

## HD-20 Straight Posted Connectors



### Product Selection Guide

| Connector Density | Type                  | Post Style | Style and Shell Finish                                                           | No. of Contact Positions | Mating Hardware        | Contact Plating (Mating Area/Solder Tails) | Post Length | Profile  |
|-------------------|-----------------------|------------|----------------------------------------------------------------------------------|--------------------------|------------------------|--------------------------------------------|-------------|----------|
| HD-20             | Plugs and Receptacles | Straight   | Full Metal-Shell With and Without Grounding Indents, Tin Plated (pgs. 78 and 79) | 9                        | .120 [3.05] Dia. Holes | Duplex (.000030 [0.00076] Gold/Tin)        | .125 [3.18] | High     |
|                   |                       |            |                                                                                  | 15                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  | 25                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  | 37                       |                        |                                            |             |          |
|                   |                       |            | Front Metal-Shell With and Without Grounding Indents (pgs. 80 and 81)            | 9                        | .120 [3.18] Dia. Holes | Duplex (.000030 [0.00076] Gold/Tin)        | .125 [3.18] | Medium   |
|                   |                       |            |                                                                                  | 15                       | Threaded Inserts       |                                            | .170 [4.32] |          |
|                   |                       |            |                                                                                  | 25                       | Retention Inserts      | Duplex (Gold Flash/Tin)                    | .250 [6.35] |          |
|                   |                       |            |                                                                                  | 37                       |                        |                                            |             |          |
|                   |                       |            | All-Plastic (pgs. 82-85)                                                         | 9                        | .120 [3.05] Dia. Holes | Duplex (.000030 [0.00076] Gold/Tin)        | .125 [3.18] | Medium   |
|                   |                       |            |                                                                                  | 15                       | Threaded Inserts       |                                            | .170 [4.32] |          |
|                   |                       |            |                                                                                  | 25                       |                        | Duplex (Gold Flash/Tin)                    | .250 [6.35] |          |
|                   |                       |            |                                                                                  | 37                       | Female Screwlocks      |                                            |             |          |
| ACTION PIN        | Plugs and Receptacles |            | Front Metal-Shell Tin Plated (pgs. 87 and 88)                                    | 9                        | .120 [3.05] Dia. Holes | Duplex (.000030 [0.00076] Gold/Tin)        | .228 [5.79] | Medium   |
|                   |                       |            |                                                                                  | 15                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  | 25                       | Threaded Inserts       |                                            |             |          |
|                   |                       |            | All-Plastic (pg. 89)                                                             | 9                        | .120 [3.05] Dia. Holes | Duplex (.000030 [0.00076] Gold/Tin)        | .228 [5.79] | Low/High |
|                   |                       |            |                                                                                  | 15                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  | 25                       | Threaded Inserts       | Duplex (.000010 [0.000254] Gold Flash/Tin) |             |          |
|                   | Receptacles           |            | Front Metal-Shell With Grounding Indents, Nickel Plated (pg. 86)                 | 37                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  | 50                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  |                          | Female Screwlocks      |                                            |             |          |
|                   |                       |            | Front Metal-Shell With Grounding Indents, Nickel Plated (pg. 86)                 | 15                       | .120 [3.05] Dia. Holes | Duplex (.000030 [0.00076] Gold/Tin)        | .125 [3.18] | Medium   |
|                   |                       |            |                                                                                  | 26                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  | 44                       | Threaded Inserts       | Duplex (.000015 [0.00038] Gold/Tin)        |             |          |
| HD-22             | Plugs and Receptacles | Straight   | Front Metal-Shell With Grounding Indents, Nickel Plated (pg. 86)                 | 62                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  | 78                       |                        |                                            |             |          |
|                   |                       |            |                                                                                  |                          | Female Screwlocks      | Duplex (Gold Flash/Tin)                    |             |          |
|                   |                       |            |                                                                                  |                          |                        |                                            |             |          |
|                   |                       |            |                                                                                  |                          |                        |                                            |             |          |
|                   |                       |            |                                                                                  |                          |                        |                                            |             |          |

## HD-20 Straight Posted Connectors (Continued)

### Product Facts

- Flame retardant thermo-plastic housing material, UL 94V-0 rated
- HD-20 straight posted connectors are available in 9, 15, 25, 37 and 50 positions (Shell Sizes 1 thru 5)
- HD-20 straight posted connectors in Full Metal-Shell, Front Metal-Shell and All-Plastic versions
- HD-20 connectors with ACTION PIN contacts are available in low, medium and high profiles with integral standoffs
- ACTION PIN contact connectors for both .093 [2.36] and .062 [1.58] min. thick pc board application
- Various straight posted connectors offer a choice of through-holes, 4-40 threaded inserts or 4-40 fixed female screwlocks
- Choice of contact platings
- Integral boardlock feature secures connector to pc board prior to soldering
- Connectors are interchangeable with any size 20 or 22 subminiature D connectors dimensionally complying with MIL-C-24308
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476 
- CSA Certified, File No. LR 16455 HD-20 Products 

### Section Contents

|                                                    |        |
|----------------------------------------------------|--------|
| Straight Posted Connectors                         |        |
| HD-20 Full Metal-Shell                             |        |
| Straight Posted Connectors .....                   | 78, 79 |
| HD-20 Front Metal-Shell                            |        |
| Straight Posted Connectors .....                   | 80, 81 |
| HD-20 All-Plastic Straight Posted Connectors ..... | 82-85  |
| HD-22 Subminiature D Connectors .....              | 86     |
| HD-20 Front Metal-Shell Straight Posted            |        |
| Connectors with ACTION PIN Contacts .....          | 87, 88 |
| HD-20 All-Plastic Straight Posted Connectors       |        |
| with ACTION PIN Contacts .....                     | 89     |

## HD-20 Full Metal-Shell Straight Posted Connectors

### Plug



Without Grounding Indents



With Grounding Indents



See customer drawings for pcb layouts.

