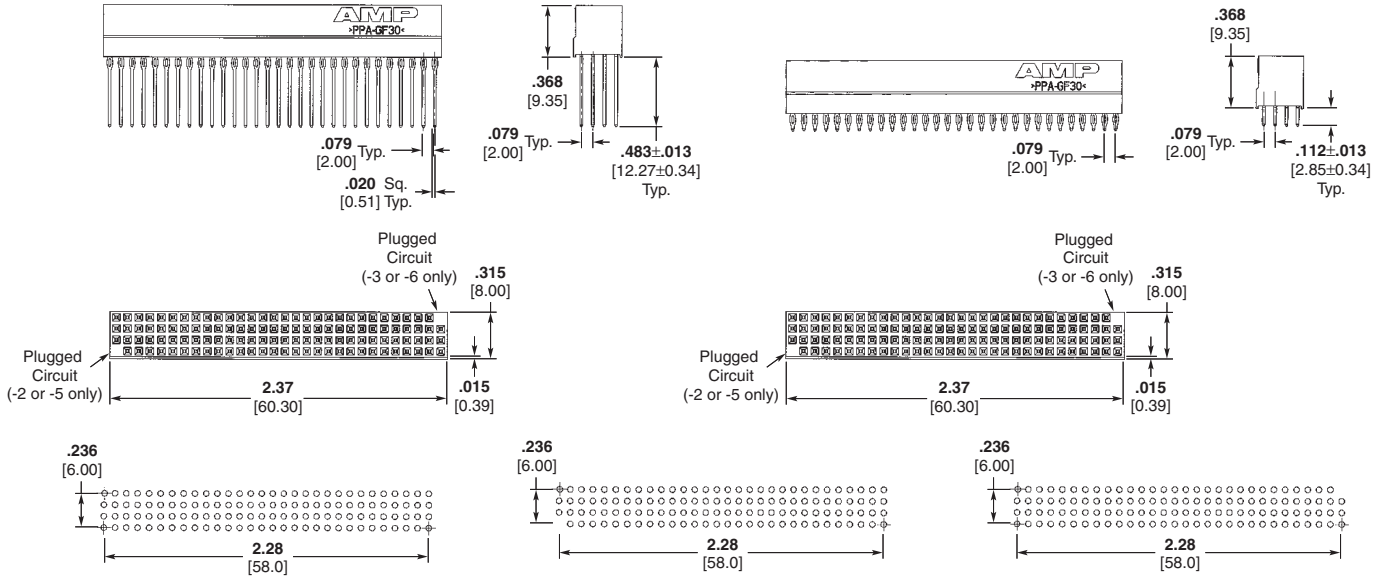
Non-Stackthrough, No Standoffs

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)

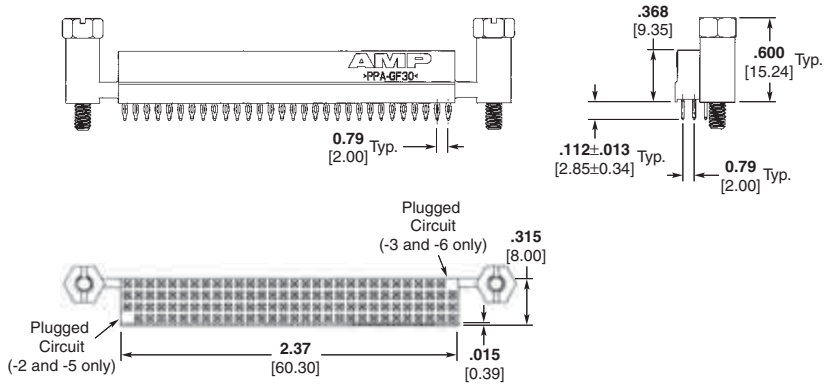
Non-Stackthrough, 2 Standoffs

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



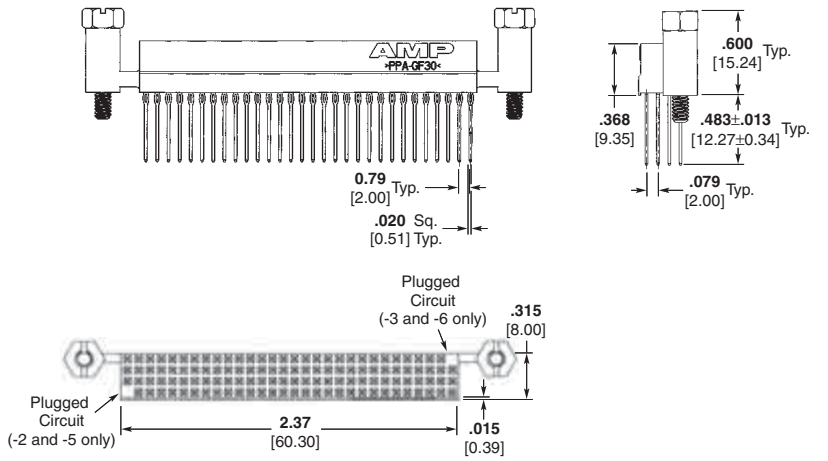
Stackthrough, 2 Standoffs

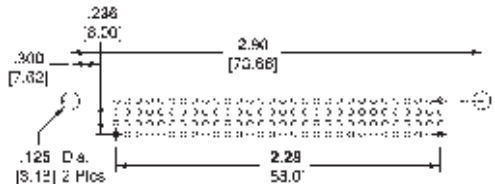
Gold plated contacts*

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

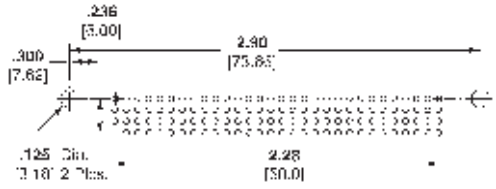
Gold plated contacts with Tin plated compliant pin section**

