

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



0.5mm Fine Stack/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

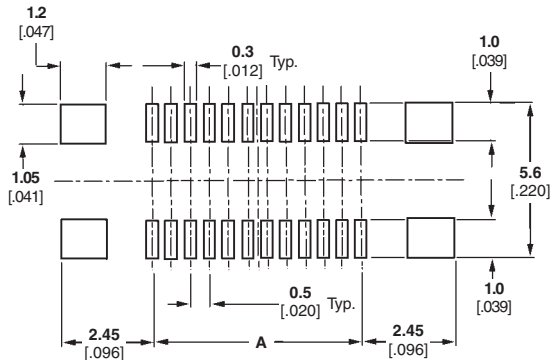
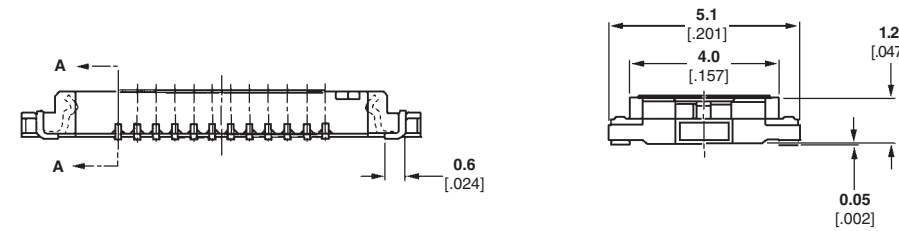
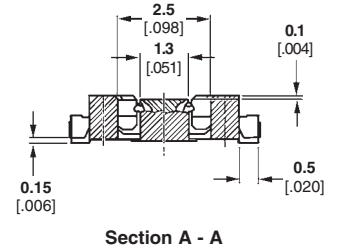
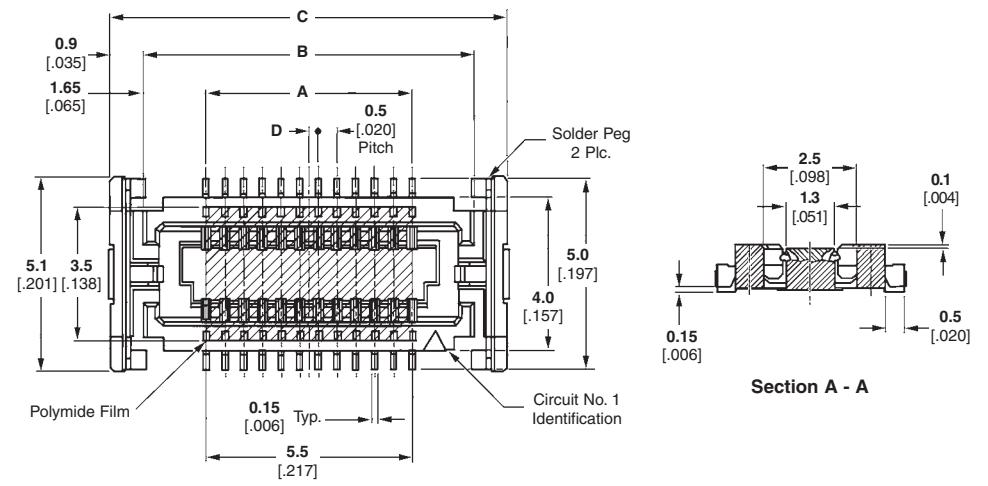
Related Product Data

Mating Tabs — page 15

Technical Documents (page 113)