### Material and Finish:

**Shell**—Steel, tin plated

**Insert**—94V-0 rated thermoplastic, black

**Pin Contacts (Posted)**—Brass, plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

**B**—Gold flash on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

### Technical Documents:

**Product Specification**—108-40025

| Shell Size | No. of Contact Positions | Dimensions     |                |               |              | Contact Finish (Plating Code) | Plug Part Numbers         |                        |                  |
|------------|--------------------------|----------------|----------------|---------------|--------------|-------------------------------|---------------------------|------------------------|------------------|
|            |                          | A              | B              | C             | D*           |                               | Without Grounding Indents | With Grounding Indents | With Clinch Nuts |
| 1          | 9                        | 1.213<br>30.81 | .984<br>24.99  | .494<br>12.55 | .125<br>3.18 | A                             | —                         | 5745410-1              | 5749014-1        |
|            |                          |                |                |               | .188<br>4.78 | B                             | 5745182-2                 | —                      | —                |
| 2          | 15                       | 1.541<br>39.14 | 1.312<br>33.33 | .494<br>12.55 | .125<br>3.18 | A                             | —                         | 5745411-1              | —                |
|            |                          |                |                |               | .125<br>3.18 | A                             | —                         | 5745412-1              | 5745959-1        |
| 3          | 25                       | 2.088<br>53.04 | 1.852<br>47.04 | .494<br>12.55 | .125<br>3.18 | B                             | 5745186-2                 | —                      | —                |
|            |                          |                |                |               | .188<br>4.78 | A                             | —                         | 5745412-7              | —                |
| 4          | 37                       | 2.729<br>69.32 | 2.500<br>63.50 | .494<br>12.55 | .125<br>3.18 | A                             | —                         | 5745413-1              | —                |
|            |                          |                |                |               | .125<br>3.18 | A                             | —                         | 5745414-1              | —                |
| 5          | 50                       | 2.635<br>66.93 | 2.406<br>61.11 | .605<br>15.37 | .125<br>3.18 | A                             | —                         | 5745414-1              | —                |
|            |                          |                |                |               | .188<br>4.78 | A                             | —                         | 5745414-7              | —                |

\*.125 [3.18] post length is for recommended pc board thickness of .062-.093 [1.58-2.36] max.; .188 [4.78] post length is for recommended pc board thickness of .125 [3.18].

- Notes:**
1. All plugs are preloaded with size 20 DF posted pin contacts.
  2. Special loading of contacts can be arranged upon request.
  3. Longer post lengths available, consult TE.

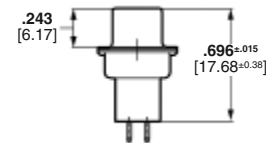
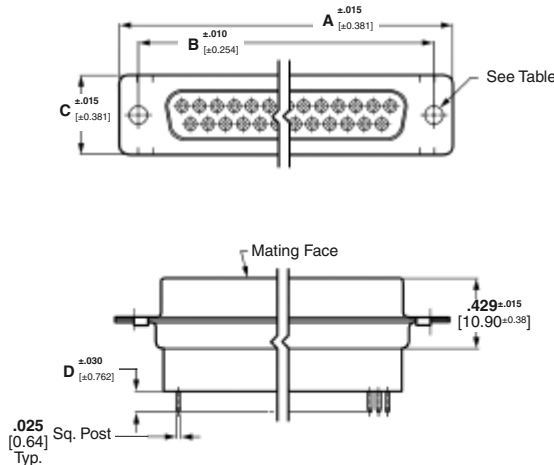
**Note:** All part numbers are RoHS compliant.

## HD-20 Full Metal-Shell Straight Posted Connectors (Continued)

### Receptacle



With Clinch Nuts



### Material and Finish:

**Shell**—Steel, tin plated

**Insert**—94V-0 rated thermoplastic, black

**Clinch Nuts**—Steel, zinc plated

**Socket Contacts (Posted)**—

Phosphor bronze, plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

**B**—Gold flash on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

See customer drawings for pcb layouts.

### Technical Documents:

**Product Specification**—108-40025

| Shell Size | No. of Contact Positions | Dimensions     |                |               |              | Contact Finish (Plating Code) | Receptacle Part Numbers         |                  |
|------------|--------------------------|----------------|----------------|---------------|--------------|-------------------------------|---------------------------------|------------------|
|            |                          | A              | B              | C             | D*           |                               | With .120 [3.05] Mounting Holes | With Clinch Nuts |
| 1          | 9                        | 1.213<br>30.81 | .984<br>24.99  | .494<br>12.55 | .125<br>3.18 | A                             | 5745183-1                       | 5747190-2        |
|            |                          |                |                |               | .188<br>4.78 | B                             | 5745183-2                       | 5747190-1        |
|            |                          |                |                |               | .125<br>3.18 | A                             | 5745183-7                       | 5747190-4        |
|            |                          |                |                |               | .188<br>4.78 | B                             | —                               | —                |
| 2          | 15                       | 1.541<br>39.14 | 1.312<br>33.33 | .494<br>12.55 | .125<br>3.18 | A                             | 5745185-1                       | 5745820-1        |
|            |                          |                |                |               | .188<br>4.78 | B                             | —                               | 5745820-2        |
|            |                          |                |                |               | .125<br>3.18 | A                             | 5745185-7                       | —                |
|            |                          |                |                |               | .188<br>4.78 | B                             | —                               | —                |
| 3          | 25                       | 2.088<br>53.04 | 1.852<br>47.04 | .494<br>12.55 | .125<br>3.18 | A                             | 5745187-1                       | 5745886-1        |
|            |                          |                |                |               | .188<br>4.78 | B                             | —                               | 5745886-2        |
|            |                          |                |                |               | .125<br>3.18 | A                             | 5745187-7                       | —                |
|            |                          |                |                |               | .188<br>4.78 | B                             | 5745187-8                       | —                |
| 4          | 37                       | 2.729<br>69.32 | 2.500<br>63.50 | .494<br>12.55 | .125<br>3.18 | A                             | 5745189-1                       | 5747315-1        |
|            |                          |                |                |               | .188<br>4.78 | A                             | 5745189-7                       | —                |
|            |                          |                |                |               | .125<br>3.18 | A                             | 5745191-1                       | 5747302-1        |
|            |                          |                |                |               | .188<br>4.78 | A                             | 5745191-7                       | —                |

\*.125 [3.18] post length is for recommended pc board thickness of .062-.093 [1.58-2.36] max.; .188 [4.78] post length is for recommended pc board thickness of .093-.125 [2.36-3.18].

- Notes:**
1. All receptacles are preloaded with size 20 DF posted socket contacts.
  2. Special loading of contacts can be arranged upon request.
  3. Longer post lengths available, consult TE.

**Note:** All part numbers are RoHS compliant.

## HD-20 Front Metal-Shell Straight Posted Connectors

### Plug



With Grounding Indents



With Threaded Insert



With Fixed Female Screwlock



With Retention



See customer drawings for pcb layouts.