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

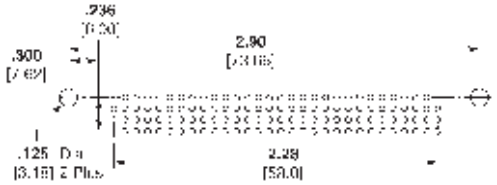




Recommended PC Board Layout for 1375797-1, 1375797-4, 1375798-1, 1375798-4



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

PC/104, Solder

Material and Finish

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

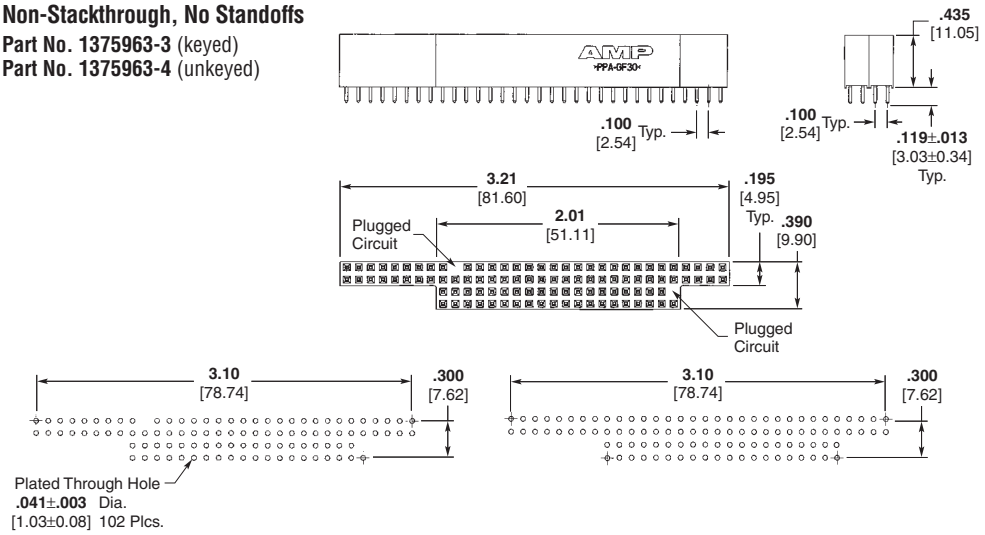
Contacts

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)

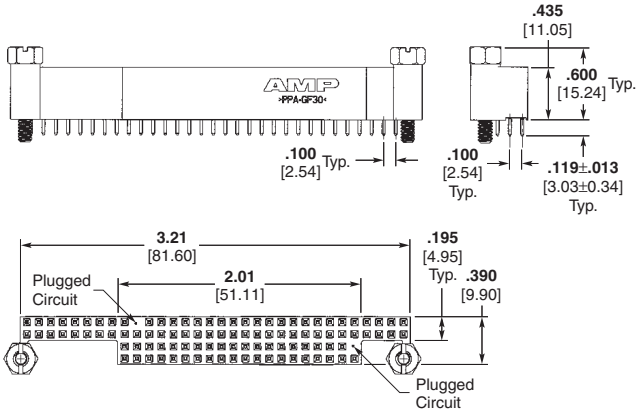


Keyed **Unkeyed**

Recommended PC Board Layout

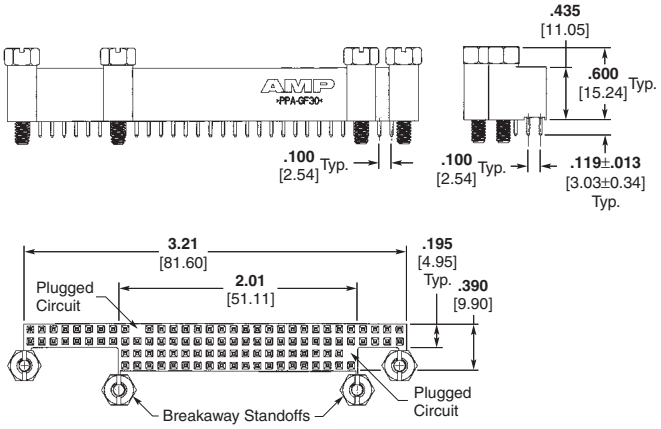
Non-Stackthrough, 2 Standoffs

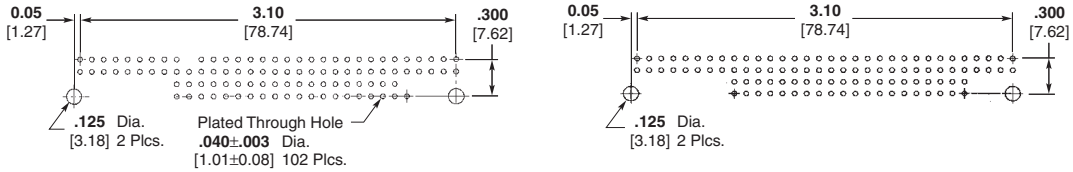
Part No. 1375961-3 (keyed)
Part No. 1375961-4 (unkeyed)



