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# DURA-CON

All-Plastic

Strip Connectors

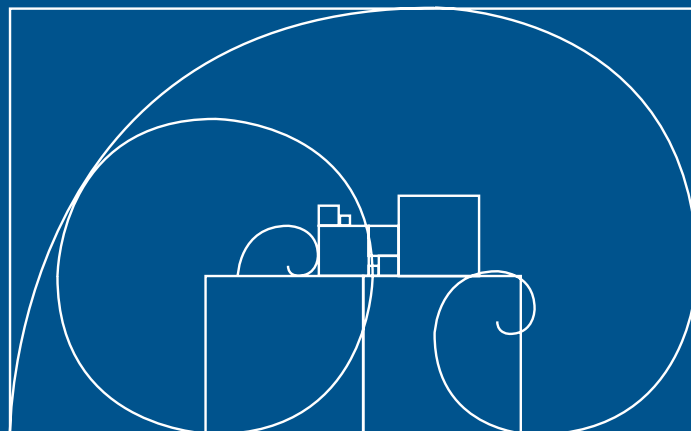
Metal Shell

Mil-C-83513 Connectors

Terminal Blocks

Microedge

.050" D-microminiature



**Cinch**

Cinch Dura-Con™ connectors are designed for applications that require a rugged, durable, and high-performance interconnect. Dura-Con is the ideal connector for applications where weight and space must be kept to a minimum while maintaining maximum reliability. Miniaturized airborne electronics and data processing equipment, where shorter signal paths are needed, represent typical applications for these unique connectors.

The heart of the Dura-Con system is the Dura-Con pin contact. The Cinch Dura-Con pin contact is made from a precision miniature spring cable with a welded tip. The expanded cable provides seven spring members peripherally around the pin so that contact is maintained with the mating socket wall no matter what radial forces are applied. This spring may be flexed many times without any evidence of metal fatigue. Reliable mating is further ensured by protecting the pin contact in a tightly tolerated recessed cavity.

Cinch's family of Dura-Con connectors includes MIL-C-83513 Series connectors along with our own commercial equivalents. The commercial Dura-Con product line offers an expanded range of termination and hardware options for all-plastic and metal shell wire versions and right-angle and straight PC board mount "terminal blocks". Cinch also packages the Dura-Con contact in a very low profile plastic strip connector on .050" centers and in a line of high-density microminiature edge (Microedge) board connectors that meet the requirements of MIL-C-55302. Cinch has created a line of plastic and metal shell Dura-Con connector savers for very high mating cycle applications such as test equipment.

### Termination Options:

Cinch offers the following termination methods for its Dura-Con connectors:

Insulated Wire - Insulated wire is crimped to the Dura-Con contacts then epoxy backpotted at the factory. Wire is available in standard lengths of 18, 24, 36, and 48 inches.

Uninsulated Wire - 24 AWG, gold-plated, uninsulated wire is crimped to the Dura-Con contact at the factory. Wire is available in standard lengths of 0.5, 1.0, and 2.0 inches. This option allows the user greater flexibility when installing the connector.

Solder Cup - For applications that require the lowest contact resistance, Cinch offers Dura-Con connectors with solder cups for termination by the user.



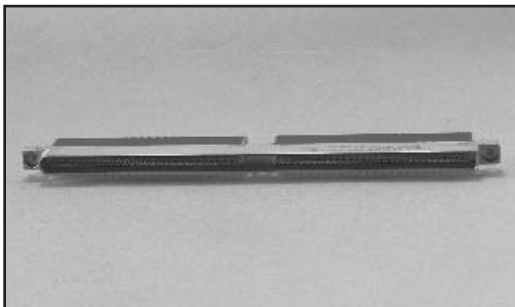
Dura-Con is a trademark of Cinch Connectors.

**Custom Capabilities:**

Standard Cinch Dura-Con connectors satisfy a wide variety of applications. Cinch's line of Dura-Con D-microminiature connectors is one of the most versatile in the industry. There are over 50,000 possible combinations of Cinch standard options such as connector type, size, materials, hardware, and termination.

When special application requirements arise, Cinch Dura-Con connectors take this versatility to the next level. Whether specific needs entail new variations of simple end-to-end connector assemblies or more complex and intricate harness assemblies, Cinch Connector Division has the state-of-the-art engineering resources and research facilities in place to meet your needs. Cinch approaches your business with a well-defined goal: to ensure the integrity of your design and to execute our contribution to it in a responsible, cost-effective manner. This philosophy has led Cinch to a position of industry leadership.

For complete information regarding the total capabilities of the Dura-Con connector series, or for custom application assistance, contact your nearest Cinch Connectors sales office.



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**Dura-Con**  
**High Reliability**  
**All-Plastic**

.050" (1.27mm) Density  
 Solder Cup/Wire  
 D-Microminiature



FEATURES

- Both plug and socket available in 9, 15, 21, 25, 31, 37, and 51 positions.
- Termination styles - solder cup, gold-plated solid wire, and insulated stranded wire.
- Several styles of mounting hardware are available for cable-to-cable, cable-to-board mount, and cable-to-panel mount applications.
- High-performance Dura-Con twist-pin contact.
- Economical all-plastic shell for lightweight applications where no shielding is required.
- Meets requirements of MIL-C-83513 except where noted.