Product Specification
 108-5546

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



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

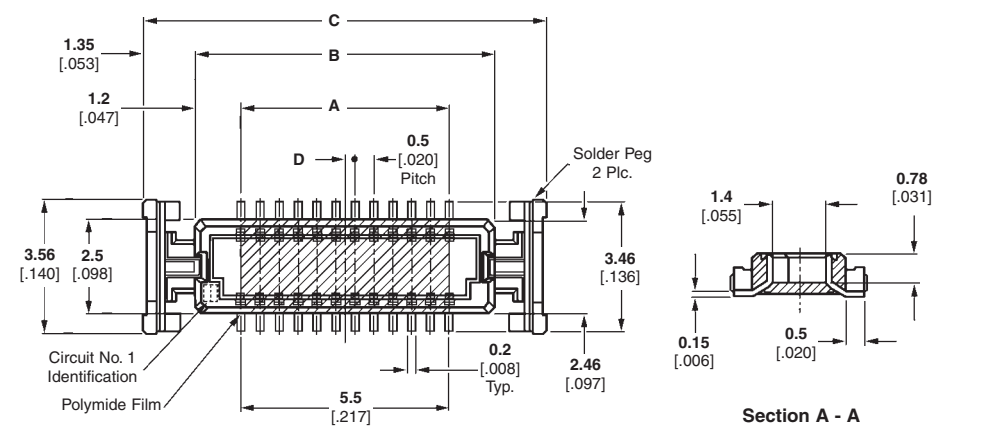
Related Product Data

Mating Receptacles — page 14

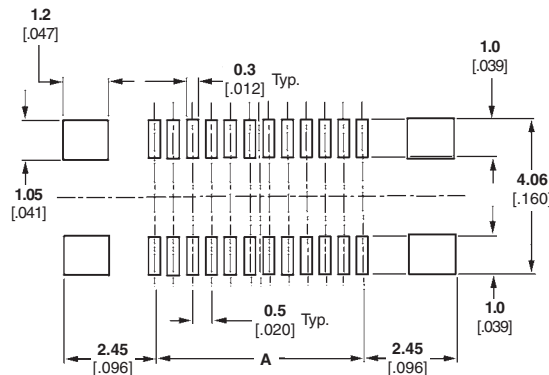
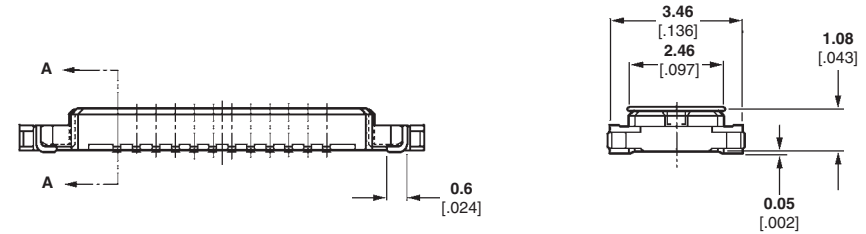
Technical Documents (page 113)

Product Specification
108-5546

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



Section A - A



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

0.5mm Fine Stack/Fine Mate Connectors

| 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.