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

PC/104-*Plus*, Solder

Material and Finish

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

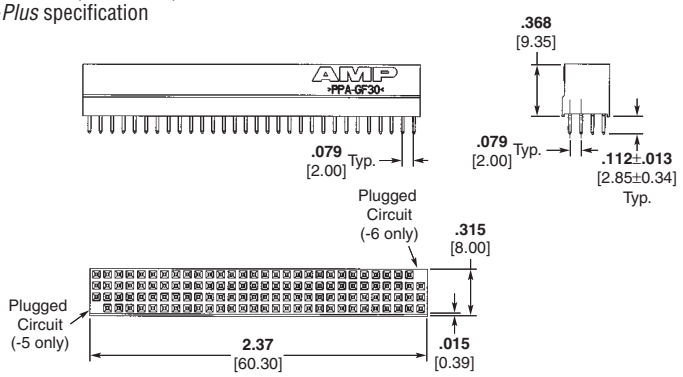
Contacts

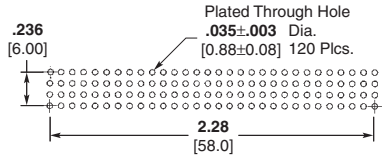
Non-Stackthrough — Phosphor Bronze; plated .000015 [0.00038] min. Gold on mating receptacle end, .000100 [0.00254] matte tin on remainder, all over .000050 [0.00127] Nickel

Screwlocks — Steel, Clear Chromate over Zinc

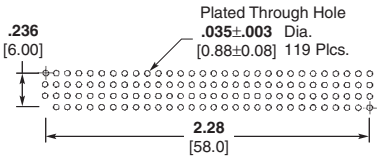
Non-Stackthrough, No Standoffs

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

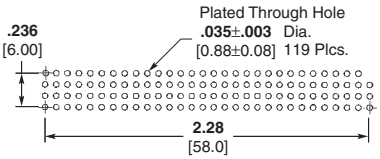




Recommended PC Board Layout for 1375967-4



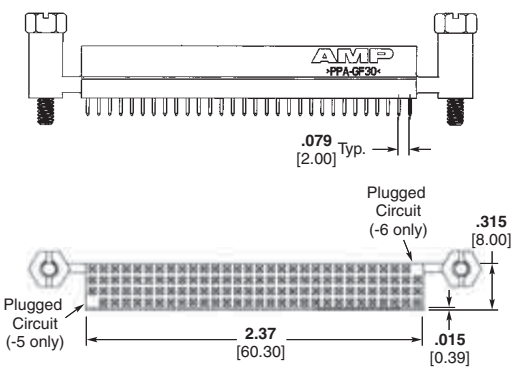
Recommended PC Board Layout for 1375967-5

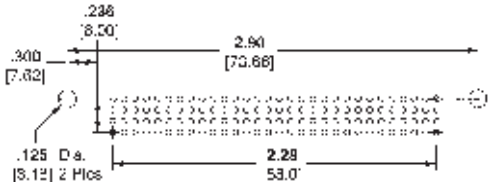


Recommended PC Board Layout for 1375967-6

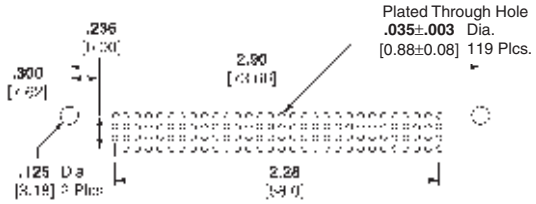
Non-Stackthrough, 2 Standoffs

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

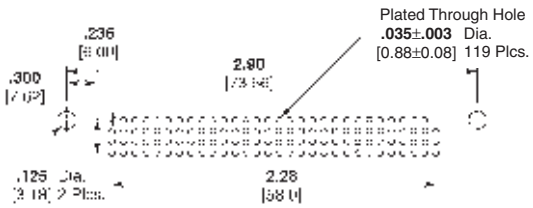




Recommended PC Board Layout for 1375965-4



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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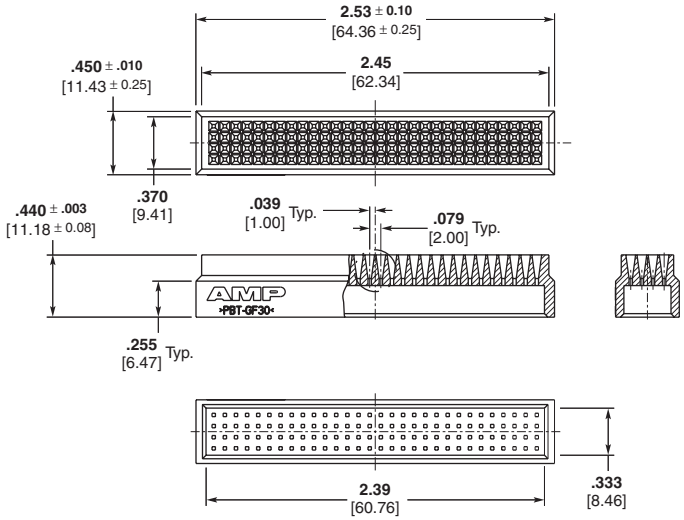
Accessories