### Material and Finish:

**Shell**—Steel, tin plated

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

**Threaded Inserts**—Brass, unplated

**Female Screwlocks**—Zinc

**Pin Contacts (Posted)**—Brass, plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

**B**—Gold flash on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

### Technical Documents:

**Product Specification**—108-40025

**Application Specification**—114-40023

| Shell Size | No. of Contact Positions | Dimensions     |                |              | Contact Finish (Plating Code) | Plug Part Numbers            |                            |                                                   |                                                    |
|------------|--------------------------|----------------|----------------|--------------|-------------------------------|------------------------------|----------------------------|---------------------------------------------------|----------------------------------------------------|
|            |                          | A              | B              | C*           |                               | With Standard Mounting Holes | With 4-40 Threaded Inserts | With Retention 4-40 Inserts (for .062 [1.58] PCB) | With Fixed Female Screwlocks (for .062 [1.58] PCB) |
| 1          | 9                        | 1.213<br>30.81 | .984<br>24.99  | .125<br>3.18 | A                             | 5747871-2                    | 5747871-8                  | 2-5748003-0                                       | 1-5747871-4                                        |
|            |                          |                |                | .170<br>4.32 | B                             | —                            | —                          | —                                                 | 1-5747871-3                                        |
| 2          | 15                       | 1.541<br>39.14 | 1.312<br>33.33 | .125<br>3.18 | A                             | —                            | 5747872-8                  | —                                                 | —                                                  |
|            |                          |                |                | .170<br>4.32 | A                             | 5747872-4                    | —                          | —                                                 | 1-5747872-6                                        |
| 3          | 25                       | 2.090<br>53.09 | 1.852<br>47.04 | .125<br>3.18 | A                             | 5745968-2                    | 5745968-8                  | 2-5747704-0                                       | 1-5745968-4                                        |
|            |                          |                |                | .170<br>4.32 | B                             | —                            | 5745968-7                  | —                                                 | 1-5745968-3                                        |
|            |                          |                |                | .125<br>3.18 | A                             | 5745968-4                    | —                          | —                                                 | 1-5745968-6                                        |
|            |                          |                |                | .170<br>4.32 | B                             | —                            | —                          | —                                                 | 1-5745968-5                                        |
| 4          | 37                       | 2.732<br>69.39 | 2.500<br>63.50 | .125<br>3.18 | A                             | 5747375-2                    | 5747375-8                  | —                                                 | —                                                  |

\*.125 [3.18] post length is recommended for pc board thickness of .062-.093 [1.58-2.36] max.; .170 [4.32] post length is recommended for pc board thickness of .093-.125 [2.36-3.18]; .250 [6.35] post length is for special applications

- Notes:**
- All plugs are preloaded with size 20 DF posted pin contacts.
  - Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.
  - PC board hole size is  $.121 \pm .002$  [ $3.07 \pm 0.0508$ ] for all retention inserts and screwlocks.

**Note:** All part numbers are RoHS compliant.

## HD-20 Front Metal-Shell Straight Posted Connectors (Continued)

### Receptacle



With Standard Mounting Holes



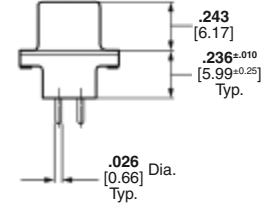
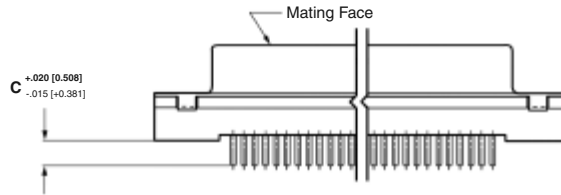
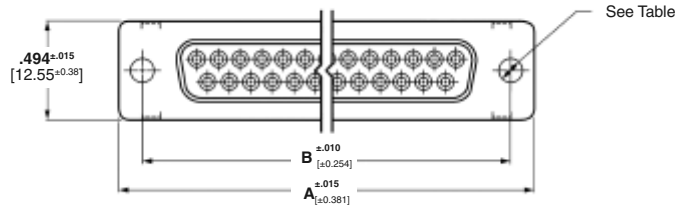
With Threaded Insert



With Fixed Female Screwlock



With Retention



See customer drawings for pcb layouts.

### Material and Finish:

**Shell**—Steel, tin plated

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

**Threaded Inserts**—Brass, unplated

**Female Screwlocks**—Zinc

### Socket Contacts (Posted)—

Phosphor bronze, plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

**B**—Gold flash on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

### Technical Documents:

**Product Specification**—108-40025

**Application Specification**—114-40023

| Shell Size | No. of Contact Positions | Dimensions     |                |              | Contact Finish (Plating Code) | Receptacle Part Numbers      |                            |                                                   |                              |                                                      |
|------------|--------------------------|----------------|----------------|--------------|-------------------------------|------------------------------|----------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------|
|            |                          | A              | B              | C*           |                               | With Standard Mounting Holes | With 4-40 Threaded Inserts | With Retention 4-40 Inserts (for .062 [1.58] PCB) | With Fixed Female Screwlocks | With Retention 4-40 Screwlocks (for .062 [1.58] PCB) |
| 1          | 9                        | 1.216<br>30.89 | .984<br>24.99  | .125<br>3.18 | A                             | 5747150-2                    | 5747150-8                  | 2-5747706-0                                       | 1-5747150-4                  | 5750678-1                                            |
|            |                          |                |                |              | B                             | —                            | 5747150-7                  | —                                                 | 1-5747150-3                  | —                                                    |
|            |                          |                |                |              | .170<br>4.32                  | A                            | 5747150-4                  | —                                                 | 1-5747150-6                  | —                                                    |
|            |                          |                |                |              | B                             | —                            | 5747150-9                  | —                                                 | —                            | —                                                    |
| 2          | 15                       | 1.541<br>39.14 | 1.312<br>33.33 | .125<br>3.18 | A                             | 5747299-2                    | 5747299-8                  | 2-5747707-0                                       | 1-5747299-4                  | 5787683-1                                            |
|            |                          |                |                |              | B                             | —                            | 5747299-7                  | —                                                 | —                            | —                                                    |
|            |                          |                |                |              | .170<br>4.32                  | A                            | 5747299-4                  | —                                                 | 1-5747299-6                  | —                                                    |
|            |                          |                |                |              | B                             | —                            | —                          | —                                                 | —                            | —                                                    |
| 3          | 25                       | 2.090<br>53.09 | 1.852<br>47.04 | .125<br>3.18 | A                             | 5745967-2                    | 5745967-8                  | 2-5747708-0                                       | 1-5745967-4                  | 5748612-1                                            |
|            |                          |                |                |              | B                             | —                            | 5745967-7                  | 1-5745967-0                                       | —                            | —                                                    |
|            |                          |                |                |              | .170<br>4.32                  | A                            | 5745967-4                  | 1-5745967-0                                       | 1-5745967-6                  | —                                                    |
|            |                          |                |                |              | B                             | —                            | —                          | —                                                 | 1-5745967-5                  | —                                                    |
| 4          | 37                       | 2.732<br>69.39 | 2.500<br>63.50 | .125<br>3.18 | A                             | 5747301-2                    | 5747301-8                  | 2-5747709-0                                       | 1-5747301-4                  | 5787685-1                                            |
|            |                          |                |                |              | B                             | —                            | 5747301-7                  | —                                                 | —                            | —                                                    |
|            |                          |                |                |              | .170<br>4.32                  | A                            | —                          | —                                                 | 1-5747301-6                  | —                                                    |
|            |                          |                |                |              | B                             | —                            | —                          | —                                                 | —                            | —                                                    |