MATERIALS

**Insulator:** UL94V-0 rated glass-filled polyester  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy (machined)  
**Contact Plating:** .000050 in gold

ENVIRONMENTAL

**Operating Temperature:** -55° C to +135° C

ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level  
**Contact Resistance:** 8 milliohms maximum change

MECHANICAL

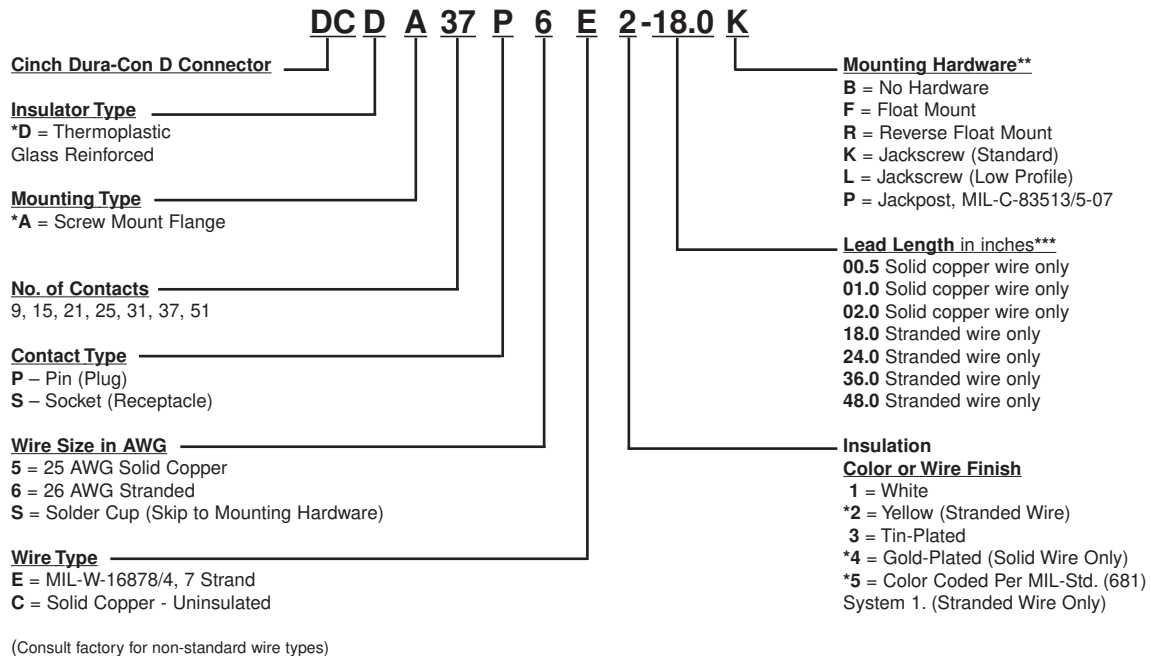
**Individual Contact:** 6 oz. (170.40 g) maximum insertion;  
 0.5 oz. (14.20 g) minimum withdrawal  
**Mating / Unmating Force:** See table

| No. of Contacts | Maximum Mating Force |       | Minimum Unmating Force |     |
|-----------------|----------------------|-------|------------------------|-----|
|                 | Lb.                  | Kg    | Lb.                    | Kg  |
| 9               | 5.63                 | 2.56  | .28                    | .13 |
| 15              | 9.38                 | 4.26  | .47                    | .21 |
| 21              | 13.13                | 5.96  | .66                    | .30 |
| 25              | 15.63                | 7.10  | .78                    | .35 |
| 31              | 19.38                | 8.80  | .97                    | .44 |
| 37              | 23.13                | 10.50 | 1.16                   | .53 |
| 51              | 31.88                | 14.47 | 1.59                   | .72 |

**Contact Arrangements**  
 (Face view of pin insulator)  
 (Use reverse order for socket)



**Ordering Information**



\* - Indicates Cinch std. option.

\*\* - See p. 5-12 for std. hardware dims. See p. 5-13 for non-std. hardware & p. 5-31 for Mil spec. hardware both sold separately.

\*\*\* - Length Tolerance: solid wire =  $\pm 3/32$ ", standard wire =  $\pm 1/4$ ".

**Connector Dimensions - Plastic Shell**

**Plug**



**Socket**



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| No. of Contacts | A                   |       | B Max. |       | C                                    |       | D                   |       | E                   |      | F Max. |      |
|-----------------|---------------------|-------|--------|-------|--------------------------------------|-------|---------------------|-------|---------------------|------|--------|------|
|                 | ± .010 (.254)<br>in | mm    | in     | mm    | + .010 (.254)<br>- .018 (.457)<br>in | mm    | ± .005 (.127)<br>in | mm    | ± .010 (.254)<br>in | mm   | in     | mm   |
| 9 Plug          | .778                | 19.76 | .292   | 7.42  | .398                                 | 10.11 | .565                | 14.35 | .208                | 5.28 | .173   | 4.39 |
| 9 Socket        | .778                | 19.76 | .376   | 9.55  | .398                                 | 10.11 | .565                | 14.35 | .208                | 5.28 | .173   | 4.39 |
| 15 Plug         | .928                | 23.57 | .442   | 11.23 | .548                                 | 13.92 | .715                | 18.16 | .208                | 5.28 | .173   | 4.39 |
| 15 Socket       | .928                | 23.57 | .526   | 13.36 | .548                                 | 13.92 | .715                | 18.16 | .208                | 5.28 | .173   | 4.39 |
| 21 Plug         | 1.078               | 27.38 | .592   | 15.04 | .698                                 | 17.73 | .865                | 21.97 | .208                | 5.28 | .173   | 4.39 |
| 21 Socket       | 1.078               | 27.38 | .676   | 17.17 | .698                                 | 17.73 | .865                | 21.97 | .208                | 5.28 | .173   | 4.39 |
| 25 Plug         | 1.178               | 29.92 | .692   | 17.58 | .798                                 | 20.27 | .965                | 24.51 | .208                | 5.28 | .173   | 4.39 |
| 25 Socket       | 1.178               | 29.92 | .776   | 19.71 | .798                                 | 20.27 | .965                | 24.51 | .208                | 5.28 | .173   | 4.39 |
| 31 Plug         | 1.328               | 33.73 | .842   | 21.39 | .948                                 | 24.08 | 1.115               | 28.32 | .208                | 5.28 | .173   | 4.39 |
| 31 Socket       | 1.328               | 33.73 | .926   | 23.52 | .948                                 | 24.08 | 1.115               | 28.32 | .208                | 5.28 | .173   | 4.39 |
| 37 Plug         | 1.478               | 37.54 | .992   | 25.20 | 1.098                                | 27.89 | 1.265*              | 32.13 | .208                | 5.28 | .173   | 4.39 |
| 37 Socket       | 1.478               | 37.54 | 1.076  | 27.33 | 1.098                                | 27.89 | 1.265*              | 32.13 | .208                | 5.28 | .173   | 4.39 |
| 51 Plug         | 1.428               | 36.27 | .942   | 23.93 | 1.048                                | 26.62 | 1.215               | 30.86 | .250                | 6.35 | .220   | 5.59 |
| 51 Socket       | 1.428               | 36.27 | 1.026  | 26.06 | 1.048                                | 26.62 | 1.215               | 30.86 | .250                | 6.35 | .220   | 5.59 |