Shroud, PC/104-*Plus*

Part No. 1375801-1

Material — PBT, Black

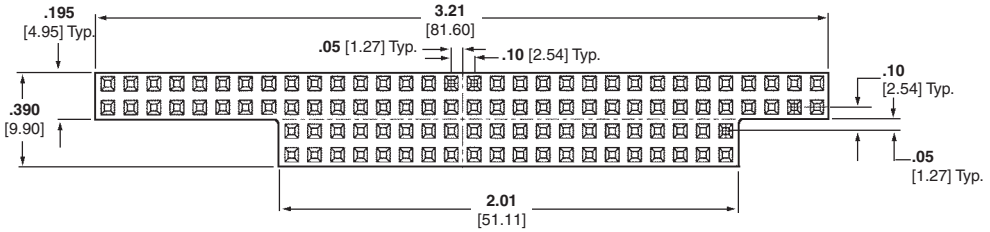




Organizer, PC/104

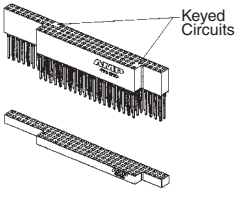
Part Number 1445251-1

Material — Polyester, PBT, Black

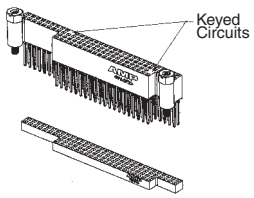


Kit Packaging Part Numbers

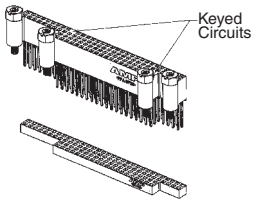
Part Number	Component Part Number		Style
	Connector Assembly	Organizer	
1445441-3	1375795-3	1445251-1	Keyed
1445441-4	1375795-4	1445251-1	Unkeyed
1445440-3	1375793-3	1445251-1	Keyed
1445440-4	1375793-4	1445251-1	Unkeyed
1445439-3	1375791-3	1445251-1	Keyed
1445439-4	1375791-4	1445251-1	Unkeyed



Part No. 1445441-3



Part No. 1445440-3



Part No. 1445439-3

Note: All part numbers are RoHS compliant.

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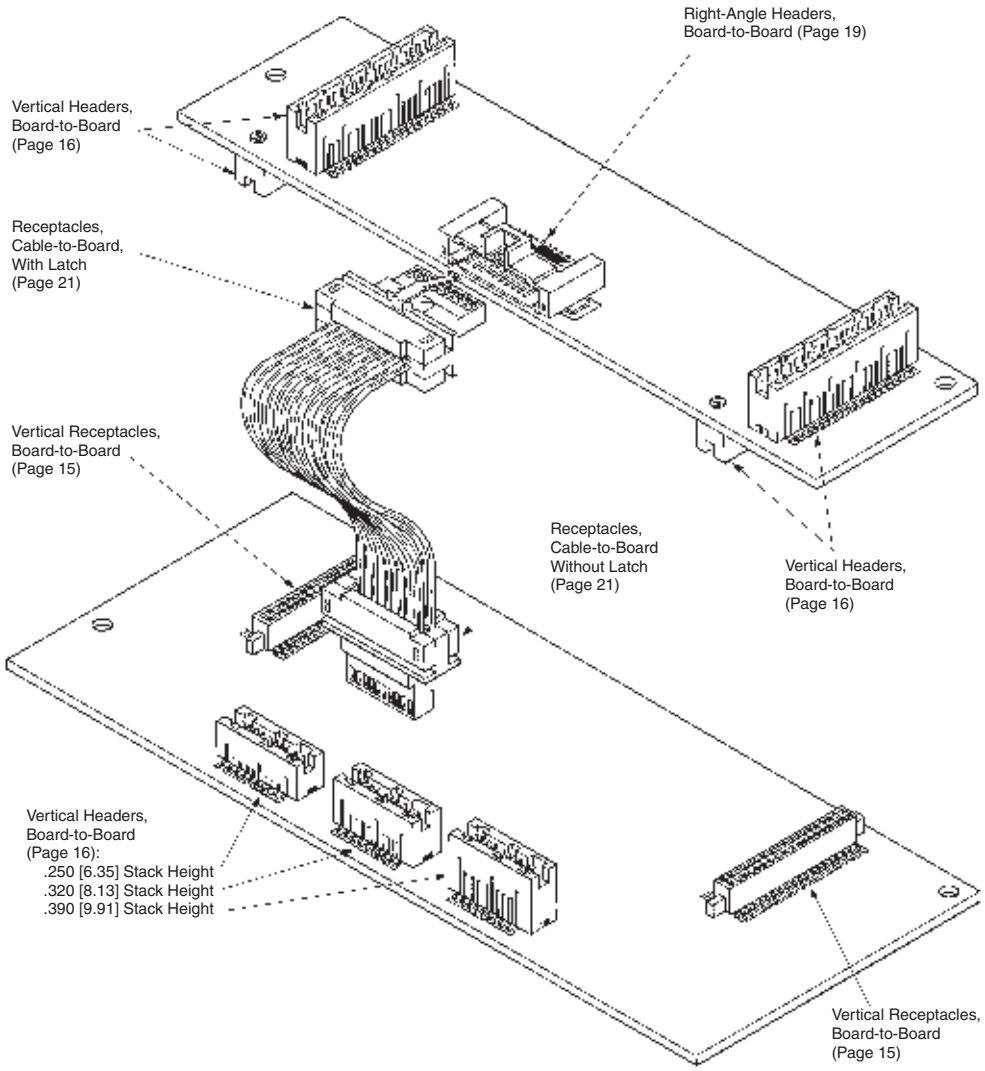
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AMPMODU 50/50 Grid Connector System



