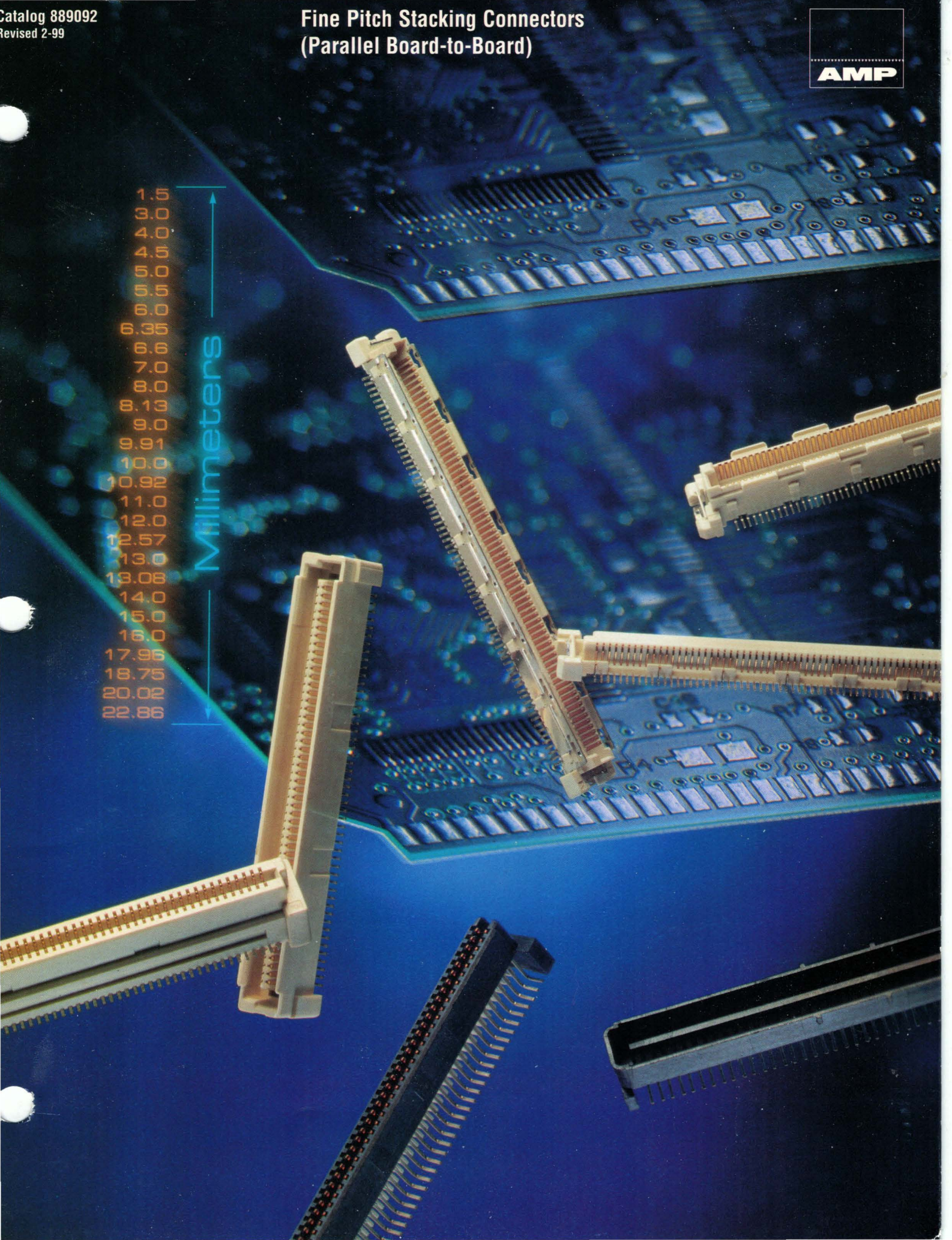


Fine Pitch Stacking Connectors (Parallel Board-to-Board)



- Millimeters
- 1.5
 - 3.0
 - 4.0
 - 4.5
 - 5.0
 - 5.5
 - 6.0
 - 6.35
 - 6.6
 - 7.0
 - 8.0
 - 8.13
 - 9.0
 - 9.91
 - 10.0
 - 10.92
 - 11.0
 - 12.0
 - 12.57
 - 13.0
 - 13.08
 - 14.0
 - 15.0
 - 16.0
 - 17.96
 - 18.75
 - 20.02
 - 22.86



Stacking Height Guide for Parallel Board-to-Board Applications

Stacking Height		Connector Description	Pitch	Catalog Pages Shown On
mm	inch			
1.50	.059	0.5mm Fine Stack Receptacles and Tabs	0.5	8, 9
3.00	.118	0.8mm Fine Stack Plugs and Caps	0.8	38-41
4.00	.157	0.6mm Free Height (FH) Receptacles and Plugs	0.6	15, 17-21
4.00	.157	0.8mm Fine Mate Receptacles and Tabs	0.8	42, 43
4.50	.177	0.5mm Fine Mate Receptacles and Tabs	0.5	10, 11
4.50	.177	0.8mm Fine Mate Receptacles and Tabs	0.8	42, 43
5.00	.197	0.6mm Free Height (FH) Receptacles and Plugs	0.6	15, 17-19
5.00	.197	0.8mm Free Height (FH) Plugs and Receptacles	0.8	46, 50
5.50	.217	0.5mm Fine Mate Receptacles and Tabs	0.5	10, 11
6.00	.236	0.5mm Fine Mate Receptacles and Tabs	0.5	10, 11
6.00	.236	0.6mm Free Height (FH) Receptacles and Plugs	0.6	15, 17-21
6.00	.236	0.8mm Free Height (FH) Plugs and Receptacles	0.8	47, 50
6.35	.250	AMPMODU 50/50 Grid Receptacles and Headers	1.27	62, 63
6.60	.260	MICTOR Plugs and Receptacles	0.64	29, 36
7.00	.276	0.6mm Free Height (FH) Receptacles and Plugs	0.6	15, 18, 19
7.00	.276	0.8mm Free Height (FH) Plugs and Receptacles	0.8	48, 50
8.00	.315	0.6mm Free Height (FH) Receptacles and Plugs	0.6	15, 17-21
8.00	.315	0.8mm Free Height (FH) Plugs and Receptacles	0.8	49, 50
8.00	.315	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
8.13	.320	AMPMODU 50/50 Grid Receptacles and Headers	1.27	62, 63
9.00	.354	0.8mm Free Height (FH) Plugs and Receptacles	0.8	46, 51
9.00	.354	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
9.91	.390	AMPMODU 50/50 Grid Receptacles and Headers	1.27	62, 63
10.00	.394	0.6mm Free Height (FH)	0.6	16-18, 20, 21
10.00	.394	0.8mm Free Height (FH) Plugs and Receptacles	0.8	47, 51
10.00	.394	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
10.92	.430	MICTOR Plugs and Receptacles	0.64	30, 36
11.00	.433	0.6mm Free Height (FH)	0.6	16, 18
11.00	.433	0.8mm Free Height (FH) Plugs and Receptacles	0.8	48, 51
11.00	.433	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
12.00	.472	0.6mm Free Height (FH) Receptacles and Plugs	0.6	16-18
12.00	.472	0.8mm Free Height (FH) Plugs and Receptacles	0.8	49, 51
12.00	.472	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
12.57	.495	MICTOR Plugs and Receptacles	0.64	31, 36
13.00	.512	0.8mm Free Height (FH) Plugs and Receptacles	0.8	46, 52
13.00	.512	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
13.08	.515	AMPMODU System 50 Headers and Receptacles	1.27	68, 69
14.00	.551	0.6mm Free Height (FH) Receptacles and Plugs	0.6	16-18, 20, 21
14.00	.551	0.8mm Free Height (FH) Plugs and Receptacles	0.8	47, 52
14.00	.551	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
15.00	.591	0.6mm Free Height (FH) Receptacles and Plugs	0.6	16, 18
15.00	.591	0.8mm Free Height (FH) Plugs and Receptacles	0.8	48, 52
15.00	.591	1.0mm FH (IEEE 1386) Receptacles and Plugs	1.0	56-59
16.00	.630	0.6mm Free Height (FH) Receptacles and Plugs	0.6	16-18
16.00	.630	0.8mm Free Height (FH) Plugs and Receptacles	0.8	49, 52
17.96	.707	MICTOR Plugs and Receptacles	0.64	32, 36
18.75	.738	MICTOR Plugs and Receptacles	0.64	33, 36
20.02	.788	MICTOR Plugs and Receptacles	0.64	34, 36
22.86	.900	MICTOR Plugs and Receptacles	0.64	35, 36

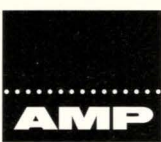


Photo 105883

0.5mm Fine Stack Connectors
(Pages 7 thru 9)

- 0.5 [.020] contact pitch
- 1.5 [.059] stacking height
- 20 to 80 positions



Photo 105884

0.5mm Fine Mate Connectors
(Pages 7, 10 and 11)

- 0.5 [.020] contact pitch
- 4.5 to 6.0 [.177 to .236] stacking heights
- 16 to 100 positions



Photo 105885

0.6mm Free Height (FH) Connectors
(Pages 12 thru 26)

- 0.6 [.024] contact pitch
- 4.0 to 16 [.157 to .630] stacking heights
- 50 to 280 positions
- Grounded (GIGA) versions



Photo 105886

MICTOR Connectors
(Pages 27 thru 36)

- 0.64 [.025] contact pitch
- 6.6 to 22.86 [.260 to .900] stacking heights
- 38 to 266 positions
- Matched impedance



Photo 105887

0.8mm Fine Stack Connectors
(Pages 37 thru 41)

- 0.8 [.031] contact pitch
- 3.0 [.118] stacking height
- 14 to 50 positions

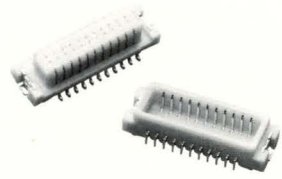


Photo 105888

0.8mm Fine Mate Connectors
(Pages 37, 42 and 43)

- 0.8 [.031] contact pitch
- 4.0 and 4.5 [.157 to .177] stacking heights
- 10 to 60 positions



Photo 105889

0.8mm Free Height (FH) Connectors
(Pages 44 thru 52)

- 0.8 [.031] contact pitch
- 5.0 to 16 [.197 to .630] stacking heights
- 40 to 200 positions



Photo 105890

1.0mm FH (IEEE 1386) Connectors
(Pages 54 thru 59)

- 1.0 [.039] contact pitch
- 8.0 to 15 [.315 to .591] stacking heights
- 64 and 84 positions

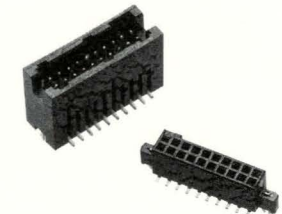


Photo 105891

AMPMODU 50/50 Grid Connectors
(Pages 60 thru 64)

- 1.27 [.050] contact pitch
- 6.35 [.250], 8.13 [.320] and 9.91 [.390] stacking heights
- 10 to 100 positions

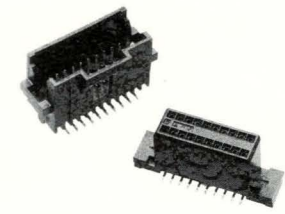


Photo 105892

AMPMODU System 50 Connectors
(Pages 66 thru 69)

- 1.27 [.050] contact pitch
- 13.08 [.515] stacking height
- 10 to 100 positions

Note: A complete stacking height guide for parallel board-to-board applications of all fine pitch connectors presented in this catalog is shown on foldout pages 3 and 4.

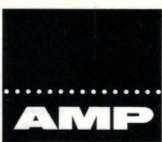


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Introduction

AMP is the leading global supplier of solutions to interconnect high density, parallel printed circuit boards using fine pitch SMT stacking connectors. This catalog includes products available world-wide to connect parallel printed circuit boards using SMT connectors with contact spacings of 1.27 [.050] or less.

This catalog serves as a guide to assist in the selection of high density connectors which fit variable heights between printed circuit boards. A guide for board-to-board stacking heights is provided on fold-out pages 3 and 4 to assist in the connector selection process.

All fine pitch SMT connectors referenced are ideally suited for applications requiring miniaturization

such as telecommunications and networking equipment, desktop and notebook personal computers, personal digital assistants, cellular phones, pagers, camcorders and other consumer electronics.

All connectors presented in this catalog are designed with precise tolerances and features to meet the requirements of modern, automated SMT printed circuit board assembly operations that rely on machine placement and reflow soldering.

These connectors are available with surface areas to accommodate "pick and place" vacuum nozzles. Some products require an optional secondary cover, while others have the surface area integral to the housing. Housings are in

configurations and made of materials to withstand the high temperatures required for solder reflow.

Many of the connectors are available in EIA standard "tape and reel" packaging, or in trays for high volume production.

These connectors are designed to continue to provide high performance and reliable service after processing. And, as with all AMP products, they are supported by a wealth of services unmatched by any other supplier.

For more information about these and other products, as well as the many services AMP can provide, consult your local sales engineer or call our Product Information Center at 1-800-522-6752.

Need more information?

Call the AMP Product Information Center:
1-800 522-6752.

The Product Information Center is staffed with specialists well versed in all AMP products. The Center can provide you with:

- Technical Support
- Catalogs
- Technical Documents
- Product Samples
- AMP Authorized Distributor Locations
- AMP FAX service 24 hours a day

Dimensioning:

Dimensions are in millimeters and inches unless specified otherwise. Values in brackets are equivalent U.S. customary units.

Metric symbols used are:
mm (millimeter)
C (Celsius)
N (newton)

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Produced under a Quality Management System certified to ISO 9001



A copy of the certificate is available upon request.

0.5mm Fine Stack and Fine Mate Connectors

Photo 105878

Product Facts

- Ultra fine, 0.5 [.020] pitch SMT connectors for board-to-board interconnections
- Low profile parallel board stacking heights as low as 1.5 [.059]
- Horizontal versions available for right-angle board-to-board applications
- Surface areas provided to accommodate vacuum nozzles
- Available packaged in tape and reel for automatic placement per EIAJ standards
- Offered with tin or gold plating on mating surfaces
- Solder pegs are included for anti-peeling



Note: Fine Stack connectors are shown at the bottom; Fine Mate connectors are shown on top.

The AMP 0.5mm Fine Stack and Fine Mate product lines are economical, surface-mount, ultra-fine pitch board-to-board connectors. Both product lines have been developed to meet the latest needs of the electronic industry for high density packaging.

These connectors offer a 0.5 [.020] contact pitch and parallel board stacking heights as low as 1.5 [.059] for Fine Stack connectors and ranging from 4.5 [.177] to 6.0 [.236] for Fine Mate connectors. They are ideally suited for applications requiring miniaturization, such as cellular phones, pagers, notebook computers, camcorders and other consumer electronics.

Both Fine Stack and Fine Mate connectors were designed for economical, automatic placement onto SMT printed circuit boards. The tab and receptacle designs include surface areas to accommodate "pick and place" vacuum nozzles without secondary covers. All products are "tape and reel" packaged, conforming to EIAJ standards.

0.5mm Fine Stack Receptacles, 0.5 [.020] Pitch

1.5 [.059] Stacking Height

Material and Finish:

Housing — 6T nylon, high heat resistant resin

Contacts — Phosphor bronze, plated AMP-DURAGOLD with entire contact underplated nickel

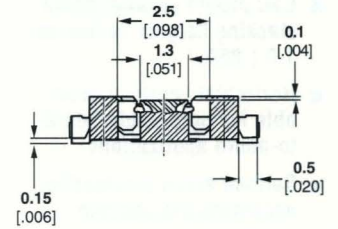
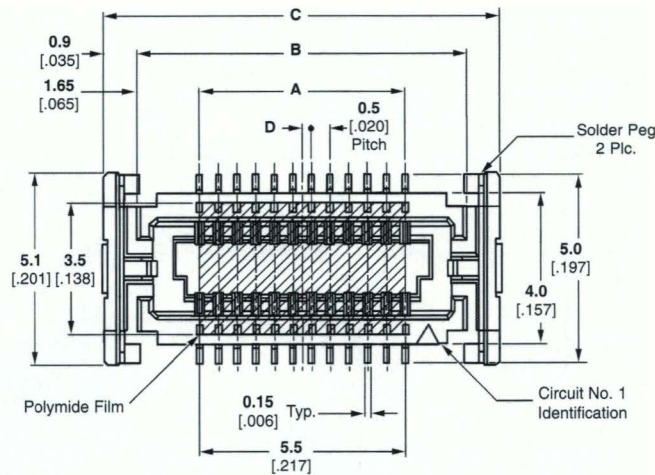
Solder Pegs — Copper alloy, plated tin-lead

Related Product Data:

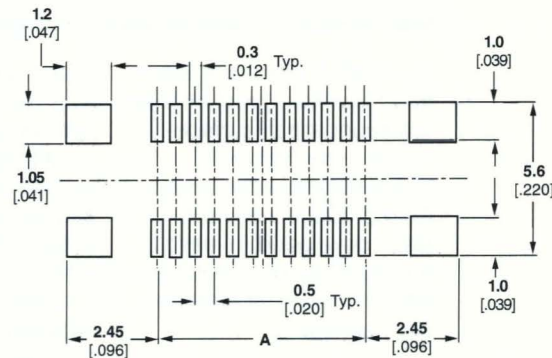
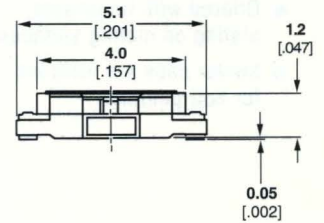
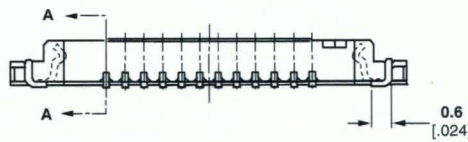
Mating Tabs — page 9

Technical Documents (Page 70):

AMP Product Specification
108-5546

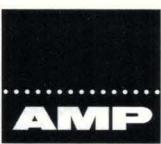


Section A - A



Recommended PC Board Layout
(PC Board Thickness = 0.6 [.024] Min.)

No. of Positions	Dimensions				Keyed	Receptacle Part Numbers
	A	B	C	D		
20	4.5 .177	7.8 .307	9.6 .378	0.25 .010	Yes	2-353512-0
30	7.0 .276	10.3 .406	12.1 .476	0.0	Yes	3-353512-0
40	9.5 .374	12.8 .504	14.6 .575	0.25 .010	Yes	4-353512-0
50	12.0 .472	15.3 .602	17.1 .673	0.0	No	5-3535159-0
60	14.5 .571	17.8 .701	19.6 .772	0.25 .010	No	6-3535159-0
70	17.0 .669	20.3 .799	22.1 .870	0.0	No	7-3535159-0
80	19.5 .768	22.8 .898	24.6 .969	0.25 .010	No	8-3535159-0



0.5mm Fine Stack Tabs, 0.5 [.020] Pitch

1.5 [.059] Stacking Height

Material and Finish:

Housing — 6T nylon, high heat resistant resin

Contacts — Phosphor bronze, plated AMP-DURAGOLD with entire contact underplated nickel

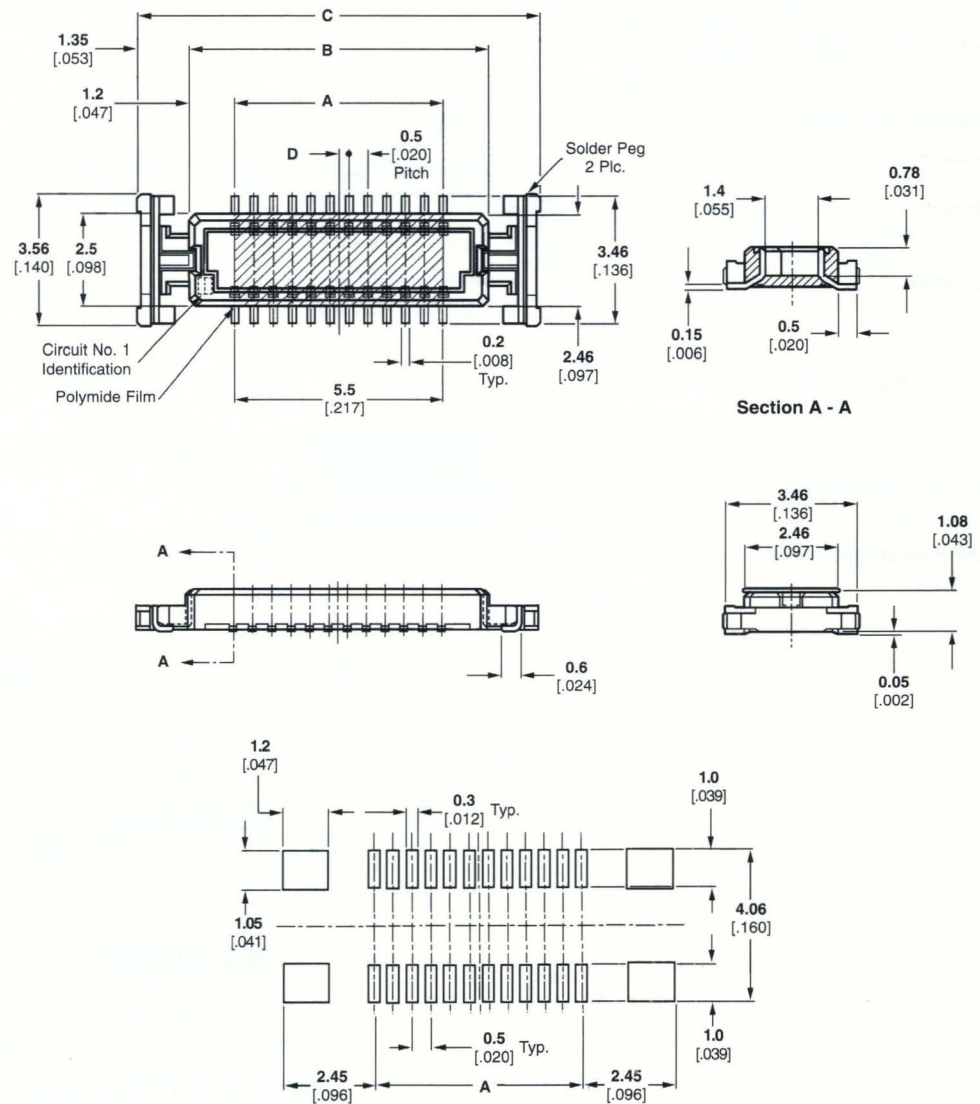
Solder Pegs — Copper alloy, plated tin-lead

Related Product Data:

Mating Receptacles — page 8

Technical Documents (Page 70):

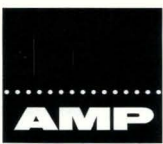
AMP Product Specification
108-5546



Recommended PC Board Layout
(PC Board Thickness = 0.6 [.024] Min.)

No. of Positions	Dimensions				Stacking Height	Keyed	Tab Part Numbers
	A	B	C	D			
20	4.5 .177	6.9 .272	9.6 .378	0.25 .010	1.5 .059	Yes	2-353515-0
30	7.0 .276	9.4 .370	12.1 .476	0.0	1.5 .059	Yes	3-353515-0
40	9.5 .374	11.9 .469	14.6 .575	0.25 .010	1.5 .059	Yes	4-353515-0
50	12.0 .472	14.4 .567	17.1 .673	0.25 0.01	1.5 .059	No	5-353164-0
60	14.5 .571	16.9 .665	19.6 .772	0.25 .010	1.5 .059	No	6-353164-0
70	17.0 .669	19.4 .764	22.1 .870	0.0	1.5 .059	No	7-353164-0
80	19.5 .768	21.9 .862	24.6 .969	0.25 .010	1.5 .059	No	8-353164-0

0.5mm Fine Stack/Fine Mate Connectors



0.5mm Fine Mate Receptacles, 0.5 [.020] Pitch

4.5 [.177], 5.5 [.217] and
6.0 [.236] Stacking Heights

Material and Finish:

Housing — 6T nylon, high heat resistant resin

Contacts — Phosphor bronze, plated AMP-DURAGOLD or tin-lead (see chart) with entire contact underplated nickel

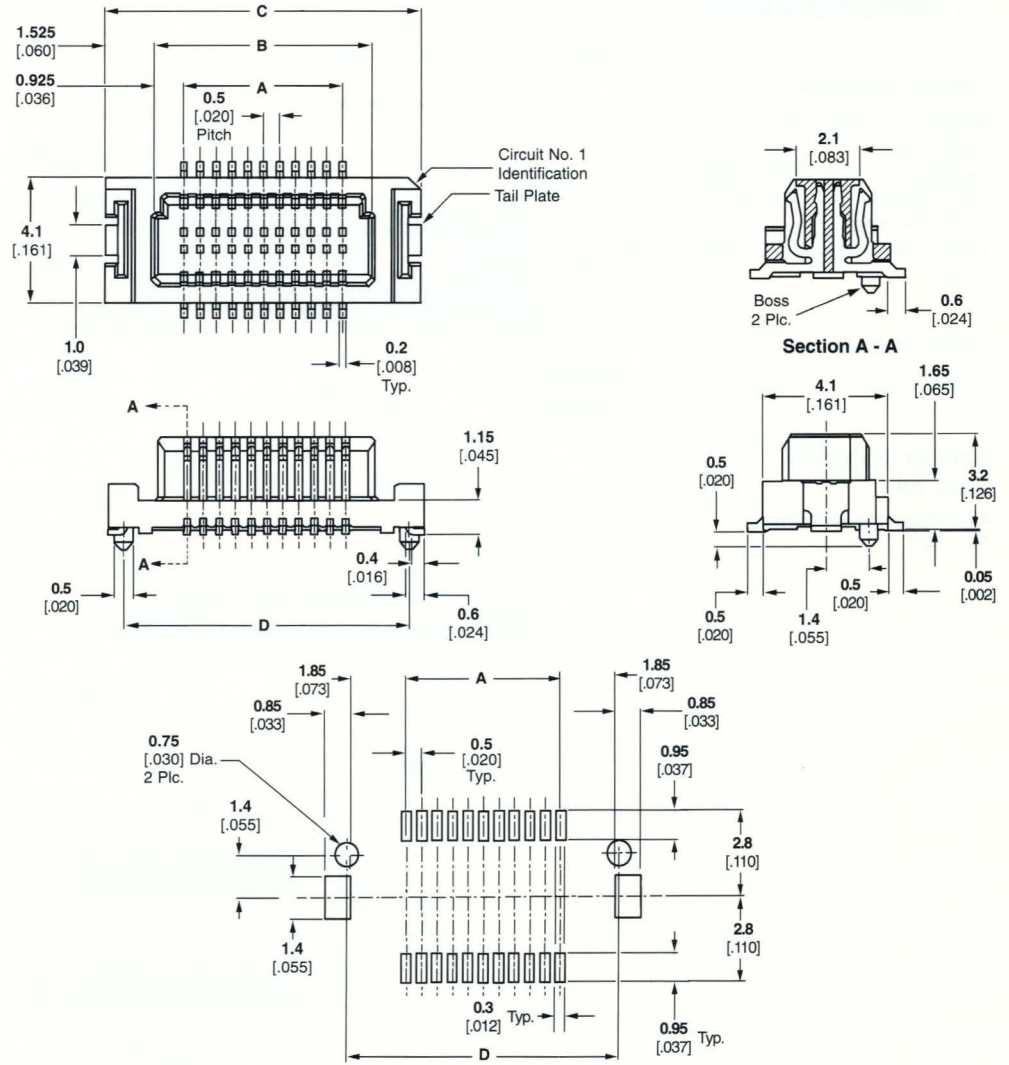
Tail Plate — Copper alloy, plated tin-lead

Related Product Data:

Mating Tabs — page 11

**Technical Documents
(Page 70):**

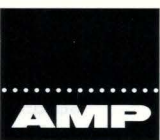
AMP Product Specification
108-5425



**Recommended PC Board Layout
(PC Board Thickness = 0.6 [.024] Min.)**

No. of Positions	Dimensions				Keyed	With Boss	Receptacle Part Numbers	
	A	B	C	D			Tin Plated Contacts	Gold plated Contacts
16	3.5 .138	5.35 .211	8.4 .331	—	Yes	No	—	1-917949-6
20	4.5 .177	5.75 .226	8.8 .346	—	No	No	—	2-316289-0
50	12.0 .472	13.25 .522	16.3 .642	—	No	No	5-179654-0	5-316289-0
60	14.5 .571	15.75 .620	18.8 .740	—	No	No	—	6-316289-0
70	17.0 .669	18.25 .719	21.3 .826	—	No	No	—	7-316289-0
	17.0 .669	18.25 .719	21.9 .862	20.95 .825	Yes	Yes	7-917272-0	7-316592-0
80	19.5 .768	21.35 .841	24.4 .961	23.45 .923	Yes	Yes	—	8-316592-0
	19.5 .768	21.35 .841	24.4 .961	—	Yes	No	8-917228-0	—
100	24.5 .965	25.75 1.014	28.8 1.134	—	No	No	—	917734-1

0.5mm Fine Stack/Fine Mate Connectors



0.5mm Fine Mate Tabs, 0.5 [.020] Pitch

4.5 [.177], 5.5 [.217] and
6.0 [.236] Stacking Heights

Material and Finish:

Housing — 6T nylon, high heat resistant resin

Contacts — Phosphor bronze, plated AMP-DURAGOLD or tin-lead (see chart) with entire contact underplated nickel

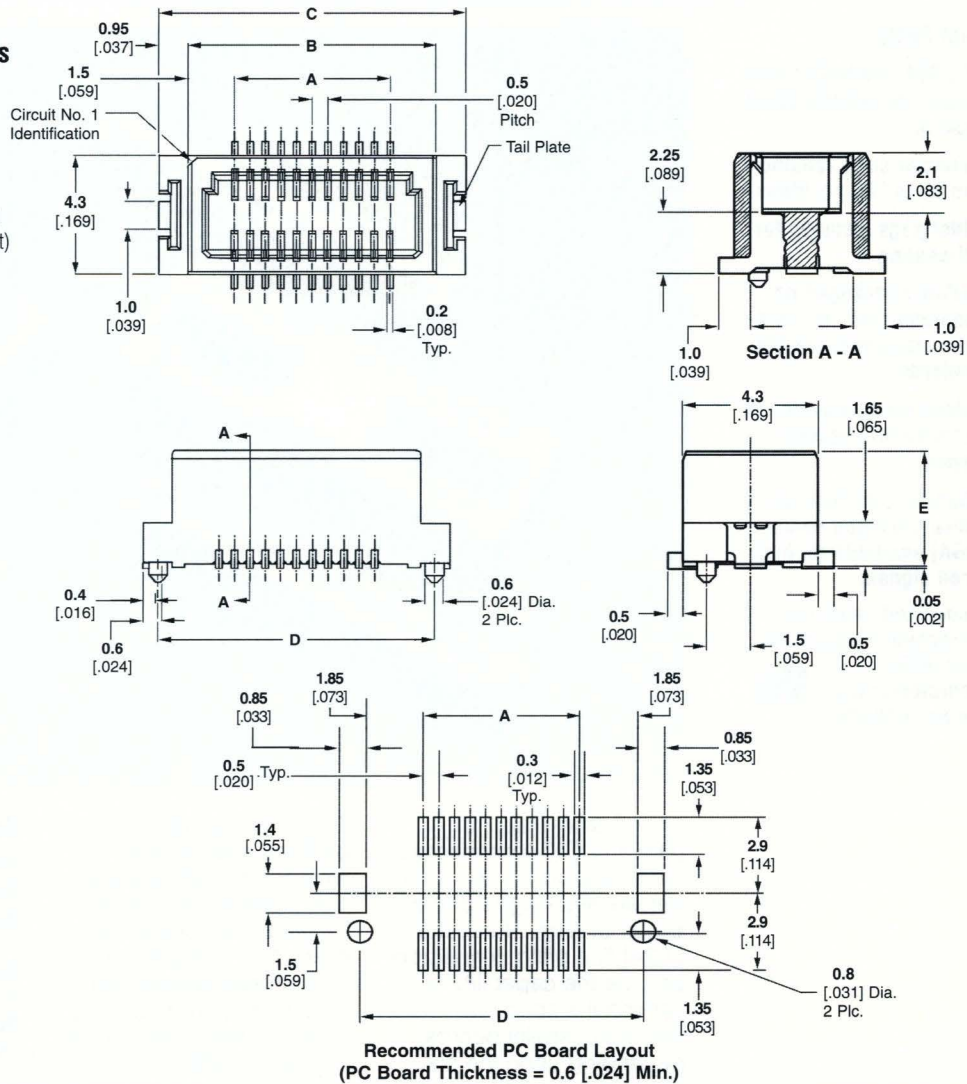
Tail Plate — Copper alloy, plated tin-lead

Related Product Data:

Mating Receptacles — page 10

Technical Documents (Page 70):

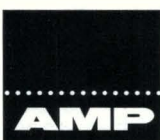
AMP Product Specification
108-5425



0.5mm Fine Stack/Fine Mate Connectors

No. of Positions	Dimensions					Stacking Height	Keyed	With Boss	Tab Part Numbers	
	A	B	C	D	E				Tin Plated Contacts	Gold Plated Contacts
16	3.5 .138	6.5 .256	8.4 .331	—	3.3 .130	4.5 .177	Yes	No	—	1-917814-6
20	4.5 .177	6.9 .272	8.8 .346	—	3.3 .130	4.5 .177	No	No	—	2-316117-0
50	12.0 .472	14.4 .567	16.3 .642	—	4.8 .189	6.0 .236	No	No	—	5-316365-0
60	14.5 .571	16.9 .665	18.8 .740	—	3.3 .130	4.5 .177	No	No	—	6-316117-0
	14.5 .571	16.9 .665	18.8 .740	—	4.3 .169	5.5 .217	No	No	—	6-316530-0
70	17.0 .669	20.0 .787	21.9 .862	20.95 .825	4.8 .189	6.0 .236	Yes	Yes	7-316366-0	7-316611-0
80	19.5 .768	22.5 .886	24.4 .961	—	4.3 .169	5.5 .217	No	No	8-917271-0	—
	19.5 .768	22.5 .886	24.4 .961	23.45 .923	4.3 .169	5.5 .217	Yes	Yes	—	8-316614-0
100	24.5 .965	26.9 1.059	28.8 1.134	—	3.3 .130	4.5 .177	No	No	—	917735-1


Note: Right-angle (horizontal) tabs and other tab sizes are available, consult AMP.