**Panel Mounting Dimensions**

Pin and socket,  
rear mounted



Pin and socket,  
front mounted



Pin, front mounted  
Socket, rear mounted



**Panel Cutout Dimensions**



Figure 1. Front Mounting



Figure 2. Rear Mounting



Figure 3. Edgeboard Mounting

| No. of Contacts | Figure Number | A                      |                        | B                      |                        | C                      |                        |
|-----------------|---------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                 |               | +0.004<br>-0.000<br>in | (.101)<br>(.000)<br>mm | +0.004<br>-0.000<br>in | (.101)<br>(.000)<br>mm | +0.005<br>-0.000<br>in | (.127)<br>(.000)<br>mm |
| 9               | 1             | .408                   | 10.36                  | .172                   | 4.37                   | .570                   | 14.48                  |
|                 | 2             | .373                   | 9.47                   | .216                   | 5.49                   | .570                   | 14.48                  |
|                 | 3             | -                      | -                      | -                      | -                      | .570                   | 14.48                  |
| 15              | 1             | .558                   | 14.17                  | .172                   | 4.37                   | .720                   | 18.29                  |
|                 | 2             | .523                   | 13.28                  | .216                   | 5.49                   | .720                   | 18.29                  |
|                 | 3             | -                      | -                      | -                      | -                      | .720                   | 18.29                  |
| 21              | 1             | .708                   | 17.98                  | .172                   | 4.37                   | .870                   | 22.10                  |
|                 | 2             | .674                   | 17.12                  | .216                   | 5.49                   | .870                   | 22.10                  |
|                 | 3             | -                      | -                      | -                      | -                      | .870                   | 22.10                  |
| 25              | 1             | .808                   | 20.52                  | .172                   | 4.37                   | .970                   | 24.64                  |
|                 | 2             | .774                   | 19.66                  | .216                   | 5.49                   | .970                   | 24.64                  |
|                 | 3             | -                      | -                      | -                      | -                      | .970                   | 24.64                  |
| 31              | 1             | .958                   | 24.33                  | .172                   | 4.37                   | 1.120                  | 28.45                  |
|                 | 2             | .924                   | 23.47                  | .216                   | 5.49                   | 1.120                  | 28.45                  |
|                 | 3             | -                      | -                      | -                      | -                      | 1.120                  | 28.45                  |
| 37              | 1             | 1.108                  | 28.14                  | .172                   | 4.37                   | 1.270                  | 32.26                  |
|                 | 2             | 1.074                  | 27.28                  | .216                   | 5.49                   | 1.270                  | 32.26                  |
|                 | 3             | -                      | -                      | -                      | -                      | 1.270                  | 32.26                  |
| 51              | 1             | 1.058                  | 26.87                  | .215                   | 5.46                   | 1.220                  | 30.99                  |
|                 | 2             | 1.024                  | 26.01                  | .259                   | 6.58                   | 1.220                  | 30.99                  |
|                 | 3             | -                      | -                      | -                      | -                      | 1.220                  | 30.99                  |



**Dura-Con**  
**High Reliability**  
**Metal Shell**

.050" (1.27mm) Density  
 Solder Cup/Wire  
 D-Microminiature



FEATURES

- Both plug and socket available in 9, 15, 21, 25, 31, 37, 51, and 100 positions.
- Several styles of mounting are available for cable-to-cable, cable-to-panel mount, and cable-to-board mount.
- Aluminum shell provides extra strength and EMI/RFI shielding capability. Plating options available.
- Silicone elastomer compression interfacial seal protects contacts from moisture and humidity and isolates contacts from each other and the metal shell.
- Meets requirements of MIL-C-83513 except where noted.
- Rugged twist-pin contacts resistant to shock and vibration make metal shell Dura-Con an excellent choice for harsh environments such as airborne or space applications.



MATERIALS

**Insulator:** UL94V-0 rated glass-filled polyester or diallyl phthalate  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy (machined)  
**Contact Plating:** .000050 in gold  
**Shell:** Aluminum alloy  
**Shell Plating:** Yellow chromate over cadmium (std.) or electroless nickel

ENVIRONMENTAL

**Operating Temperature:** -55°C to +135°C

ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level  
**Contact Resistance:** 8 milliohms maximum

MECHANICAL

**Individual Contact:** 6 oz. (170.40 g) maximum insertion;  
 0.5 oz. (14.20 g) minimum withdrawal  
**Mating / Unmating Force:** See table