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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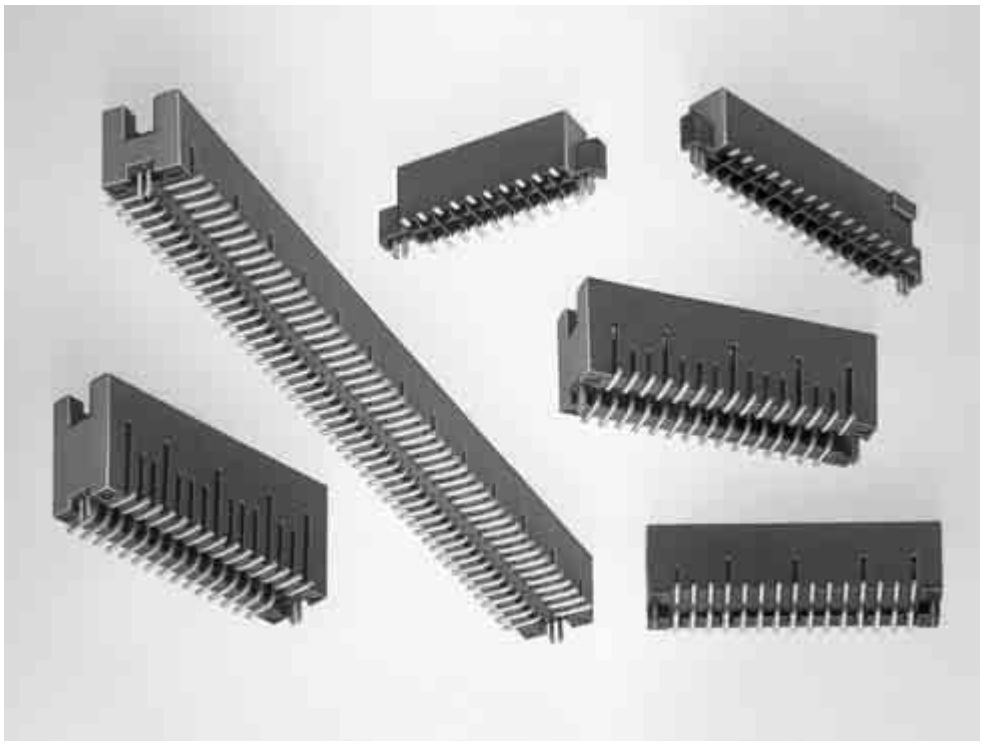
USA: 1-800-522-6752
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Board-to-Board Vertical Receptacles and Headers

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 Tyco Electronics 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).

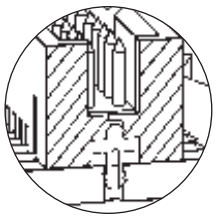
Parallel board-to-board stack heights of .250 [6.35], .320 [8.13] and .390 [9.91] are achievable by selection of the appropriate header. The receptacle is the same for all three stack height headers.

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.

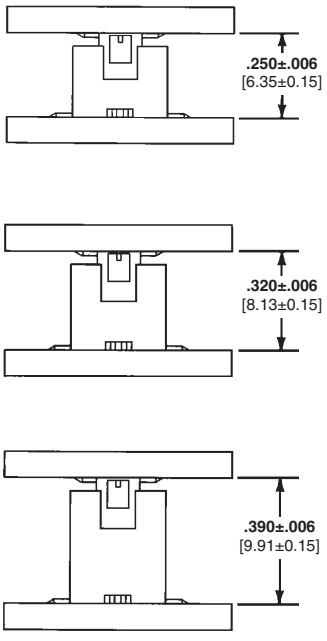
AMPMODU 50/50 Grid Vertical Headers and Receptacles are designed to be compatible with standard surface-mount processes; IR (infrared) and VPR (vapor phase reflow). The surface-mount connectors have been designed so that dimensioning, tolerances, referenced datums, holddown characteristics and packaging 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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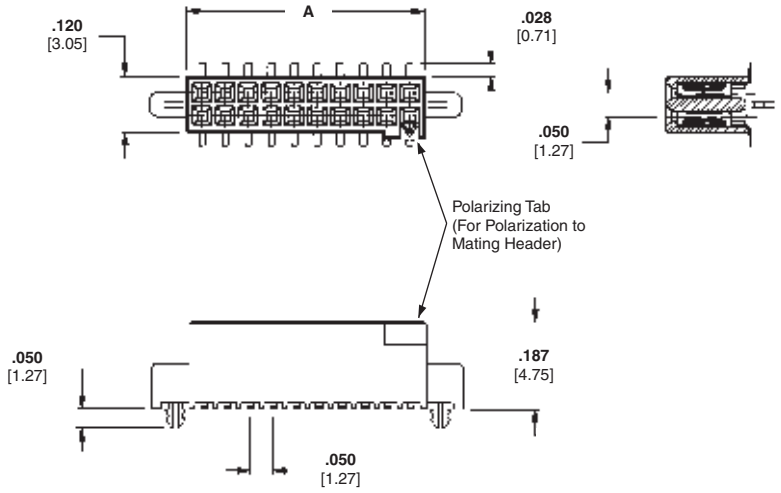
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Board-to-Board Vertical Receptacles, Double Row, .050 x .050 [1.27 x 1.27] Centerline





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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UK: 44-8706-080-208

