



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

**Product Facts**

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



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

The 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.

0.5mm Fine Stack/Fine Mate Connectors

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

**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

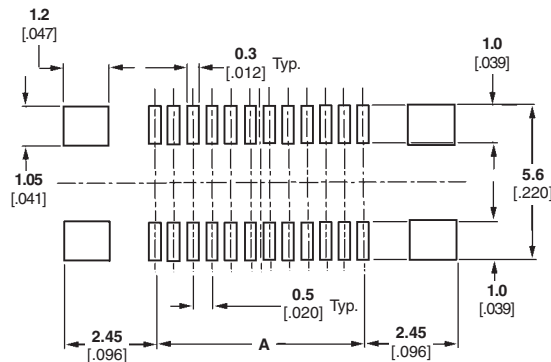
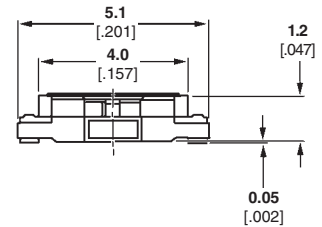
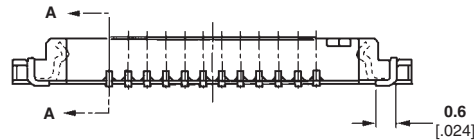
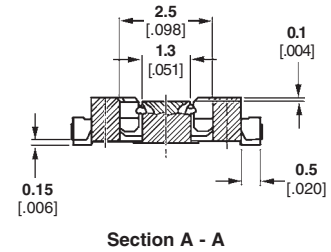
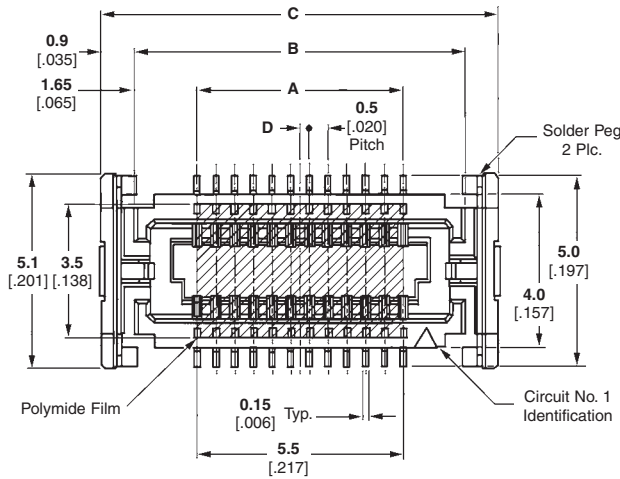
**Related Product Data**