\*.125 [3.18] post length is recommended for pc board thickness of .062-.093 [1.58-2.36] max.; .170 [4.32] post length is recommended for pc board thickness of .093-.125 [2.36-3.18]; .250 [6.35] post length is for special applications

- Notes:** 1. All receptacles are preloaded with size 20 DF posted socket contacts.  
2. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.  
3. Pc board hole size is .121±.002 [3.07±0.0508] for all retention inserts and screwlocks.

**Note:** All part numbers are RoHS compliant.

## HD-20 All-Plastic Straight Posted Connectors

### Plug



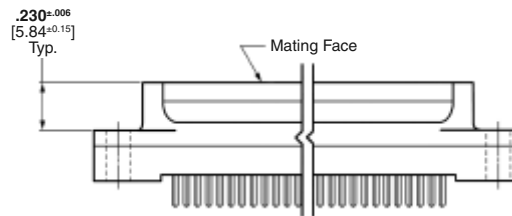
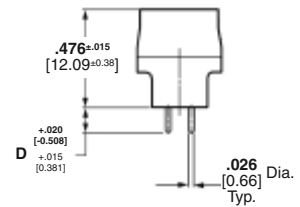
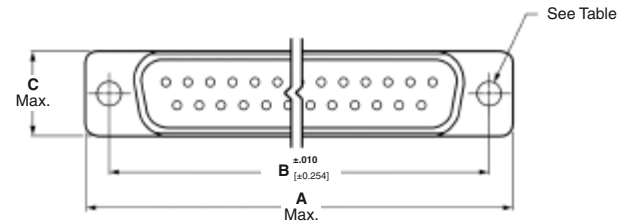
With Standard Mounting Hole



With Threaded Insert



With Fixed Female Screwlock



### Material and Finish:

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

**Threaded Inserts**—Brass, unplated

**Female Screwlocks**—Brass, nickel plated

**Pin Contacts (Posted)**—Brass, plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

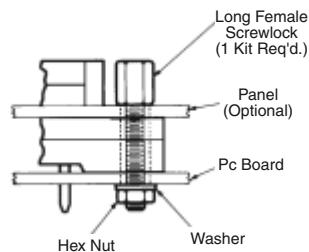
**B**—Gold flash on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

### Technical Documents:

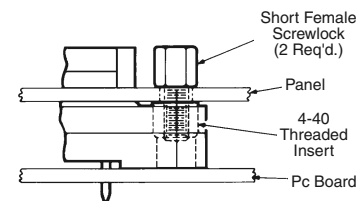
**Product Specification**—108-40025

See customer drawings for pcb layouts.

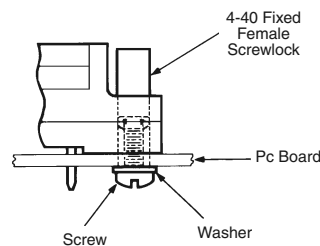
### Typical Applications



Application of connector with standard mounting holes using Long Female Screwlock Kit No. 207719



Application of connector with 4-40 Threaded Inserts using Short Female Screwlocks included in Kit No. 207952



Application of connector with 4-40 Fixed Female Screwlocks. (See table on next page.)

**Note:** Hardware parts in illustrations above are not included with the connectors listed in the table on page 83. They are to be supplied by the Customer or, where applicable, purchased separately from TE using the part nos. specified.

**Note:** All part numbers are RoHS compliant.

## HD-20 All-Plastic Straight Posted Connectors (Continued)

### Plug (Continued)

| Shell Size | No. of Contact Positions | Dimensions     |                |               |              | Contact Finish (Plating Code) | Plug Part Numbers               |                       |                              |
|------------|--------------------------|----------------|----------------|---------------|--------------|-------------------------------|---------------------------------|-----------------------|------------------------------|
|            |                          | A              | B              | C             | D*           |                               | With .120 [3.05] Mounting Holes | With Threaded Inserts | With Fixed Female Screwlocks |
| 1          | 9                        | 1.228<br>32.72 | .984<br>24.99  | .420<br>10.67 | .125<br>3.18 | A                             | 5208006-2                       | 5745051-2             | 5745071-2                    |
|            |                          |                |                |               |              | B                             | 5208006-1                       | 5745051-1             | 5745071-1                    |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | —                     | 5745071-4                    |
| 2          | 15                       | 1.546<br>39.27 | 1.312<br>33.33 | .420<br>10.67 | .125<br>3.18 | A                             | 5208007-2                       | 5745052-2             | 5745072-2                    |
|            |                          |                |                |               |              | B                             | —                               | 5745052-1             | —                            |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | —                     | 5745072-4                    |
| 3          | 25                       | 2.095<br>53.21 | 1.852<br>47.04 | .420<br>10.67 | .125<br>3.18 | A                             | 5208008-2                       | 5745053-2             | 5745073-2                    |
|            |                          |                |                |               |              | B                             | 5208008-1                       | —                     | 5745073-1                    |
|            |                          |                |                |               | .170<br>4.32 | B                             | —                               | —                     | 5745073-3                    |
| 4          | 37                       | 2.737<br>69.52 | 2.500<br>63.50 | .420<br>10.67 | .125<br>3.18 | A                             | —                               | —                     | 5745074-2                    |
|            |                          |                |                |               |              | B                             | 5208009-1                       | —                     | 5745074-1                    |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | 5745054-4             | 5745074-4                    |
| 5          | 50                       | 2.643<br>67.13 | 2.406<br>61.11 | .527<br>13.39 | .125<br>3.18 | B                             | 5208009-3                       | —                     | —                            |
|            |                          |                |                |               |              | A                             | 5208010-2                       | —                     | —                            |

\*.125 [3.18] post length is recommended for pc board thickness of .062-.093 [1.58-2.36] max.; .170 [4.32] post length is recommended for pc board thickness of .093-.125 [2.36-3.18]; .250 [6.35] post length is for special applications.

