



**tyco**

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**Electronics**

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

RoHS  
Ready 

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**0.4mm Fine Stack Connectors**  
(Pages 7 thru 11)

- 0.4mm contact pitch
- 1.0mm and 1.5mm stacking height
- 20 to 90 positions



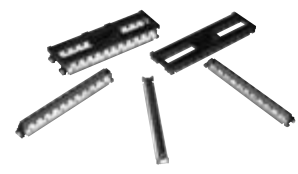
**0.5mm Fine Stack Connectors**  
(Pages 13 thru 16)

- 0.5mm contact pitch
- 1.5mm stacking height
- 20 to 80 positions



**0.5mm Fine Mate Connectors**  
(Pages 13 and 16 thru 18)

- 0.5mm contact pitch
- 4.0 to 6.0mm stacking heights
- 16 to 100 positions
- Right angle options



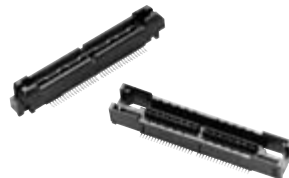
**0.5mm Free Height (FH) Connectors**  
(Pages 19 thru 25)

- 0.5mm contact pitch
- 5.0 to 16mm stacking heights
- 120 to 440 positions



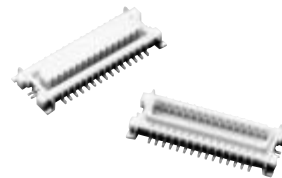
**0.6mm Free Height (FH) Connectors**  
(Pages 27 thru 40)

- 0.6mm contact pitch
- 4.0 to 16mm stacking heights
- 50 to 320 positions
- Grounded (GIGA) versions



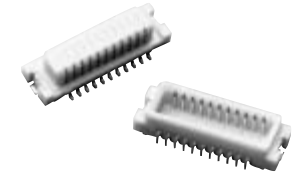
**MICTOR Connectors**  
(Pages 41 thru 62)

- 0.635 [.025] contact pitch
- 6.6 to 22.86 [.260 to .900] stacking heights
- 38 to 266 positions
- Matched impedance



**0.8mm Fine Stack Connectors**  
(Pages 63 thru 67)

- 0.8mm contact pitch
- 3.0mm stacking height
- 14 to 50 positions



**0.8mm Fine Mate Connectors**  
(Pages 63, 68 and 69)

- 0.8mm contact pitch
- 4.0 and 4.5mm stacking heights
- 10 to 60 positions



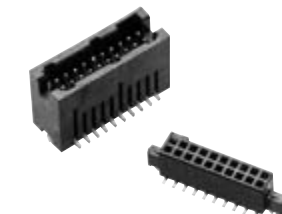
**0.8mm Free Height (FH) Connectors**  
(Pages 71 thru 81)

- 0.8mm contact pitch
- 5.0 to 16mm stacking heights
- 40 to 200 positions



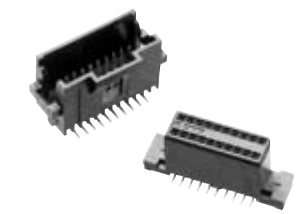
**1.0mm FH (IEEE 1386) Connectors**  
(Pages 83 thru 88)

- 1.0mm contact pitch
- 8.0 to 15mm stacking heights
- 64 and 84 positions



**AMPMODU 50/50 Grid Connectors**  
(Pages 89 thru 99)

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



**AMPMODU System 50 Connectors**  
(Pages 101 thru 104)

- 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.

## Stacking Height Guide for Parallel Board-to-Board Applications

[illegible]



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## Introduction

Tyco Electronics 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 [0.050] 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 Tyco Electronics 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 Tyco Electronics can provide, consult your local sales engineer or call our Product Information Center at the numbers listed below.

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**See inside back cover for Global Contacts and phone numbers.**

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- Catalogs
- Technical Documents
- Product Samples
- Authorized Distributor Locations

### 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)

### Restriction on the use of Hazardous Substances (RoHS)

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

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

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

NOTE: Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced at right.

### Getting the Information You Need

Our comprehensive on-line RoHS Customer Support Center provides a forum to answer your questions and support your RoHS needs. A RoHS FAQ (Frequently Asked Questions) is available with links to more detailed information. You can also submit RoHS questions and receive a response within 24 hours during a normal work week. The Support Center also provides:

- Cross-Reference from Non-compliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog
- Downloadable Technical Data Customer Information Presentation
- More detailed information regarding the definitions used above
- So whatever your questions when it comes to RoHS, we've got the answers at [www.tycoelectronics.com/leadfree](http://www.tycoelectronics.com/leadfree)

**RoHS**  
Customer  
Support  
Center

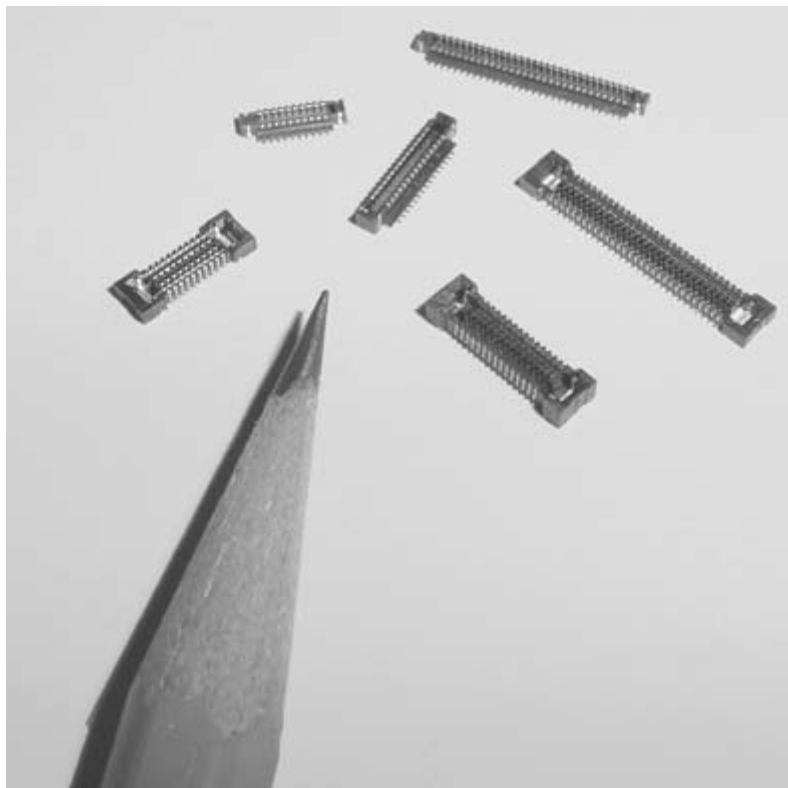
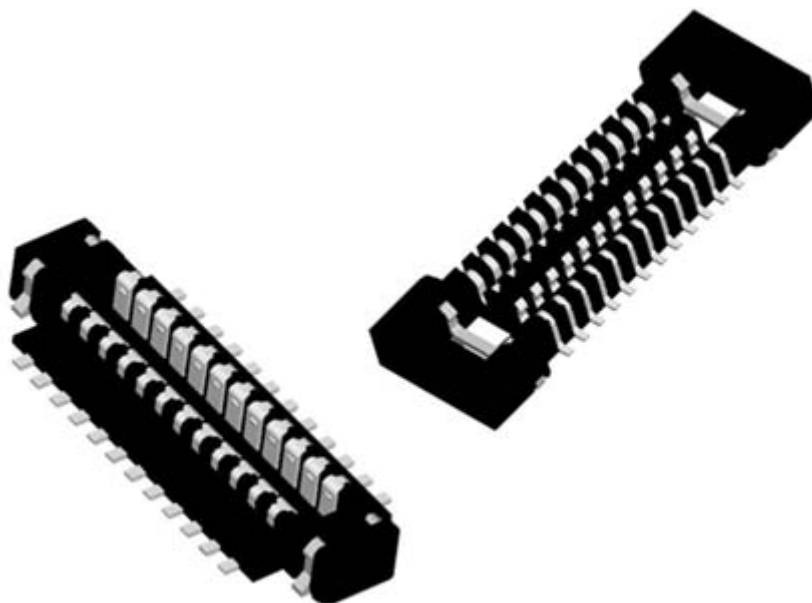
**Product Facts**

- All 0.4mm Fine Stack products in this section are RoHS compliant
- Ultra low stacking height 1.0mm and 1.5mm
- Contact system allows for large mating tolerances  $\pm 0.4\text{mm}$  in X-Y direction
- The separated contact point prevents the contact to be damaged by flux and solder
- 0.3A, 30VAC
- Versions planned for 12 through 80 positions
- One action distinct audible locking clip

**Technical Documents**

Product 108-5901

**0.4mm Fine Stack Connectors**



This Board to Board connector has been developed especially for LCD to board applications, where one side of the FPC connector will be soldered to the FPC and the other side will be

mounted on the PCB. By applying this connection style a major board space reduction can be obtained, compared with the traditional FPC / Board to Board connectors.

**1.0mm [.039"] Stacking Height**

**Material and Finish**

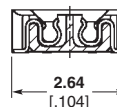
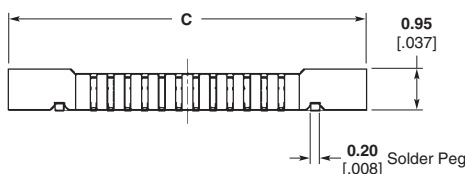
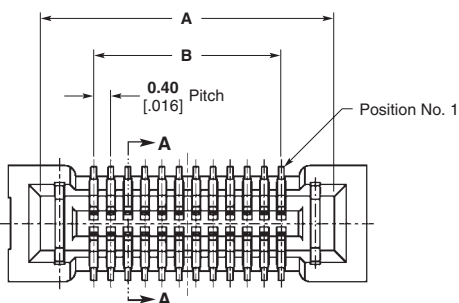
**Contact** — Copper alloy, plated gold with entire contact underplated nickel

**Housing** — Thermoplastic

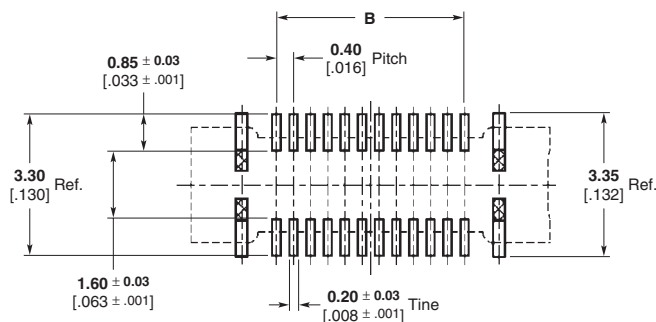
**Solder Peg** — Copper alloy, tin plated with entire contact underplated nickel

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

**0.4mm Fine Stack Receptacles, 0.4 [.016] Pitch**



Section A - A



Recommended PC Board Layout

No. of Positions	Dimensions			Qty./Reel	Part Number
	A	B	C		
20	6.10 .240	3.60 .142	7.60 .299	4000	2-1747769-0
24	6.90 .272	4.40 .173	8.40 .331		2-1747769-4
46	11.30 .445	8.80 .346	12.80 .504		4-1747769-6
50	12.10 .476	9.60 .378	13.60 .535		5-1747769-0
60	14.10 .555	11.60 .457	15.60 .614		6-1747769-0

**Note:** Part Numbers are RoHS compliant.

**1.0mm [.039"] Stacking Height**

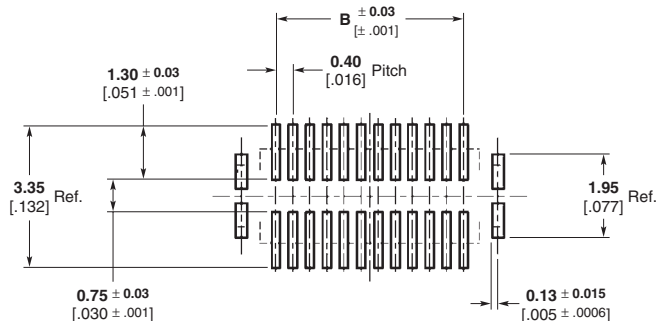
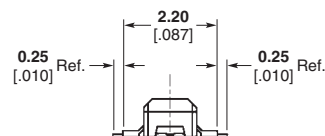
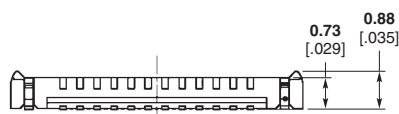
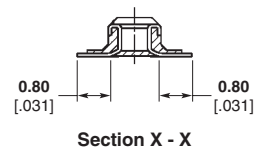
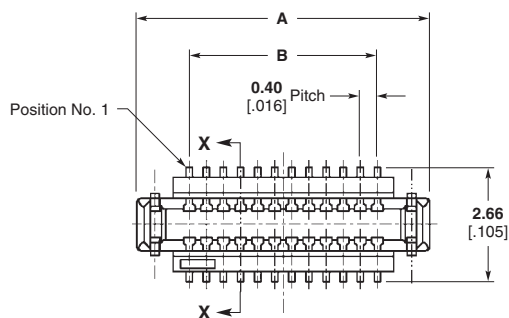
**Material and Finish**

**Contact** — Copper alloy, plated gold with entire contact underplated nickel

**Housing** — Thermoplastic

**Solder Peg** — Copper alloy, tin plated with entire contact underplated nickel

**0.4mm Fine Stack Plugs, 0.4 [.016] Pitch**



Recommended PC Board Layout

No. of Positions	Dimensions		Qty./Reel	Part Number
	A	B		
20	6.05 .238	3.60 .142	4000	2-1747770-0
24	6.85 .270	4.40 .173		2-1747770-4
46	11.25 .443	8.80 .346		4-1747770-6
50	12.05 .474	9.60 .378		5-1747770-0
60	14.05 .553	11.60 .457		6-1747770-0

**Note:** Part Numbers are RoHS compliant.



**1.5mm [.059"] Stacking Height**

**Material and Finish**

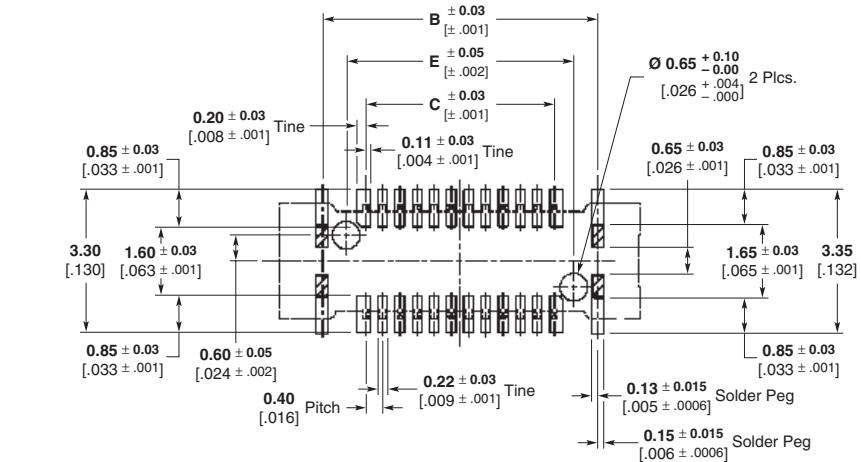
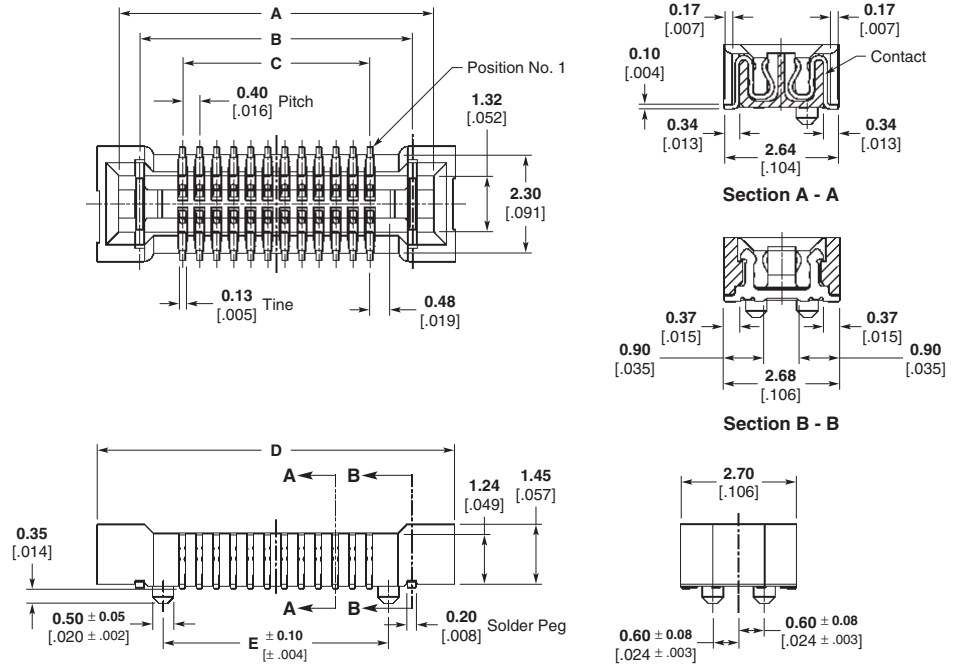
**Contact** — Copper alloy, plated gold with entire contact underplated nickel

**Housing** — Thermoplastic

**Solder Peg** — Copper alloy, tin plated with entire contact underplated nickel

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

**0.4mm Fine Stack Receptacles, 0.4 [.016] Pitch**



Recommended PC Board Layout

No. of Positions	Dimensions					Boss	Qty./Reel	Part Number
	A	B	C	D	E			
24	7.4 .291	6.4 .252	4.4 .173	8.4 .331	5.3 .209	Without	2500	2-1871274-4
54	13.4 .528	12.4 .488	10.4 .409	14.4 .567	11.3 .445	With	2500	5-1871274-4
56	13.8 .543	12.8 .504	10.8 .425	14.8 .583	11.7 .461	With	2500	5-1871274-6

**Note:** Part Numbers are RoHS compliant.

**1.5mm [.059"] Stacking Height**

**Material and Finish**

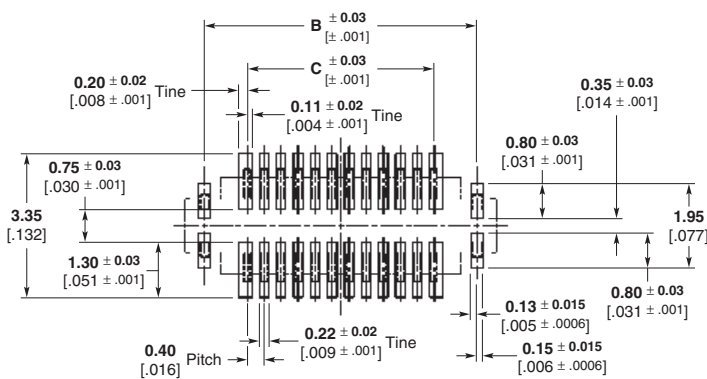
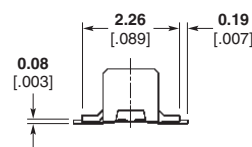
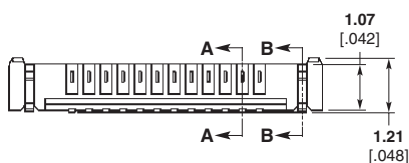
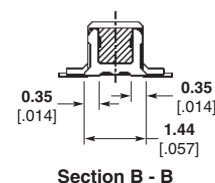
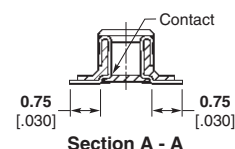
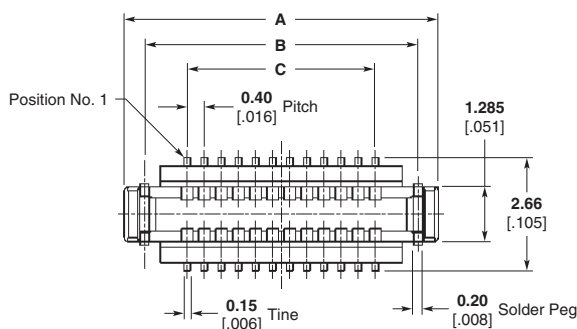
**Contact** — Copper alloy, plated gold with entire contact underplated nickel

**Housing** — Thermoplastic

**Solder Peg** — Copper alloy, tin plated with entire contact underplated nickel

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

**0.4mm Fine Stack Plugs, 0.4 [.016] Pitch**



**Recommended PC Board Layout**

No. of Positions	Dimensions			Peg	Qty./Reel	Part Number
	A	B	C			
24	7.4 .291	6.4 .252	4.4 .173	N/A	3000	2-1871275-4
54	13.4 .528	12.4 .488	10.4 .409	N/A	3000	5-1871275-4
				Without	3000	5-1871275-5
56	13.8 .543	12.8 .504	10.8 .425	N/A	3000	5-1871275-6
				Without	3000	5-1871275-7

**Note:** Part Numbers are RoHS compliant.

**Engineering Notes**

**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

**0.5mm Fine Stack and Fine Mate Connectors**



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

The Tyco Electronics 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.



# 1.5mm [.059"] Stacking Height

## Material and Finish

**Housing** — 6T nylon, high heat resistant resin

**Contacts** — Phosphor bronze, plated gold over nickel

**Solder Pegs** — Copper alloy, plated tin

## Related Product Data

**Mating Tabs** — page 15

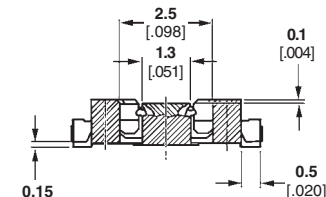
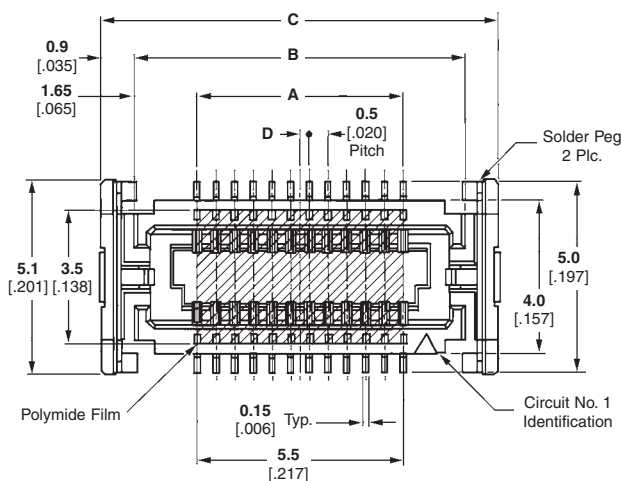
**Technical Documents** (page 113)

## Product Specification

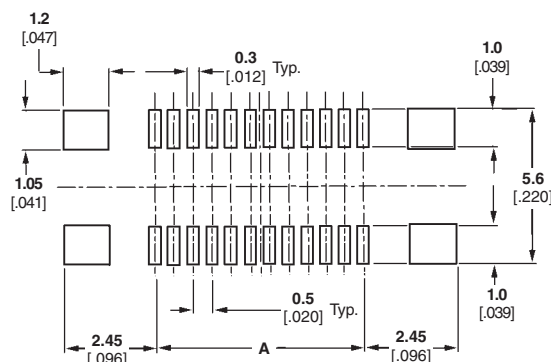
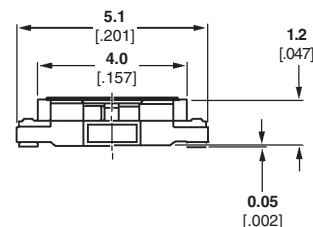
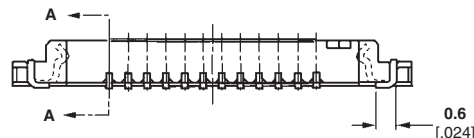
108-5546

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

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



Section A - A



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

No. of Positions	Dimensions				Keyed	Receptacle Part Number
	A	B	C	D		
20	4.5 .177	7.8 .307	9.6 .378	0.25 .010	Yes	2-5353512-0
30	7.0 .276	10.3 .406	12.1 .476	0.0	Yes	3-5353512-0
40	9.5 .374	12.8 .504	14.6 .575	0.25 .010	Yes	4-5353512-0
50	12.0 .472	15.3 .602	17.1 .673	0.0	No	5-5353159-0
60	14.5 .571	17.8 .701	19.6 .772	0.25 .010	No	6-5353159-0
70	17.0 .669	20.3 .799	22.1 .870	0.0	No	7-5353159-0
80	19.5 .768	22.8 .898	24.6 .969	0.25 .010	No	8-5353159-0

**Note:** Part Numbers are RoHS compliant.

# 1.5mm [.059"] Stacking Height

## Material and Finish

**Housing** — 6T nylon, high heat resistant resin

**Contacts** — Phosphor bronze, plated gold over nickel

**Solder Pegs** — Copper alloy, plated tin

## Related Product Data

**Mating Receptacles** — page 14

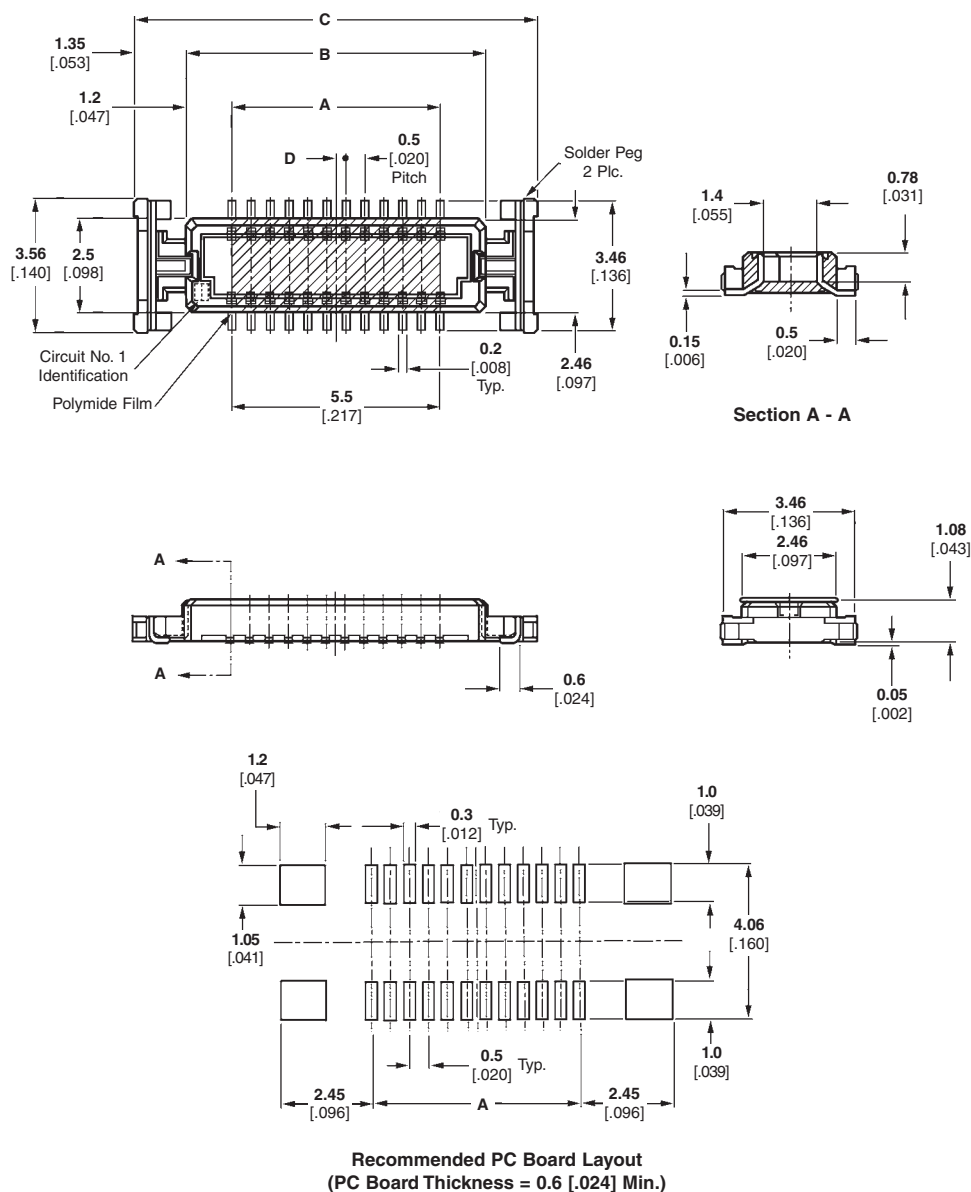
**Technical Documents** (page 113)

## Product Specification

108-5546

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

## 0.5mm Fine Stack Tabs (Plugs), 0.5 [.020] Pitch



No. of Positions	Dimensions				Stacking Height	Keyed	Tab Part Number
	A	B	C	D			
20	4.5 .177	6.9 .272	9.6 .378	0.25 .010	1.5 .059	Yes	2-5353515-0
30	7.0 .276	9.4 .370	12.1 .476	0.0	1.5 .059	Yes	3-5353515-0
40	9.5 .374	11.9 .469	14.6 .575	0.25 .010	1.5 .059	Yes	4-5353515-0
50	12.0 .472	14.4 .567	17.1 .673	0.25 .010	1.5 .059	No	5-5353164-0
60	14.5 .571	16.9 .665	19.6 .772	0.25 .010	1.5 .059	No	6-5353164-0
70	17.0 .669	19.4 .764	22.1 .870	0.0	1.5 .059	No	7-5353164-0
80	19.5 .768	21.9 .862	24.6 .969	0.25 .010	1.5 .059	No	8-5353164-0

**Note:** Part Numbers are RoHS compliant.

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**4.0mm, 4.5mm, 5.5mm  
and 6.0mm Stacking  
Heights**

**Material and Finish**

**Housing** — 6T nylon, high heat resistant resin

**Contacts** — Phosphor bronze, plated gold with entire contact underplated nickel

**Tail Plate** — Copper alloy, plated tin

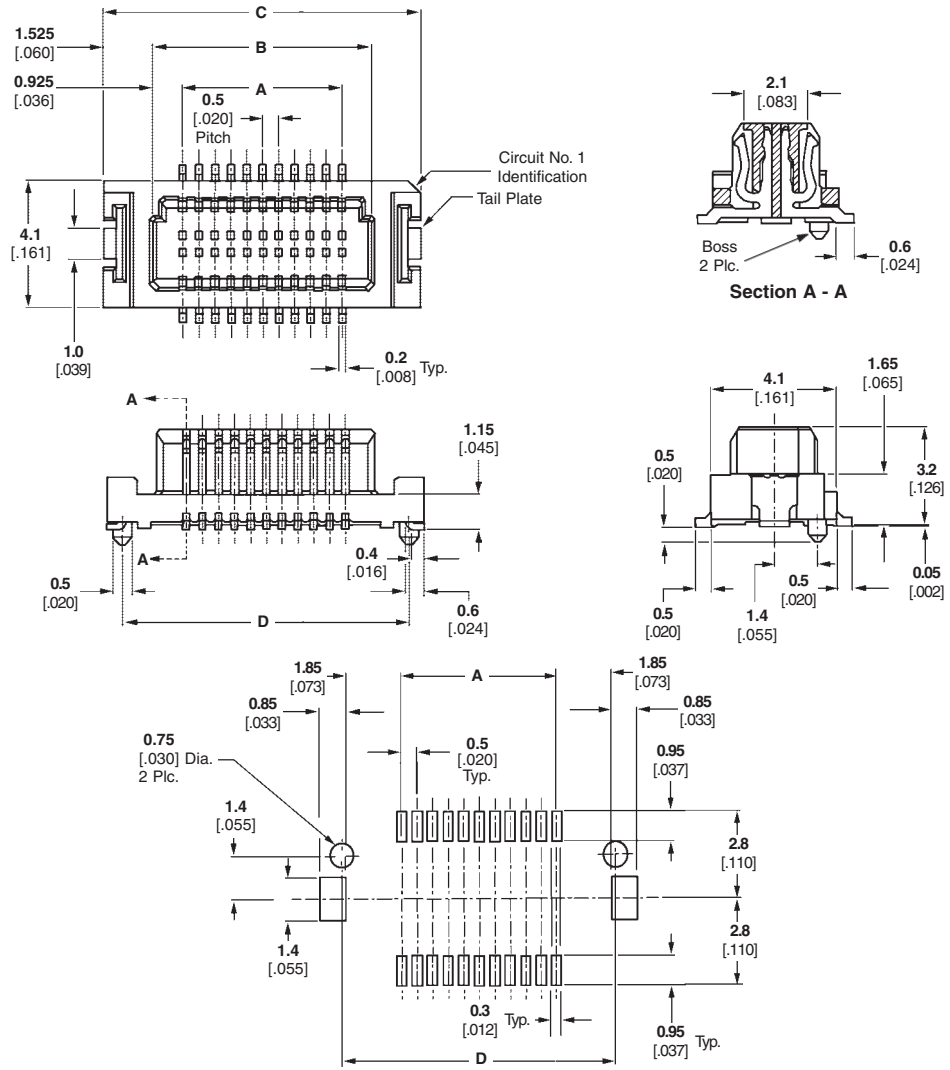
**Related Product Data**

**Mating Tabs** — page 17

**Technical Documents** (page 113)

**Product Specification**  
108-5425

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



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

No. of Positions	Dimensions				Keyed	With Boss	Part Number
	A	B	C	D			
16	3.50 .138	5.35 .211	8.40 .331	—	Yes	No	1-1747022-0
20	4.50 .177	5.75 .226	8.80 .346	—	No	No	1565357-9
				—	Yes	No	1747022-9
50	12.00 .472	13.25 .522	16.30 .642	—	No	No	1565357-6
60	14.50 .571	15.75 .620	18.80 .740	—	No	No	1565357-5
				17.85 .703	No	Yes	5-1565357-5
70	17.00 .669	18.25 .719	21.30 .826	—	No	No	1565357-4
				20.95 .825	Yes	Yes	5-1747022-4
80	19.50 .768	21.35 .841	24.40 .961	—	No	No	1565357-3
				23.45 .923	No	Yes	5-1565357-3
				—	Yes	No	1747022-3
				23.45 .923	Yes	Yes	5-1747022-3
100	24.50 .965	25.75 1.014	28.80 1.134	—	No	No	1565357-1

**Note:** Part Numbers are RoHS compliant.

## Material and Finish

**Housing** — 6T nylon, high heat resistant resin

**Contacts** — Phosphor bronze, plated gold with entire contact underplated nickel

**Tail Plate** — Copper alloy, plated tin

### Related Product Data

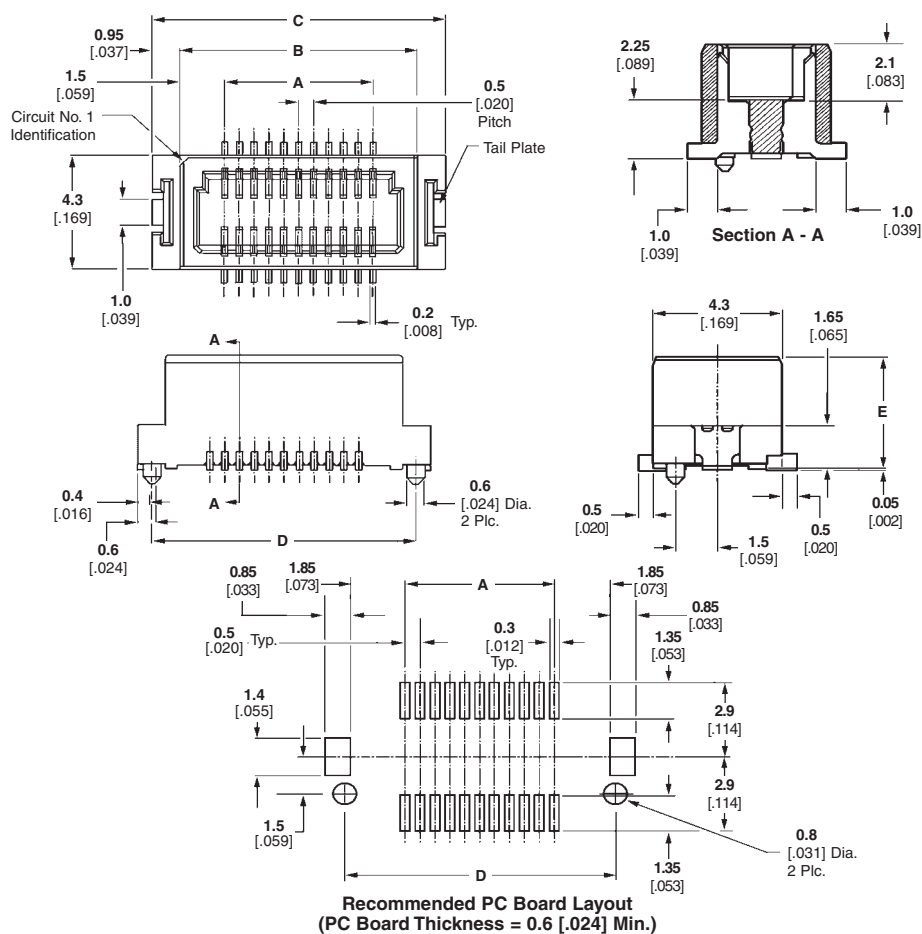
Mating Receptacles — page 16

## Technical Documents (page 113)

## Product Specification

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

### 0.5mm Fine Mate Vertical Tabs (Plugs), 0.5 [.020] Pitch



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

No. of Positions	Dimensions				E	Stack Height	Keyed	With Boss	Part Number
	A	B	C	D					
16	3.50 .138	5.35 .211	8.40 .331	—	3.30 .130	4.50 .177	Yes	No	1-1747038-0
20	4.50 .177	5.75 .226	8.80 .346	—	3.30 .130	4.50 .177	Yes	No	1747038-9
							No	No	1565359-9
50	12.00 .472	13.25 .522	16.30 .642	—	4.30 .169	5.50 .217	No	No	1747032-6
				—	4.80 .189	6.00 .236	No	No	1747035-6
60	14.50 .571	15.75 .620	18.80 .740	17.85 .703	2.70 .106	4.00 .157	No	Yes	5-1747028-5
				—	3.30 .130	4.50 .177	No	No	1565359-5
				—	4.30 .169	5.50 .217	No	No	1747032-5
				—	2.70 .106	4.00 .157	No	No	1747028-4
70	17.00 .669	18.25 .719	21.30 .826	—	2.70 .106	4.00 .157	No	No	1747028-4
80	19.50 .768	21.35 .841	24.40 .961	—	2.70 .106	4.00 .157	No	No	1747028-3
				—	3.30 .130	4.50 .177	No	No	1565359-3
				23.45 .923	3.30 .130	4.50 .177	No	Yes	5-1565359-3
				23.45 .923	4.30 .169	5.50 .217	No	Yes	5-1747254-3
				—	4.80 .189	6.00 .236	No	No	1747035-3
				—	2.70 .106	4.00 .157	No	No	1747028-1
100	24.50 .965	25.75 1.014	28.80 1.134	—	3.30 .130	4.50 .177	No	No	1565359-1

**Note:** Part Numbers are RoHS compliant.



*Electronics*

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**4.0mm, 4.5mm, 5.5mm  
and 6.0mm Stacking  
Heights**

**Material and Finish**

**Housing** — 6T nylon, high heat resistant resin

**Contacts** — Phosphor bronze, plated gold with entire contact underplated nickel

**Tail Plate** — Copper alloy, plated tin

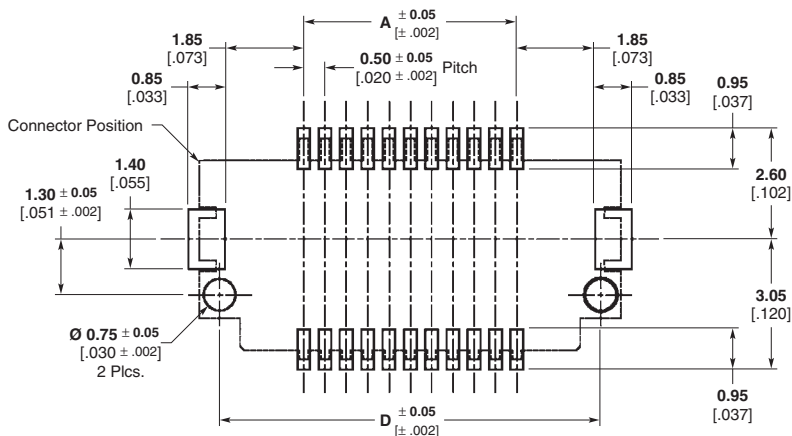
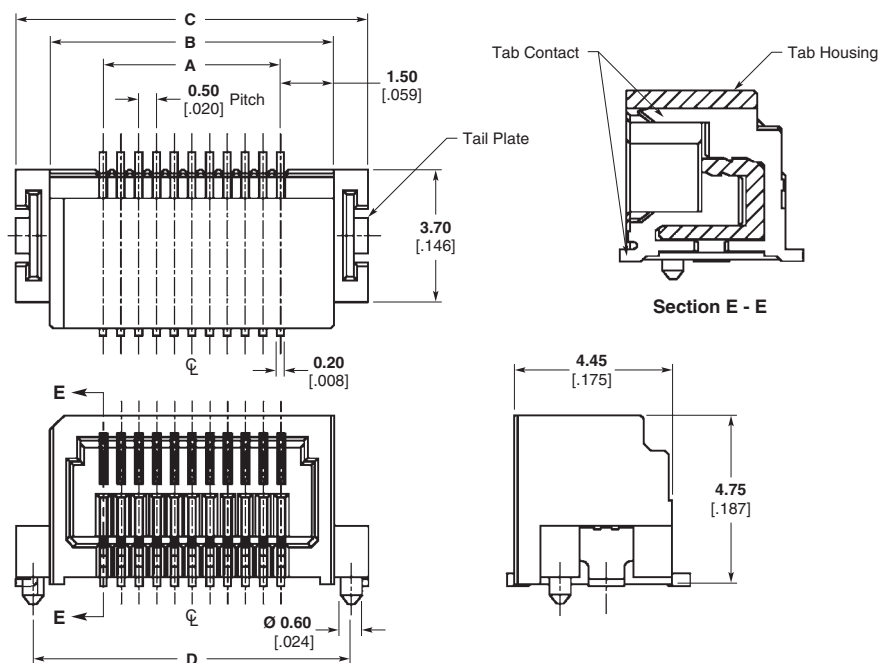
**Related Product Data**

**Mating Receptacles** — page 16

**Technical Documents** (page 113)

**Product Specification**  
108-5425

**0.5mm Fine Mate Right Angle Tabs (Plugs), 0.5 [.020] Pitch**



**Recommended PC Board Layout**

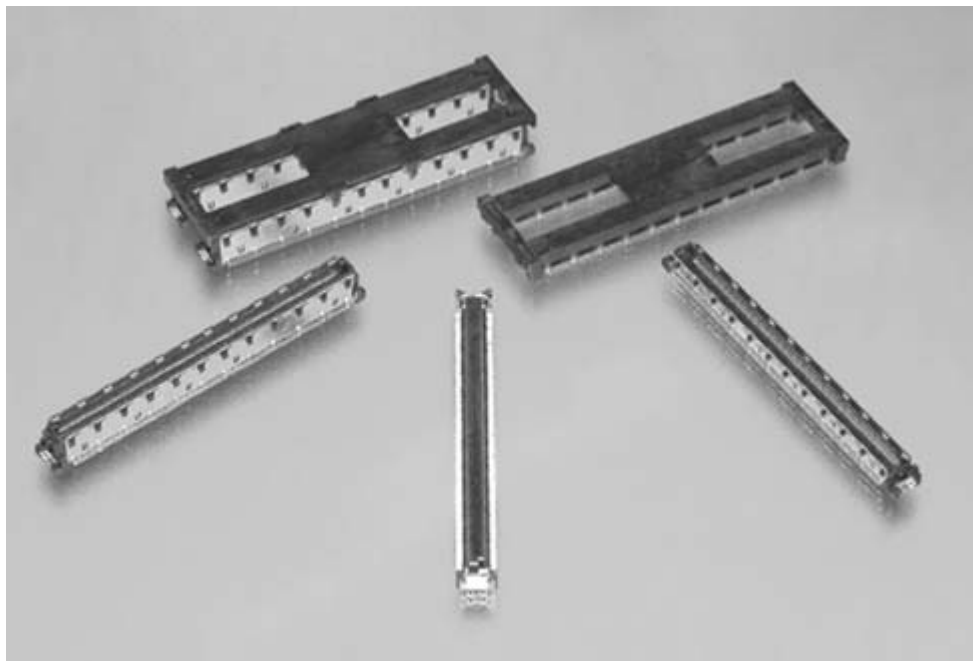
No. of Positions	Dimensions				Keyed	With Boss	Part Number
	A	B	C	D			
16	3.50 .138	5.35 .211	8.40 .331	—	Yes	No	1-1747257-0
20	4.50 .177	5.75 .226	8.80 .346	—	No	No	1747025-9
50	12.00 .472	13.25 .522	16.30 .642	—	No	No	1747025-6
60	14.50 .571	15.75 .620	18.80 .740	—	No	No	1747025-5
70	17.00 .669	18.25 .719	21.30 .826	—	No	No	1747025-4
				20.95 .825	No	Yes	5-1747025-4
80	19.50 .768	21.35 .841	24.40 .961	—	No	No	1747025-3
				23.45 .923	No Yes	Yes Yes	5-1747025-3 5-1747257-3
100	24.50 .965	25.75 1.014	28.80 1.134	—	No	No	1747025-1

**Note:** Part Numbers are RoHS compliant.

**Product Facts**

- Available position sizes:
  - For single connector: 120, 160, 200, 220, and 240 positions
  - For bridged connectors: 240, 320, and 440 positions
- Available stacking heights:
  - 5mm, 6mm, 7mm, 8mm, 9mm, 11mm, 12mm, 15mm, and 16mm (limited by position sizes)
- Giga ground shielding options on all parts
- RoHS Compliant part numbers available
- Polarized locating posts

**0.5mm Free Height (FH) Connectors**



0.5mm Free Height is a two-piece connector system designed for parallel board-to-board stacking applications. The contact system is identical to our popular 0.6mm FH product. The 0.5mm FH product has been chosen by the PICMG COM Express working group as the interface between embedded modules and carrier cards.

**Applications**

Parallel board-to-board for stacking applications that require high density. **The .5mm FH product is specified by the PICMG COM Express standard as the module to carrier card interface.** All stacking applications including Computer, Telecommunications, and Industrial industries.