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

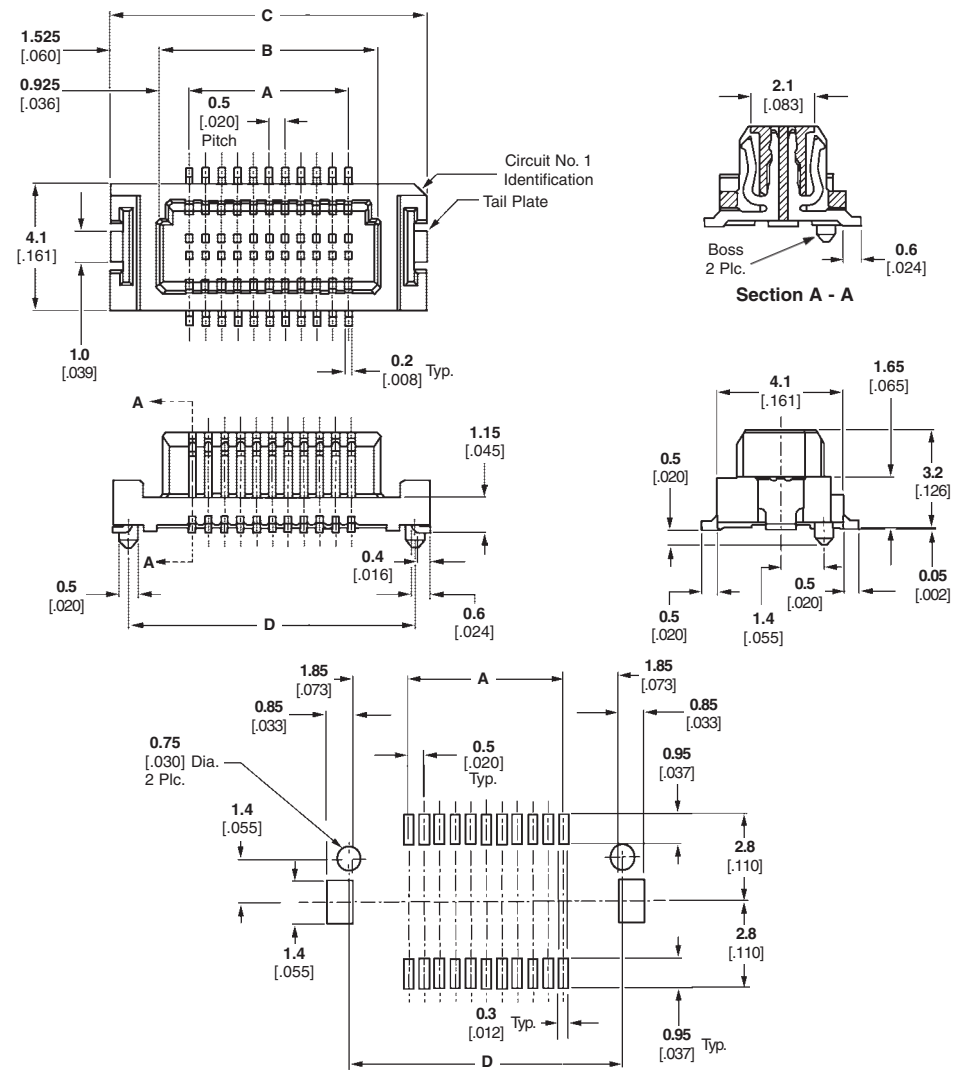
Related Product Data

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 |
| | | | | — | No | No | 1565357-5 |
| 60 | 14.50 .571 | 15.75 .620 | 18.80 .740 | 17.85 .703 | No | Yes | 5-1565357-5 |
| | | | | — | No | No | 1565357-4 |
| 70 | 17.00 .669 | 18.25 .719 | 21.30 .826 | 20.95 .825 | Yes | Yes | 5-1747022-4 |
| | | | | — | No | No | 1565357-3 |
| | | | | 23.45 .923 | No | Yes | 5-1565357-3 |
| 80 | 19.50 .768 | 21.35 .841 | 24.40 .961 | — | 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.