**Mating Tabs** — page 15

**Technical Documents** (page 113)

**Product Specification**

108-5546



**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.

0.5mm Fine Stack/Fine Mate Connectors

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

**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

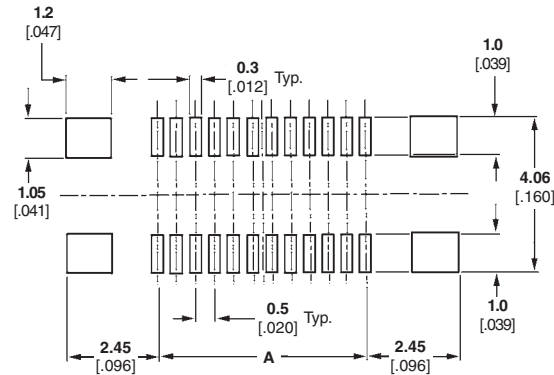
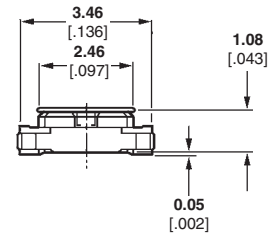
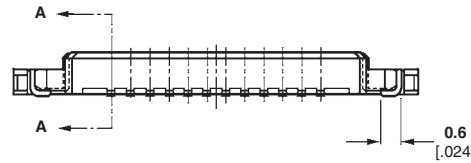
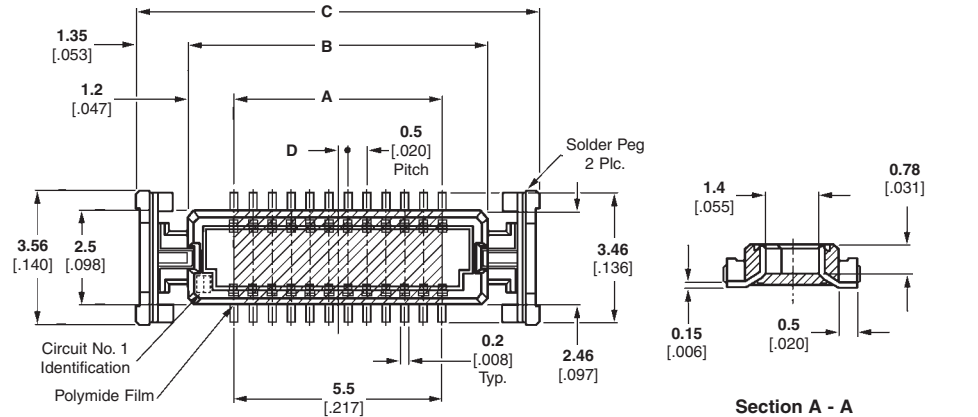
**Related Product Data**

**Mating Receptacles** — page 14

**Technical Documents** (page 113)

**Product Specification**

108-5546



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

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 0.01	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.

**0.5mm Fine Mate Receptacles, 0.5 [0.020] Pitch**

**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

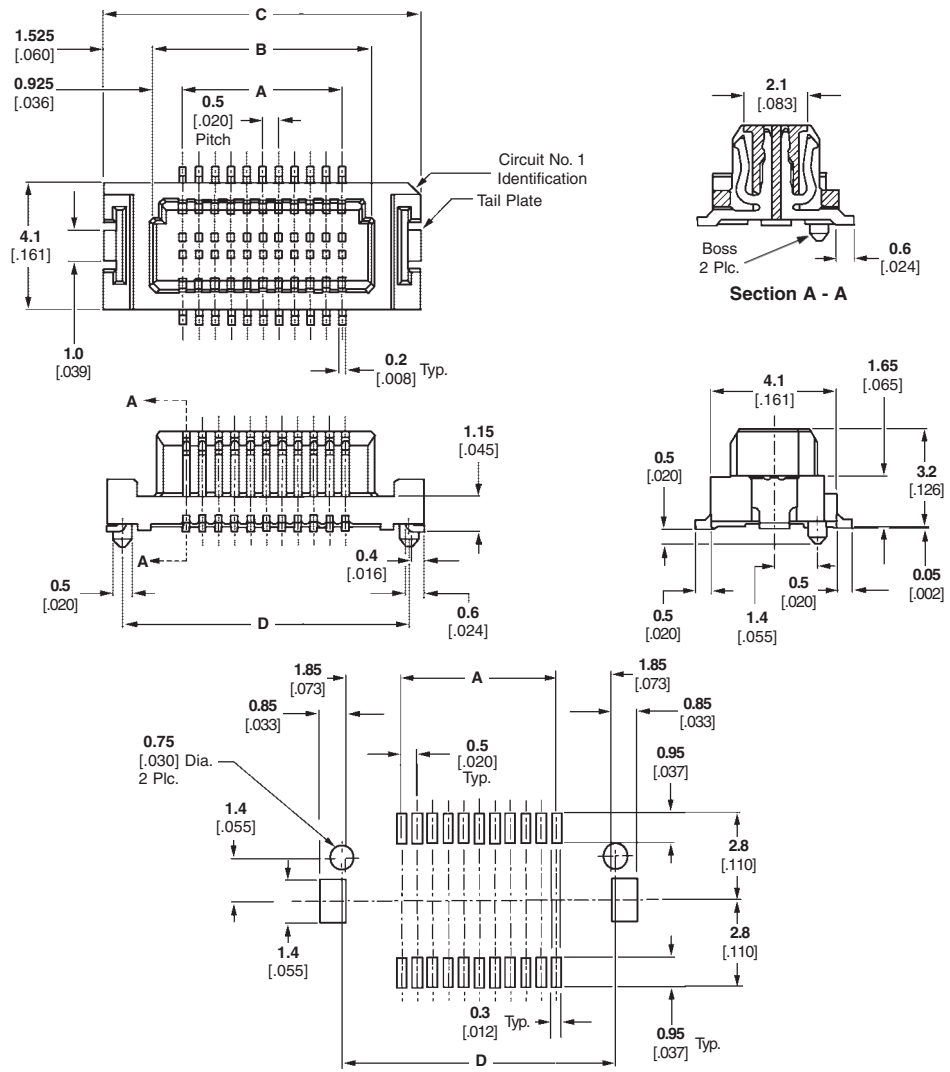
**Tail Plate** — Copper alloy, plated tin