**Mechanical Properties**

**Operating Temperature** — -40°C to +85°C  
**Durability** — 30 cycles  
**Current Rating** — 0.5A  
**Voltage Rating** — 50 VAC  
**Dielectric Withstanding Voltage** — 200 VAC

**Technical Documents**

**Product Specification**

108-5560

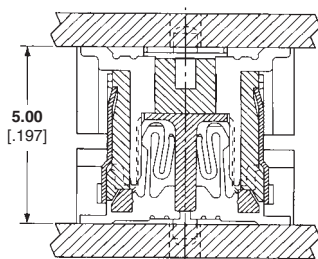
**Test Reports**

501-5226

**Board Stacking Spacing by  
Combined Receptacle and  
Plug Assemblies**

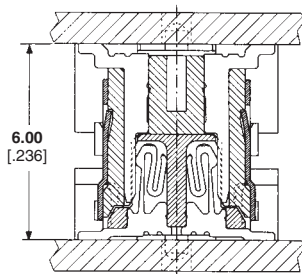
**0.5mm Free Height (FH) Connectors (Continued)**

**5mm Height**



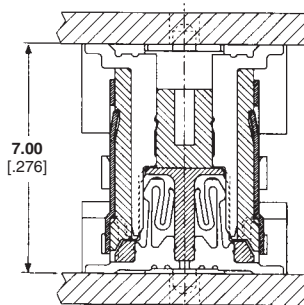
(Signal Position)

**6mm Height**



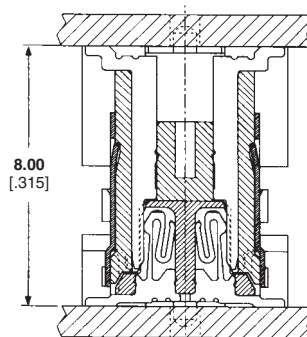
(Signal Position)

**7mm Height**



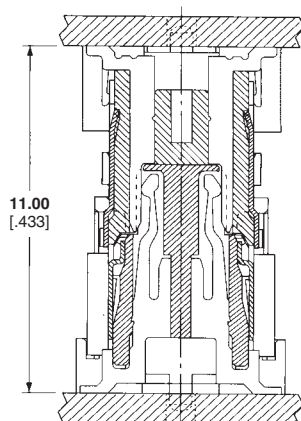
(Signal Position)

**8mm Height**



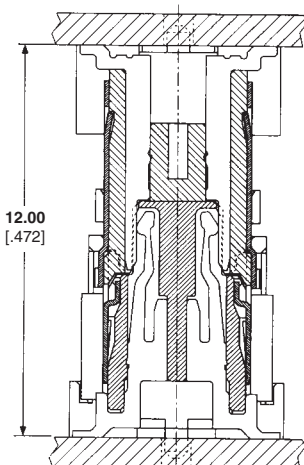
(Signal Position)

**11mm Height**



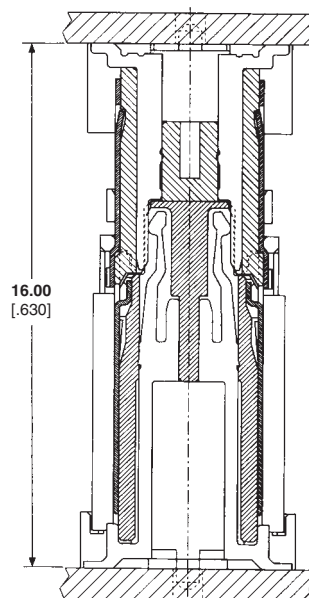
(Signal Position)

**12mm Height**



(Signal Position)

**16mm Height**



(Signal Position)

**0.5mm Free Height (FH) Connectors** (Continued)

**0.5 FH Height Lists**

Stack Height(mm) = Rcpt H + Plug H - 4  
Giga Option = G-Plate & G-Con't  
COM Express Part Numbers  
Type: S = Single part; B = Bridge

PLUG

**RECEPTACLE**

Remarks	Saleable Part No.	Packaging	SIF-200	G-Con	Type	H	Pos.	200	220	240	240	440	240	240	120	200	120	160	200	220	320	440
with Cap	2-6473527-9	Emboss	—	—	S	4	120								7H		8H					
with Cap	3-6565778-5	Semi H/T	—	—	S	4	200	5H								7H		8H				
with Cap	6-5353606-6	Hard Tray	—	X	S	4	220		5H										8H			
	3-6318490-6	Hard Tray	—	X	S	4	220		5H										8H			
with Cap	3-6473884-7	Hard Tray	—	—	S	4	240						6H	6H								
with Cap	3-5353606-7	Hard Tray	—	X	S	4	240						6H	6H								
with Cap	3-1827231-6	Hard Tray	—	X	B	4	440					5H										8H
with Cap	5-6123675-9	Emboss	—	X	B	4	240			5H	5H											
	6-5353699-5	Hard Tray	—	X	S	8	200	9H								11H		12H				
with Cap	6-5353700-5	Hard Tray	X	X	S	8	200									11H		12H				
with Cap	6376618-1	Hard Tray	—	X	S	12	120								15H		16H					
with Cap	6-5353703-2	Tray	X	X	S	12	160										16H					
	6-5353649-2	Hard Tray	—	X	B	12	320														16H	

0.5mm Free Height (FH)  
Connectors

**Note:** Part Numbers are RoHS compliant.



**Receptacle Assembly**

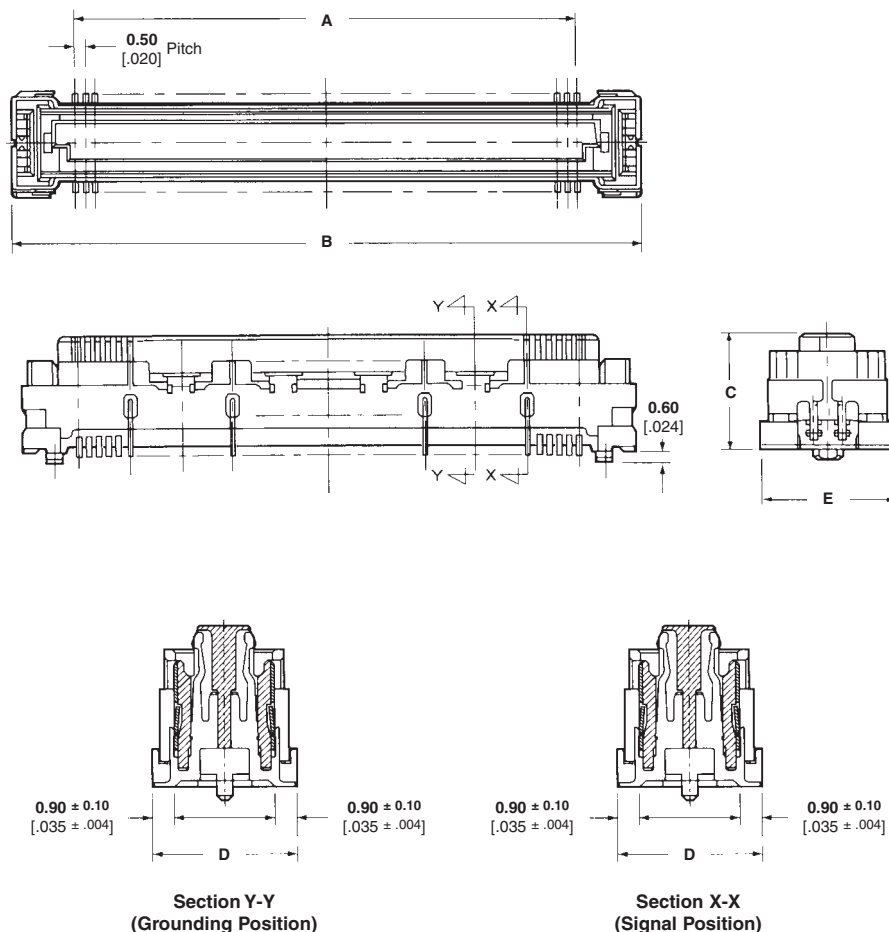
**Acceptable Board Stacking Height = 11mm/12mm**

**Material and Finish**

**Housing** — UL94V-0, heat resistant resin, natural color

**Contact** — Copper alloy, 0.2µm min. gold plated on contact area, 0.1µm tin-lead plated or tin plated on soldering area, 1.3µm min. nickel underplated on entire contact, 0.1µm thick tin plated on grounding contact.

**0.5mm Free Height (FH) Connectors (Continued)**



**.5 mm FH Receptacle Assemblies**

Positions	Height	Dimensions					Ground Contact	SIF-200	With Pickup Cap	Packaging Type	Part Number
		A	B	C	D	E					
120	4	29.50 1.161	36.80 1.449	3.25 .128	6.20 .244	6.00 .236	—	—	Yes	Tape	2-6473527-9
	12	29.50 1.161	36.80 1.449	11.25 .443	6.30 .248	6.50 .256	Yes	—	Yes	Hard Tray	6376618-1
160	12	39.50 1.555	46.80 1.843	11.25 .443	6.30 .248	6.50 .256	Yes	—	Yes	Tray	6-5353703-2
200	4	49.50 1.949	56.80 2.236	3.25 .128	6.20 .244	6.00 .236	—	—	Yes	Semi H/T	3-6565778-5
	8	49.50 1.949	56.80 2.236	7.25 .285	6.30 .248	6.50 .256	Yes	—	—	Hard Tray	6-5353699-5
220	4	54.50 2.146	61.80 2.433	3.25 .128	6.20 .244	6.00 .236	Yes	—	—	Hard Tray	3-6318490-6
	4	54.50 2.146	61.80 2.433	3.25 .128	6.20 .244	6.00 .236	Yes	—	Yes	Hard Tray	6-5353606-6
	8	54.50 2.146	61.80 2.433	7.25 .285	6.30 .248	6.50 .256	Yes	Yes	Yes	Hard Tray	6-5353700-5
240	4	59.50 2.343	66.80 2.630	3.25 .128	6.20 .244	6.00 .236	—	—	Yes	Hard Tray	3-6473884-7
	4	59.50 2.343	66.80 2.630	3.25 .128	6.20 .244	6.00 .236	Yes	—	Yes	Hard Tray	3-5353606-7

**Note:** Part Numbers are RoHS compliant.

### 0.5mm Free Height (FH) Connectors (Continued)

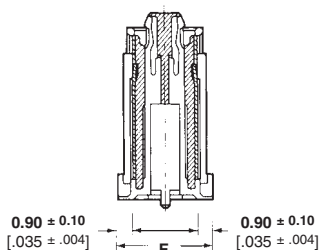
### Receptacle Assembly with Bridge

**Acceptable Board Stacking  
Height = 16mm**

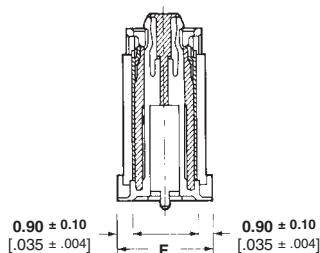
## Material and Finish

**Housing** — UL94V-0, heat resistant resin, natural color

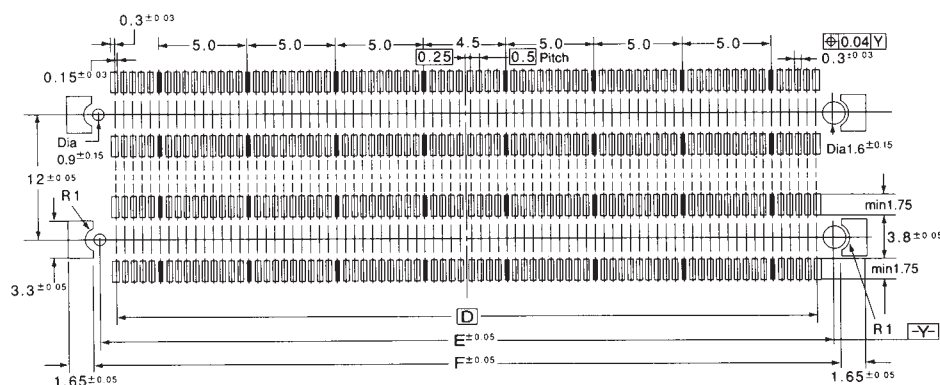
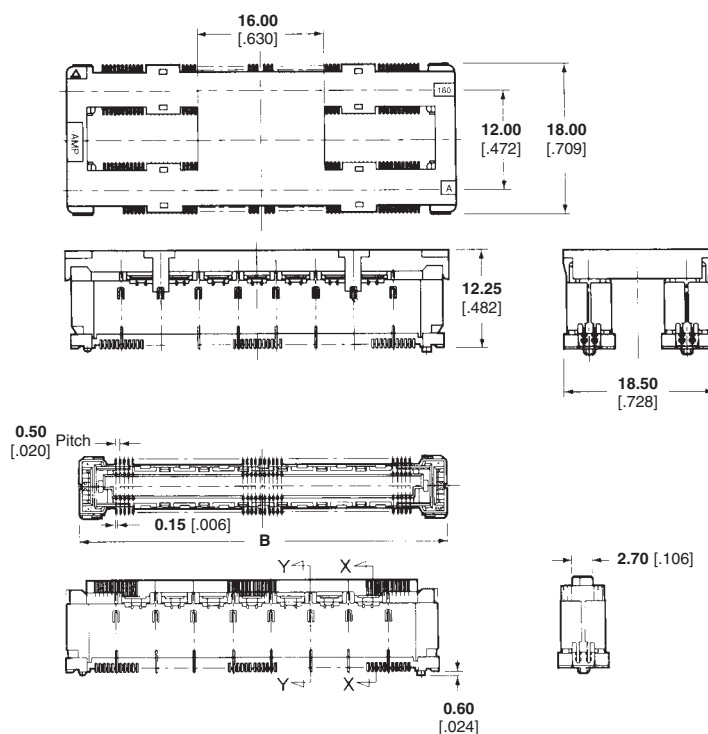
**Contact** — Copper alloy, 0.2µm min. gold plated on contact area, 0.1µm tin-lead plated or tin plated on soldering area, 1.3µm min. nickel underplated on entire contact, 0.1µm thick tin plated on grounding contact.



**Section Y-Y**  
**(Grounding Position)**



**Section X-X**  
**(Signal Position)**



**PC Board Layout  
(I = For Grounding Contact)**

### .5 mm FH Receptacle Assemblies with Bridge

Positions	Height	Dimensions						Ground Contact	SIF-200	With Pickup Cap	Packaging Type	Part Number
		A	B	C	D	E	F					
240	4	29.50	36.80	3.25	37.80	6.20	6.00	Yes	—	Yes	Tape	5-6123675-9
		1.161	1.449	.128	1.488	.244	.236					
320	12	39.50	46.80	11.25	47.80	6.50	6.30	Yes	—	Yes	Hard Tray	6-5353649-2
		1.555	1.843	.443	1.882	.256	.248					
440	4	54.50	61.80	3.25	62.80	6.20	6.00	Yes	—	Yes	Hard Tray	3-1827231-6
		2.146	2.433	.128	2.472	.244	.236					

**Note:** Part Numbers are RoHS compliant.

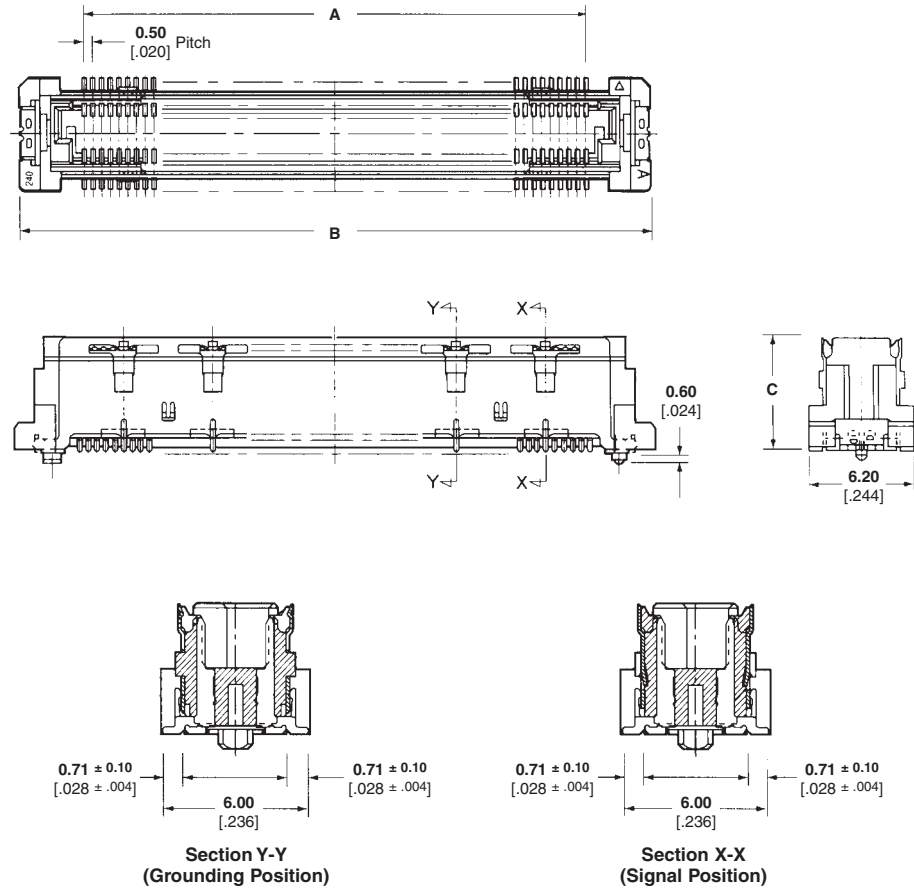
**Plug Assembly**

**Material and Finish**

**Housing** — UL94V-0, heat resistant resin, natural color

**Contact** — Copper alloy, 0.2µm min. gold plated on contact area, 0.1µm tin-lead plated or tin plated on soldering area, 1.3µm min. nickel underplated on entire contact, 0.1µm thick tin plated on grounding contact.

**0.5mm Free Height (FH) Connectors (Continued)**



**.5 mm FH Plug Assemblies**

Positions	Height	Dimensions			Giga Ground Shield	SIF-200	With Pickup Cap	Packaging Type	Part Number
		A	B	C					
120	7	29.50 1.161	36.80 1.449	6.45 .254	—	—	Yes	Tape	2-6473530-9
	8	29.50 1.161	36.80 1.449	7.45 .293	—	—	—	Hard Tray	6376622-1
160	8	39.50 1.555	46.80 1.843	7.45 .293	Yes	Yes	Yes	Hard Tray	6-5353706-2
200	5	49.50 1.949	56.80 2.236	4.45 .1175	Yes	—	Yes	Semi H/T	3-6612148-5
	7	49.50 1.949	56.80 2.236	6.45 .254	Yes	—	—	Hard Tray	6-6123766-5
	8	49.50 1.949	56.80 2.236	7.45 .293	Yes	—	Yes	Semi H/T	3-6565779-5
220	5	54.50 2.146	61.80 2.433	4.45 .1175	Yes	—	—	Hard Tray	3-1827253-6
	8	54.50 2.146	61.80 2.433	7.45 .293	Yes	—	—	Hard Tray	3-6318491-6
240	6	59.50 2.343	66.80 2.630	5.45 .215	Yes	—	Yes	Hard Tray	3-5353614-7
	6	59.50 2.343	66.80 2.630	5.45 .215	—	—	Yes	Hard Tray	3-6473868-7

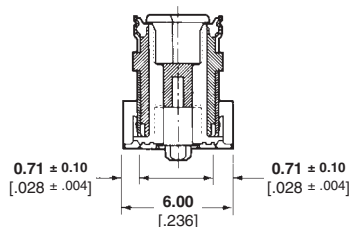
**Note:** Part Numbers are RoHS compliant.

Plug Assembly with Bridge

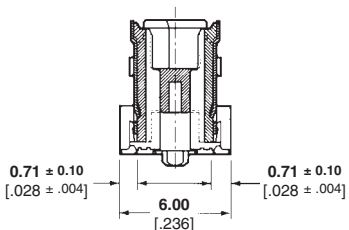
Material and Finish

**Housing** — UL94V-0, heat resistant resin, natural color

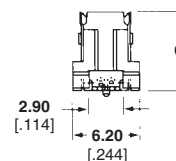
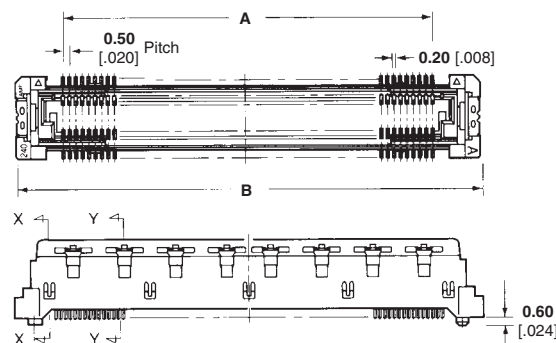
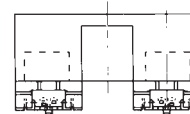
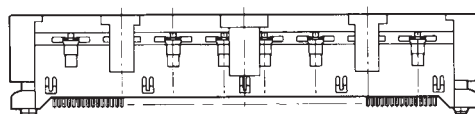
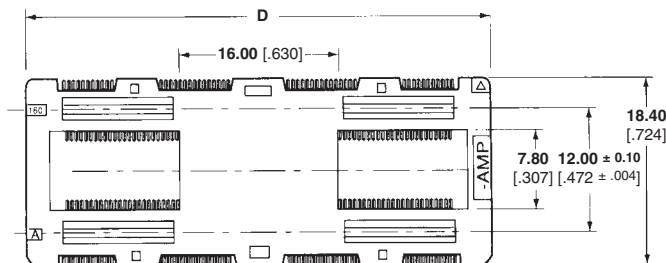
**Contact** — Copper alloy, 0.2µm min. gold plated on contact area, 0.1µm tin-lead plated or tin plated on soldering area, 1.3µm min. nickel underplated on entire contact, 0.1µm thick tin plated on grounding contact.



Section Y-Y  
(Grounding Position)



Section X-X  
(Signal Position)

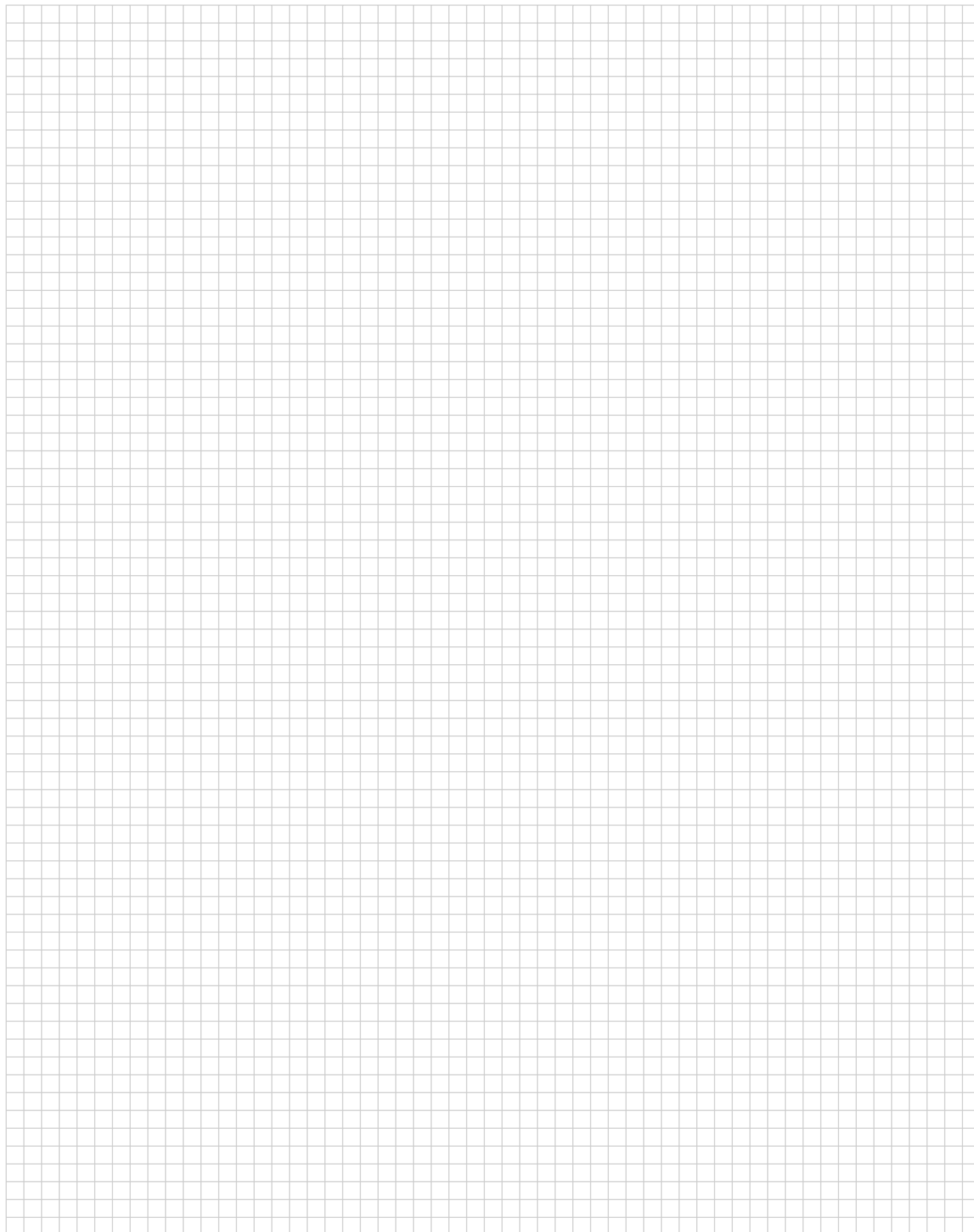


.5 mm FH Plug Assemblies with Bridge


Positions	Height	Dimensions				Giga Ground Shield	SIF-200	With Pickup Cap	Packaging Type	Part Number
		A	B	C	D					
240	5	29.50 1.161	36.80 1.449	4.45 .175	36.90 1.453	Yes	—	Yes	Tape	9-6123672-9
240	5	29.50 1.161	36.80 1.449	4.45 .175	36.90 1.453	Yes	—	Yes	Tape	5-6123672-9
320	8	39.50 1.555	46.80 1.843	7.45 .293	46.90 1.846	Yes	—	Yes	Hard Tray	6-5353652-2
440	5	54.50 2.146	61.80 2.433	4.45 .175	61.90 2.437	Yes	—	Yes	Hard Tray	3-1827233-6
440	8	54.50 2.146	61.80 2.433	7.45 .293	61.90 2.437	Yes	—	Yes	Hard Tray	3-5353652-6

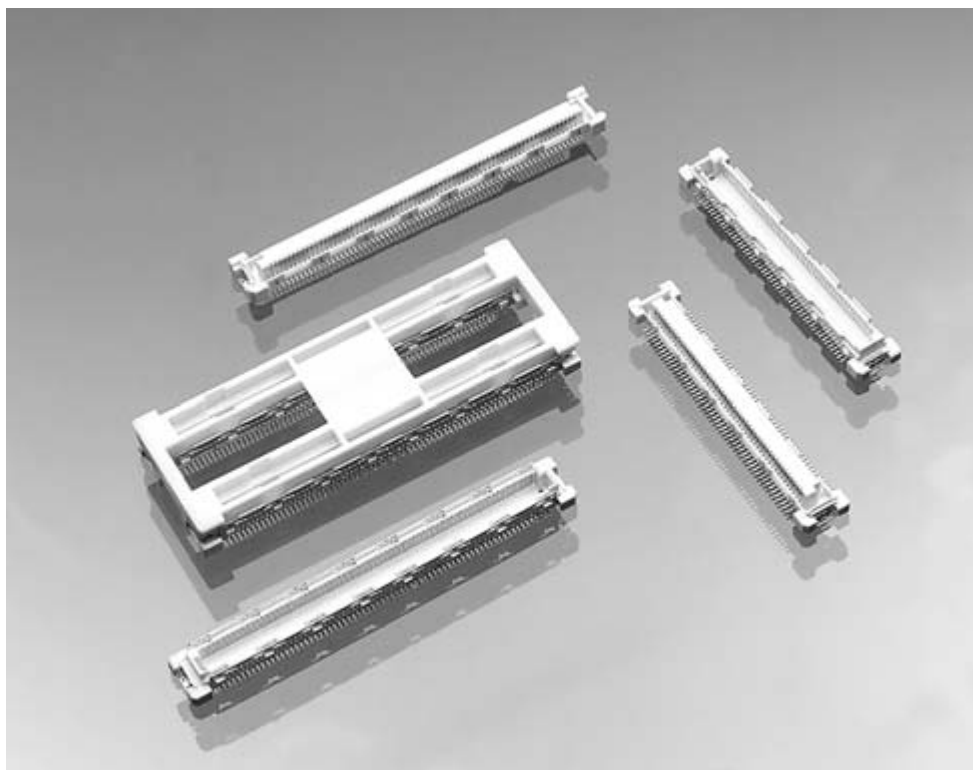
**Note:** Part Numbers are RoHS compliant.

**Engineering Notes**



**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

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


Tyco Electronics 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

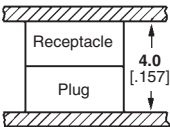
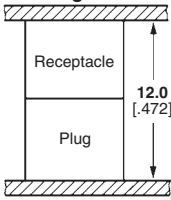
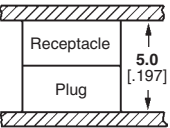
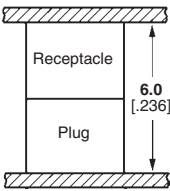
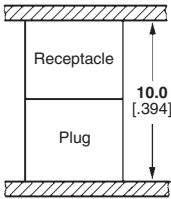
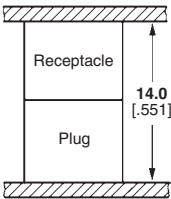
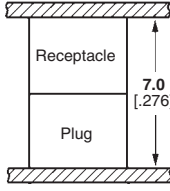
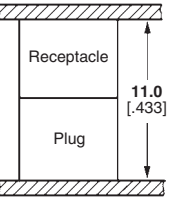
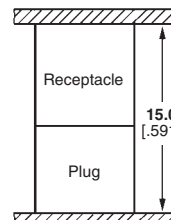
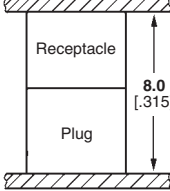
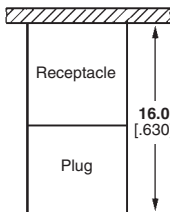
**Overall Resistance** —  
less than 30 milliohms

**Dielectric Withstanding Voltage** —  
0.2 kVAC

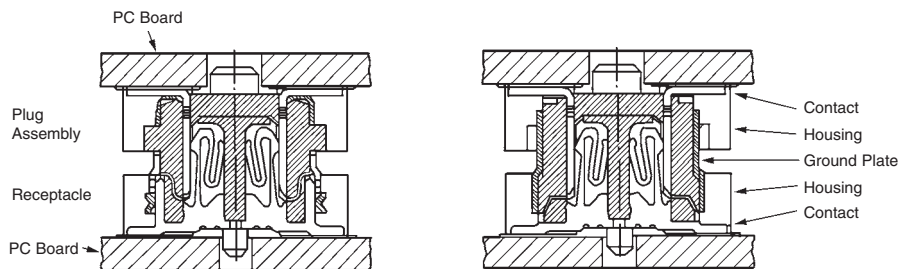
**Operating Temperature** —  
-40°C to +85°C



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

Plugs	Receptacles		
	4H	8H	12H
4H	<p>Pages 30, 34</p>  <p>Pages 32, 33 &amp; 35</p>	N/A	<p>Page 31</p>  <p>Pages 32, 33 &amp; 35</p>
5H	<p>Page 30</p>  <p>Pages 32, 33</p>	N/A	N/A
6H	<p>Pages 30, 34</p>  <p>Pages 32, 33 &amp; 35</p>	<p>Page 31</p>  <p>Page 33</p>	<p>Page 31</p>  <p>Pages 32, 33 &amp; 35</p>
7H	<p>Page 30</p>  <p>Page 33</p>	<p>Page 31</p>  <p>Page 33</p>	<p>Page 31</p>  <p>Page 33</p>
8H	<p>Pages 30, 34</p>  <p>Pages 32, 33 &amp; 35</p>	N/A	<p>Page 31</p>  <p>Pages 32, 33 &amp; 35</p>

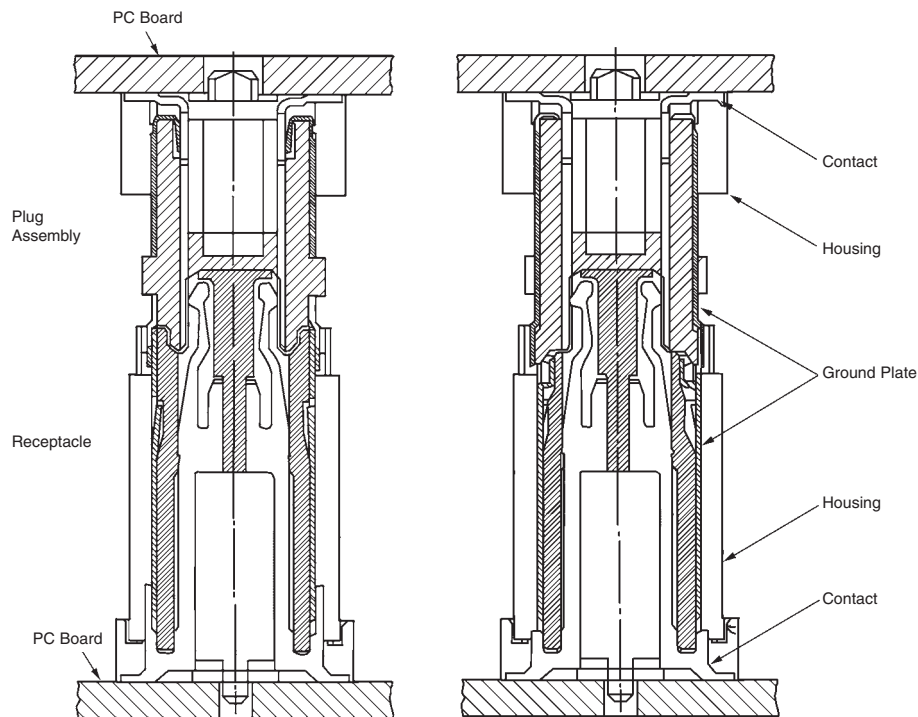
**0.6mm Free Height (FH) and GIGA Connectors (Continued)**



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

**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 on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

**Related Product Data**

**Performance Characteristics** — page 27

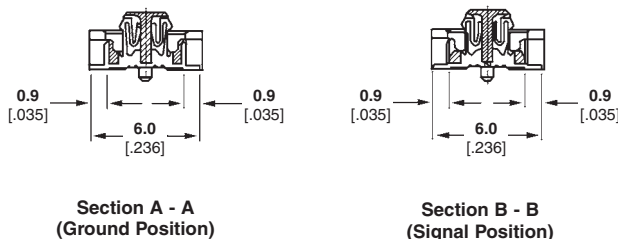
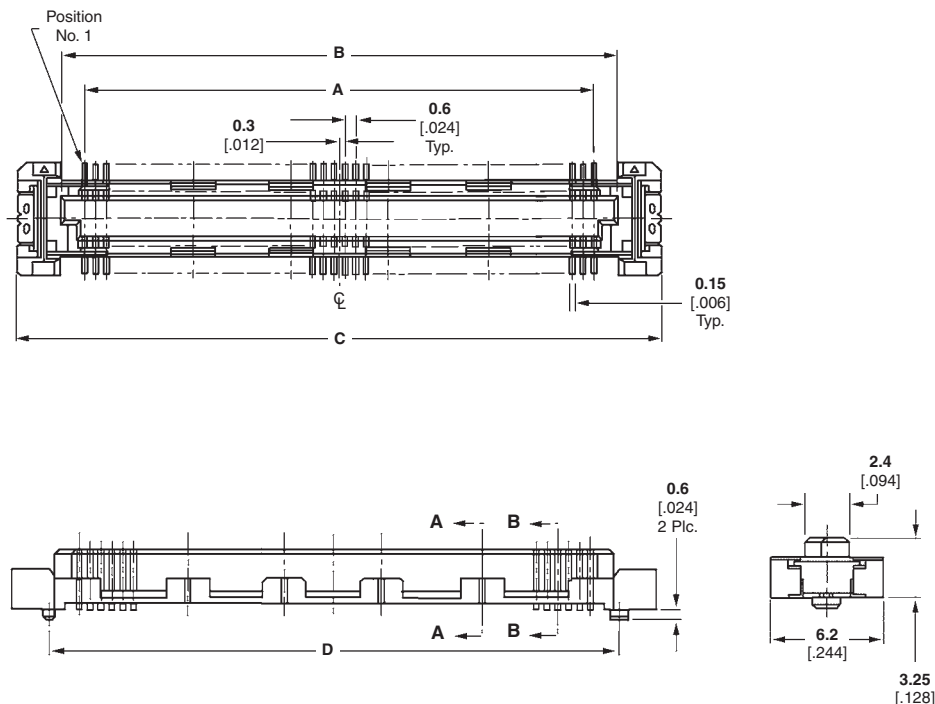
**Stacking Height Combinations** — page 28

**Mating Plugs** — pages 32, 33 & 35

**PC Board Layout** — pages 36 & 37

**Technical Documents** (page 113)

**Product Specification**  
108-5468



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	5316077-3	5353190-3
	70	20.4 .803	23.0 .906	27.7 1.091	23.6 .929	—	5-5353190-5
	80	23.4 .921	26.0 1.024	30.7 1.208	26.6 1.047	5316560-6	5353190-6
	100	29.4 1.158	32.0 1.260	36.7 1.445	32.6 1.284	—	5353190-8
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	1-5316077-0	1-5353190-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	1-5316560-1	—

**Note:** Free Height (FH) receptacles for 8H (8mm) and 12H (12mm) stacking height are shown on page 31. Part Numbers are RoHS compliant.

**8H (8mm) and 12H (12mm)**

**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 on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

**Related Product Data**

**Performance Characteristics** — page 27

**Stacking Height Combinations** — page 28

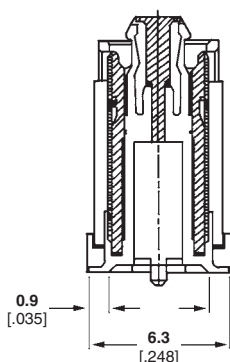
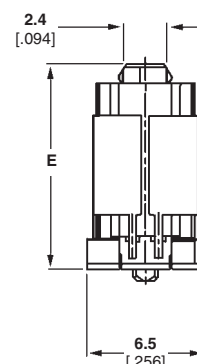
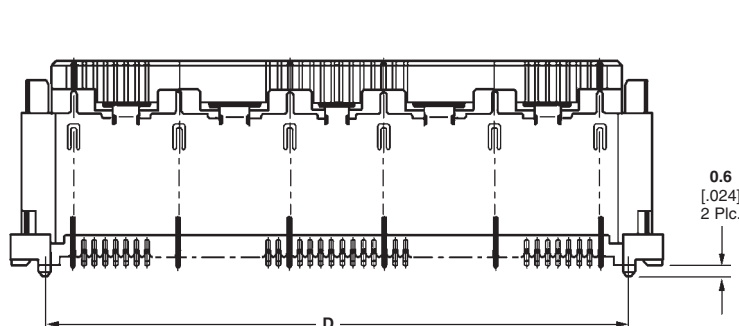
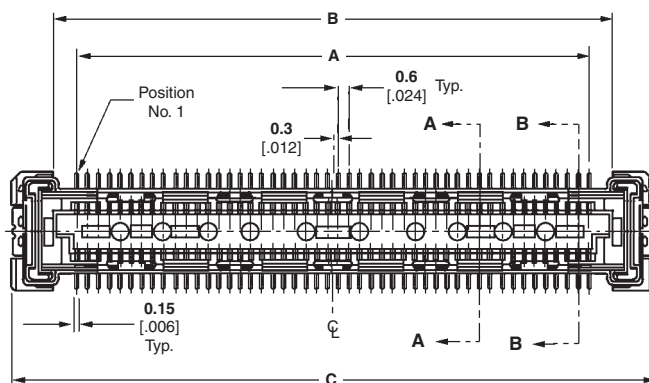
**Mating Plugs** — pages 32 & 33

**PC Board Layout** — pages 36 & 37

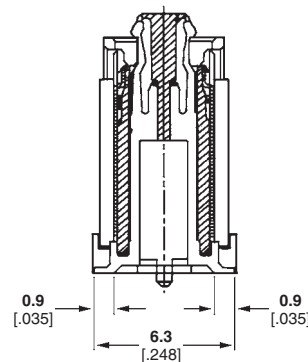
**Technical Documents** (page 113)

**Product Specification**  
108-5468

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



**Section A - A**  
(Ground Position)



**Section B - B**  
(Signal Position)

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	5316317-6
	50	14.4 .567	17.0 .670	21.7 .854	17.6 .693	11.25 .443	6318029-3
12H	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	11.25 .443	1-5316318-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	11.25 .443	1-5316318-1

**Note:** Free Height (FH) receptacles for 4H (4mm) stacking height are shown on page 30.  
Part Numbers are RoHS compliant.

**4H (4mm), 5H (5mm)  
6H (6mm), 8H (8mm)  
and 12H (12mm)**

### 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 on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

### Related Product Data

**Performance Characteristics** — page 27

**Stacking Height Combinations** — page 28

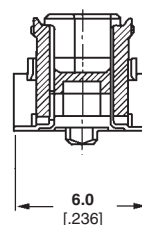
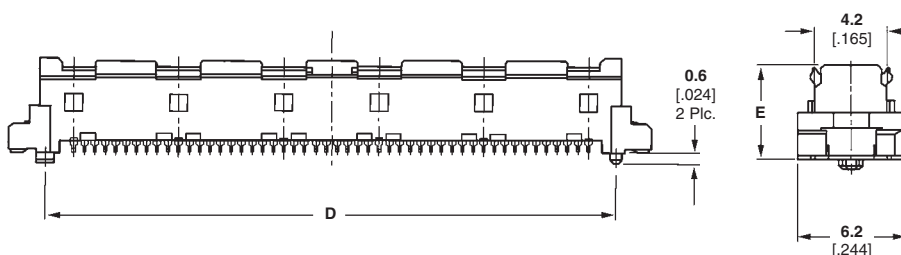
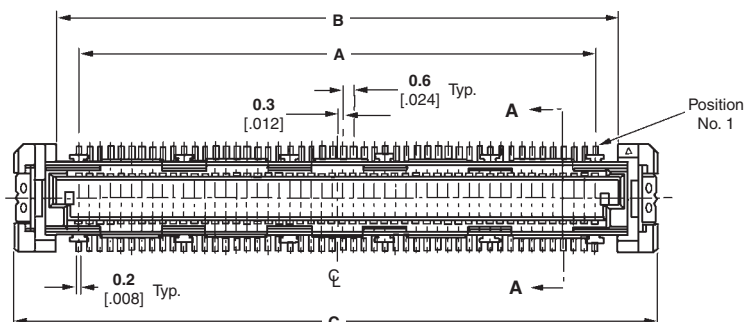
**Mating Receptacles** — pages 30, 31 & 34

**PC Board Layout** — pages 38 & 39

### Technical Documents (page 113)

**Product Specification**  
108-5468

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



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	5316135-3	5353183-3
	70	20.4 .803	23.0 .906	27.7 1.091	23.6 .929	3.45 .136	5316135-5	—
	100	29.4 1.158	32.0 1.260	36.7 1.445	32.6 1.284	3.45 .136	—	5353183-8
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	3.45 .136	1-5316135-0	1-5353183-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	3.45 .136	1-5316135-1	—
5H	50	14.4 .567	17.0 .669	21.7 .854	17.6 .693	4.45 .175	—	5-5353692-3
6H	100	29.4 1.158	32.0 1.260	36.7 1.445	32.6 1.284	5.45 .215	—	5353185-8
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	5.45 .215	—	1-5353185-0
8H	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	7.45 .293	—	1-5353187-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	7.45 .293	—	1-5353187-1
12H	50	14.4 .567	17.0 .669	21.7 .854	17.6 .693	11.25 .443	6318026-3	—

**Note:** Part Numbers are RoHS compliant

**4H (4mm), 5H (5mm),  
6H (6mm), 7H (7mm),  
8H (8mm) and 12H (12mm)**

**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 on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

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

### Related Product Data

**Performance Characteristics** — page 27

**Stacking Height Combinations** — page 28

**Mating Receptacles** — pages 30, 31, & 34

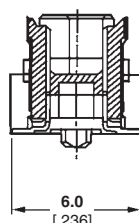
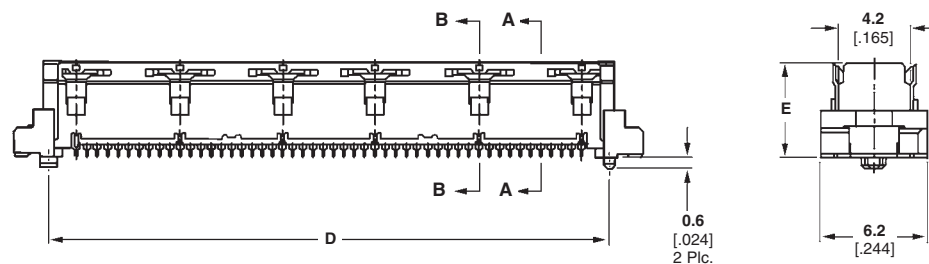
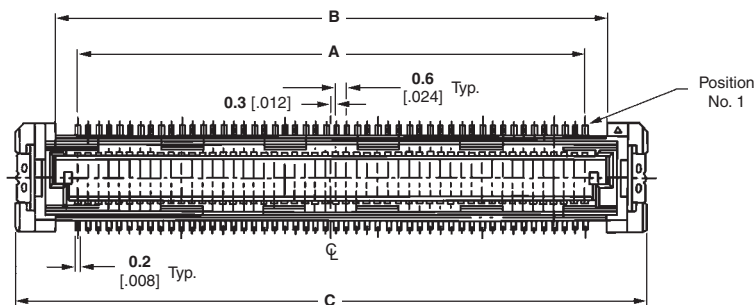
**PC Board Layout** — pages 23 & 24

### Technical Documents (page 113)

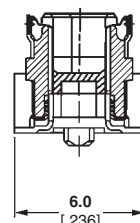
#### Product Specification

108-5468

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



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	5316076-3	—
	70	20.4 .803	23.0 .906	27.7 1.091	23.6 .929	3.45 .136	—	5-5353184-5
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	3.45 .136	1-5316076-0	1-5353184-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	3.45 .136	1-5316559-1	—
5H	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	4.45 .175	1-5353471-1	—
6H	80	23.4 .921	26.0 1.024	30.7 1.209	26.6 1.047	5.45 .215	—	5353186-6
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	5.45 .215	—	1-5353186-0
7H	80	23.4 .921	26.0 1.024	30.7 1.209	26.6 1.047	6.45 .254	—	5353831-6
	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	6.45 .254	—	1-5353831-0
8H	140	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	7.45 .293	—	1-5353188-0
	160	47.4 1.866	50.0 1.969	54.7 2.154	50.6 1.992	7.45 .293	1-5316562-1	1-5353188-1
	12H	41.4 1.630	44.0 1.732	48.7 1.917	44.6 1.756	11.25 .443	6473225-1	—

**Note:** Part Numbers are RoHS compliant.



**0.6mm Free Height Bridged Receptacle, 0.6 [.024] Pitch**

**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 on solder area, with entire contact underplated 0.00130 [.000051] min. nickel

**Related Product Data**

**Performance Characteristics** — page 27

**Stacking Height Combinations** — page 28

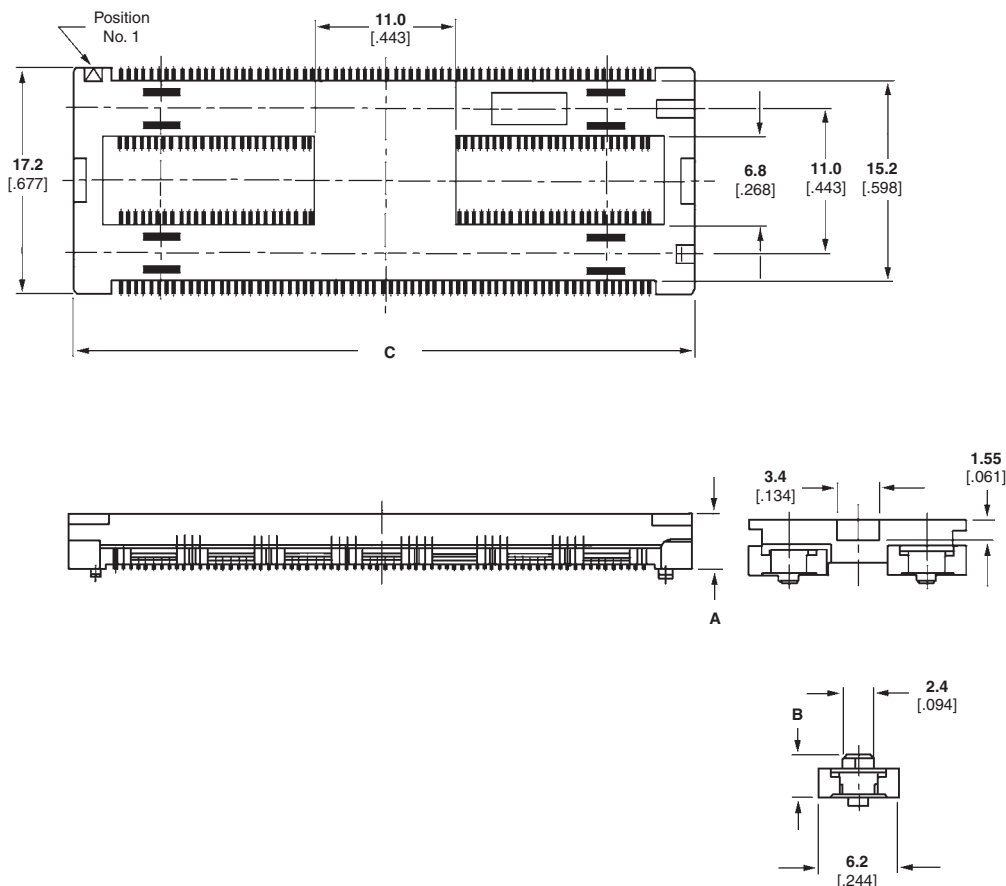
**Mating Plugs** — pages 32, 33 & 35

**PC Board Layout** — page 37

**Technical Documents** (page 113)

**Product Specification**

108-5468



Dimensions			Ground Plate	Packaging	Positions	Height	Part Number
A	B	C					
4.25 .167	3.25 .128	48.70 1.917	Yes	Tape	280	4H	1-5353206-0
4.25 .167	3.25 .128	48.70 1.917	Yes	Tray	280	4H	1-5353729-0
12.25 .482	11.25 .443	48.70 1.917	Yes	Tray	280	12H	1-5353800-0
4.25 .167	3.25 .128	54.70 2.154	Yes	Tray	320	4H	6-6318157-1