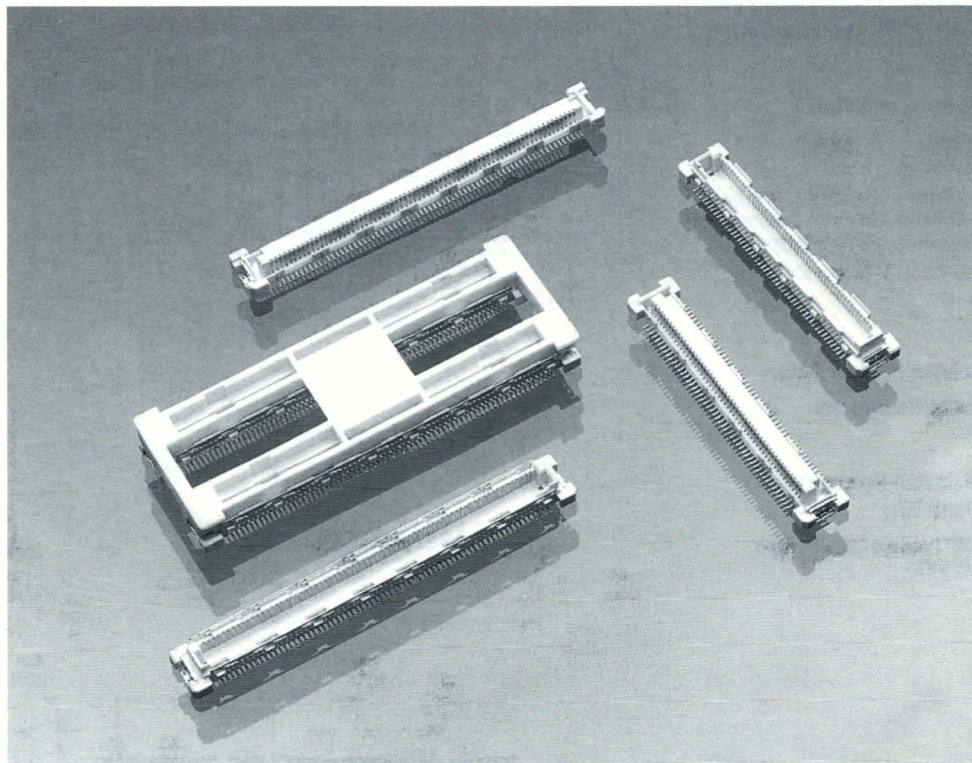


0.6mm Free Height (FH) and GIGA Connectors

Photo 105879

Product Facts

- 0.6 [.024] pitch SMT connectors for parallel board stacking
- Connector sizes ranging from 50 to 280 positions
- Solder pegs included for anti-peeling
- Available packaged on "tape-and-reel" for automatic placement per EIA standards
- Surface areas provided to accommodate vacuum nozzles
- Enhanced electrical performance grounded version (GIGA) available for high speed signals
- Recognized under the Component Program of Underwriter Laboratories Inc.,  File No. E28476



AMP 0.6mm Free Height (FH) and GIGA connectors are designed for use in the parallel stacking of printed-circuit boards. These 0.6 [.024] fine pitch connectors provide the capability of varying the spacing between parallel boards, depending upon the components to be packaged or equipment designs. They are best suited for applications where miniaturization is essential, such as notebook PCs, sub-notebook PCs, pen pads, cellular phones and communication equipment.

This connector family consists of vertical board-mount receptacles and plug assemblies. By using various combinations of plug and receptacle heights, it is possible to alter the spacing of parallel boards between 4 [.157] and 16 [.630].

The enhanced electrical performance version (GIGA) includes receptacles loaded with contacts for grounding circuits at every 9 or 10 signal circuits. These ground contacts mate with grounding plates on both sides of the plug assemblies.

0.6mm FH and GIGA connectors are packaged in trays or on "tape-and-reel" for high volume production. Each connector half features surface areas to accommodate "pick-and-place" vacuum nozzles without secondary covers. Some connector sizes are available packaged in a unique "bridge" to facilitate the aligning of dual connectors on PC boards during placement and SMT processing.

Performance Characteristics

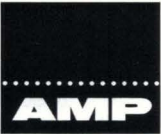
Voltage Rating: 50 VAC

Current Rating: 0.5 ampere

Overall Resistance:
less than 30 milliohms

Dielectric Withstanding Voltage:
0.2 kVAC

Operating Temperature:
-40°C to +85°C



0.6mm Free Height (FH) and GIGA Connectors (Continued)

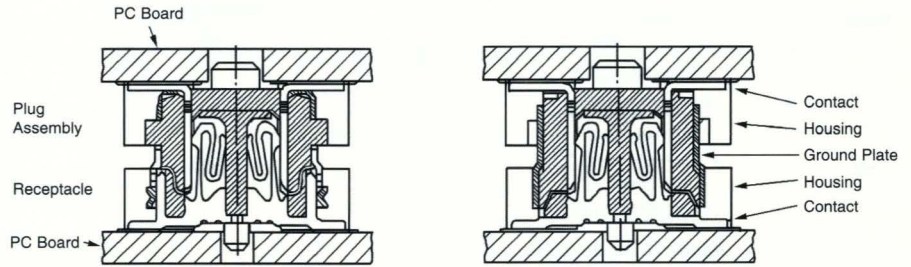
Board-to-Board Stacking Height Selection Guide (By Receptacle/Plug Combinations)

Plugs	Receptacles		
	4H	8H	12H
4H	<p>Pages 15, 19</p> <p>Pages 17, 18, 20 & 21</p>	N/A	<p>Page 16</p> <p>Pages 17, 18, 20 & 21</p>
5H	<p>Page 15</p> <p>Pages 17, 18</p>	N/A	N/A
6H	<p>Pages 15, 19</p> <p>Pages 17, 18, 20 & 21</p>	<p>Page 16</p> <p>Page 18</p>	<p>Page 16</p> <p>Pages 17, 18, 20 & 21</p>
7H	<p>Page 15</p> <p>Page 18</p>	<p>Page 16</p> <p>Page 18</p>	<p>Page 16</p> <p>Page 18</p>
8H	<p>Pages 15, 19</p> <p>Pages 17, 18, 20 & 21</p>	N/A	<p>Page 16</p> <p>Pages 17, 18, 20 & 21</p>

0.6mm FH and GIGA Connectors

0.6mm Free Height (FH) and GIGA Connectors (Continued)

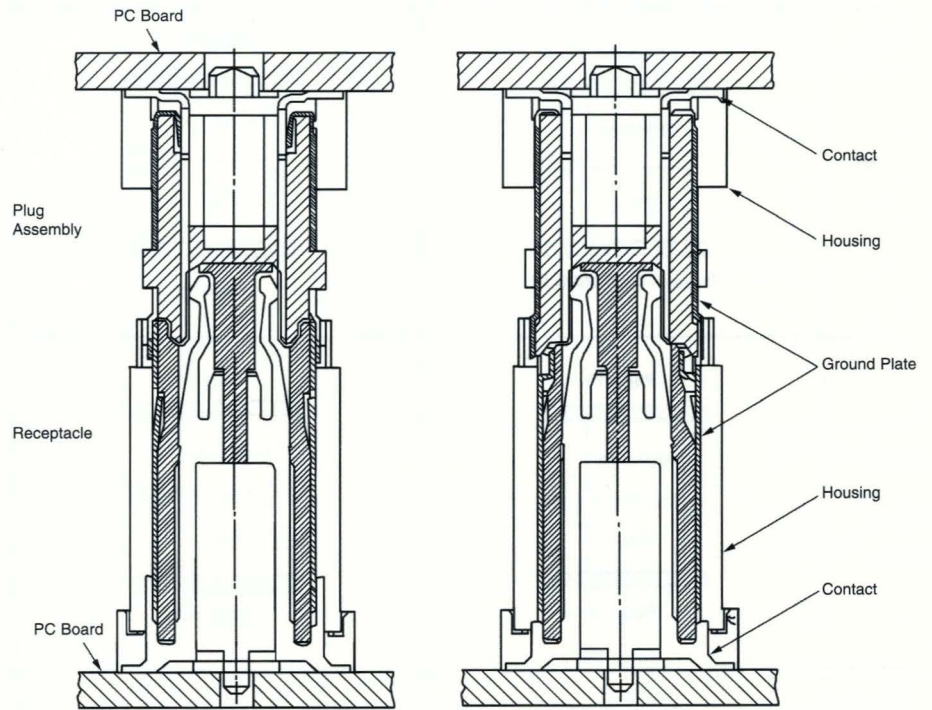
**Plug/Receptacle Mating
Cross-Sections**



Cross-Section of Grounding Position

Cross-Section of Signal Position

Typical Example of 4H Receptacle with Common Ground Contacts and 4H GIGA Plug with Ground Plates

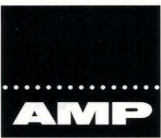


Cross-Section of Grounding Position

Cross-Section of Signal Position

Typical Example of 8H and 12H Receptacle and Plug;
both with Ground Plates

0.6mm FH and GIGA
Connectors



0.6mm Free Height Receptacles, 0.6 [.024] Pitch

4H (4mm) Stacking Height

Note: All receptacles include common ground contacts that mate with standard plug assemblies or GIGA plug assemblies with ground plates.

Material and Finish:

Housing — High temperature thermoplastic, 94V-0 rated

Signal Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00005 [.000002] min. gold on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Ground Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

Performance Characteristics — page 12

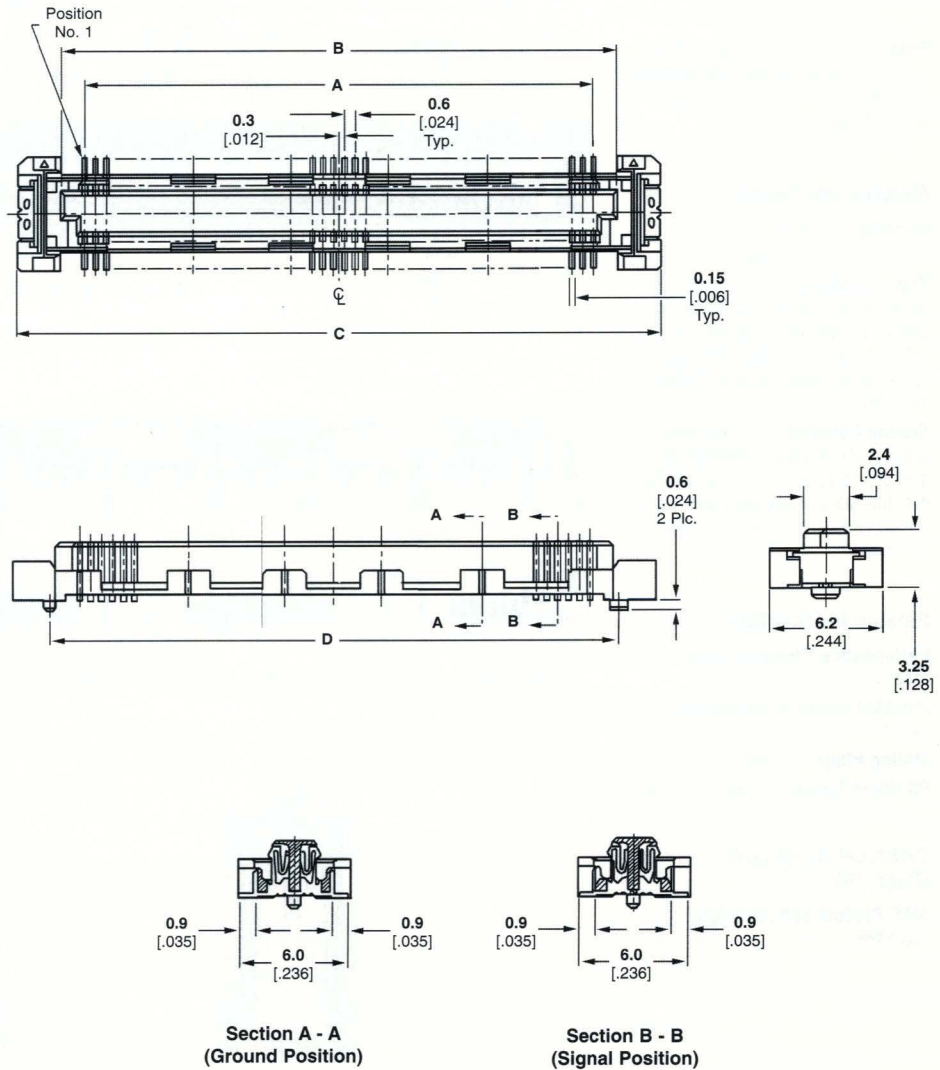
Stacking Height Combinations — page 13

Mating Plugs — pages 17, 18, 20 & 21

PC Board Layout — pages 22 & 23

Technical Documents (Page 70):

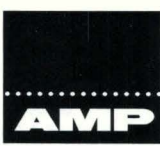
AMP Product Specification
108-5468



0.6mm FH and GIGA Connectors

Stacking Height	No. of Positions	Dimensions				Part Numbers	
		A	B	C	D	Tray Packaged	Tape Packaged
4H	50	14.4 .567	17.0 .669	21.7 .854	17.6 .693	316077-3	353190-3
	70	20.4 .803	23.0 .906	27.7 1.091	23.6 .929	—	5-353190-5
	80	23.4 .921	26.0 1.024	30.7 2.087	26.6 1.047	316560-6	353190-6
	100	29.4 1.158	32.0 1.260	36.7 1.445	32.6 1.284	—	353190-8
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	1-316077-0	1-353190-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	1-316560-1	—

Note: Free Height (FH) receptacles for 8H (8mm) and 12H (12mm) stacking height are shown on page 16.



0.6mm Free Height Receptacles, 0.6 [.024] Pitch (Continued)

8H (8mm) and 12H (12mm) Stacking Height

Note: All receptacles include common ground contacts that mate with standard plug assemblies or GIGA plug assemblies with ground plates.

Material and Finish:

Housing — High temperature thermoplastic, 94V-0 rated

Signal Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00005 [.000002] min. gold on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Ground Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

Performance Characteristics — page 12

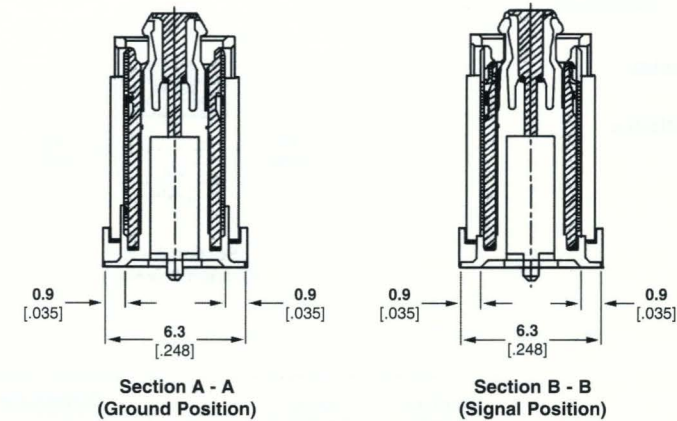
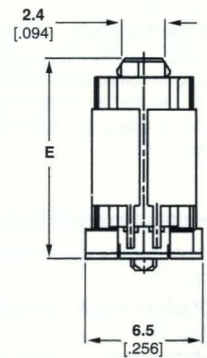
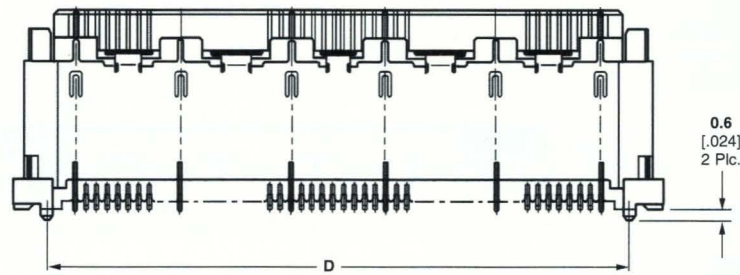
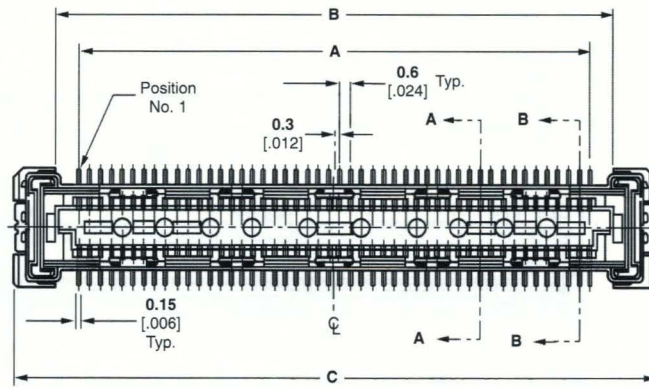
Stacking Height Combinations — page 13

Mating Plugs — pages 17 & 18

PC Board Layout — pages 22 & 23

Technical Documents (Page 70):

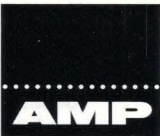
AMP Product Specification
108-5468



Stacking Height	No. of Positions	Dimensions					Part Numbers (Tray Packaged)
		A	B	C	D	E	
8H	80	23.4 .921	26.0 1.024	30.7 2.087	26.6 1.047	7.25 .285	316317-6
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	11.25 .443	1-316318-0
12H	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	11.25 .443	1-316318-1

Note: Free Height (FH) receptacles for 4H (4mm) stacking height are shown on page 15.

0.6mm FH and GIGA Connectors



0.6mm Free Height Standard Plugs, 0.6 [.024] Pitch

**4H (4mm), 5H (5mm)
6H (6mm) and 8H (8mm)
Stacking Heights**

Material and Finish:

Housing — High temperature thermoplastic, 94V-0 rated

Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

Performance Characteristics — page 12

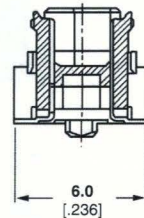
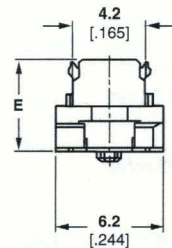
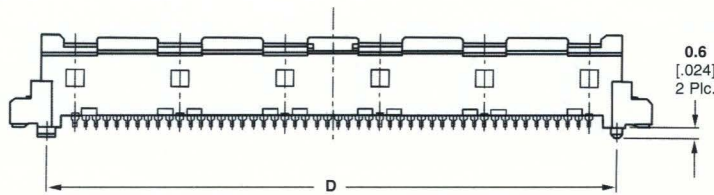
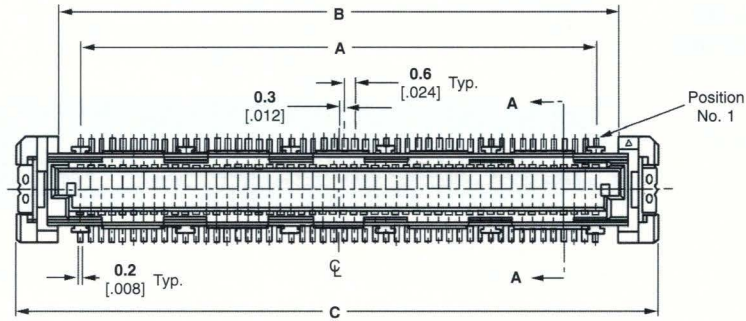
Stacking Height Combinations — page 13

Mating Receptacles — pages 15, 16 & 19

PC Board Layout — pages 24 & 25

**Technical Documents
(Page 70):**

AMP Product Specification
108-5468



Section A - A

Stacking Height	No. of Positions	Dimensions					Part Numbers	
		A	B	C	D	E	Tray Packaged	Tape Packaged
4H	50	14.4 .567	17.0 .669	21.7 .854	17.6 .693	3.45 .136	316135-3	353183-3
	70	20.4 .803	23.0 .906	27.7 1.091	23.6 .929	3.45 .136	316135-5	—
	100	29.4 1.158	32.0 1.260	36.7 1.445	32.6 1.284	3.45 .136	—	353183-8
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	3.45 .136	1-316135-0	1-353183-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	3.45 .136	1-316135-1	—
5H	50	14.4 .567	17.0 .669	21.7 .854	17.6 .693	4.45 .175	—	5-353692-3
	100	29.4 1.158	32.0 1.260	36.7 1.445	32.6 1.284	5.45 .215	—	353185-8
6H	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	5.45 .215	—	1-353185-0
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	7.45 .293	—	1-353187-0
8H	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	7.45 .293	—	1-353187-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	7.45 .293	—	1-353187-1

0.6mm FH and GIGA Connectors

0.6mm Free Height GIGA Plugs, 0.6 [.024] Pitch

4H (4mm), 5H (5mm),
6H (6mm), 7H (7mm) and
8H (8mm) Stacking Heights

Note: All GIGA plugs include ground plates that mate with receptacles with common ground contacts..

Material and Finish:

Housing — High temperature thermoplastic, 94V-0 rated

Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Ground Plates — Phosphor bronze, plated 0.00300-0.00500 [.000120-.000200] tin-lead over 0.00050 [.000020] copper

Related Product Data:

Performance Characteristics — page 12

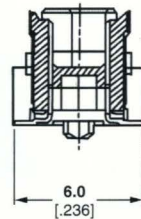
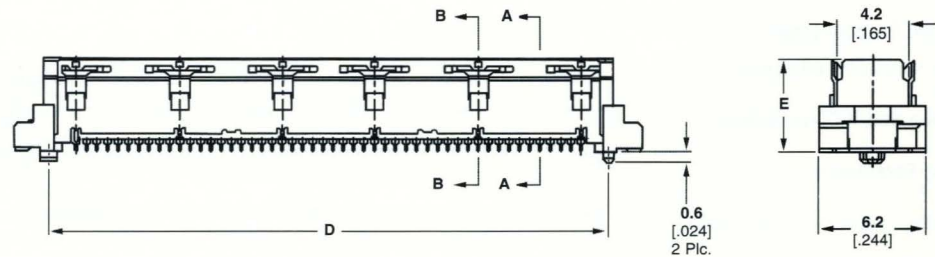
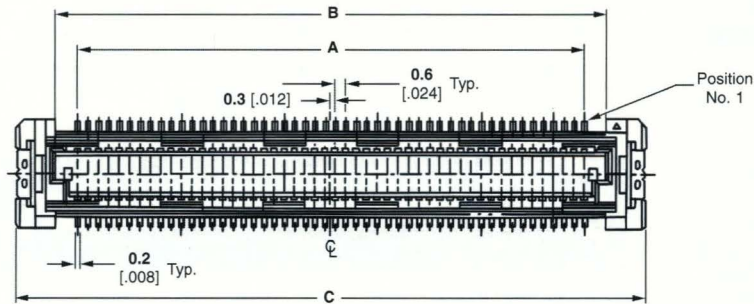
Stacking Height Combinations — page 13

Mating Receptacles — pages 15, 16 & 19

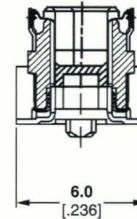
PC Board Layout — pages 25 & 26

Technical Documents (Page 70):

AMP Product Specification
108-5468

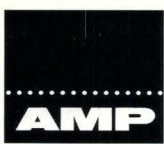


Section A - A
(Signal Position)



Section B - B
(Ground Position)

Stacking Height	No. of Positions	Dimensions					Part Numbers	
		A	B	C	D	E	Tray Packaged	Tape Packaged
4H	50	14.4 .567	17.0 .669	21.7 .854	17.6 .693	3.45 .136	316076-3	—
	70	20.4 .803	23.0 .906	27.7 1.091	23.6 .929	3.45 .136	—	5-353184-5
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	3.45 .136	1-316076-0	1-353184-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	3.45 .136	1-316559-1	—
5H	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	4.45 .175	1-353471-1	—
6H	80	23.4 .921	26.0 1.024	30.7 1.209	26.6 1.047	5.45 .215	—	353186-6
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	5.45 .215	—	1-353186-0
7H	80	23.4 .921	26.0 1.024	30.7 1.209	26.6 1.047	6.45 .254	—	353831-6
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	6.45 .254	—	1-353831-0
8H	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	7.45 .293	—	1-353188-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	7.45 .293	1-316562-1	1-353188-1



0.6mm Free Height Bridge Receptacle, 0.6 [.024] Pitch

4H (4mm) Double Row Stacking Height

Part Number: 1-353206-0
(280-Position)

Note: Receptacle includes common ground contacts that mate with standard plug assemblies or GIGA plug assemblies with ground plates.

Material and Finish:

Housing — High temperature thermoplastic, 94V-0 rated

Signal Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00005 [.000002] min. gold on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Ground Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

Performance Characteristics — page 12

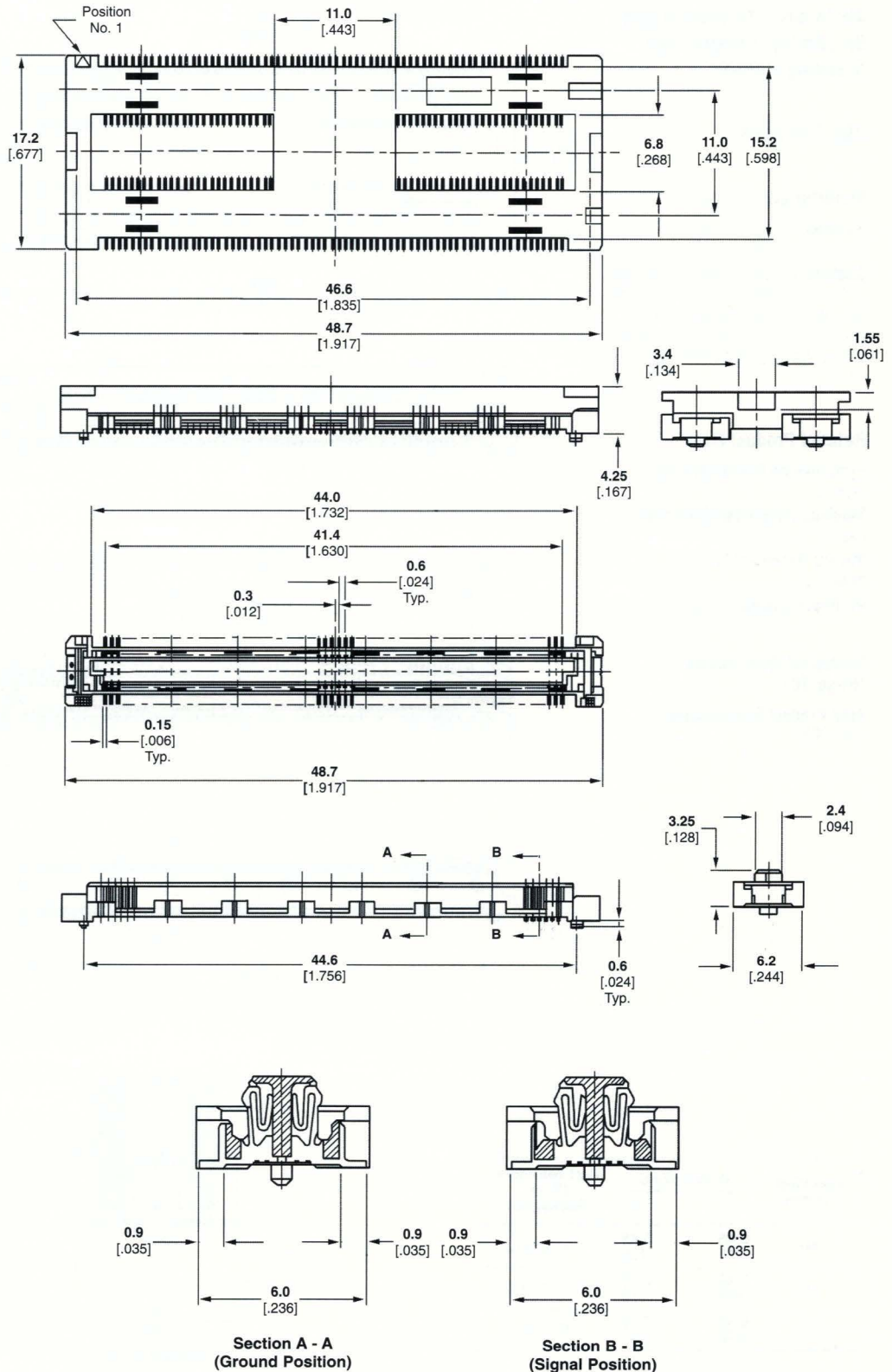
Stacking Height Combinations — page 13

Mating Plugs — pages 17, 18, 20 & 21

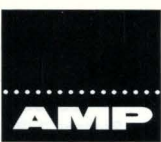
PC Board Layout — page 23

Technical Documents (Page 70):

AMP Product Specification
108-5468



0.6mm FH and GIGA
Connectors



0.6mm Free Height Standard Bridge Plugs, 0.6 [.024] Pitch

4H (4mm), 6H (6mm) and
8H (8mm) Double Row
Stacking Heights

280 Positions

Material and Finish:

Housing — High temperature thermoplastic, 94V-0 rated

Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

Performance Characteristics — page 12

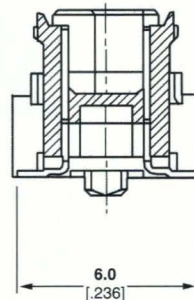
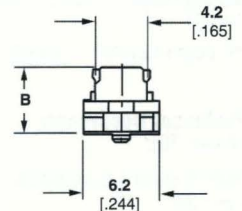
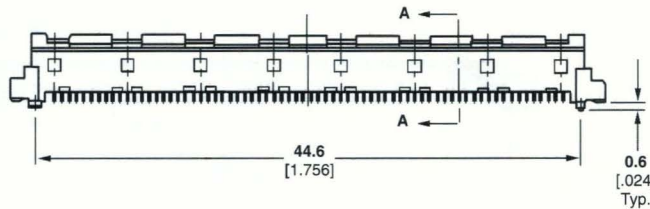
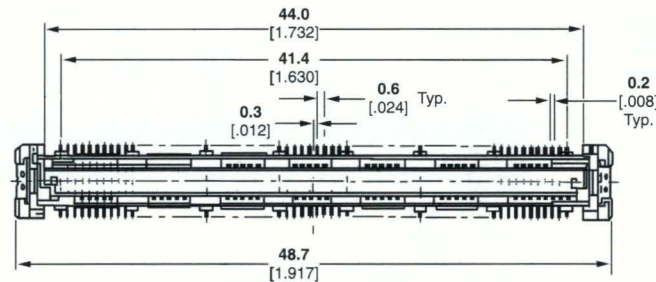
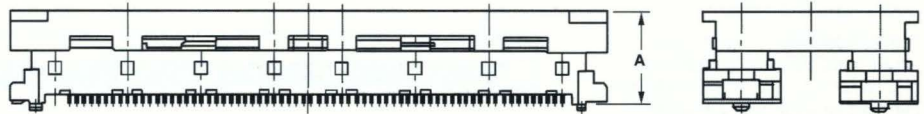
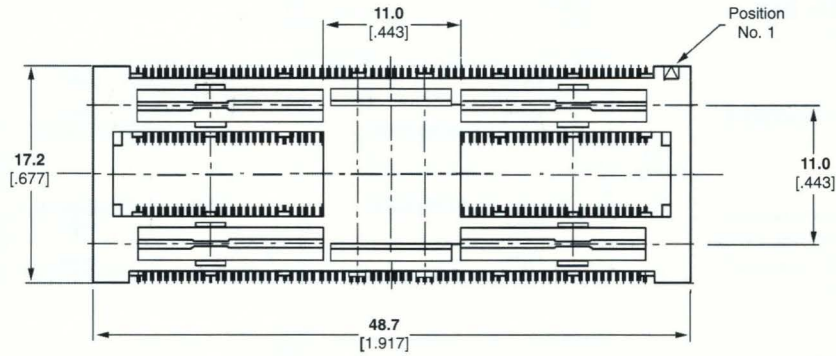
Stacking Height Combinations — page 13

Mating Receptacles — pages 15 & 19

PC Board Layout — page 25

Technical Documents (Page 70):

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Section A - A

Stacking Height	Dimensions		Part Numbers (Tape Packaged)
	A	B	
4H	5.45 .215	3.45 .136	1-353284-0
6H	7.45 .293	5.45 .215	1-353134-0
8H	9.45 .372	7.45 .293	1-353135-0

0.6mm Free Height GIGA Bridge Plugs, 0.6 [.024] Pitch

4H (4mm), 6H (6mm) and
8H (8mm) Double Row
Stacking Heights

280 Positions

Note: All GIGA plugs include ground plates that mate with receptacles with common ground contacts..