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

Material and Finish

Housing — GT nylon, high heat resistant resin

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

Tail Plate — Copper alloy, plated tin

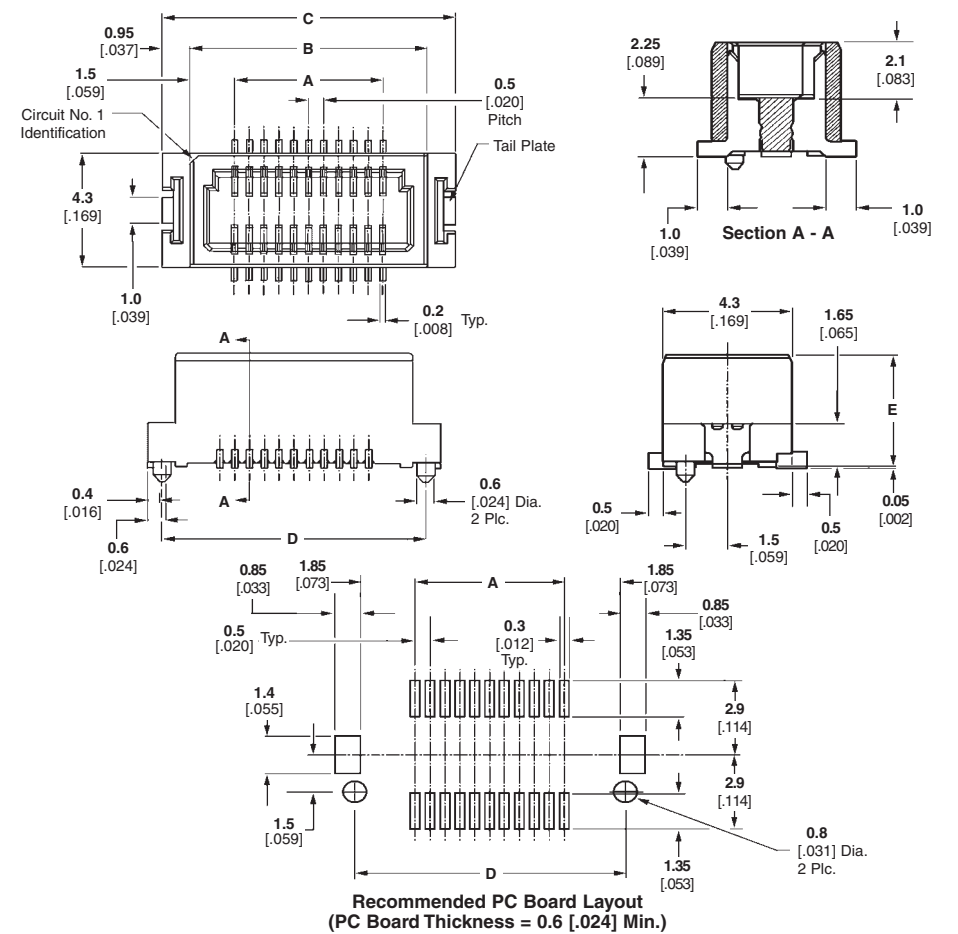
Related Product Data

Mating Receptacles — page 16

Technical Documents (page 113)

Product Specification
108-5425

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



0.5mm Fine Stack/Fine Mate Connectors

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

Note: Part Numbers are RoHS compliant.

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

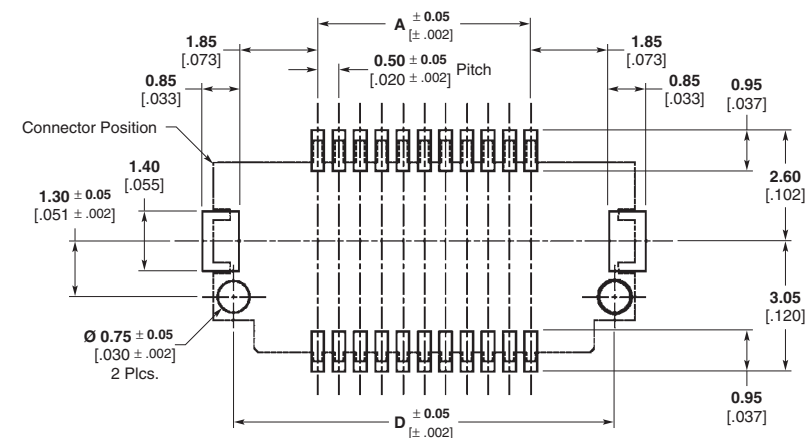
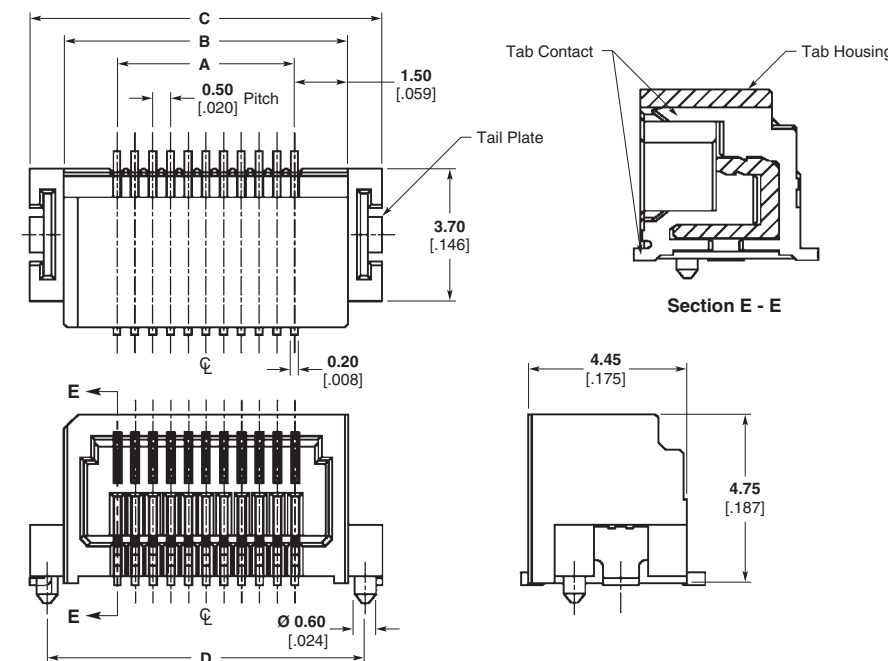
Related Product Data

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 | 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.