**Note:** Part Numbers are RoHS compliant.

**Material and Finish**

**Housing** — High temperature thermoplastic, 94V-0 rated

**Contacts** — Copper alloy; duplex plated 0.00020 [0.00008] min. gold on contact area, 0.00100 [0.00039] min. tin on solder area, with entire contact underplated 0.00130 [0.00051] min. nickel

**Related Product Data**

**Performance Characteristics** —  
page 27

**Stacking Height Combinations** —  
page 28

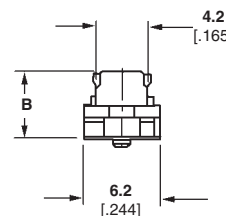
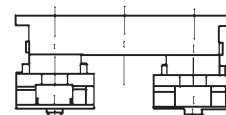
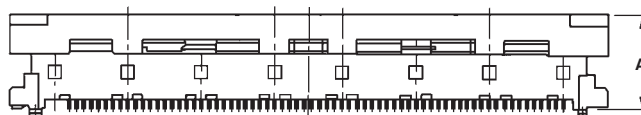
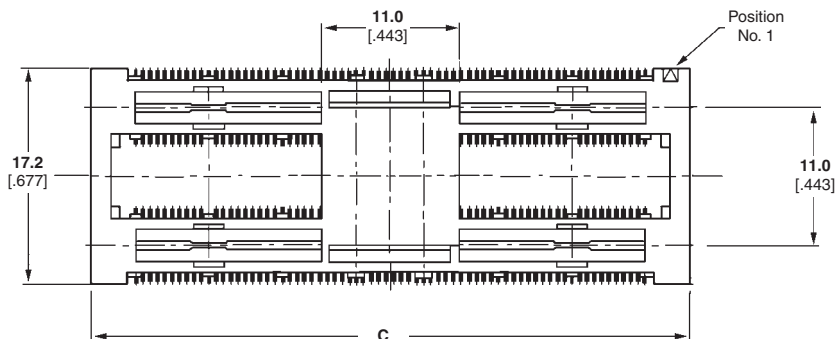
**Mating Receptacles** —  
pages 30 & 34

**PC Board Layout** — page 39

**Technical Documents** (page 113)

**Product Specification**  
108-5468

**0.6mm Free Height Bridged Plugs, 0.6 [0.024] Pitch**



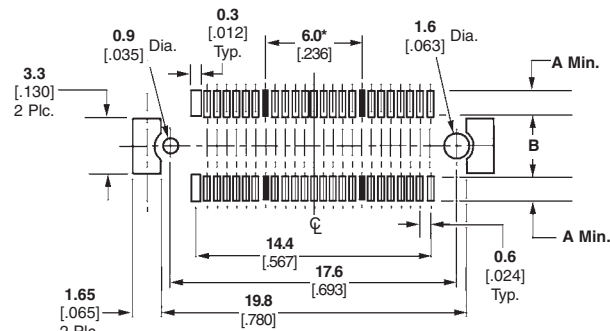
Dimensions			Ground Plate	Packaging	Positions	Height	Part Number
A	B	C					
5.45 .215	3.45 .136	48.70 1.917	Yes	Tape	280	4H	1-5353231-0
5.45 .215	3.45 .136	48.70 1.917	No	Tape	280	4H	1-5353284-0
5.45 .215	3.45 .136	48.70 1.917	Yes	Tray	280	4H	1-5353720-0
7.45 .293	5.45 .215	48.70 1.917	Yes	Tape	280	6H	1-5353232-0
7.45 .293	5.45 .215	48.70 1.917	Yes	Tray	280	6H	1-6123086-0
7.45 .293	5.45 .215	48.70 1.917	No	Tape	280	6H	1-5353134-0
9.45 .372	7.45 .293	48.70 1.917	No	Tape	280	8H	1-5353135-0
9.45 .372	7.45 .293	48.70 1.917	Yes	Tape	280	8H	1-5353233-0
9.45 .372	7.45 .293	48.70 1.917	Yes	Tray	280	8H	1-5353727-0
13.45 .530	11.45 .451	48.70 1.917	Yes	Tray	280	12H	1-6123098-0
5.45 .215	3.45 .136	54.70 2.154	Yes	Tray	320	4H	6-6318151-1
9.45 .372	7.45 .293	54.70 2.154	Yes	Tray	320	8H	6-6318154-1

**Note:** Part Numbers are RoHS compliant.

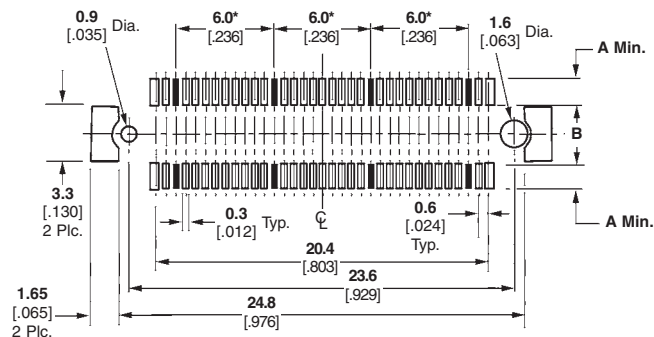
**For 50-, 70-, 80- and 100-Position Receptacles**

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

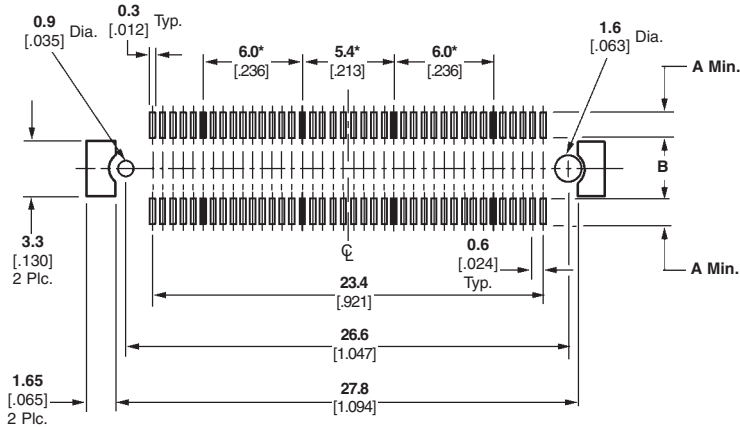
**Recommended PC Board Layouts and Grounding Circuit Positions**



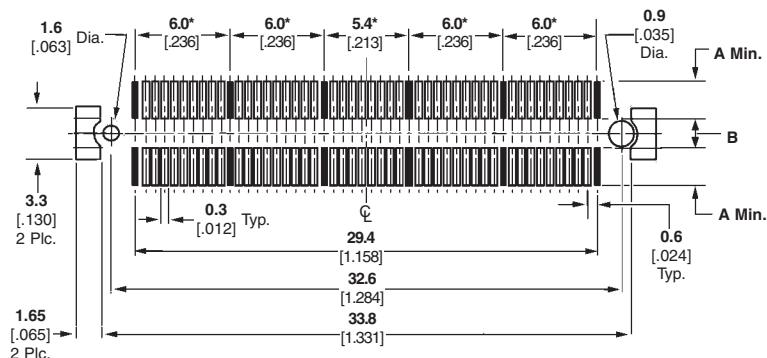
**For 50-Position Receptacles**  
**\*Spacing between grounding circuits**



**For 70-Position Receptacles**  
**\*Spacing between grounding circuits**



**For 80-Position Receptacles**  
**\*Spacing between grounding circuits**

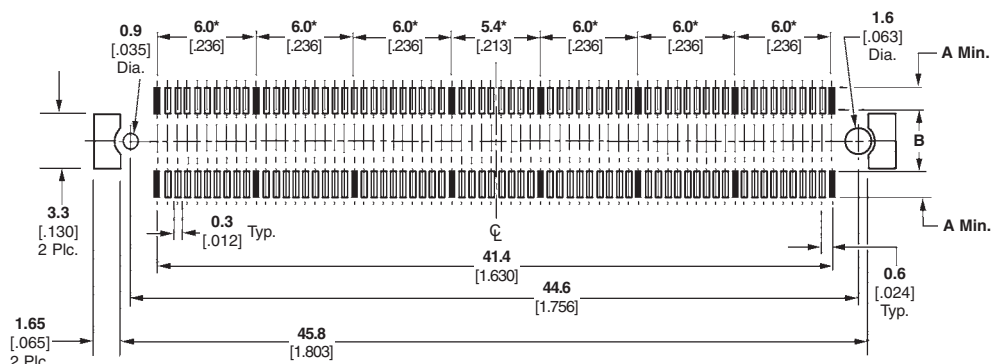


**For 100-Position Standard Receptacles**  
**\*Spacing between grounding circuits**

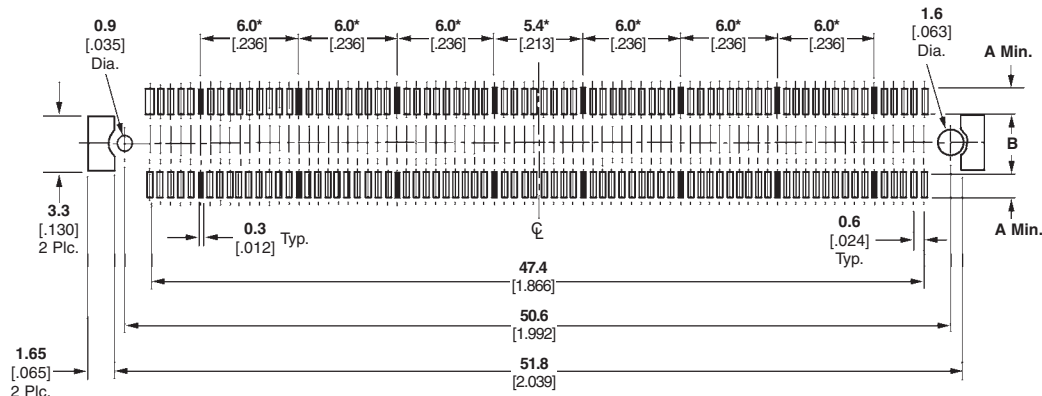
**For 140-, 160-Position  
Receptacles and 280-  
Position Bridge Receptacle**

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

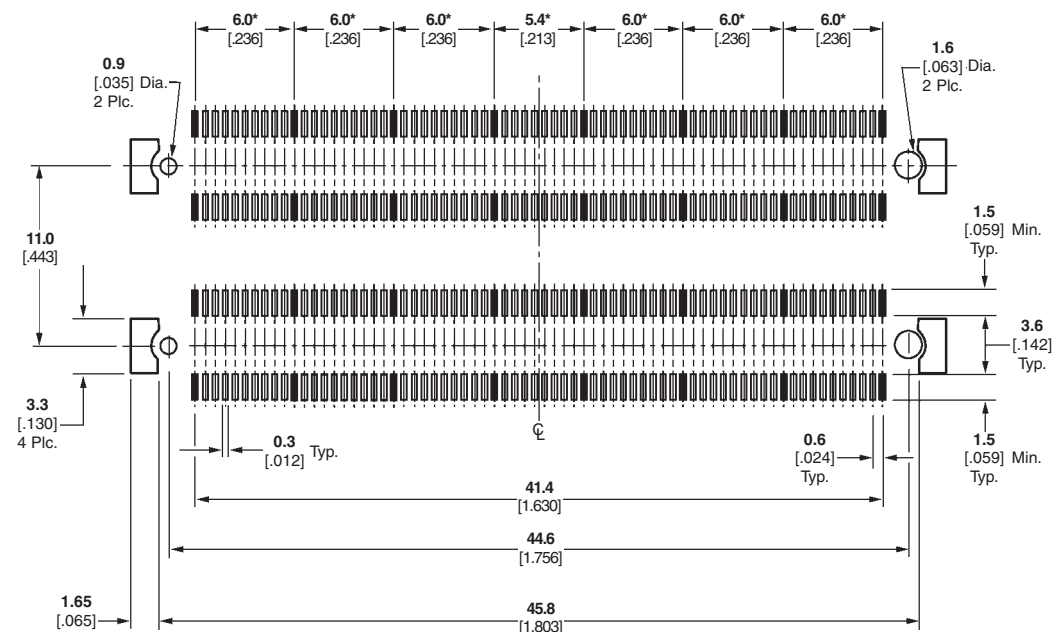
**Recommended PC Board Layouts and Grounding Circuit Positions (Continued)**



**For 140-Position Receptacles**  
\*Spacing between grounding circuits



**For 160-Position Receptacles**  
\*Spacing between grounding circuits

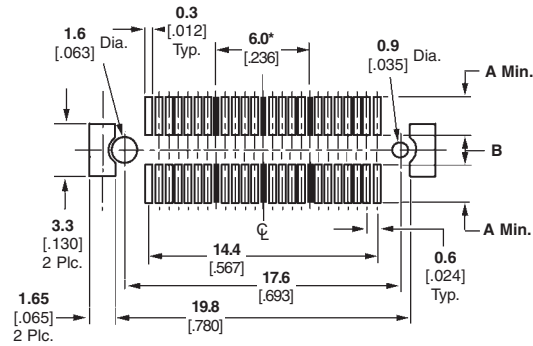


**For 280-Position Bridge Receptacle**  
\*Spacing between grounding circuits

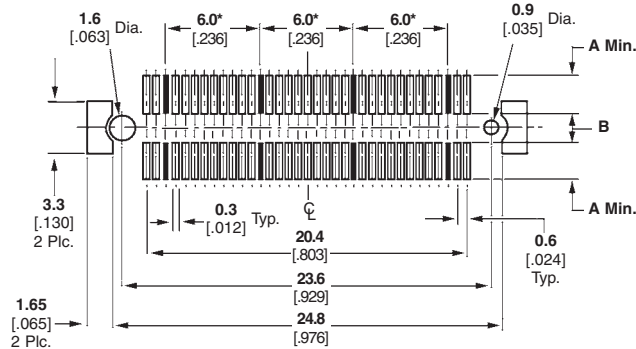
**For 50-, 70-, 100- and 140-Position Standard Plugs**

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

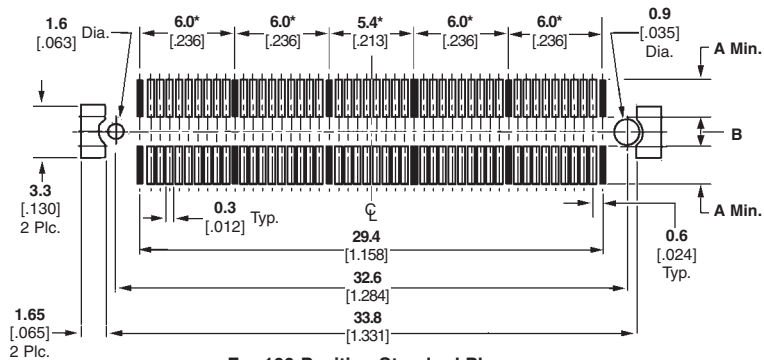
**Recommended PC Board Layouts and Grounding Circuit Positions (Continued)**



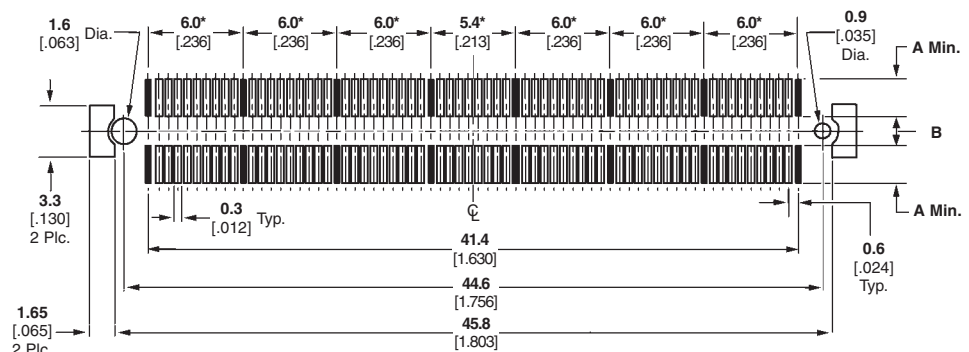
**For 50-Position Standard Plugs**  
\*Spacing between grounding circuits



**For 70-Position Standard Plugs**  
\*Spacing between grounding circuits



**For 100-Position Standard Plugs**  
\*Spacing between grounding circuits

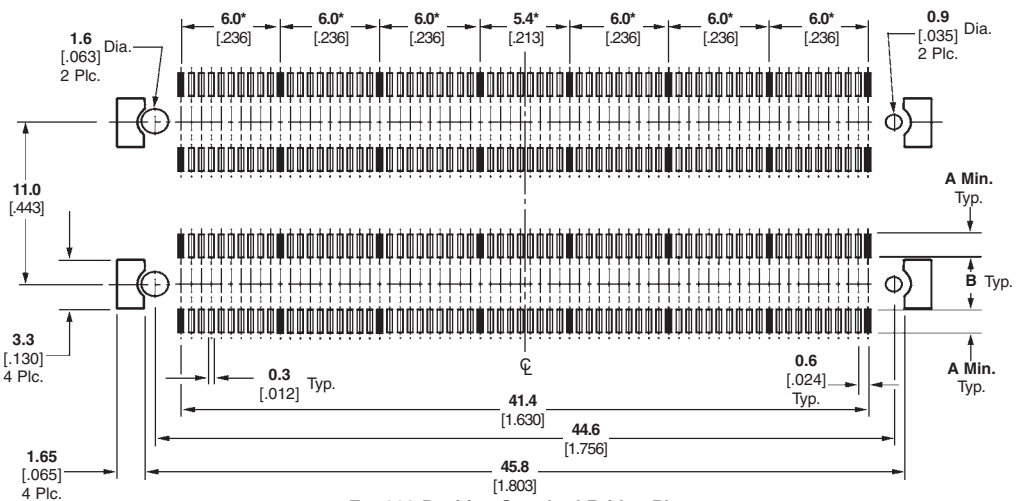
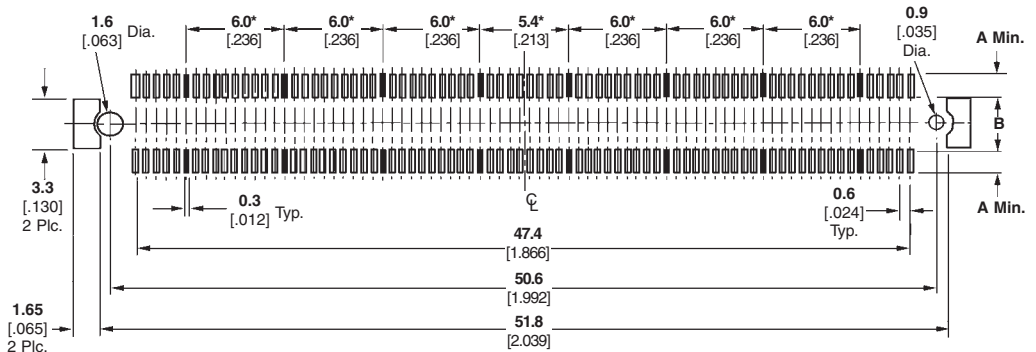


**For 140-Position Standard Plugs**  
\*Spacing between grounding circuits

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

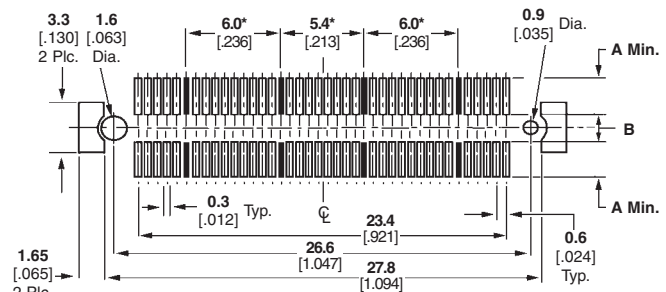
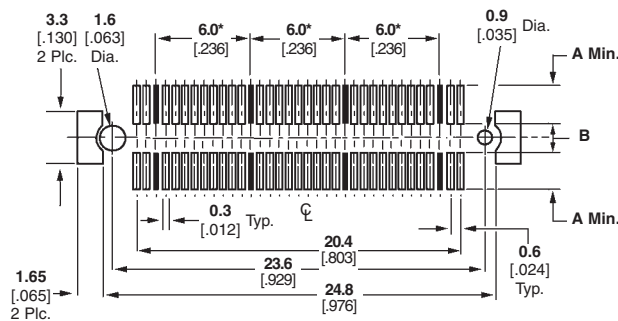
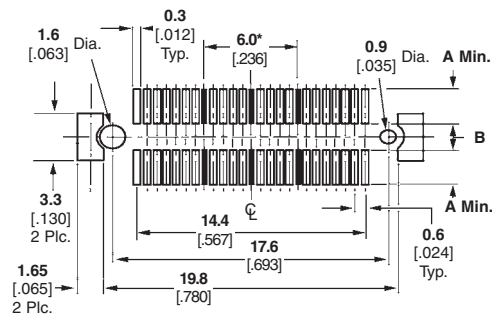
Stacking Height	Dimensions	
	A	B
4H	2.35 .093	1.9 .075
6H	1.8 .071	3.4 .134
8H	1.8 .071	3.4 .134

**Recommended PC Board Layouts and Grounding Circuit Positions (Continued)**



**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

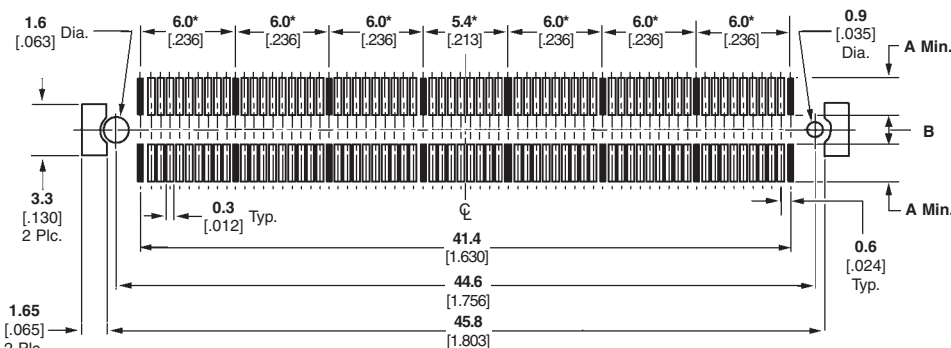




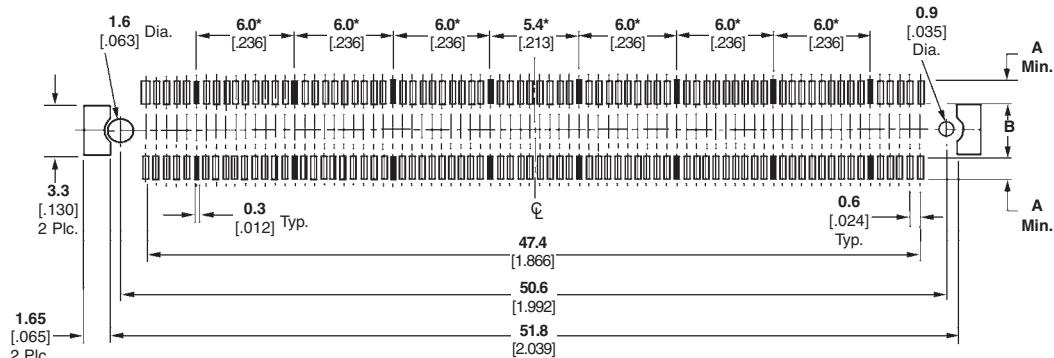
**For 140- and 160-position  
GIGA Plugs and 280-Position  
GIGA Bridge Plugs**

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

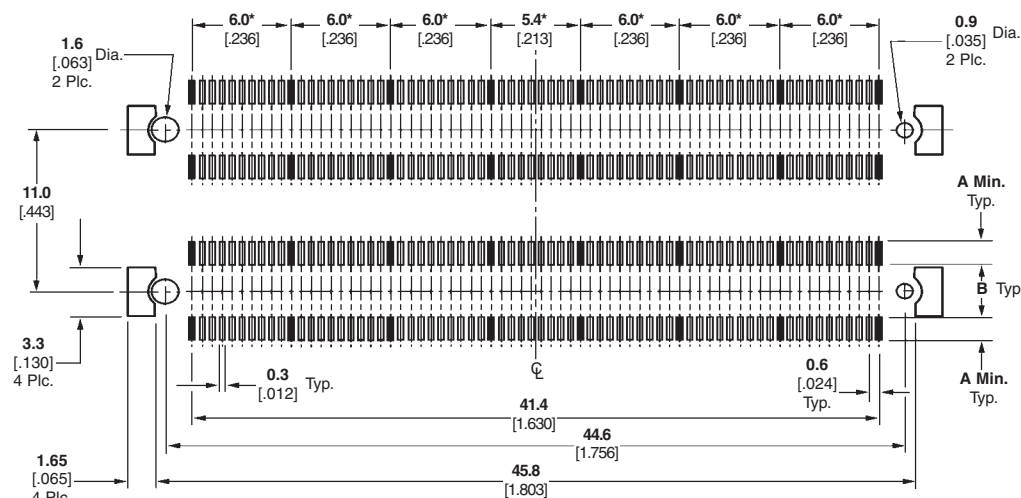
**Recommended PC Board Layouts and Grounding Circuit Positions (Continued)**



**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

## Introduction to the MICTOR Interconnection System (0.64 [.025] Centerline)

### Product Facts

- 76 dedicated signal lines per linear inch
- Surface mount family designed for parallel and right angle board-to-board, flex-to-board and cable-to-board configurations
- 0.64 [.025] centerline contact spacing
- Redundant interfaces on mated contacts
- Fifteen mated stack heights available ranging from 6.60 [.260] to 31.90 [1.256]
- 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, tubes)
- Recognized under the Component Program of Underwriter Laboratories Inc.  File No. E28476



The MICTOR connector family is based on the microstrip concept of two rows of signal contacts divided by a center power ground plane. MICTOR connectors are mother-board 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.

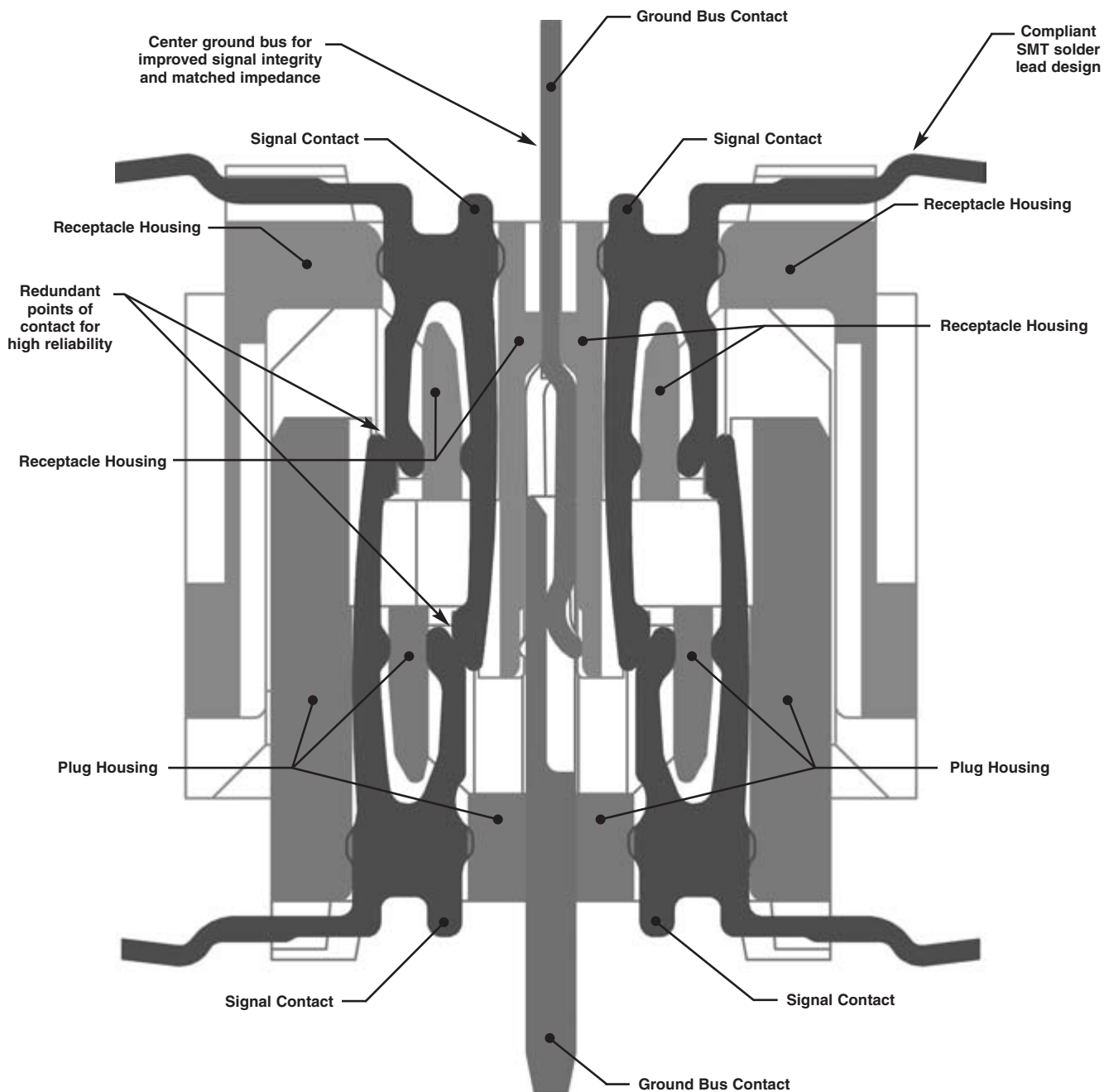
Redundant interfaces on every signal line provide added reliability. Two plating

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 uses the solid ground bus between the rows of signals to provide low crosstalk and excellent high-speed signal characteristics.

**MICTOR Connector Cross Section**



Connectors are shown at point where signal contact first touch each other.  
Connectors are designed to be fully mated when the two "Z" datums meet.

## Material and Performance Specifications, MICTOR Connectors

### Material

**Housing** — Liquid crystal polymer, black

**Contacts** — High reliability copper alloy

**Ground Bus** — Phosphor bronze

### Finish (Gold Plating)

**Contacts and Ground Bus** — 0.00076 [.000030] min. gold on contact area, 0.00381-0.00635 [.000150-.000250] matte tin per ASTM B 545 on leads, all over 0.00177-0.00445 [.000070-.000175] nickel.

### Finish (Palladium-Nickel Plating)

**Contacts and Ground Bus** — 0.00013 [.000005] min. gold over, 0.00076 [.000030] min. palladium nickel on contact area, 0.00381-0.00635 [.000150-.000250] matte tin per ASTM B 545 on leads, all over 0.00191-0.00445 [.000075-.000175] nickel.

## Performance Specifications

### Ratings

**Voltage** — 30 vac

**Current** — Signal; rated 1.0 Amps, fully derated 0.5 Amps  
Ground; rated 11.5 Amps, fully derated 7.6 Amps

**Temperature** — -55°C to +125°C

### 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 1μs or longer duration; AMP Specification 109-21-5

**Physical Shock** — No discontinuities of 1μs 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

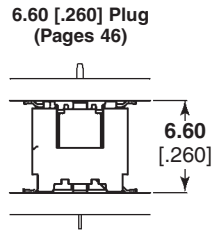
**Temperature Life** — Subject mated samples to temperature life at +118°C for 792 hours; AMP Specification 109-43

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

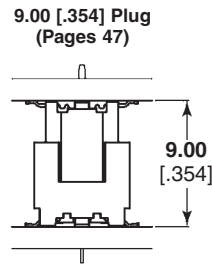
**30μ Gold and Palladium  
Nickel Plated Vertical  
Connectors**

**MICTOR Stack Height Combinations**

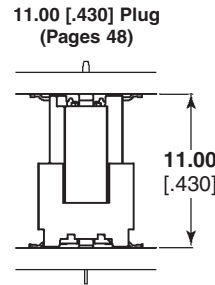
0.635mm MICTOR Connectors



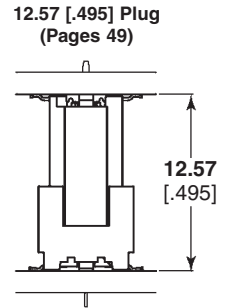
Standard Receptacle  
(Pages 56 and 57)



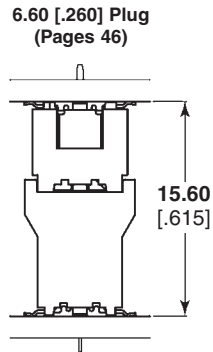
Standard Receptacle  
(Pages 56 and 57)



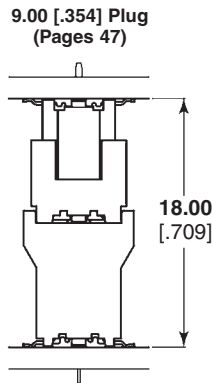
Standard Receptacle  
(Pages 56 and 57)



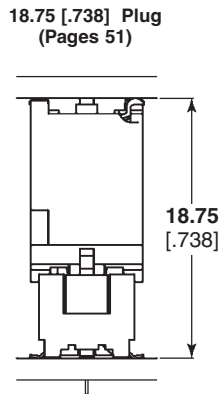
Standard Receptacle  
(Pages 56 and 57)



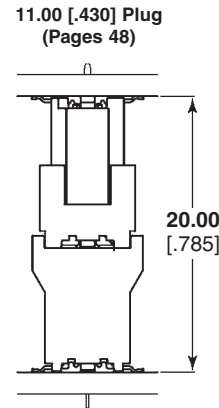
Raised Receptacle  
(Pages 58 and 59)



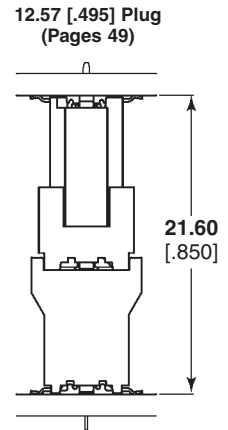
Raised Receptacle  
(Pages 58 and 59)



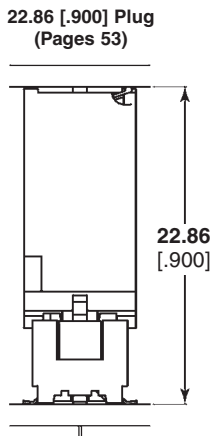
Standard Receptacle  
(Pages 56 and 57)



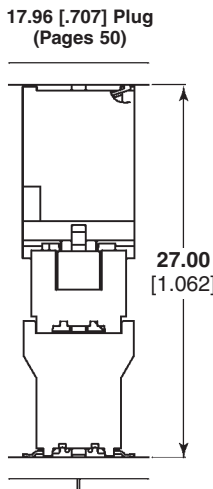
Raised Receptacle  
(Pages 58 and 59)



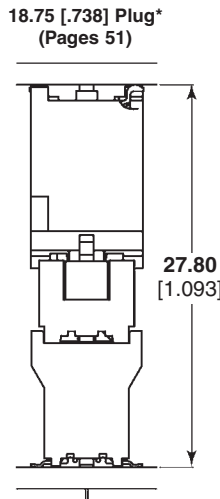
Raised Receptacle  
(Pages 58 and 59)



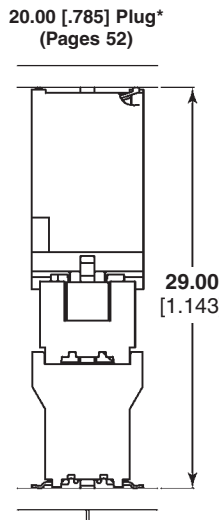
Standard Receptacle  
(Pages 56 and 57)



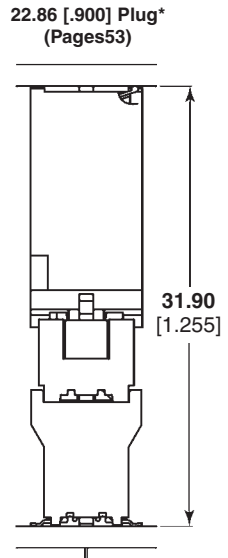
Raised Receptacle  
(Pages 58 and 59)



Raised Receptacle  
(Pages 58 and 59)



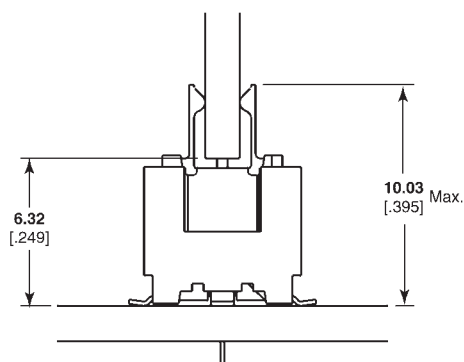
Raised Receptacle  
(Pages 58 and 59)



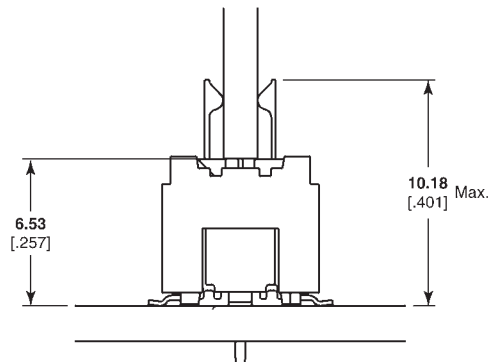
Raised Receptacle  
(Pages 58 and 59)

\*This connector not available in Palladium Nickel.

**MICTOR Right Angle (Straddle Mount) Combinations**



**Vertical Receptacle with  
Right Angle Plug**



**Vertical Plug with  
Right Angle Receptacle**

Right angle versions are designed for paddlecard type applications. It is highly recommended that customers who are considering right angle applications contact Tyco Electronics

Engineering to review their applications as the potential for tolerancing issues and/or issues of solder joint integrity can be highly application specific.



**6.60 [.260]  
Stacking Height\***

**Related Product Data**

**Material and Finish** — page 43

**Performance Characteristics** —  
page 43

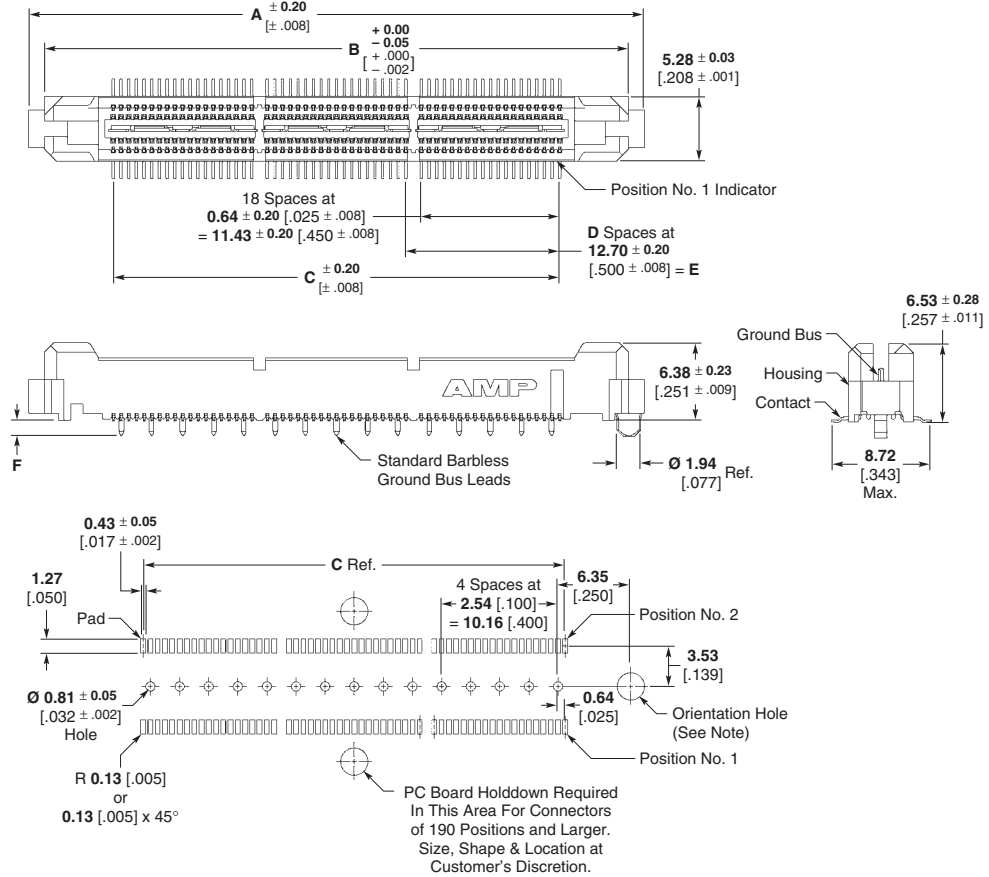
**Mating Receptacles** — pages 56-61

**Technical Documents** — page 113

\*6.60 [.260] stack height when  
mated to vertical receptacle;  
15.62 [.615] stack height when  
mated to vertical receptacle  
(extended height).

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

**MICTOR Vertical Plugs**



**Note:** For standard applications,  
the orientation hole must be  
 $2.39 \pm 0.05$  [.094 ± .002];  
For slip-fit applications, the  
orientation hole must be  
 $2.00 \pm 0.03$  [.079 ± .001].

**Recommended PC Board Layout  
(Viewed from Connector Side)**

No. of Pos.	Dimensions						Platings		Part Numbers					
									Barbed G/B Leads			Barbless G/B Leads		
	A	B	C	D	E	F	Solder Tail	Contact	Tube	T&R Vacuum Caps		Tube	T&R Vacuum Caps	
										With	Without		With	Without
38	25.40 1.000	22.81 .898	11.43 .450	0	—	1.35 [.053]	Sn	Gold	5767007-8	5767111-8	5767111-1	5767116-1	5767118-1	5767118-8
						2.72 [.107]			PdNi	5767056-1	—	—	—	—
						2.64 [.104]			—	—	—	5767117-1	5767119-1	5767119-8
76	38.10 1.500	31.70 1.248	24.13 .950	1	12.70 .500	1.35 [.053]	Sn	Gold	5767007-9	5767111-9	5767111-2	5767116-2	5767118-2	5767118-9
						2.72 [.107]			PdNi	5767056-2	—	—	—	—
						2.64 [.104]			—	—	—	5767117-2	5767119-2	5767119-9
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1.35 [.053]	Sn	Gold	1-5767007-0	1-5767111-0	5767111-3	5767116-3	5767118-3	1-5767118-0
						2.72 [.107]			PdNi	5767056-3	—	—	—	—
						2.64 [.104]			—	—	—	5767117-3	5767119-3	1-5767119-0
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	1.35 [.053]	Sn	Gold	1-5767007-1	1-5767111-1	5767111-4	5767116-4	5767118-4	1-5767118-1
						2.72 [.107]			PdNi	5767056-4	—	—	—	—
						2.64 [.104]			—	—	—	5767117-4	5767119-4	1-5767119-1
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1.35 [.053]	Sn	Gold	1-5767007-2	1-5767111-2	5767111-5	5767116-5	5767118-5	1-5767118-2
						2.72 [.107]			PdNi	5767056-5	—	—	—	—
						2.64 [.104]			—	—	—	5767117-5	5767119-5	1-5767119-2
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1.35 [.053]	Sn	Gold	1-5767007-3	—	—	5767116-6	—	—
						2.72 [.107]			PdNi	5767056-6	—	—	—	—
						2.64 [.104]			—	—	—	5767117-6	—	—
266	101.60 4.000	99.01 3.898	87.63 3.450	6	76.20 3.000	1.35 [.053]	Sn	Gold	1-5767007-4	—	—	5767116-7	—	—
						2.72 [.107]			PdNi	5767056-7	—	—	—	—
						2.64 [.104]			—	—	—	5767117-7	—	—

**Note:** Part Numbers are RoHS compliant.

**Related Product Data**

**Material and Finish** — page 43

**Performance Characteristics** — page 43

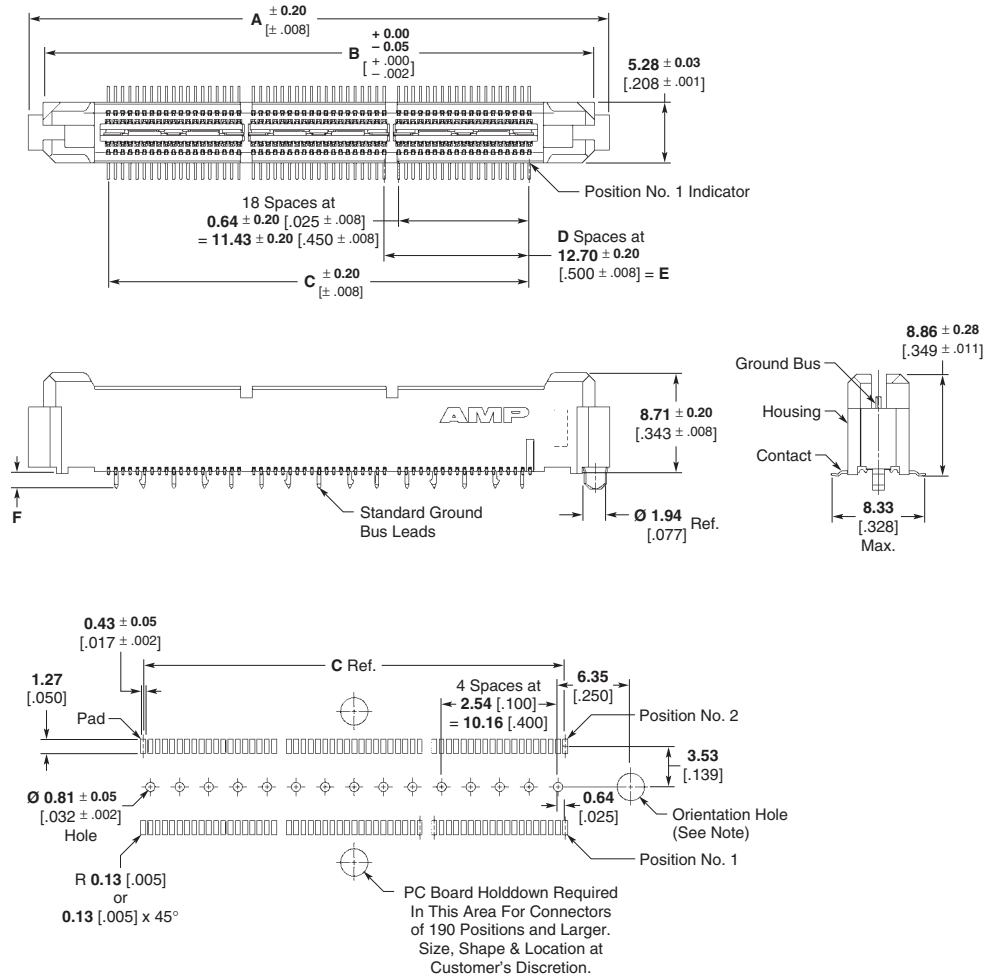
**Mating Receptacles** — pages 56-61

**Technical Documents** — page 113

\* 9.00 [.354] stack height when mated to vertical receptacle;  
18.00 [.709] stack height when mated to vertical receptacle (extended height).

**Note:** For standard applications, the orientation hole must be 2.39±0.05 [.094±.002];  
For slip-fit applications, the orientation hole must be 2.00±0.03 [.079±.001].