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



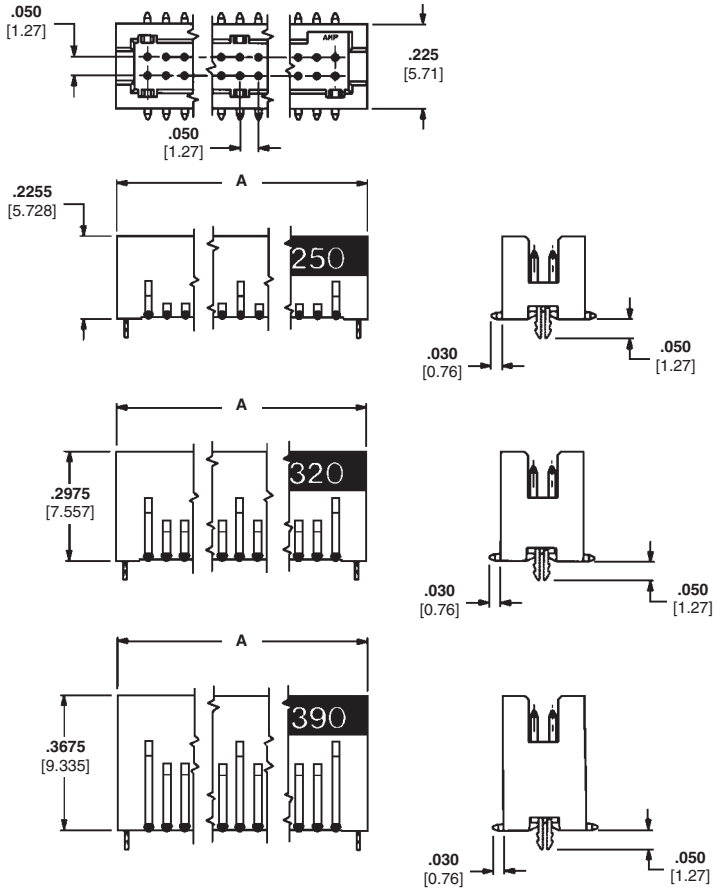
For .250 [6.35] Mated Height



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.

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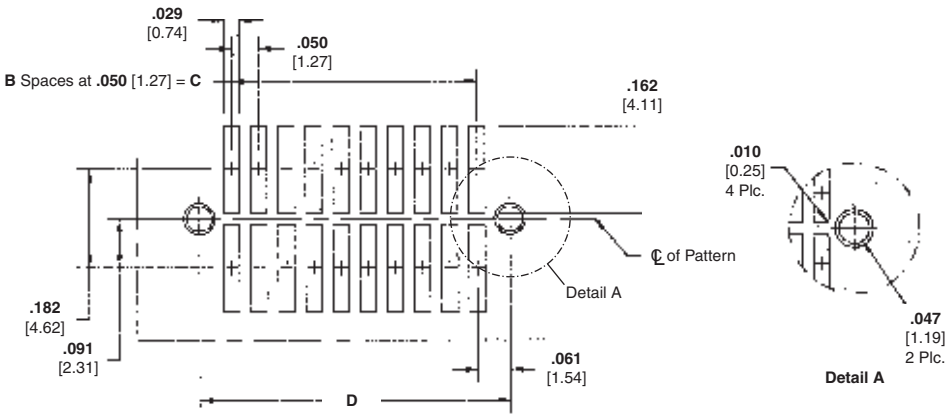
Dimensions are shown for reference purposes only. Specifications subject to change.

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

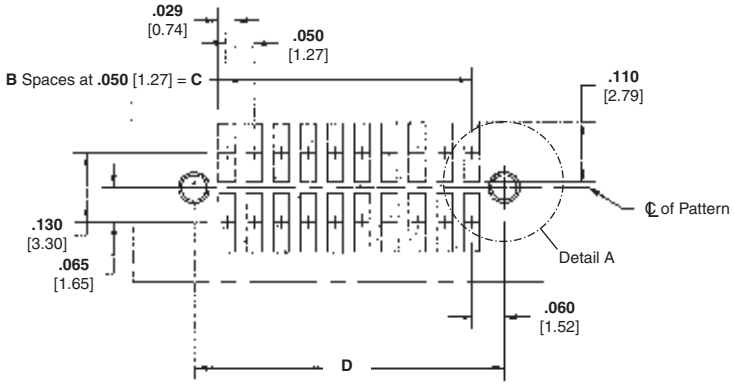
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

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 Tyco Electronics Customer Drawings for additional PC board layout information and dimensional tolerances.

Note: All part numbers are RoHS compliant.

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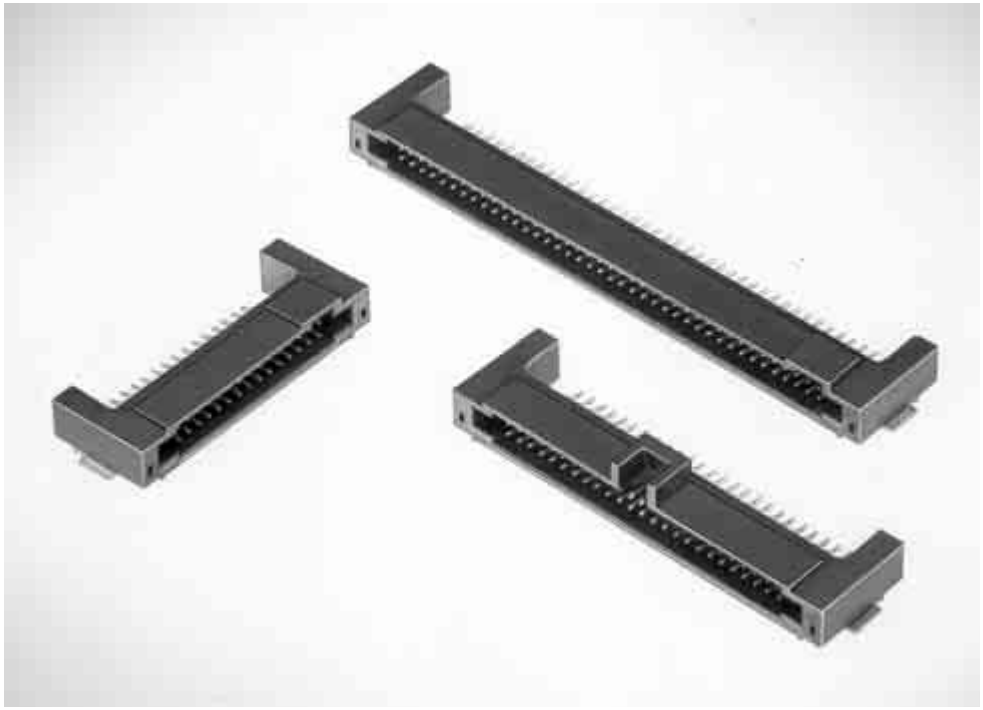
USA: 1-800-522-6752
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C. America: 52-55-1106-0803

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

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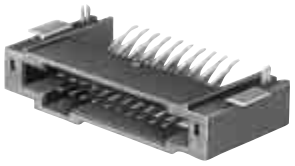
Dimensions are shown for reference purposes only. Specifications subject to change.