**Related Product Data**

**Mating Tabs** — page 17

**Technical Documents** (page 113)

**Product Specification**  
108-5425



**Recommended PC Board Layout**  
(PC Board Thickness = 0.6 [0.024] Min.)

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

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

0.5mm Fine Stack/Fine Mate Connectors

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

**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

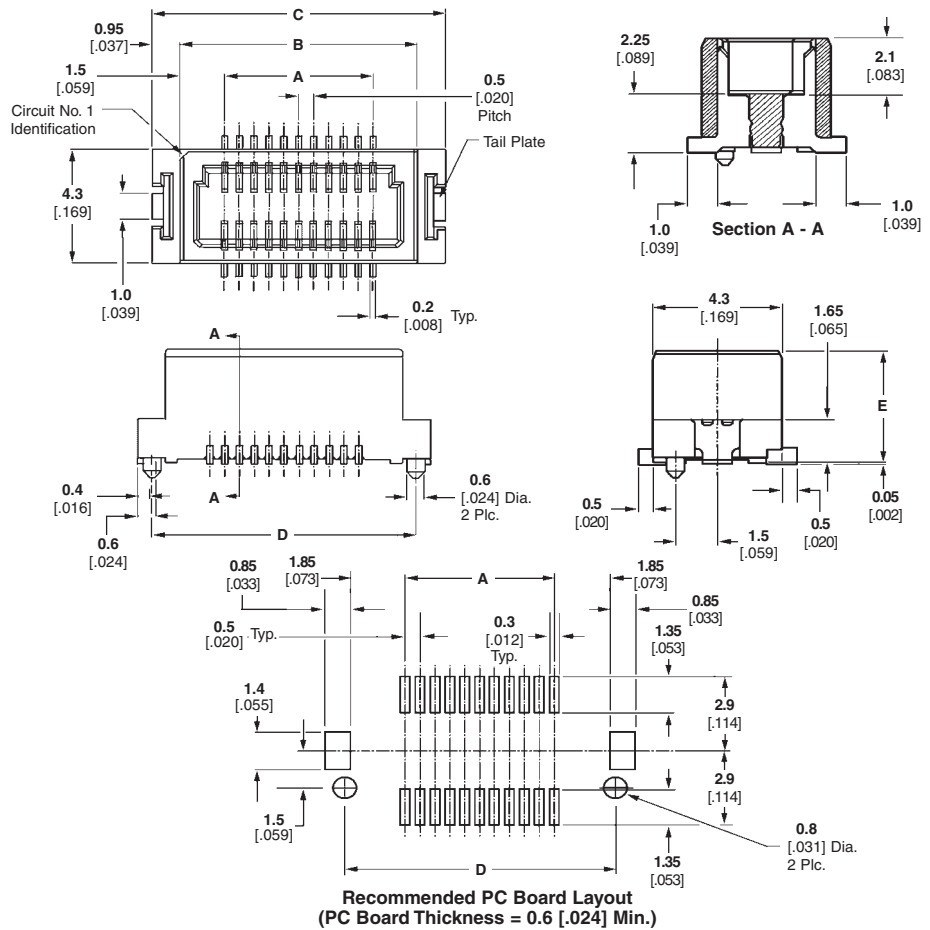
**Tail Plate** — Copper alloy, plated tin