- Notes:**
1. All plugs are preloaded with size 20 DF posted pin contacts.
  2. It is recommended that these connectors be secured with appropriate hardware to a pc board and/or panel.
  3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

**Note:** All part numbers are RoHS compliant.

## HD-20 All-Plastic Straight Posted Connectors (Continued)

### Receptacle



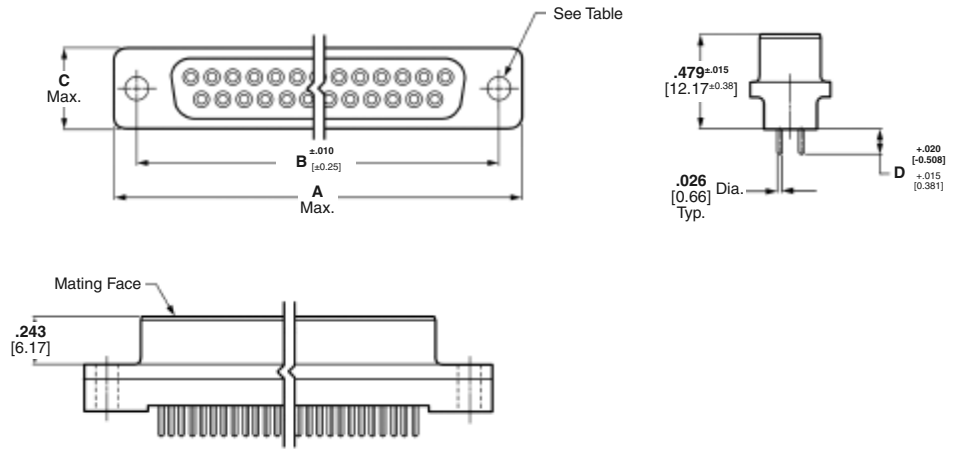
With Standard Mounting Hole



With Threaded Insert



With Fixed Female Screwlock



See customer drawings for pcb layouts.

### Material and Finish:

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

**Threaded Inserts**—Brass, unplated

**Female Screwlocks**—Brass, nickel plated

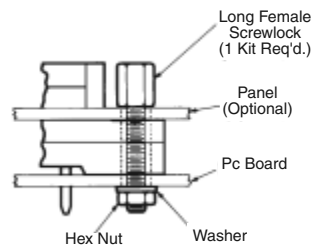
#### Socket Contacts (Posted)—

Phosphor bronze, plated as follows:

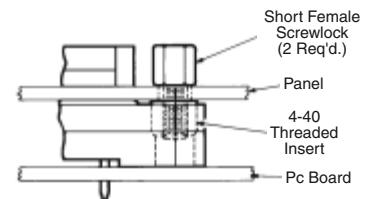
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

**B**—Gold flash on mating end, tin on termination end, with entire contact .000050 [0.00127] (min.) nickel underplated

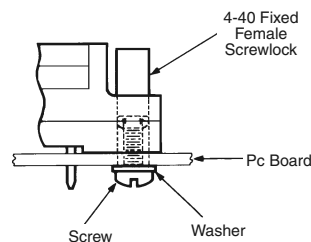
### Typical Applications



Application of connector with standard mounting holes using Long Female Screwlock Kit No. 207719



Application of connector with 4-40 Threaded Inserts using Short Female Screwlocks included in Kit No. 207952



Application of connector with 4-40 Fixed Female Screwlocks. (See table on next page.)

**Note:** Hardware parts in illustrations above are not included with the connectors listed in the table on page 85. They are to be supplied by the Customer or, where applicable, purchased separately from TE using the part nos. specified.

**Note:** All part numbers are RoHS compliant.

## HD-20 All-Plastic Straight Posted Connectors (Continued)

### Receptacle

(Continued)

| Shell Size | No. of Contact Positions | Dimensions     |                |               |              | Contact Finish (Plating Code) | Receptacle Part Numbers         |                       |                              |
|------------|--------------------------|----------------|----------------|---------------|--------------|-------------------------------|---------------------------------|-----------------------|------------------------------|
|            |                          | A              | B              | C             | D*           |                               | With .120 [3.05] Mounting Holes | With Threaded Inserts | With Fixed Female Screwlocks |
| 1          | 9                        | 1.228<br>32.72 | .984<br>24.99  | .420<br>10.67 | .125<br>3.18 | A                             | 5207826-4                       | 5207841-4             | 5745076-4                    |
|            |                          |                |                |               |              | B                             | 5207826-3                       | 5207841-3             | 5745076-3                    |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | —                     | 5745076-6                    |
| 2          | 15                       | 1.546<br>39.27 | 1.312<br>33.33 | .420<br>10.67 | .125<br>3.18 | A                             | 5207827-4                       | 5745057-4             | 5745077-4                    |
|            |                          |                |                |               |              | B                             | 5207827-3                       | 5745057-3             | 5745077-3                    |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | —                     | 5745077-6                    |
| 3          | 25                       | 2.095<br>53.21 | 1.852<br>47.04 | .420<br>10.67 | .125<br>3.18 | A                             | 5207828-4                       | 5745058-4             | 5745078-4                    |
|            |                          |                |                |               |              | B                             | 5207828-3                       | 5745058-3             | 5745078-3                    |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | —                     | 5745078-6                    |
| 4          | 37                       | 2.737<br>69.52 | 2.500<br>63.50 | .420<br>10.67 | .125<br>3.18 | A                             | 5207829-4                       | 5745059-4             | 5745079-4                    |
|            |                          |                |                |               |              | A                             | —                               | —                     | 5745079-6                    |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | —                     | 5745080-4                    |
| 5          | 50                       | 2.643<br>67.13 | 2.406<br>61.11 | .527<br>13.39 | .125<br>3.18 | A                             | —                               | —                     | 5745080-4                    |
|            |                          |                |                |               |              | A                             | —                               | —                     | 5745080-6                    |
|            |                          |                |                |               | .170<br>4.32 | A                             | —                               | —                     | 5745080-6                    |

\*.125 [3.18] post length is recommended for pc board thickness of .062-.093 [1.58-2.36] max.; .170 [4.32] post length is recommended for pc board thickness of .093-.125 [2.36-3.18]; .250 [6.35] post length is for special applications.