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Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

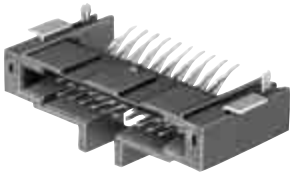
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

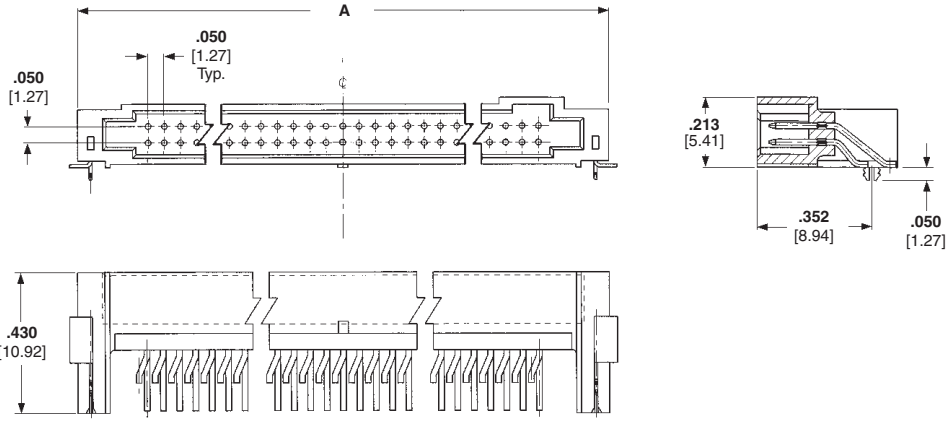
Board-to-Board Right-Angle Headers, Double Row, .050 x .050 [1.27 x 1.27] Centerline

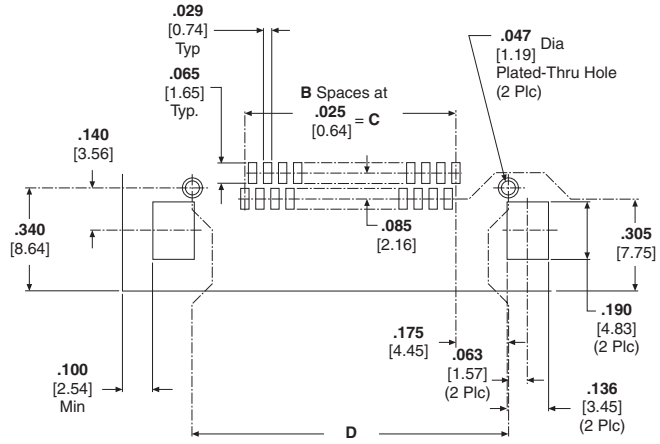
Non-Latching Header



Latching Header







Recommended PC Board Layout

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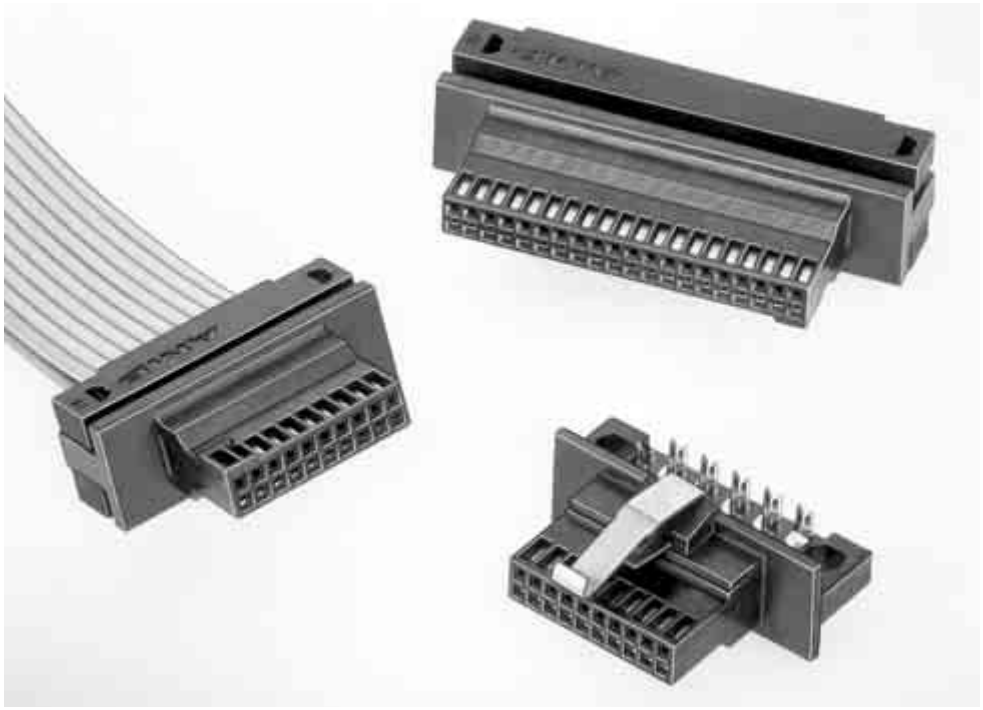
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

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

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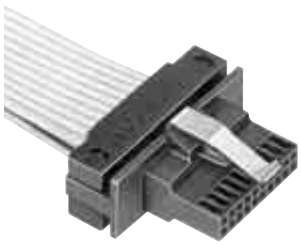
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

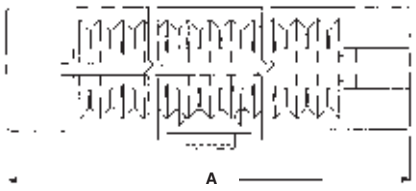
Dimensions are shown for reference purposes only. Specifications subject to change.