**Related Product Data**

**Mating Receptacles** — page 16

**Technical Documents** (page 113)

**Product Specification**  
108-5425



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

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

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

**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

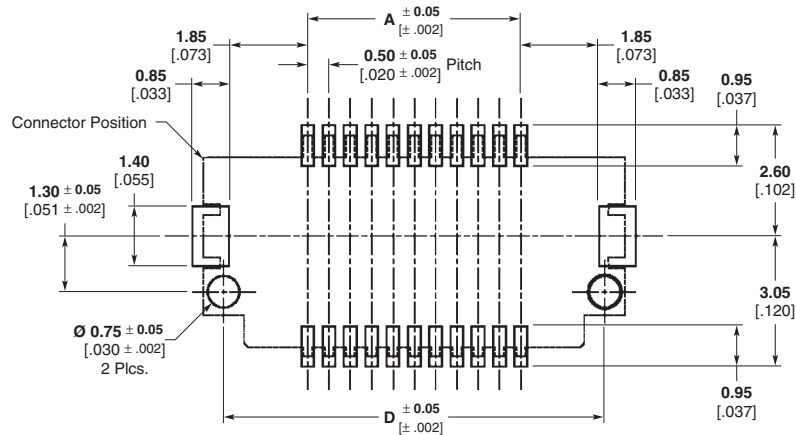
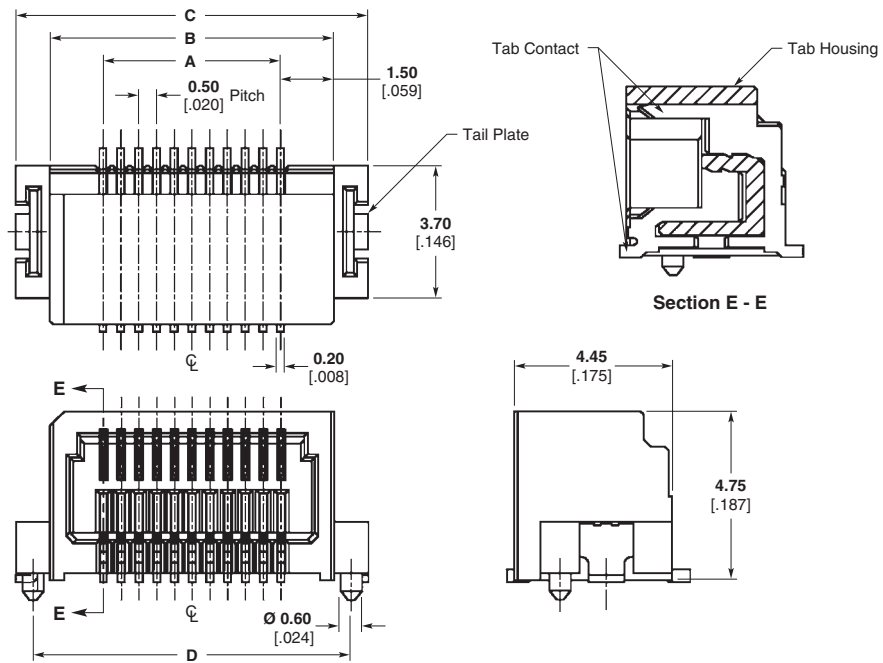
**Tail Plate** — Copper alloy, plated tin

**Related Product Data**

**Mating Receptacles** — page 16

**Technical Documents** (page 113)

**Product Specification**  
108-5425



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	5-1747025-3
				—	Yes	Yes	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.

0.5mm Fine Stack/Fine Mate Connectors