**Notes:** 1. All receptacles are preloaded with size 20 DF posted socket contacts.

2. It is recommended that these connectors be secured with appropriate hardware to a pc board and/or panel.

3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

**Note:** All part numbers are RoHS compliant.

## HD-22 Straight Subminiature D Connectors

### Material and Finish:

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

▲ VESA Std. 15-position Receptacle  
Housing Material—Thermoplastic  
94V-0 blue per VESA Std.

**Shell**—Steel, nickel plated

**Contacts**

**Pins**—Brass

**Sockets**—Phosphor bronze

**Contact Plating**—  
Gold flash, .000010 [0.00025] or  
.000030 [0.00076] on mating end, tin on  
solder tails with overall nickel underplate

**Boardlocks**—Brass, tin plated

**Female Screwlocks**—Brass, nickel  
plated

**Threaded Inserts**—Brass, tin plated

### Technical Documents:

**Product Specification**—108-1092

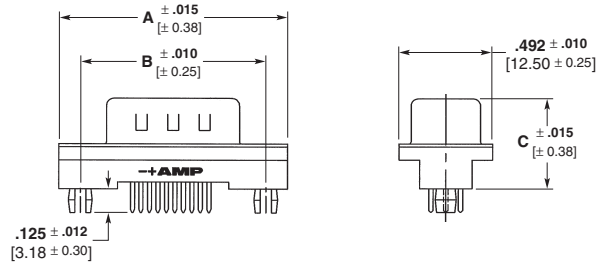
**Application Specification**—  
114-13199

See customer drawings for printed  
circuit board layouts.

■ Recognized under  
the Component Program  
of Underwriters  
Laboratories, Inc.,  
File No. E28476

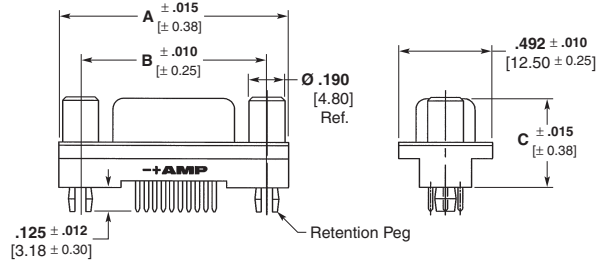


■ Certified by  
Canadian Standards  
Association,  
File No. LR 7189



Vertical Plug

| No. of<br>Contact<br>Positions | Dimensions     |                |               | Mounting<br>Hardware | PCB<br>Mounting<br>Style | Part Numbers  |              |              |
|--------------------------------|----------------|----------------|---------------|----------------------|--------------------------|---------------|--------------|--------------|
|                                | A              | B              | C             |                      |                          | Gold<br>Flash | 15µ"<br>Gold | 30µ"<br>Gold |
| 15                             | 1.212<br>30.80 | .984<br>25.00  | .476<br>12.10 | 4-40<br>inserts      | retention<br>pegs        | 5750489-4     | 5750489-3    | 5750489-1    |
|                                | 1.212<br>30.80 | .984<br>25.00  | .476<br>12.10 | 4-40<br>inserts      | —                        | 5749798-4     | 5749798-3    | 5749798-1    |
| 78                             | 2.640<br>67.00 | 2.500<br>63.50 | .476<br>12.10 | 4-40<br>inserts      | —                        | 5749019-6     | 5749019-5    | 5749019-1    |



Vertical Receptacle

| No. of<br>Contact<br>Positions | Dimensions     |                |               | Mounting<br>Hardware | PCB<br>Mounting<br>Style | Part Numbers  |              |              |
|--------------------------------|----------------|----------------|---------------|----------------------|--------------------------|---------------|--------------|--------------|
|                                | A              | B              | C             |                      |                          | Gold<br>Flash | 15µ"<br>Gold | 30µ"<br>Gold |
| 15                             | 1.212<br>30.80 | .984<br>25.00  | .465<br>11.80 | 4-40<br>inserts      | —                        | —             | 5749374-7    | 5749374-1    |
|                                | 1.212<br>30.80 | .984<br>25.00  | .465<br>11.80 | 4-40<br>screw locks  | —                        | 5786356-4     | 5786356-3    | 5786356-1    |
|                                | 1.212<br>30.80 | .984<br>25.00  | .465<br>11.80 | 4-40<br>inserts      | retention<br>pegs        | —             | —            | 5749374-3    |
|                                | 1.212<br>30.80 | .984<br>25.00  | .465<br>11.80 | 4-40<br>screw locks  | retention<br>pegs        | —             | 5786382-3    | 5786382-1    |
| 26                             | 1.543<br>39.20 | 1.310<br>33.30 | .465<br>11.80 | 4-40<br>inserts      | —                        | 5749030-4     | 5749030-3    | 5749030-1    |
|                                | 1.543<br>39.20 | 1.310<br>33.30 | .465<br>11.80 | 4-40<br>screw locks  | retention<br>pegs        | 5788623-4     | 5788623-3    | —            |
| 62                             | 2.732<br>69.40 | 2.500<br>63.50 | .465<br>11.80 | 4-40<br>inserts      | —                        | 3-5747786-4   | —            | 5747786-6    |
| 78                             | 2.638<br>67.00 | 2.400<br>61.00 | .476<br>12.10 | 4-40<br>inserts      | —                        | 1-5748831-0   | 5748831-9    | 5748831-1    |

**Note:** All part numbers are RoHS compliant.

## HD-20 Front Metal-Shell Straight Posted Connectors With ACTION PIN Contacts

### Receptacle



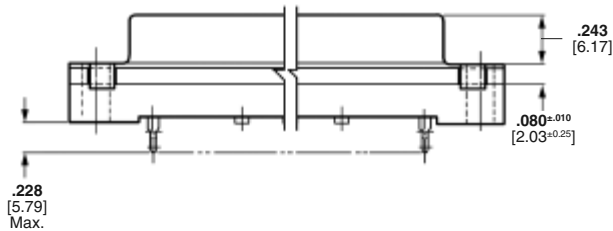
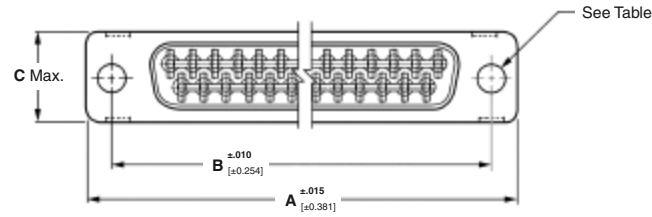
With Standard Mounting Holes



With Threaded Insert



With Fixed Female Screwlock



See customer drawings for pcb layouts.