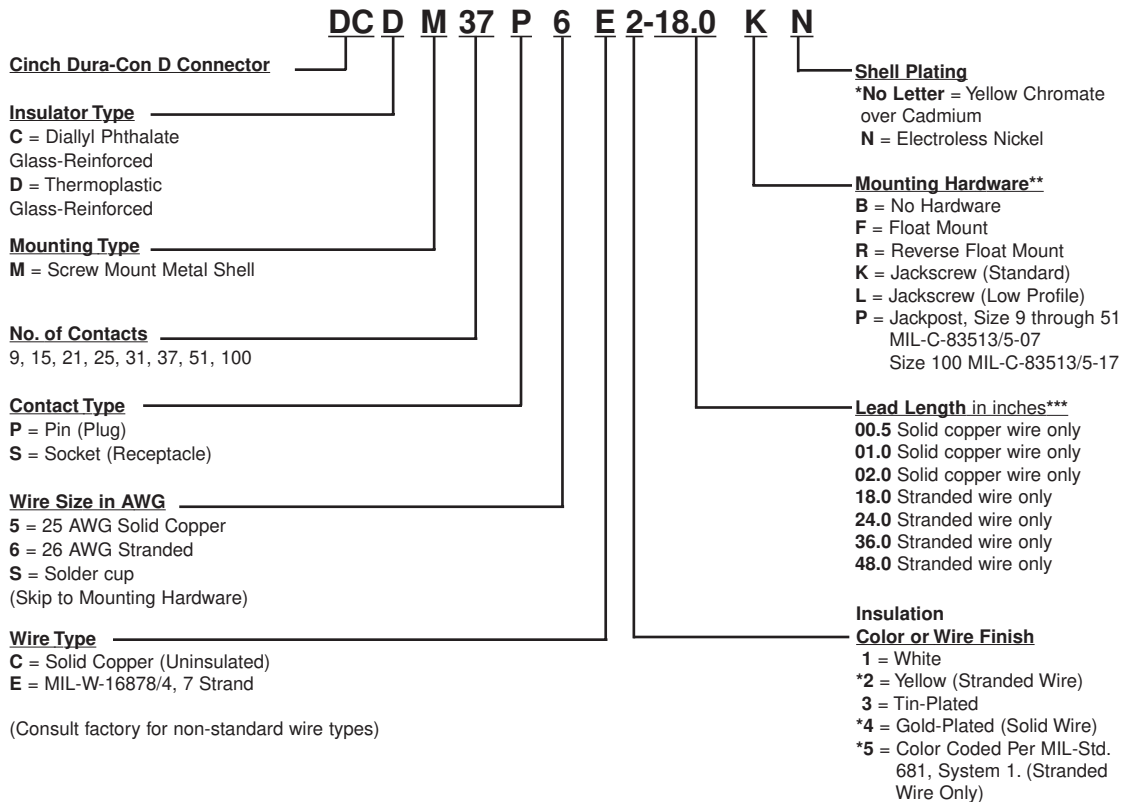
| No. of Contacts | Maximum Mating Force |       | Minimum Unmating Force |      |
|-----------------|----------------------|-------|------------------------|------|
|                 | Lb.                  | Kg    | Lb.                    | Kg   |
| 9               | 5.63                 | 2.56  | .28                    | .13  |
| 15              | 9.38                 | 4.26  | .47                    | .21  |
| 21              | 13.13                | 5.96  | .66                    | .30  |
| 25              | 15.63                | 7.10  | .78                    | .35  |
| 31              | 19.38                | 8.80  | .97                    | .44  |
| 37              | 23.13                | 10.50 | 1.16                   | .53  |
| 51              | 31.88                | 14.47 | 1.59                   | .72  |
| 100             | 62.50                | 28.38 | 3.13                   | 1.42 |

**Contact Arrangements**

(Face view of pin insert)  
 (Use reverse order for socket side)



**Ordering Information**

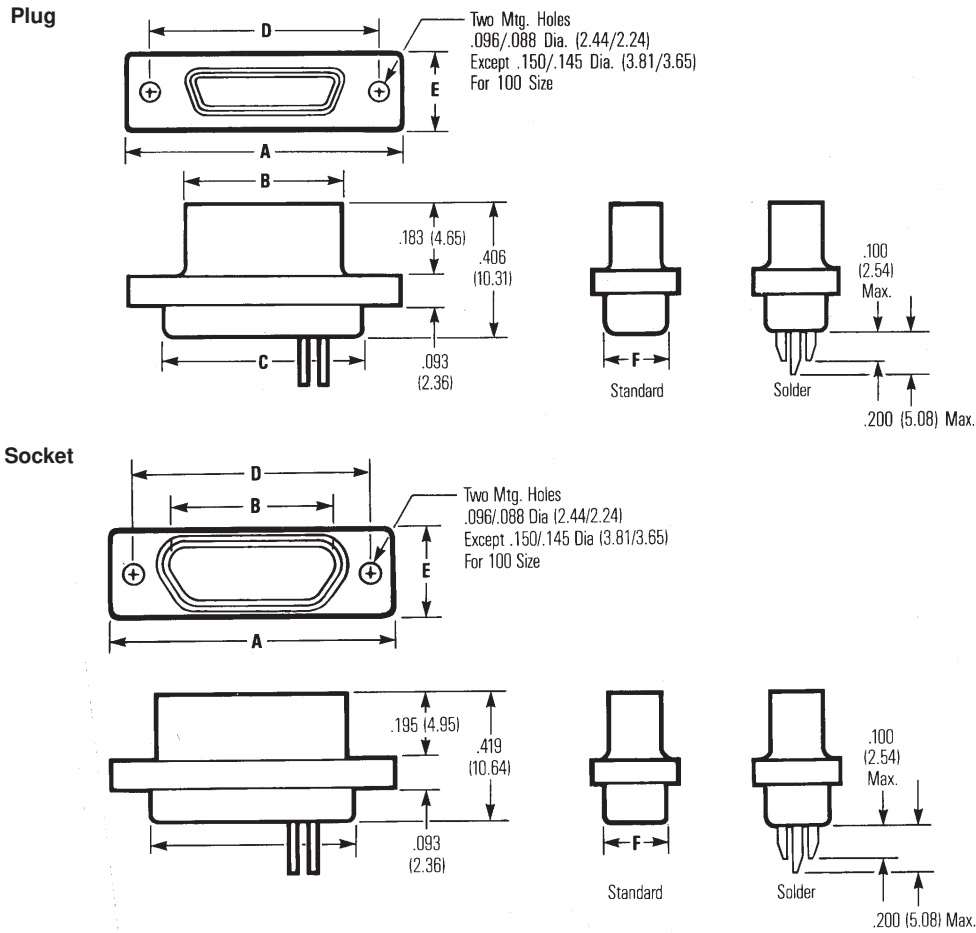


\* - Indicates Cinch std. option.