Material and Finish:

Housing — High temperature thermoplastic, 94V-0 rated

Contacts — Copper alloy; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

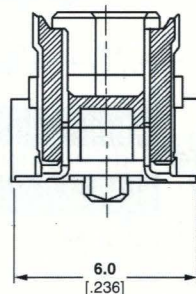
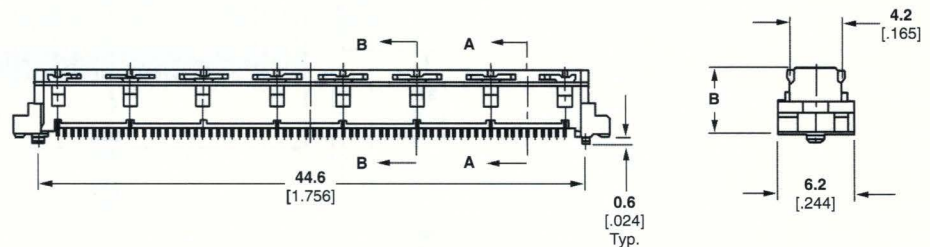
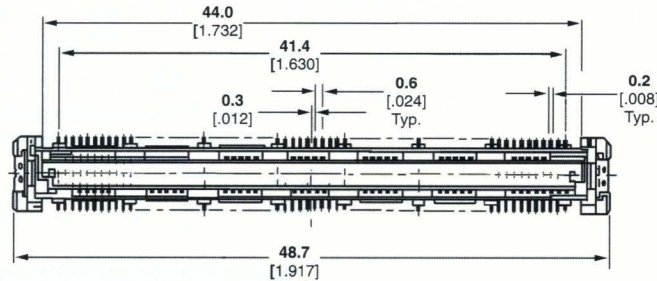
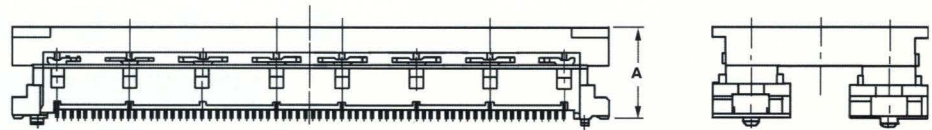
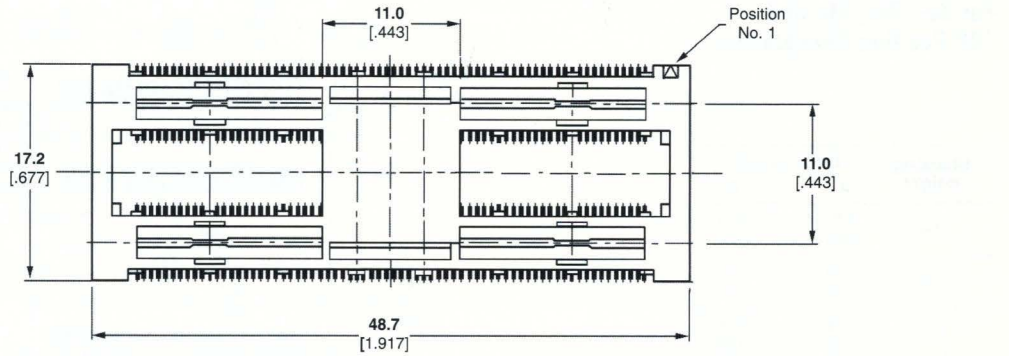
Ground Plates — Phosphor bronze, plated 0.00300-0.00500 [.000120-.000200] tin-lead over 0.00050 [.000020] copper

Related Product Data:

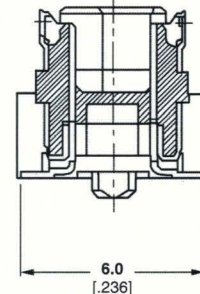
- Performance Characteristics** — page 12
- Stacking Height Combinations** — page 13
- Mating Receptacles** — pages 15 & 19
- PC Board Layout** — page 26

Technical Documents (Page 70):

AMP Product Specification
108-5468

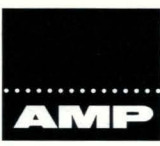


Section A - A
(Signal Position)



Section B - B
(Ground Position)

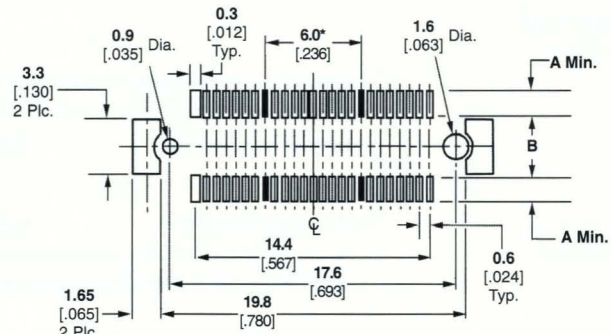
Stacking Height	Dimensions		Part Numbers (Tape Packaged)
	A	B	
4H	5.45 .215	3.45 .136	1-353231-0
6H	7.45 .293	5.45 .215	1-353232-0
8H	9.45 .372	7.45 .293	1-353233-0



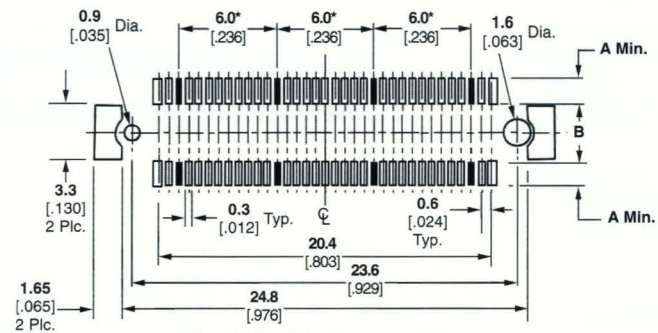
Recommended PC Board Layouts and Grounding Circuit Positions

For 50-, 70-, 80- and 100-Position Receptacles

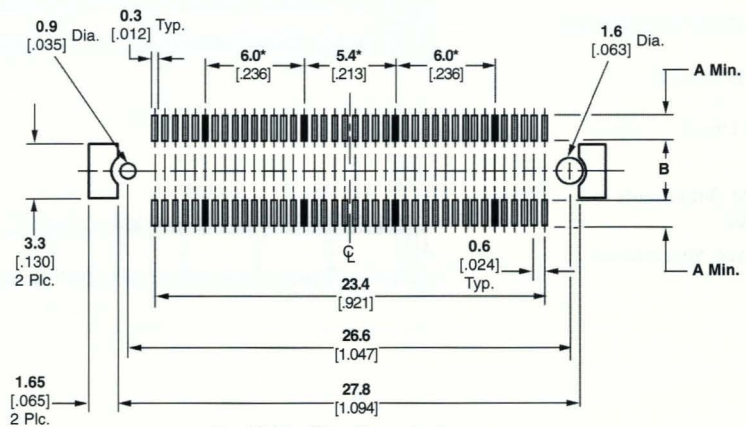
Stacking Height	Dimensions	
	A	B
4H	1.5 .059	3.6 .142
8H	1.75 .069	3.8 .150
12H	1.75 .069	3.8 .150



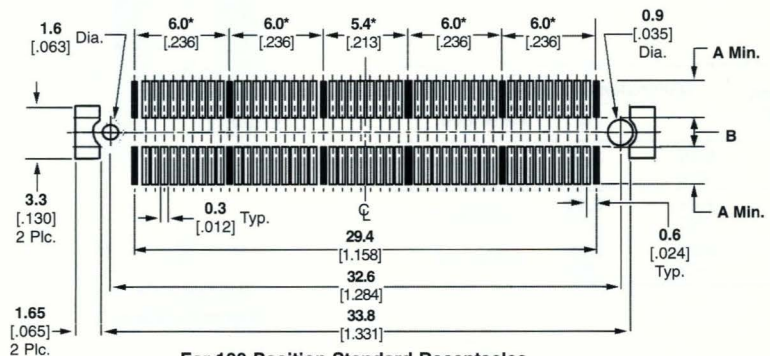
For 50-Position Receptacles
*Spacing between grounding circuits



For 70-Position Receptacles
*Spacing between grounding circuits



For 80-Position Receptacles
*Spacing between grounding circuits



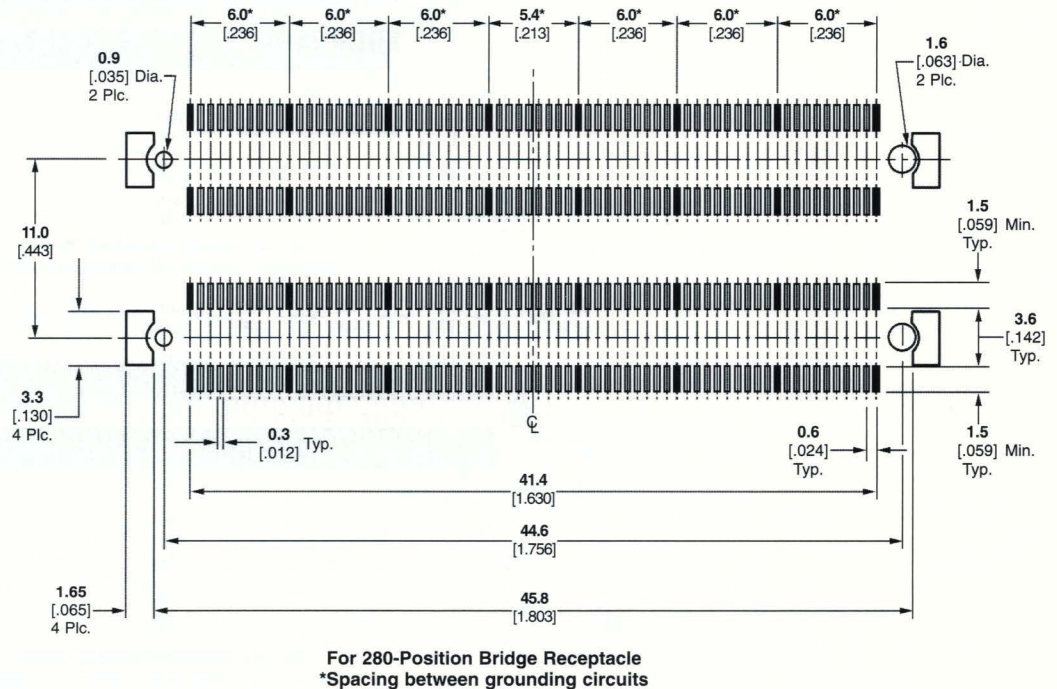
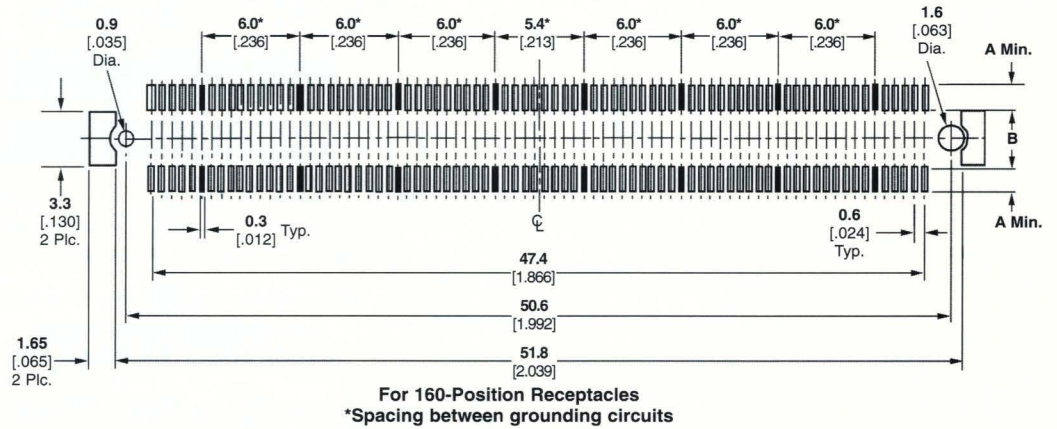
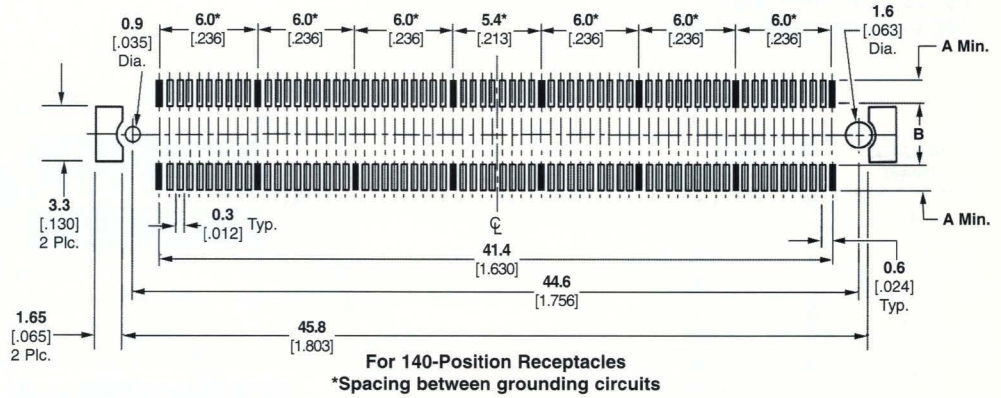
For 100-Position Standard Receptacles
*Spacing between grounding circuits

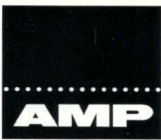
0.6mm FH and GIGA Connectors

Recommended PC Board Layouts and Grounding Circuit Positions (Continued)

For 140-, 160-Position Receptacles and 280-Position Bridge Receptacle

Stacking Height	Dimensions	
	A	B
4H	1.5 .059	3.6 .142
12H	1.75 .069	3.8 .150

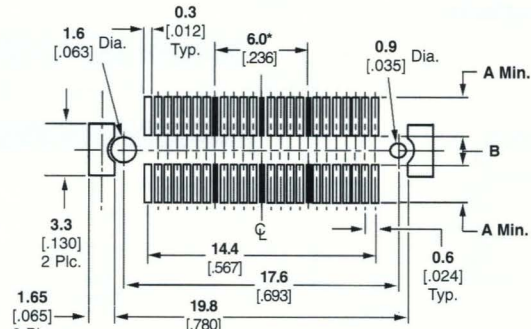




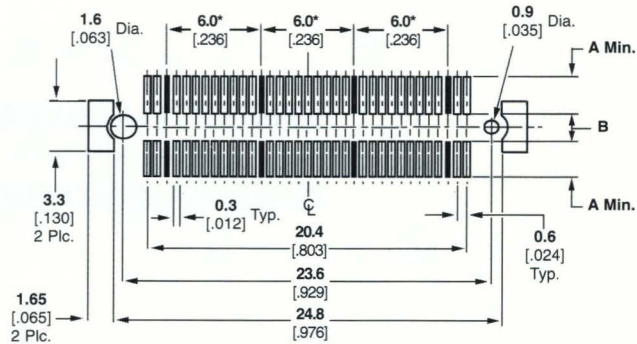
Recommended PC Board Layouts and Grounding Circuit Positions (Continued)

For 50-, 70-, 100- and 140-Position Standard Plugs

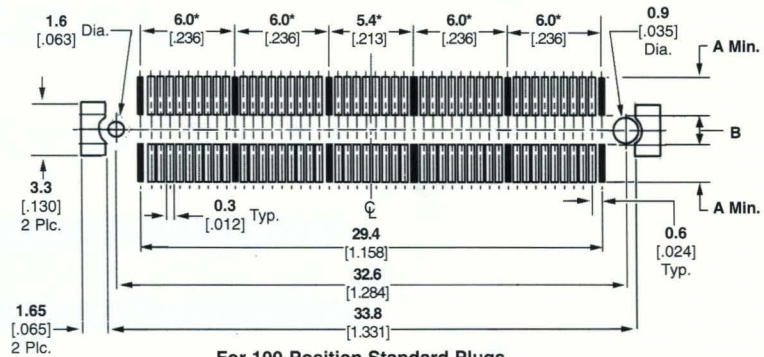
Stacking Height	Dimensions	
	A	B
4H	2.35 .093	1.9 .075
5H	1.8 .071	3.4 .134
6H	1.8 .071	3.4 .134
8H	1.8 .071	3.4 .134



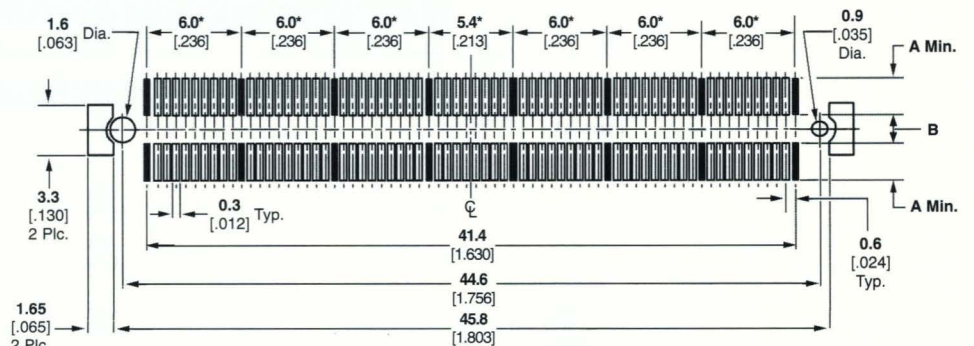
For 50-Position Standard Plugs
*Spacing between grounding circuits



For 70-Position Standard Plugs
*Spacing between grounding circuits



For 100-Position Standard Plugs
*Spacing between grounding circuits



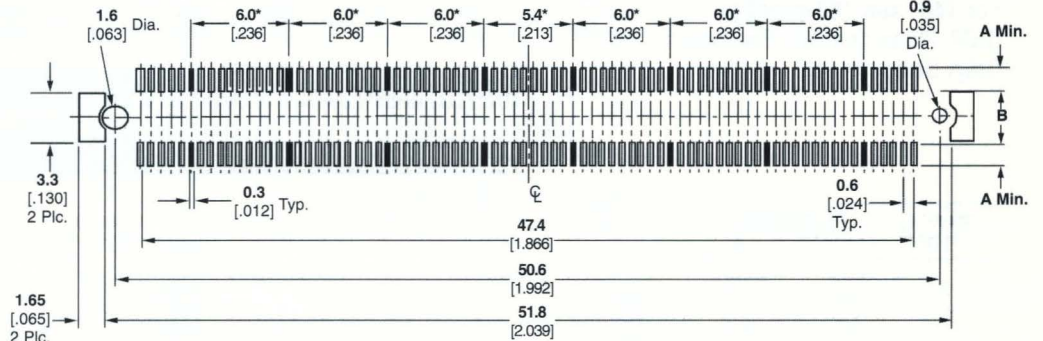
For 140-Position Standard Plugs
*Spacing between grounding circuits

0.6mm FH and GIGA Connectors

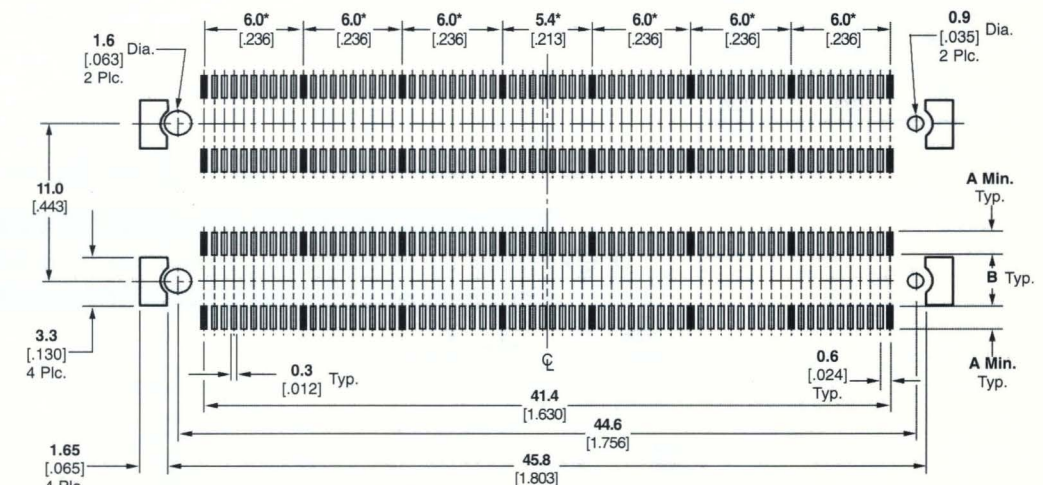
Recommended PC Board Layouts and Grounding Circuit Positions (Continued)

For 160-Position Standard Plugs and 280-Position Standard Bridge Plugs

Stacking Height	Dimensions	
	A	B
4H	2.35 .093	1.9 .075
6H	1.8 .071	3.4 .134
8H	1.8 .071	3.4 .134



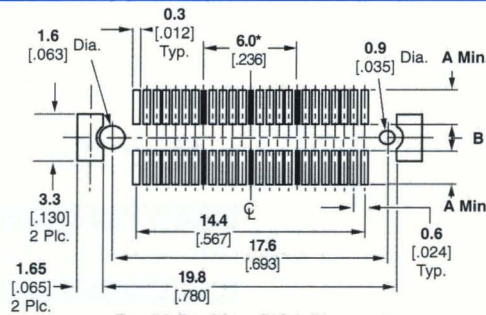
For 160-Position Standard Plugs
*Spacing between grounding circuits



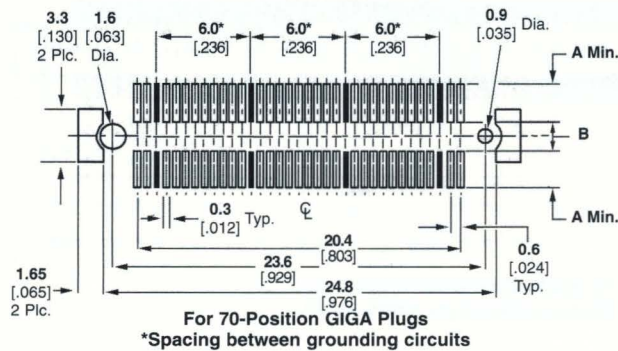
For 280-Position Standard Bridge Plugs
*Spacing between grounding circuits

For 50-, 70- and 80-Position GIGA Plugs

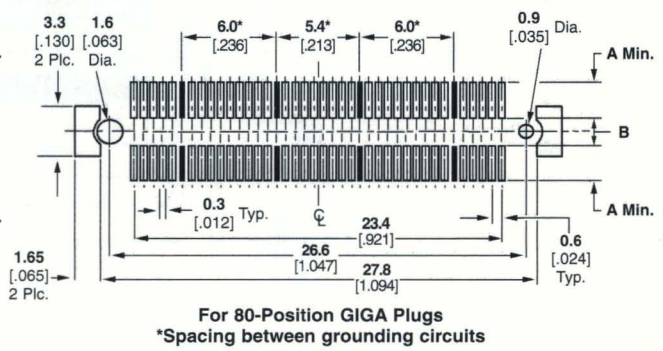
Stacking Height	Dimensions	
	A	B
4H	2.35 .093	1.9 .075
6H	1.8 .071	3.4 .134
7H	1.8 .071	3.4 .134



For 50-Position GIGA Plugs
*Spacing between grounding circuits



For 70-Position GIGA Plugs
*Spacing between grounding circuits

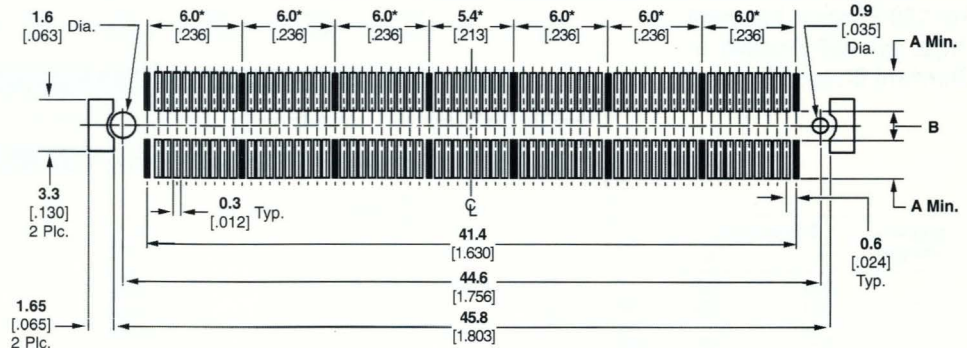


For 80-Position GIGA Plugs
*Spacing between grounding circuits

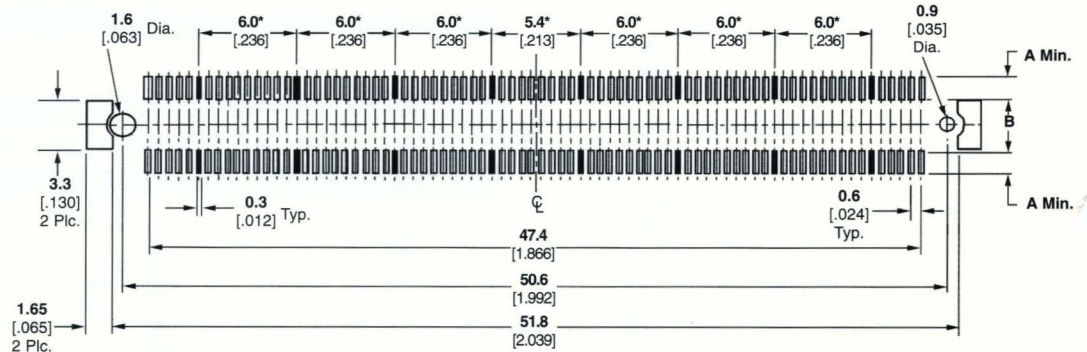
Recommended PC Board Layouts and Grounding Circuit Positions (Continued)

For 140- and 160-position
GIGA Plugs and 280-Position
GIGA Bridge Plugs

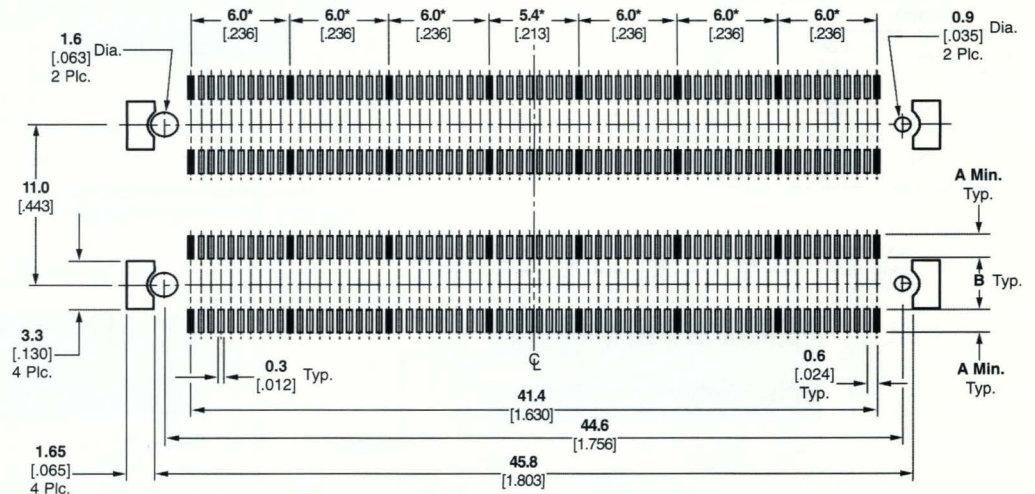
Stacking Height	Dimensions	
	A	B
4H	2.35 .093	1.9 .075
5H	1.8 .071	3.4 .134
6H	1.8 .071	3.4 .134
7H	1.8 .071	3.4 .134
8H	1.8 .071	3.4 .134



For 140-Position GIGA Plugs
*Spacing between grounding circuits



For 160-Position GIGA Plugs
*Spacing between grounding circuits



For 280-Position GIGA Bridge Plugs
*Spacing between grounding circuits

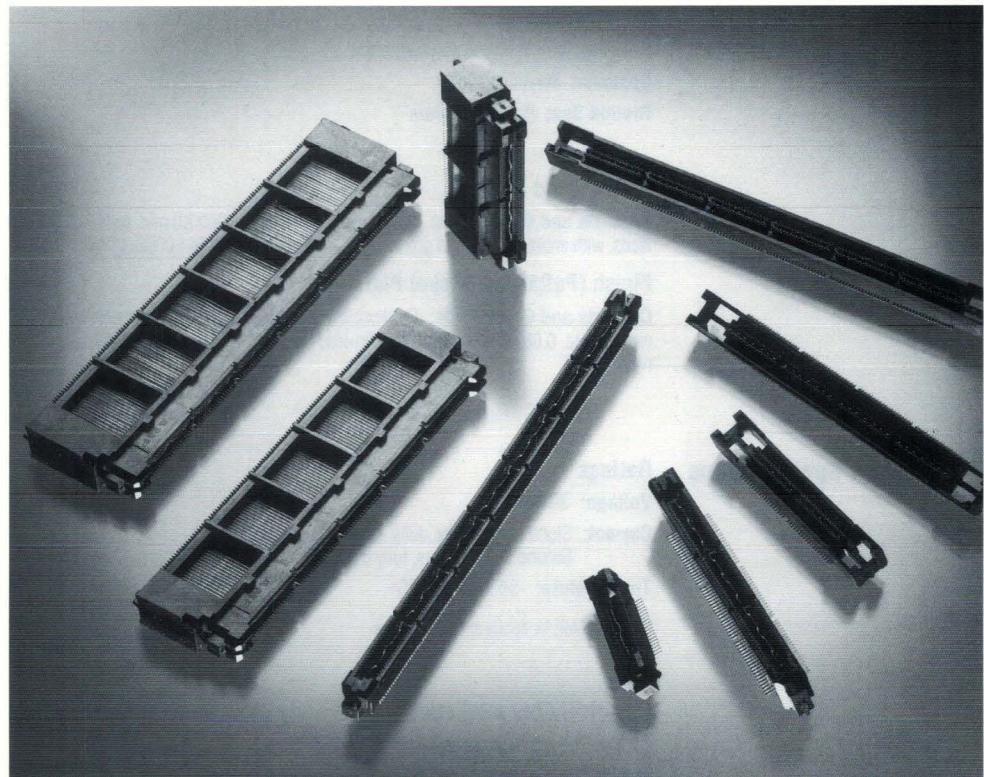
0.6mm FH and GIGA
Connectors

MICTOR Connectors

Photo 101766

Product Facts

- 76 dedicated signal lines per linear inch
- Surface mount family designed for parallel board-to-board, flex-to-board and cable-to-board configurations
- Right-angle versions are available, see AMP catalog 65194
- 0.64 [.025] centerline contact spacing
- Redundant interfaces on mated contacts
- Infrared and forced air convection compatible housing materials
- Designed for 50-ohm systems
- Connector housings polarized for correct mating
- Built-in connector-to-board retention feature
- Connector can be separated by peeling from one end to the other
- Various packaging styles can be made available for automated assembly (tape and reel, gang of tubes, matrix trays, etc.). Consult AMP for details
- Recognized under the Component Program of Underwriter Laboratories Inc.,  File No. E28476



The MICTOR connector family is based on the micro-strip concept of two rows of signal contacts divided by a center power ground plane. MICTOR connectors are motherboard and daughtercard compatible and include designs for cable-to-board applications.

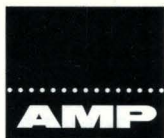
Various mated heights are available for parallel board-to-board systems. Custom stacking heights can be provided. The MICTOR connector family is available in

0.64 [.025] centerlines and in sizes ranging from 38 signal positions to 266 positions (in increments of 38 positions). There is a discrete ground bus every 12.7 [.50] of the connector length, which can be assigned to either power or ground in any combination. Redundant interfaces on every signal line provide added reliability. Several plating options are available to meet the needs of various applications.

The housing material is a liquid crystal polymer, compatible with infrared and forced air convection operations.

The connector system maintains a 50-ohm impedance and uses the solid ground bus between the rows of signals to provide low crosstalk and excellent high-speed signal characteristics.

See Catalog #65194 For Additional MICTOR Connectors and Other High Speed Connector Systems



Material and Performance Specifications, MICTOR Connectors

Material Specifications

Material

Housing: Liquid crystal polymer, black

Contacts: Beryllium copper

Ground Bus: Phosphor bronze

Finish (Gold Plating)

Contacts and Ground Bus: Duplex plated 0.00076 [.000030] min. gold in mating area, 0.00381 [.000150] min. tin-lead on leads, with entire contact and ground bus underplated 0.00178 [.000070] min. nickel

Finish (Palladium-Nickel Plating)

Contacts and Ground Bus: Duplex plated 0.000013 [.000005] min. gold over 0.00076 [.000030] min. palladium-nickel in mating area, 0.00381 [.000150] min. tin-lead on leads, with entire contact and ground bus underplated 0.00178 [.000070] min. nickel

Performance Specifications

Ratings

Voltage: 30 vac

Current: Signal; 1.0 ampere, fully derated*
Ground; 7.6 amperes, fully derated*

Temperature: -55°C to +125°C

*Consult AMP for details on current rating.