### Material and Finish:

**Front Shell**—Steel, tin plated

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

**Threaded Inserts**—Brass, unplated

**Female Screwlocks**—Zinc

**ACTION PIN Contacts**—Copper alloy, duplex plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on ACTION PIN post surface, with entire contact .000050 [0.00127] (min.) nickel underplated

**B**—Gold flash on mating end, tin on ACTION PIN post surface, with entire contact .000050 [0.00127] (min.) nickel underplated

### Technical Documents:

**Product Specification**—108-40014

**Application Specification**—114-40026

### For .062 [1.57] min. Thick Pc Boards

| Shell Size | No. of Contact Positions | Dimensions     |                |               | Contact Finish (Plating Code) | Receptacle Part Numbers         |                       |                              | Seating Tool Part No. |
|------------|--------------------------|----------------|----------------|---------------|-------------------------------|---------------------------------|-----------------------|------------------------------|-----------------------|
|            |                          | A              | B              | C             |                               | With .120 [3.05] Mounting Holes | With Threaded Inserts | With Fixed Female Screwlocks |                       |
| 1          | 9                        | 1.213<br>30.81 | .984<br>24.99  | .509<br>12.93 | A                             | —                               | —                     | —                            | 91164-2               |
| 2          | 15                       | 1.541<br>39.14 | 1.312<br>33.33 | .509<br>12.93 | A                             | —                               | —                     | —                            | 91165-2               |
| 3          | 25                       | 2.088<br>53.04 | 1.852<br>47.04 | .509<br>12.93 | B                             | —                               | —                     | 5748688-1                    | 91168-2               |
| 5          | 50                       | 2.635<br>66.93 | 2.406<br>61.11 | .620<br>15.75 | A                             | —                               | 5748485-2             | —                            | 91167-2               |

### For .093 [2.36] min. Thick Pc Boards

| Shell Size | No. of Contact Positions | Dimensions     |                |               | Contact Finish (Plating Code) | Receptacle Part Numbers         |                       |                              | Seating Tool Part No. |
|------------|--------------------------|----------------|----------------|---------------|-------------------------------|---------------------------------|-----------------------|------------------------------|-----------------------|
|            |                          | A              | B              | C             |                               | With .120 [3.05] Mounting Holes | With Threaded Inserts | With Fixed Female Screwlocks |                       |
| 1          | 9                        | 1.213<br>30.81 | .984<br>24.99  | .509<br>12.93 | A                             | 5747089-2                       | 5747090-2             | 5747091-2                    | 91164-2               |
| 2          | 15                       | 1.541<br>39.14 | 1.312<br>33.32 | .509<br>12.93 | A                             | 5747140-2                       | 5747141-2             | 5747142-2                    | 91165-2               |
| 3          | 25                       | 2.088<br>53.04 | 1.852<br>47.04 | .509<br>12.93 | A                             | 5745922-2                       | 5745925-2             | 5745928-2                    | 91168-2               |
| 4          | 37                       | 2.729<br>69.32 | 2.500<br>63.50 | .509<br>12.93 | A                             | 5747713-2                       | 5747714-2             | 5747715-2                    | 91166-2               |
|            |                          |                |                |               | B                             | —                               | 5747714-1             | —                            |                       |
| 5          | 50                       | 2.635<br>66.93 | 2.406<br>61.11 | .620<br>15.75 | A                             | 5747143-2                       | 5747144-2             | 5747145-2                    | 91167-2               |

- Notes:** 1. All receptacles are preloaded with straight posted ACTION PIN socket contacts.  
2. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

**Note:** All part numbers are RoHS compliant.

## HD-20 Front Metal-Shell Straight Posted Connectors With ACTION PIN Contacts (Continued)

### Plug



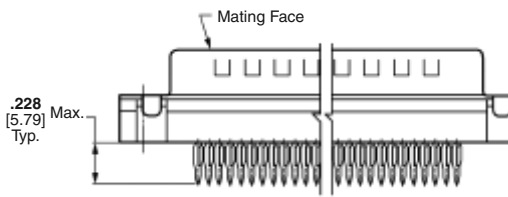
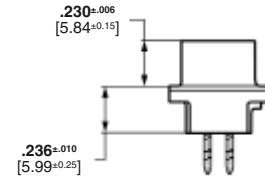
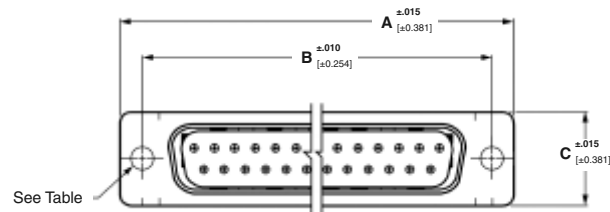
With Standard Mounting Holes



With Threaded Insert



With Fixed Female Screwlock



See customer drawings for pcb layouts.