\*\* - See p. 5-12 for std. hardware dims. See p. 5-13 for non-std. hardware & p. 5-31 for Mil spec. hardware both sold separately.

\*\*\* - Length Tolerance: solid wire = ± 3/32", standard wire = ± 1/4".

**Connector Dimensions - Metal Shell**



| No. of Contacts | A             |       | B Max. |       | C                              |       | D             |       | E             |      | F Max. |      |
|-----------------|---------------|-------|--------|-------|--------------------------------|-------|---------------|-------|---------------|------|--------|------|
|                 | ± .010 (.254) |       |        |       | + .010 (.254)<br>- .018 (.457) |       | ± .005 (.127) |       | ± .010 (.254) |      |        |      |
|                 | in            | mm    | in     | mm    | in                             | mm    | in            | mm    | in            | mm   | in     | mm   |
| 9 Plug          | .775          | 19.68 | .333   | 8.46  | .390                           | 9.91  | .565          | 14.35 | .298          | 7.57 | .270   | 6.86 |
| 9 Socket        | .775          | 19.68 | .396   | 10.06 | .390                           | 9.91  | .565          | 14.35 | .298          | 7.57 | .270   | 6.86 |
| 15 Plug         | .925          | 23.50 | .483   | 12.27 | .540                           | 13.72 | .715          | 18.16 | .298          | 7.57 | .270   | 6.86 |
| 15 Socket       | .925          | 23.50 | .546   | 13.87 | .540                           | 13.72 | .715          | 18.16 | .298          | 7.57 | .270   | 6.86 |
| 21 Plug         | 1.075         | 27.30 | .633   | 16.08 | .690                           | 17.53 | .865          | 21.97 | .298          | 7.57 | .270   | 6.86 |
| 21 Socket       | 1.075         | 27.30 | .696   | 17.68 | .690                           | 17.53 | .865          | 21.97 | .298          | 7.57 | .270   | 6.86 |
| 25 Plug         | 1.175         | 29.84 | .733   | 18.62 | .790                           | 20.07 | .965          | 24.51 | .298          | 7.57 | .270   | 6.86 |
| 25 Socket       | 1.175         | 29.84 | .796   | 20.22 | .790                           | 20.07 | .965          | 24.51 | .298          | 7.57 | .270   | 6.86 |
| 31 Plug         | 1.325         | 33.66 | .883   | 21.16 | .940                           | 23.88 | 1.115         | 28.32 | .298          | 7.57 | .270   | 6.86 |
| 31 Socket       | 1.325         | 33.66 | .946   | 24.03 | .940                           | 23.88 | 1.115         | 28.32 | .298          | 7.57 | .270   | 6.86 |
| 37 Plug         | 1.475         | 37.46 | 1.033  | 26.24 | 1.090                          | 27.69 | 1.265         | 32.13 | .298          | 7.57 | .270   | 6.86 |
| 37 Socket       | 1.475         | 37.46 | 1.096  | 27.84 | 1.090                          | 27.69 | 1.265         | 32.13 | .298          | 7.57 | .270   | 6.86 |
| 51 Plug         | 1.425         | 36.20 | .983   | 24.97 | 1.040                          | 26.42 | 1.215         | 30.86 | .341          | 8.66 | .310   | 7.87 |
| 51 Socket       | 1.425         | 36.20 | 1.046  | 26.57 | 1.040                          | 26.42 | 1.215         | 30.86 | .341          | 8.66 | .310   | 7.87 |
| 100 Plug        | 2.160         | 54.86 | 1.383  | 35.13 | 1.432                          | 36.38 | 1.800         | 45.71 | .384          | 9.75 | .360   | 9.15 |
| 100 Socket      | 2.160         | 54.86 | 1.446  | 36.73 | 1.432                          | 36.38 | 1.800         | 45.71 | .384          | 9.75 | .360   | 9.15 |