Electrical Characteristics

Characteristic Impedance: 50±5 ohms at 1 ns

Termination Resistance: ΔR 10 milliohms max.; AMP Specification 109-6-1

Insulation Resistance: 10,000 megohms min.; AMP Specification 109-208-1

Dielectric Withstanding Voltage: 500 vac at sea level; AMP Specification 109-29-1

Mechanical Characteristics

Solderability: Solderable area shall have a 95% min. solder coverage; AMP Specification 109-11-1

Vibration (Random): No discontinuities of 1 μs or longer duration; AMP Specification 109-21-5

Physical Shock: No discontinuities of 1 μs or longer duration; AMP Specification 109-26-1

Durability (Tested to): Mate and unmate samples at a rate of 600 cycles max. per hour. 25 cycles, gold plating; 500 cycles, palladium-nickel plating; AMP Specification 109-27

Contact Retention: 1 lb min.; AMP Specification 109-30

Mating Force: 152 oz max. per 1/2 inch of connector (1 module). Each module equals 38 signal contacts and 1 ground bus; AMP Specification 109-42

Unmating Force: 19 oz min. per 1/2 inch of connector (1 module). Each module equals 38 signal contacts and 1 ground bus; AMP Specification 109-42

Environmental Characteristics

Thermal Shock: Subject mated samples to 5 cycles between -55°C and +125°C; AMP Specification 109-22

Humidity - Temperature Cycling: Subject mated samples to 10 cycles between +25°C and +65°C at 95% RH; AMP Specification 109-23-3, Condition B

Temperature Cycling: Subject mated samples to 1024 cycles between -40°C and +60°C at 2 hours per cycle; AMP Specification 109-75-1

Temperature Life: Subject mated samples to temperature life at +118°C for 792 hours; AMP Specification 109-43

Mixed Flowing Gas: Subject mated samples to environmental class II for 14 days; AMP Specification 109-85-2

MICTOR Vertical Plugs, 0.64 [.025] Pitch

6.60 [.260] Stacking Height

Related Product Data:

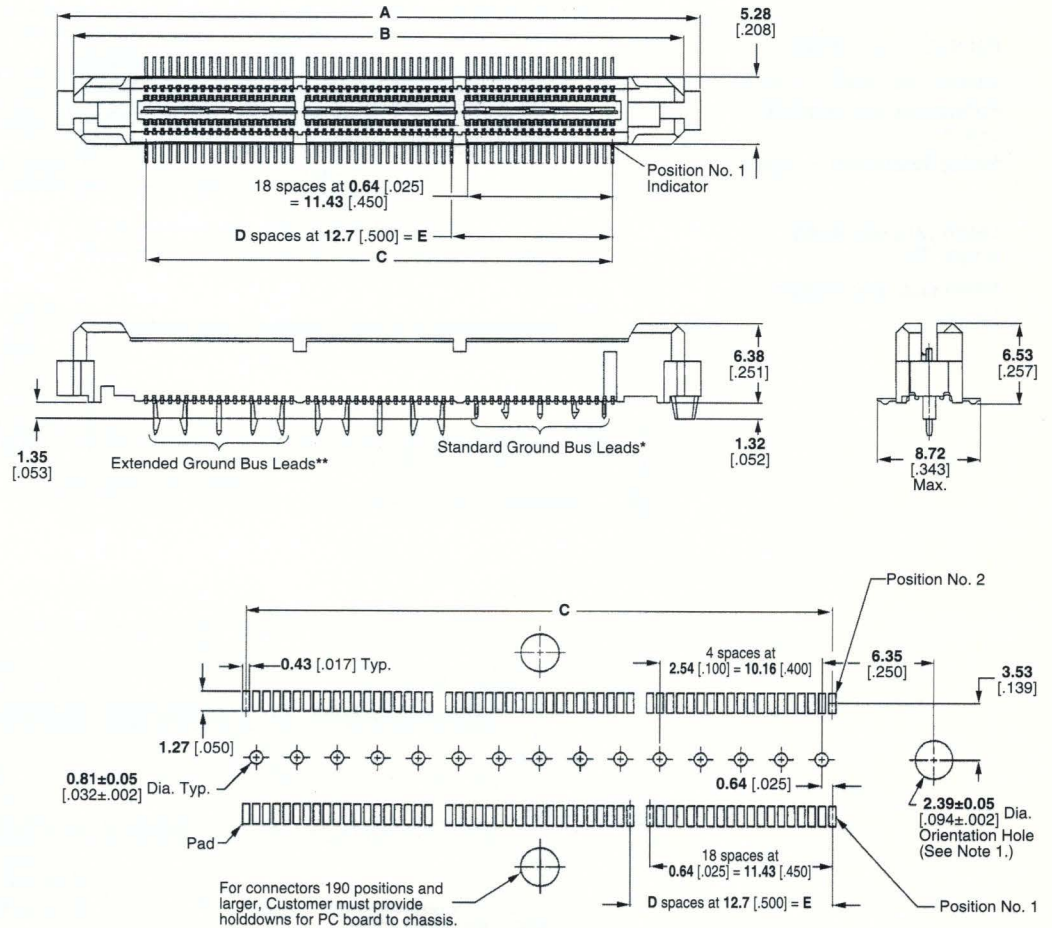
Material and Finish — page 28

Performance Characteristics —
page 28

Mating Receptacles — page 36

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108-1422



Recommended PC Board Layout
(Connector Side of Board Shown)

No. of Positions	Dimensions					Plug Part Numbers	
	A	B	C	D	E	Gold Plating	Palladium-Nickel Plating
38	25.40 1.000	22.81 .898	11.43 .450	0	—	767007-8	767056-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	767007-9	767056-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1-767007-0	767056-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	1-767007-1	767056-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1-767007-2	767056-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1-767007-3	767056-6
266	101.60 4.000	99.01 3.898	87.63 3.450	6	76.20 3.000	1-767007-4	767056-7

*One ground bus with 5 tails per each 38-position module.

**Plugs with extended ground bus leads can be made available, consult AMP.

Notes: 1. For dual application, the orientation hole must be 1.98 ±0.03 [.078 ±.001]. See Application Specification 114-11004 for details.

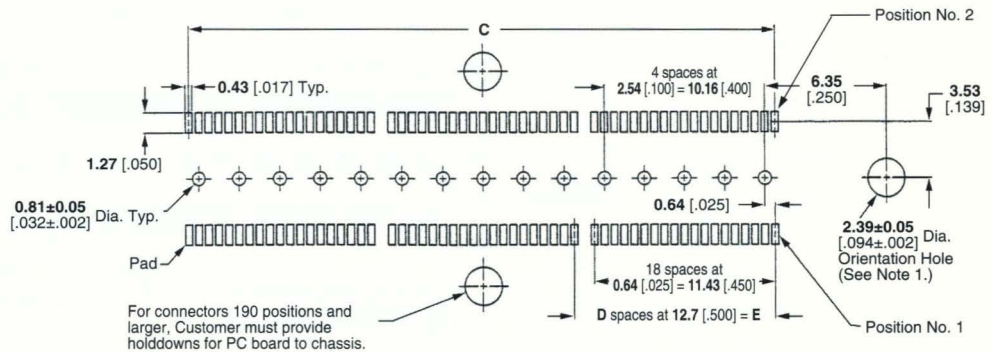
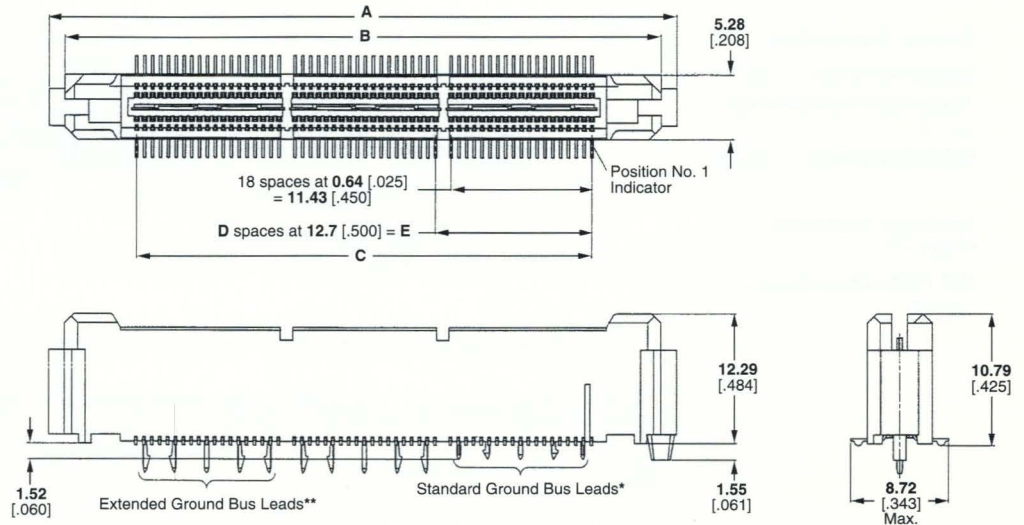
2. For right-angle plugs, see AMP catalog 65194.

MICTOR Vertical Plugs, 0.64 [.025] Pitch (Continued)

**10.92 [.430]
Stacking Height**

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**Recommended PC Board Layout
(Connector Side of Board Shown)**

No. of Positions	Dimensions					Plug Part Numbers	
	A	B	C	D	E	Gold Plating	Palladium-Nickel Plating
38	25.40 1.000	22.81 .898	11.43 .450	0	—	767003-9	767087-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	1-767003-0	767087-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1-767003-1	767087-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	767003-8	767087-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1-767003-2	767087-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1-767003-3	767087-6
266	101.60 4.000	99.01 3.898	87.63 3.450	6	76.20 3.000	1-767003-4	767087-7

*One ground bus with 5 tails per each 38-position module.

**Plugs with extended ground bus leads can be made available, consult AMP.

Notes: 1. For dual application, the orientation hole must be 1.98 ± 0.03 [.078 ± .001]. See Application Specification 114-11004 for details.

2. For right-angle plugs, see AMP catalog 65194.

MICTOR Vertical Plugs, 0.64 [.025] Pitch (Continued)

**12.57 [.495]
Stacking Height**

Related Product Data:

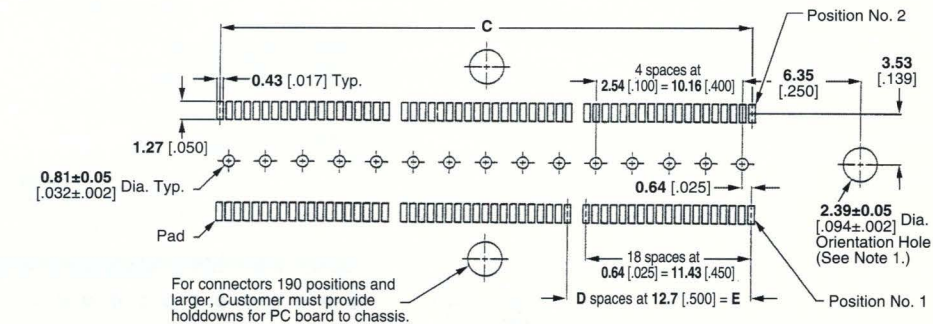
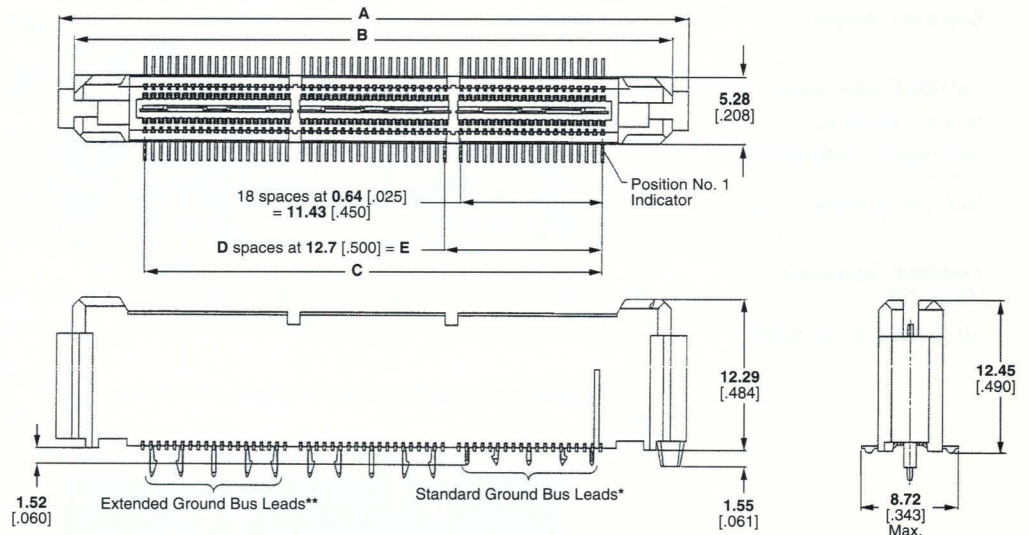
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No. of Positions	Dimensions					Plug Part Numbers	
	A	B	C	D	E	Gold Plating	Palladium-Nickel Plating
38	25.40 1.000	22.81 .898	11.43 .450	0	—	767005-8	767057-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	767005-9	767057-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1-767005-0	767057-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	1-767005-1	767057-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1-767005-2	767057-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1-767005-3	767057-6
266	101.60 4.000	99.01 3.898	87.63 3.450	6	76.20 3.000	1-767005-4	767057-7

*One ground bus with 5 tails per each 38-position module.

**Plugs with extended ground bus leads can be made available, consult AMP.

Notes: 1. For dual application, the orientation hole must be 1.98 ± 0.03 [.078 ±.001]. See Application Specification 114-11004 for details.

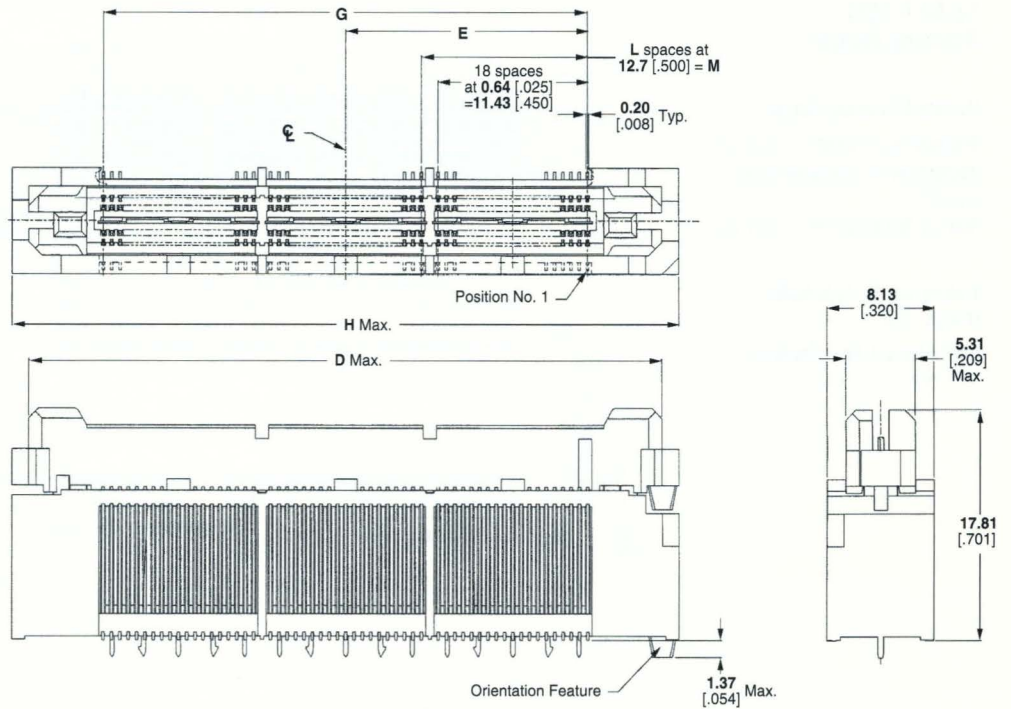
2. For right-angle plugs, see AMP catalog 65194.

MICTOR Vertical Plugs, 0.64 [.025] Pitch (Continued)

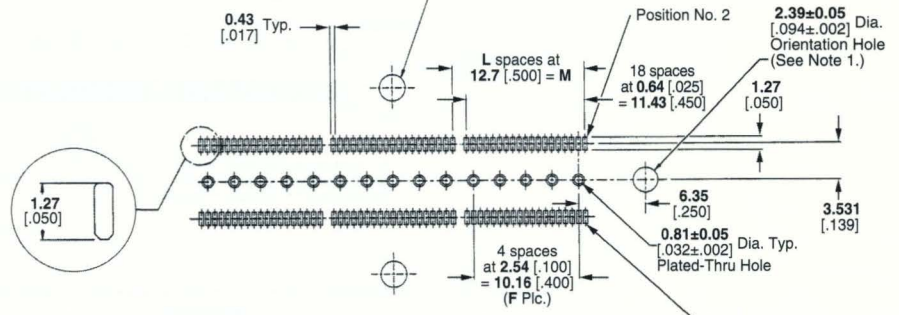
**17.96 [.707]
Stacking Height**

Related Product Data:
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For connectors 190 positions and larger, Customer must provide holdowns for PC board to chassis.



**Recommended PC Board Layout
(Connector Side of Board Shown)**

No. of Positions	Dimensions							Plug Part Numbers (Gold Plating)
	D	E	F	G	H	L	M	
38	22.81 .898	5.72 .225	1	11.43 .450	25.55 1.006	0	—	767025-1
76	35.51 1.398	12.07 .475	2	24.13 .950	38.25 1.506	1	12.70 .500	767025-2
114	48.21 1.898	18.42 .725	3	36.83 1.450	50.95 2.006	2	25.40 1.000	767025-3
152	60.91 2.398	24.77 .975	4	49.53 1.950	63.65 2.506	3	38.10 1.500	767025-4
190	73.61 2.898	31.16 1.225	5	62.23 2.450	76.35 3.006	4	50.80 2.000	767025-5
228	86.31 3.398	37.47 1.475	6	74.93 2.950	89.05 3.506	5	63.50 2.500	767025-6
266	99.01 3.898	43.82 1.725	7	87.63 3.450	101.75 4.006	6	76.20 3.000	767025-7

Notes: 1. For dual application, the orientation hole must be 1.98 ± 0.03 [.078 ± .001]. See Application Specification 114-11004 for details.
2. For right-angle plugs, see AMP catalog 65194.
3. Plugs with extended ground bus leads can be made available, consult AMP.

MICTOR Vertical Plugs, 0.64 [.025] Pitch (Continued)

**18.75 [.738]
Stacking Height**

Related Product Data:

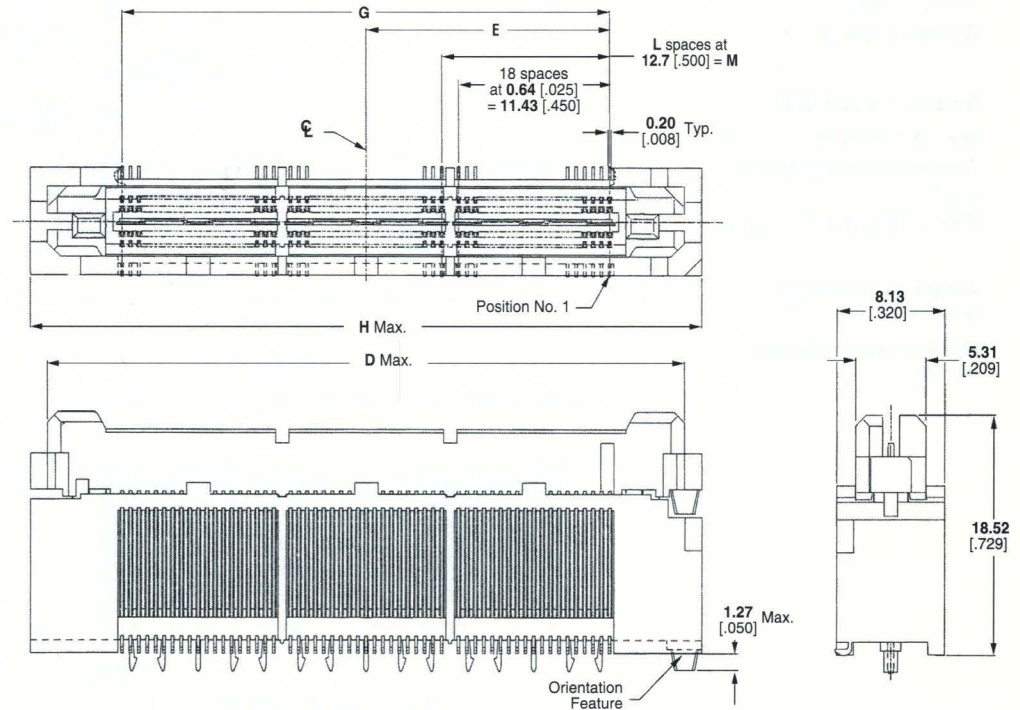
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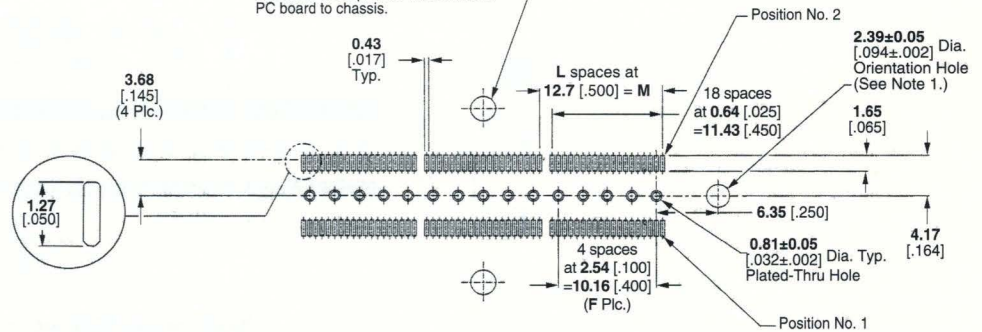
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For connectors 190 positions and larger,
Customer must provide holdowns for
PC board to chassis.



**Recommended PC Board Layout
(Connector Side of Board Shown)**

No. of Positions	Dimensions							Plug Part Numbers (Gold Plating)
	D	E	F	G	H	L	M	
38	22.81 .898	5.71 .225	1	11.43 .450	25.54 1.000	0	0 .000	767042-1
76	35.51 1.398	12.06 .475	2	24.13 .950	38.10 1.500	1	12.70 .500	767042-2
114	48.21 1.898	18.42 .725	3	36.83 1.450	50.95 2.006	2	25.40 1.000	767042-3
152	60.91 2.398	24.77 .975	4	49.53 1.950	63.65 2.506	3	38.10 1.500	767042-4
190	73.61 2.898	31.16 1.225	5	62.23 2.450	76.35 3.006	4	50.80 2.000	767042-5
228	86.31 3.398	37.47 1.475	6	74.93 2.950	89.05 3.506	5	63.50 2.500	767042-6
266	99.01 3.898	43.82 1.725	7	87.63 3.450	101.75 4.006	6	76.20 3.000	767042-7

Notes: 1. For dual application, the orientation hole must be **1.98 ±0.03 [.078 ±.001]**. See Application Specification 114-11004 for details.

2. For right-angle plugs, see AMP catalog 65194.

3. Plugs with extended ground bus leads can be made available, consult AMP.

MICTOR Vertical Plugs, 0.64 [.025] Pitch (Continued)

20.02 [.788] Stacking Height

Related Product Data:

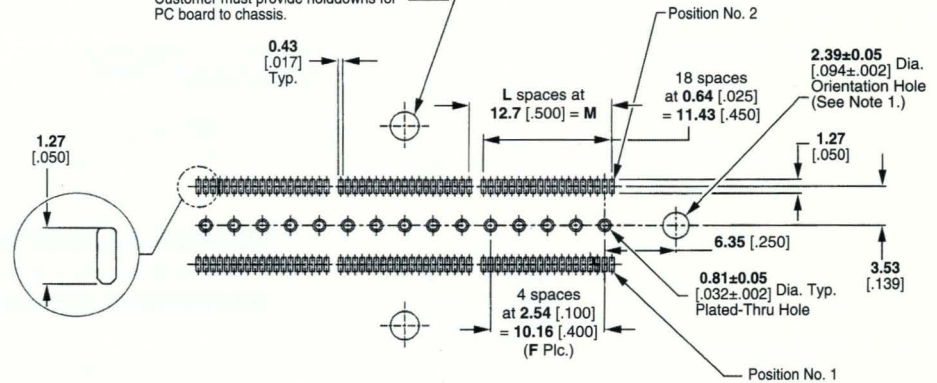
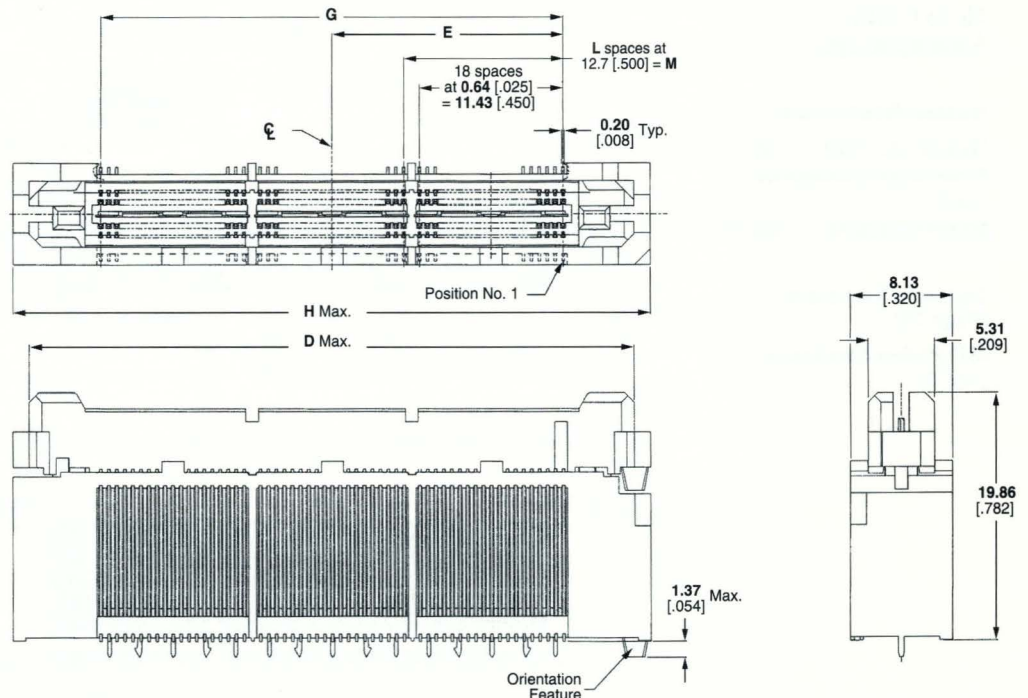
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Recommended PC Board Layout
(Connector Side of Board Shown)

No. of Positions	Dimensions							Plug Part Numbers (Gold Plating)
	D	E	F	G	H	L	M	
38	22.81 .898	5.72 .225	1	11.43 .450	25.55 1.006	0	—	767032-1
76	35.51 1.398	12.07 .475	2	24.13 .950	38.25 1.506	1	12.70 .500	767032-2
114	48.21 1.898	18.42 .725	3	36.83 1.450	50.95 2.006	2	25.40 1.000	767032-3
152	60.91 2.398	24.77 .975	4	49.53 1.950	63.65 2.506	3	38.10 1.500	767032-4
190	73.61 2.898	31.16 1.225	5	62.23 2.450	76.35 3.006	4	50.80 2.000	767032-5
228	86.31 3.398	37.47 1.475	6	74.93 2.950	89.05 3.506	5	63.50 2.500	767032-6
266	99.01 3.898	43.82 1.725	7	87.63 3.450	101.75 4.006	6	76.20 3.000	767032-7

- Notes: 1. For dual application, the orientation hole must be 1.98 ±0.03 [.078 ±.001]. See Application Specification 114-11004 for details.
2. For right-angle plugs, see AMP catalog 65194.
3. Plugs with extended ground bus leads can be made available, consult AMP.

MICTOR Vertical Plugs, 0.64 [.025] Pitch (Continued)

**22.86 [.900]
Stacking Height**

Related Product Data:

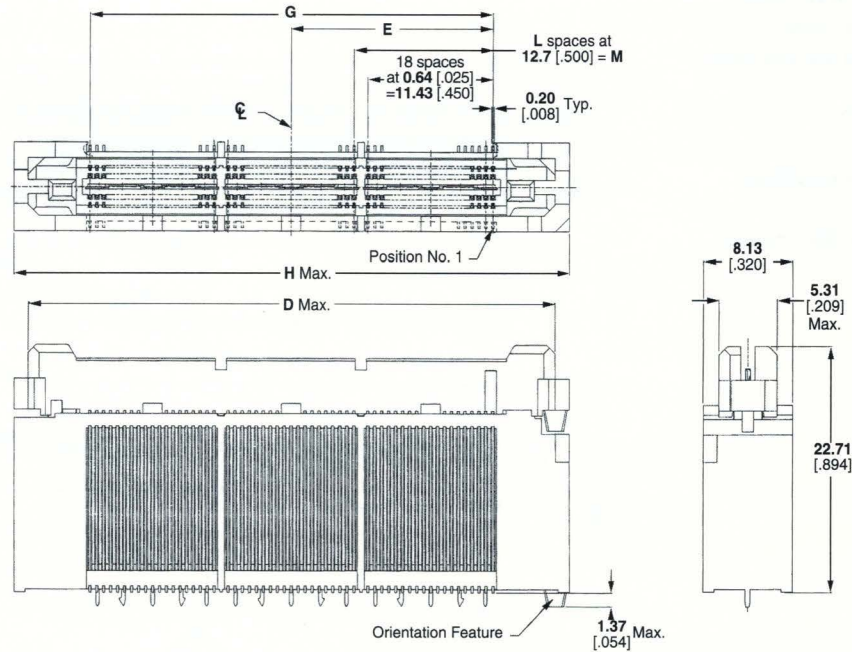
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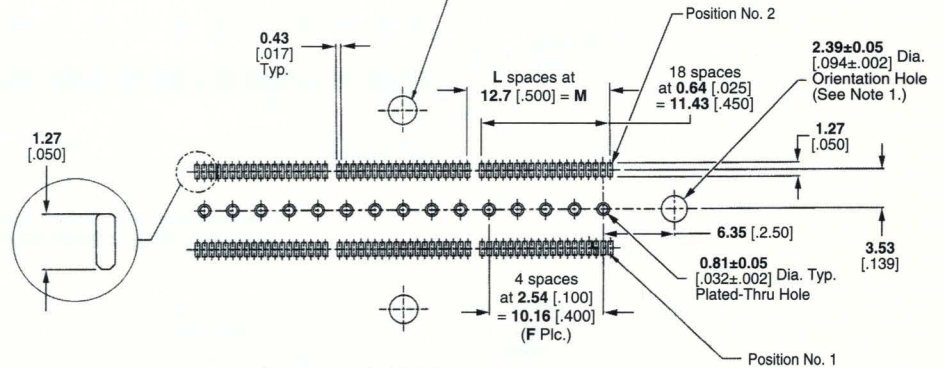
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For connectors 190 positions and larger,
Customer must provide holdowns for
PC board to chassis.



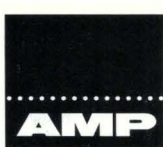
**Recommended PC Board Layout
(Connector Side of Board Shown)**

No. of Positions	Dimensions							Plug Part Numbers (Gold Plating)
	D	E	F	G	H	L	M	
38	22.81 .898	5.72 .225	1	11.43 .450	25.55 1.006	0	—	767017-1
76	35.51 1.398	12.07 .475	2	24.13 .950	38.25 1.506	1	12.70 .500	767017-2
114	48.21 1.898	18.42 .725	3	36.83 1.450	50.95 2.006	2	25.40 1.000	767017-3
152	60.91 2.398	24.77 .975	4	49.53 1.950	63.65 2.506	3	38.10 1.500	767017-4
190	73.61 2.898	31.16 1.225	5	62.23 2.450	76.35 3.006	4	50.80 2.000	767017-5
228	86.31 3.398	37.47 1.475	6	74.93 2.950	89.05 3.506	5	63.50 2.500	767017-6
266	99.01 3.898	43.82 1.725	7	87.63 3.450	101.75 4.006	6	76.20 3.000	767017-7

Notes: 1. For dual application, the orientation hole must be 1.98 ± 0.03 [.078 ±.001]. See Application Specification 114-11004 for details.

2. For right-angle plugs, see AMP catalog 65194.

3. Plugs with extended ground bus leads can be made available, consult AMP.



MICTOR Vertical Receptacles, 0.64 [.025] Pitch

Related Product Data:

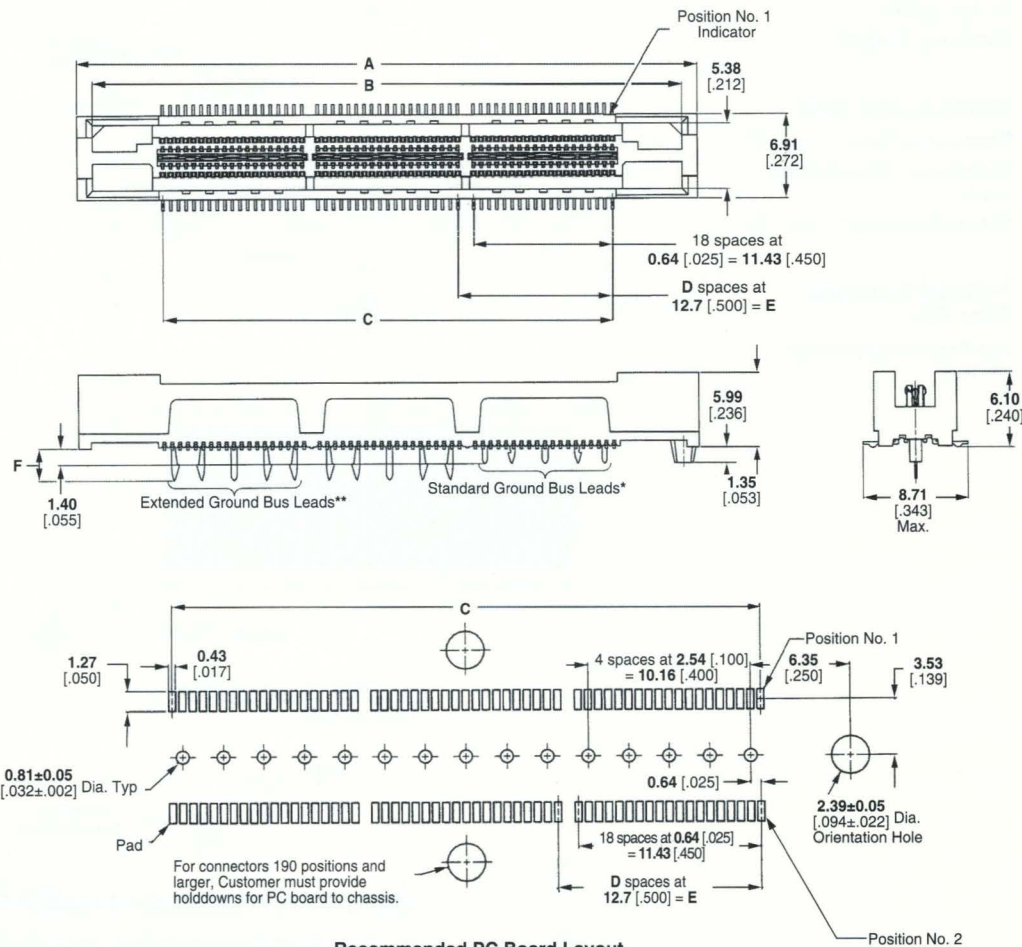
Material and Finish — page 28

Performance Characteristics —
page 28

Mating Plugs — pages 29 thru 35

Technical Documents (Page 70):

AMP Product Specification
108-1422



Recommended PC Board Layout
(Connector Side of Board Shown)

No. of Positions	Dimensions					Plug Part Numbers	
	A	B	C	D	E	Gold Plating	Palladium-Nickel Plating
38	25.40 1.000	22.86 .900	11.43 .450	0	—	2-767004-2	767054-1
76	38.10 1.500	35.56 1.400	24.13 .950	1	12.70 .500	2-767004-3	767054-2
114	50.80 2.000	48.26 1.900	36.83 1.450	2	25.40 1.000	2-767004-4	767054-3
152	63.50 2.500	60.96 2.400	49.53 1.950	3	38.10 1.500	2-767004-5	767054-4
190	76.20 3.000	73.66 2.900	62.23 2.450	4	50.80 2.000	2-767004-6	767054-5
228	88.90 3.500	86.36 3.400	74.93 2.950	5	63.50 2.500	2-767004-7	767054-6
266	101.60 4.000	99.06 3.900	87.63 3.450	6	76.20 3.000	2-767004-8	767054-7

*One ground bus with 5 tails per each 38-position module.