**MICTOR Vertical Plugs (Continued)**



**Recommended PC Board Layout  
(Viewed from Connector Side)**

No. of Pos.	Dimensions						Platings		Part Numbers	
	A	B	C	D	E	F	Solder Tail	Contact	Barbed G/B Leads	Tube
38	25.40 1.000	22.81 .898	11.43 .450	0	—	1.52 [.060] 2.74 [.108]	Sn	Gold PdNi	5767139-1 5767140-1	
76	38.10 1.500	31.70 1.248	24.13 .950	1	12.70 .500	1.52 [.060] 2.74 [.108]	Sn	Gold PdNi	5767139-2 5767140-2	
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1.52 [.060] 2.74 [.108]	Sn	Gold PdNi	5767139-3 5767140-3	
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	1.52 [.060] 2.74 [.108]	Sn	Gold PdNi	5767139-4 5767140-4	
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1.52 [.060] 2.74 [.108]	Sn	Gold PdNi	5767139-5 5767140-5	
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1.52 [.060] 2.74 [.108]	Sn	Gold PdNi	5767139-6 5767140-6	
266	101.60 4.000	99.01 3.898	87.63 3.450	6	76.20 3.000	1.52 [.060] 2.74 [.108]	Sn	Gold PdNi	5767139-7 5767140-7	

**Note:** Part Numbers are RoHS compliant.

**11.00 [.430]**  
**Stacking Height\***

**Related Product Data**

**Material and Finish** — page 43

**Performance Characteristics** —  
page 43

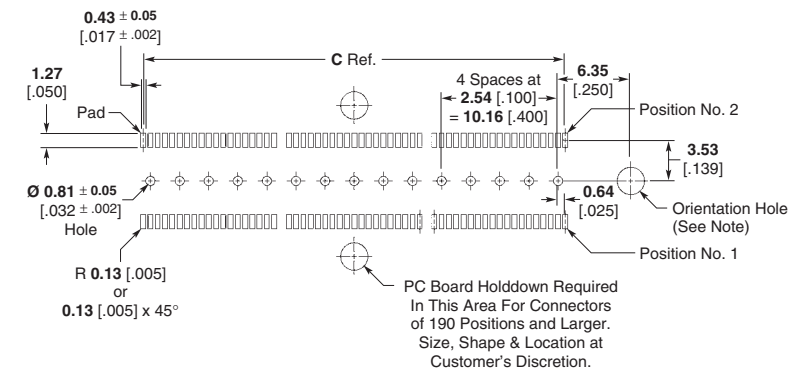
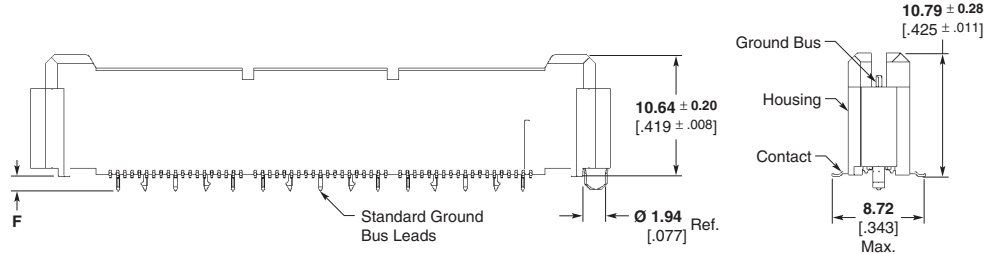
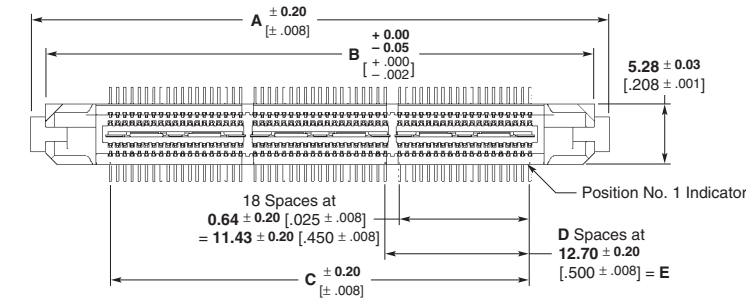
**Mating Receptacles** — pages 56-61

**Technical Documents** — page 113

\* 11.00 [.430] stack height when  
mated to vertical receptacle;  
19.94 [.785] stack height when  
mated to vertical receptacle  
(extended height).

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

**MICTOR Vertical Plugs (Continued)**



**Note:** For standard applications,  
the orientation hole must be  
2.39±0.05 [.094±.002];  
For slip-fit applications, the  
orientation hole must be  
2.00±0.03 [.079±.001].

**Recommended PC Board Layout  
(Viewed from Connector Side)**

No. of Pos.	Dimensions						Platings		Part Numbers					
	A	B	C	D	E	F	Solder Tail	Contact	Barbed G/B Leads			Barbless G/B Leads		
									Tube	T&R Vacuum Caps		Tube	T&R Vacuum Caps	
										With	Without		With	Without
38	25.40 1.000	22.81 .898	11.43 .450	0	—	1.52 [.060] 2.64 [.104]	Sn	Gold PdNi	5767003-9 5767087-1	5767123-8 —	5767123-1 —	— —	— —	— —
76	38.10 1.500	31.70 1.248	24.13 .950	1	12.70 .500	1.52 [.060] 2.64 [.104]	Sn	Gold PdNi	1-5767003-0 5767087-2	5767123-9 —	5767123-2 —	— —	— —	— —
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1.52 [.060] 2.64 [.104]	Sn	Gold PdNi	1-5767003-1 5767087-3	1-5767123-0 —	5767123-3 —	1-5767182-3 —	1-5767183-0 —	— —
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	1.52 [.060] 2.64 [.104]	Sn	Gold PdNi	5767003-8 5767087-4	— —	— —	— —	— —	— —
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1.52 [.060] 2.64 [.104]	Sn	Gold PdNi	1-5767003-2 5767087-5	1-5767123-2 —	5767123-5 —	— —	— —	— —
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1.52 [.060] 2.64 [.104]	Sn	Gold PdNi	1-5767003-3 5767087-6	— —	— —	— —	— —	— —
266	101.60 4.000	99.01 3.898	87.63 3.450	6	76.20 3.000	1.52 [.060] 2.64 [.104]	Sn	Gold PdNi	1-5767003-4 5767087-7	— —	— —	— —	— —	— —

**Note:** Part Numbers are RoHS compliant.

# 12.57 [.495]

## Stacking Height\*

### Related Product Data

Material and Finish — page 43

Performance Characteristics — page 43

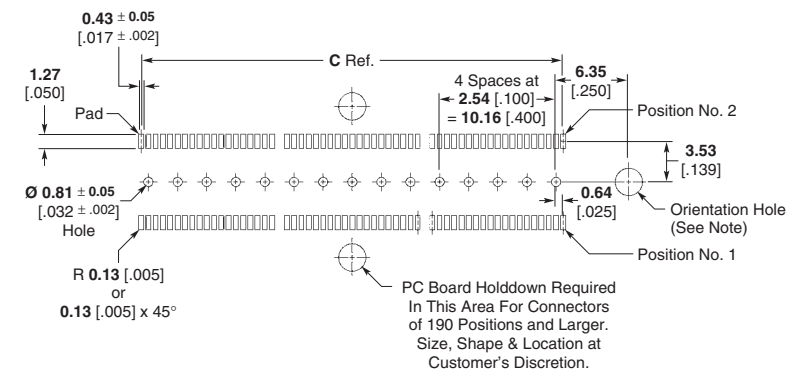
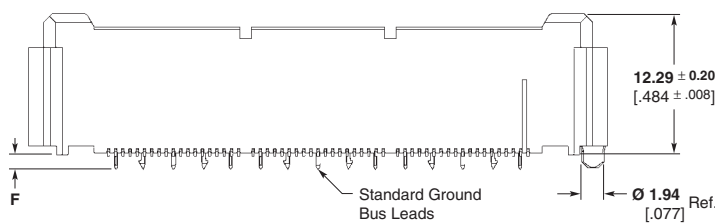
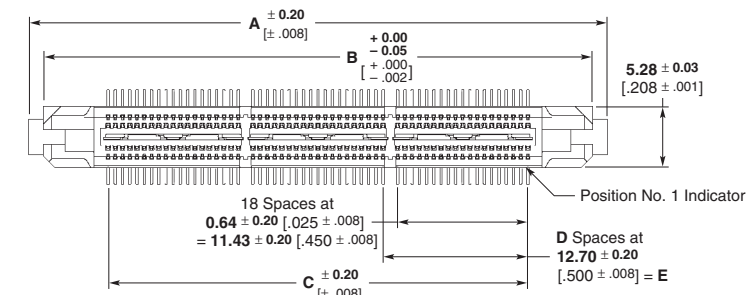
Mating Receptacles — pages 56-61

Technical Documents — page 113

\* 12.57 [.495] stack height when mated to vertical receptacle;  
21.59 [.850] stack height when mated to vertical receptacle (extended height).

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

## MICTOR Vertical Plugs (Continued)



**Note:** For standard applications, the orientation hole must be 2.39±0.05 [.094±.002]; For slip-fit applications, the orientation hole must be 2.00±0.03 [.079±.001].

### Recommended PC Board Layout (Viewed from Connector Side)

No. of Pos.	Dimensions						Platings		Part Numbers					
									Barbed G/B Leads			Barbless G/B Leads		
	A	B	C	D	E	F	Solder Tail	Contact	Tube	T&R Vacuum Caps		Tube	T&R Vacuum Caps	
										With	Without		With	Without
38	25.40 1.000	22.81 .898	11.43 .450	0	—	1.52 [.060] 2.64 [.104]	Sn	Gold	5767005-8	5767149-1	5767149-8	5767120-1	5767121-1	5767121-8
								PdNi	5767057-1	—	—	5767082-1	—	—
76	38.10 1.500	31.70 1.248	24.13 .950	1	12.70 .500	1.52 [.060] 2.64 [.104]	Sn	Gold	5767005-9	5767149-2	5767149-9	5767120-2	5767121-2	5767121-9
								PdNi	5767057-2	—	—	5767082-2	—	—
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1.52 [.060] 2.64 [.104]	Sn	Gold	1-5767005-0	5767149-3	1-5767149-0	5767120-3	5767121-3	1-5767121-0
								PdNi	5767057-3	—	—	5767082-3	—	—
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	1.52 [.060] 2.64 [.104]	Sn	Gold	1-5767005-1	5767149-4	1-5767149-1	5767120-4	5767121-4	1-5767121-1
								PdNi	5767057-4	—	—	5767082-4	5767127-4	1-5767127-1
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1.52 [.060] 2.64 [.104]	Sn	Gold	1-5767005-2	5767149-5	1-5767149-2	5767120-5	—	—
								PdNi	5767057-5	—	—	5767082-5	5767127-5	1-5767121-2
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1.52 [.060] 2.64 [.104]	Sn	Gold	1-5767005-3	—	—	5767120-6	—	—
								PdNi	5767057-6	—	—	5767082-6	—	—
266	101.60 4.000	99.01 3.898	87.63 3.450	6	76.20 3.000	1.52 [.060] 2.64 [.104]	Sn	Gold	1-5767005-4	—	—	5767120-7	—	—
								PdNi	5767057-7	—	1-5767151-4	5767082-7	—	—

**Note:** Part Numbers are RoHS compliant.

**17.96 [.707]  
Stacking Height\***

**Related Product Data**

**Material and Finish** — page 43

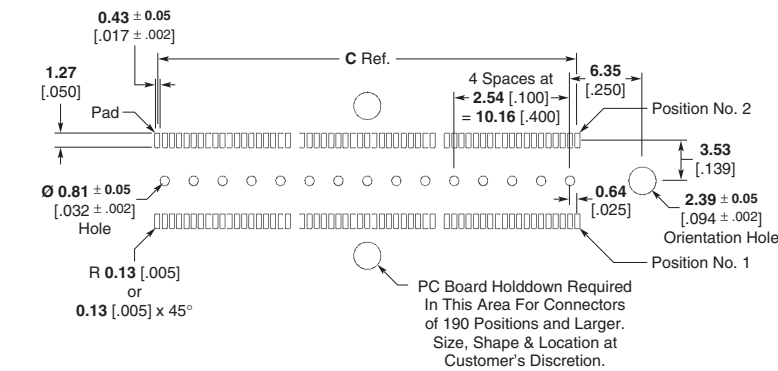
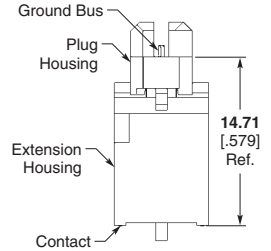
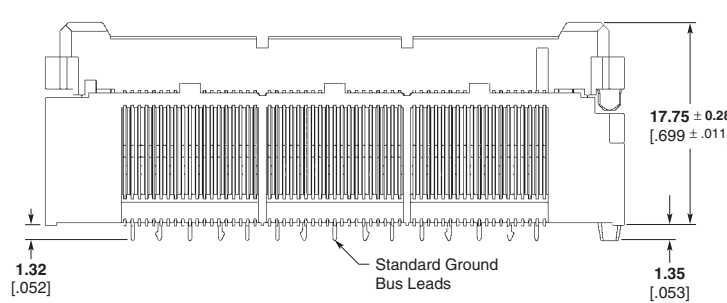
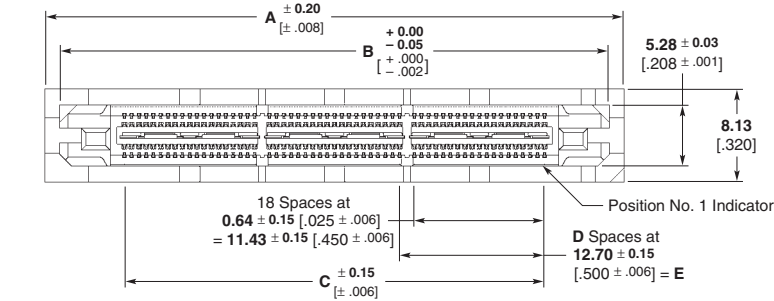
**Performance Characteristics** — page 43

**Mating Receptacles** — pages 56-61

**Technical Documents** — page 113

\* 17.96 [.707] stack height when mated to vertical receptacle;  
26.97 [1.062] stack height when mated to vertical receptacle (extended height).

**MICTOR Vertical Plugs (Continued)**



- Notes:** 1. For dual application, the orientation hole must be 1.98±0.03 [.078±.001]. See Application Specification 114-11004 for details.  
2. Connectors with extended ground bus leads can be made available, consult Tyco Electronics.

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

No. of Pos.	Dimensions					Part Numbers
	A	B	C	D	E	
38	25.40 1.000	22.81 .898	11.43 .450	0	0.00 .000	5767025-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	5767025-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	5767025-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	5767025-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	5767025-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	5767025-6
266	101.60 4.000	99.00 3.898	87.63 3.450	6	76.20 3.000	5767025-7

**Note:** Part Numbers are RoHS compliant.

**18.75 [.738]  
Stacking Height\***

**Related Product Data**

**Material and Finish** — page 43

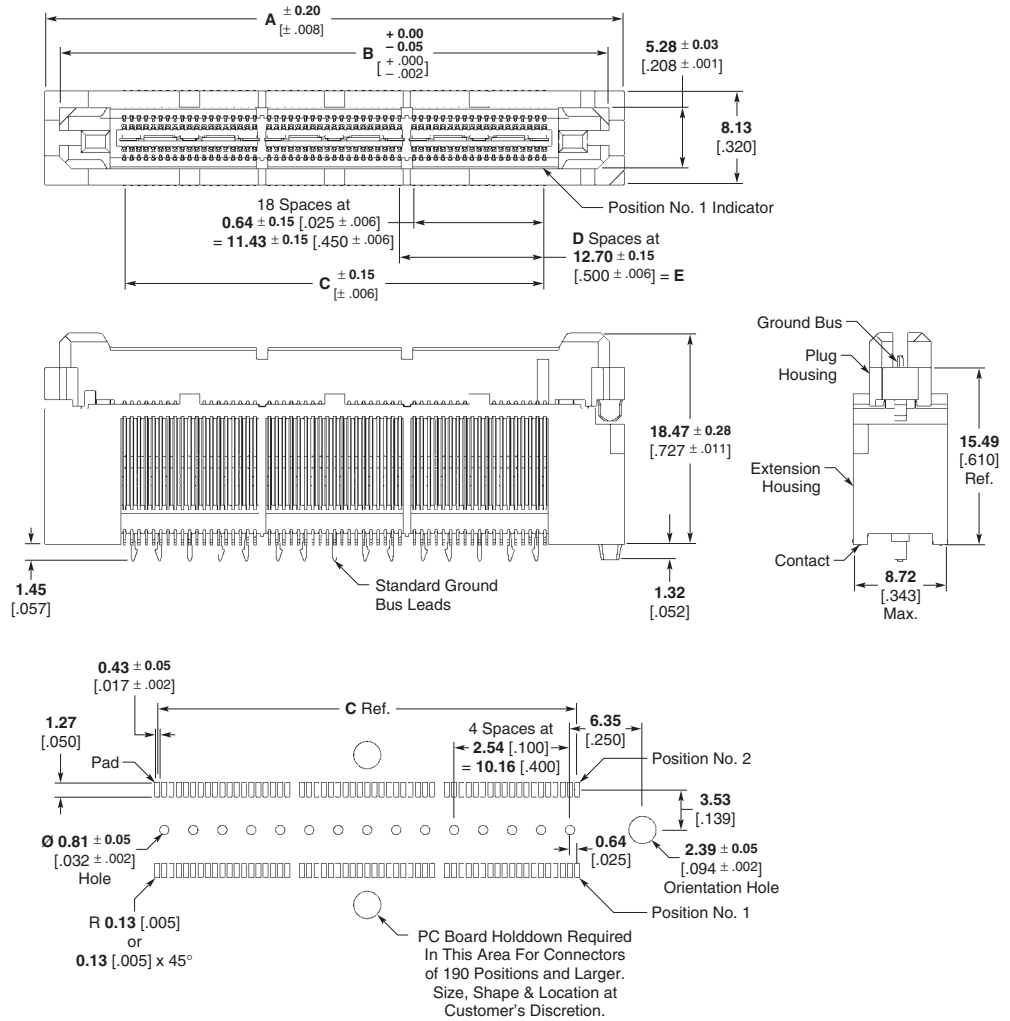
**Performance Characteristics** —  
page 43

**Mating Receptacles** — pages 56-61

**Technical Documents** — page 113

\* 18.75 [.738] stack height when  
mated to vertical receptacle;  
27.76 [1.093] stack height when  
mated to vertical receptacle  
(extended height).

**MICTOR Vertical Plugs (Continued)**



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

No. of Pos.	Dimensions					Part Numbers
	A	B	C	D	E	
38	25.40 1.000	22.81 .898	11.43 .450	0	0.00 .000	5767042-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	5767042-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	5767042-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	5767042-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	5767042-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	5767042-6
266	101.60 4.000	99.00 3.898	87.63 3.450	6	76.20 3.000	5767042-7

**Note:** Part Numbers are RoHS compliant.



**20.00 [.785]  
Stacking Height\***

**Related Product Data**

**Material and Finish** — page 43

**Performance Characteristics** —  
page 43

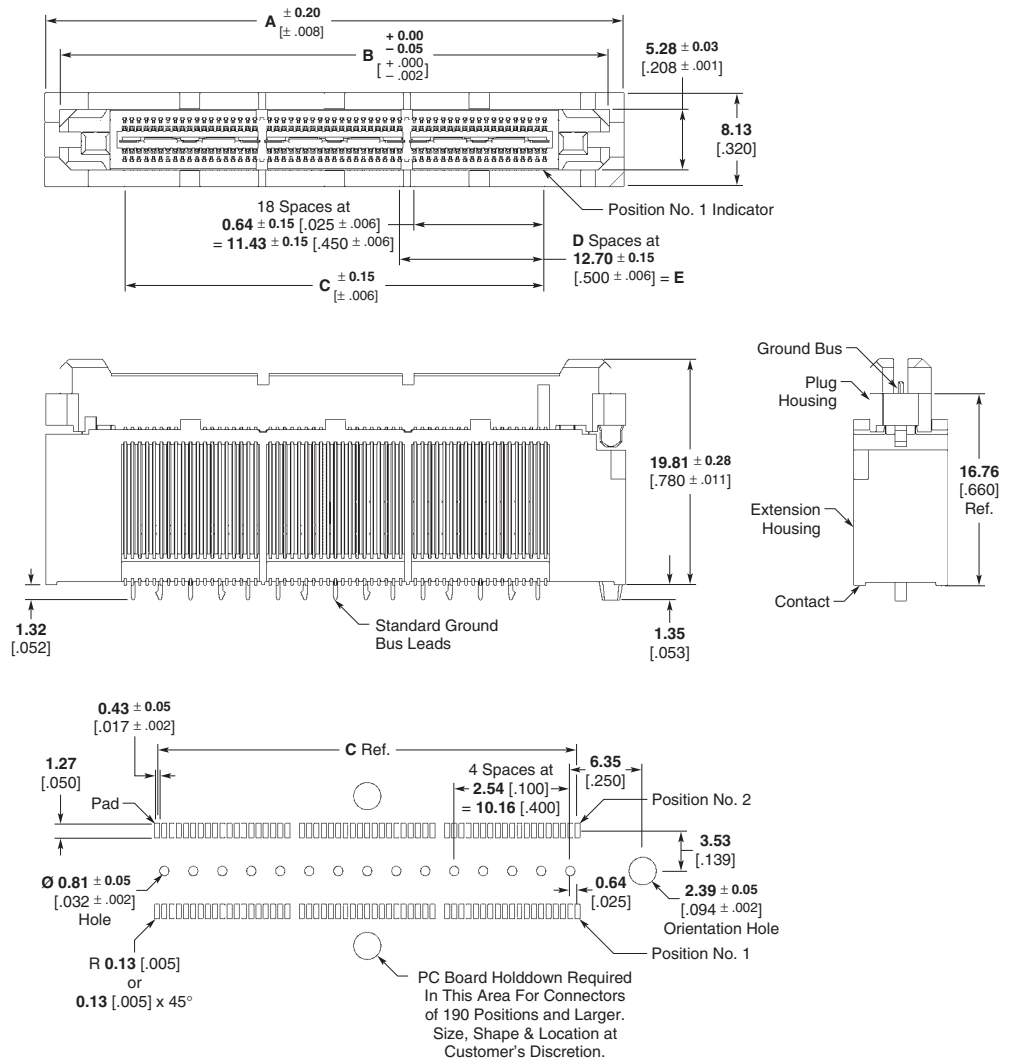
**Mating Receptacles** — pages 56-61

**Technical Documents** — page 113

\* 20.02 [.788] stack height when  
mated to vertical receptacle;  
29.03 [1.143] stack height when  
mated to vertical receptacle  
(extended height).

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

**MICTOR Vertical Plugs (Continued)**



- Notes:**
1. For dual application, the orientation hole must be  $1.98 \pm 0.03$  [.078 ±.001]. See Application Specification 114-11004 for details.
  2. Connectors with extended ground bus leads can be made available, consult Tyco Electronics.

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

No. of Pos.	Dimensions					Part Numbers
	A	B	C	D	E	
38	25.40 1.000	22.81 .898	11.43 .450	0	0.00 .000	5767032-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	5767032-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	5767032-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	5767032-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	5767032-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	5767032-6
266	101.60 4.000	99.00 3.898	87.63 3.450	6	76.20 3.000	5767032-7

**Note:** Part Numbers are RoHS compliant.

### MICTOR Vertical Plugs (Continued)

22.86 [.900]

**Stacking Height\***

### Related Product Data

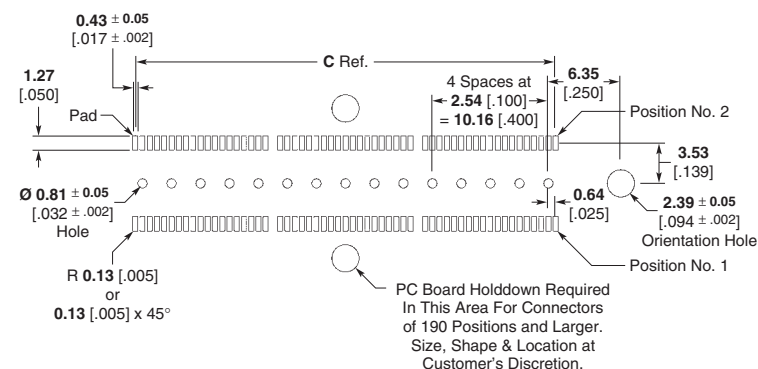
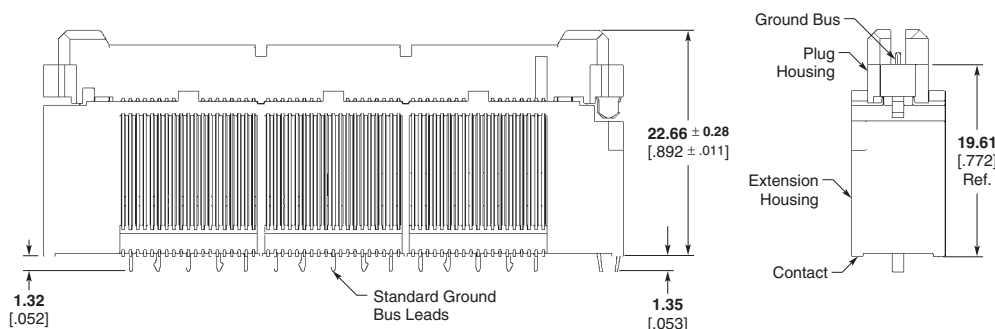
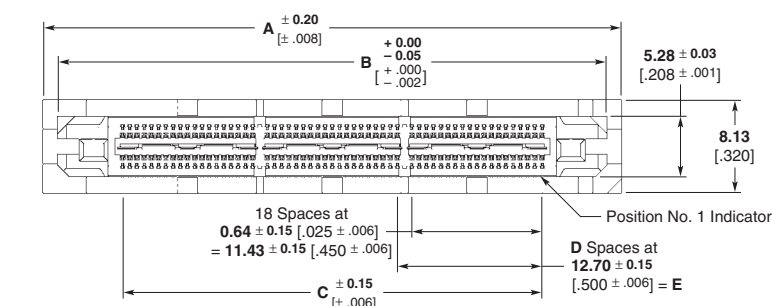
**Material and Finish** — page 43

**Performance Characteristics** —  
page 43

**Mating Receptacles** — pages 56-61

Technical Documents — page 113

\* 22.86 [.900] stack height when mated to vertical receptacle;  
31.89 [1.255] stack height when mated to vertical receptacle (extended height).



- Notes:**
1. For dual application, the orientation hole must be  $1.98 \pm 0.03$  [0.078 ± .001]. See Application Specification 114-11004 for details.
  2. Connectors with extended ground bus leads can be made available, consult Tyco Electronics.

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

No. of Pos.	Dimensions					Part Numbers
	A	B	C	D	E	
38	25.40 1.000	22.81 .898	11.43 .450	0	0.00 .000	5767017-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	5767017-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	5767017-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	5767017-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	5767017-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	5767017-6
266	101.60 4.000	99.00 3.898	87.63 3.450	6	76.20 3.000	5767017-7

**Note:** Part Numbers are RoHS compliant.

### Related Product Data

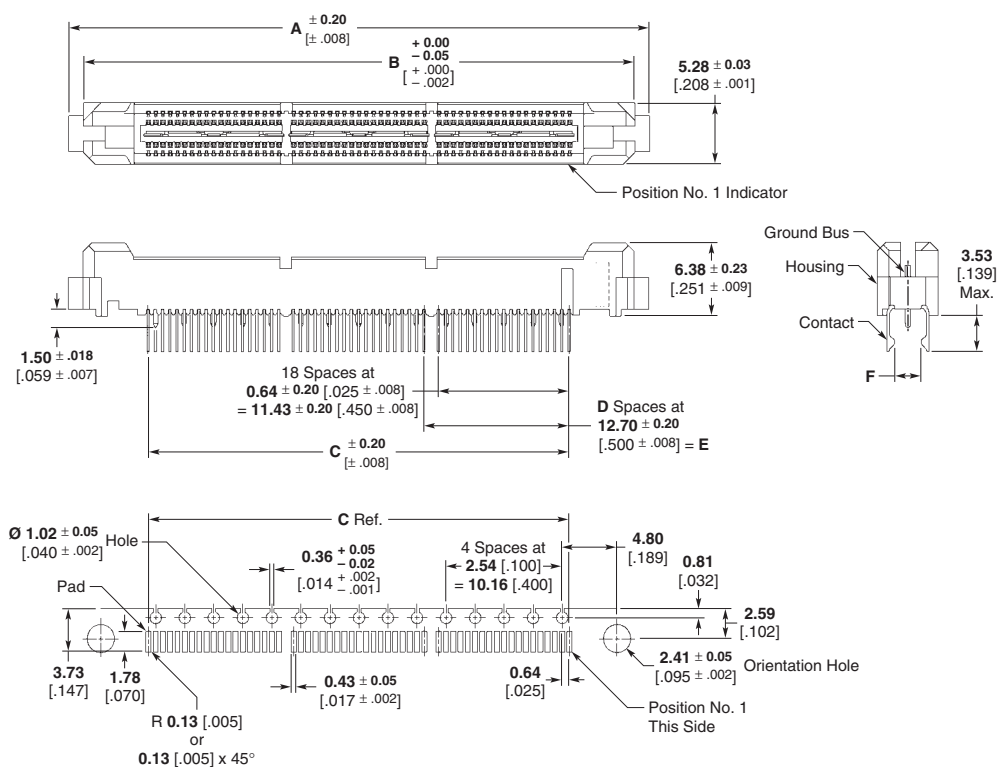
**Material and Finish** — page 43

**Performance Characteristics** —  
page 43

**Mating Receptacles** — pages 56-61

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## MICTOR Right Angle Plugs



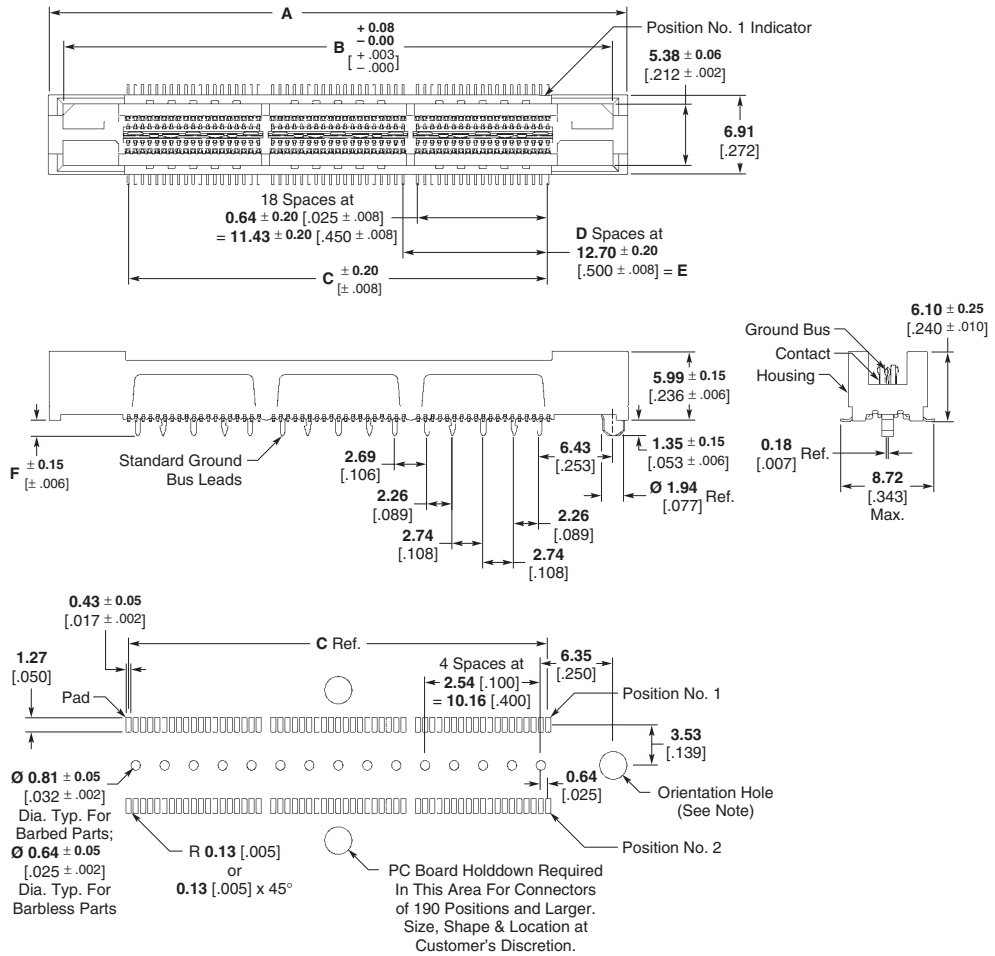
**Recommended PC Board Layout  
(Mirror Image on Opposite Side)**

**MICTOR Right Angle Plugs (Continued)**

No. of Pos.	Dimensions						Platings		Part Numbers
	A	B	C	D	E	F	Solder Tail	Contact	Tube
38	25.40 1.000	22.81 .898	11.43 .450	0	0.00 .000	1.52 .060	Sn	Gold	5767006-1
						1.52 .060	Sn	PdNi	5767055-1
						2.31 .091	Sn	PdNi	5767039-1
76	38.10 1.500	35.51 1.398	24.13 .950	1	12.70 .500	1.52 .060	Sn	Gold	5767006-2
						1.52 .060	Sn	PdNi	5767055-2
						2.31 .091	Sn	PdNi	5767039-2
						2.97 .117	Sn	PdNi	5767170-2
114	50.80 2.000	48.21 1.898	36.83 1.450	2	25.40 1.000	1.52 .060	Sn	Gold	5767006-3
						1.52 .060	Sn	PdNi	5767055-3
						2.31 .091	Sn	PdNi	5767039-3
152	63.50 2.500	60.91 2.398	49.53 1.950	3	38.10 1.500	1.52 .060	Sn	Gold	5767006-4
						1.52 .060	Sn	PdNi	5767055-4
						2.31 .091	Sn	PdNi	5767039-4
190	76.20 3.000	73.61 2.898	62.23 2.450	4	50.80 2.000	1.52 .060	Sn	Gold	5767006-5
						1.52 .060	Sn	PdNi	5767055-5
						2.31 .091	Sn	PdNi	5767039-5
228	88.90 3.500	86.31 3.398	74.93 2.950	5	63.50 2.500	1.52 .060	Sn	Gold	5767006-6
						1.52 .060	Sn	PdNi	5767055-6
						2.31 .091	Sn	PdNi	5767039-6
266	101.60 4.000	99.00 3.898	87.63 3.450	6	76.20 3.000	1.52 .060	Sn	Gold	5767006-7
						1.52 .060	Sn	PdNi	5767055-7
						2.31 .091	Sn	PdNi	5767039-7

**Note:** Part Numbers are RoHS compliant.

**MICTOR Vertical Receptacles**



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

**Note:** For standard applications, orientation hole to be  $\varnothing 2.39 \pm 0.05$  [094 ± .002]; For slip-fit applications, orientation hole to be  $\varnothing 2.00 \pm 0.03$  [079 ± .001].

**MICTOR Vertical Receptacles** (Continued)

No. of Pos.	Dimensions						Platings		Part Numbers						
									Barbed G/B Leads			Barbless G/B Leads			
									Tube	T&R Vacuum Caps		Tube	T&R Vacuum Caps		
	A	B	C	D	E	F	Solder Tail	Contact		With	Without		With	Without	
38	25.40 1.000	22.86 .900	11.43 .450	0	—	1.40 .055	Sn	Gold	2-5767004-2	5767096-8	5767096-1	5767110-1	5767114-1	5767114-8	
						2.74 .108	Sn	Gold	5767181-1	—	—	—	—	—	
								PdNi	5767054-1	5767171-1	—	5767081-1	5767115-1	—	
76	38.10 1.500	35.56 1.400	24.13 .950	1	12.70 .500	1.40 .055	Sn	Gold	2-5767004-3	5767096-9	5767096-2	5767110-2	5767114-2	5767114-9	
						2.74 .108	Sn	Gold	5767181-2	—	—	—	—	—	
								PdNi	5767054-2	—	—	5767081-2	5767115-2	—	
114	50.80 2.000	48.26 1.900	36.83 1.450	2	25.40 1.000	1.40 .055	Sn	Gold	2-5767004-4	1-5767096-0	5767096-3	5767110-3	5767114-3	1-5767114-0	
						2.74 .108	Sn	Gold	5767181-3	—	—	—	—	—	
								PdNi	5767054-3	—	—	5767081-3	5767115-3	—	
152	63.50 2.500	60.96 2.400	49.53 1.950	3	38.10 1.500	1.40 .055	Sn	Gold	2-5767004-5	1-5767096-1	5767096-4	5767110-4	5767114-4	1-5767114-1	
						2.74 .108	Sn	Gold	5767181-4	—	—	—	—	—	
								PdNi	5767054-4	—	—	5767081-4	5767115-4	—	
190	76.20 3.000	73.66 2.900	62.23 2.450	4	50.80 2.000	1.40 .055	Sn	Gold	2-5767004-6	1-5767096-2	5767096-5	5767110-5	5767114-5	1-5767114-2	
						2.74 .108	Sn	Gold	5767181-5	—	—	—	—	—	
								PdNi	5767054-5	—	—	5767081-5	5767115-5	—	
228	88.90 3.500	86.36 3.400	74.93 2.950	5	63.50 2.500	1.40 .055	Sn	Gold	2-5767004-7	—	—	5767110-6	—	—	
						2.74 .108	Sn	Gold	5767181-6	—	—	—	—	—	
								PdNi	5767054-6	—	—	5767081-6	—	—	
266	101.60 4.000	99.06 3.900	87.63 3.450	6	76.20 3.000	1.40 .055	Sn	Gold	2-5767004-8	—	—	5767110-7	—	—	
						2.74 .108	Sn	Gold	5767181-7	—	—	—	—	—	
								PdNi	5767054-7	—	—	5767081-7	—	—	

**Note:** Part Numbers are RoHS compliant.

**Related Product Data**

**Material and Finish** — page 43

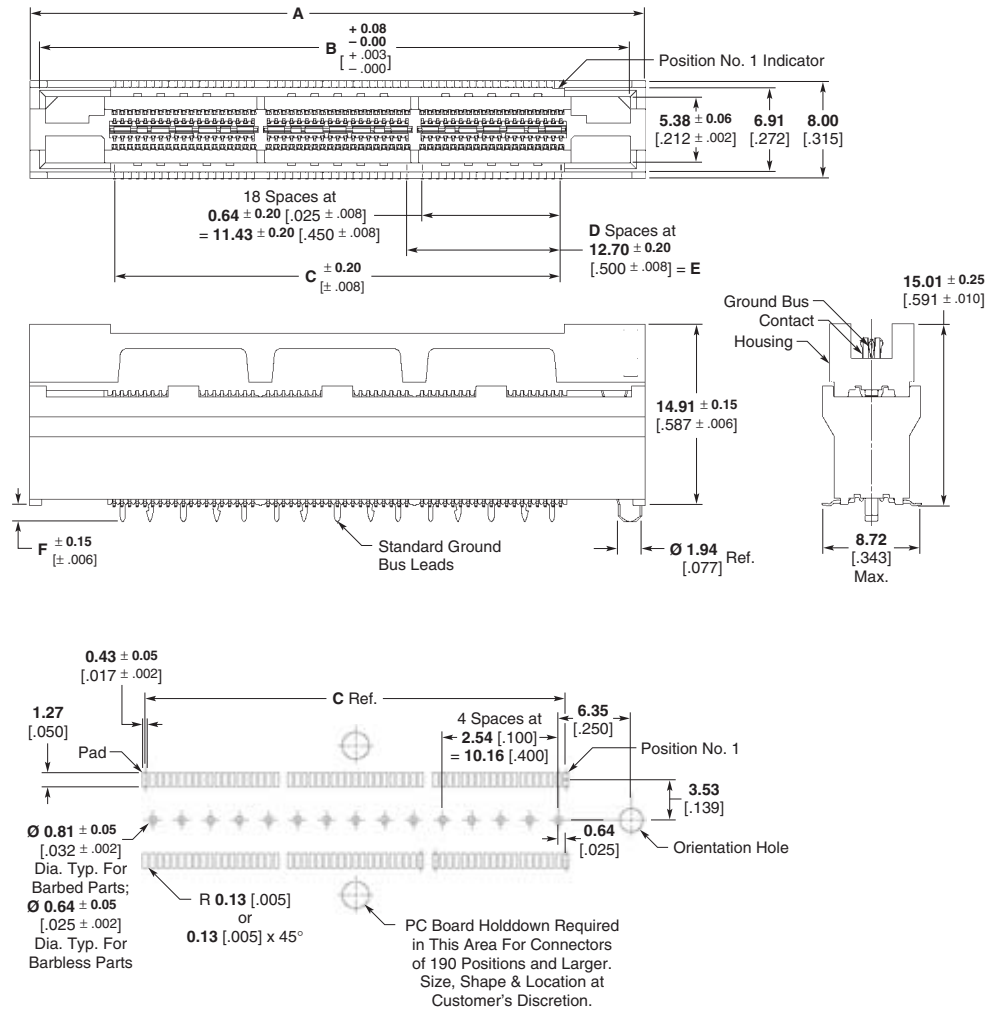
**Performance Characteristics** — page 43

**Mating Plugs** — pages 46-55

**Technical Documents** — page 113

When mated with a standard vertical plug, this extended height receptacle adds 9.017 [.355] to the mated stack height when compared with the standard height vertical receptacle.

**MICTOR Vertical Receptacles (Extended Height)**



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



**MICTOR Vertical Receptacles (Extended Height) (Continued)**

No. of Pos.	Dimensions						Platings		Part Numbers						
									Barbed G/B Leads			Barbless G/B Leads			
	A	B	C	D	E	F	Solder Tail	Contact	Tube	T&R		Tube	T&R		
										Vacuum Caps			Vacuum Caps		
										With	Without		With	Without	
38	25.40 1.000	22.86 .900	11.43 .450	0	—	1.37 [.054]	Sn	Gold	5767130-1	5767146-1	5767146-8	—	—	—	
						1.37 [.054]			PdNi	5767094-1	5767178-1	6761316-8	—	—	—
						2.72 [.107]				5767154-1	—	5767153-8	5767095-1	—	—
76	38.10 1.500	35.56 1.400	24.13 .950	1	12.70 .500	1.37 [.054]	Sn	Gold	5767130-2	5767146-2	5767146-9	—	—	—	
						1.37 [.054]			PdNi	5767094-2	5767178-2	—	—	—	—
						2.72 [.107]				5767154-2	—	5767153-9	5767095-2	—	—
114	50.80 2.000	48.26 1.900	36.83 1.450	2	25.40 1.000	1.37 [.054]	Sn	Gold	5767130-3	5767146-3	1-5767146-0	—	—	—	
						1.37 [.054]			PdNi	5767094-3	—	—	—	—	—
						2.72 [.107]				5767154-3	—	1-5767153-0	5767095-3	5767145-3	1-5767145-0
152	63.50 2.500	60.96 2.400	49.53 1.950	3	38.10 1.500	1.37 [.054]	Sn	Gold	5767130-4	5767146-4	1-5767146-1	—	—	—	
						1.37 [.054]			PdNi	5767094-4	—	—	—	—	—
						2.72 [.107]				5767154-4	—	1-5767153-1	5767095-4	—	1-5767145-1
190	76.20 3.000	73.66 2.900	62.23 2.450	4	50.80 2.000	1.37 [.054]	Sn	Gold	5767130-5	—	—	—	—	—	
						1.37 [.054]			PdNi	5767094-5	5767178-5	1-6761316-2	—	—	—
						2.72 [.107]				5767154-5	—	1-5767153-2	5767095-5	—	—
228	88.90 3.500	86.36 3.400	74.93 2.950	5	63.50 2.500	1.37 [.054]	Sn	Gold	5767130-6	—	—	—	—	—	
						1.37 [.054]			PdNi	5767094-6	—	—	—	—	—
						2.72 [.107]				5767154-6	—	1-5767153-3	5767095-6	—	—
266	101.60 4.000	99.06 3.900	87.63 3.450	6	76.20 3.000	1.37 [.054]	Sn	Gold	5767130-7	—	—	—	—	—	
						1.37 [.054]			PdNi	5767094-7	—	—	—	—	—
						2.72 [.107]				5767154-7	—	1-5767153-4	5767095-7	—	—

**Note:** Part Numbers are RoHS compliant.

**Related Product Data**

**Material and Finish** — page 43

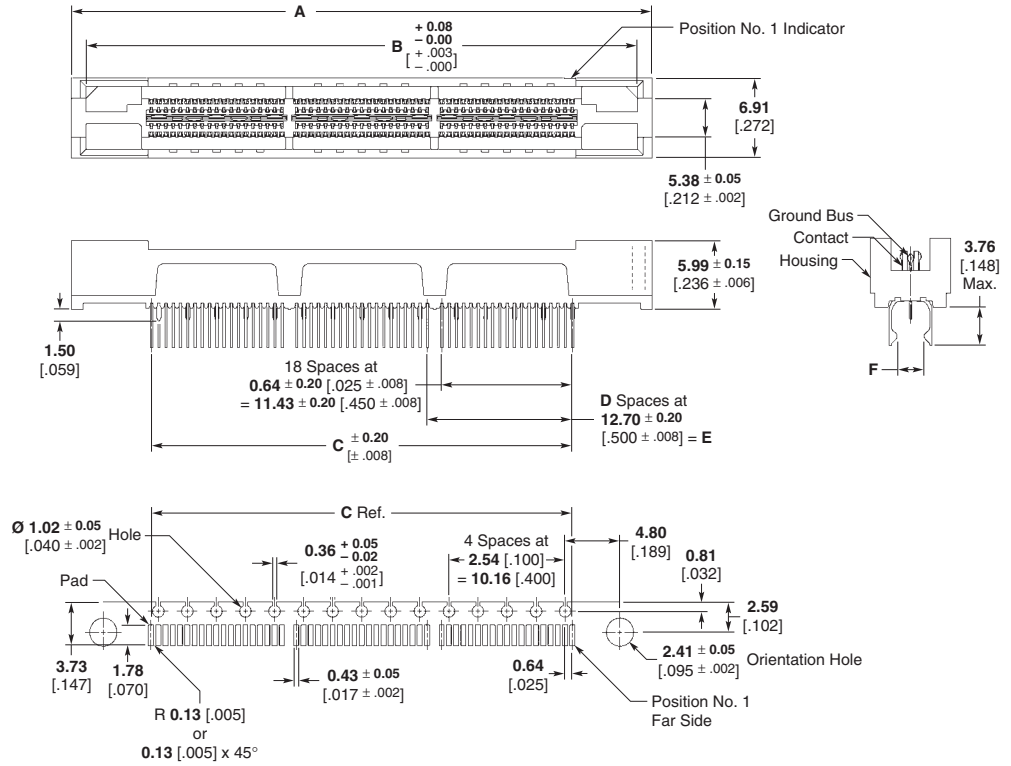
**Performance Characteristics** —  
page 43

**Mating Plugs** — pages 46-55

**Application Tooling** — page 62

**Technical Documents** — page 113

**MICTOR Right Angle Receptacles**



**Recommended PC Board Layout**  
(Mirror image on opposite side)  
PC Board Thickness: 1.57 [.062]

**MICTOR Right Angle Receptacles** (Continued)

No. of Pos.	Dimensions						Platings		Part Numbers Tube
	A	B	C	D	E	F	Solder Tail	Contact	
38	25.40 1.000	22.86 .900	11.43 .450	0	0.00 .000	1.52 .060	Sn	Gold	5767143-1
						2.31 .091	Sn	PdNi	5767044-1
76	38.10 1.500	35.56 1.400	24.13 .950	1	12.70 .500	1.52 .060	Sn	Gold	5767143-2
						2.31 .091	Sn	PdNi	5767089-2
114	50.80 2.000	48.26 1.900	36.83 1.450	2	25.40 1.000	1.52 .060	Sn	Gold	5767143-3
						2.31 .091	Sn	PdNi	5767044-3
152	63.50 2.500	60.96 2.400	49.53 1.950	3	38.10 1.500	1.52 .060	Sn	Gold	5767143-4
						2.31 .091	Sn	PdNi	5767089-4
190	76.20 3.000	73.66 2.900	62.23 2.450	4	50.80 2.000	1.52 .060	Sn	Gold	5767143-5
						2.31 .091	Sn	PdNi	5767089-5
228	88.90 3.500	86.36 3.400	74.93 2.950	5	63.50 2.500	1.52 .060	Sn	Gold	5767143-6
						2.31 .091	Sn	PdNi	5767089-6
266	101.60 4.000	99.06 3.900	87.63 3.450	6	76.20 3.000	1.52 .060	Sn	Gold	5767143-7
						2.31 .091	Sn	PdNi	5767089-7

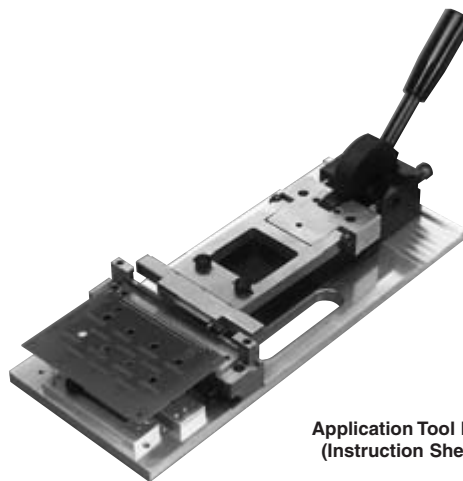
**Note:** Part Numbers are RoHS compliant.