**Panel Mounting Dimensions**

Pin and socket,  
rear mounted



Pin and socket,  
front mounted



Pin, front mounted  
Socket, rear mounted



**Panel Cutout Dimensions**



| No. of Contacts | Figure Number | A                      |                        | B                      |                        | C                      |                        | D                      |                        |
|-----------------|---------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                 |               | +0.004<br>-0.000<br>in | (.101)<br>(.000)<br>mm | +0.004<br>-0.000<br>in | (.101)<br>(.000)<br>mm | +0.005<br>-0.000<br>in | (.127)<br>(.000)<br>mm | +0.005<br>-0.000<br>in | (1.27)<br>(.000)<br>mm |
| 9               | 1             | .408                   | 10.36                  | .270                   | 6.86                   | .570                   | 14.48                  | -                      | -                      |
|                 | 2             | .408                   | 10.36                  | .256                   | 6.50                   | .570                   | 14.48                  | .089                   | 2.26                   |
|                 | 3             | -                      | -                      | -                      | -                      | .570                   | 14.48                  | -                      | -                      |
| 15              | 1             | .558                   | 14.17                  | .270                   | 6.86                   | .720                   | 18.29                  | -                      | -                      |
|                 | 2             | .558                   | 14.17                  | .256                   | 6.50                   | .720                   | 18.29                  | .089                   | 2.26                   |
|                 | 3             | -                      | -                      | -                      | -                      | .720                   | 18.29                  | -                      | -                      |
| 21              | 1             | .708                   | 17.98                  | .270                   | 6.86                   | .870                   | 22.10                  | -                      | -                      |
|                 | 2             | .708                   | 17.98                  | .256                   | 6.50                   | .870                   | 22.10                  | .089                   | 2.26                   |
|                 | 3             | -                      | -                      | -                      | -                      | .870                   | 22.10                  | -                      | -                      |
| 25              | 1             | .808                   | 20.52                  | .270                   | 6.86                   | .970                   | 24.64                  | -                      | -                      |
|                 | 2             | .808                   | 20.52                  | .256                   | 6.50                   | .970                   | 24.64                  | .089                   | 2.26                   |
|                 | 3             | -                      | -                      | -                      | -                      | .970                   | 24.64                  | -                      | -                      |
| 31              | 1             | .958                   | 24.33                  | .270                   | 6.86                   | 1.120                  | 28.45                  | -                      | -                      |
|                 | 2             | .958                   | 24.33                  | .256                   | 6.50                   | 1.120                  | 28.45                  | .089                   | 2.26                   |
|                 | 3             | -                      | -                      | -                      | -                      | 1.120                  | 28.45                  | -                      | -                      |
| 37              | 1             | 1.108                  | 28.14                  | .270                   | 6.86                   | 1.270                  | 32.26                  | -                      | -                      |
|                 | 2             | 1.108                  | 28.14                  | .256                   | 6.50                   | 1.270                  | 32.26                  | .089                   | 2.26                   |
|                 | 3             | -                      | -                      | -                      | -                      | 1.270                  | 32.26                  | -                      | -                      |
| 51              | 1             | 1.058                  | 26.87                  | .315                   | 8.00                   | 1.220                  | 30.99                  | -                      | -                      |
|                 | 2             | 1.058                  | 26.87                  | .300                   | 7.62                   | 1.220                  | 30.99                  | .089                   | 2.26                   |
|                 | 3             | -                      | -                      | -                      | -                      | 1.220                  | 30.99                  | -                      | -                      |
| 100             | 1             | 1.450                  | 36.84                  | .361                   | 9.17                   | 1.805                  | 45.86                  | .117                   | 2.97                   |
|                 | 2             | 1.562                  | 39.68                  | .338                   | 8.58                   | 1.805                  | 45.86                  | .117                   | 2.97                   |
|                 | 3             | -                      | -                      | -                      | -                      | 1.805                  | 45.86                  | .117                   | 2.97                   |

**Mounting Hardware**  
**For Plastic & Metal Shell**  
**Dura-Con Connectors**



**Float Mounting**  
**Option "F"**



**Reversed Float Mounting**  
**Option "R"**



**Standard Jackscrew**  
**Option "K"**



**Low Profile Jackscrew**  
**Option "L"**



**Removable Jackpost**  
**Option "P"**



Screwlock Kit

**P/N: DCSL1**  
**Purchased Separately**

**Jackpost - Rear Panel Mount**  
 (Purchased Separately)



Jackpost Bushing  
 (for rear panel mounting)

| Jackpost Part Number | Panel Thickness |     | A Dimension |           |
|----------------------|-----------------|-----|-------------|-----------|
|                      | in              | mm  | in          | mm        |
| DCJPRM094            | .094            | 2.5 | .092/.087   | 2.34/2.21 |
| DCJPRM063            | .063            | 1.6 | .061/.056   | 1.55/1.42 |
| DCJPRM047            | .047            | 1.2 | .047/.042   | 1.19/1.07 |
| DCJPRM031            | .031            | 0.8 | .030/.025   | 0.76/0.64 |

**Panel Cutout Dimensions**  
 (Plug & Receptacle)



| Part Number<br>(by Shell Size) | A                            |       | B                            |      | C            |       |
|--------------------------------|------------------------------|-------|------------------------------|------|--------------|-------|
|                                | +.004 (.101)<br>-.000 (.000) |       | +.004 (.101)<br>-.000 (.000) |      | ±.005 (.127) |       |
|                                | in                           | mm    | in                           | mm   | in           | mm    |
| 9                              | .398                         | 10.11 | .249                         | 6.32 | .565         | 14.35 |
| 15                             | .548                         | 13.92 | .249                         | 6.32 | .715         | 18.16 |
| 21                             | .698                         | 17.73 | .249                         | 6.32 | .865         | 21.97 |
| 25                             | .798                         | 20.27 | .249                         | 6.32 | .965         | 24.51 |
| 31                             | .948                         | 24.08 | .249                         | 6.32 | 1.115        | 28.34 |
| 37                             | 1.098                        | 27.89 | .249                         | 6.32 | 1.265        | 32.13 |
| 51                             | 1.048                        | 26.62 | .292                         | 7.42 | 1.215        | 30.86 |
| 100                            | 1.448                        | 36.78 | .336                         | 8.53 | 1.800        | 45.72 |

# Dura-Con High Reliability Metal Shell

.050" (1.27mm) Density  
PCB Mount Terminal Block



## FEATURES

- *Plug & socket versions available in 9, 15, 21, 25, 31, 37, 51, and 100 positions.*
- *Flow-through design facilitates inspection and cleaning after soldering.*
- *All terminal block connectors use standard mounting hardware.*
- *Metal shell provides EMI/RFI shielding capability.*
- *Available in 3 styles: Straight mount, 90° right-angle mount, and 90° right-angle narrow profile mounting.*
- *Silicone elastomer interfacial seal protects contacts from moisture and isolates them from each other and from the metal shell.*
- *Meets requirements of MIL-C-83513.*
- *Choice of insulator materials.*



## MATERIALS

**Insulator:** UL94V-0 glass-filled polyester or diallyl phthalate  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy (machined)  
**Contact Plating:** .000050 in gold  
**Shell:** Aluminum alloy  
**Shell Plating:** Yellow chromate over cadmium (std.) or electroless nickel

## ENVIRONMENTAL

**Operating Temperature:** -55°C to +135°C

## ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level, 150 VAC @ 70,000 ft.  
**Contact Resistance:** 8 milliohms maximum  
**Insulation Resistance:** 1,000 megohms min between adjacent pins