**Receptacles with extended ground bus leads can be made available, consult AMP.

Notes: 1. For dual application, the orientation hole must be 1.98 ±0.03 [.078 ±.001]. See Application Specification 114-11004 for details.

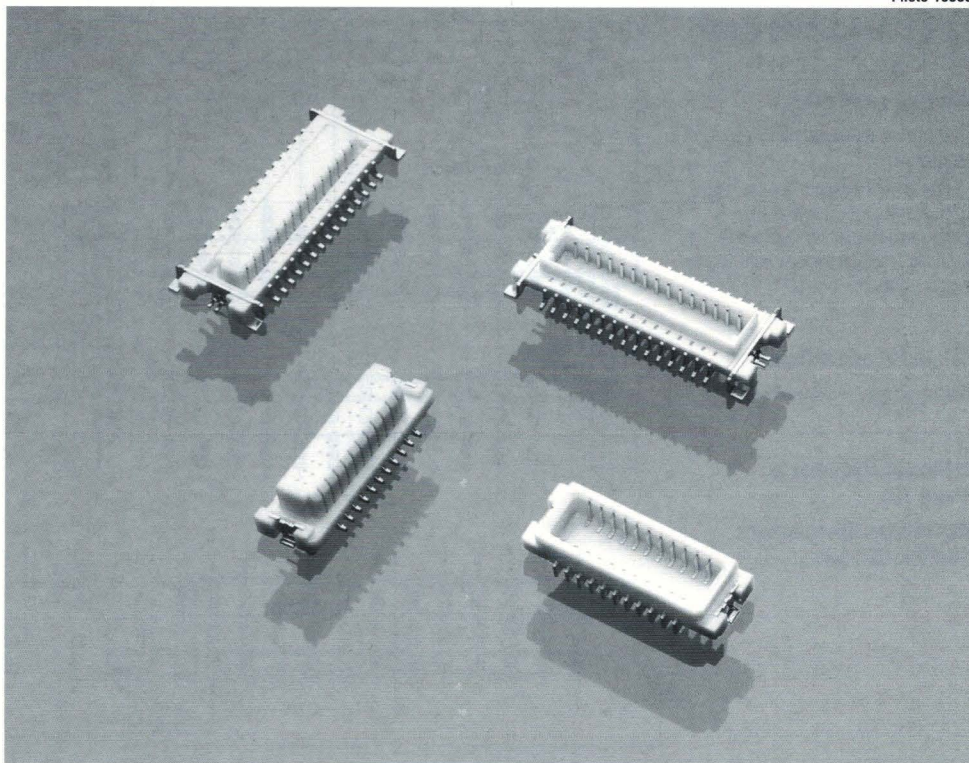
2. For right-angle receptacles, see AMP catalog 65194.

0.8mm Fine Stack and Fine Mate Connectors

Photo 105880

Product Facts

- 0.8 [.031] fine pitch SMT connectors for board-to-board interconnections
- Low profile parallel board stacking heights as low as 3.0 [.118]
- Available packaged in tape and reel for automatic placement per EIAJ standards
- Offered with tin or gold plating on mating surfaces
- Solder pegs included for anti-peeling
- Surface areas provided to accommodate vacuum nozzles

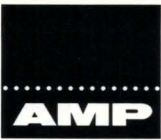


Note: Fine Stack connectors are shown on top; Fine Mate connectors are shown at the bottom.

The AMP 0.8mm Fine Stack and Fine Mate product lines are economical, surface-mount, fine pitch board-to-board connectors. Both product lines have been developed to meet the latest needs of the electronic industry for high density packaging.

These connectors offer a 0.8 [.031] contact pitch and parallel board stacking heights ranging from 3.0 [.118] to 4.5 [.177]. They are ideally suited for applications requiring miniaturization, such as cellular phones, pagers, notebook computers, camcorders and other consumer electronics.

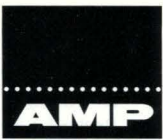
Both Fine Stack and Fine Mate connectors were designed for economical, automatic placement onto SMT printed circuit boards. The plug and cap designs include surface areas to accommodate "pick and place" vacuum nozzles without secondary covers. All products are "tape and reel" packaged, conforming to EIAJ standards.



0.8mm Fine Stack Plugs, 0.8 [.031] Pitch (Continued)

No. of Positions	Dimensions [®]					Keyed	With Boss	Plug Part Numbers	
	A	B	C	D	E			Tin Plated Contacts	Gold Plated Contacts
14	4.8 .189	6.35 .250	9.8 .386	—	8.8 .346	Yes	Yes	1-179396-4	—
16	5.6 .217	7.15 .281	10.6 .417	0.4 .016	9.6 .378	Yes	Yes	1-179396-6	1-179701-6
	5.6 .217	7.15 .281	10.6 .417	0.4 .016	—	Yes	No	1-179400-6	1-179702-6
24	8.8 .346	10.35 .407	13.8 .543	0.4 .016	12.8 .504	Yes	Yes	2-179396-4	2-179701-4
	8.8 .346	10.35 .407	13.8 .543	0.4 .016	—	Yes	No	2-179400-4	2-179702-4
30	11.2 .441	12.75 .502	16.2 .638	—	15.2 .598	Yes	Yes	3-179396-0	3-179701-0
	11.2 .441	12.75 .502	16.2 .638	—	—	Yes	No	3-179400-0	3-179702-0
	11.2 .441	12.75 .502	16.2 .638	—	—	No	No	3-917293-0	—
	11.2 .441	12.75 .502	16.2 .638	—	15.2 .598	No	Yes	3-917299-0	—
34	12.8 .504	14.35 .565	17.8 .701	—	—	No	No	3-917293-4	—
	12.8 .504	14.35 .565	17.8 .701	—	16.8 .661	No	Yes	3-917299-4	—
40	15.2 .598	16.75 .659	20.2 .795	0.4 .016	19.2 .756	Yes	Yes	4-179396-0	4-179701-0
	15.2 .598	16.75 .659	20.2 .795	0.4 .016	—	Yes	No	4-179400-0	4-179702-0
50	19.2 .756	20.75 .817	24.2 .953	—	23.2 .913	Yes	Yes	5-179396-0	—

0.8mm Fine Stack/Fine Mate Connectors



0.8mm Fine Stack Caps, 0.8 [.031] Pitch

3.0 [.118] Stacking Height

Material and Finish:

Housing — 6T nylon, high heat resistant resin

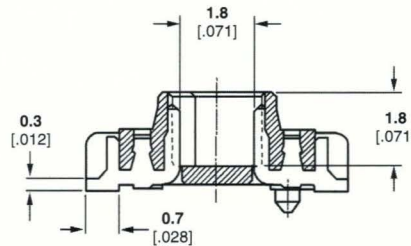
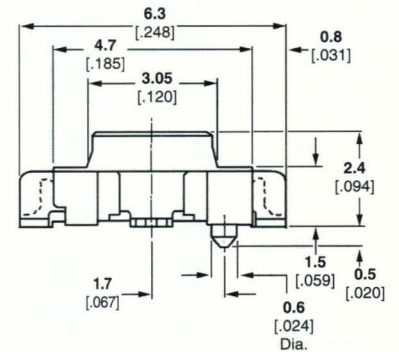
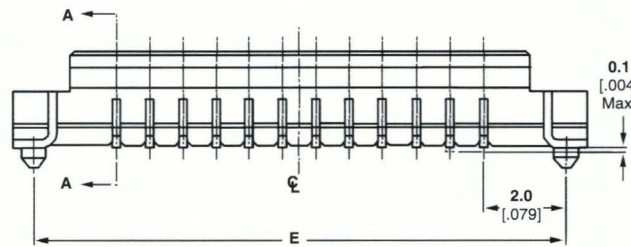
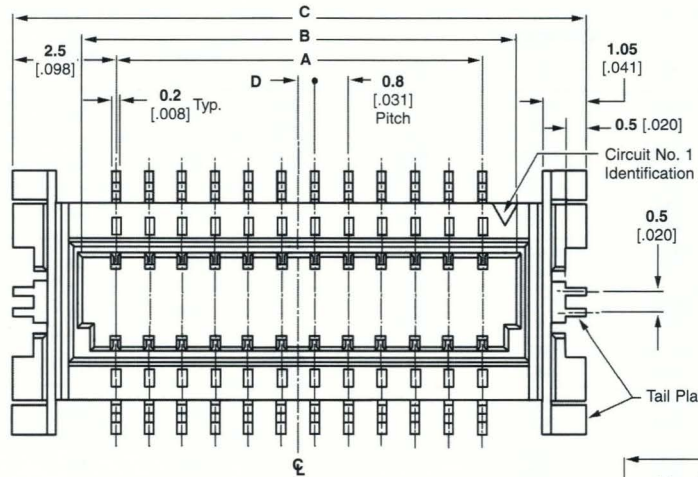
Contacts — Phosphor bronze, plated AMP-DURAGOLD or tin-lead on contact area (see chart), tin-lead or gold on solder leads (see chart), with entire contact underplated nickel

Related Product Data:

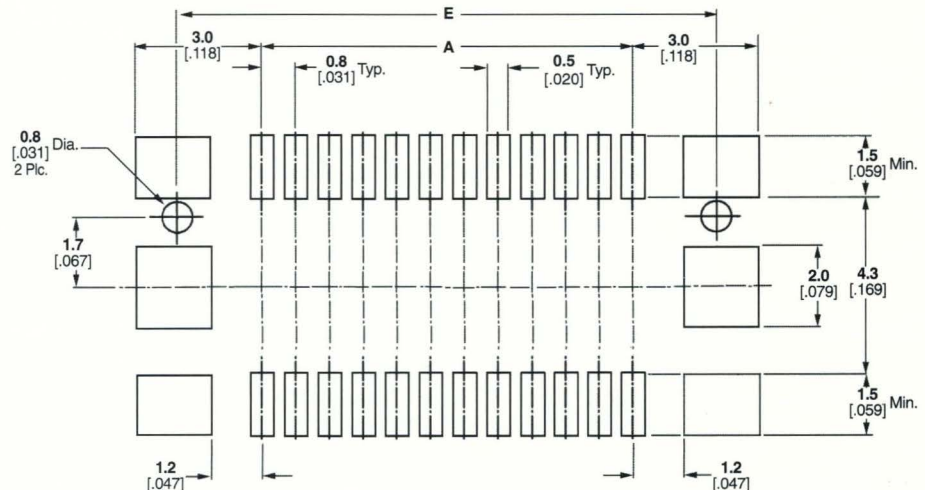
Mating Plugs — pages 38 & 39

Technical Documents (Page 70):

AMP Product Specifications
108-5424, 108-5466



Section A - A



Recommended PC Board Layout
(PC Board Thickness = 0.6 [.024] Min.)

0.8mm Fine Stack/Fine Mate
Connectors

0.8mm Fine Stack Caps, 0.8 [.031] Pitch (Continued)

No. of Positions	Dimensions					Keyed	With Boss	Cap Part Numbers	
	A	B	C	D	E			Tin Plated Contacts	Gold Plated Contacts
14	4.8 .189	6.4 .252	9.8 .386	—	8.8 .346	Yes	Yes	1-179397-4	—
16	5.6 .217	7.2 .283	10.6 .417	0.4 .016	9.6 .378	Yes	Yes	1-179397-6	1-179703-6
	5.6 .217	7.2 .283	10.6 .417	0.4 .016	—	Yes	No	1-179403-6	1-179704-6
24	8.8 .346	10.4 .409	13.8 .543	0.4 .016	12.8 .504	Yes	Yes	2-179397-4	2-179703-4
	8.8 .346	10.4 .409	13.8 .543	0.4 .016	—	Yes	No	2-179403-4	2-179704-4
30	11.2 .441	12.8 .504	16.2 .638	—	15.2 .598	Yes	Yes	3-179397-0	3-179703-0
	11.2 .441	12.8 .504	16.2 .638	—	—	Yes	No	3-179403-0	3-179704-0
	11.2 .441	12.8 .504	16.2 .638	—	—	No	No	3-917294-0	—
	11.2 .441	12.8 .504	16.2 .638	—	15.2 .598	No	Yes	3-917300-0	—
34	12.8 .504	14.35 .565	17.8 .701	—	—	No	No	3-917294-4	—
	12.8 .504	14.35 .565	17.8 .701	—	16.8 .661	No	Yes	3-917300-4	—
40	15.2 .598	16.8 .661	20.2 .795	0.4 .016	19.2 .756	Yes	Yes	4-179397-0	4-179703-0
	15.2 .598	16.8 .661	20.2 .795	0.4 .016	—	Yes	No	4-179403-0	4-179704-0
50	19.2 .756	20.8 .819	24.2 .953	—	23.2 .913	Yes	Yes	5-179397-0	—

0.8mm Fine Mate Tabs, 0.8 [.031] Pitch

4.0 [.157] and 4.5 [.177] Stacking Heights

Material and Finish:

Housing — 6T nylon, high heat resistant resin

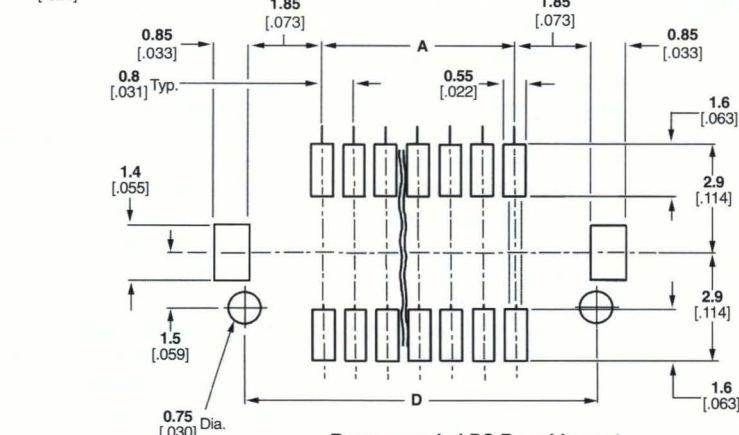
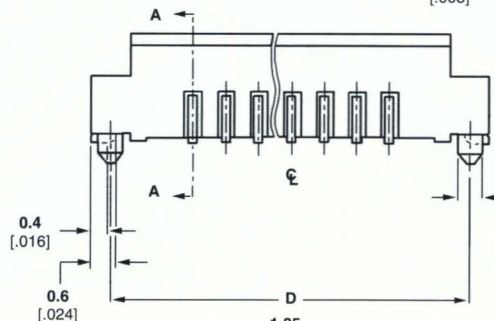
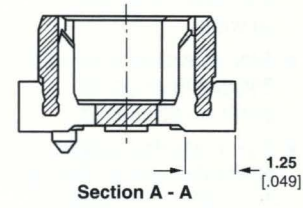
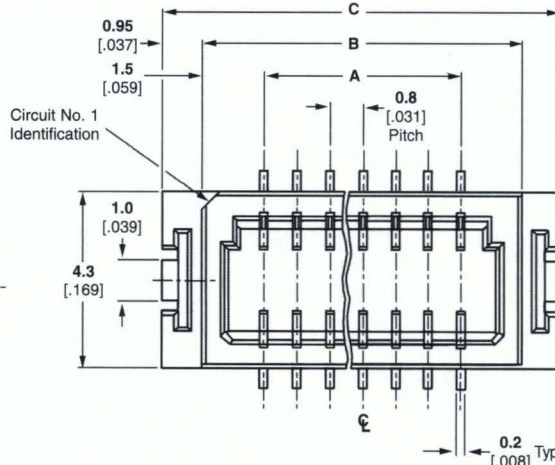
Contacts — Copper alloy, plated AMP-DURAGOLD or tin-lead on contact area (see chart), tin-lead on solder leads, with entire contact under-plated nickel

Related Product Data:

Mating Receptacles — page 42

Technical Documents (Page 70):

AMP Product Specification
108-5512



Recommended PC Board Layout
(PC Board Thickness = 0.6 [.024] Min.)


0.8mm Fine Stack/Fine Mate Connectors

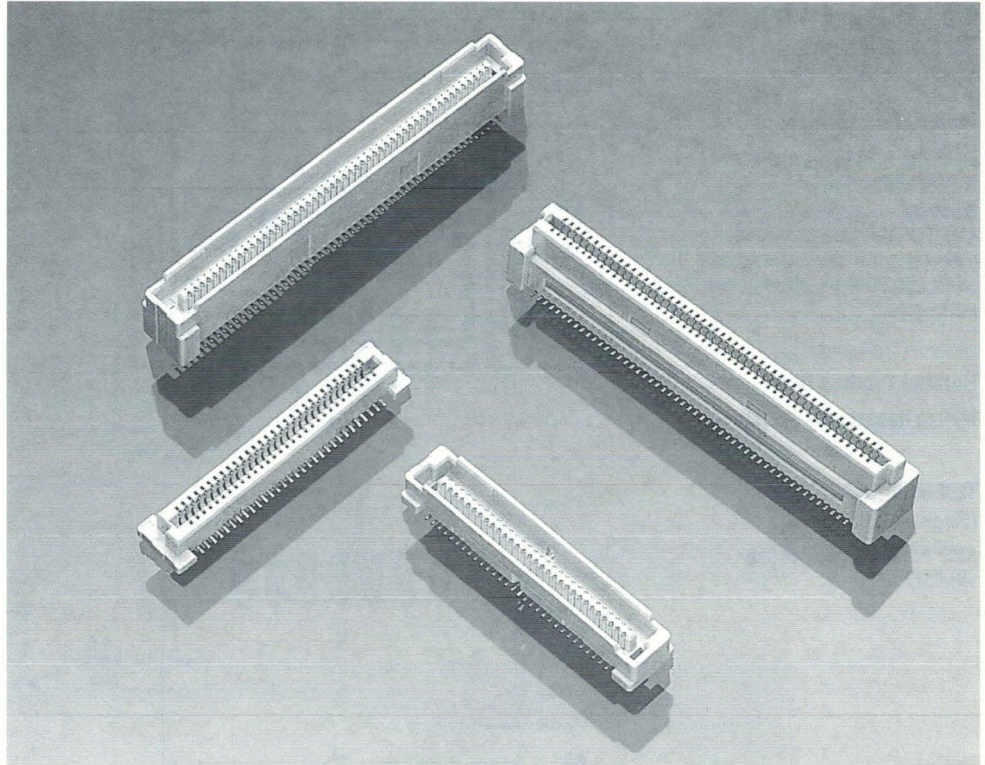
No. of Positions	Dimensions					Stacking Height	Keyed	With Boss	Tab Part Numbers	
	A	B	C	D	E				Tin Plated Contacts	Gold Plated Contacts
10	3.2 .126	6.2 .244	8.1 .319	7.15 .281	2.7 .106	4.0 .157	Yes	Yes	—	1-917407-0
	8.0 .315	11.0 .433	12.9 .508	11.95 .470	2.7 .106	4.0 .157	No	Yes	—	2-917407-2
22	8.0 .315	11.0 .433	12.9 .508	11.95 .470	3.3 .130	4.5 .177	No	Yes	—	2-316120-2
	15.2 .598	18.2 .717	20.1 .791	19.15 .754	3.3 .130	4.5 .177	Yes	Yes	4-316407-0	—
50	19.2 .756	21.6 .850	23.5 .925	22.55 .888	3.3 .130	4.5 .177	No	Yes	—	5-316466-0
60	23.2 .913	26.2 1.031	28.1 1.106	27.15 1.069	2.7 .106	4.0 .157	Yes	Yes	—	6-316514-0

0.8mm Free Height (FH) Connectors

Photo 105881

Product Facts

- For parallel board stacking applications
- High density packaging on 0.8 [.031] centerline spacing
- Available sizes from 40 to 200 positions (in 20 position increments)
- Board stacking heights available from 5 [.197] to 16 [.630] (in 1 [.039] increments)
- Bellows type spring contacts are resistant to scooping and stubbing during mating and unmating
- Positioning bosses for proper on-board orientation
- Available packaged on "tape-and-reel" for automatic placement per EIA standards
- Recognized under the Component Program of Underwriter Laboratories Inc.,  File No. E28476



AMP 0.8mm FH surface-mount connectors are designed for parallel board stacking applications using subminiature connectors to meet today's electronic industry requirements for high density packaging.

It is possible to save more than 50% of the required board space when compared to conventional 1.27 [.050] centerline connectors.

0.8mm FH connectors are ideally suited for application downsizing, such as notebook PCs, pen pads, cellular telephones and other electronic equipment requiring miniature connector packaging.

Vertical board-mount plugs and receptacles are available. By mating combinations of plug and receptacle housing heights, board-to-board stacking heights from 5 [.197] to 16 [.630] (in 1 [.039] increments) can be achieved.

The receptacles are preloaded with AMP's unique bellows-type spring contacts for reliable electrical connection with the plugs.

Surface-mount solder leads permit fast assembly operation.

Performance Characteristics

Voltage Rating: 100 VAC

Current Rating: 0.5 ampere

Contact Resistance:
30 milliohms max. (initial)

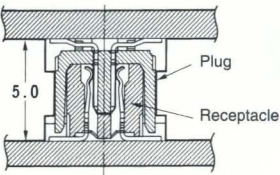
Dielectric Withstanding Voltage:
500 VAC (1 minute)

Operating Temperature:
-40°C to +85°C (Including terminal temperature rise)

0.8mm Free Height (FH) Connectors (Continued)

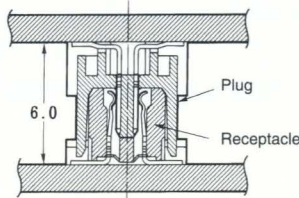
Board-to-Board Stacking Heights (By Plug/Receptacle Combinations)

Part No.: 177984-□
(Page 46)



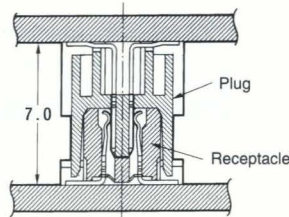
Part No.: 177983-□
(Page 50)
5 [.197] Stacking Height

Part No.: 179029-□
(Page 47)



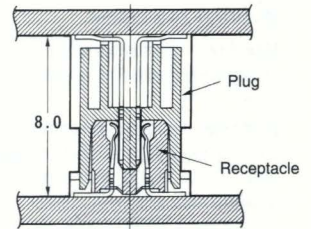
Part No.: 177983-□
(Page 50)
6 [.236] Stacking Height

Part No.: 179030-□
(Page 48)



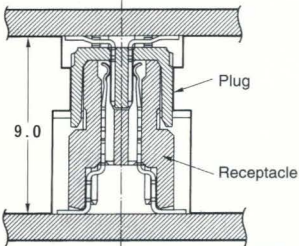
Part No.: 177983-□
(Page 50)
7 [.276] Stacking Height

Part No.: 179031-□
(Page 49)



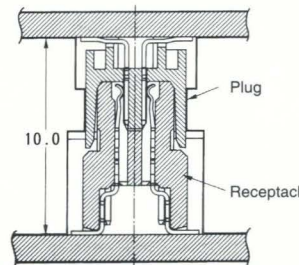
Part No.: 177983-□
(Page 50)
8 [.315] Stacking Height

Part No.: 177984-□
(Page 46)



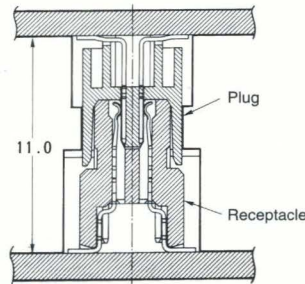
Part No.: 5-179009-□
(Page 51)
9 [.354] Stacking Height

Part No.: 179029-□
(Page 47)



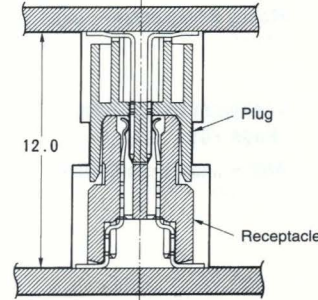
Part No.: 5-179009-□
(Page 51)
10 [.394] Stacking Height

Part No.: 179030-□
(Page 48)



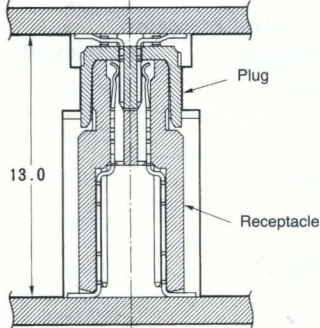
Part No.: 5-179009-□
(Page 51)
11 [.433] Stacking Height

Part No.: 179031-□
(Page 49)



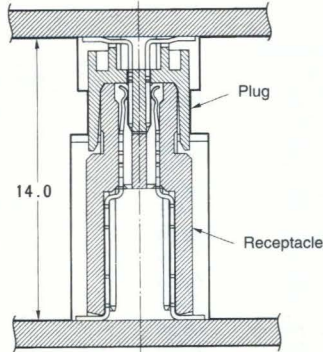
Part No.: 5-179009-□
(Page 51)
12 [.472] Stacking Height

Part No.: 177984-□
(Page 46)



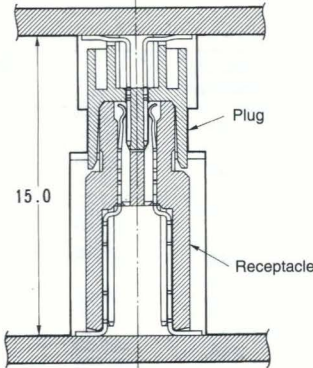
Part No.: 5-179010-□
(Page 52)
13 [.512] Stacking Height

Part No.: 179029-□
(Page 47)



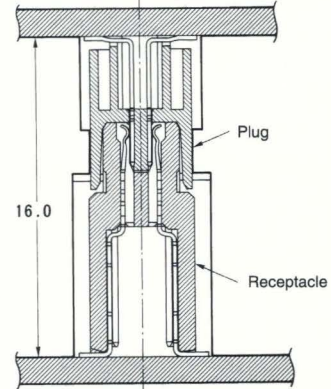
Part No.: 5-179010-□
(Page 52)
14 [.551] Stacking Height

Part No.: 179030-□
(Page 48)



Part No.: 5-179010-□
(Page 52)
15 [.591] Stacking Height

Part No.: 179031-□
(Page 49)



Part No.: 5-179010-□
(Page 52)
16 [.630] Stacking Height

Note: For specific dash nos. of sizes 40 to 200 positions (in 20-position increments), see pages 46 thru 52.

0.8mm FH
Connectors

**5mm Plugs for 5 [.197],
9 [.354] and 13 [.512]
Stacking Heights**

Material and Finish:

Housing — High temperature thermoplastic, natural color, 94V-0 rated

Contacts — Brass; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

Performance Characteristics — page 44

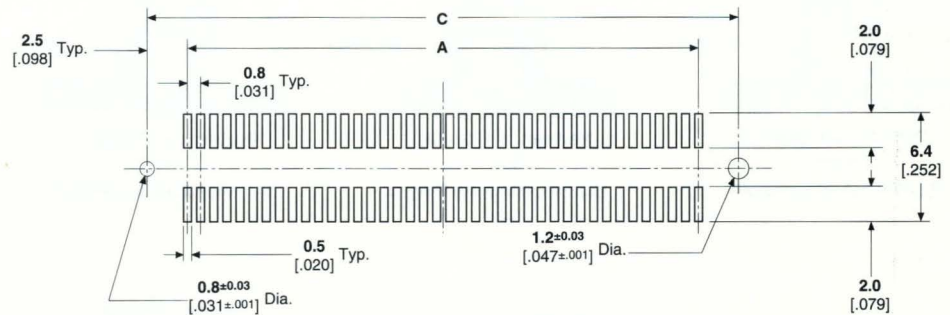
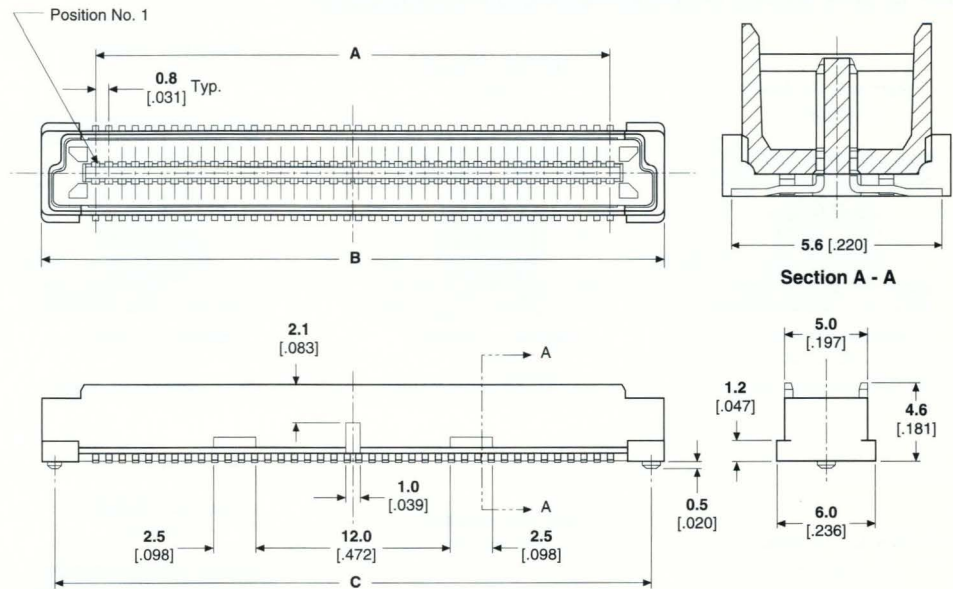
Stacking Height Combinations — page 45

Mating Receptacles — pages 50 thru 52

**Technical Documents
(Page 70):**

AMP Product Specification
108-5390

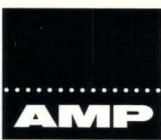
0.8mm Free Height Vertical Plugs, 0.8 [.031] Pitch



Recommended PC Board Layout

No. of Positions	Dimensions			Plug Part Numbers	
	A	B	C	Tube Packaged	Tape Packaged*
40	15.20 .598	21.80 .858	20.20 .795	177984-1	177986-1
60	23.20 .913	29.80 1.173	28.20 1.110	177984-2	177986-2
80	31.20 1.228	37.80 1.488	36.20 1.425	177984-3	177986-3
100	39.20 1.543	45.80 1.803	44.20 1.740	177984-4	177986-4
120	47.20 1.858	53.80 2.118	52.20 2.055	177984-5	177986-5
140	55.20 2.173	61.80 2.433	60.20 2.370	177984-6	177986-6
160	63.20 2.488	69.80 2.748	68.20 2.685	177984-8	—
200	79.20 3.118	85.80 3.378	84.20 3.315	1-177984-0	—

*With steel cover for automatic placement.



0.8mm Free Height Vertical Plugs, 0.8 [.031] Pitch (Continued)

**6mm Plugs for 6 [.236],
10 [.394] and 14 [.551]
Stacking Heights**

Material and Finish:

Housing — High temperature thermoplastic, natural color, 94V-0 rated

Contacts — Brass; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

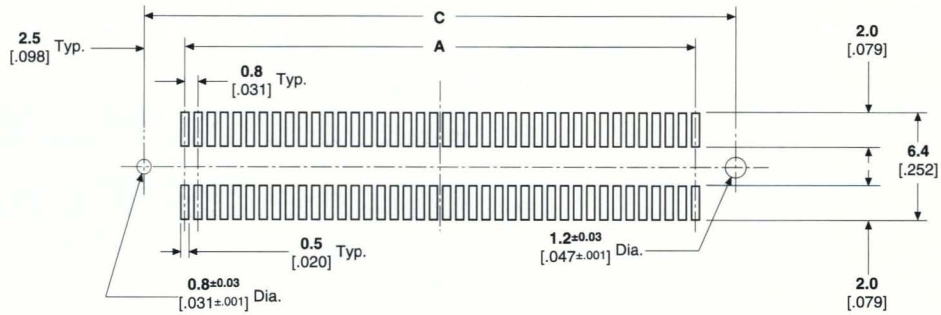
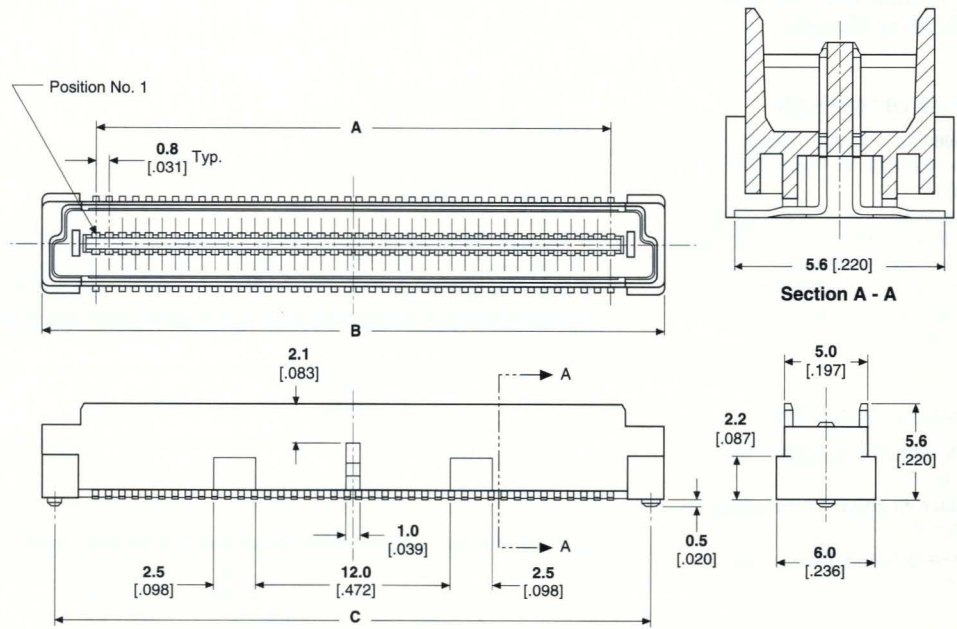
Performance Characteristics — page 44

Stacking Height Combinations — page 45

Mating Receptacles — pages 50 thru 52

**Technical Documents
(Page 70):**

AMP Product Specification
108-5390



Recommended PC Board Layout

No. of Positions	Dimensions			Plug Part Numbers	
	A	B	C	Tube Packaged	Tape Packaged*
40	15.20 .598	21.80 .858	20.20 .795	179029-1	1-177986-1
60	23.20 .913	29.80 1.173	28.20 1.110	179029-2	1-177986-2
80	31.20 1.228	37.80 1.488	36.20 1.425	179029-3	1-177986-3
100	39.20 1.543	45.80 1.803	44.20 1.740	179029-4	1-177986-4
120	47.20 1.858	53.80 2.118	52.20 2.055	179029-5	1-177986-5
140	55.20 2.173	61.80 2.433	60.20 2.370	179029-6	—
160	63.20 2.488	69.80 2.748	68.20 2.685	179029-8	—
180	71.20 2.803	77.80 3.063	76.20 3.000	179029-9	—
200	79.20 3.118	85.80 3.378	84.20 3.315	1-179029-0	—

*With steel cover for automatic placement.