Two operations must be performed so that the MICTOR right angle connector can be successfully installed on a PC board. First, the board must be slit for the ground/bus bar. At the customer's option, this operation may be done at the time of board manufacture. Second, the right angle connector must be properly placed on the board.

Tyco Electronics offers bench-mount tooling for slitting the PC board (see below) and a free-standing tool for installing the connector (shown at the right). AMP Application Specification No. 114-11004 and Instruction Sheets are available to provide the necessary instructions and recommendations for proper tool use.

Application Specification No. 114-13008 for Right Angle.

## Application Tooling for MICTOR Right Angle Connectors



Application Tool Number 767511-1  
(Instruction Sheet No. 408-4335)

### Replacement Components for Tool Number 767511-1

Connector Size (No. of Positions)	Board Locator Pin		Plug Insert	Receptacle Insert	Support Pillar
	Round	Diamond			
38	767523-1	767526-1	767514-1	767570-1	767522-1
76	767523-1	767526-1	767514-2	767570-2	767522-1
114	767523-1	767526-1	767514-3	767570-3	767522-1
152	767523-1	767526-1	767514-4	767570-4	767522-1
190	767523-1	767526-1	767514-5	767570-5	767522-1
228	767523-1	767526-1	767514-6	767570-6	767522-1
266	767523-1	767526-1	767514-7	767570-7	767522-1



Slitting Tool Number 767527-1  
(Instruction Sheet No. 408-4334)

### Replacement Components for Tool Number 767527-1

Component Description	Quantity Required for Each Increment of 38 Positions (0.64 [.025] Centerline)	Part Number
Slitting Punch (Set of 35)	5	767532-1
Die Insert* (Set of 7)	1	767530-1

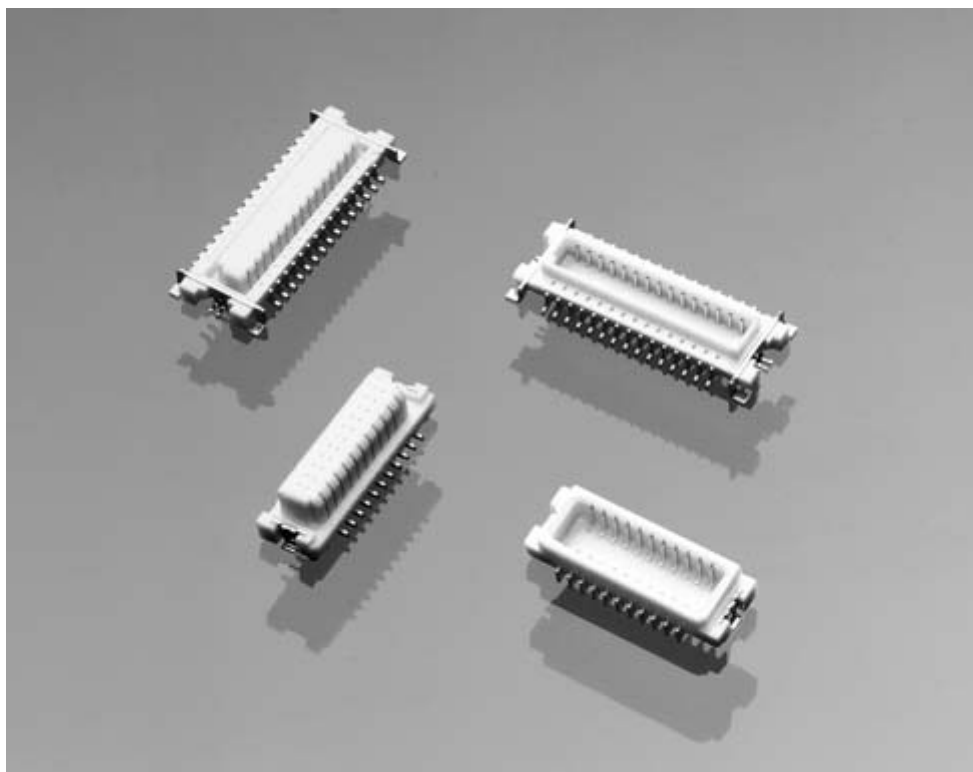
\* The die insert is located in the tool with a 3.18 x 28.58 [.125 x 1.125] long dowel and held in place with a 6-32 UNC-2A x 7.94 [5/16] long socket head cap screw (not included with replacement insert).

**Note:** Part Numbers are RoHS compliant.

**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

**0.8mm Fine Stack and Fine Mate Connectors**



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

The Tyco Electronics 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.

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**3.0 – 9.0 [.118 – .354]  
Stacking Height**

**Material and Finish**

**Housing** — 6T nylon, high heat resistant resin

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

**Related Product Data**

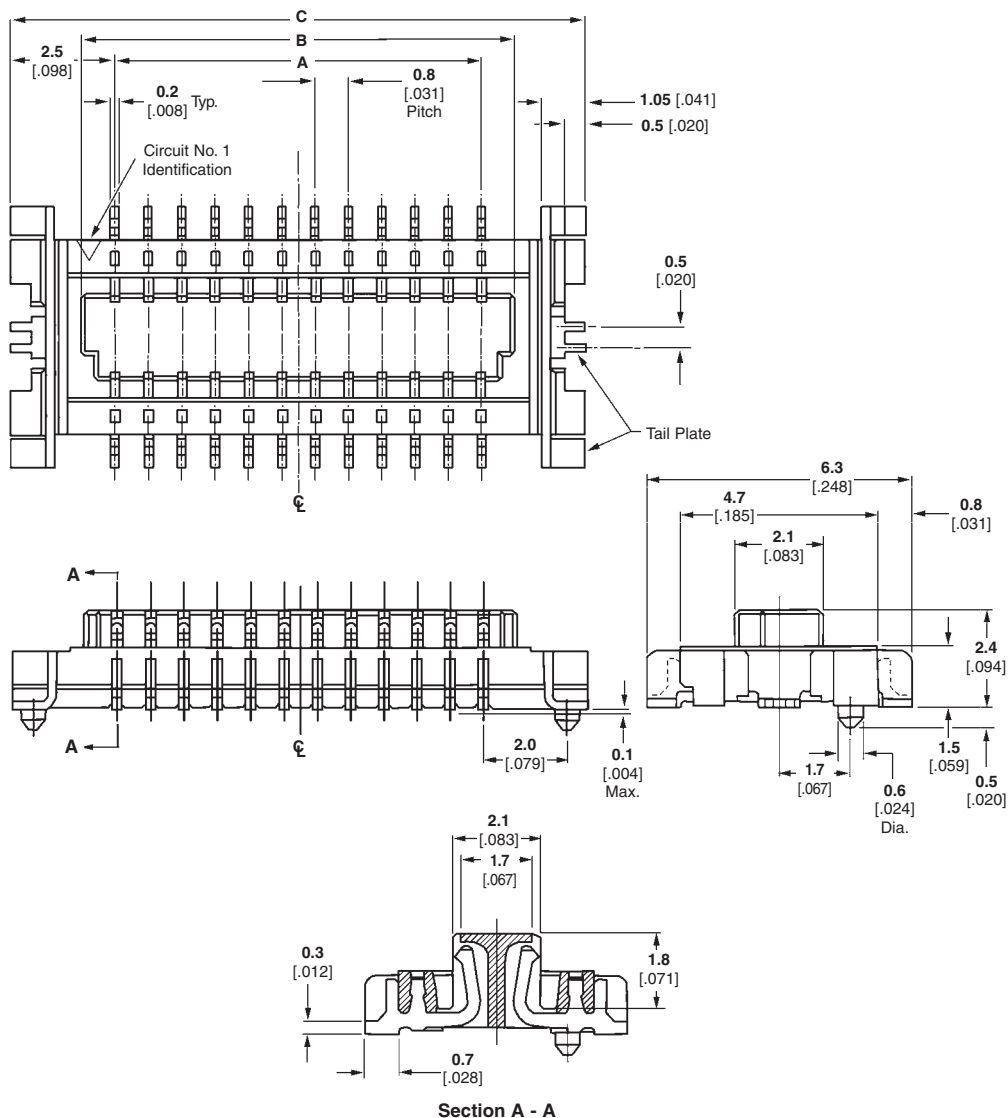
**Mating Caps** — pages 66 & 67

**Technical Documents** (page 113)

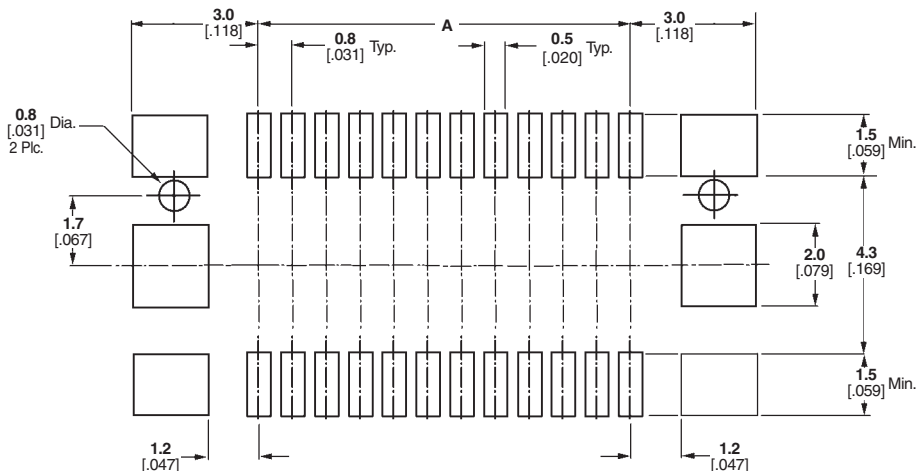
**Product Specifications**

108-5424, 108-5466

**0.8mm Fine Stack Plugs, 0.8 [.031] Pitch**



Section A - A



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

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

No. of Positions	Dimensions			Contact Plating	With Boss	Keying	With Pickup Tape	Part Number
	A	B	C					
12	4.0 .157	5.6 .220	9.0 .354	Tin	Yes	Yes	No	1-179396-2
				Tin	No	Yes	No	1-179400-2
				Gold	Yes	Yes	No	1-179701-2
				Gold	No	Yes	No	1-179702-2
14	4.8 .189	6.4 .252	9.8 .386	Tin	Yes	Yes	No	1-179396-4
				Tin	No	Yes	No	1-179400-4
				Gold	Yes	Yes	No	1-179701-4
				Gold	No	Yes	No	1-179702-4
16	5.6 .217	7.2 .283	10.6 .417	Tin	Yes	Yes	No	1-179396-6
				Tin	No	Yes	No	1-179400-6
				Gold	Yes	Yes	No	1-179701-6
				Gold	No	Yes	No	1-179702-6
24	8.8 .346	10.4 .409	13.8 .543	Tin	Yes	Yes	No	2-179396-4
				Tin	No	Yes	No	2-179400-4
				Gold	Yes	Yes	No	2-179701-4
				Gold	No	Yes	No	2-179702-4
30	11.2 .441	12.8 .504	16.2 .638	Tin	Yes	Yes	No	3-179396-0
				Tin	No	Yes	No	3-179400-0
				Gold	Yes	Yes	No	3-179701-0
				Gold	No	Yes	No	3-179702-0
34	12.8 .504	14.4 .567	17.8 .701	Tin	Yes	No	No	3-917299-0
				Tin	No	No	No	3-917293-0
				Tin	Yes	Yes	No	3-917299-4
				Tin	No	No	No	3-917293-4
40	15.2 .598	16.8 .661	20.2 .795	Tin	Yes	Yes	No	4-179396-0
				Tin	No	Yes	No	4-179400-0
				Gold	Yes	Yes	No	4-179701-0
				Gold	No	Yes	No	4-179702-0
50	19.2 .756	20.8 .819	24.2 .953	Tin	Yes	Yes	No	5-179396-0
				Gold	Yes	Yes	No	5-179701-0

**Note:** Part Numbers are RoHS compliant.



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

### 3.0 [.118] Stacking Height

## Material and Finish

**Housing** — 6T nylon, high heat resistant resin

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

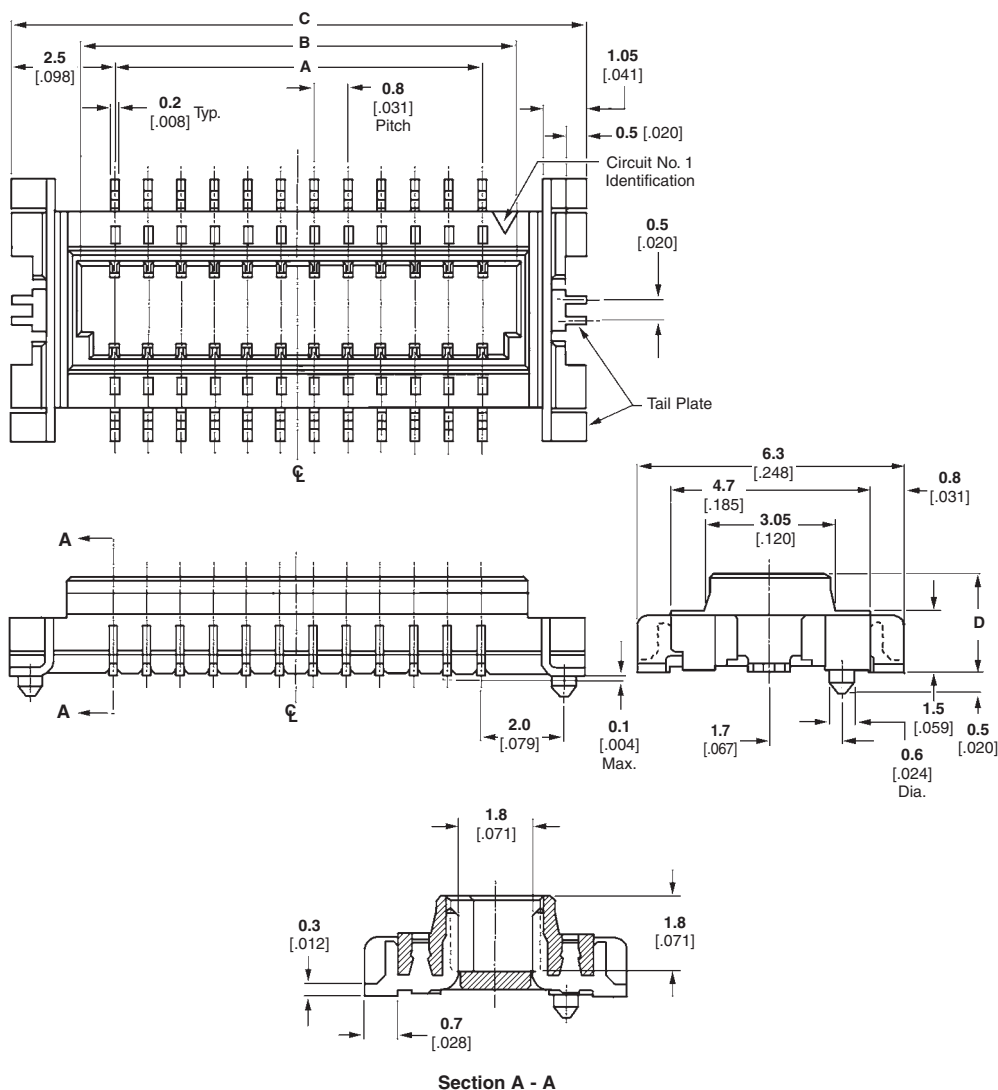
### Related Product Data

**Mating Plugs** — pages 64 & 65

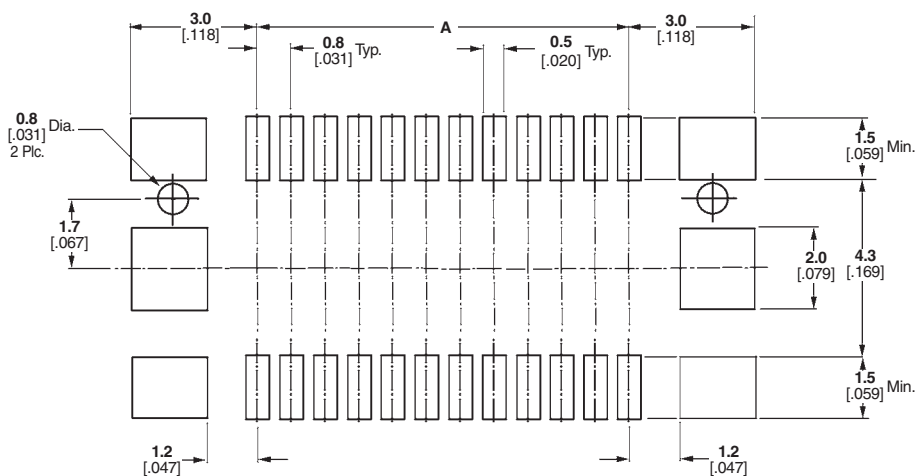
## Technical Documents (page 113)

## Product Specifications

108-5424, 108-5466



Section A - A



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

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

No. of Positions	Dimensions				Stack Height	Contact Plating	With Boss	Keying	With Pickup Tape	Part Number
	A	B	C	D						
12	4.0 .157	5.6 .220	9.0 .354	2.4 .094	3.0 .118	Tin	Yes	Yes	No	1-179397-2
						Tin	No	Yes	No	1-179403-2
						Gold	No	Yes	No	1-1871238-2
				3.6 .142	4.2 .165	Tin	Yes	Yes	No	1-6376826-2
						Tin	Yes	Yes	No	1-6376038-2
						Tin	No	Yes	No	1-6473725-2
				5.3 .209	5.9 .232	Tin	No	Yes	No	1-1827815-2
						Tin	Yes	Yes	No	1-179397-4
14	4.8 .189	6.4 .252	9.8 .386	2.4 .094	3.0 .118	Tin	No	Yes	No	1-179403-4
						Gold	Yes	Yes	No	1-179703-4
						Gold	No	Yes	No	1-179704-4
						Tin	Yes	Yes	No	1-179397-6
16	5.6 .217	7.2 .283	10.6 .417	2.4 .094	3.0 .118	Tin	No	Yes	No	1-179403-6
						Gold	Yes	Yes	No	1-179703-6
						Gold	No	Yes	No	1-179704-6
						Tin	Yes	Yes	No	2-179397-4
24	8.8 .346	10.4 .409	13.8 .543	2.4 .094	3.0 .118	Tin	No	Yes	No	2-179403-4
						Gold	Yes	Yes	No	2-179703-4
						Gold	No	Yes	No	2-179704-4
						Tin	Yes	Yes	No	3-179397-0
30	11.2 .441	12.8 .504	16.2 .638	2.4 .094	3.0 .118	Tin	No	Yes	No	3-179403-0
						Gold	Yes	Yes	No	3-179703-0
						Gold	No	Yes	No	3-179704-0
						Tin	No	No	No	3-917294-0
						Tin	Yes	No	No	3-917300-0
						Tin	Yes	Yes	Yes	3-1565909-0
				3.3 .130	3.9 .154	Tin	Yes	Yes	Yes	3-6612118-0
						Tin	Yes	Yes	No	3-6376826-0
						Tin	Yes	Yes	No	3-6565907-0
						Tin	Yes	Yes	No	3-6376038-0
						Tin	No	Yes	No	3-6473725-0
						Tin	Yes	Yes	No	3-6565239-0
34	12.8 .504	14.4 .567	17.8 .701	2.4 .094	3.0 .118	Tin	No	No	No	3-917294-4
						Tin	Yes	No	No	3-917300-4
40	15.2 .598	16.8 .661	20.2 .795	2.4 .094	3.0 .118	Tin	Yes	Yes	No	4-179397-0
						Tin	No	Yes	No	4-179403-0
						Gold	Yes	Yes	No	4-179703-0
						Gold	No	Yes	No	4-179704-0
50	19.2 .756	20.8 .819	24.2 .953	2.4 .094	3.0 .118	Tin	Yes	Yes	No	5-179397-0
						Tin	No	Yes	No	5-179403-0
						Gold	Yes	Yes	No	5-179703-0
						Gold	No	Yes	No	5-179704-0

**Note:** Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — 46 Nylon, high heat resistant resin

**Contacts** — Copper alloy, gold plating or tin on contact area (see chart), tin on solder leads, with entire contact under-plated nickel

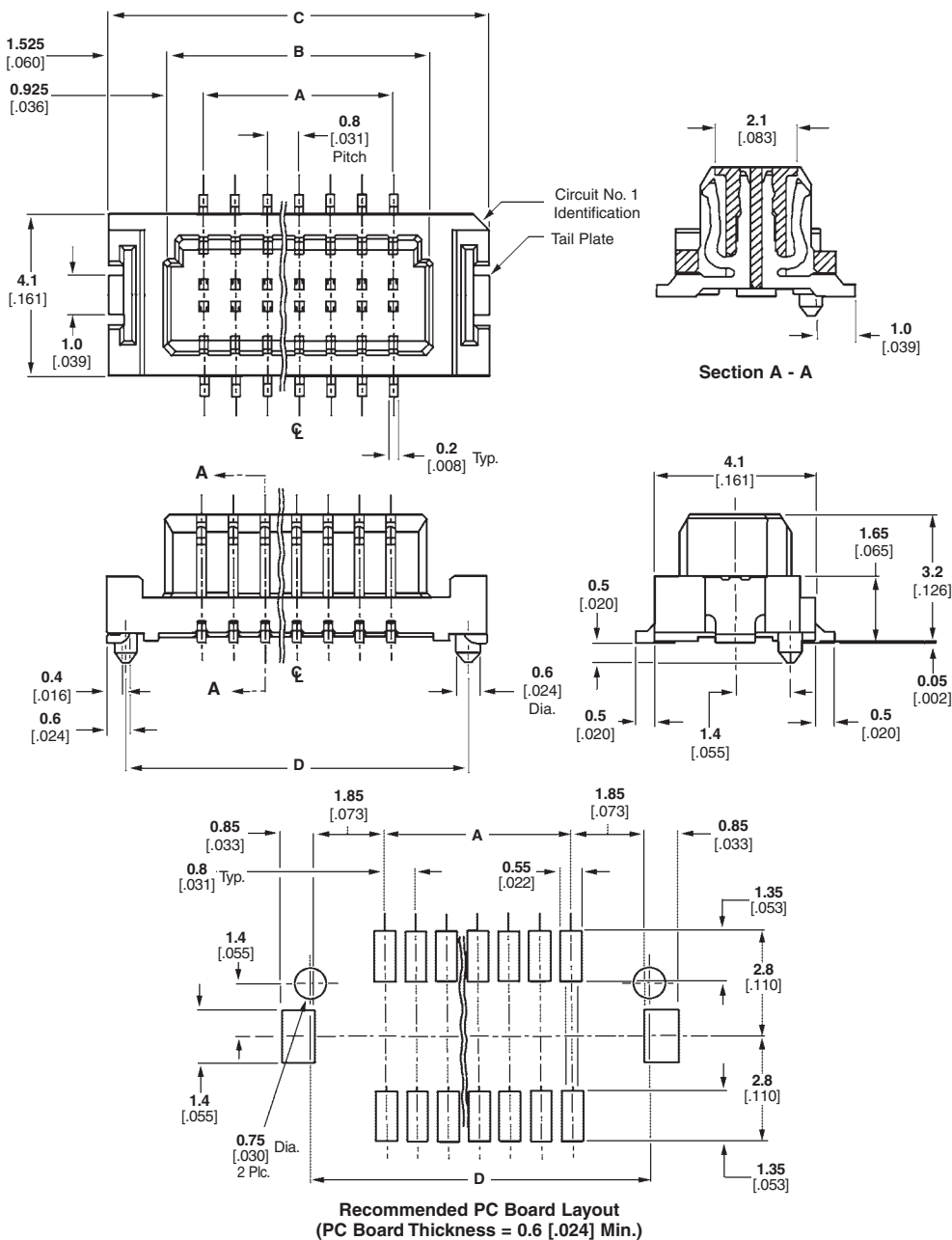
**Related Product Data**

**Mating Tabs** — page 69

**Technical Documents** (page 113)

**Product Specification**  
108-5512

**0.8mm Fine Mate Receptacles, 0.8 [.031] Pitch**



No. of Positions	Dimensions				Keyed	With Boss	Part Number
	A	B	C	D			
10	3.2 .126	5.05 .199	8.1 .319	7.15 .281	Yes	Yes	1-5917408-0
	3.2 .126	5.05 .199	8.1 .319	—	Yes	No	1-5316657-0
22	8.0 .315	9.85 .388	12.9 .508	11.95 .470	Yes	Yes	2-5917408-2
50	19.2 .756	20.45 .805	23.5 .925	22.55 .888	No	Yes	5-5316464-0
60	23.2 .913	25.05 .986	28.1 1.106	27.15 1.069	Yes	Yes	6-5917408-0

**Note:** Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — 46 Nylon, high heat resistant resin

**Contacts** — Copper alloy, gold plating on contact area (see chart), tin on solder leads, with entire contact underplated nickel

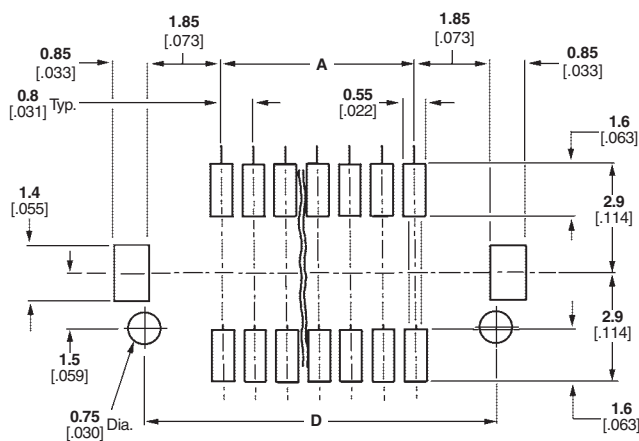
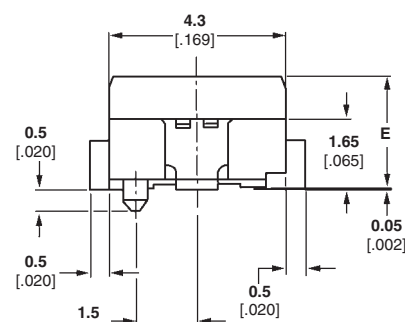
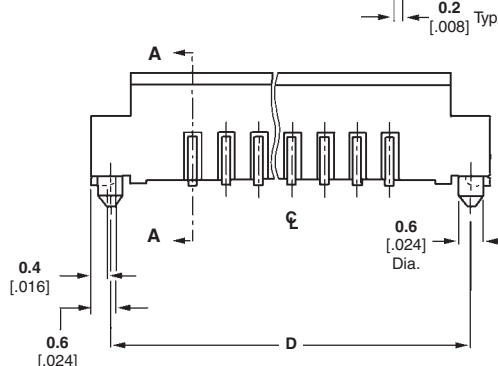
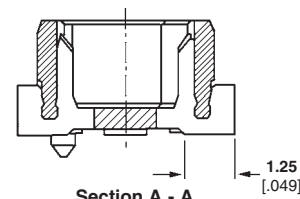
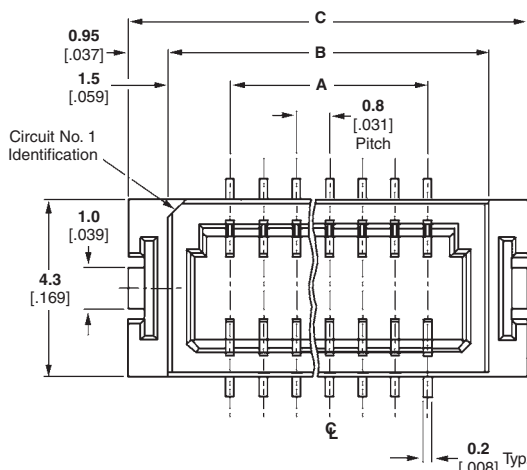
**Related Product Data**

**Mating Receptacles** — page 68

**Technical Documents** (page 113)

**Product Specification**  
108-5512

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



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

No. of Positions	Dimensions					Stacking Height	Keyed	With Boss	Part Number
	A	B	C	D	E				
10	3.2 .126	6.2 .244	8.1 .319	7.15 .281	2.7 .106	4.0 .157	Yes	Yes	1-5917407-0
	8.0 .315	11.0 .433	12.9 .508	11.95 .470	2.7 .106	4.0 .157	No	Yes	2-5316120-2
22	8.0 .315	11.0 .433	12.9 .508	11.95 .470	3.3 .130	4.5 .177	No	Yes	2-5917407-2
	19.2 .756	21.6 .850	23.5 .925	22.55 .888	3.3 .130	4.5 .177	No	Yes	5-5316466-0
60	23.2 .913	26.2 1.031	28.1 1.106	27.15 1.069	2.7 .106	4.0 .157	Yes	Yes	6-5316514-0

**Note:** Part Numbers are RoHS compliant.

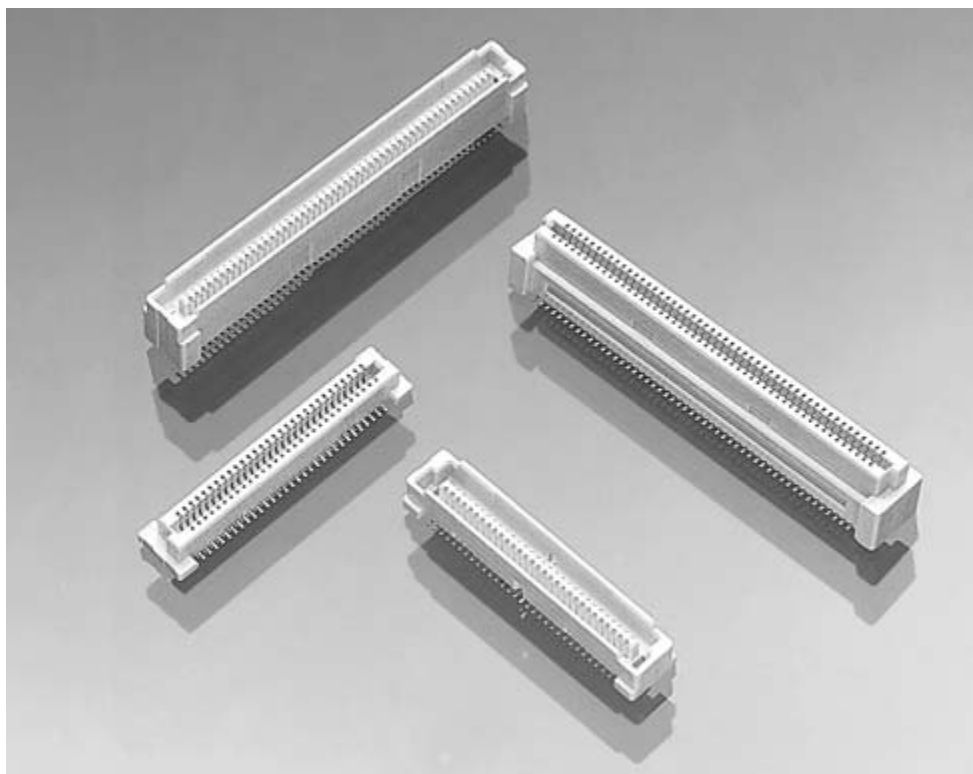
**Engineering Notes**

**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



**0.8mm Free Height (FH) Connectors**



Tyco Electronics 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 the Tyco Electronics unique bellows-type spring contacts for reliable electrical connection with the plugs.

In addition, right angle plugs are available which mate to standard receptacles.

**Performance Characteristics**

**Voltage Rating** — 100 VAC

**Current Rating** — 0.5 ampere

**Contact Resistance** — 30 milliohms max. (initial)

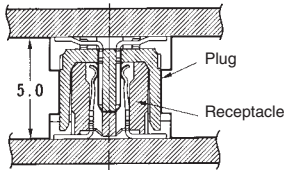
**Dielectric Withstanding Voltage** — 500 VAC (1 minute)

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

**0.8mm Free Height (FH) Connectors (Continued)**

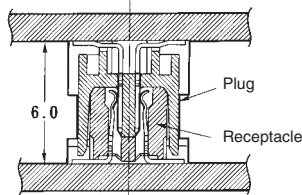
**Board-to-Board Stacking Heights (By Plug/Receptacle Combinations)**

Part No.: 5177984-□  
(Page 74)



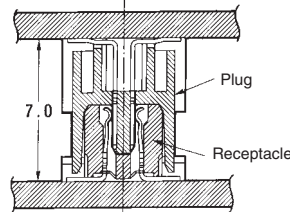
Part No.: 5177983-□  
(Page 78)  
5 [.197] Stacking Height

Part No.: 5179029-□  
(Page 75)



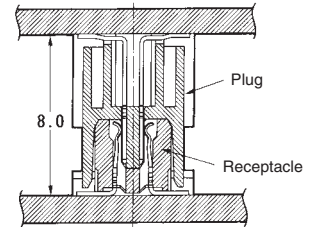
Part No.: 5177983-□  
(Page 78)  
6 [.236] Stacking Height

Part No.: 5179030-□  
(Page 76)



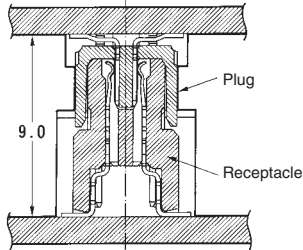
Part No.: 5177983-□  
(Page 78)  
7 [.276] Stacking Height

Part No.: 5179031-□  
(Page 77)



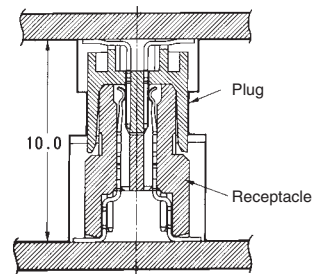
Part No.: 5177983-□  
(Page 78)  
8 [.315] Stacking Height

Part No.: 5177984-□  
(Page 74)



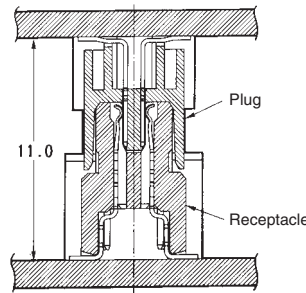
Part No.: 5-5179009-□  
(Page 79)  
9 [.354] Stacking Height

Part No.: 5179029-□  
(Page 75)



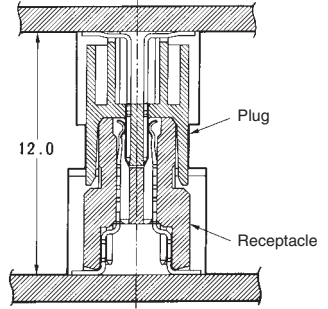
Part No.: 5-5179009-□  
(Page 79)  
10 [.394] Stacking Height

Part No.: 5179030-□  
(Page 76)



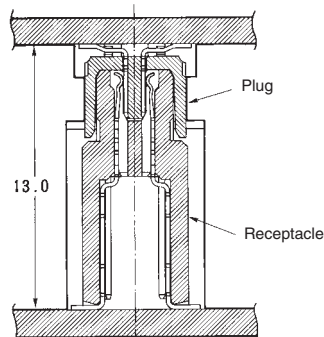
Part No.: 5-5179009-□  
(Page 79)  
11 [.433] Stacking Height

Part No.: 5179031-□  
(Page 77)



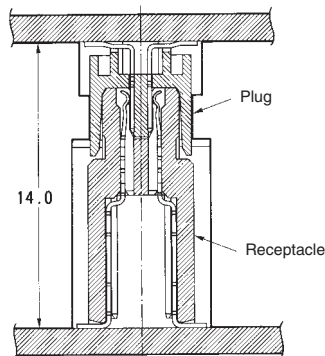
Part No.: 5-5179009-□  
(Page 79)  
12 [.472] Stacking Height

Part No.: 5177984-□  
(Page 74)



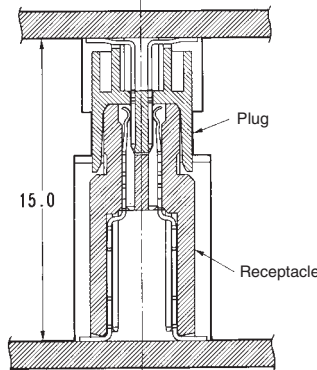
Part No.: 5-5179010-□  
(Page 80)  
13 [.512] Stacking Height

Part No.: 5179029-□  
(Page 75)



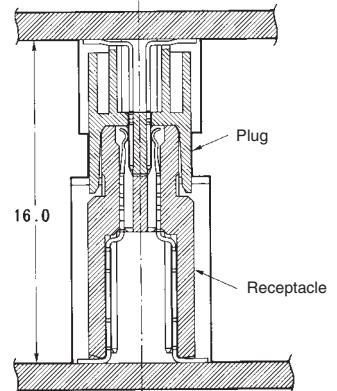
Part No.: 5-5179010-□  
(Page 80)  
14 [.551] Stacking Height

Part No.: 5179030-□  
(Page 76)



Part No.: 5-5179010-□  
(Page 80)  
15 [.591] Stacking Height

Part No.: 5179031-□  
(Page 77)



Part No.: 5-5179010-□  
(Page 80)  
16 [.630] Stacking Height

**Notes:** For specific dash nos. of sizes 40 to 200 positions (in 20-position increments), see pages 73 thru 81.  
Part Numbers are RoHS compliant.



**0.8mm Free Height (FH) Connectors (Continued)**

**0.8mm Product Tree**

Gender	Height	Plating Au Thickness	Package Type	Pickup Cap	40 Pos.	60 Pos.	80 Pos.	100 Pos.	120 Pos.	140 Pos.	160 Pos.	180 Pos.	200 Pos.
Rcpt.	5H	8µ"	Tube	No	5177983-1	5177983-2	5177983-3	5177983-4	5177983-5	5177983-6	5177983-8	5177983-9	1-5177983-0
			Tube	Yes	5179229-1	5179229-2	5179229-3	5179229-4	5179229-5	5179229-6	5179229-8	5179229-9	1-5179229-0
			Tape and Reel	Yes	5177985-1	5177985-2	5177985-3	5177985-4	5177985-5	5177985-6	5177985-8	—	—
			Tube	No	6123000-1	6123000-2	6123000-3	6123000-4	6123000-5	6123000-6	6123000-8	6123000-9	1-6123000-0
	9H	8µ"	Tube	Yes	—	—	—	—	—	—	—	—	—
			Tape and Reel	Yes	5353999-1	5353999-2	5353999-3	5353999-4	5353999-5	5353999-6	5353999-8	—	—
			Tube	No	5-5179009-1	5-5179009-2	5-5179009-3	5-5179009-4	5-5179009-5	5-5179009-6	5-5179009-8	5-5179009-9	6-5179009-0
			Tube	Yes	—	5-5179232-2	5-5179232-3	5-5179232-4	5-5179232-5	5-5179232-6	5-5179232-8	5-5179232-9	6-5179232-0
	13H	30µ"	Tape and Reel	Yes	5-5179180-1	5-5179180-2	5-5179180-3	5-5179180-4	5-5179180-5	5-5179180-6	—	—	—
			Tube	No	5084613-1	5084613-2	5084613-3	5084613-4	5084613-5	5084613-6	5084613-8	5084613-9	1-5084613-0
			Tube	Yes	—	—	—	—	—	—	—	—	—
			Tape and Reel	Yes	7-5179180-1	7-5179180-2	7-5179180-3	7-5179180-4	7-5179180-5	7-5179180-6	—	—	—
Plug	5H	8µ"	Tube	No	5-5179010-1	5-5179010-2	5-5179010-3	5-5179010-4	5-5179010-5	5-5179010-6	5-5179010-8	5-5179010-9	6-5179010-0
			Tube	Yes	5-5179233-1	5-5179233-2	5-5179233-3	5-5179233-4	5-5179233-5	5-5179233-6	5-5179233-8	5-5179233-9	6-5179233-0
			Tape and Reel	Yes	5084616-1	5084616-2	5084616-3	5084616-4	5084616-5	5084616-6	5084616-8	5084616-9	—
			Tube	No	5-6123212-1	5-6123212-2	5-6123212-3	5-6123212-4	5-6123212-5	5-6123212-6	5-6123212-8	5-6123212-9	6-6123212-0
	6H	30µ"	Tube	Yes	—	—	—	—	—	—	—	—	—
			Tape and Reel	Yes	5084618-1	5084618-2	5084618-3	5084618-4	5084618-5	5084618-6	5084618-8	5084618-9	—
			Tube	No	5177984-1	5177984-2	5177984-3	5177984-4	5177984-5	5177984-6	5177984-8	5177984-9	1-5177984-0
			Tube	Yes	5179230-1	5179230-2	5179230-3	5179230-4	5179230-5	5179230-6	5179230-8	5179230-9	1-5179230-0
	7H	8µ"	Tape and Reel	Yes	5177986-1	5177986-2	5177986-3	5177986-4	5177986-5	5177986-6	5177986-8	—	—
			Tube	No	5084615-1	5084615-2	5084615-3	5084615-4	5084615-5	5084615-6	5084615-8	5084615-9	1-5084615-0
			Tube	Yes	—	—	—	—	—	—	1-5084615-8	1-5084615-9	2-5084615-0
			Tape and Reel	Yes	6-5177986-1	6-5177986-2	6-5177986-3	6-5177986-4	6-5177986-5	6-5177986-6	—	—	—
R/A	8H	30µ"	Tube	No	5179030-1	5179030-2	5179030-3	5179030-4	5179030-5	5179030-6	5179030-8	5179030-9	1-5179030-0
			Tube	Yes	4-5179230-1	4-5179230-2	4-5179230-3	4-5179230-4	4-5179230-5	4-5179230-6	4-5179230-8	4-5179230-9	5-5179230-0
			Tape and Reel	Yes	2-5177986-1	2-5177986-2	2-5177986-3	2-5177986-4	2-5177986-5	2-5177986-6	—	—	—
			Tube	No	1-5179030-1	1-5179030-2	1-5179030-3	1-5179030-4	1-5179030-5	1-5179030-6	1-5179030-8	1-5179030-9	2-5179030-0
	R/A	8µ"	Tube	Yes	2-5179030-1	2-5179030-2	2-5179030-3	2-5179030-4	2-5179030-5	2-5179030-6	2-5179030-8	2-5179030-9	3-5179030-0
			Tape and Reel	Yes	—	—	—	—	—	—	—	—	—
			Tube	No	5179031-1	5179031-2	5179031-3	5179031-4	5179031-5	5179031-6	5179031-8	5179031-9	1-5179031-0
			Tube	Yes	6-5179230-1	6-5179230-2	6-5179230-3	6-5179230-4	6-5179230-5	6-5179230-6	6-5179230-8	6-5179230-9	7-5179230-0
	R/A	30µ"	Tape and Reel	Yes	3-5177986-1	3-5177986-2	3-5177986-3	3-5177986-4	3-5177986-5	3-5177986-6	3-5177986-8	3-5177986-9	—
			Tube	No	6123002-1	6123002-2	6123002-3	6123002-4	6123002-5	6123002-6	6123002-8	6123002-9	1-6123002-0
			Tube	Yes	—	—	—	—	—	—	—	—	—
			Tape and Reel	Yes	6123001-1	6123001-2	6123001-3	6123001-4	6123001-5	6123001-6	6123001-8	6123001-9	—

**Stack Height = [(Rcpt. Height + Plug Height) - 5]**  
example: [(13H Rcpt. + 6H Plug) - 5] = [(13 + 6) - 5] = 14mm stack height  
**Note:** Part Numbers are RoHS compliant.