## MECHANICAL

**Individual Contact:** 6 oz. (170.40 g) maximum insertion force;  
 0.5 oz. (14.20 g) minimum withdrawal force  
**Mating / Unmating Forces:** See table

| No. of Contacts | Maximum Mating Force |       | Minimum Unmating Force |      |
|-----------------|----------------------|-------|------------------------|------|
|                 | Lb.                  | Kg    | Lb.                    | Kg   |
| 9               | 5.63                 | 2.56  | .28                    | .13  |
| 15              | 9.38                 | 4.26  | .47                    | .21  |
| 21              | 13.13                | 5.96  | .66                    | .30  |
| 25              | 15.63                | 7.10  | .78                    | .35  |
| 31              | 19.38                | 8.80  | .97                    | .44  |
| 37              | 23.13                | 10.50 | 1.16                   | .53  |
| 51              | 31.88                | 14.47 | 1.59                   | .72  |
| 100             | 62.50                | 28.38 | 3.13                   | 1.42 |

# Dura-Con High Reliability Metal Shell

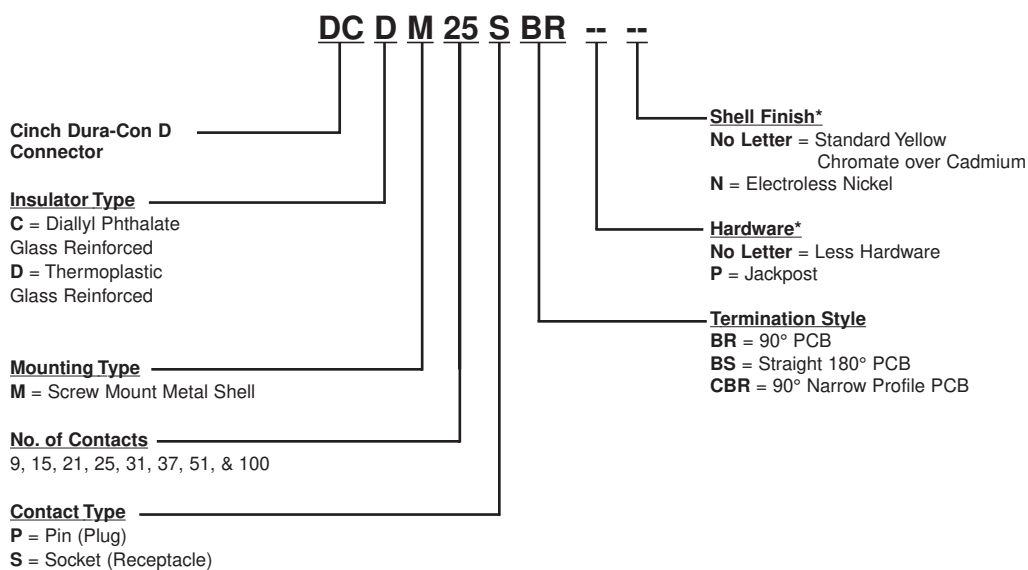
.050" (1.27mm) Density  
PCB Mount Terminal Block



## Contact Arrangements



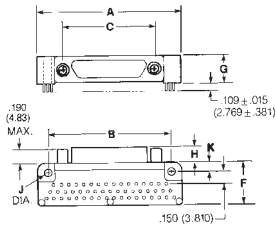
## Ordering Information



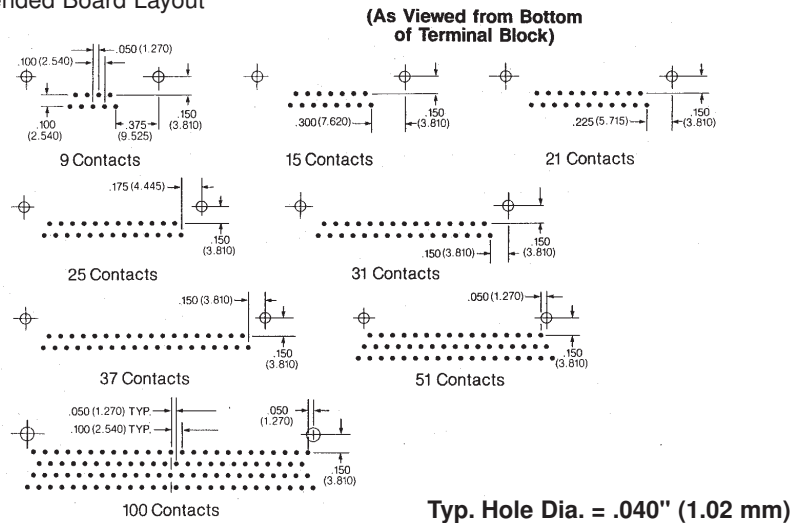
\* For other options consult factory.



**90° Termination**



**Recommended Board Layout**



NOTE: For additional connector dimensions, see page 5-10.