0.8mm FH
Connectors

0.8mm Free Height Vertical Plugs, 0.8 [.031] Pitch (Continued)

**7mm Plugs for 7 [.276],
11 [.433] and 15 [.591]
Stacking Heights**

Material and Finish:

Housing — High temperature thermoplastic, natural color, 94V-0 rated

Contacts — Brass; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

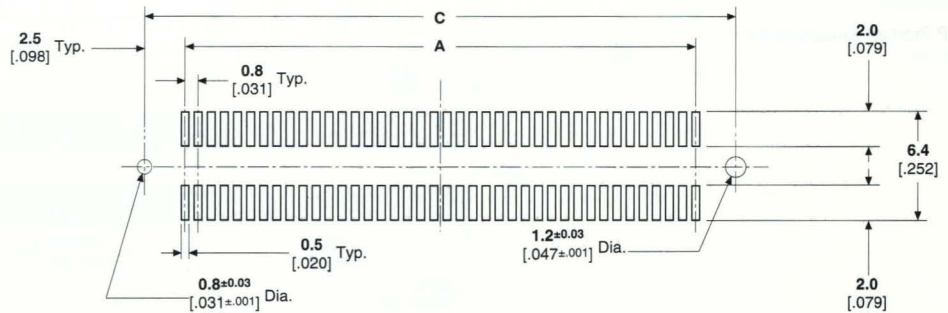
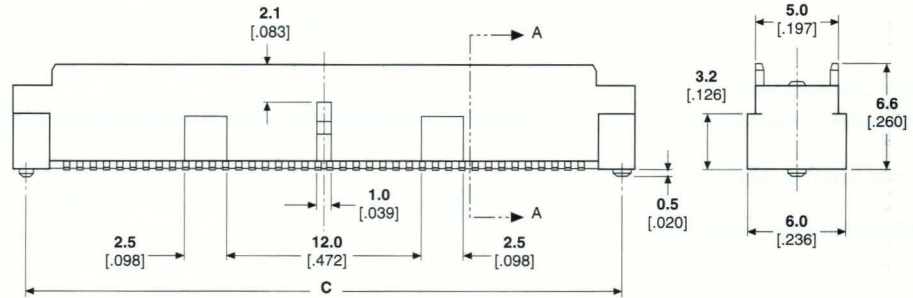
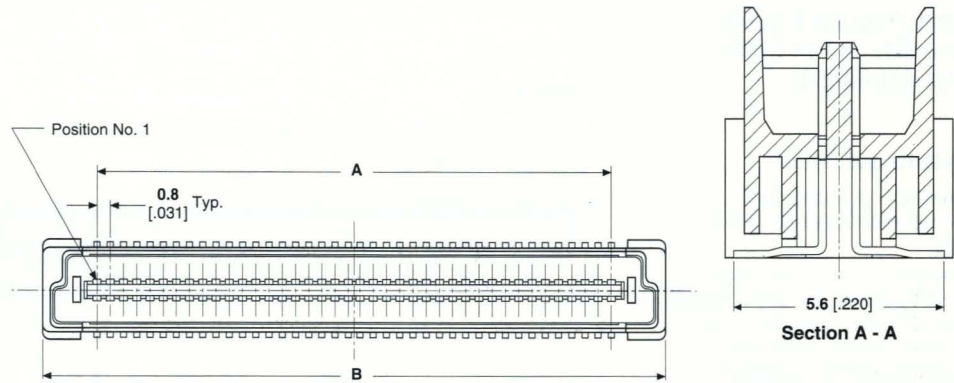
Performance Characteristics — page 44

Stacking Height Combinations — page 45

Mating Receptacles — pages 50 thru 52

Technical Documents (Page 70):

AMP Product Specification
108-5390



Recommended PC Board Layout

No. of Positions	Dimensions			Plug Part Numbers	
	A	B	C	Tube Packaged	Tape Packaged *
40	15.20 .598	21.80 .858	20.20 .795	179030-1	2-177986-1
60	23.20 .913	29.80 1.173	28.20 1.110	179030-2	2-177986-2
80	31.20 1.228	37.80 1.488	36.20 1.425	179030-3	2-177986-3
100	39.20 1.543	45.80 1.803	44.20 1.740	179030-4	2-177986-4
120	47.20 1.858	53.80 2.118	52.20 2.055	179030-5	2-177986-5
140	55.20 2.173	61.80 2.433	60.20 2.370	179030-6	—
160	63.20 2.488	69.80 2.748	68.20 2.685	179030-8	—
200	79.20 3.118	85.80 3.378	84.20 3.315	1-179030-0	—

*With steel cover for automatic placement.

0.8mm FH Connectors

0.8mm Free Height Vertical Plugs, 0.8 [.031] Pitch (Continued)

**8mm Plugs for 8 [.315],
12 [.472] and 16 [.630]
Stacking Heights**

Material and Finish:

Housing — High temperature thermoplastic, natural color, 94V-0 rated

Contacts — Brass; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

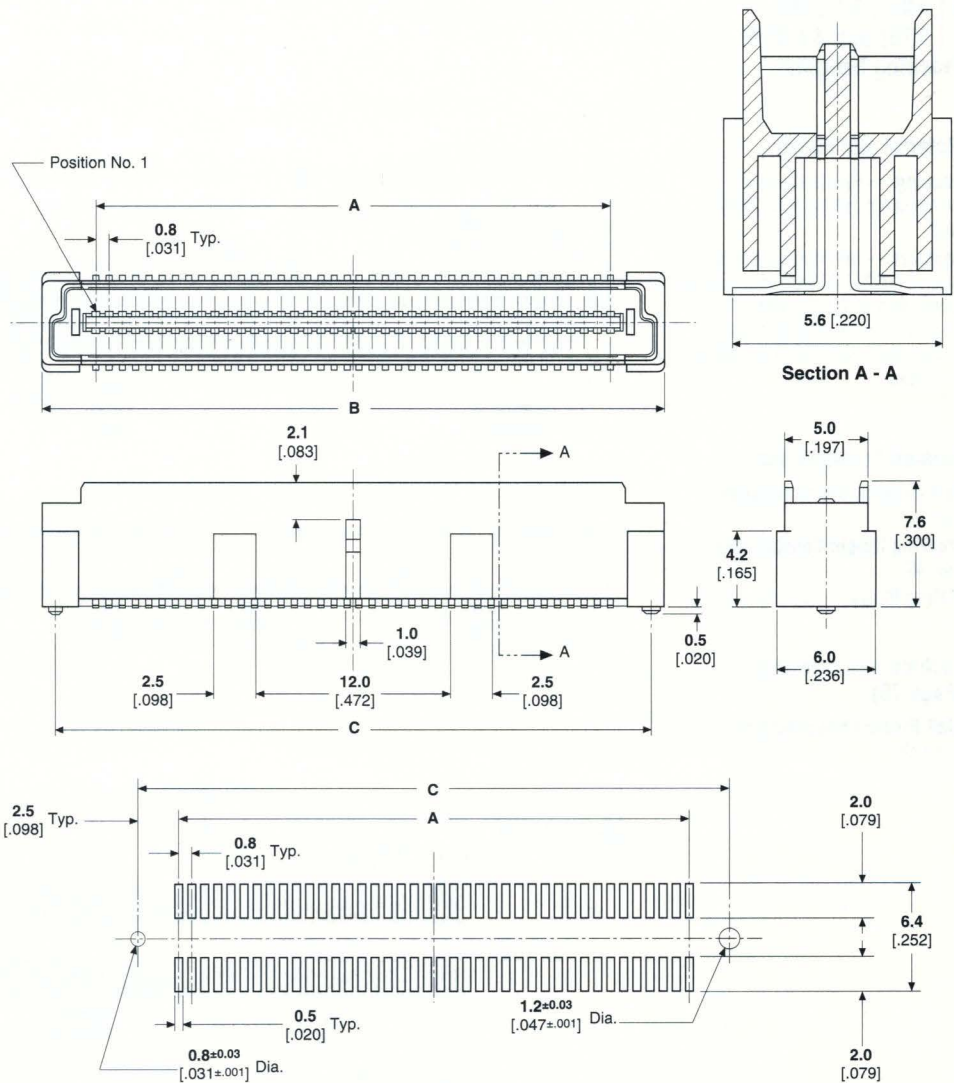
Performance Characteristics — page 44

Stacking Height Combinations — page 45

Mating Receptacles — pages 50 thru 52

**Technical Documents
(Page 70):**

AMP Product Specification
108-5390



Recommended PC Board Layout

No. of Positions	Dimensions			Plug Part Numbers	
	A	B	C	Tube Packaged	Tape Packaged*
40	15.20 .598	21.80 .858	20.20 .795	179031-1	3-177986-1
60	23.20 .913	29.80 1.173	28.20 1.110	179031-2	3-177986-2
80	31.20 1.228	37.80 1.488	36.20 1.425	179031-3	3-177986-3
100	39.20 1.543	45.80 1.803	44.20 1.740	179031-4	3-177986-4
120	47.20 1.858	53.80 2.118	52.20 2.055	179031-5	3-177986-5
140	55.20 2.173	61.80 2.433	60.20 2.370	179031-6	—
160	63.20 2.488	69.80 2.748	68.20 2.685	179031-8	—
180	71.20 2.803	77.80 3.063	76.20 3.000	179031-9	—
200	79.20 3.118	85.80 3.378	84.20 3.315	1-179031-0	—

*With steel cover for automatic placement.

0.8mm Free Height Vertical Receptacles, 0.8 [.031] Pitch (Continued)

**5mm Receptacles for
5 [.197], 6 [.236],
7 [.276] and 8 [.315]
Stacking Heights**

Material and Finish:

Housing — High temperature thermoplastic, natural color, 94V-0 rated

Contacts — Beryllium copper; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

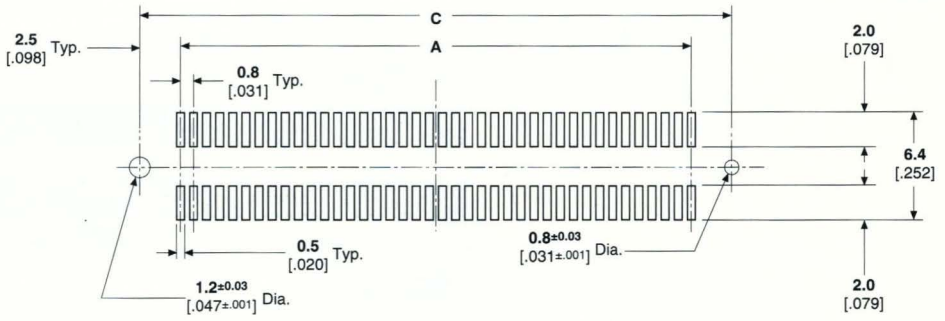
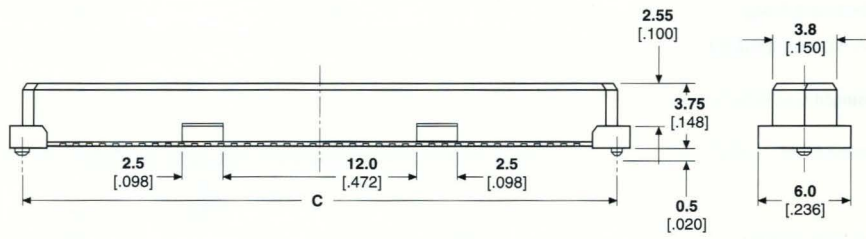
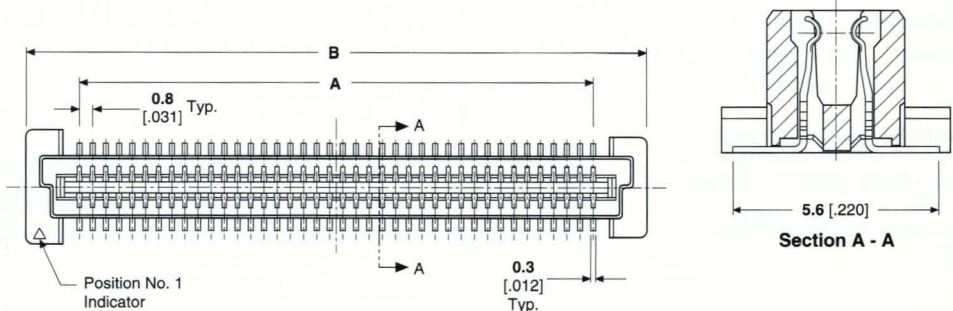
Performance Characteristics — page 44

Stacking Height Combinations — page 45

Mating Plugs — pages 46 thru 49

**Technical Documents
(Page 70):**

AMP Product Specification
108-5390



Recommended PC Board Layout

No. of Positions	Dimensions			Receptacle Part Numbers	
	A	B	C	Tube Packaged	Tape Packaged*
40	15.20 .598	21.80 .858	20.20 .795	177983-1	177985-1
60	23.20 .913	29.80 1.173	28.20 1.110	177983-2	177985-2
80	31.20 1.228	37.80 1.488	36.20 1.425	177983-3	177985-3
100	39.20 1.543	45.80 1.803	44.20 1.740	177983-4	177985-4
120	47.20 1.858	53.80 2.118	52.20 2.055	177983-5	177985-5
140	55.20 2.173	61.80 2.433	60.20 2.370	177983-6	—
160	63.20 2.488	69.80 2.748	68.20 2.685	177983-8	—
200	79.20 3.118	85.80 3.378	84.20 3.315	1-177983-0	—

*With steel cover for automatic placement.

0.8mm FH Connectors

0.8mm Free Height Vertical Receptacles, 0.8 [.031] Pitch (Continued)

**9mm Receptacles for
9 [.354], 10 [.394],
11 [.433] and 12 [.472]
Stacking Heights**

Material and Finish:

Housing — High temperature thermoplastic, natural color, 94V-0 rated

Contacts — Beryllium copper; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

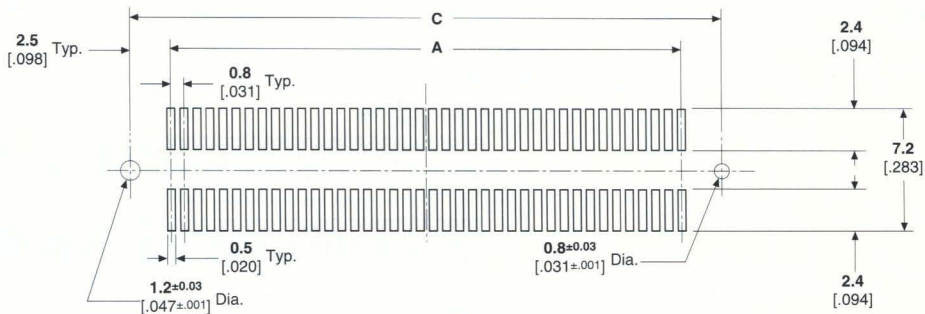
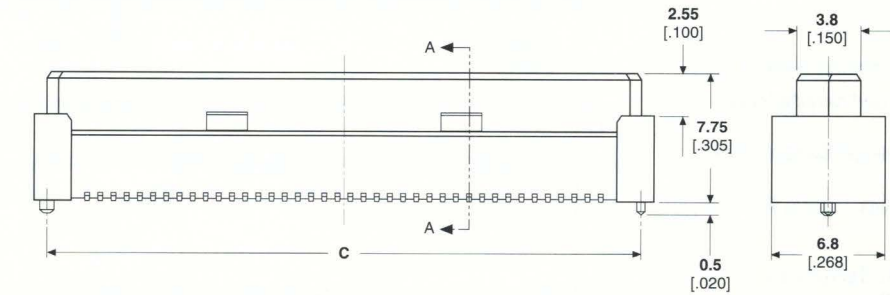
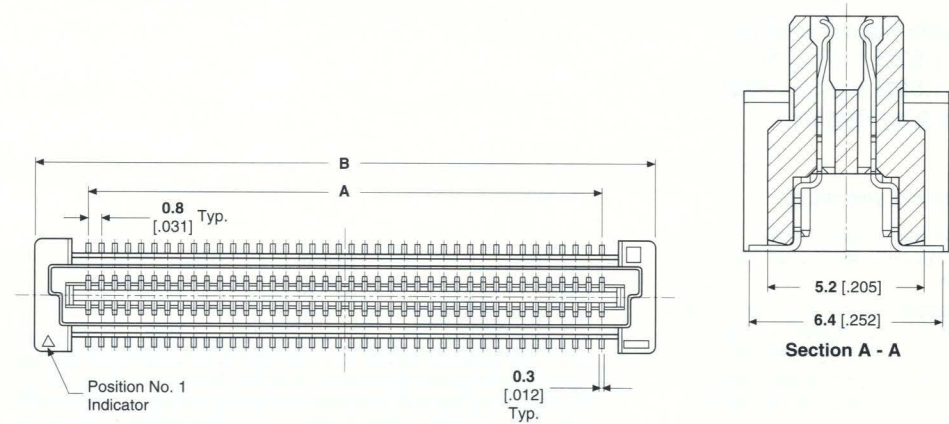
Performance Characteristics — page 44

Stacking Height Combinations — page 45

Mating Plugs — pages 46 thru 49

**Technical Documents
(Page 70):**

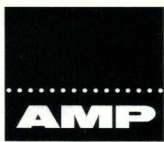
AMP Product Specification
108-5390



Recommended PC Board Layout

No. of Positions	Dimensions			Receptacle Part Numbers	
	A	B	C	Tube Packaged	Tape Packaged*
40	15.20 .598	21.80 .858	20.20 .795	5-179009-1	5-179180-1
60	23.20 .913	29.80 1.173	28.20 1.110	5-179009-2	5-179180-2
80	31.20 1.228	37.80 1.488	36.20 1.425	5-179009-3	5-179180-3
100	39.20 1.543	45.80 1.803	44.20 1.740	5-179009-4	5-179180-4
120	47.20 1.858	53.80 2.118	52.20 2.055	5-179009-5	—
140	55.20 2.173	61.80 2.433	60.20 2.370	5-179009-6	—
160	63.20 2.488	69.80 2.748	68.20 2.685	5-179009-8	—
180	71.20 2.803	77.80 3.063	76.20 3.000	5-179009-9	—
200	79.20 3.118	85.80 3.378	84.20 3.315	6-179009-0	—

*With steel cover for automatic placement.



0.8mm Free Height Vertical Receptacles, 0.8 [.031] Pitch (Continued)

13mm Receptacles for 13 [.512], 14 [.551], 15 [.591] and 16 [.630] Stacking Heights

Material and Finish:

Housing — High temperature thermoplastic, natural color, 94V-0 rated

Contacts — Beryllium copper; duplex plated 0.00020 [.000008] min. gold on contact area, 0.00100 [.000039] min. tin-lead on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

Related Product Data:

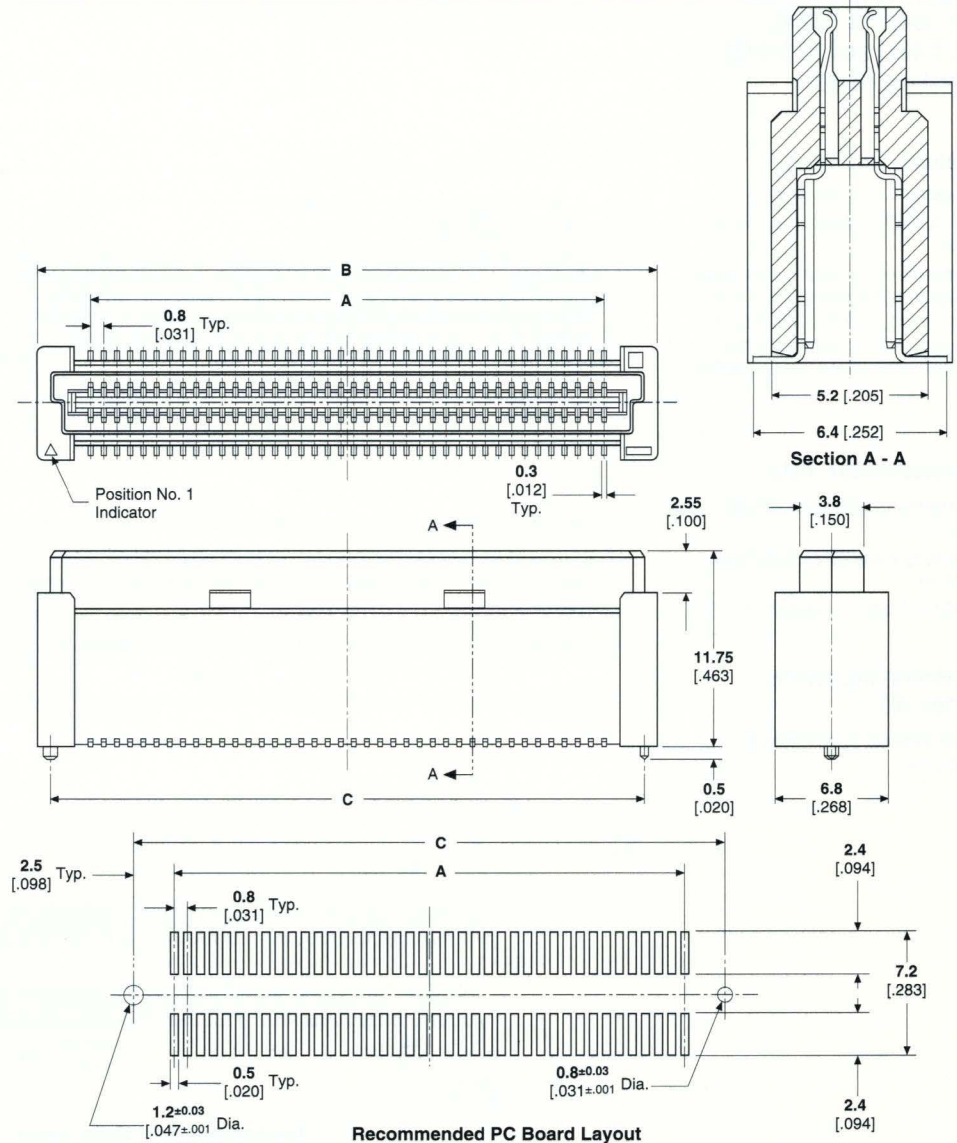
Performance Characteristics — page 44

Stacking Height Combinations — page 45

Mating Plugs — pages 46 thru 49

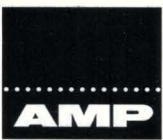
Technical Documents (Page 70):

AMP Product Specification
108-5390



No. of Positions	Dimensions			Receptacle Part Numbers	
	A	B	C	(Tube Packaged)	Tape Packaged*
40	15.20 .598	21.80 .858	20.20 .795	5-179010-1	84616-1
60	23.20 .913	29.80 1.173	28.20 1.110	5-179010-2	84616-2
80	31.20 1.228	37.80 1.488	36.20 1.425	5-179010-3	84616-3
100	39.20 1.543	45.80 1.803	44.20 1.740	5-179010-4	84616-4
120	47.20 1.858	53.80 2.118	52.20 2.055	5-179010-5	84616-5
140	55.20 2.173	61.80 2.433	60.20 2.370	5-179010-6	
160	63.20 2.488	69.80 2.748	68.20 2.685	5-179010-8	
180	71.20 2.803	77.80 3.063	76.20 3.000	5-179010-9	
200	79.20 3.118	85.80 3.378	84.20 3.315	6-179010-0	

*With steel cover for automatic placement.



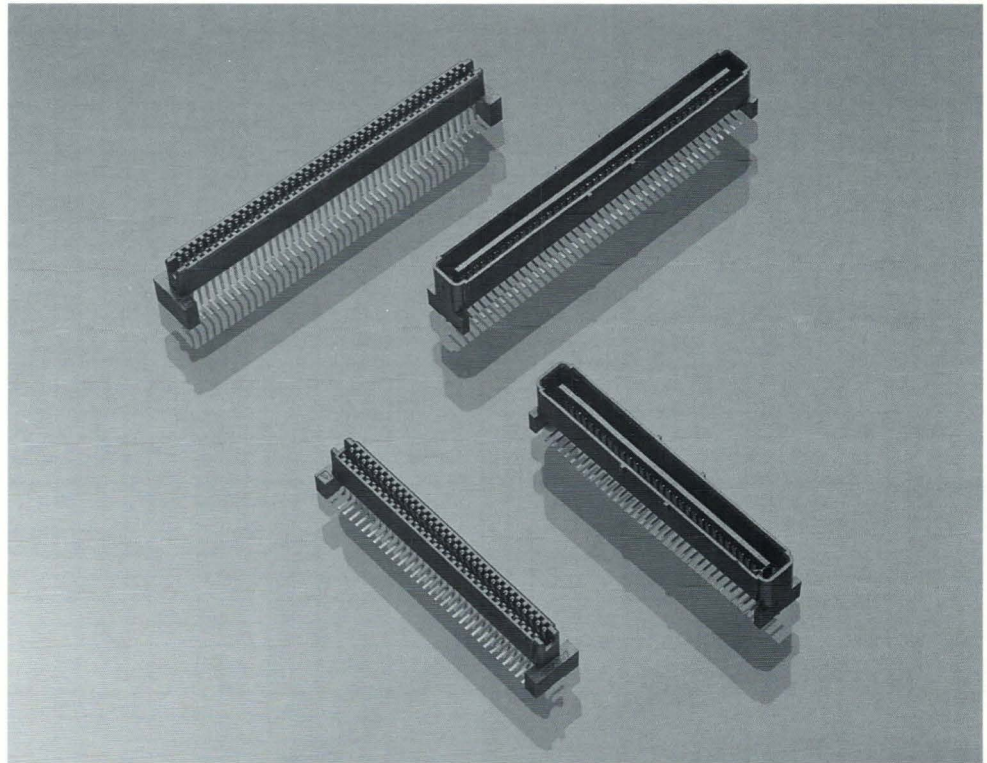
Engineering Notes

1.0mm FH (IEEE 1386) Connectors

Photo 105882

Product Facts

- For board stacking applications
- High density packaging on 1.0 [.039] centerline spacing
- Available in standard 64-position and optional 84-position sizes
- "Tape-and-reel" packaged per EIA standards
- Board stacking heights available from 8 [.315] to 15 [.591] (see page 55)
- Increased plastic clearance eliminates stress to solder joints during mating (see page 55)
- Improved locating posts ensure accurate hand or robotic placement (see page 55)
- Meets EIA-700 AAAB specifications for IEEE 1386 applications



As a standard for adding local PCI or Sbus performance to Futurebus+ and VMEbus applications, IEEE 1386 offers new levels of performance and packaging convenience through the mezzanine architecture.

AMP makes it easier and more productive to add an IEEE 1386 mezzanine connector to your system. The surface-mount parallel stacking connector features contacts on a 1.0 [.039] pitch and is available in eight stacking heights from 8 [.315] to 15 [.591]. Sizes include the IEEE 1386 standard 64-position version and an optional 84-position version.

Not only is the connector compatible with EIA-700 AAAB — the connector standard for IEEE 1386 mezzanine connectors — it offers several enhancements that make it easier to use and more reliable. Increased plastic clearance between mating connectors makes it easier to align multiple connectors for mating, thus eliminating stress to the solder joints during engagement. Improved locating posts allow fast, highly accurate hand placement of connectors. The connectors are available with vacuum covers for automated placement.

Performance Characteristics

Current Rating:

1.0 ampere per contact

Contact Resistance:

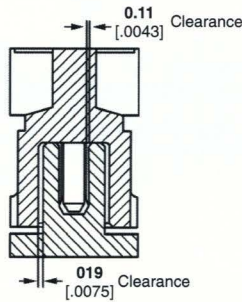
30 milliohms max. (initial)

Durability:

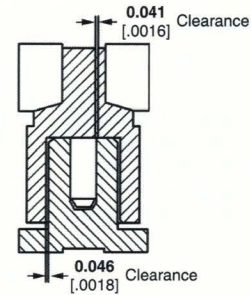
tested to 100 mating cycles min.

1.0mm FH (IEEE 1386) Connectors (Continued)

Additional clearance during mating increases reliability by allowing registration misalignment and eliminating stresses on the solder joints.

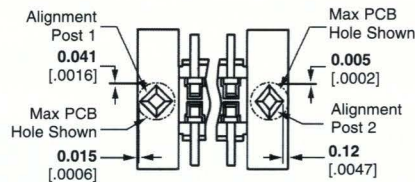


AMP Product

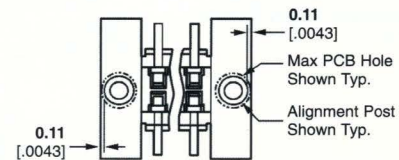


Standard Product

Improved locating posts allow fast, accurate hand placement on the board by ensuring proper location at both the minimum and maximum dimensions of connector material tolerances and PC board hole tolerances.



AMP Product



Standard Product

Board-to-Board Stacking Heights (By Receptacle/Plug Combinations)

No. of Positions	Stacking Height	Part Numbers				
		With Locating Posts		With Vacuum Cover		
		Receptacle	Plug	Receptacle	Plug	
64	8 [.315]	120521-1	120525-1	120528-1	120532-1	
	9 [.354]	120521-1	120526-1	120528-1	120533-1	
	10 [.394]	120521-1	120527-1	120528-1	120534-1	
	11 [.433]	120603-1	120526-1	120529-1	120533-1	
	12 [.472]	120603-1	120527-1	120529-1	120534-1	
	13 [.512]	120523-1	120527-1	120530-1	120534-1	
	14 [.551]	120524-1	120526-1	120531-1	120533-1	
	15 [.591]	120524-1	120527-1	120531-1	120534-1	
	84	8 [.315]	120521-2	120525-2	120528-2	120532-2
		9 [.354]	120521-2	120526-2	120528-2	120533-2
		10 [.394]	120521-2	120527-2	120528-2	120534-2
		11 [.433]	120603-2	120526-2	120529-2	120533-2
		12 [.472]	120603-2	120527-2	120529-2	120534-2
		13 [.512]	120523-2	120527-2	120530-2	120534-2
		14 [.551]	120524-2	120526-2	120531-2	120533-2
15 [.591]		120524-2	120527-2	120531-2	120534-2	

Note: Receptacle specifications are shown on pages 56 and 57; plug specifications are shown on pages 58 and 59.

1.0mm FH (IEEE 1386) Receptacles with Locating Posts, 1.0 [.039] Pitch

8 [.315] thru 15 [.591] Stacking Heights

Material and Finish:

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] min. gold on contact area, 0.00381 [.000150] min. tin-lead on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Related Product Data:

Performance Characteristics — page 54

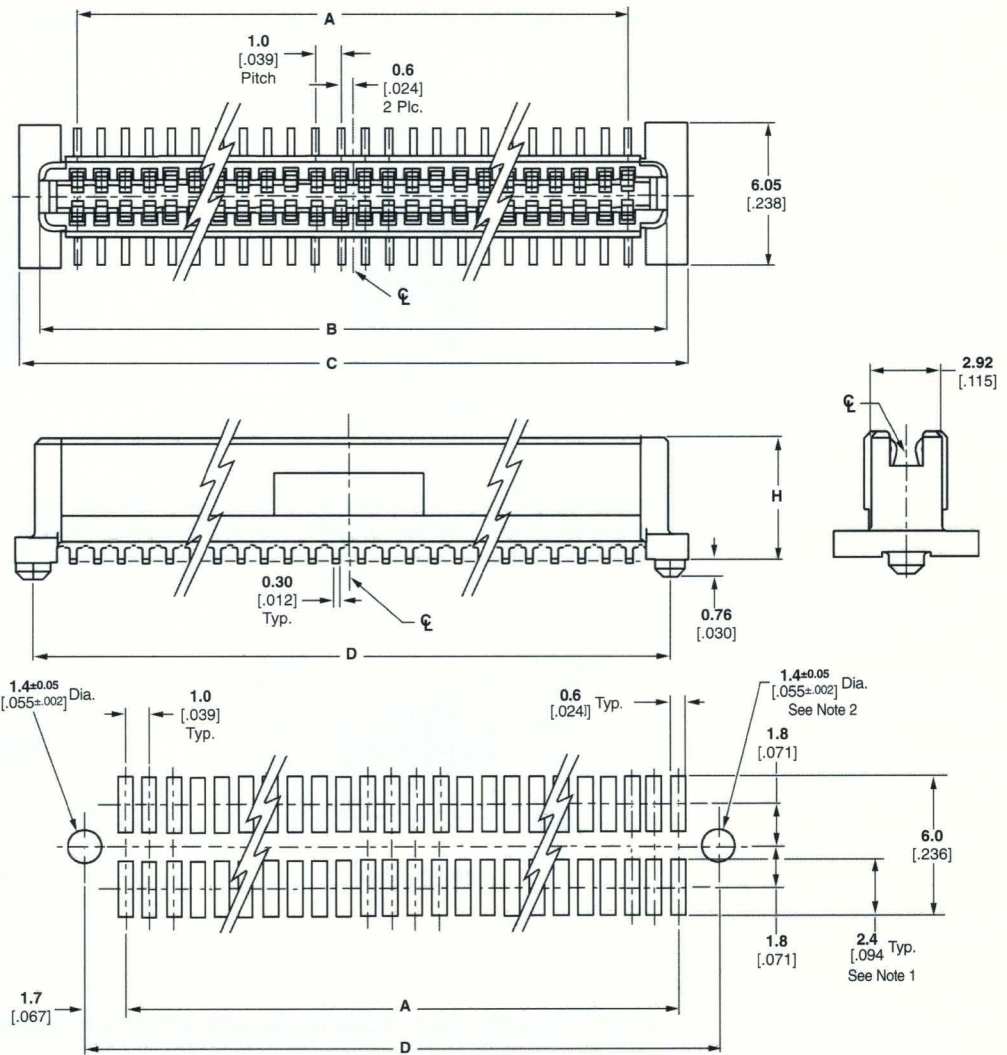
Stacking Height Combinations — page 55

Mating Plugs — pages 58 & 59

Technical Documents:

EIA-700 AAAB Specification

AMP Application Specification:
114-25045



Recommended PC Board Layout

No. of Positions	Dimensions				H	Receptacle Part Numbers
	A	B	C	D		
64					5.37 .211	120521-1
					7.37 .290	120603-1
					8.37 .330	120523-1
					10.37 .408	120524-1
84					5.37 .211	120521-2
					7.37 .290	120603-2
					8.37 .330	120523-2
					10.37 .408	120524-2

Notes: 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.4 [.094] length assures optimum solder fillet regardless of connector manufacturer.
2. 1.5 ±0.05 [.059 ±.002] diameter hole should be used if placed on PC board with vacuum placement equipment.