**0.8mm Free Height (FH)  
Connectors**

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

**Material and Finish**

**Housing** — High temperature thermo-plastic, natural color, 94V-0 rated

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

**Related Product Data**

**Performance Characteristics** —  
page 71

**Stacking Height Combinations** —  
page 72

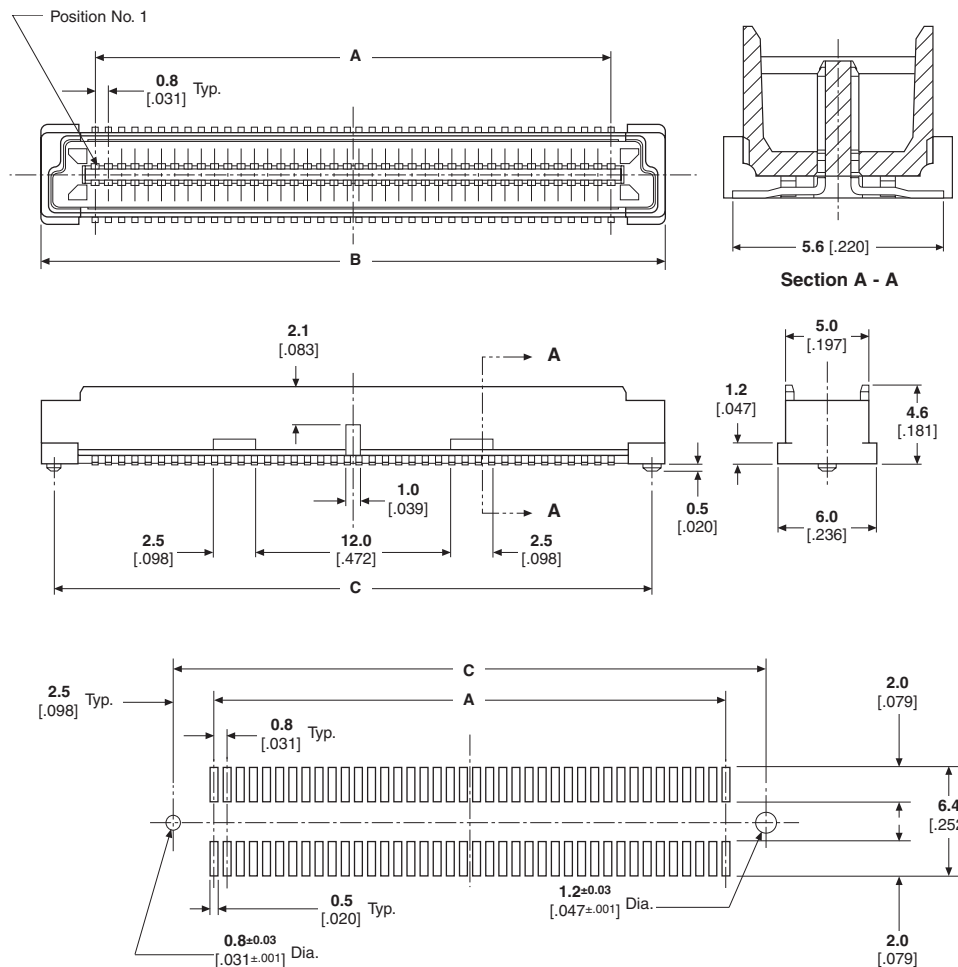
**Mating Receptacles** — pages 78  
thru 80

**Technical Documents** (page 113)

**Product Specification**  
108-5390

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

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



Recommended PC Board Layout

Dimensions			No. of Positions	Plating Type	Part Numbers		
A	B	C			Tube	Tube w/ Pickup Cap	Tape and Reel
15.20 .598	21.80 .858	20.20 .795	40	8µ" Au	5177984-1	5179230-1	5177986-1
				30µ" Au	5084614-1	—	5-5177986-1
23.20 .913	29.80 1.173	28.20 1.110	60	8µ" Au	5177984-2	5179230-2	5177986-2
				30µ" Au	5084614-2	—	5-5177986-2
31.20 1.228	37.80 1.488	36.20 1.425	80	8µ" Au	5177984-3	5179230-3	5177986-3
				30µ" Au	5084614-3	—	5-5177986-3
39.20 1.543	45.80 1.803	44.20 1.740	100	8µ" Au	5177984-4	5179230-4	5177986-4
				30µ" Au	5084614-4	—	5-5177986-4
47.20 1.858	53.80 2.118	52.20 2.055	120	8µ" Au	5177984-5	5179230-5	5177986-5
				30µ" Au	5084614-5	—	5-5177986-5
55.20 2.173	61.80 2.433	60.20 2.370	140	8µ" Au	5177984-6	5179230-6	5177986-6
				30µ" Au	5084614-6	—	5-5177986-6
63.20 2.488	69.80 2.748	68.20 2.685	160	8µ" Au	5177984-8	5179230-8	5177986-8
				30µ" Au	5084614-8	—	5-5177986-8
71.20 2.803	77.80 3.063	76.20 3.000	180	8µ" Au	5177984-9	5179230-9	—
				30µ" Au	5084614-9	—	—
79.20 3.118	85.80 3.378	84.20 3.315	200	8µ" Au	1-5177984-0	1-5179230-0	—
				30µ" Au	1-5084614-0	—	—

**Note:** Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — High temperature thermo-plastic, natural color, 94V-0 rated

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

**Related Product Data**

**Performance Characteristics** —  
page 71

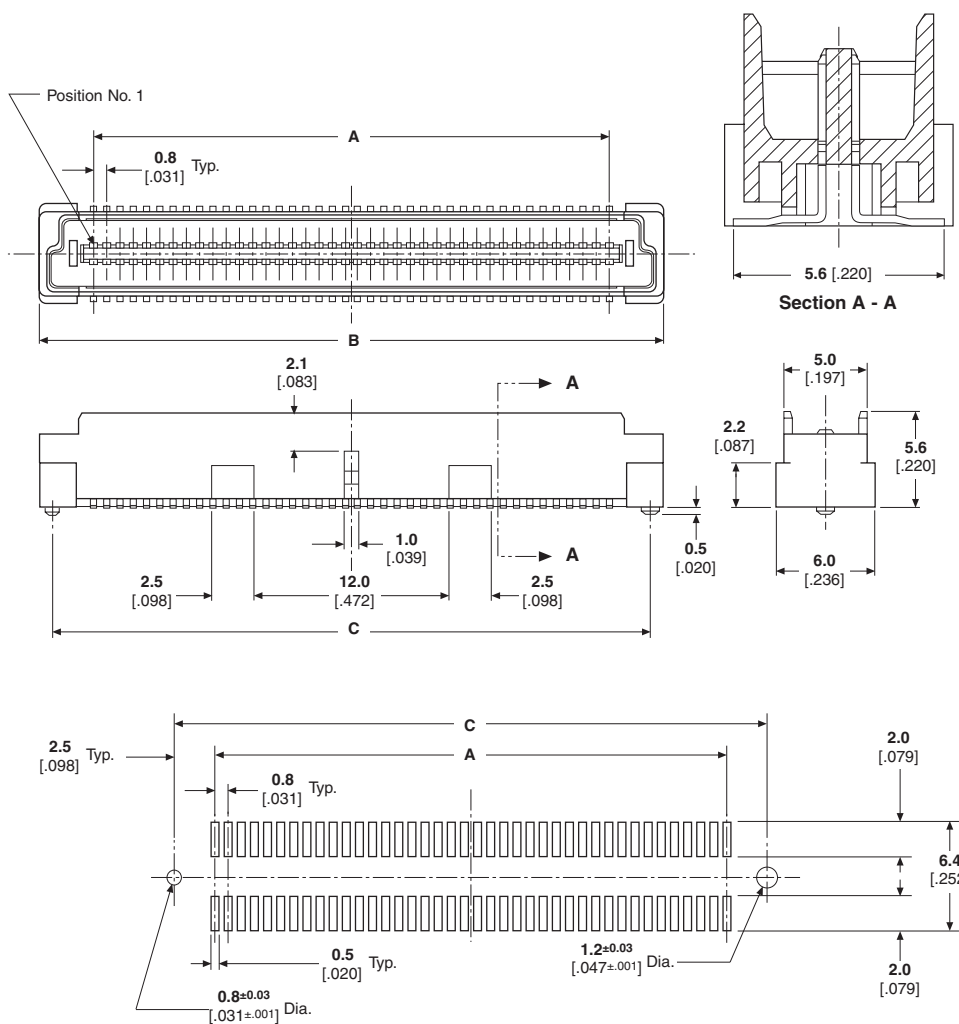
**Stacking Height Combinations** —  
page 72

**Mating Receptacles** — pages 78  
thru 80

**Technical Documents** (page 113)

**Product Specification**  
108-5390

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



**Recommended PC Board Layout**

Dimensions			No. of Positions	Plating Type	Part Numbers		
A	B	C			Tube	Tube w/ Pickup Cap	Tape and Reel
15.20 .598	21.80 .858	20.20 .795	40	8µ" Au	5179029-1	2-5179230-1	1-5177986-1
				30µ" Au	5084615-1	—	6-5177986-1
23.20 .913	29.80 1.173	28.20 1.110	60	8µ" Au	5179029-2	2-5179230-2	1-5177986-2
				30µ" Au	5084615-2	—	6-5177986-2
31.20 1.228	37.80 1.488	36.20 1.425	80	8µ" Au	5179029-3	2-5179230-3	1-5177986-3
				30µ" Au	5084615-3	—	6-5177986-3
39.20 1.543	45.80 1.803	44.20 1.740	100	8µ" Au	5179029-4	2-5179230-4	1-5177986-4
				30µ" Au	5084615-4	—	6-5177986-4
47.20 1.858	53.80 2.118	52.20 2.055	120	8µ" Au	5179029-5	2-5179230-5	1-5177986-5
				30µ" Au	5084615-5	—	6-5177986-5
55.20 2.173	61.80 2.433	60.20 2.370	140	8µ" Au	5179029-6	2-5179230-6	1-5177986-6
				30µ" Au	5084615-6	—	6-5177986-6
63.20 2.488	69.80 2.748	68.20 2.685	160	8µ" Au	5179029-8	2-5179230-8	—
				30µ" Au	5084615-8	1-5084615-8	—
71.20 2.803	77.80 3.063	76.20 3.000	180	8µ" Au	5179029-9	2-5179230-9	—
				30µ" Au	5084615-9	1-5084615-9	—
79.20 3.118	85.80 3.378	84.20 3.315	200	8µ" Au	1-5179029-0	3-5179230-0	—
				30µ" Au	1-5084615-9	2-5084615-0	—

**Note:** Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — High temperature thermo-plastic, natural color, 94V-0 rated

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

**Related Product Data**

**Performance Characteristics** —  
page 71

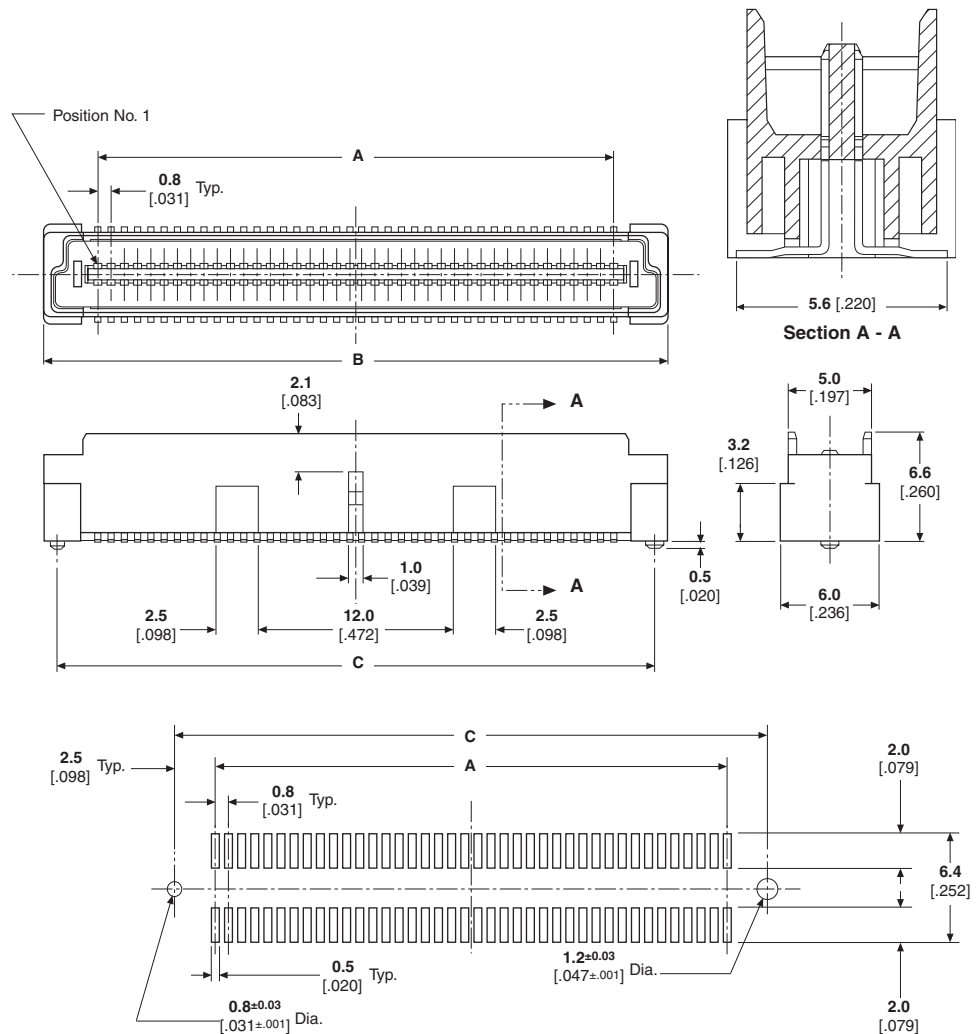
**Stacking Height Combinations** —  
page 72

**Mating Receptacles** — pages 78  
thru 80

**Technical Documents** (page 113)

**Product Specification**  
108-5390

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



**Recommended PC Board Layout**

Dimensions			No. of Positions	Plating Type	Part Numbers		
A	B	C			Tube	Tube w/ Pickup Cap	Tape and Reel
15.20 .598	21.80 .858	20.20 .795	40	8μ" Au	5179030-1	4-5179230-1	2-5177986-1
				30μ" Au	1-5179030-1	2-5179030-1	—
23.20 .913	29.80 1.173	28.20 1.110	60	8μ" Au	5179030-2	4-5179230-2	2-5177986-2
				30μ" Au	1-5179030-2	2-5179030-2	—
31.20 1.228	37.80 1.488	36.20 1.425	80	8μ" Au	5179030-3	4-5179230-3	2-5177986-3
				30μ" Au	1-5179030-3	2-5179030-3	—
39.20 1.543	45.80 1.803	44.20 1.740	100	8μ" Au	5179030-4	4-5179230-4	2-5177986-4
				30μ" Au	1-5179030-4	2-5179030-4	—
47.20 1.858	53.80 2.118	52.20 2.055	120	8μ" Au	5179030-5	4-5179230-5	2-5177986-5
				30μ" Au	1-5179030-5	2-5179030-5	—
55.20 2.173	61.80 2.433	60.20 2.370	140	8μ" Au	5179030-6	4-5179230-6	2-5177986-6
				30μ" Au	1-5179030-6	2-5179030-6	—
63.20 2.488	69.80 2.748	68.20 2.685	160	8μ" Au	5179030-8	4-5179230-8	2-5177986-8
				30μ" Au	1-5179030-8	2-5179030-8	—
71.20 2.803	77.80 3.063	76.20 3.000	180	8μ" Au	5179030-9	4-5179230-9	2-5177986-9
				30μ" Au	1-5179030-9	2-5179030-9	—
79.20 3.118	85.80 3.378	84.20 3.315	200	8μ" Au	1-5179030-0	5-5179230-0	3-5177986-0
				30μ" Au	2-5179030-0	3-5179030-0	—

**Note:** Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — High temperature thermo-plastic, natural color, 94V-0 rated

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

**Related Product Data**

**Performance Characteristics** —  
page 71

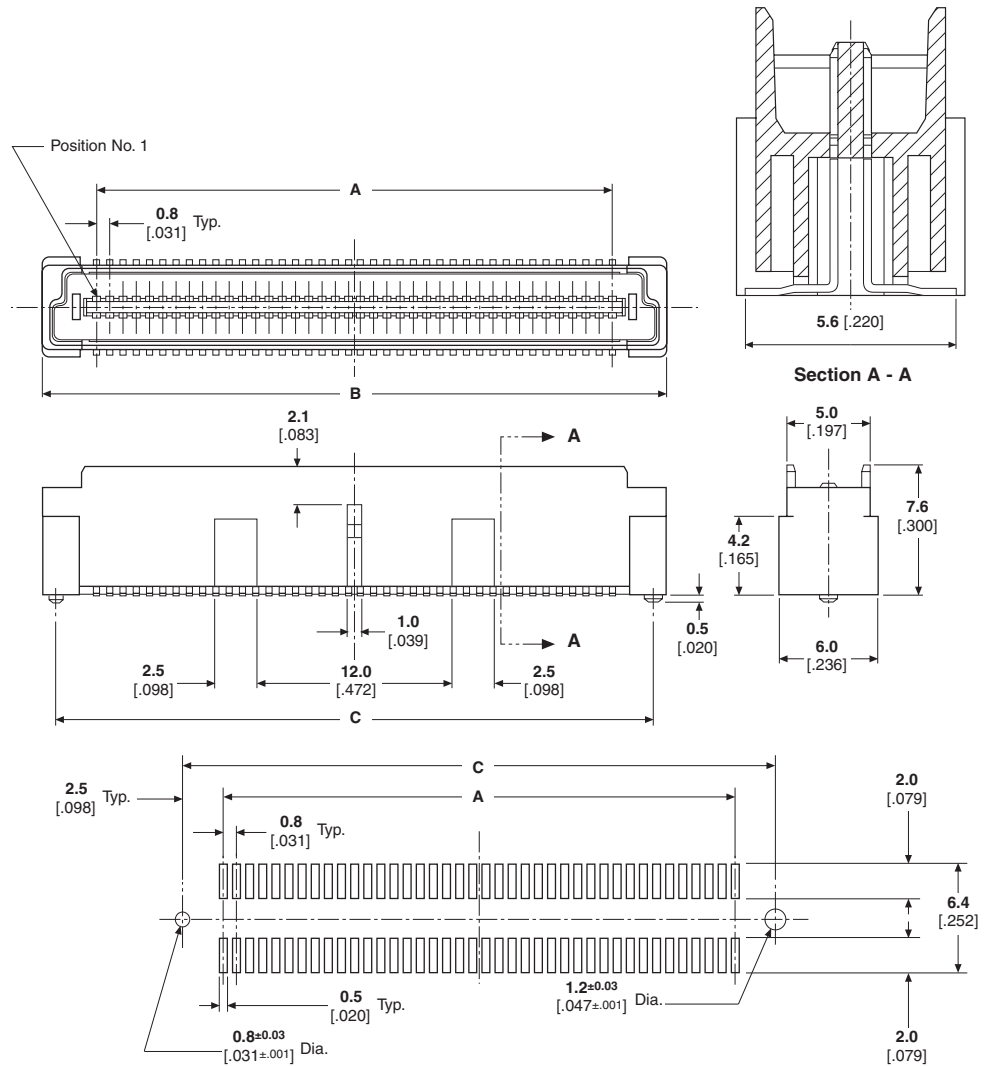
**Stacking Height Combinations** —  
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**Mating Receptacles** — pages 78  
thru 80

**Technical Documents** (page 113)

**Product Specification**  
108-5390

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



**Recommended PC Board Layout**

Dimensions			No. of Positions	Plating Type	Part Numbers		
A	B	C			Tube	Tube w/ Pickup Cap	Tape and Reel
15.20 .598	21.80 .858	20.20 .795	40	8μ" Au 30μ" Au	5179031-1 6123002-1	6-5179230-1 —	3-5177986-1 6123001-1
23.20 .913	29.80 1.173	28.20 1.110	60	8μ" Au 30μ" Au	5179031-2 6123002-2	6-5179230-2 —	3-5177986-2 6123001-2
31.20 1.228	37.80 1.488	36.20 1.425	80	8μ" Au 30μ" Au	5179031-3 6123002-3	6-5179230-3 —	3-5177986-3 6123001-3
39.20 1.543	45.80 1.803	44.20 1.740	100	8μ" Au 30μ" Au	5179031-4 6123002-4	6-5179230-4 —	3-5177986-4 6123001-4
47.20 1.858	53.80 2.118	52.20 2.055	120	8μ" Au 30μ" Au	5179031-5 6123002-5	6-5179230-5 —	3-5177986-5 6123001-5
55.20 2.173	61.80 2.433	60.20 2.370	140	8μ" Au 30μ" Au	5179031-6 6123002-6	6-5179230-6 —	3-5177986-6 6123001-6
63.20 2.488	69.80 2.748	68.20 2.685	160	8μ" Au 30μ" Au	5179031-8 6123002-8	6-5179230-8 —	3-5177986-8 6123001-8
71.20 2.803	77.80 3.063	76.20 3.000	180	8μ" Au 30μ" Au	5179031-9 6123002-9	6-5179230-9 —	3-5177986-9 6123001-9
79.20 3.118	85.80 3.378	84.20 3.315	200	8μ" Au 30μ" Au	1-5179031-0 1-6123002-0	7-5179230-0 —	— —

**Note:** Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — High temperature thermo-plastic, natural color, 94V-0 rated

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

**Related Product Data**

**Performance Characteristics** —  
page 71

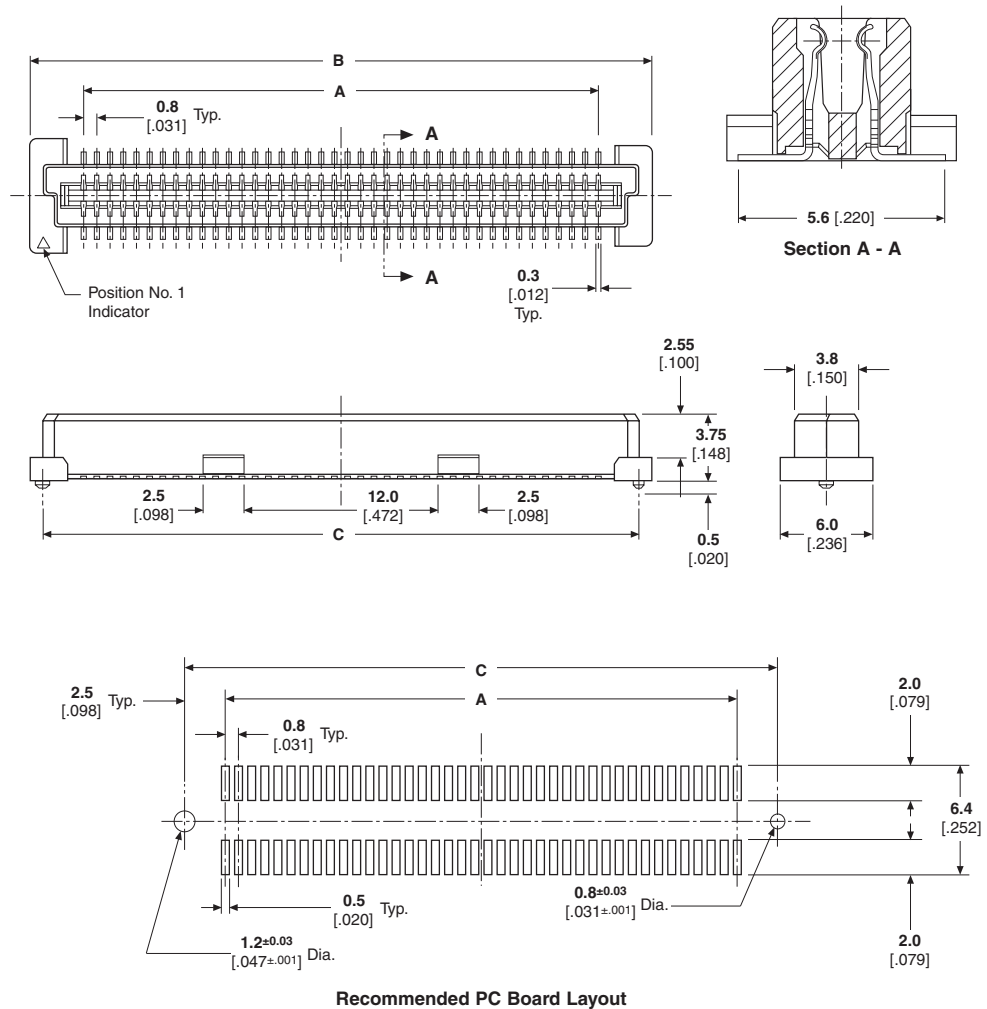
**Stacking Height Combinations** —  
page 72

**Mating Plugs** — pages 74 thru 77,  
and 81

**Technical Documents** (page 113)

**Product Specification**  
108-5390

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



Recommended PC Board Layout

Dimensions			No. of Positions	Plating Type	Part Numbers		
A	B	C			Tube	Tube w/ Pickup Cap	Tape and Reel
15.20 .598	21.80 .858	20.20 .795	40	8µ" Au	5177983-1	5179229-1	5177985-1
				30µ" Au	6123000-1	—	5353999-1
23.20 .913	29.80 1.173	28.20 1.110	60	8µ" Au	5177983-2	5179229-2	5177985-2
				30µ" Au	6123000-2	—	5353999-2
31.20 1.228	37.80 1.488	36.20 1.425	80	8µ" Au	5177983-3	5179229-3	5177985-3
				30µ" Au	6123000-3	—	5353999-3
39.20 1.543	45.80 1.803	44.20 1.740	100	8µ" Au	5177983-4	5179229-4	5177985-4
				30µ" Au	6123000-4	—	5353999-4
47.20 1.858	53.80 2.118	52.20 2.055	120	8µ" Au	5177983-5	5179229-5	5177985-5
				30µ" Au	6123000-5	—	5353999-5
55.20 2.173	61.80 2.433	60.20 2.370	140	8µ" Au	5177983-6	5179229-6	5177985-6
				30µ" Au	6123000-6	—	5353999-6
63.20 2.488	69.80 2.748	68.20 2.685	160	8µ" Au	5177983-8	5179229-8	5177985-8
				30µ" Au	6123000-8	—	5353999-8
71.20 2.803	77.80 3.063	76.20 3.000	180	8µ" Au	5177983-9	5179229-9	—
				30µ" Au	6123000-9	—	—
79.20 3.118	85.80 3.378	84.20 3.315	200	8µ" Au	1-5177983-0	1-5179229-0	—
				30µ" Au	1-6123000-0	—	—

**Note:** Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — High temperature thermo-plastic, natural color, 94V-0 rated

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

**Related Product Data**

**Performance Characteristics** —  
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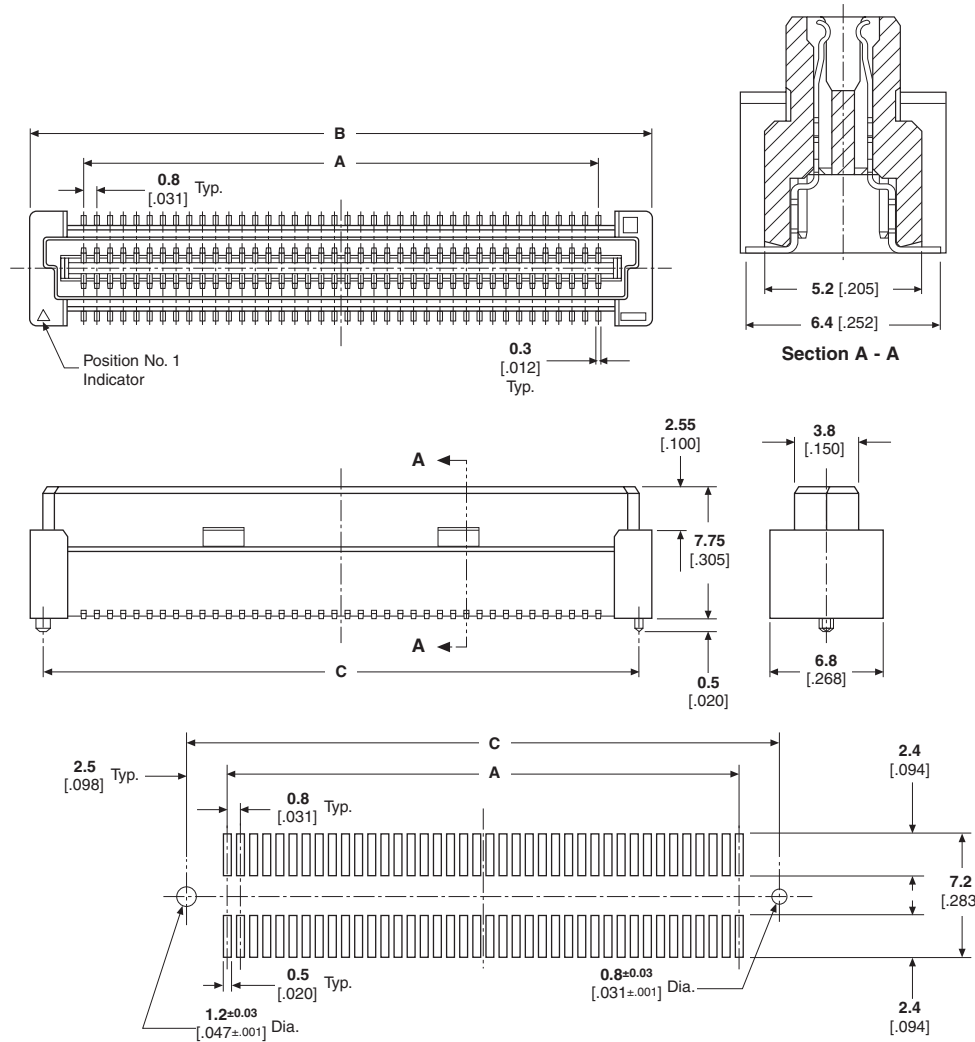
**Stacking Height Combinations** —  
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**Mating Plugs** — pages 74 thru 77,  
and 81

**Technical Documents** (page 113)

**Product Specification**  
108-5390

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



**Recommended PC Board Layout**

Dimensions			No. of Positions	Plating Type	Part Numbers		
A	B	C			Tube	Tube w/ Pickup Cap	Tape and Reel
15.20 .598	21.80 .858	20.20 .795	40	8µ" Au	5-5179009-1	—	5-5179180-1
				30µ" Au	5084613-1	—	7-5179180-1
23.20 .913	29.80 1.173	28.20 1.110	60	8µ" Au	5-5179009-2	5-5179232-2	5-5179180-2
				30µ" Au	5084613-2	—	7-5179180-2
31.20 1.228	37.80 1.488	36.20 1.425	80	8µ" Au	5-5179009-3	5-5179232-3	5-5179180-3
				30µ" Au	5084613-3	—	7-5179180-3
39.20 1.543	45.80 1.803	44.20 1.740	100	8µ" Au	5-5179009-4	5-5179232-4	5-5179180-4
				30µ" Au	5084613-4	—	7-5179180-4
47.20 1.858	53.80 2.118	52.20 2.055	120	8µ" Au	5-5179009-5	5-5179232-5	5-5179180-5
				30µ" Au	5084613-5	—	7-5179180-5
55.20 2.173	61.80 2.433	60.20 2.370	140	8µ" Au	5-5179009-6	5-5179232-6	5-5179180-6
				30µ" Au	5084613-6	—	7-5179180-6
63.20 2.488	69.80 2.748	68.20 2.685	160	8µ" Au	5-5179009-8	5-5179232-8	—
				30µ" Au	5084613-8	—	—
71.20 2.803	77.80 3.063	76.20 3.000	180	8µ" Au	5-5179009-9	5-5179232-9	—
				30µ" Au	5084613-9	—	—
79.20 3.118	85.80 3.378	84.20 3.315	200	8µ" Au	6-5179009-0	6-5179232-0	—
				30µ" Au	1-5084613-0	—	—

**Note:** Part Numbers are RoHS compliant.





**8mm Plugs for 5 [.197],  
9 [.354] and 13 [.512]  
Stacking Heights**

**Material and Finish**

**Housing** — High temperature thermo-plastic, natural color, 94V-0 rated

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

**Related Product Data**

**Performance Characteristics** —  
page 71

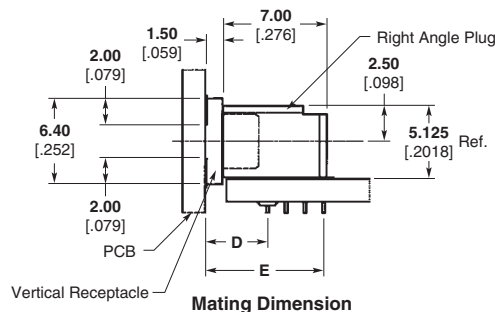
**Stacking Height Combinations** —  
page 72

**Mating Receptacles** — pages 78  
thru 80

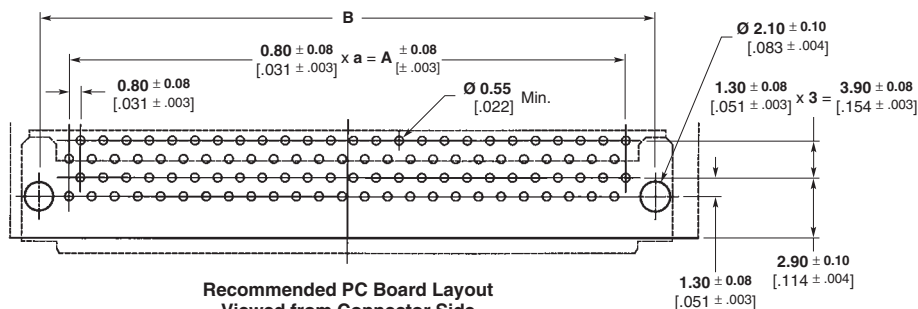
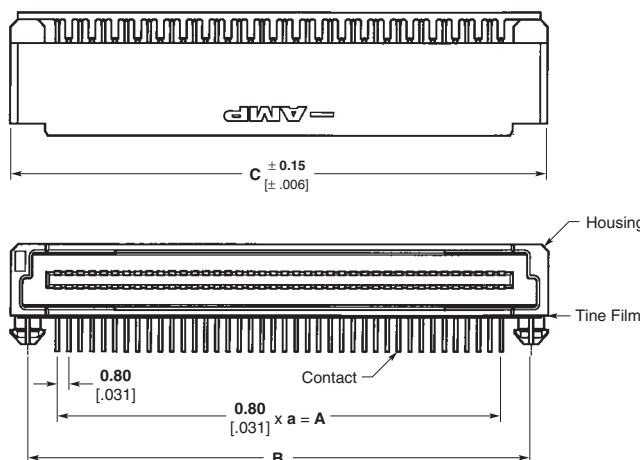
**Technical Documents** (page 113)

**Product Specification**  
108-5390

**0.8mm Free Height Right Angle Plugs, 0.8 [.031] Pitch**



Receptacle Height	Dimension	
	D	E
5.00 .197	4.40 .173	8.30 .327
9.00 .354	8.40 .331	12.30 .484
13.00 .512	12.40 .488	16.30 .642

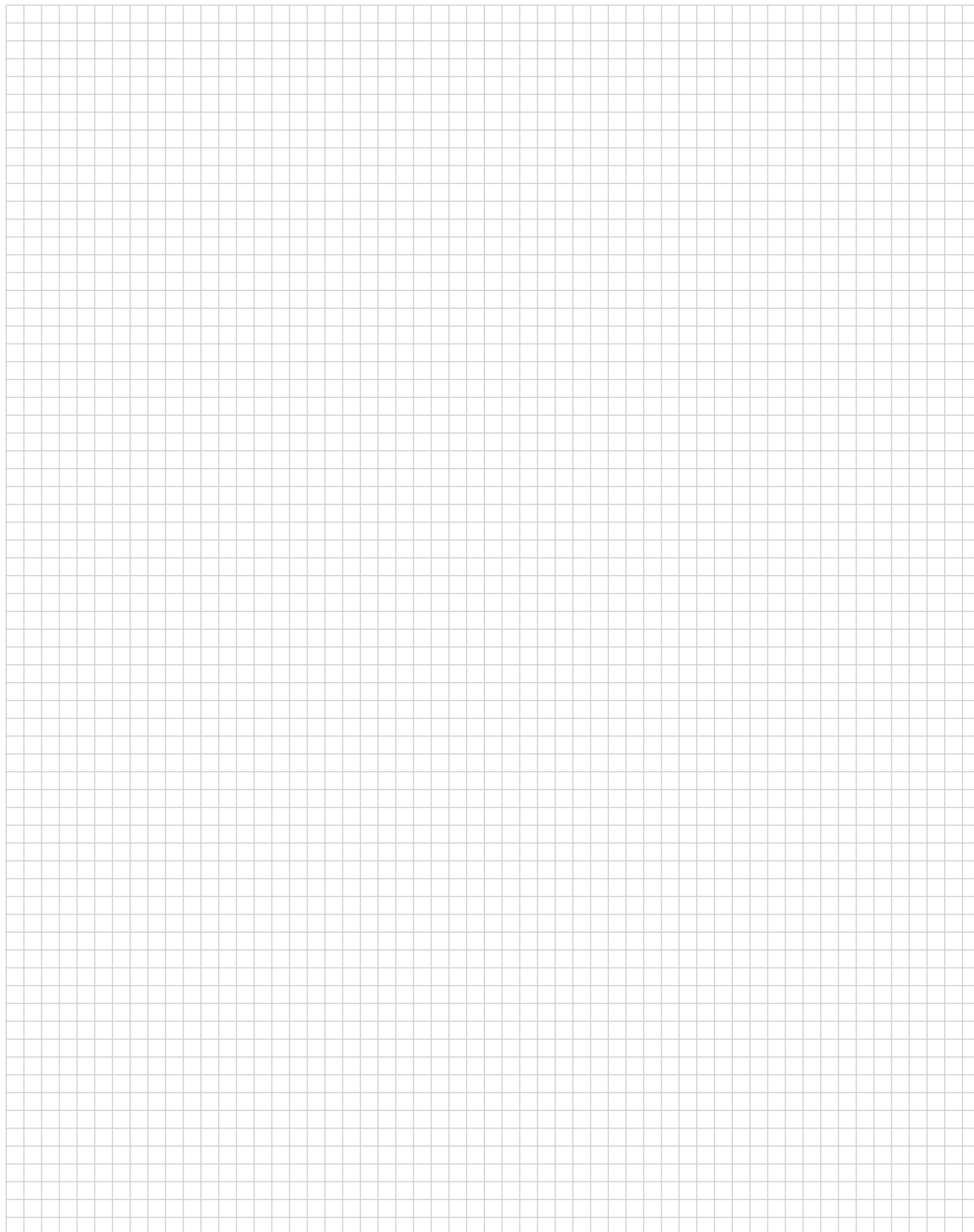


**Recommended PC Board Layout  
Viewed from Connector Side**

Dimension				No. of Positions	Part Number
A	B	C	a		
23.20 .913	27.40 1.079	29.80 1.173	29	60	316229-2
31.20 1.228	35.40 1.394	37.80 1.488	39	80	316229-3

**Note:** Part Numbers are RoHS compliant.

**Engineering Notes**



*Electronics*

www.DataSheet4U.com

**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 84)
- Increased plastic clearance eliminates stress to solder joints during mating (see page 84)
- Improved locating posts ensure accurate hand or robotic placement (see page 84)
- Meets EIA-700 AAAB specifications for IEEE 1386 applications
- All 1.0mm Free Height products within this section are RoHS Compliant

**Technical Documents** (page 113)  
**Product Specification**  
108-2246

**1.0mm Free Height (FH) (IEEE 1386) Connectors**



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. Tyco Electronics 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**

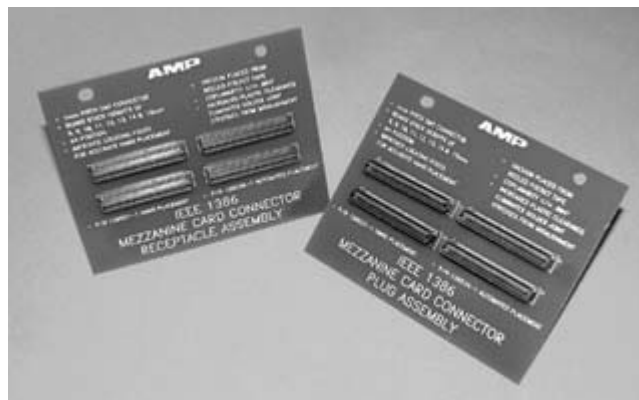
**Current Rating** —

1.0 ampere per contact

**Contact Resistance** —

30 milliohms max. (initial)

**Durability** — tested to 100 mating cycles min.



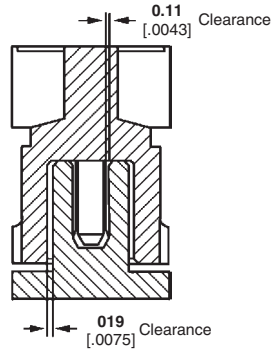
1.0mm FH (IEEE 1386)  
Connectors

**Electronics**

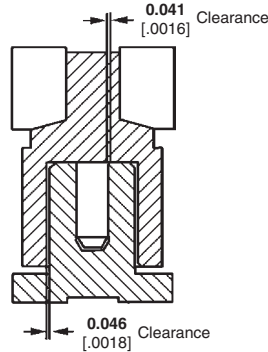
www.DataSheet4U.com

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

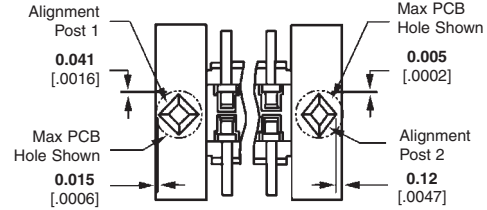
Improved locating posts allow fast, accurate hand placement on the board by ensuring proper location at both the minimum and maximum dimensions of connector material tolerances and PC board hole tolerances.



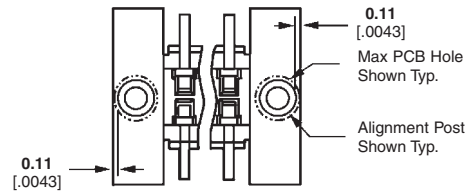
**Tyco Electronics Product**



**Competitive Product**



**Tyco Electronics Product**



**Competitive Product**

**1.0mm Free Height (FH) (IEEE 1386) Connector Assemblies**

No. of Positions	Plating	Stack Height	With Locating Posts Without Pickup Cap		Without Locating Posts With Pickup Cap		With Locating Posts With Pickup Cap	
			Receptacle	Plug	Receptacle	Plug	Receptacle	Plug
64	30µ" Au	8.00 [.315]	5120521-1	5120525-1	5120528-1	5120532-1	5146893-1	5146897-1
		9.00 [.354]	5120521-1	5120526-1	5120528-1	5120533-1	5146893-1	5146898-1
		10.00 [.394]	5120521-1	5120527-1	5120528-1	5120534-1	5146893-1	5146888-1
		11.00 [.433]	5120603-1	5120526-1	5120529-1	5120533-1	5146894-1	5146898-1
		12.00 [.472]	5120603-1	5120527-1	5120529-1	5120534-1	5146894-1	5146888-1
		13.00 [.512]	5120523-1	5120527-1	5120530-1	5120534-1	5146895-1	5146888-1
		14.00 [.551]	5120524-1	5120526-1	5120531-1	5120533-1	5146896-1	5146898-1
		15.00 [.591]	5120524-1	5120527-1	5120531-1	5120534-1	5146896-1	5146888-1
	50µ" Au	8.00 [.315]	1-5120521-1	1-5120525-1	1-5120528-1	1-5120532-1	1-5146893-1	1-5146897-1
		9.00 [.354]	1-5120521-1	1-5120526-1	1-5120528-1	1-5120533-1	1-5146893-1	1-5146898-1
		10.00 [.394]	1-5120521-1	1-5120527-1	1-5120528-1	1-5120534-1	1-5146893-1	1-5146888-1
		11.00 [.433]	1-5120603-1	1-5120526-1	1-5120529-1	1-5120533-1	1-5146894-1	1-5146898-1
		12.00 [.472]	1-5120603-1	1-5120527-1	1-5120529-1	1-5120534-1	1-5146894-1	1-5146888-1
		13.00 [.512]	1-5120523-1	1-5120527-1	1-5120530-1	1-5120534-1	1-5146895-1	1-5146888-1
		14.00 [.551]	1-5120524-1	1-5120526-1	1-5120531-1	1-5120533-1	1-5146896-1	1-5146898-1
		15.00 [.591]	1-5120524-1	1-5120527-1	1-5120531-1	1-5120534-1	1-5146896-1	1-5146888-1
84	30µ" Au	8.00 [.315]	5120521-2	5120525-2	5120528-2	5120532-2	5146893-2	5146897-2
		9.00 [.354]	5120521-2	5120526-2	5120528-2	5120533-2	5146893-2	5146898-2
		10.00 [.394]	5120521-2	5120527-2	5120528-2	5120534-2	5146893-2	5146888-2
		11.00 [.433]	5120603-2	5120526-2	5120529-2	5120533-2	5146894-2	5146898-2
		12.00 [.472]	5120603-2	5120527-2	5120529-2	5120534-2	5146894-2	5146888-2
		13.00 [.512]	5120523-2	5120527-2	5120530-2	5120534-2	5146895-2	5146888-2
		14.00 [.551]	5120524-2	5120526-2	5120531-2	5120533-2	5146896-2	5146898-2
		15.00 [.591]	5120524-2	5120527-2	5120531-2	5120534-2	5146896-2	5146888-2
	50µ" Au	8.00 [.315]	1-5120521-2	1-5120525-2	1-5120528-2	1-5120532-2	1-5146893-2	1-5146897-2
		9.00 [.354]	1-5120521-2	1-5120526-2	1-5120528-2	1-5120533-2	1-5146893-2	1-5146898-2
		10.00 [.394]	1-5120521-2	1-5120527-2	1-5120528-2	1-5120534-2	1-5146893-2	1-5146888-2
		11.00 [.433]	1-5120603-2	1-5120526-2	1-5120529-2	1-5120533-2	1-5146894-2	1-5146898-2
		12.00 [.472]	1-5120603-2	1-5120527-2	1-5120529-2	1-5120534-2	1-5146894-2	1-5146888-2
		13.00 [.512]	1-5120523-2	1-5120527-2	1-5120530-2	1-5120534-2	1-5146895-2	1-5146888-2
		14.00 [.551]	1-5120524-2	1-5120526-2	1-5120531-2	1-5120533-2	1-5146896-2	1-5146898-2
		15.00 [.591]	1-5120524-2	1-5120527-2	1-5120531-2	1-5120534-2	1-5146896-2	1-5146888-2

**Notes:** Receptacle specifications are shown on pages 85 and 86; plug specifications are shown on pages 87 and 88.  
Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — Liquid crystal polymer, black

**Contacts** — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

**Related Product Data**

**Performance Characteristics** — page 83

**Stacking Height Combinations** — page 84

**Mating Plugs** — pages 87 & 88

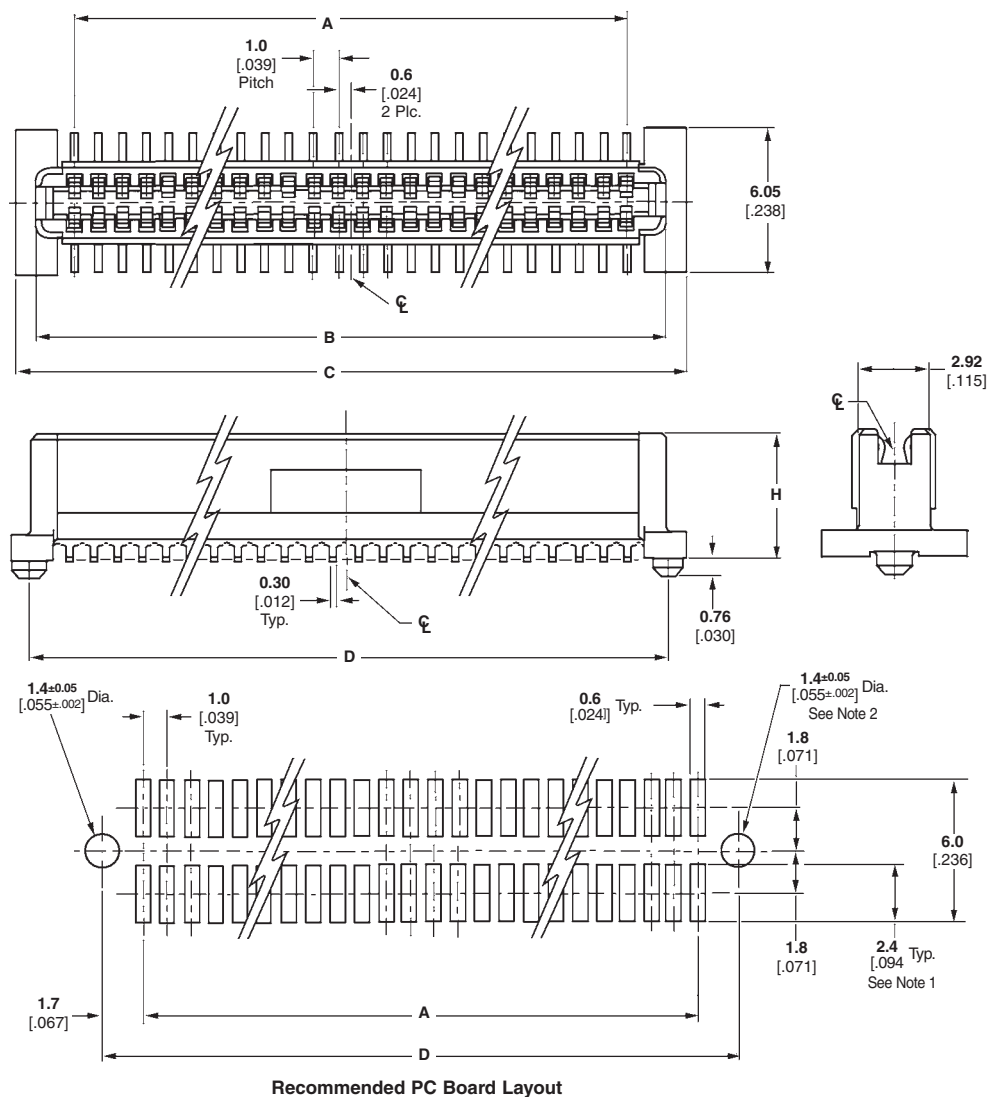
**Technical Documents**

**EIA-700 AAAB Specification**

**Application Specification**

114-25045

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



Recommended PC Board Layout

No. of Positions	Dimensions					Receptacle Part Number			
	A	B	C	D	H	30μ" Au Plating		50μ" Au Plating	
						w/o pickup cap	w/ pickup cap	w/o pickup cap	w/ pickup cap
64	31.0 1.220	34.22 1.347	35.9 1.413	34.4 1.354	5.37 .211	5120521-1	5146893-1	1-5120521-1	1-5146893-1
					7.37 .290	5120603-1	5146894-1	1-5120603-1	1-5146894-1
					8.37 .330	5120523-1	5146895-1	1-5120523-1	1-5146895-1
					10.37 .408	5120524-1	5146896-1	1-5120524-1	1-5146896-1
84	41.0 1.614	44.22 1.741	45.9 1.807	44.4 1.748	5.37 .211	5120521-2	5146893-2	1-5120521-2	1-5146893-2
					7.37 .290	5120603-2	5146894-2	1-5120603-2	1-5146894-2
					8.37 .330	5120523-2	5146895-2	1-5120523-2	1-5146895-2
					10.37 .408	5120524-2	5146896-2	1-5120524-2	1-5146896-2

**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.  
3. Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — Liquid crystal polymer, black

**Contacts** — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

**Vacuum Cover** — Aluminum Alloy

**Related Product Data**

**Performance Characteristics** — page 83

**Stacking Height Combinations** — page 84

**Mating Plugs** — pages 87 & 88

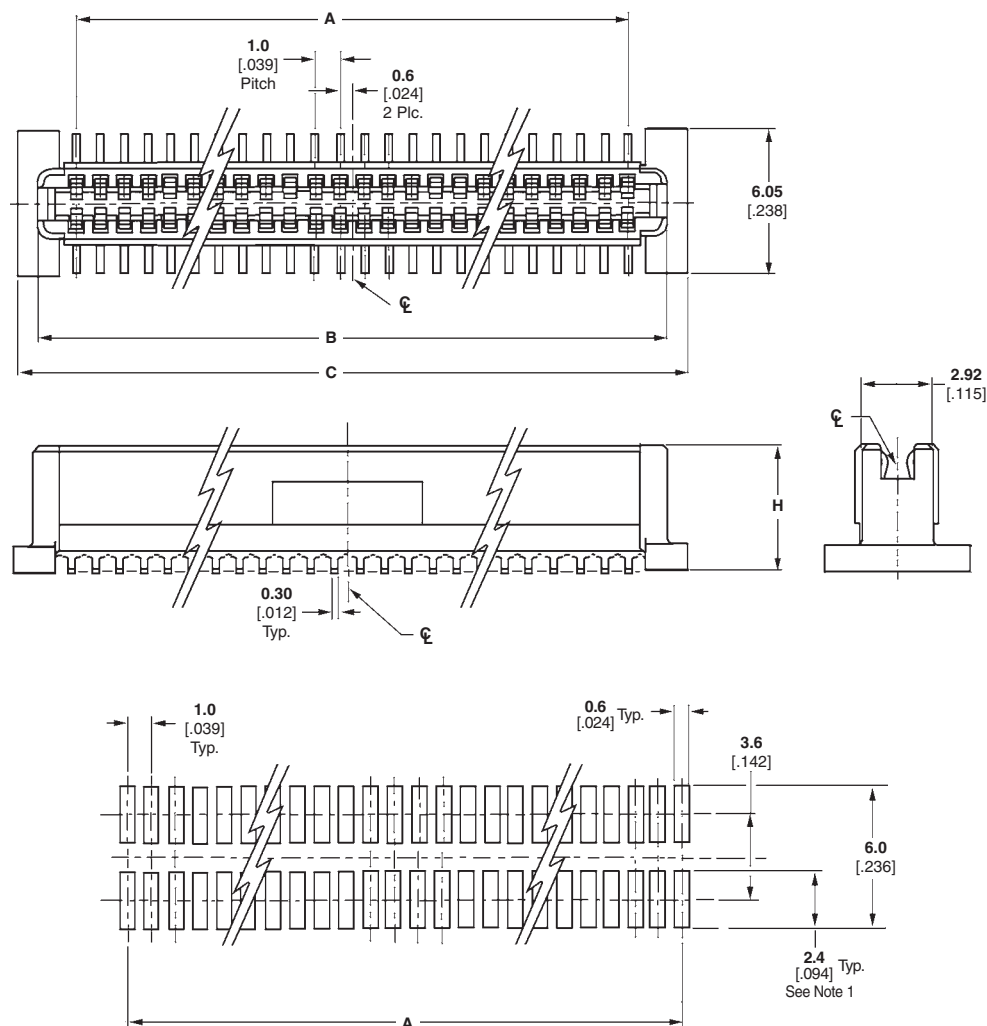
**Technical Documents**

**EIA-700 AAAB Specification**

**Application Specification**

114-25045

**1.0mm FH (IEEE 1386) Receptacles without Locating Posts, 1.0 [.039] Pitch**



Recommended PC Board Layout

No. of Positions	Dimensions				Receptacle Part Number	
	A	B	C	H	30μ" Au Plating w/ pickup cap	50μ" Au Plating w/ pickup cap
64	31.0 1.220	34.22 1.347	35.9 1.413	5.37 .211	5120528-1	1-5120528-1
				7.37 .290	5120529-1	1-5120529-1
				8.37 .330	5120530-1	1-5120530-1
				10.37 .408	5120531-1	1-5120531-1
84	41.0 1.614	44.22 1.741	45.9 1.807	5.37 .211	5120528-2	1-5120528-2
				7.37 .290	5120529-2	1-5120529-2
				8.37 .330	5120530-2	1-5120530-2
				10.37 .408	5120531-2	1-5120531-2

- 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.  
3. Part Numbers are RoHS compliant.