### Material and Finish:

**Front Shell**—Steel, tin plated

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

**Threaded Inserts**—Brass, unplated

**Female Screwlocks**—Zinc

**ACTION PIN Contacts**—Copper alloy, duplex plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on ACTION PIN post surface, with entire contact .000050 [0.00127] (min.) nickel underplated

### For .093 [2.36] min. Thick Pc Board

| Shell Size | No. of Contact Positions | Dimensions     |                |               | Contact Finish (Plating Code) | Plug Part Numbers               |                       |                              | Seating Tool Part No. |
|------------|--------------------------|----------------|----------------|---------------|-------------------------------|---------------------------------|-----------------------|------------------------------|-----------------------|
|            |                          | A              | B              | C             |                               | With .120 [3.05] Mounting Holes | With Threaded Inserts | With Fixed Female Screwlocks |                       |
| 1          | 9                        | 1.213<br>30.81 | .984<br>24.99  | .494<br>12.55 | A                             | —                               | 5786830-1             | 5787176-1                    | 58274-3               |
| 2          | 15                       | 1.541<br>39.14 | 1.312<br>33.32 | .494<br>12.55 | A                             | —                               | —                     | 5787177-1                    | 58274-6               |
| 3          | 25                       | 2.088<br>53.04 | 1.852<br>47.04 | .494<br>12.55 | A                             | 5748146-2                       | 5748146-4             | 5748146-6                    | 58274-1               |
| 4          | 37                       | 2.732<br>69.39 | 2.500<br>63.50 | .494<br>12.55 | A                             | 5788458-1                       | 5786534-1             | 5750060-1                    | 58274-5               |
| 5          | 50                       | 2.635<br>66.93 | 2.406<br>61.11 | .605<br>15.37 | A                             | —                               | 5749892-1             | —                            | 58273-1               |

**Notes:** 1. All plugs are preloaded with straight posted ACTION PIN pin contacts.

2. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

### Technical Documents:

**Product Specification**—108-40014

**Application Specification**—  
114-40026

**Note:** All part numbers are RoHS compliant.

## HD-20 All-Plastic Straight Posted Connectors With ACTION PIN Contacts

### Receptacles (Low and High Profile)



With Standard Mounting Holes



With Threaded Insert



With Fixed Female Screwlock

### Material and Finish:

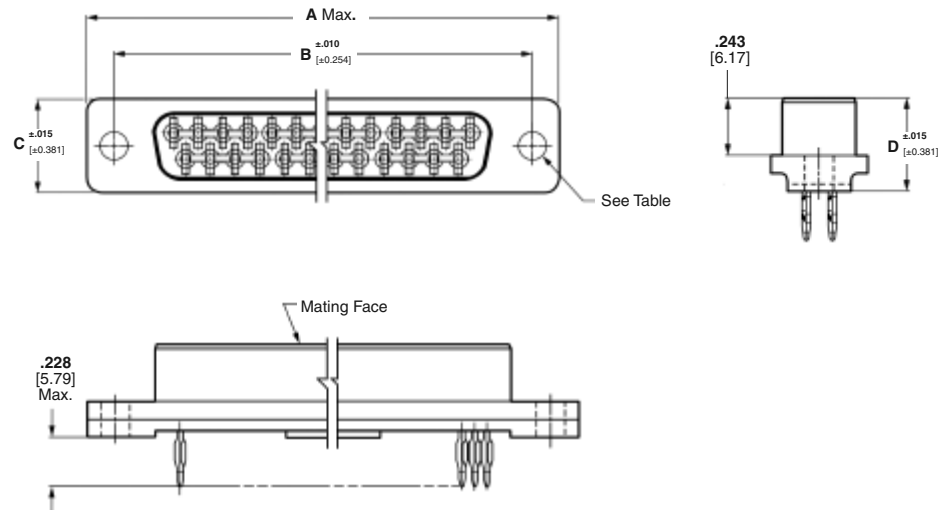
**Housing**—94V-0 rated thermoplastic, black

**Threaded Inserts**—Brass, unplated

**Female Screwlocks**—Brass, nickel plated

**ACTION PIN Contacts**—Copper alloy, duplex plated as follows:

**A**—.000030 [0.00076] gold on mating end, tin on ACTION PIN post surface, with entire contact .000050 [0.00127] (min.) nickel underplated



See customer drawings for pcb layouts.

**B**—Gold flash on mating end, tin on ACTION PIN post surface, with entire contact .000050 [0.00127] (min.) nickel underplated

### Technical Documents:

**Product Specification**—108-40014

| Shell Size | No. of Contact Positions | Dimensions     |                |               |               | Profile | Contact Finish (Plating Code) | Receptacle Part Numbers                |                       |                              |                                        |                       |                              | Seating Tool Part No. |
|------------|--------------------------|----------------|----------------|---------------|---------------|---------|-------------------------------|----------------------------------------|-----------------------|------------------------------|----------------------------------------|-----------------------|------------------------------|-----------------------|
|            |                          | A              | B              | C             | D             |         |                               | For .093 [2.36] (min.) Thick Pc Boards |                       |                              | For .062 [1.57] (min.) Thick PC Boards |                       |                              |                       |
|            |                          |                |                |               |               |         |                               | With .120 [3.05] Mounting Holes        | With Threaded Inserts | With Fixed Female Screwlocks | With .120 [3.05] Mounting Holes        | With Threaded Inserts | With Fixed Female Screwlocks |                       |
| 1          | 9                        | 1.221<br>31.01 | .984<br>24.99  | .410<br>10.41 | .395<br>10.03 | Low     | A                             | —                                      | —                     | 5745454-2                    | —                                      | —                     | —                            | 91164-1               |
|            |                          |                |                |               | .695<br>17.65 | High    | A                             | —                                      | —                     | 5745455-2                    | —                                      | —                     | —                            | 91164-3               |
| 2          | 15                       | 1.546<br>39.27 | 1.312<br>33.32 | .410<br>10.41 | .395<br>10.03 | Low     | A                             | —                                      | —                     | 5745456-2                    | —                                      | —                     | —                            | 91165-1               |
|            |                          |                |                |               | .695<br>17.65 | High    | A                             | —                                      | —                     | —                            | —                                      | 5745612-2             | —                            | 91165-3               |
| 3          | 25                       | 2.095<br>53.21 | 1.852<br>47.04 | .410<br>10.41 | .395<br>10.03 | Low     | A                             | —                                      | —                     | 5745458-2                    | —                                      | —                     | —                            | 91168-1               |
|            |                          |                |                |               | .695<br>17.65 | High    | A                             | —                                      | 5745465-2             | —                            | —                                      | —                     | —                            | 91168-3               |
| 4          | 37                       | 2.737<br>69.52 | 2.500<br>63.50 | .410<br>10.41 | .395<br>10.03 | Low     | A                             | —                                      | —                     | 5745459-2                    | 5745589-2                              | —                     | —                            | 91166-1               |
| 5          | 50                       | 2.643<br>67.13 | 2.406<br>61.11 | .517<br>13.13 | .395<br>10.03 | Low     | A                             | —                                      | —                     | 5745461-2                    | —                                      | —                     | —                            | 91167-1               |

- Notes:** 1. All receptacles are preloaded with straight posted ACTION PIN socket contacts.  
2. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

**Note:** All part numbers are RoHS compliant.