1.0mm FH (IEEE 1386) Receptacles with Vacuum Cover, 1.0 [.039] Pitch

8 [.315] thru 15 [.591]
Stacking Heights

Material and Finish:

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] min. gold on contact area, 0.00381 [.000150] min. tin-lead on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Vacuum Cover — Aluminum Alloy

Related Product Data:

Performance Characteristics — page 54

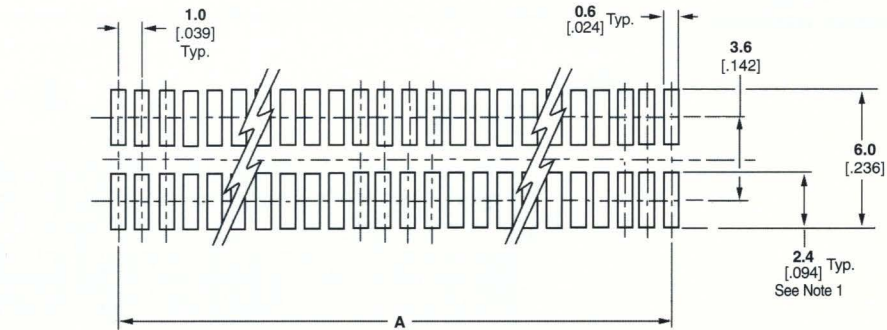
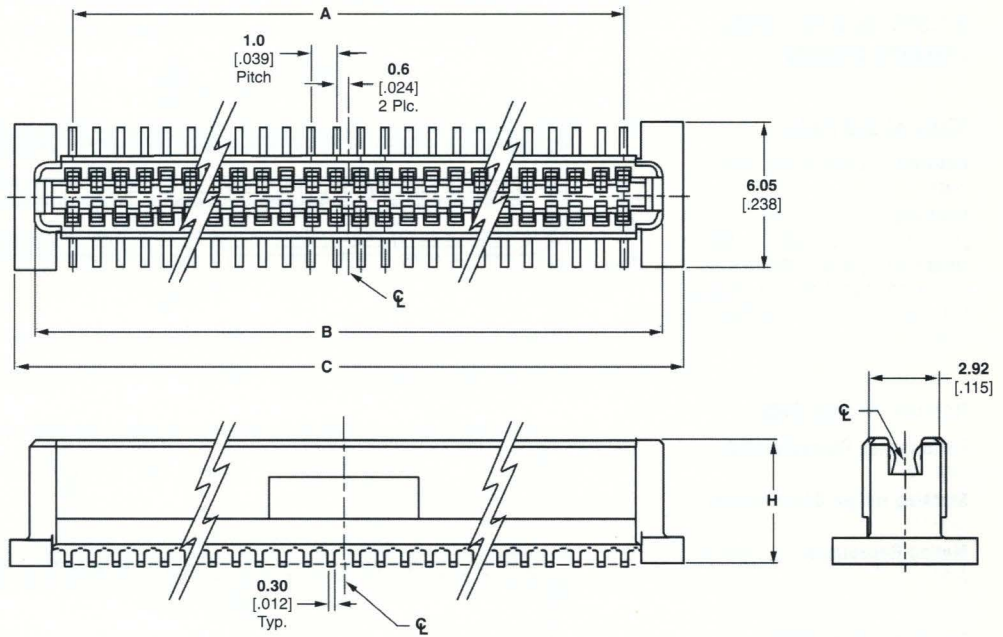
Stacking Height Combinations — page 55

Mating Plugs — pages 58 & 59

Technical Documents:

EIA-700 AAAB Specification

AMP Application Specification:
114-25045



Recommended PC Board Layout

No. of Positions	Dimensions				Receptacle Part Numbers
	A	B	C	H	
64	31.0 1.220	34.22 1.347	35.9 1.413	5.37 .211	120528-1
				7.37 .290	120529-1
				8.37 .330	120530-1
				10.37 .408	120531-1
84	41.0 1.614	44.22 1.741	45.9 1.807	5.37 .211	120528-2
				7.37 .290	120529-2
				8.37 .330	120530-2
				10.37 .408	120531-2

Notes: 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.4 [.094] length assures optimum solder fillet regardless of connector manufacturer.
2. Vacuum cover omitted from illustrations above for dimensional clarity.

1.0mm FH (IEEE 1386) Plugs with Locating Posts, 1.0 [.039] Pitch

8 [.315] thru 15 [.591] Stacking Heights

Material and Finish:

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] min. gold on contact area, 0.00381 [.000150] min. tin-lead on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Related Product Data:

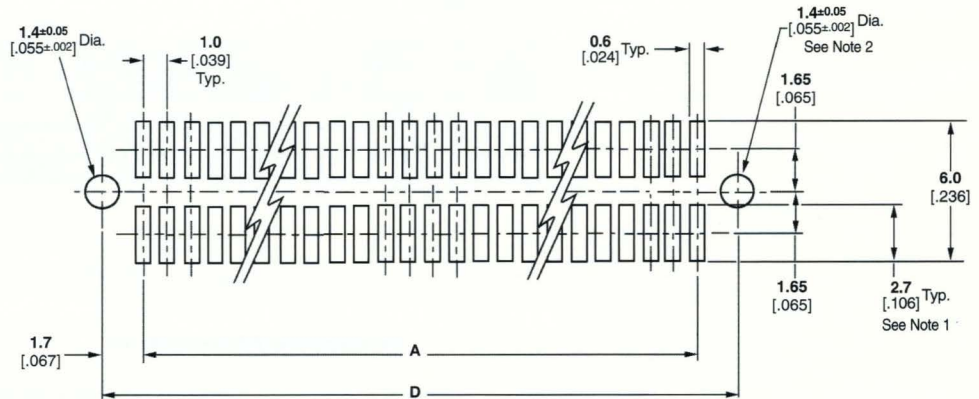
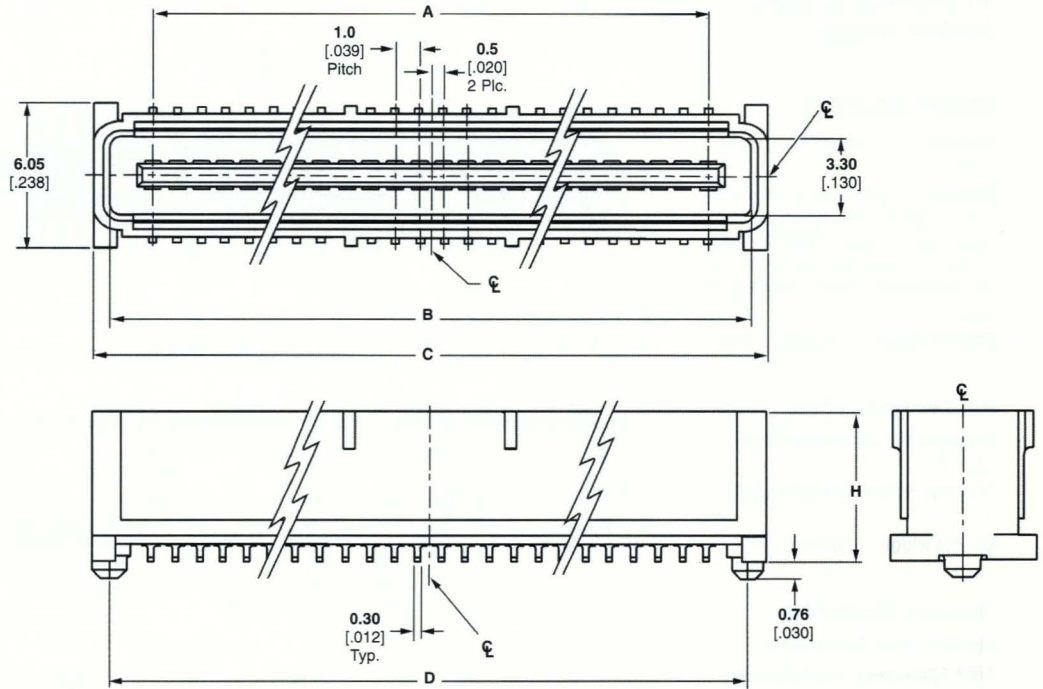
Performance Characteristics — page 54

Stacking Height Combinations — page 55

Mating Receptacles — pages 56 & 57

Technical Documents:

EIA-700 AAAB Specification
AMP Application Specification:
114-25045

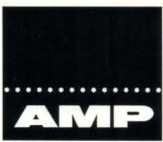


Recommended PC Board Layout

No. of Positions	Dimensions				H	Plug Part Numbers
	A	B	C	D		
64	31.0	34.58	35.9	34.4	6.35	120525-1
	1.220	1.361	1.413	1.354	.250	120526-1
					7.35	120527-1
84	41.0	44.58	45.9	44.4	8.35	120525-2
	1.614	1.755	1.807	1.748	.250	120526-2
					7.35	120527-2
				8.35	.329	

Notes: 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.7 [.106] length assures optimum solder fillet regardless of connector manufacturer.

2. 1.5 ±0.05 [.059 ±.002] diameter hole should be used if placed on PC board with vacuum placement equipment.



1.0mm FH (IEEE 1386) Plugs with Vacuum Cover, 1.0 [.039] Pitch

8 [.315] thru 15 [.591] Stacking Heights

Material and Finish:

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] min. gold on contact area, 0.00381 [.000150] min. tin-lead on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Vacuum Cover — Aluminum Alloy

Related Product Data:

Performance Characteristics — page 54

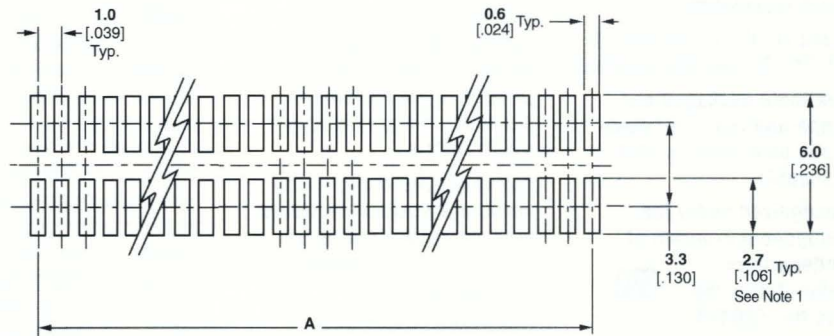
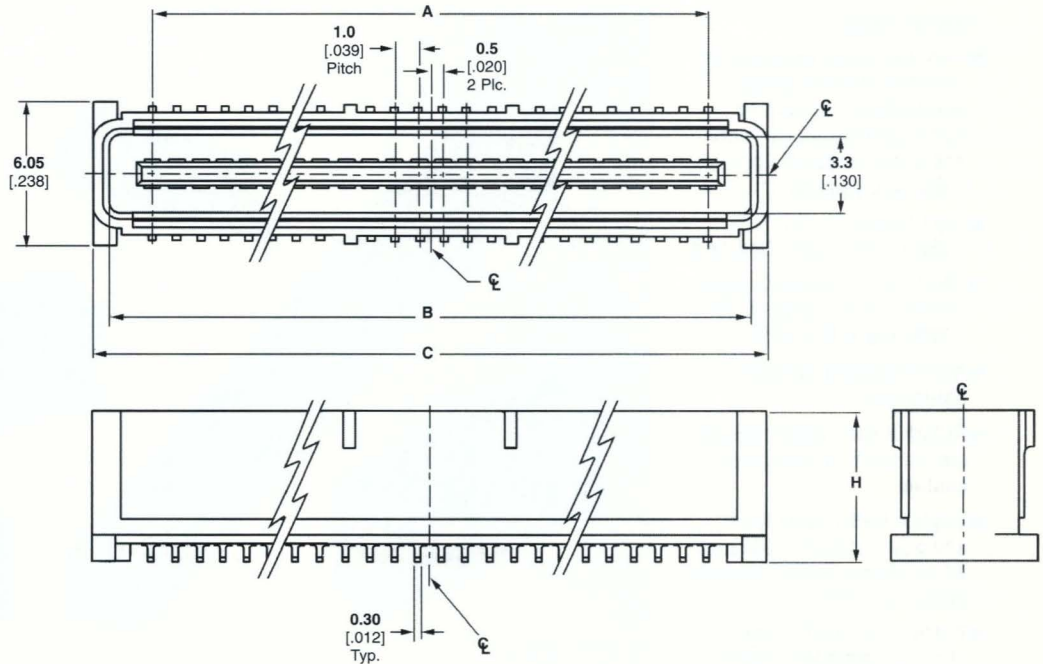
Stacking Height Combinations — page 55

Mating Receptacles — pages 56 & 57

Technical Documents:

EIA-700 AAAB Specification

AMP Application Specification:
114-25045

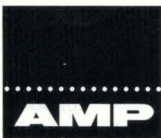


Recommended PC Board Layout

No. of Positions	Dimensions			H	Plug Part Numbers
	A	B	C		
64	31.0 1.220	34.58* 1.361	35.9 1.413	6.35 .250	120532-1
				7.35 .289	120533-1
				8.35 .329	120534-1
84	41.0 1.614	44.58* 1.755	45.9 1.807	6.35 .250	120532-2
				7.35 .289	120533-2
				8.35 .329	120534-2

Notes: 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.7 [.106] length assures optimum solder fillet regardless of connector manufacturer.
2. Vacuum cover omitted from illustrations above for dimensional clarity.

1.0mm FH (IEEE 1386)
Connectors

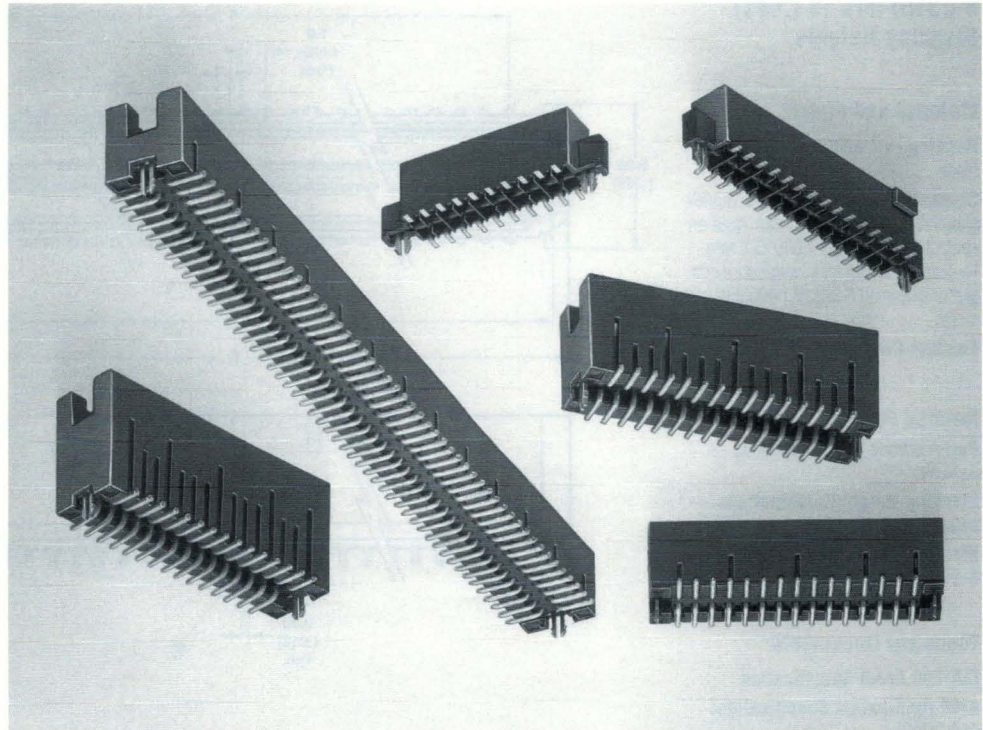


AMPMODU 50/50 Grid Connectors

Photo 91589

Product Facts

- Surface-mount products for parallel board-to-board applications, as well as right-angle board-to-board and cable-to-board applications (see page 61.)
- High density 1.27 x 1.27 [.050 x .050] centerline grid
- Three board-to-board stack heights: 6.35 [.250], 8.13 [.320] and 9.91 [.390]
- Non-protrusive metallic holddowns
- Reliable dual beam receptacle contacts for redundant contact
- Duplex plated receptacle and post contacts; gold plated on mating areas, tin-lead plated on tails
- Receptacle and header allow for drainage of processing fluids
- Polarized header and receptacle assemblies.
- Sizes of 10, 20, 30, 40, 50, 60, 70, 80 and 100 positions
- Available packaged on "tape-and-reel" for automatic placement per EIA standards
- 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.

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

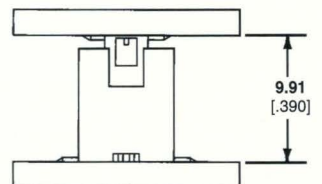
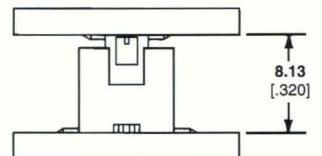
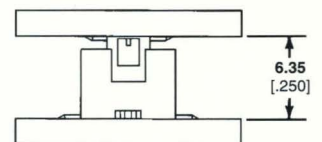
Parallel board-to-board stacking heights of 6.35 [.250], 8.13 [.320] and 9.91 [.390] are achievable by selection of the appropriate header. The receptacle is common for all three stacking heights.

Non-protrusive metallic holddowns are designed for use in 1.57 [.062] 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 lead solder joints.

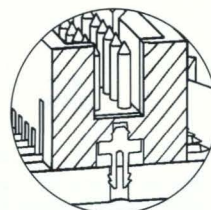
AMPMODU 50/50 Grid vertical headers and receptacles are compatible with standard surface-mount processes; IR (infrared) and VPR (vapor phase reflow). The surface-mount connectors have been designed so that dimensioning, tolerances, referenced datums, holddown characteristics and packaging methods result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

The headers and receptacles feature polarization to prevent misalignment.

Board Stacking Heights



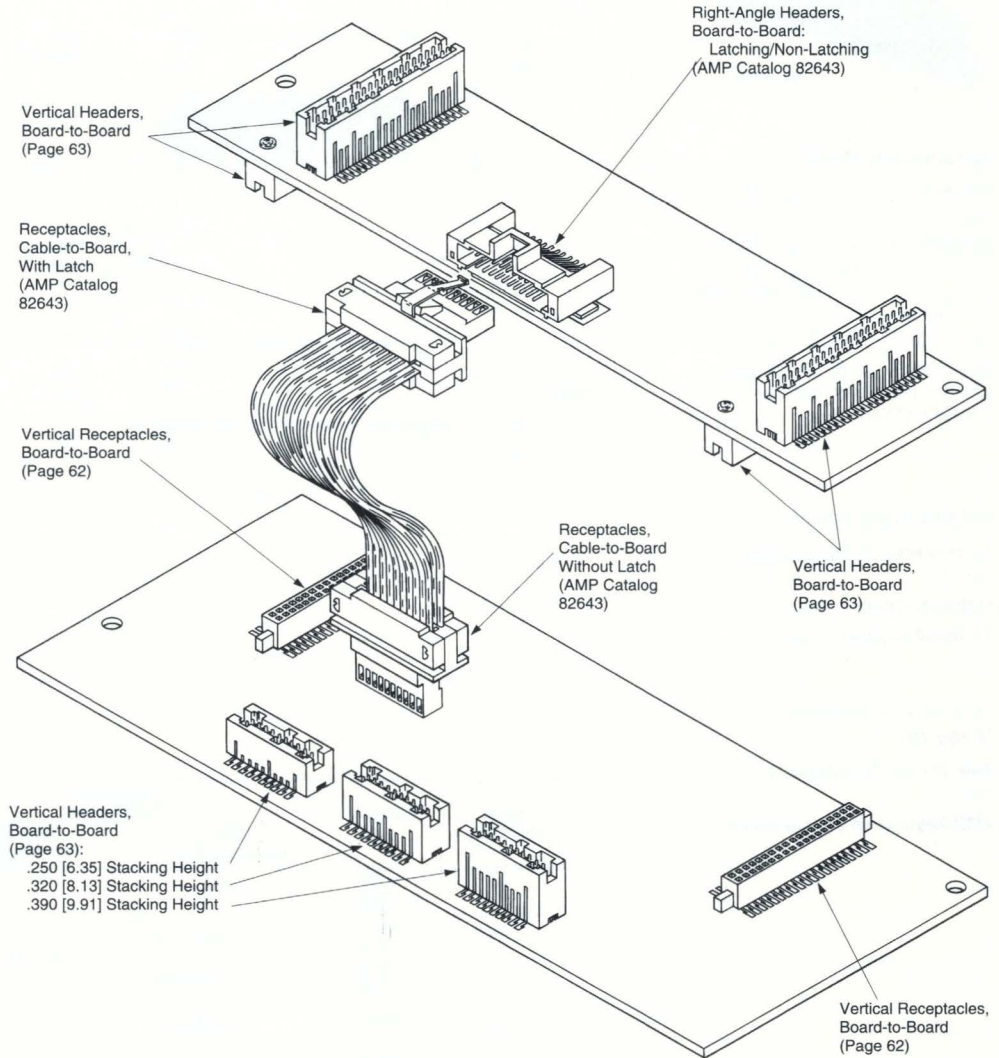
Non-Protrusive Metallic Holddowns



AMPMODU 50/50 Grid Connectors (Continued)

AMPMODU 50/50 Grid vertical headers and receptacles are designed for parallel board-to-board stacking and also can be used for right-angle board-to-board and cable-to-board connections (see illustration at right).

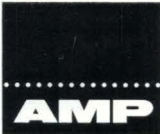
Right-angle board-to-board and cable-to-board applications are possible since the vertical receptacles mate with non-latching right-angle headers, and the vertical headers mate with non-latching cable connectors. Complete details on these right-angle headers and cable connectors are presented in AMP Catalog 82643.



Performance Characteristics

Board-to-Board Connectors

- Mating Force:** 1.78 N [6.4 oz] max. per contact
- Unmating Force:** 0.28 N [1.0 oz] min. per contact
- Durability:** Tested to 200 cycles min.
- Current Rating:** (30°C T-rise); 4 amperes max per contact, depending upon connector loading
- Operating Temperature Range:** -65°C to +105°C
- Termination Resistance:** 16 milliohms max. (initial)
- Insulation Resistance:** 5,000 megohms min. (initial)
- Dielectric Withstanding Voltage:** 300 VAC



AMPMODU Vertical Receptacles, 1.27 x 1.27 [.050 x .050] Centers

With Standard Holddowns

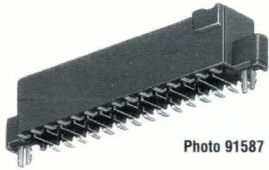


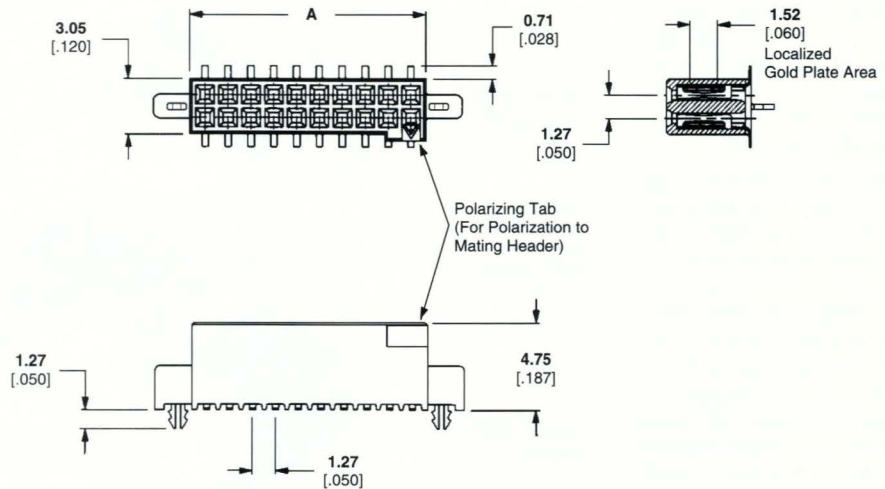
Photo 91587

Material and Finish:

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

Contacts—Beryllium copper; duplex plated 0.00076 [.000030] gold in mating area, 0.00381 [.000150] tin-lead on solder tail, with entire contact under-plated 0.00127 [.000050] nickel

Holddowns—Copper alloy; plated 0.00381 [.000150] tin-lead over 0.00127 [.000050] nickel



Related Product Data:

Performance Characteristics — page 61

Mating Headers — page 63

PC Board Layouts — page 64

Technical Documents (Page 70):

AMP Product Specification
108-1332

AMP Application Specification
114-7010

No. of Positions	Dimension A	Receptacle Part Numbers		Tape & Reel* With Polarizing Tab
		With Polarizing Tab	Without Polarizing Tab	
10	6.75 .266	104652-1	—	146141-4
20	13.11 .516	104652-2	—	146141-1
30	19.46 .766	104652-3	—	146141-2
40	25.81 1.016	104652-4	—	146141-3
50	32.16 1.266	104652-5	104803-5	146141-5
60	38.51 1.516	104652-6	104803-1	146141-6
70	44.86 1.766	104652-7	—	146141-7
80	51.21 2.016	104652-8	104803-2	146141-8
100	63.91 2.516	1-104652-0	—	146141-9

*Dimensional changes for recommended board layout when using tape and reel product (ref. page 64). Tape and reel product includes vacuum pick and place button.



AMPMODU Vertical Headers, 1.27 x 1.27 [.050 x .050] Centers

With Standard Holddowns



Photo 91588

For 6.35 [.250] Stacking Height

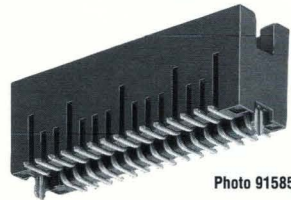


Photo 91585

For 8.13 [.320] Stacking Height

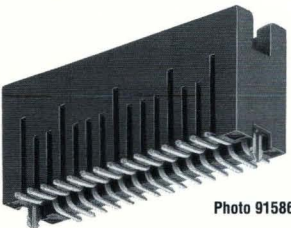


Photo 91586

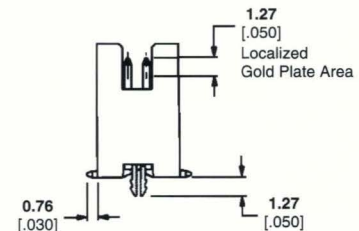
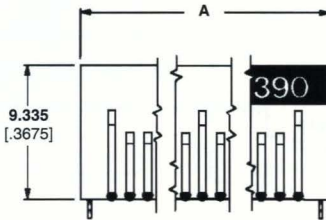
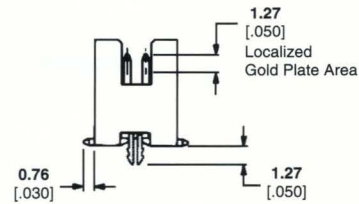
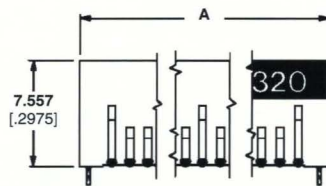
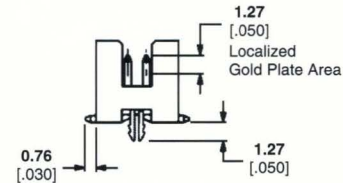
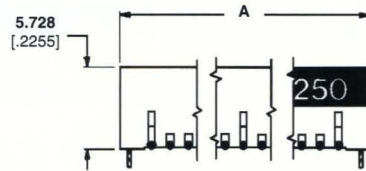
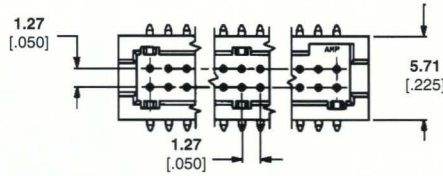
For 9.91 [.390] Stacking Height

Material and Finish:

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

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

Holddowns—Copper alloy; plated 0.00381 [.000150] tin-lead over 0.00127 [.000050] nickel



Related Product Data:

Performance Characteristics — page 61

Mating Receptacles — page 62

PC Board Layouts — page 64

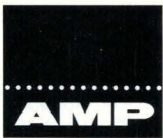
Technical Documents (Page 70):

AMP Product Specification
108-1332

AMP Application Specification
114-7010

No. of Positions	Dimension A	Header Part Numbers					
		6.35 [.250] Stacking Height	Tape & Reel*	8.13 [.320] Stacking Height	Tape & Reel*	9.91 [.390] Stacking Height	Tape & Reel*
10	9.44 .372	104655-1	146142-2	104656-1	147112-1	—	146437-3
20	15.79 .622	104655-3	146142-1	104656-2	147112-2	104693-2	146437-4
30	22.14 .872	104655-4	146142-3	104656-3	147112-3	104693-3	146437-1
40	28.49 1.122	104655-5	146142-4	104656-4	147112-4	104693-4	146437-2
50	34.84 1.372	104655-6	146142-5	104656-5	147112-5	104693-5	146437-5
60	41.19 1.622	104655-7	146142-6	104656-6	147112-6	104693-6	146437-6
70	47.54 1.872	104655-8	146142-7	104656-7	147112-7	104693-7	146437-7
80	53.89 2.122	104655-9	146142-8	104656-8	147112-8	104693-8	146437-8
100	66.59 2.622	1-104655-1	146142-9	1-104656-0	147112-9	1-104693-0	146437-9

*Dimensional changes for recommended board layout when using tape and reel product (ref. page 64). Tape and reel product includes vacuum pick and place button.

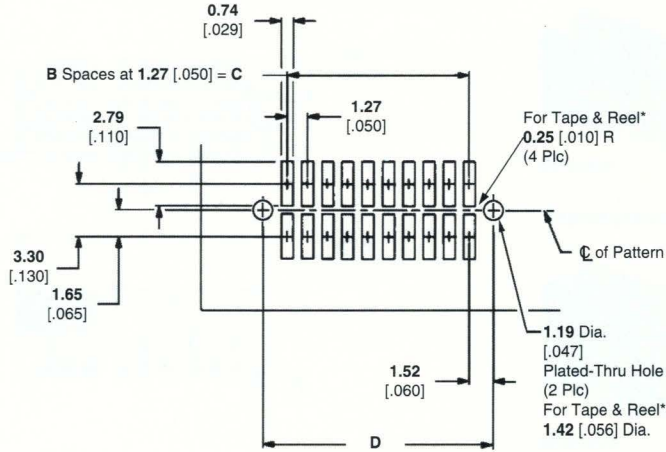


Recommended PC Board Layouts for AMPMODU Vertical Connectors

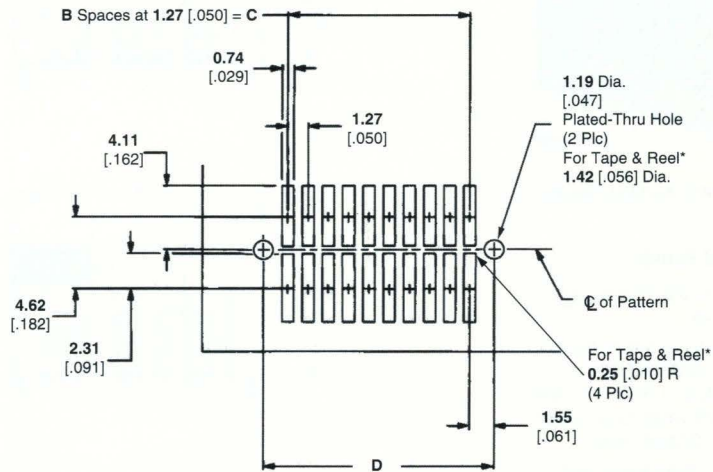
Connectors with Standard Holddowns

For use with receptacle part numbers 104652 and 104803 (page 62) and header part numbers 104655, 104656 and 104693 (page 63).

Receptacles



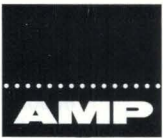
Headers



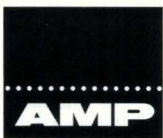
No. of Pos.	Receptacle Dimensions			Header Dimensions		
	B	C	D	B	C	D
10	4	5.08 .200	8.12 .320	4	5.08 .200	8.17 .322
20	9	11.43 .450	14.48 .570	9	11.43 .450	14.52 .572
30	14	17.78 .700	20.83 .820	14	17.78 .700	20.87 .822
40	19	24.13 .950	27.19 1.070	19	24.13 .950	27.22 1.072
50	24	30.48 1.200	33.53 1.320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

Note: Refer to AMP customer drawings for additional PC board layout information and dimensional tolerances.

*Dimensional changes for recommended board layout when using tape and reel product.