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

**Material and Finish**

**Housing** — Liquid crystal polymer, black

**Contacts** — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

**Related Product Data**

**Performance Characteristics** — page 83

**Stacking Height Combinations** — page 84

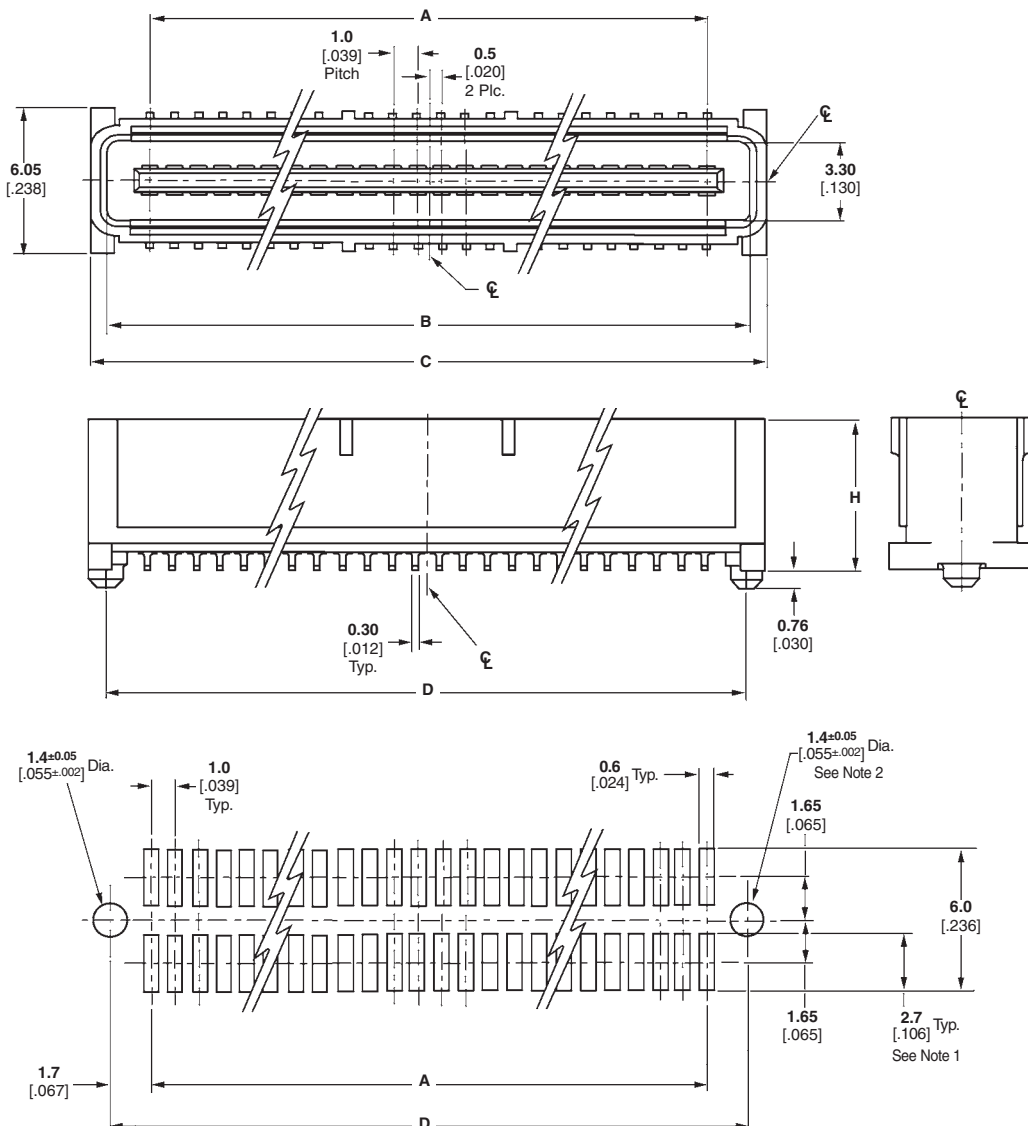
**Mating Receptacles** — pages 85 & 86

**Technical Documents**

**EIA-700 AAAB Specification**

**Application Specification**  
114-25045

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



**Recommended PC Board Layout**

No. of Positions	Dimensions					Plug Part Number			
	A	B	C	D	H	30µ" Au Plating		50µ" Au Plating	
						w/o pickup cap	w/ pickup cap	w/o pickup cap	w/ pickup cap
64	31.0 1.220	34.58 1.361	35.9 1.413	34.4 1.354	6.35 .250	5120525-1	5146897-1	1-5120525-1	1-5146897-1
					7.35 .289	5120526-1	5146898-1	1-5120526-1	1-5146898-1
					8.35 .329	5120527-1	5146888-1	1-5120527-1	1-5146888-1
84	41.0 1.614	44.58 1.755	45.9 1.807	44.4 1.748	6.35 .250	5120525-2	5146897-2	1-5120525-2	1-5146897-2
					7.35 .289	5120526-2	5146898-2	1-5120526-2	1-5146898-2
					8.35 .329	5120527-2	5146888-2	1-5120527-2	1-5146888-2

**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. 1.5 ±0.05 [.059 ±.002] diameter hole should be used if placed on PC board with vacuum placement equipment.  
3. Part Numbers are RoHS compliant.

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

**Material and Finish**

**Housing** — Liquid crystal polymer, black

**Contacts** — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

**Vacuum Cover** — Aluminum Alloy

**Related Product Data**

**Performance Characteristics** — page 83

**Stacking Height Combinations** — page 84

**Mating Receptacles** — pages 85 & 86

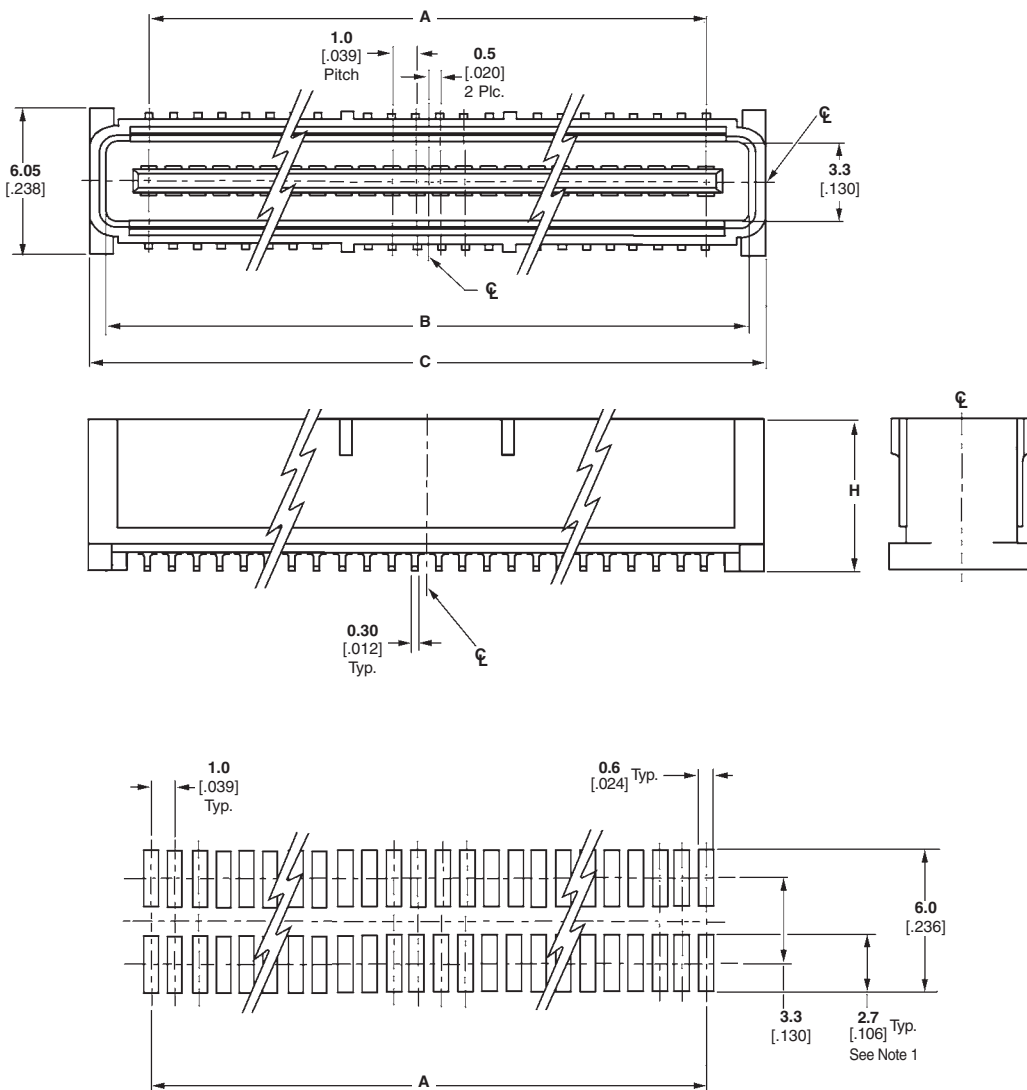
**Technical Documents**

**EIA-700 AAAB Specification**

**Application Specification**

114-25045

**1.0mm FH (IEEE 1386) Plugs without Locating Posts, 1.0 [.039] Pitch**





**Recommended PC Board Layout**

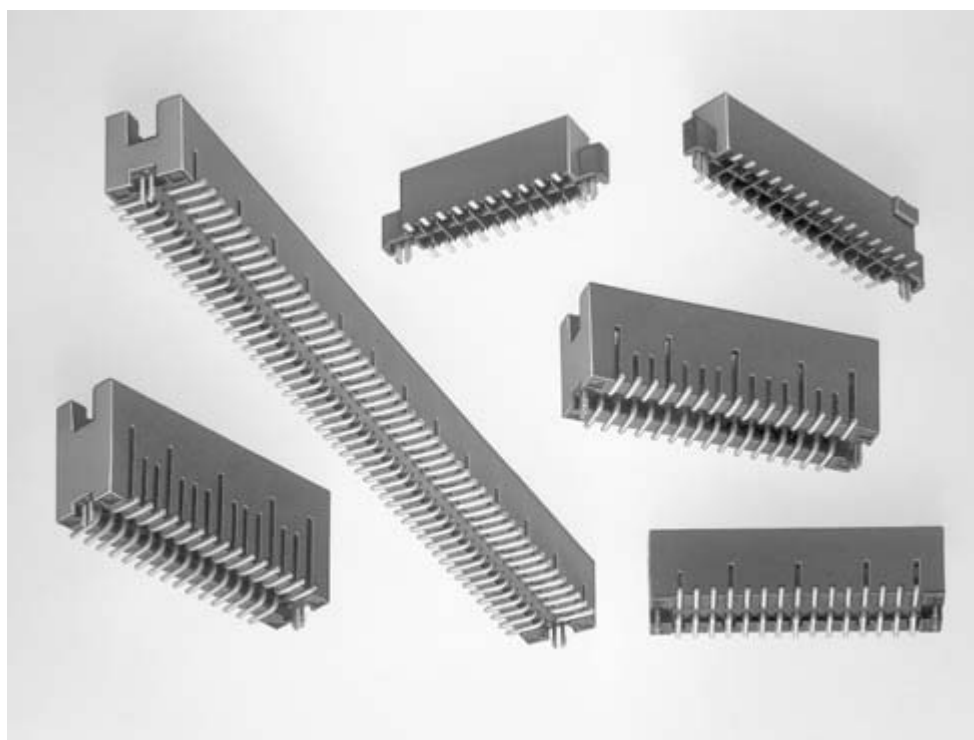
No. of Positions	Dimensions				Plug Part Number	
	A	B	C	H	30μ" Au Plating w/ pickup cap	50μ" Au Plating w/ pickup cap
64	31.0 1.220	34.58 1.361	35.9 1.413	6.35 .250	5120532-1	1-5120532-1
				7.35 .289	5120533-1	1-5120533-1
				8.35 .329	5120534-1	1-5120534-1
84	41.0 1.614	44.58 1.755	45.9 1.807	6.35 .250	5120532-2	1-5120532-2
				7.35 .289	5120533-2	1-5120533-2
				8.35 .329	5120534-2	1-5120534-2

**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.  
3. Part Numbers are RoHS compliant.

**Product Facts**

- Surface-mount products for parallel board-to-board applications, as well as right angle board-to-board and cable-to-board applications
- High density 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
- Compatible with standard surface-mount processing (VPR and IR)
- Receptacle and header allow for drainage of processing fluids
- Tape and reel packaging available, contact Tyco Electronics for details
- Polarized header and receptacle assemblies
- Sizes of 10, 20, 30, 40, 50, 60, 70, 80 and 100 positions
- Recognized under the Component Program of Underwriters Laboratories Inc.,  File No. E28476
- Certified by Canadian Standards Association  File No. LR7189

See Catalog 1307819 for additional AMPMODU product offerings.

**AMPMODU 50/50 Grid Connectors**


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

Right angle board-to-board and cable-to-board applications are also possible, since the vertical receptacles also mate with non-latching right angle headers (page 95) and the vertical headers also mate with non-latching cable connectors.

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

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

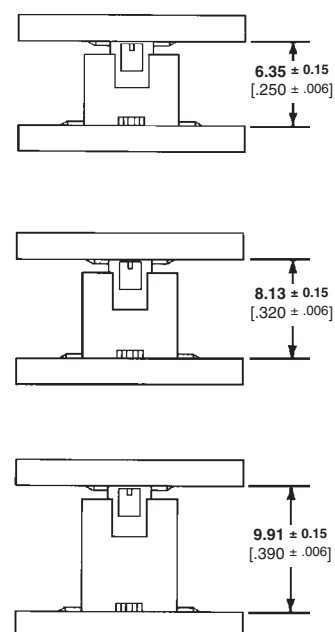
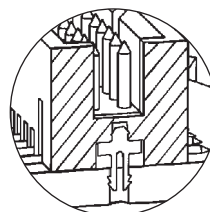
Non-protrusive metallic holddowns are designed for use in 1.57 [.062] or thicker

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.

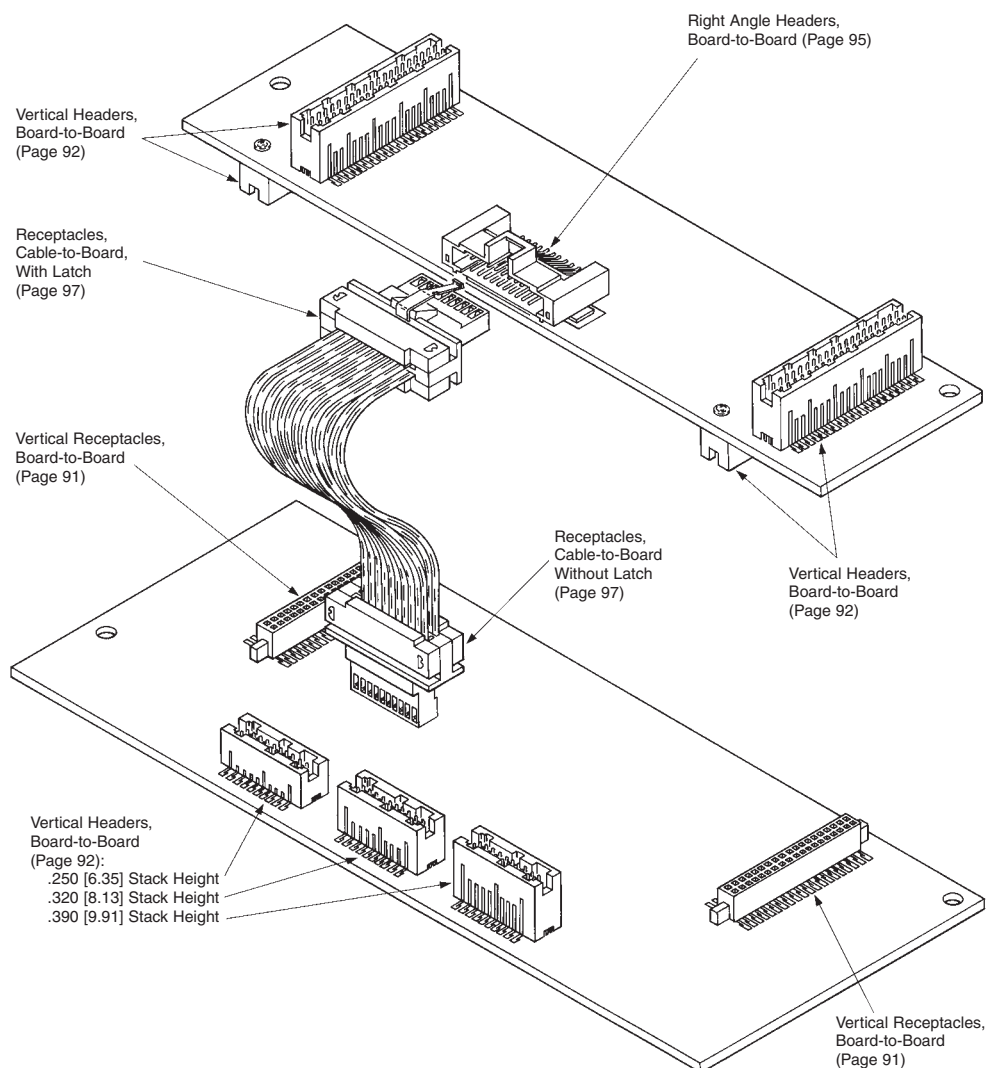
AMPMODU 50/50 Grid Vertical Headers and Receptacles are compatible with standard surface-mount processes; IR (infrared) and VPR (vapor phase reflow). The surface-mount connectors have been designed so that dimensioning, tolerances, referenced datums, hold-

down characteristics and packaging methods result in a system that is compatible with robotic assembly.

The headers and receptacles feature polarization to prevent misalignment.

**Three Board Stack Heights**

**Non-Protrusive Metallic Holddowns**


## AMPMODU 50/50 Grid Connector System



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

A copy of the  
certificate is available  
upon request.



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

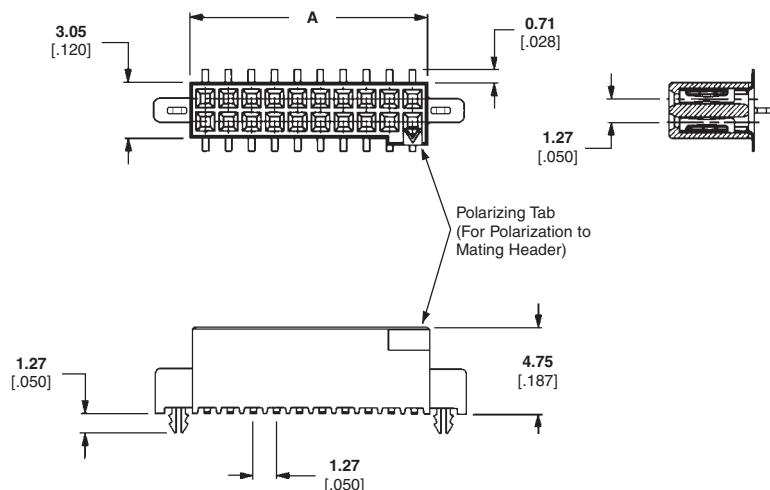


**Material and Finish**

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

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

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



**Related Product Data**

**Mating Headers** — pages 92, 95

**PC Board Layouts** — page 93

**Technical Documents** (page 113)

**Product Specification** 108-1332

**Application Specification**  
114-7010

**Packaging:** Tube or Tape and Reel

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

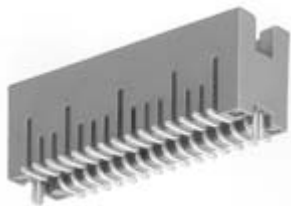
\* Parts packaged in tape and reel have vacuum pick and place cover.  
See PC Board Layout on page 93.

**Note:** Part Numbers are RoHS compliant.

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



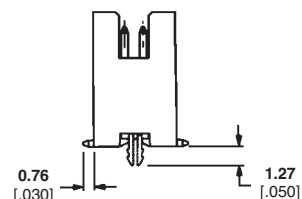
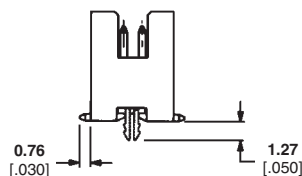
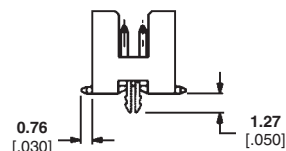
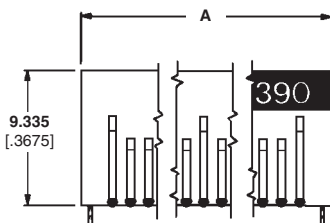
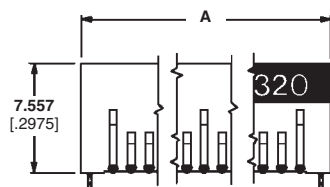
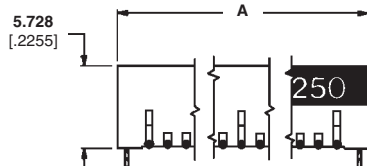
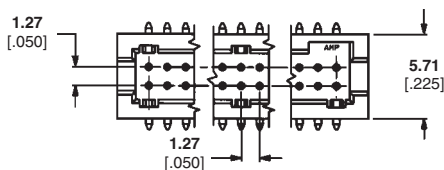
For 6.35 [.250] Mated Height



For 8.13 [.320] Mated Height



For 9.91 [.390] Mated 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 on solder tail, with entire contact underplated 0.00127 [.000050] nickel

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

**Related Product Data**

**Mating Receptacles** — pages 91, 97  
(without latch only)

**PC Board Layouts** — page 93

**Technical Documents** (page 113)

**Product Specification** 108-1332

**Application Specification**  
114-7010

**Packaging:** Tube or Tape and Reel

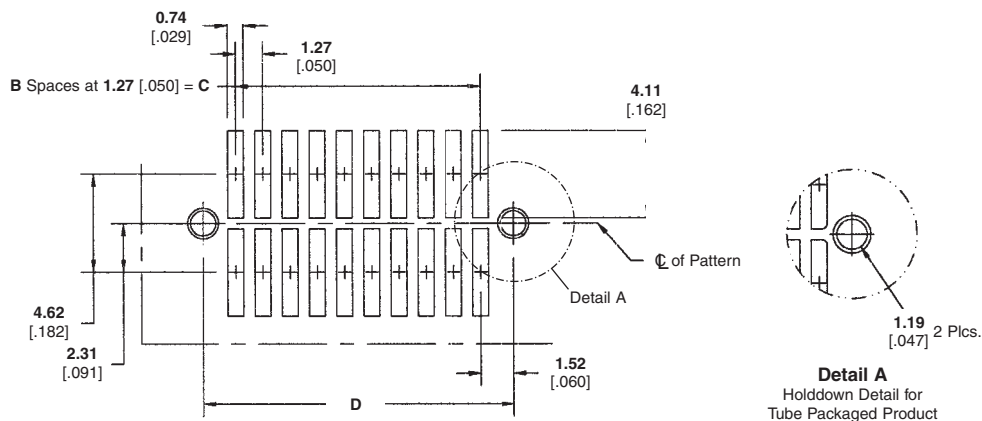
No. of Pos.	Dimension A	Header Part Numbers								
		.250 [6.35] Mated Height			.320 [8.13] Mated Height			.390 [9.91] Mated Height		
		Tubes	Tape & Reel*		Tubes	Tape & Reel*		Tubes	Tape & Reel*	
			Hold Down	No Hold Down				Hold Down	No Hold Down	
10	9.44 [.372]	5-104655-1	5-147381-1	5-147121-1	5-104656-1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

\*Parts packaged in tape and reel have vacuum pick and place cover.  
See PC Board Layout on page 93.

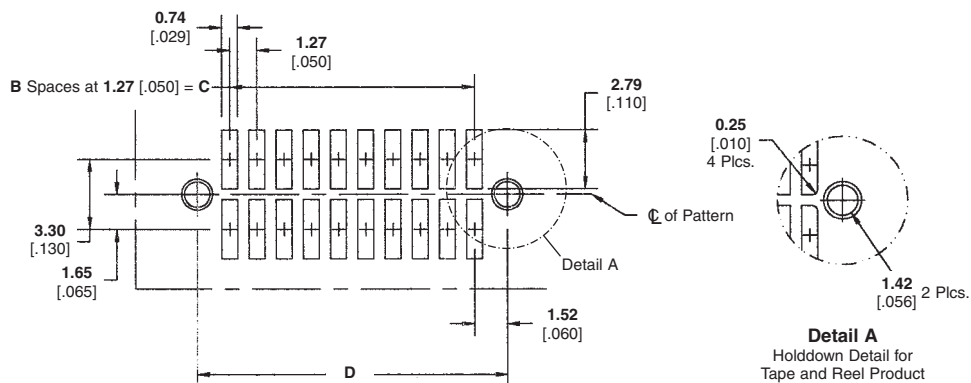
**Note:** Part Numbers are RoHS compliant.

## Recommended PC Board Layouts for Vertical Connectors

### 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]
90	44	55.88 [2.200]	58.93 [2.320]	44	55.88 [2.200]	58.97 [2.322]
100	49	62.23 [2.450]	65.28 [2.570]	49	62.23 [2.450]	65.32 [2.572]

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



# Product Facts

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



## Board-to-Board Right Angle Headers



AMPMODU 50/50 Grid Right Angle Headers will accommodate a variety of high density packaging applications; right angle board-to-board applications when mated with vertical receptacles (page 91) and right angle cable-to-board applications when mated with cable connectors (page 97). The small 1.27 x 1.27 [.050 x .050] centerline contact spacing allows efficient use of the PC board area.

Mechanical support of the headers to the PC board is provided by non-protrusive metallic holdowns designed for 1.57 [.062] or thicker PC boards. These holdowns are of the same

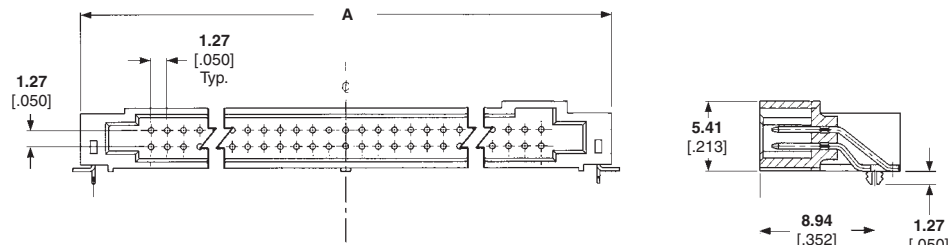
design as those used in the vertical headers (page 92) and receptacles (page 91). There are also metallic tabs that are soldered to the surfaces of the PC board pads for added support.

AMPMODU 50/50 Grid Right Angle Headers are available in dual-row, in either latching or non-latching versions, and in sizes ranging from 10 through 100 positions (in 10 position increments). The latching version provides positive retention when mated with the latching cable connector (page 97). All headers feature polarization to help prevent misalignment during mating.

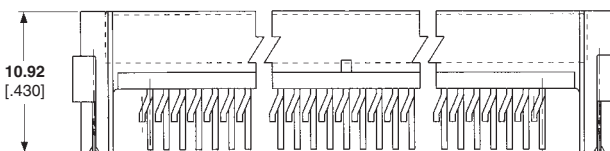
See Catalog 1307819 for additional AMPMODU product offerings.

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

**Non-Latching Header**



**Latching Header**



**Material and Finish**

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

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

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

**Related Product Data**

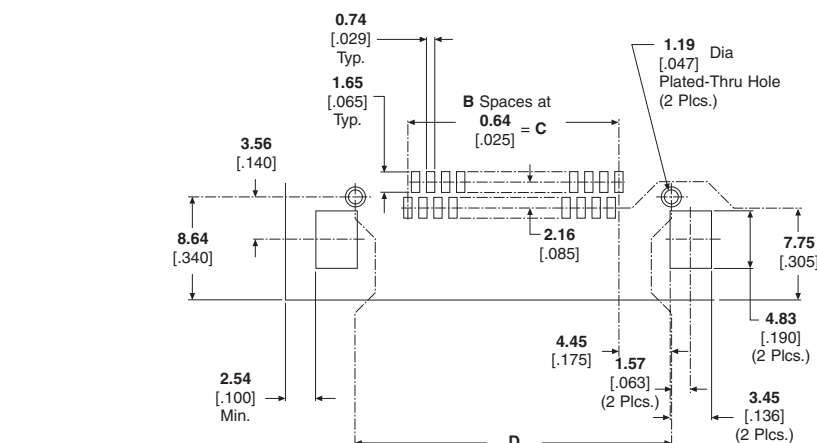
**Mating Receptacles** — pages 91, 97

**Technical Documents** (page 113)

**Product Specification** 108-1443

**Application Specification**  
114-7010

**Packaging:** Tube



**Recommended PC Board Layout**

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

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

**Note:** Part Numbers are RoHS compliant.

# Product Facts

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



## Cable-to-Board Connectors



These dual-row cable connectors, with a 1.27 x 1.27 [.050 x .050] centerline contact spacing, provide cable-to-board connection capabilities for the AMPMODU 50/50 Grid Connector System. Cable connectors without a latch will mate with the vertical headers (page 92), while cable connectors with or without a latch can be used to mate with the right angle headers (page 95).

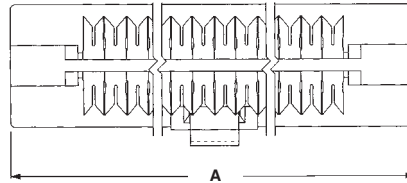
The cable connectors feature reliable single-beam IDC (insulation displacement crimp) contacts which are duplex plated with

0.00076 [.000030] gold. These contacts can be mass terminated to either solid or stranded round conductor ribbon cable with conductor sizes of 28 AWG [0.08-0.09 mm<sup>2</sup>] and 30 AWG [0.05 mm<sup>2</sup>] and a maximum insulation diameter of 0.91 [.036]. During termination, the terminating covers, which must be purchased separately, assist in guiding the wire into the IDC contacts, then provide strain relief when fully seated. Actual termination is accomplished with the Tyco Electronics manual tooling shown on page 99.

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

See Catalog 1307819 for additional AMPMODU product offerings.

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



**Material and Finish**

**Housing** — Thermoplastic, black, 94V-0 rated

**Latch** — Stainless steel

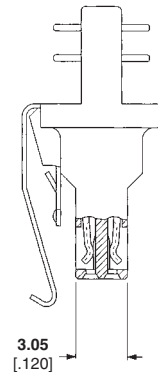
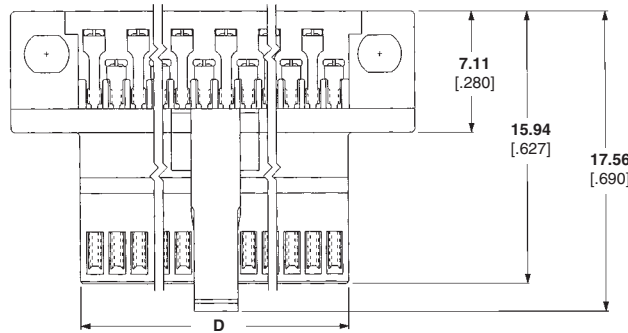
**Contacts** — Phosphor bronze; duplex plated 0.00076 [.000030] minimum gold in mating area, 0.00381 [.000150] minimum tin in termination area, with entire contact underplated 0.00127 [.000050] minimum nickel

**Related Product Data**

**Mating Headers** — pages 92, 95 (latching)

**Terminating Covers (Must be Purchased Separately, 2 Required per Connector)** — page 98

**Termination Tooling** — page 99

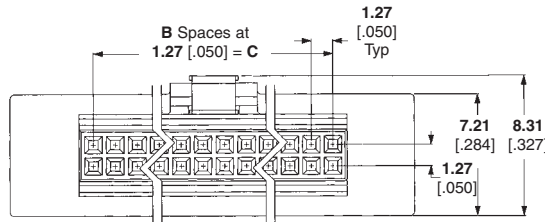


**Technical Documents** (page 113)

**Product Specification** 108-1443

**Application Specification**  
408-9817, 408-9909

**Packaging:** Tube



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

**Note:** Part Numbers are RoHS compliant.

## Terminating Covers for Cable Connectors



### Material

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

### Related Product Data

**Connectors used with Covers** —  
page 97

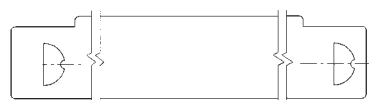
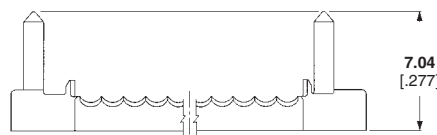
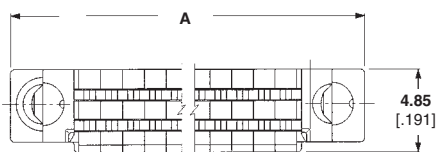
**Termination Tooling** — page 99

**Technical Documents** (page 113)

**Product Specification** 108-1443

**Application Specification**  
408-9817, 408-9909

**Packaging:** Plastic bag



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

**Notes:** Terminating covers must be purchased separately, two are required for each cable connector.  
Part Numbers are RoHS compliant.

The Tyco Electronics Manual Miniature Application Frame Assembly 91295-1, equipped with a Cover Closing Kit 543518-1, is used for the IDC termination of ribbon cable to the cable connectors shown on page 97.

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

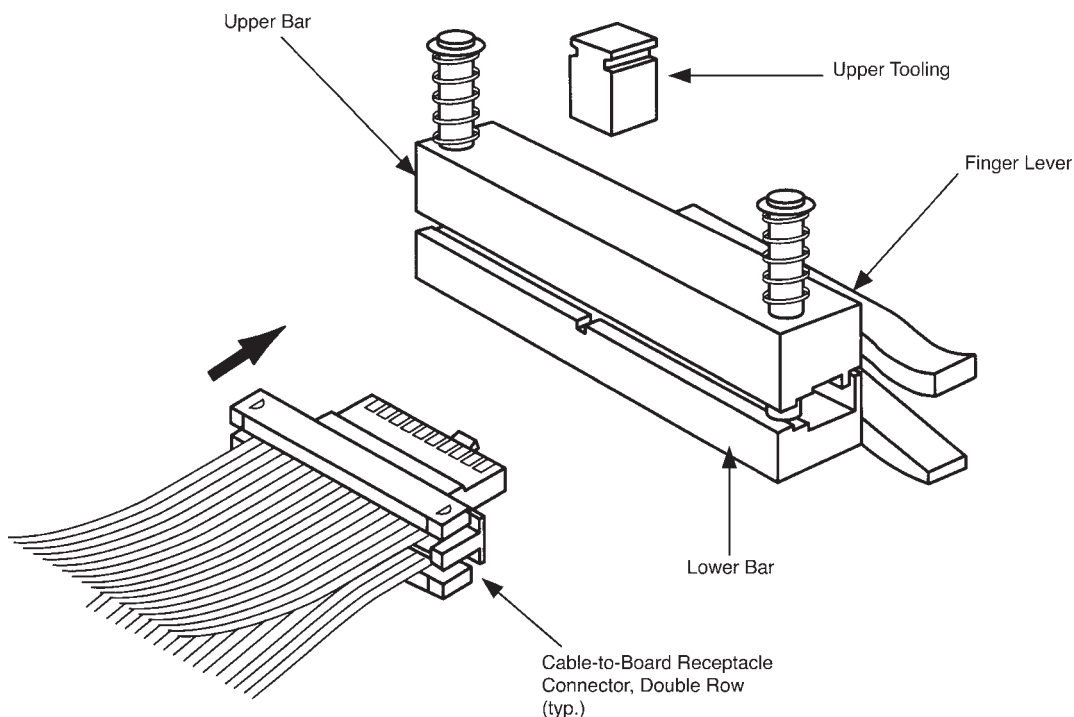
In the Manual Miniature Application Frame Assembly, the covers are fully seated to complete the mass termination and provide strain relief for the completed connection.

For tooling information, call Technical Support at the numbers listed below.

**Application Tooling for Cable Connectors**



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



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

**Engineering Notes**

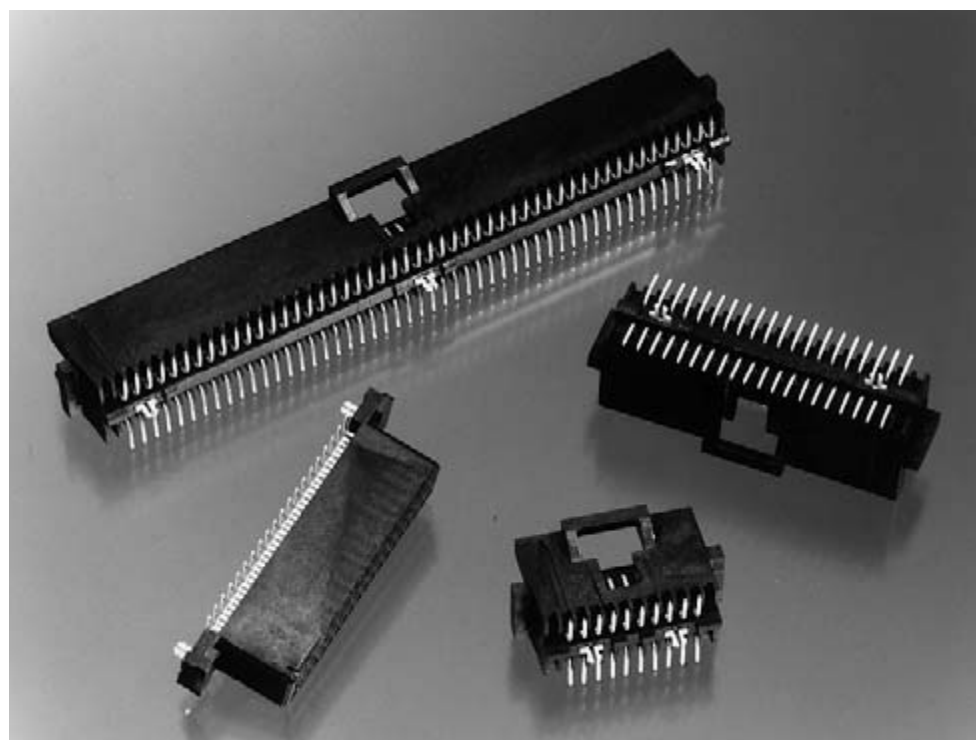


## AMPMODU System 50 Connectors

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

#### 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
- Dual-row, vertical, shrouded header and receptacle assemblies
- Available in select sizes from 10 through 100 positions
- High Density; contacts spaced on 1.27 x 2.54 [.050 x .100] 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.

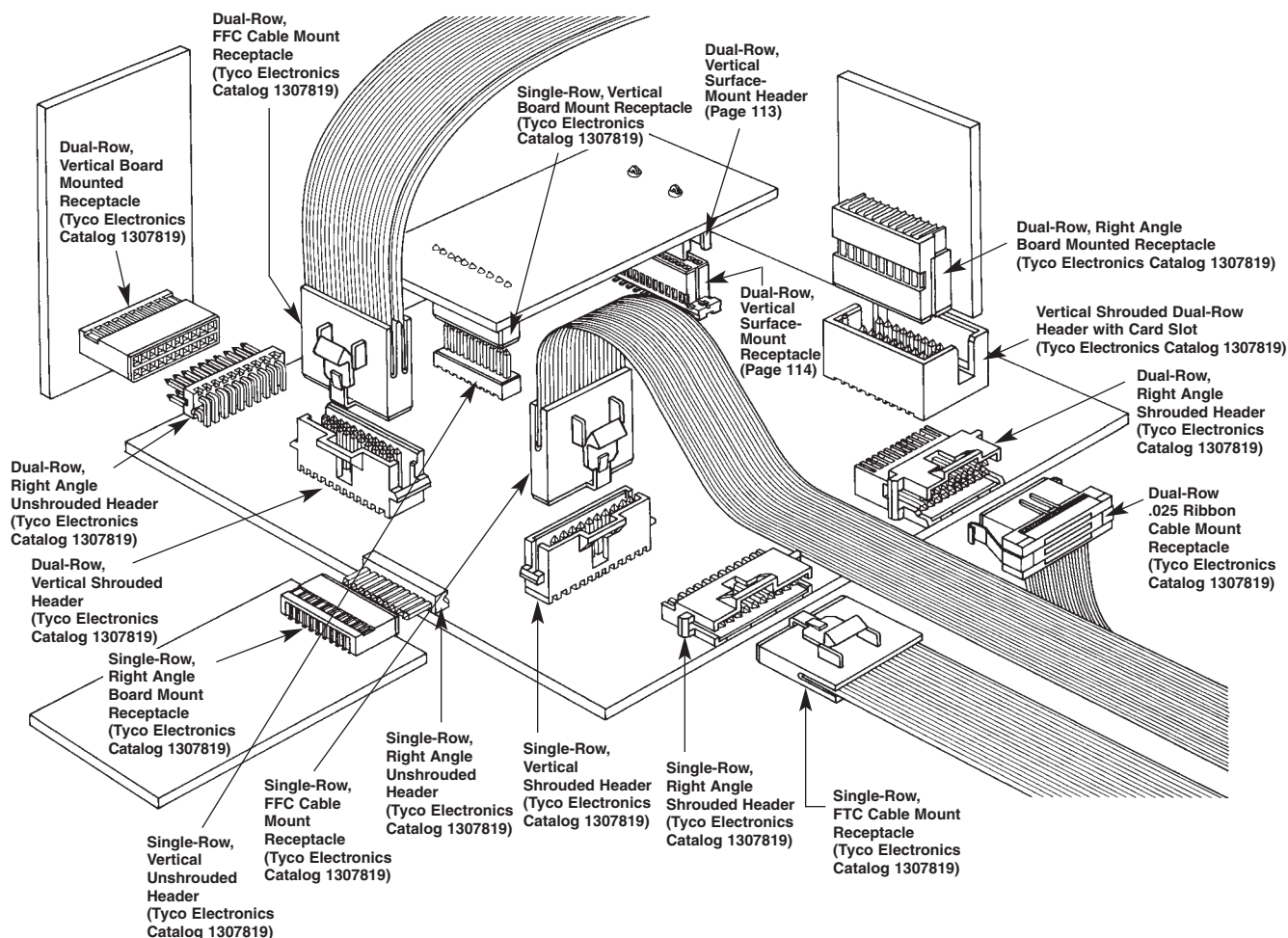
Additionally, the design of the mating interface has not been changed, ensuring the same high reliability as the thru-hole product.

The surface-mount system includes dual-row, vertical, 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.

See Catalog 1307819 for additional AMPMODU product offerings.

# AMPMODU System 50 Connectors

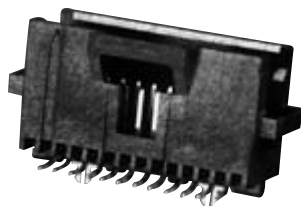
## Surface-Mount Connectors, 1.27 [.050] Centers, Board-to-Board (Continued)



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 1.27 x 2.54 [.050 x .100] 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 Tyco Electronics Catalog 1307819.