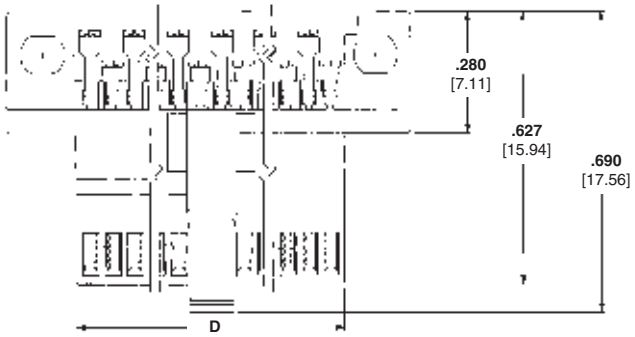
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

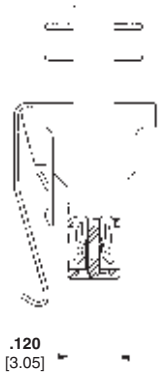
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

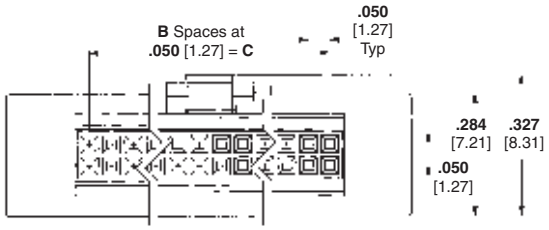
Cable-to-Board Receptacle Connectors, Double Row, .050 x .050 [1.27 x 1.27] Centerline











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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UK: 44-8706-080-208

Terminating Covers for Cable Connectors



Material

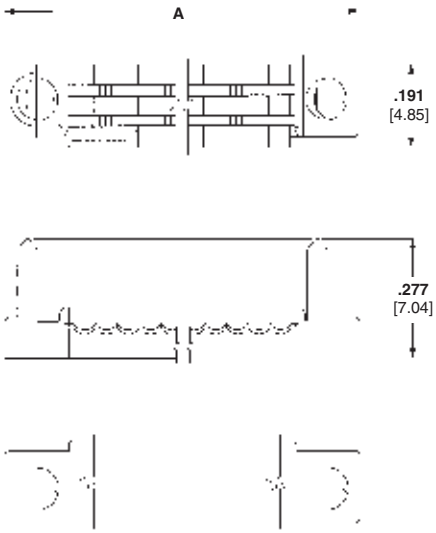
Glass-filled thermoplastic, black, 94V-0 rated

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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UK: 44-8706-080-208

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.

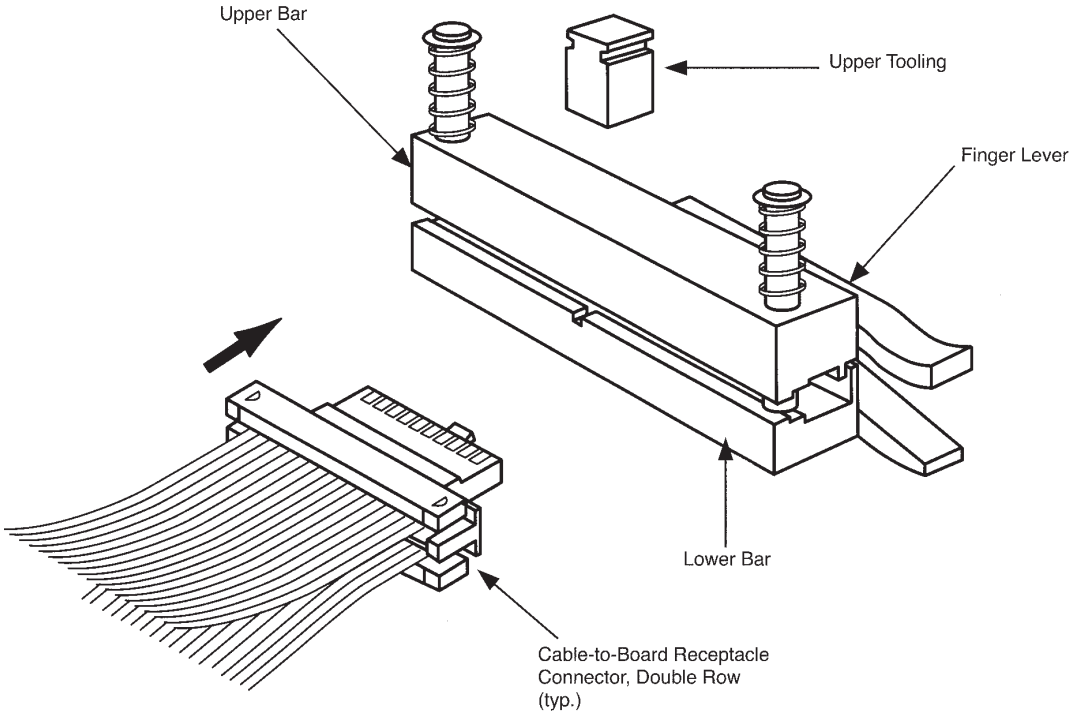
Prior to termination, the covers must be partially assembled onto a connector housing, the cable inserted between the covers and contacts and the covers preclosed by hand, clamping the cable in place.

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: 44-8706-080-208

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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