Engineering Notes

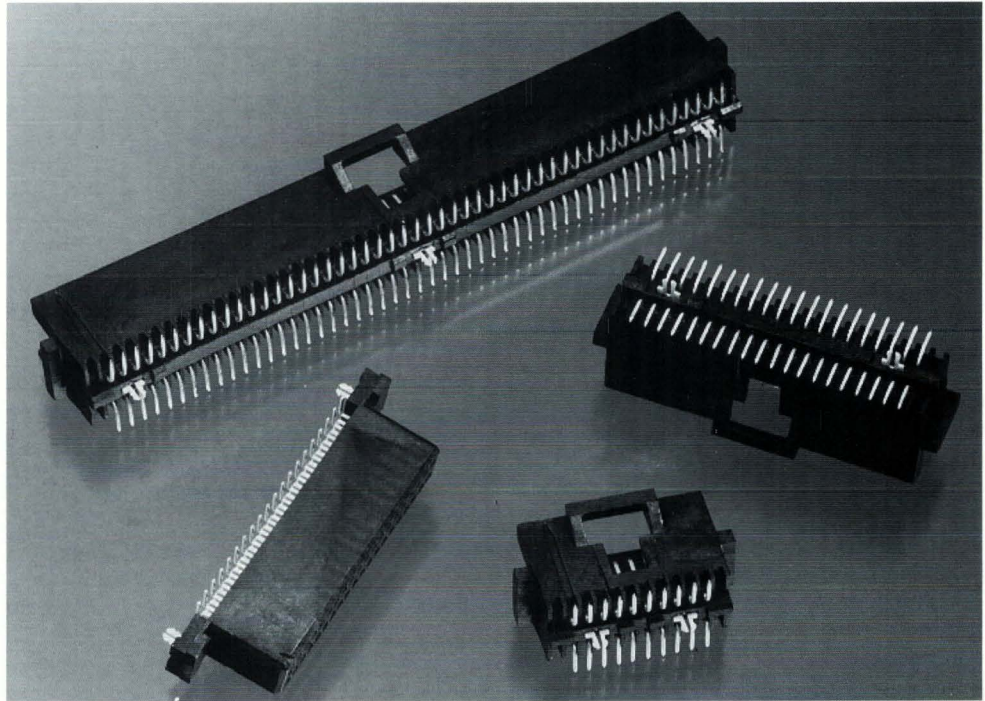


AMPMODU System 50 Connectors Surface-Mount Connectors, .050 [1.27] Centers, Board-to-Board

Photo 109795

Product Facts

- Surface-mount option for parallel board-to-board applications; completely intermateable with AMPMODU System 50 through-hole board-to-board and cable-to-board systems
- Double row, vertical, shrouded header and receptacle assemblies
- Available in select sizes from 10 through 100 positions
- High Density; contacts spaced on .050 x .100 [1.27 x 2.54] centers; compact footprint
- Compatible with standard surface-mount processes
- Stand-offs for free drainage of flux cleaning solutions; visible solder joints for easy inspection
- Simple, low insertion-force hold-down for process retention and long-term strain relief for solder joints
- Available in tape and reel packaging for automatic placement.
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



The high-density surface-mount connector is another mounting option in the AMPMODU System 50 connector family.

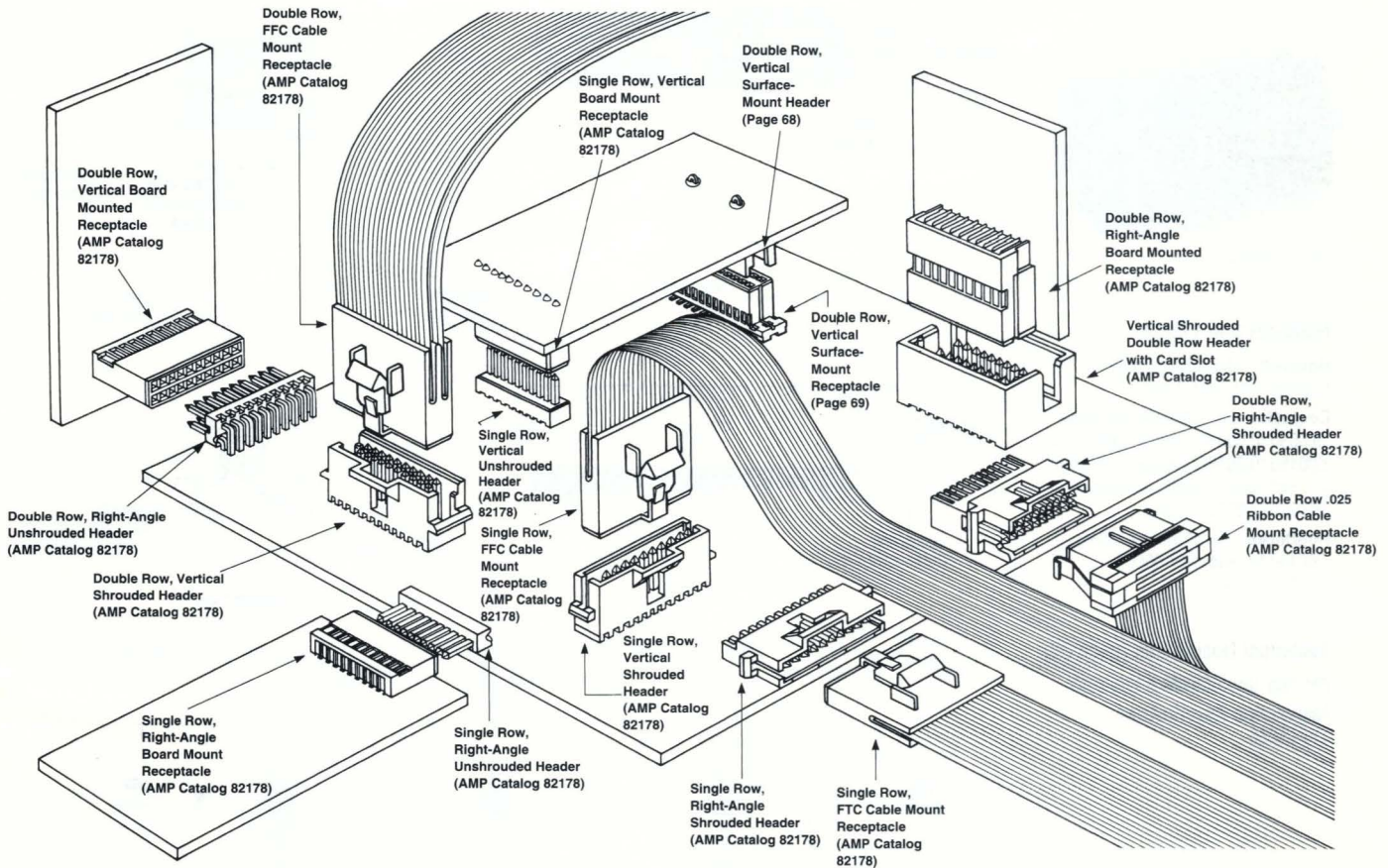
This surface-mount system is totally intermateable with the AMPMODU System 50 thru-hole and cable-to-board connectors.

Additionally, the design of the mating interface has not been changed, ensuring the same high reliability as the thru-hole product.

The surface-mount system includes double row, verti-

cal, shrouded header and receptacle assemblies in select sizes from 10 through 100 positions. It meets the tight dimensional requirements of surface-mount technology. The simple, low insertion-force hold-down provides both processing retention and long-term strain relief for the solder joints in the headers and receptacles.

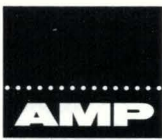
AMPMODU System 50 Connectors (Continued)



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. System 50 connectors are composed of one- and two-row receptacles and posted headers with .050 x .100 [1.27 x 2.54] spacing between contacts for extreme density and efficient use of printed circuit board area. Complete details on the AMPMODU System 50 connector family are presented in AMP Catalog 82178.

Performance Characteristics

- Current Rating:** 1.0 ampere per contact
- Dielectric Withstanding Voltage:** 500 VAC
- Insulation Resistance:** 5,000 megohms min.
- Durability:** Tested to 200 cycles
- Mating Force:** 1.38 N [5 oz.] max. per contact
- Unmating Force:** 0.22 N [0.8 oz.] min. per contact
- Operating Temperature:** -65°C to +105°C



Surface-Mount Headers, .050 [1.27] Centers, Board-to-Board

Double Row, Vertical

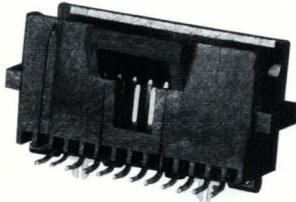


Photo 109793

Material and Finish:

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

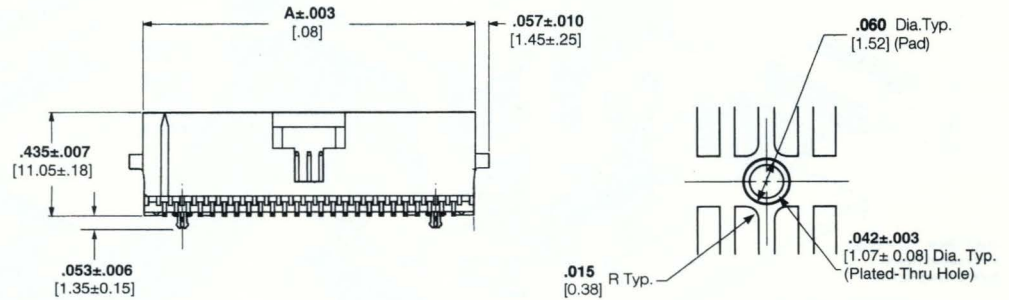
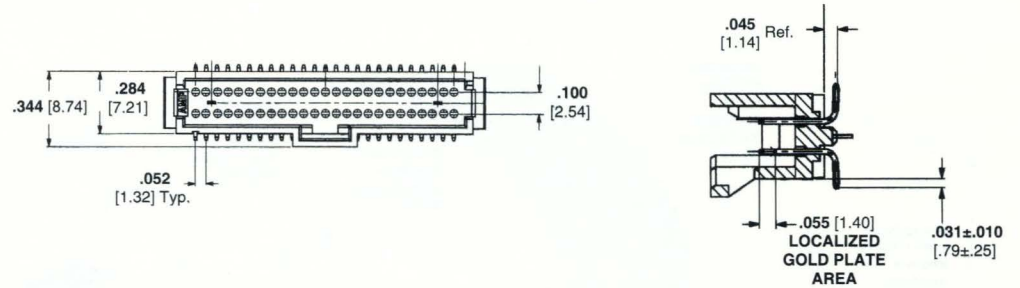
Contacts—Phosphor bronze, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel

Holddown—Copper alloy, plated .000150 tin-lead over .000050 [0.00127] nickel

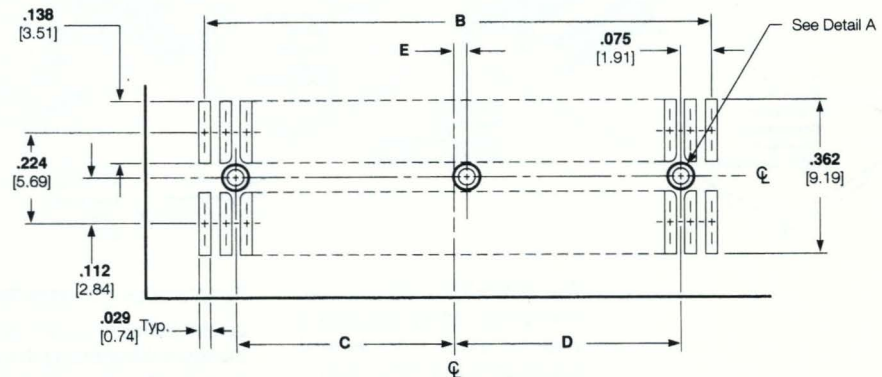
Technical Documents (page 70):

Product Specification 108-1093

Application Specification 114-25035



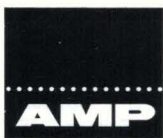
Detail A



Recommended PC Board Layout

No. of Positions	Dimensions					Part Numbers	
	A	B	C	D	E	Pkg in Tube	Pkg in Tape & Reel*
10	.380 9.65	.200 5.08	—	.025 0.64	—	104549-1	146351-6
12	.430 10.92	.250 6.35	—	—	—	1-104549-1	—
20	.630 16.00	.450 11.43	.150 3.81	.150 3.81	—	104549-2	146351-2
24	.730 18.54	.550 13.97	.200 5.08	.200 5.08	—	104549-3	146351-4
30	.880 22.35	.700 17.78	.275 6.99	.275 6.99	—	104549-5	146351-5
40	1.130 28.70	.950 24.13	.400 10.16	.400 10.16	—	104549-6	146351-1
50	1.380 35.05	1.200 30.48	.525 13.34	.525 13.34	.025 0.64	104549-7	146351-3
60	1.630 41.40	1.450 36.83	.650 16.51	.650 16.51	.000	104549-8	146351-7
80	2.130 54.10	1.950 49.53	.900 22.86	.900 22.86	.000	104549-9	146351-8
100	2.630 66.80	2.450 62.23	1.150 29.21	1.150 29.21	.000	1-104549-0	146351-9

*Parts packaged in tape and reel without hold downs and with vacuum pick and place button

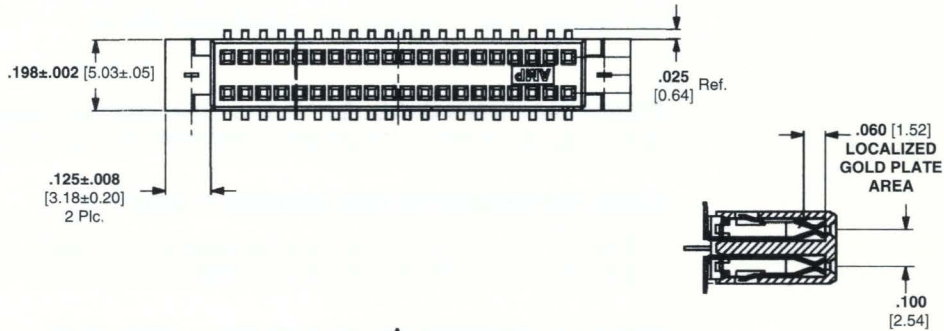


Surface-Mount Receptacles, .050 [1.27] Centers, Board-to-Board

Double Row, Vertical



Photo 109794



Material and Finish:

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

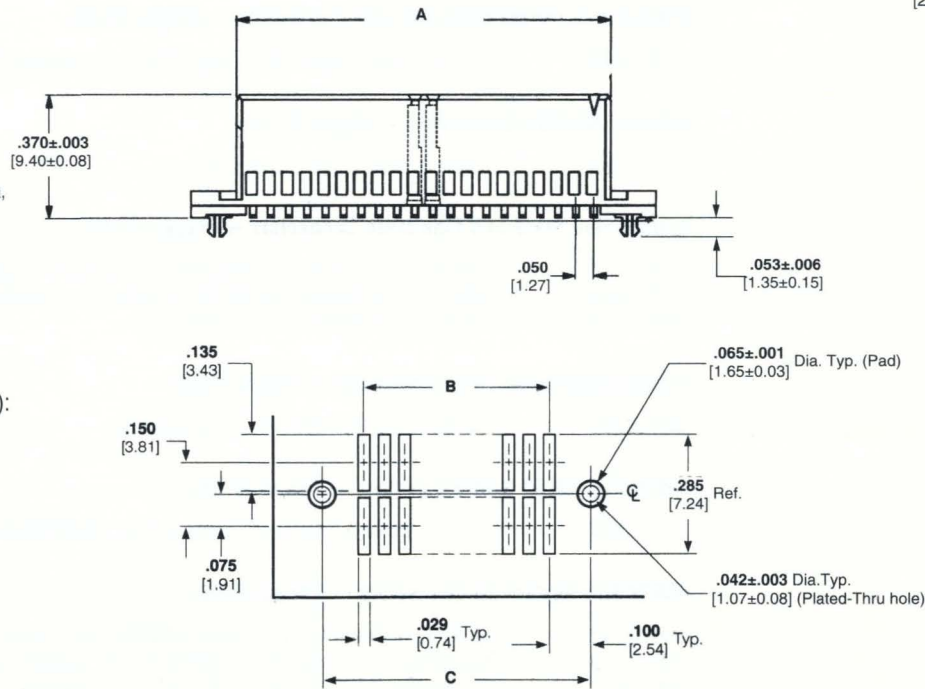
Contacts—Phosphor bronze, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel

Holddown—Copper alloy, plated .000150 tin-lead over .000050 [0.00127] nickel

Technical Documents (page 70):

Product Specification 108-1093

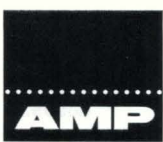
Application Specification 114-25035



Recommended PC Board Layout

No. of Positions	Dimensions			Part Numbers	
	A	B	C	Pkg in Tube	Pkg in Tape & Reel*
10	.294 7.47	.200 5.08	.400 10.16	104550-1	146883-3
20	.544 13.82	.450 11.43	.650 16.51	104550-2	146883-4
24	.644 16.36	.550 13.97	.750 19.05	104550-3	146883-1
30	.794 20.17	.700 17.78	.900 22.86	104550-4	146883-2
40	1.044 26.52	.950 24.13	1.150 29.21	104550-5	146883-5
50	1.294 32.87	1.200 30.48	1.400 35.56	104550-6	146883-6
60	1.544 39.22	1.450 36.83	1.650 41.91	104550-7	146883-7
80	2.044 51.92	1.950 49.53	2.150 54.61	104550-8	146883-8
100	2.544 64.62	2.450 62.23	2.650 67.31	104550-9	146883-9

*Parts packaged in tape and reel without hold downs and with vacuum pick and place button



Technical Documents

Various technical documents are available for your use.

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

0.5mm Fine Stack and Fine Mate Connectors — Pages 7-11:

108-5425 0.5mm Fine Mate Receptacles and Tabs
108-5546 0.5mm Fine Stack Receptacles and Tabs

0.6mm Free Height (FH) and GIGA Connectors — Pages 12-26:

108-5468 0.6mm Free Height (FH) and GIGA Connectors

0.64mm MICTOR Connectors — Pages 27-36:

108-1422 0.64mm MICTOR Connectors

0.8mm Fine Stack and Fine Mate Connectors — Pages 37-43:

108-5424 0.8mm Fine Stack Connectors (Tin-Lead Contacts)
108-5466 0.8mm Fine Stack Connectors (Gold Contacts)
108-5512 0.8mm Fine Mate Connectors

0.8mm Free Height (FH) Connectors — Pages 44-52:

108-5390 0.8mm Free Height (FH) Connectors

AMPMODU 50/50 Grid Connectors — Pages 60-64:

108-1332 Vertical Board-to-Board Connectors, AMPMODU 50/50 Grid

AMPMODU System 50 Connectors — Pages 66-69:

108-1093 Board-to-Board Connectors, AMPMODU System 50
108-1109 Receptacle Connectors, AMP-LATCH System 50
108-16022 Connector, FFC Cable, 1.27 [.050] Centerline

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

1.0mm Free Height(IEEE 1386) — Pages 54-59:

114-25045 1.0mm Free Height (FH) Plug and Receptacle Connectors Using
Surface Mount Technology

AMPMODU 50/50 Grid Connectors — Pages 60-64:

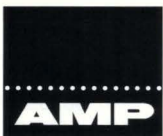
114-7010 AMPMODU 50/50 Grid Connector System

AMPMODU System 50 Connectors — Pages 66-69:

114-16008 Flexible Flat Cable (FFC) Connectors for 1.27 [.050] Centerline Cable
114-25029 AMPMODU System 50 Ribbon Cable Receptacle Connectors
114-25035 Surface-Mount Connectors, AMPMODU System 50

0.64 mm MICTOR Connectors — Pages 27-36:

114-11004 MICTOR Connector System



Part Number Index

Note: This numerical index lists all cataloged part numbers by base no. only. Complete part numbers (with prefixes and/or suffixes) are shown on the pages listed.

Part No.	Page	Part No.	Page	Part No.	Page
84616	52	179397	41	353187	17
104549	68	179400	39	353188	18
104550	69	179403	41	353190	15
104652	62	179654	10	353206	19
104655	63	179701	39	353231	21
104656	63	179702	39	353232	21
104693	63	179703	41	353233	21
104803	62	179704	41	353284	20
120521	55, 56	316076	18	353471	18
120523	55, 56	316077	15	353512	8
120524	55, 56	316177	11	353515	9
120525	55, 58	316120	43	353692	17
120526	55, 58	316135	17	353831	18
120527	55, 58	316289	10	767003	30
120528	55, 57	316317	16	767004	36
120529	55, 57	316318	16	767005	31
120530	55, 57	316365	11	767007	29
120531	55, 57	316366	11	767017	35
120532	55, 59	316407	43	767025	32
120533	55, 59	316414	42	767032	34
120534	55, 59	316464	42	767042	33
120603	55, 56	316466	43	767054	36
146141	62	316514	43	767056	29
146142	63	316530	11	767057	31
146351	68	316559	18	767087	30
146437	63	316560	15	917228	10
146883	69	316562	18	917271	11
147112	63	316592	10	917272	10
177983	50	316611	11	917294	41
177984	46	316614	11	917299	39
177985	50	316657	42	917300	41
177986	46, 47, 48, 49	353134	20	917407	43
179009	51	353135	20	917408	42
179010	52	353159	8	917734	10
179029	47	353164	9	917735	11
179030	48	353183	17	917814	11
179031	49	353184	18	917949	10
179180	51	353185	17		
179396	39	353186	18		

Other Fine Pitch Connectors

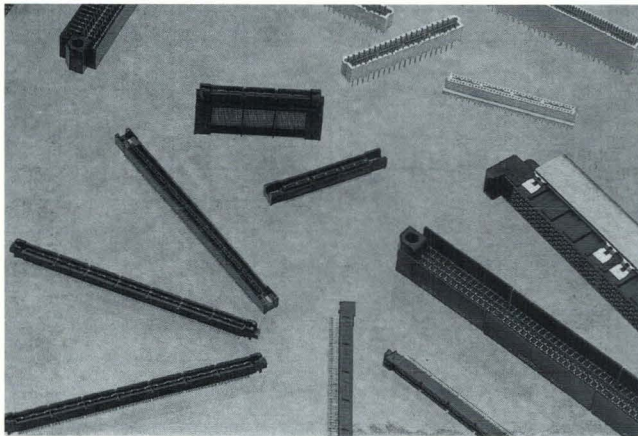


Photo 10537

MICTOR and Micro-Strip Connectors

MICTOR Connectors:

- 0.64 [.025] contact pitch
- 76 dedicated signal lines per linear inch
- 38 to 266 signal positions (in 38 position increments)
- Right-angle versions are available

Micro-Strip Connectors:

- 1.27 x 2.54 [.050 x .100] contact centerline
- 40 high speed signal lines per inch
- Custom stacking heights available
- 40 to 240 positions

For more details, see AMP Catalog 65194.

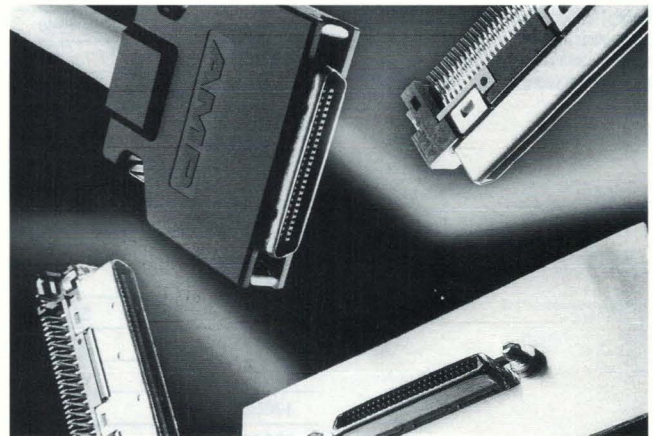
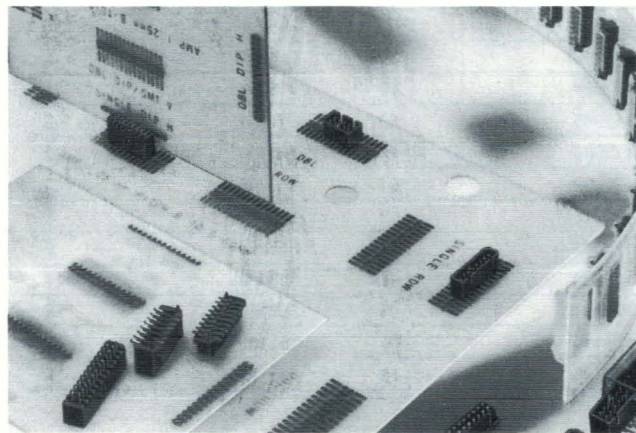


Photo 99120

CHAMP 0.8mm High Density Connectors

- 0.8 [.031] contact pitch
- EMI shielded, high density, low profile I/O system
- Insulation displacement type (IDC) contacts
- PC board receptacles feature surface-mount and thru-hole hybrid board leads
- Right-angle PC board connectors are offered in 50, 68 and 90 position receptacles, and 50 and 68 position plugs
- Cable plugs are available in 50 and 68 position sizes

For more details, see AMP Catalog 65972.

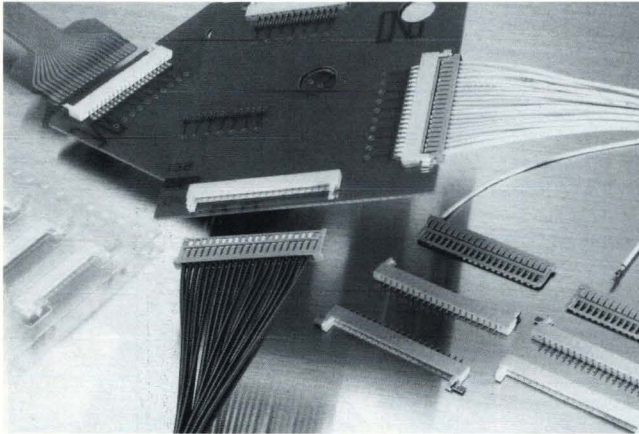


1.25mm F-P Board-to-Board Connectors

- 1.25 [.049] contact pitch
- Economical board-to-board interconnection connector of ultra-lightweight and ultra-thin construction
- Tube and reel-mounted products for automatic board packaging; loose-piece connectors also available
- Single-row and dual-row versions available, both enabling either parallel or right-angle interconnection of boards using vertical post header and either vertical or horizontal receptacle header
- 4 to 30 positions

For more details, see AMP Catalog 124962.

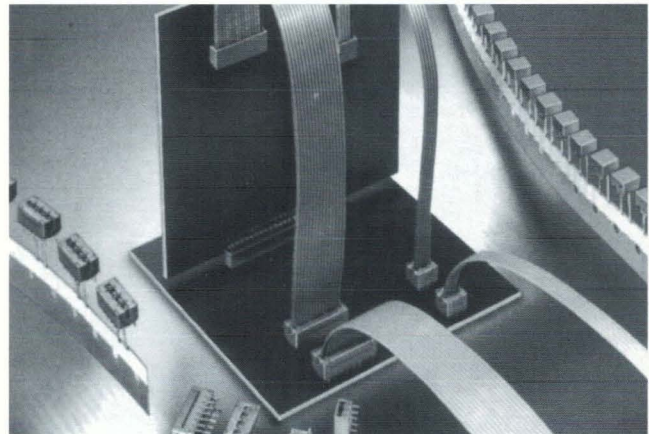
Other Fine Pitch Connectors (Continued)



AMPSLIM Wire-to-Board Connectors

- 1.25 [.049] contact pitch
- Low profile, compact construction; above-board heights of 1.3 [.051] with offset-mount type and 1.85 [.073] with horizontal-mount type
- 7.3 [.287] mating length
- Receptacle contacts on board mounting side; tab contacts on wire mount side
- Design eliminates pin damage problems
- Low cost tin-plated contacts ensure low insertion force and high reliability

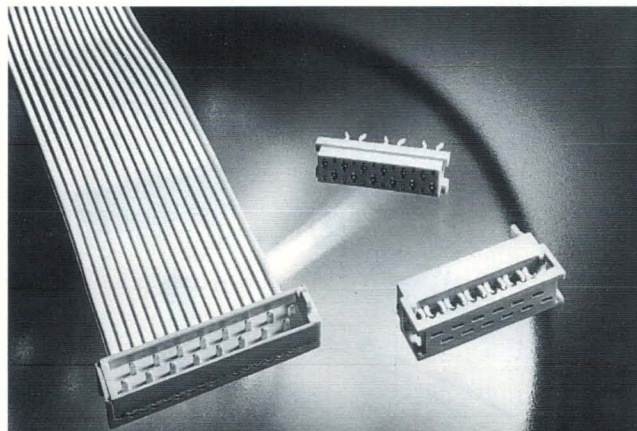
For more details, see AMP Catalog 124917.



AMP Super Trap Flat Ribbon Cable Connectors

- 1.25 [.049] contact pitch
- Terminates 0.12-0.15mm² [26 AWG] ribbon cable to PC board
- Available in both vertical and horizontal mounting types
- Low above-board height for high density packaging
- Radial tape-mounted connector as staggered posted product; applicable to high-speed automatic packaging
- Loose piece connector features post with kink for retaining connector when mounted to PC board

For more details, see AMP Catalog 124962.



AMP Micro-MaTch Miniature Connectors

- 1.27 [.050] contact pitch
- 5.0 [.197] wide, 7.0 [.276] height of mated connectors
- Suitable for mass termination of 0.08-0.09mm² [28 AWG] ribbon cable
- Contacts fully protected by plastic housings
- Board connectors supplied on tape. For automated connector handling, consult AMP
- Built-in polarization
- Full range of application tooling available
- 4 to 20 positions

For more details, see AMP Catalog 82750.

Other Fine Pitch Connectors (Continued)

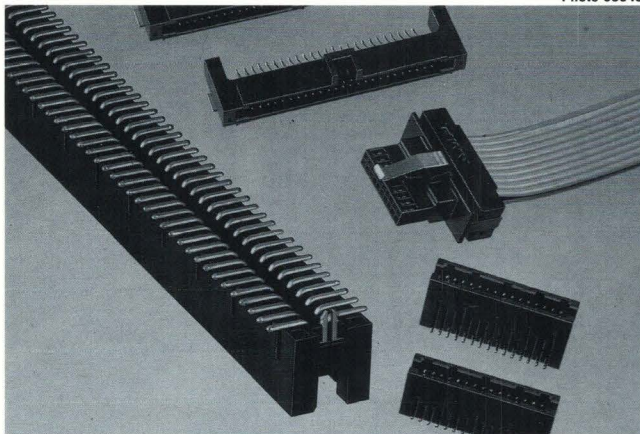


Photo 95043

AMPMODU 50/50 Grid Connectors

- 1.27 x 1.27 [.050 x .050] centerline
- Surface-mount products for parallel board-to-board, right-angle board-to-board and cable-to-board applications
- Compatible with standard surface-mount processing
- Polarized headers and receptacles
- Cable-to-board connectors feature Insulation Displacement Crimp (IDC) mass termination of solid or stranded round conductor ribbon cable
- 10 to 100 positions

For more details, see AMP Catalog 82643.

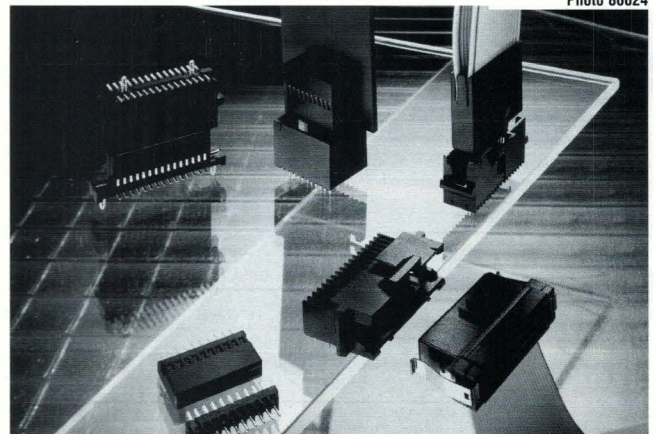


Photo 86024

AMPMODU System 50 Connectors

- 1.27 x 2.54 [.050 x .100] centerline
- Connectors for parallel board-to-board, right-angle board-to-board and cable-to-board applications
- Board-to-board connectors for thru-hole and surface mounting
- Cable-to-board connectors terminate 0.05mm² [30 AWG] solid and 0.03mm² [32 AWG] stranded ribbon cable with conductors on 0.64 [.025] centers
- Selected sizes from 10 to 100 positions

For more details, see AMP Catalog 82178.

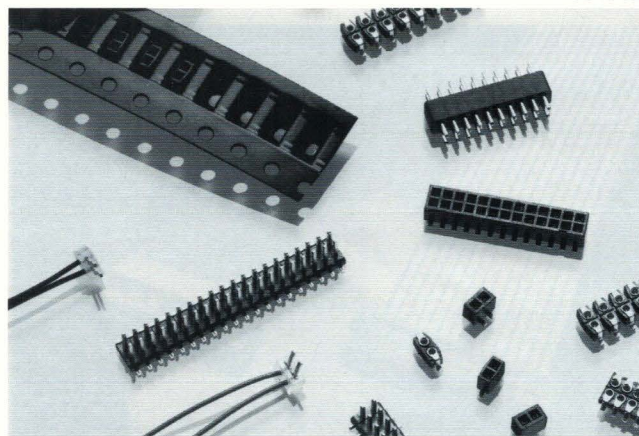
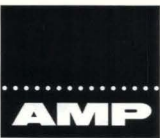


Photo 104682

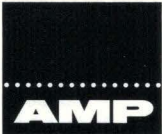
Low Profile System (LPS)

- 1.27 [.050] and 2.00 [.079] centerlines
- Ultra-low profile
- Proven four-point contact technology
- Seamless receptacle contact for reliability and consistency
- Surface-mount versions for use with multilayer and flexible film circuit boards
- EIA 481 tape-and-reel packaging
- Robotics capability for vacuum or mechanical pick-and-place

For more details, see AMP Catalog 124140.



Engineering Notes



Engineering Notes

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