### 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



### Material and Finish

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

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

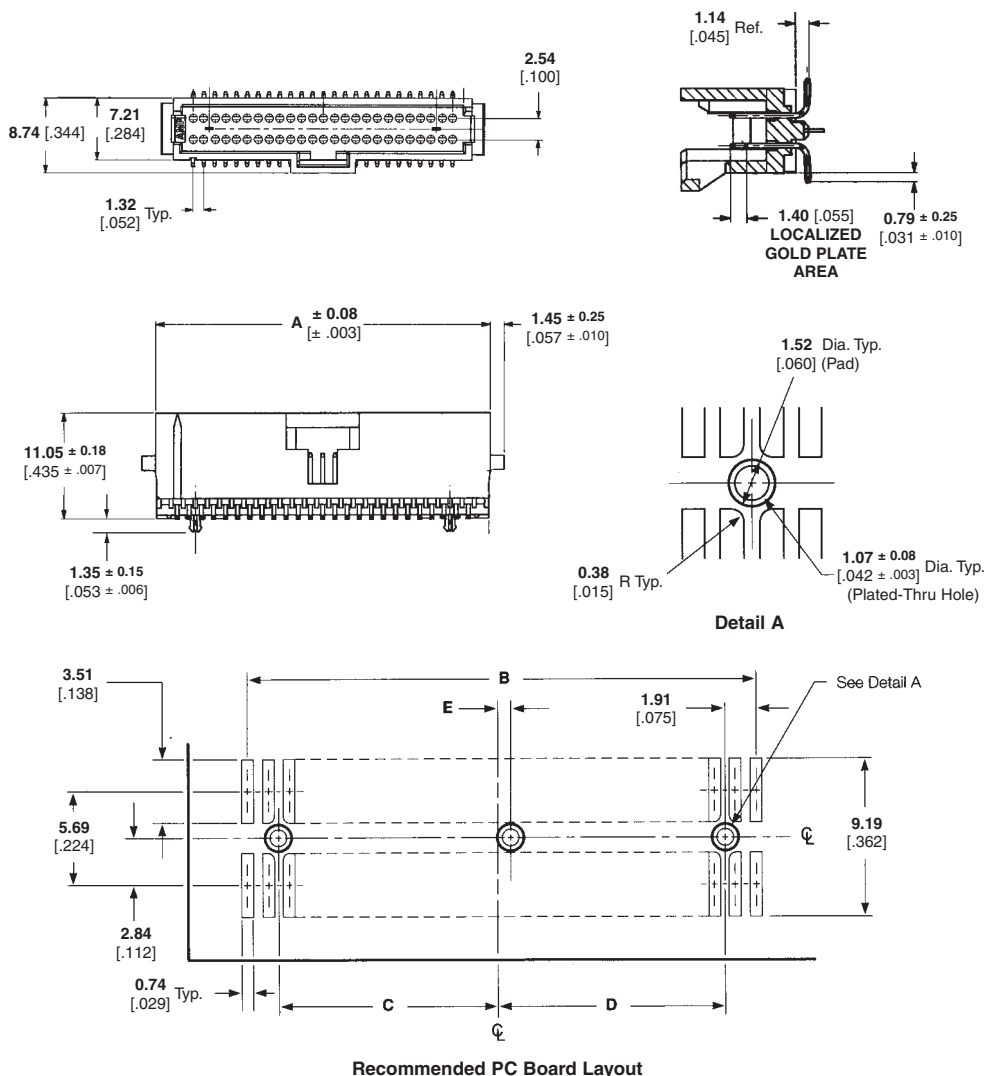
**Holddown** — Copper alloy, plated 0.00381 [.000150] tin over 0.00127 [.000050] nickel

### Technical Documents (page 113)

**Product Specification** 108-1093

**Application Specification**  
114-25035

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



Recommended PC Board Layout

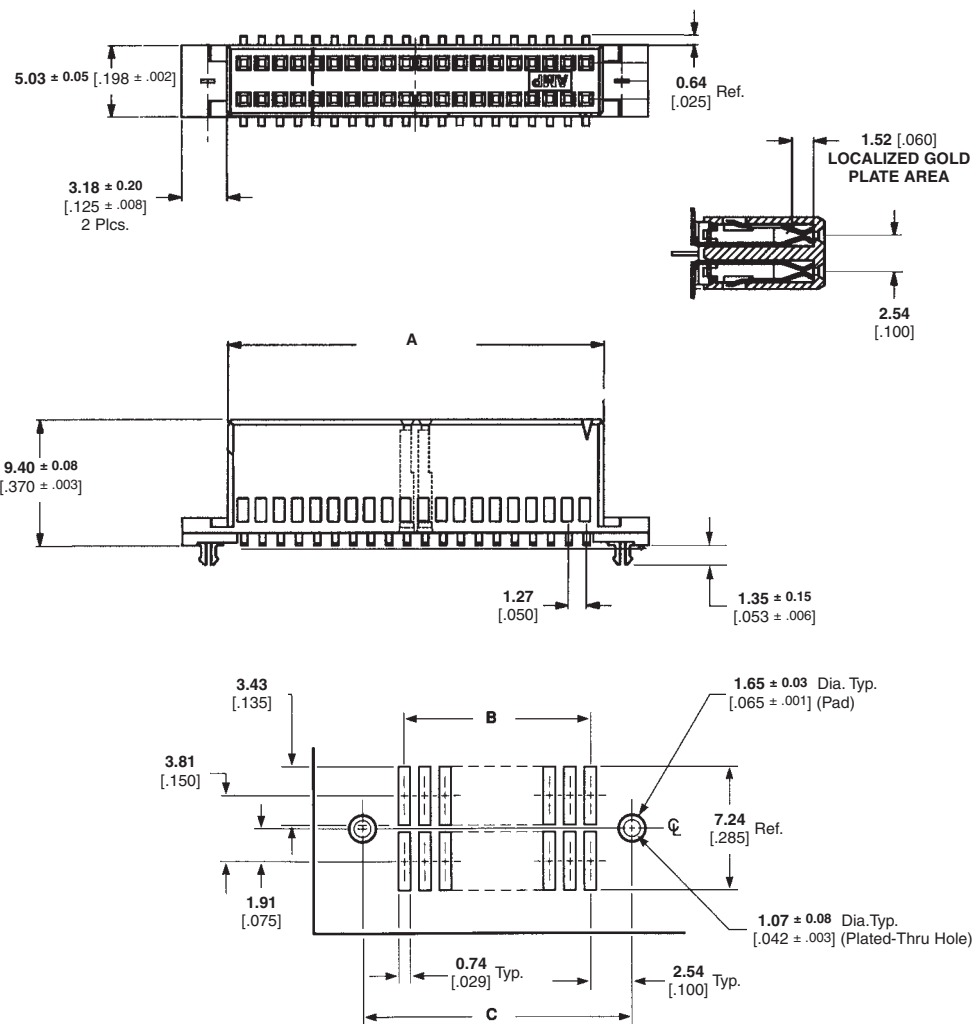
No. of Positions	Dimensions					Part Numbers	
	A	B	C	D	E	Pkg in Tube	Pkg in Tape & Reel*
10	9.65 .380	5.08 .200	—	0.64 .025	—	5-104549-1	5-147377-1
12	10.92 .430	6.35 .250	—	—	—	6-104549-1	—
20	16.00 .630	11.43 .450	3.81 .150	3.81 .150	—	5-104549-2	5-147377-2
24	18.54 .730	13.97 .550	5.08 .200	5.08 .200	—	5-104549-3	5-147377-9
30	22.35 .880	17.78 .700	6.99 .275	6.99 .275	—	5-104549-5	5-147377-3
40	28.70 1.130	24.13 .950	10.16 .400	10.16 .400	—	5-104549-6	5-147377-4
50	35.05 1.380	30.48 1.200	13.34 .525	13.34 .525	0.64 .025	5-104549-7	5-147377-5
60	41.40 1.630	36.83 1.450	16.51 .650	16.51 .650	.000	5-104549-8	5-147377-6
80	54.10 2.130	49.53 1.950	22.86 .900	22.86 .900	.000	5-104549-9	5-147377-7
100	66.80 2.630	62.23 2.450	29.21 1.150	29.21 1.150	.000	6-104549-0	5-147377-8

\*Parts packaged in tape and reel without holdowns and with vacuum pick and place cover.

**Note:** Part Numbers are RoHS compliant.



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



Recommended PC Board Layout

No. of Positions	Dimensions			Part Numbers	
	A	B	C	Pkg in Tube	Pkg in Tape & Reel*
10	7.47 .294	5.08 .200	10.16 .400	5-104550-1	5-147378-1
20	13.82 .544	11.43 .450	16.51 .650	5-104550-2	5-147378-2
24	16.36 .644	13.97 .550	19.05 .750	5-104550-3	5-147378-9
30	20.17 .794	17.78 .700	22.86 .900	5-104550-4	5-147378-3
40	26.52 1.044	24.13 .950	29.21 1.150	5-104550-5	5-147378-4
50	32.87 1.294	30.48 1.200	35.56 1.400	5-104550-6	5-147378-5
60	39.22 1.544	36.83 1.450	41.91 1.650	5-104550-7	5-147378-6
80	51.92 2.044	49.53 1.950	54.61 2.150	5-104550-8	5-147378-7
100	64.62 2.544	62.23 2.450	67.31 2.650	5-104550-9	5-147378-8

\*Parts packaged in tape and reel without holdowns and with vacuum pick and place cover

Note: Part Numbers are RoHS compliant.



### Product Facts

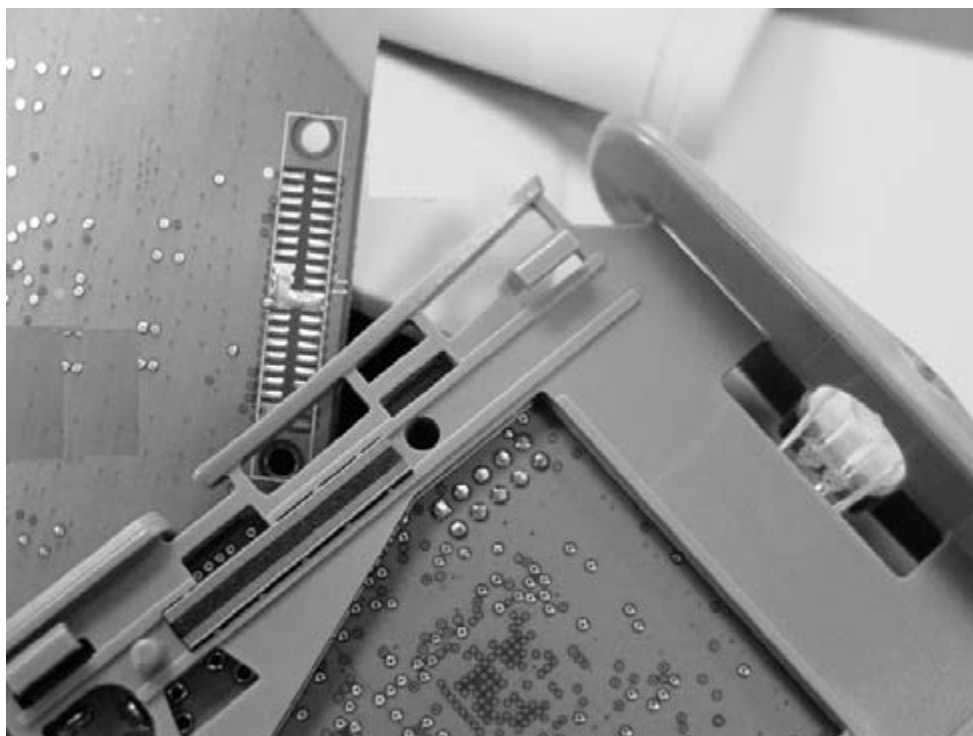
- Single piece compression connector
- Contact pitch as low as 0.80mm
- Number of rows of Contacts: 1 through 5 (2 rows shown to the right)
- Number of contacts: 1 – 200
- Board Separation: 0.50 – 8.00mm
- Shielding Capability
- Performs in high speed applications (3 GHz)
- Low Resistance
- Current Capability: 1 Amp typical with higher capability possible with modification
- Easily modified standard designs
- Facilitates automatic assembly, rework, and field upgrades
- Compatible with tin and flash gold contact metallurgy
- Rugged and reliable
- RoHS compliant

### Modifications and Options

The flexible elastomeric manufacturing process allows a fast, easy modification of the products to suit the individual needs of the application. Typically with an elastomer-only solution there is no tooling. There are requirements for minimum production volume.

## STAX LD Elastomeric Connectors

### Surface-Surface Compression Connection For Board Stacking Applications



Dual-Row STAX Connector connects two rows of contact pads. Retention slot is provided in PCB separator.

Elastomeric Connectors are viable in most applications where traditional board-to-board connectors are used. The applications may include high speed, power, digital, grounding/shielded interconnect.

The elastomer is a single piece compression technology. The silicone within the connector provides the normal force (spring). The conductive layers (blend of silicone and silver particles) make redundant electrical contact to the pads on the board.

The STAX LD technology is based upon 30 years of experience in manufacturing and in the hundreds of millions of connectors used in trouble-free applications. This is a low durometer and low contact resistance product.

Tyco Electronics maintains complete control over the quality and performance of the product. The STAX product line is manufactured from basic raw materials (silver or gold, and silicone) using a proprietary manufacturing process.

The result is a connector technology that allows the freedom of design without the traditional limitations of standard product availability. There is no need to compromise the end product at the design stage.

Mechanically, the elastomeric capabilities are flexible. The technology can meet PCB area requirements in applications of board separations under 8.00mm. Electrically, resistance and current ratings are competitive with most alternative technologies.

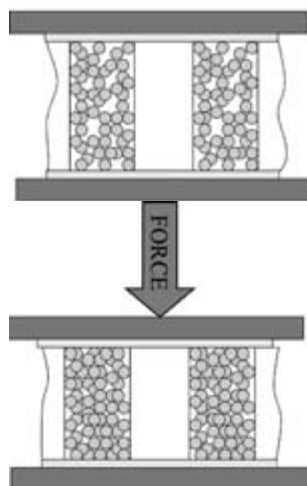




## Introduction — STAX LD Elastomeric Connectors

### How STAX elastomeric connectors work

STAX elastomers are zero insertion force connectors that do not require soldering. They provide a compliant surface-to-surface compression connection when deflected between opposing mirror-image pad patterns. STAX elastomers are composed of alternating layers of conductive and non-conductive silicone rubber. Silicone rubber is the base material because it has excellent aging properties, chemical stability, electrical reliability, and superior performance in shock and vibration. It also provides a gasket-like seal to protect the contact surfaces.



The conductive layers consist of tiny metallic particles dispersed in silicone rubber. Within each of the conductive layers, the metallic particles create thousands of conductive paths. Therefore, each conductive layer provides multiple points of contact at the sub-

strate interface. While the conductive layers ensure contact between mating pads, the non-conductive layers isolate the conductive layers from each other. The alternating STAX construction – 200 conductive layers per inch (8 per mm) – allows multiple conductive layers to make contact to a single contact pad while the non-conductive layers electrically isolate adjacent contact pads.

The advantage of this material construction is that you achieve 3-4 conductive layers typically making contact to a single contact pad on the board. Also, a single elastomeric strip (element) is used to connect an entire row of contacts. The multiple layers coupled with the thousands of conductive paths in each layer ensure reliable interconnect.

### Why use a Tyco Electronics Elastomeric connector:

#### 1. Simple Implementation

Assembly is as easy as making a sandwich. There is no soldering, no special tooling or machinery.

#### 2. Easily modified

How often is a standard off-the-shelf connector ideal for your application? Smaller height, higher I/O, greater current capacity, lower resistance, less PCB area are all modifications that can be made.

#### 3. Fast

The flexible elastomeric manufacturing process allows quick turn on prototypes (1 week) to test solutions and rapid ramp on production. Prototypes are made with the same process as production.

#### 4. No tooling

An elastomer-only approach allows the customer to implement the housing and alignment features within existing plastic or metal structure. Modifications of elastomer length, height, and width do not require tooling.

#### 5. Reliability

Tyco Electronics' elastomeric products have been tested to the following:

- MIL STD-1344
- IEC-68-2
- EIA-364
- MIL-STD 202
- JIS C 0020
- JEIDA 38
- INTEL SPEC 5.1, 5.2
- NUMEROUS CUSTOMER ACCELERATED LIFE TESTING (ALT)

Test data available upon request.

#### 6. Product Support

Tyco Electronics product engineers work directly with customer engineering teams on modifications and custom solutions for volume applications. All aspects of the design and implementation of the product are reviewed to ensure a successful product launch.

#### Contact Information:

Website:  
www.elastomerictech.com

Phone: 1-800-989-STAX  
Ext. 4463

Fax: 215-784-4522

Email: ETIapplications@  
tycoelectronics.com



## Introduction — STAX LD Elastomeric Connectors (Continued)

### Custom Capability:

Application requirements vary dramatically across the many industries that elastomers are used. The technology is flexible in adapting to many of these requirements but, as with any product, there are limits.

#### 1. Determine if an elastomeric connector is appropriate for the application.

- Board-to-Board separation > 8mm?* An elastomer cost is tied closely to material usage (precious metals). In application greater than 8mm elastomers lose their price competitiveness.
- X-Y alignment ( $> \pm 0.25\text{mm}$ )?* Unlike a mechanical male-female connector an elastomer cannot perform the alignment of the system. The reference drawings show how pins can provide satisfactory alignment. Other methods can achieve the same result.
- Sliding contact?* Silicone by the nature of the product has a high coefficient of friction. Sliding a contacting surface across the elastomer will not be reliable.
- Contact Pitch:  $< 0.80\text{mm}$ ?* Since an elastomeric connector depends on the alignment of the mating surfaces by an external means, contact pitch  $< 0.80\text{mm}$  is not easily achievable. However,

board real-estate is minimized by achieving more closely-spaced rows of contacts pads than fine-pitch connectors.

#### 2. Determine if "holder" functions can be integrated within existing structure?

The holder is synonymous with the plastic that surrounds traditional mechanical connectors. The most efficient and cost effective way to implement a STAX connector is by incorporating a retaining slot into an existing housing or board separator as shown on the reference designs.

In an approved application, Elastomeric Technologies application engineers are available to assist in:

- Defining customer furnished housing requirements.
- Providing design input for:
  - Alignment
  - Deflection
  - Pad Layout
  - Final Elastomer Dimensions

#### 3. Can Tyco Electronics supply a complete connector solution?

Yes. These solutions can take the form of simple holders with STAX connectors held in place by:

- Localized Interference
- In-molding
- Grafting

The holder or frame can be plastic, silicone rubber, or metal and typically has low tooling investment.

Below are examples of complete connection solutions in challenging applications.



**Circular Connector Grafted 160-Position (LCP frame)**



**Ultra-low Profile Inmolded 8-Position 0.5mm Height Silicone Rubber Base**



**Module-to-Board Grafted 220-Position Peripheral Contact Ultem Frame**

ULTEM is a trademark of General Electric Company.



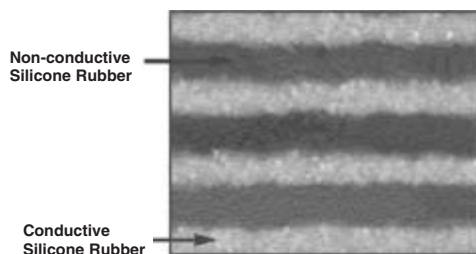
**Part Number 2-1442001-0**  
**Generic STAX LD Connector**  
**Sample**



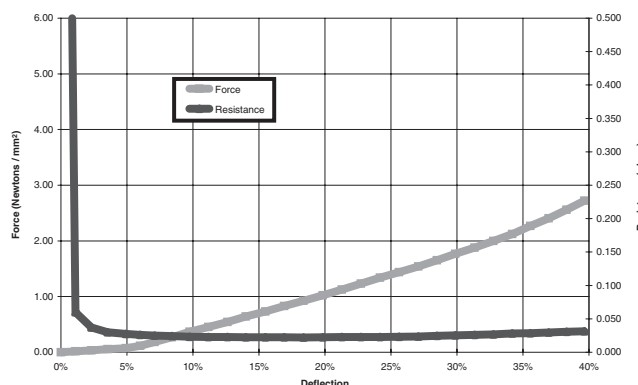
**STAX LD Connector Properties**

**Physical Properties**

**Height** — 0.50 – 8.00 [.020 – .315]  
**Minimum Pad Pitch** — 0.80 [.031]  
**Conductor Width** — 0.064 [.0025]  
**Conductor Pitch** — 0.127 [.005]  
**Typical Clamping Force** —  
See Chart



STAX LD - FORCE AND RESISTANCE vs. DEFLECTION



Values are based on a STAX LD connector 2.90 [.114] high, 26.42 [1.040] long, with a conductor width of 1.19 [.047]. Contact to gold pads 0.50 [.020] wide on 1.00 [.039] centers.

**Note:** Lower deflection forces can be obtained with thinner width of STAX strip.

**Typical Electrical Properties**

**Contact Resistance<sup>1</sup>** — 35mΩ  
**Dielectric Constant** — 3.1  
**Insulation Resistance<sup>1</sup>** —  
10<sup>12</sup> Ω min.  
**Dielectric Withstanding Voltage<sup>1</sup>** —  
1000 Volts without breakdown or arcing  
**Current Carrying Capacity<sup>1</sup>** — 1 A  
<sup>1</sup> Test elastomer — 1.00 [.039] wide x  
2.9 [.114] tall.  
Test boards — Au plated contact pads  
0.50 [.020] wide on 1.00 [.039] pitch.

**Environmental Parameters**

**Operating Temperature** —  
-40°C to +125°C  
**Moisture** — 0 to 100% RH

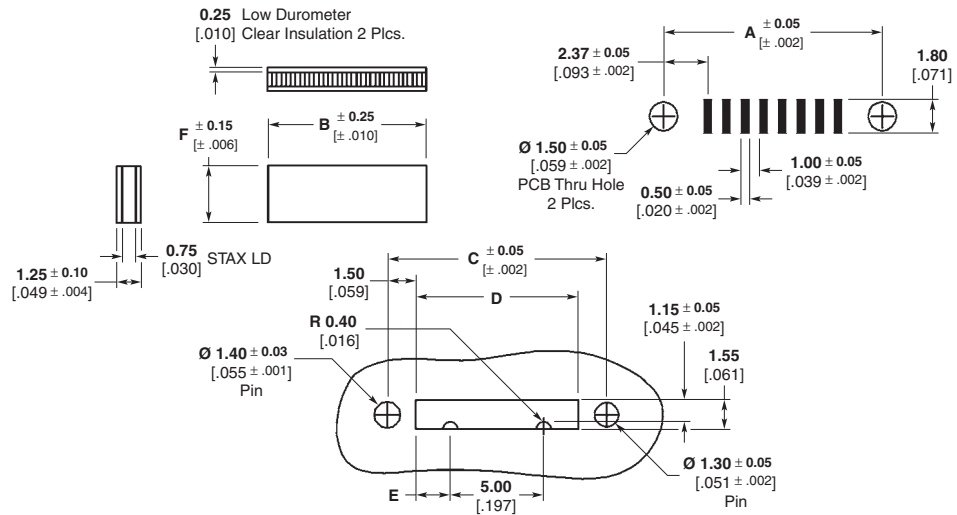
**Technical Documents**

**Qualification Test Report**  
3-1773443-3

**Note:** Part Numbers are RoHS compliant.



## Single-Row STAX LD Connector

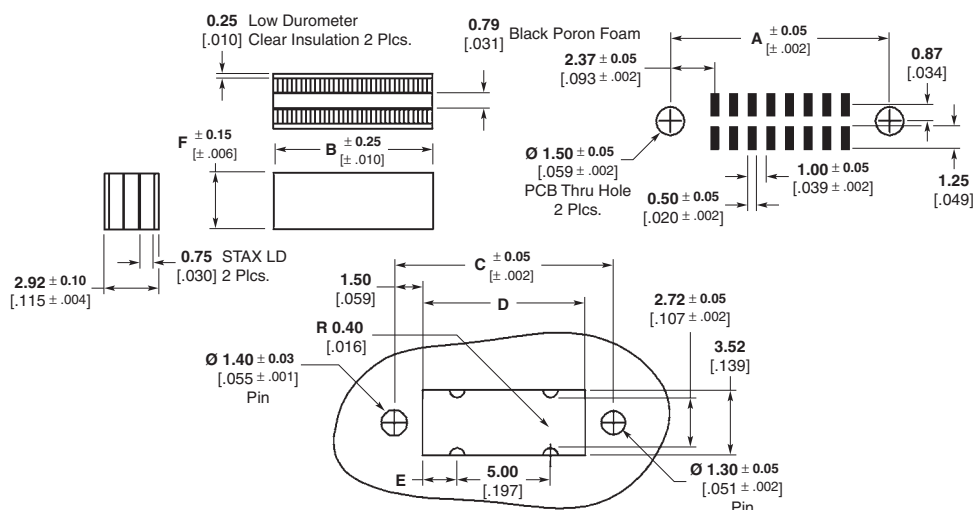


No. of Contacts*	Dimensions					Deflected Height	F	No. of Ribs	Part Number
	A	B	C	D	E				
8	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	2.00 .079	2.50 .098	2	1442005-1
9	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	2.00 .079	2.50 .098	2	1442005-2
10	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	2.00 .079	2.50 .098	2	1442005-3
11	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	2.00 .079	2.50 .098	2	1442005-4
12	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	2.00 .079	2.50 .098	2	1442005-5
13	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	2.00 .079	2.50 .098	3	1442005-6
14	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	2.00 .079	2.50 .098	3	1442005-7
15	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	2.00 .079	2.50 .098	3	1442005-8
8	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	2.50 .098	3.00 .118	2	1442005-9
9	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	2.50 .098	3.00 .118	2	1-1442005-0
10	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	2.50 .098	3.00 .118	2	1-1442005-1
11	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	2.50 .098	3.00 .118	2	1-1442005-2
12	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	2.50 .098	3.00 .118	2	1-1442005-3
13	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	2.50 .098	3.00 .118	3	1-1442005-4
14	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	2.50 .098	3.00 .118	3	1-1442005-5
15	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	2.50 .098	3.00 .118	3	1-1442005-6
8	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	3.00 .118	3.50 .138	2	1-1442005-7
9	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	3.00 .118	3.50 .138	2	1-1442005-8
10	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	3.00 .118	3.50 .138	2	1-1442005-9
11	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	3.00 .118	3.50 .138	2	2-1442005-0
12	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	3.00 .118	3.50 .138	2	2-1442005-1
13	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	3.00 .118	3.50 .138	3	2-1442005-2
14	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	3.00 .118	3.50 .138	3	2-1442005-3
15	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	3.00 .118	3.50 .138	3	2-1442005-4

\* Other pad layouts are possible with these connectors. Consult Tyco Electronics' Application Engineering Department for the ETI product line at ETIapplicationsEng@tycoelectronics.com  
**Note:** Part Numbers are RoHS compliant.



## Dual-Row STAX LD Connector

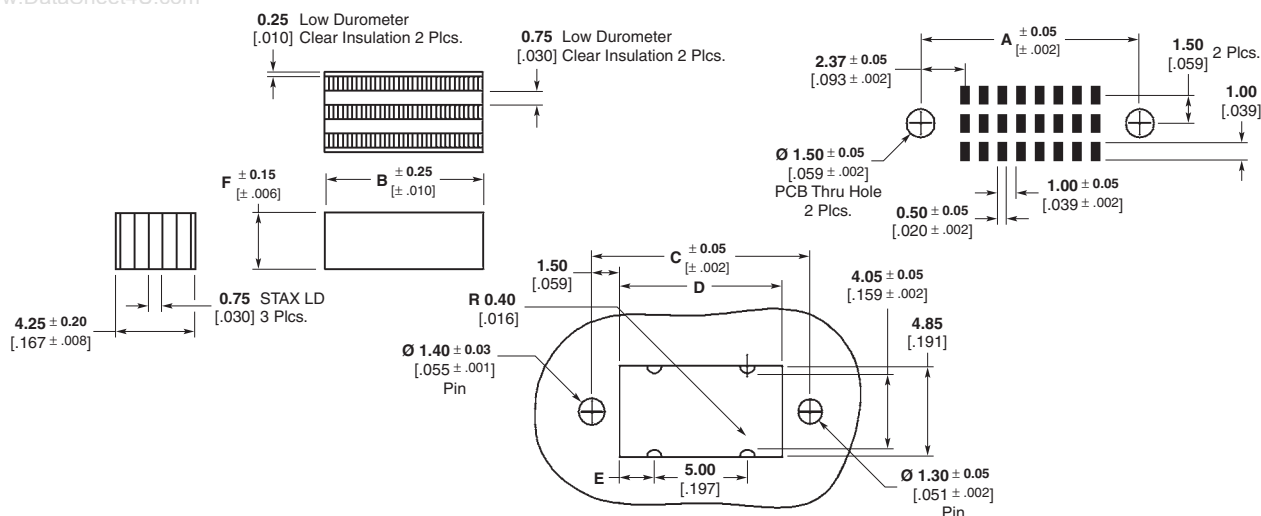


No. of Contacts*	Dimensions					Deflected Height	F	No. of Ribs	Part Number
	A	B	C	D	E				
16	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	2.00 .079	2.50 .098	4	1442006-1
18	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	2.00 .079	2.50 .098	4	1442006-2
20	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	2.00 .079	2.50 .098	4	1442006-3
22	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	2.00 .079	2.50 .098	4	1442006-4
24	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	2.00 .079	2.50 .098	4	1442006-5
26	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	2.00 .079	2.50 .098	6	1442006-6
28	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	2.00 .079	2.50 .098	6	1442006-7
30	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	2.00 .079	2.50 .098	6	1442006-8
16	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	2.50 .098	3.00 .118	4	1442006-9
18	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	2.50 .098	3.00 .118	4	1-1442006-0
20	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	2.50 .098	3.00 .118	4	1-1442006-1
22	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	2.50 .098	3.00 .118	4	1-1442006-2
24	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	2.50 .098	3.00 .118	4	1-1442006-3
26	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	2.50 .098	3.00 .118	6	1-1442006-4
28	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	2.50 .098	3.00 .118	6	1-1442006-5
30	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	2.50 .098	3.00 .118	6	1-1442006-6
16	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	3.00 .118	3.50 .138	4	1-1442006-7
18	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	3.00 .118	3.50 .138	4	1-1442006-8
20	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	3.00 .118	3.50 .138	4	1-1442006-9
22	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	3.00 .118	3.50 .138	4	2-1442006-0
24	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	3.00 .118	3.50 .138	4	2-1442006-1
26	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	3.00 .118	3.50 .138	6	2-1442006-2
28	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	3.00 .118	3.50 .138	6	2-1442006-3
30	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	3.00 .118	3.50 .138	6	2-1442006-4

\* Other pad layouts are possible with these connectors. Consult Tyco Electronics' Application Engineering Department for the ETI product line at [ETIapplicationsEng@tycoelectronics.com](mailto:ETIapplicationsEng@tycoelectronics.com)

**Note:** Part Numbers are RoHS compliant.

### Three-Row STAX LD Connector



No. of Contacts*	Dimensions					Deflected Height	F	No. of Ribs	Part Number
	A	B	C	D	E				
24	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	2.00 .079	2.50 .098	4	1442007-1
27	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	2.00 .079	2.50 .098	4	1442007-2
30	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	2.00 .079	2.50 .098	4	1442007-3
33	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	2.00 .079	2.50 .098	4	1442007-4
36	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	2.00 .079	2.50 .098	4	1442007-5
39	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	2.00 .079	2.50 .098	6	1442007-6
42	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	2.00 .079	2.50 .098	6	1442007-7
45	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	2.00 .079	2.50 .098	6	1442007-8
48	19.75 .778	16.50 .650	19.75 .778	16.75 .659	3.38 .133	2.00 .079	2.50 .098	6	1442007-9
24	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	2.50 .098	3.00 .118	4	1-1442007-0
27	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	2.50 .098	3.00 .118	4	1-1442007-1
30	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	2.50 .098	3.00 .118	4	1-1442007-2
33	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	2.50 .098	3.00 .118	4	1-1442007-3
36	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	2.50 .098	3.00 .118	4	1-1442007-4
39	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	2.50 .098	3.00 .118	6	1-1442007-5
42	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	2.50 .098	3.00 .118	6	1-1442007-6
45	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	2.50 .098	3.00 .118	6	1-1442007-7
48	19.75 .778	16.50 .650	19.75 .778	16.75 .659	3.38 .133	2.00 .079	2.50 .098	6	1-1442007-8
24	11.75 .463	8.50 .335	11.75 .463	8.75 .344	1.88 .074	3.00 .118	3.50 .138	4	1-1442007-9
27	12.75 .502	9.50 .374	12.75 .502	9.75 .384	2.38 .094	3.00 .118	3.50 .138	4	2-1442007-0
30	13.75 .541	10.50 .413	13.75 .541	10.75 .423	2.88 .113	3.00 .118	3.50 .138	4	2-1442007-1
33	14.75 .581	11.50 .453	14.75 .581	11.75 .463	3.38 .133	3.00 .118	3.50 .138	4	2-1442007-2
36	15.75 .620	12.50 .492	15.75 .620	12.75 .502	3.88 .153	3.00 .118	3.50 .138	4	2-1442007-3
39	16.75 .659	13.50 .531	16.75 .659	13.75 .541	1.88 .074	3.00 .118	3.50 .138	6	2-1442007-4
42	17.75 .699	14.50 .571	17.75 .699	14.75 .581	2.38 .094	3.00 .118	3.50 .138	6	2-1442007-5
45	18.75 .738	15.50 .610	18.75 .738	15.75 .620	2.88 .113	3.00 .118	3.50 .138	6	2-1442007-6
48	19.75 .778	16.50 .650	19.75 .778	16.75 .659	3.38 .133	3.00 .118	3.50 .138	6	2-1442007-7

\* Other pad layouts are possible with these connectors. Consult Tyco Electronics' Application Engineering Department for the ETI product line at ETIapplications  
Eng@tycoelectronics.com

**Note:** Part Numbers are RoHS compliant.



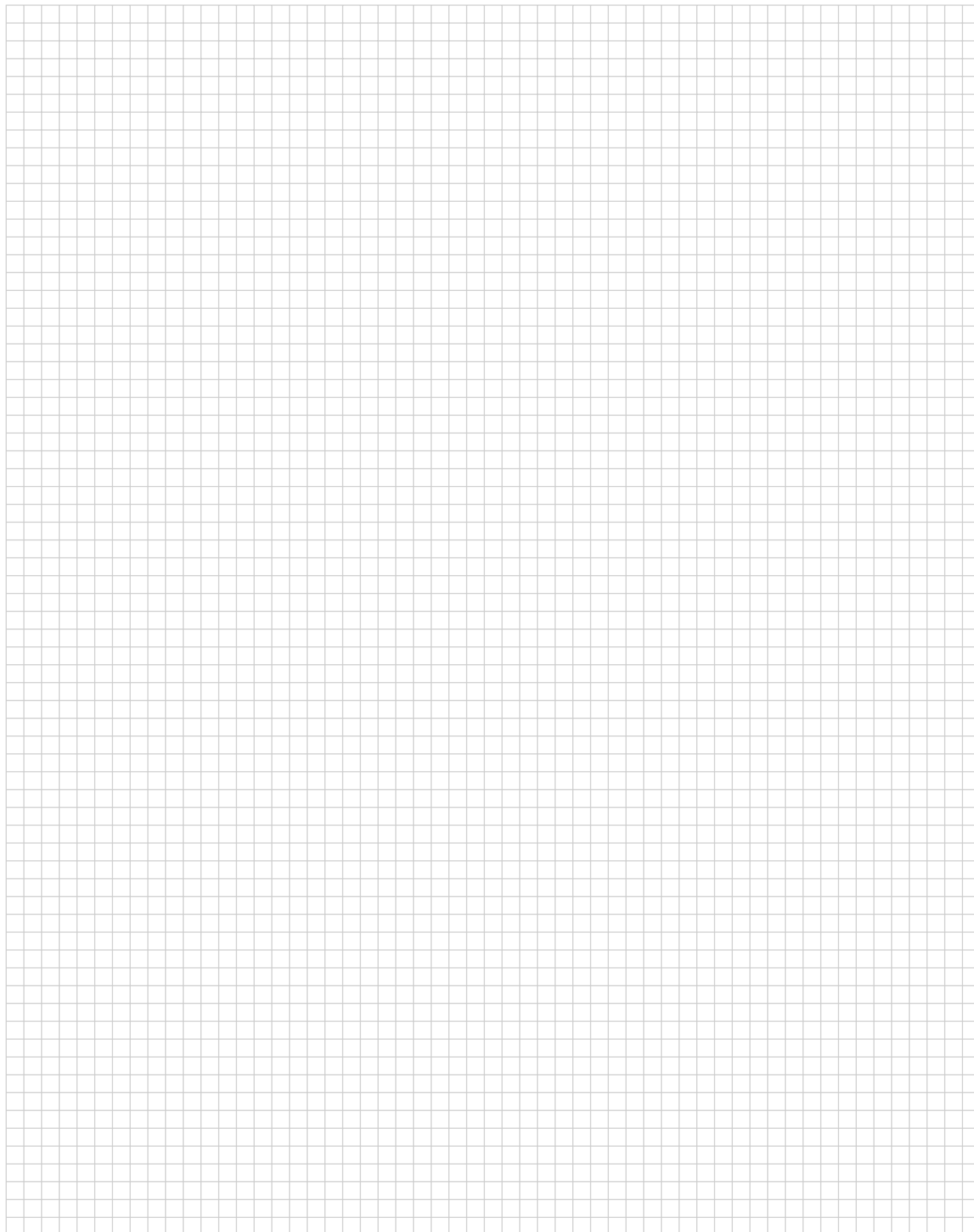
Electronics

www.DataSheet4U.com

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



## Engineering Notes



## 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.

### 0.4mm Fine Stack Connectors — Pages 7-11:

108-5901 0.4mm Fine Stack Connectors

### 0.5mm Fine Stack and Fine Mate Connectors — Pages 13-18:

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

### 0.5mm Free Height (FH) Connectors — Pages 19-25:

108-5560 0.5mm Free Height (FH) Connectors

### 0.6mm Free Height (FH) and GIGA Connectors — Pages 27-40:

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

### 0.64mm MICTOR Connectors — Pages 41-62:

108-1422 0.64mm MICTOR Connectors

### 0.8mm Fine Stack and Fine Mate Connectors — Pages 63-69:

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 71-81:

108-5390 0.8mm Free Height (FH) Connectors

### 1.0mm Free Height (FH) Connectors (IEEE 1386) — Pages 83-88:

108-2246 1.0mm Free Height (FH) Plug and Receptacle Connectors Using Surface Mount Technology

### AMPMODU 50/50 Grid Connectors — Pages 89-99:

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

### AMPMODU System 50 Connectors — Pages 101-104:

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 (FH) Connectors (IEEE 1386) — Pages 83-88:

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

### AMPMODU 50/50 Grid Connectors — Pages 89-99:

114-7010 AMPMODU 50/50 Grid Connector System

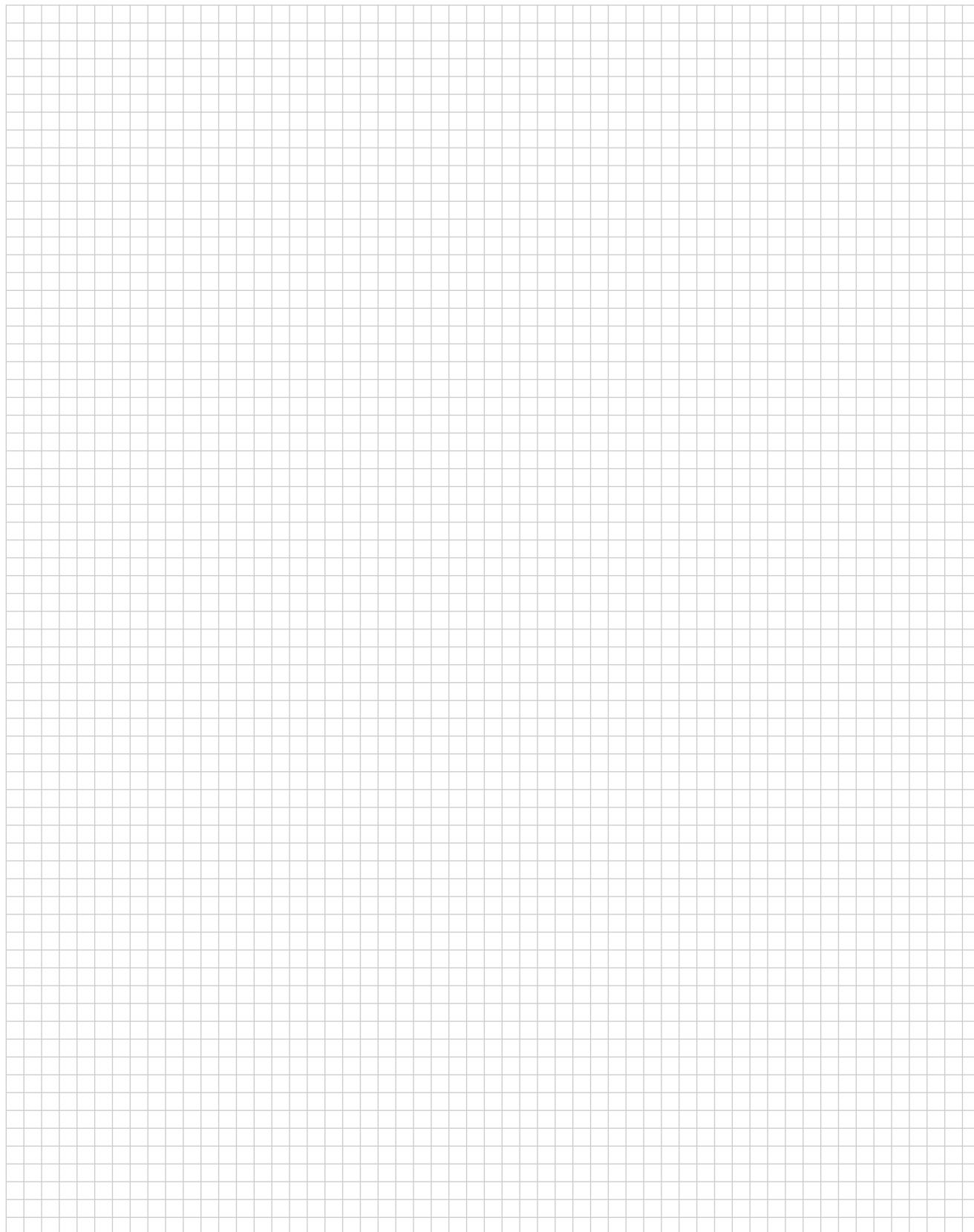
### AMPMODU System 50 Connectors — Pages 101-104:

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 41-62:

114-11004 MICTOR Connector System

**Engineering Notes**





## Other Fine Pitch Connectors



### 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

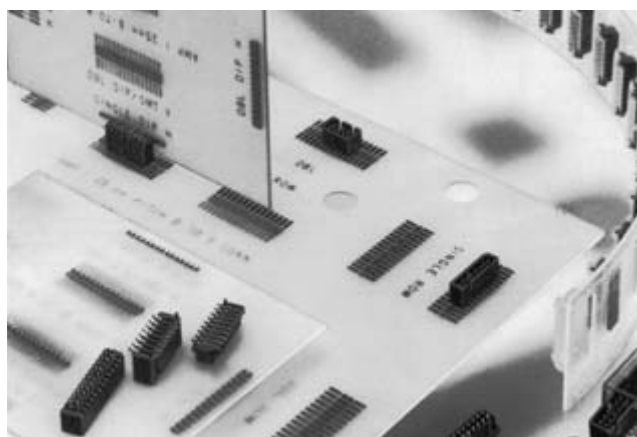
For more details, see Tyco Electronics Catalog 65194.



### 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

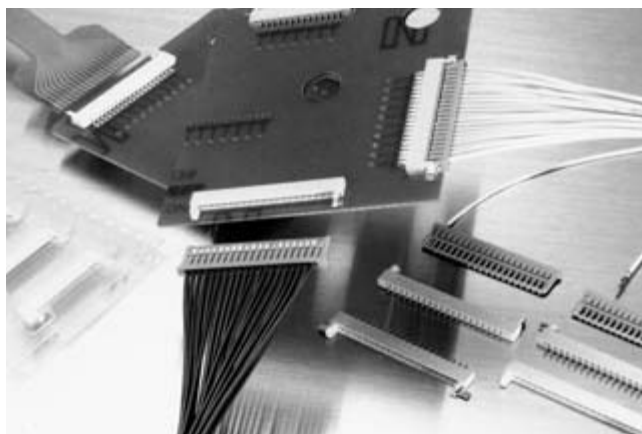
For more details, see Tyco Electronics Catalog 65972.



### 1.25mm F-P Board-to-Board Connectors

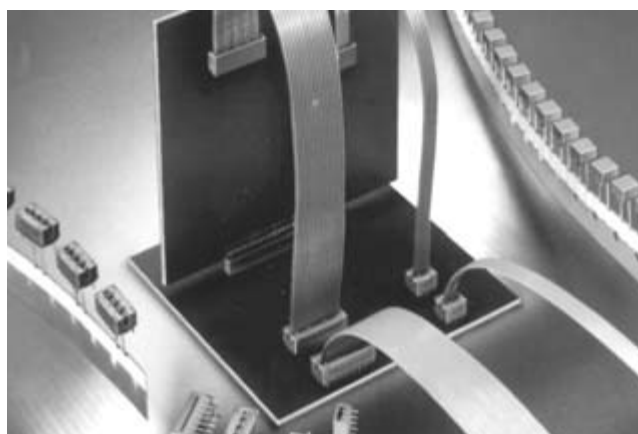
- 1.25 [.049] contact pitch
- Economical board-to-board interconnection connector of ultra-lightweight and ultra-thin construction
- Tube and reel-mounted products for automatic board packaging; loose-piece connectors also available
- Single-row and dual-row versions available, both enabling either parallel 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 Tyco Electronics Catalog 124962.

**Other Fine Pitch Connectors (Continued)**

**AMPSLIM Wire-to-Board Connectors**

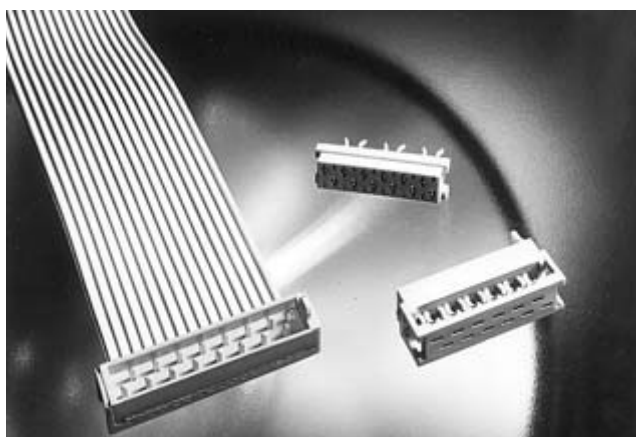
- 1.25 [.049] contact pitch
- Low profile, compact construction; above-board heights of 1.3 [.051] with offset-mount type and 1.85 [.073] with horizontal-mount type
- 7.3 [.287] mating length
- Receptacle contacts on board mounting side; tab contacts on wire mount side
- Design eliminates pin damage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

For more details, see Tyco Electronics Catalog 124917.


**AMP Super Trap Flat Ribbon Cable Connectors**

- 1.25 [.049] contact pitch
- Terminates 0.12-0.15mm<sup>2</sup> [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

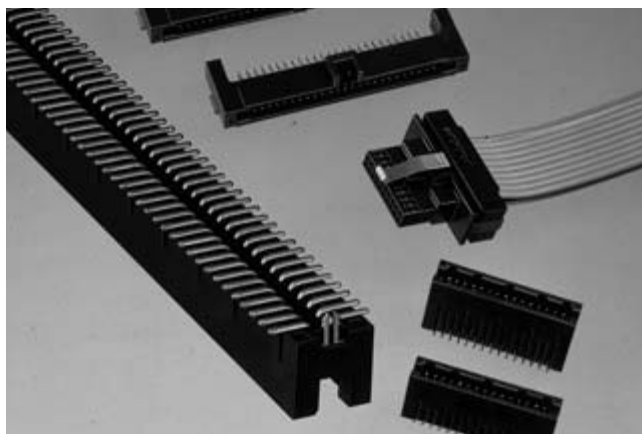
For more details, see Tyco Electronics Catalog 124962.


**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 0.08-0.09mm<sup>2</sup> [28 AWG] ribbon cable
- Contacts fully protected by plastic housings
- Board connectors supplied on tape. For automated connector handling, consult Tyco Electronics at the numbers listed below
- Built-in polarization
- Full range of application tooling available
- 4 to 20 positions

For more details, see Tyco Electronics Catalog 82750.

**Other Fine Pitch Connectors** (Continued)



**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

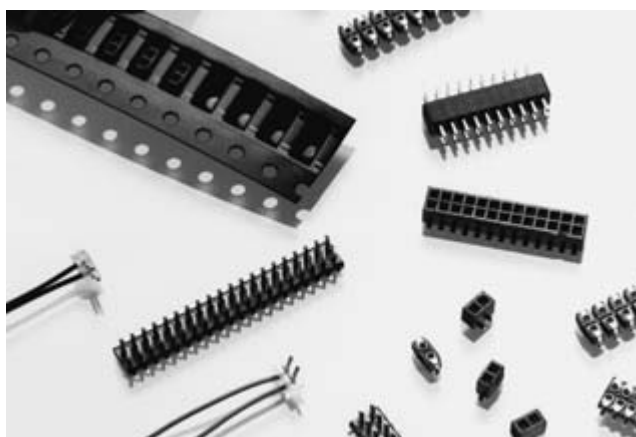
For more details, see Tyco Electronics Catalog 82643.



**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 0.05mm<sup>2</sup> [30 AWG] solid and 0.03mm<sup>2</sup> [32 AWG] stranded ribbon cable with conductors on 0.64 [.025] centers
- Selected sizes from 10 to 100 positions

For more details, see Tyco Electronics Catalog 1307819.



**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 Tyco Electronics Catalog 124140.

**Engineering Notes**

**Note:** This index lists all cataloged parts by base no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

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