| No. of Contacts | A     |       | B     |       | C     |       | F    |       |
|-----------------|-------|-------|-------|-------|-------|-------|------|-------|
|                 | in    | mm    | in    | mm    | in    | mm    | in   | mm    |
| 9 Plug          | 1.390 | 35.31 | 1.150 | 29.21 | .565  | 14.35 | .465 | 11.81 |
| 9 Socket        | 1.390 | 35.31 | 1.150 | 29.21 | .565  | 14.35 | .465 | 11.81 |
| 15 Plug         | 1.540 | 39.12 | 1.300 | 33.02 | .715  | 18.16 | .465 | 11.81 |
| 15 Socket       | 1.540 | 39.12 | 1.300 | 33.02 | .715  | 18.16 | .465 | 11.81 |
| 21 Plug         | 1.690 | 42.93 | 1.450 | 36.83 | .865  | 21.97 | .465 | 11.81 |
| 21 Socket       | 1.690 | 42.93 | 1.450 | 36.83 | .865  | 21.97 | .465 | 11.81 |
| 25 Plug         | 1.790 | 45.47 | 1.550 | 39.37 | .965  | 24.51 | .465 | 11.81 |
| 25 Socket       | 1.790 | 45.47 | 1.550 | 39.37 | .965  | 24.51 | .465 | 11.81 |
| 31 Plug         | 2.040 | 51.82 | 1.800 | 45.72 | 1.115 | 28.32 | .465 | 11.81 |
| 31 Socket       | 2.040 | 51.82 | 1.800 | 45.72 | 1.115 | 28.32 | .465 | 11.81 |
| 37 Plug         | 2.340 | 59.44 | 2.100 | 53.34 | 1.265 | 32.13 | .465 | 11.81 |
| 37 Socket       | 2.340 | 59.44 | 2.100 | 53.34 | 1.265 | 32.13 | .465 | 11.81 |
| 51 Plug         | 1.875 | 47.63 | 1.600 | 40.64 | 1.215 | 30.86 | .565 | 14.35 |
| 51 Socket       | 1.875 | 47.63 | 1.600 | 40.64 | 1.215 | 30.86 | .565 | 14.35 |
| 100 Plug        | 2.780 | 70.61 | 2.500 | 63.50 | 1.800 | 45.72 | .765 | 19.43 |
| 100 Socket      | 2.780 | 70.61 | 2.500 | 63.50 | 1.800 | 45.72 | .765 | 19.43 |

| No. of Contacts | G    |       | H    |      | J    |      | K    |      |
|-----------------|------|-------|------|------|------|------|------|------|
|                 | in   | mm    | in   | mm   | in   | mm   | in   | mm   |
| 9 Plug          | .308 | 7.82  | .190 | 4.83 | .096 | 2.44 | .125 | 3.18 |
| 9 Socket        | .308 | 7.82  | .200 | 5.08 | .096 | 2.44 | .125 | 3.18 |
| 15 Plug         | .308 | 7.82  | .190 | 4.83 | .096 | 2.44 | .125 | 3.18 |
| 15 Socket       | .308 | 7.82  | .200 | 5.08 | .096 | 2.44 | .125 | 3.18 |
| 21 Plug         | .308 | 7.82  | .190 | 4.83 | .096 | 2.44 | .125 | 3.18 |
| 21 Socket       | .308 | 7.82  | .200 | 5.08 | .096 | 2.44 | .125 | 3.18 |
| 25 Plug         | .308 | 7.82  | .190 | 4.83 | .096 | 2.44 | .125 | 3.18 |
| 25 Socket       | .308 | 7.82  | .200 | 5.08 | .096 | 2.44 | .125 | 3.18 |
| 31 Plug         | .308 | 7.82  | .190 | 4.83 | .096 | 2.44 | .125 | 3.18 |
| 31 Socket       | .308 | 7.82  | .200 | 5.08 | .096 | 2.44 | .125 | 3.18 |
| 37 Plug         | .308 | 7.82  | .190 | 4.83 | .096 | 2.44 | .125 | 3.18 |
| 37 Socket       | .308 | 7.82  | .200 | 5.08 | .096 | 2.44 | .125 | 3.18 |
| 51 Plug         | .351 | 8.92  | .190 | 4.83 | .096 | 2.44 | .125 | 3.18 |
| 51 Socket       | .351 | 8.92  | .200 | 5.08 | .096 | 2.44 | .125 | 3.18 |
| 100 Plug        | .394 | 10.00 | .190 | 4.83 | .125 | 3.18 | .225 | 5.72 |
| 100 Socket      | .394 | 10.00 | .200 | 5.08 | .125 | 3.18 | .225 | 5.72 |

# Dura-Con High Reliability Metal Shell

.050" (1.27mm) Density  
PCB Mount Terminal Block

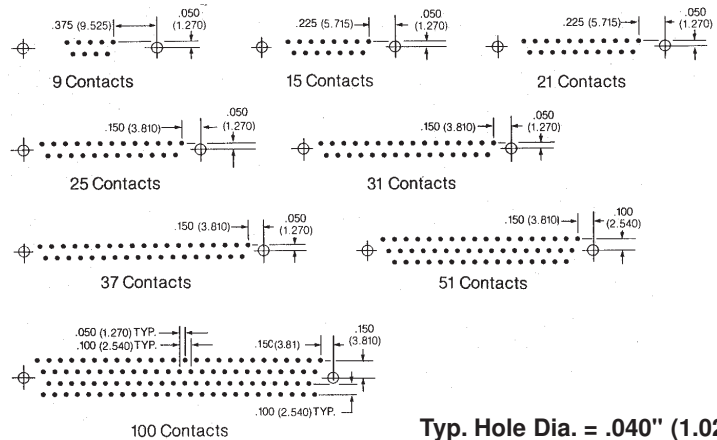


## Straight (180°) Termination



## Recommended Board Layout

(As Viewed from Bottom of Terminal Block)



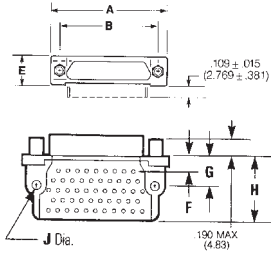
Typ. Hole Dia. = .040" (1.02 mm)

NOTE: For additional connector dimensions, see page 5-10.

| No. of Contacts | A<br>Max. |       | B<br>± .007 (0.18) |       | C<br>± .005 (0.13) |       | D<br>Max. |       | G<br>Max. |       |
|-----------------|-----------|-------|--------------------|-------|--------------------|-------|-----------|-------|-----------|-------|
|                 | in        | mm    | in                 | mm    | in                 | mm    | in        | mm    | in        | mm    |
| 9 Plug          | 1.390     | 35.31 | 1.150              | 29.21 | .565               | 14.35 | .885      | 22.48 | .308      | 7.75  |
| 9 Socket        | 1.390     | 35.31 | 1.150              | 29.21 | .565               | 14.35 | .885      | 22.48 | .308      | 7.75  |
| 15 Plug         | 1.390     | 35.31 | 1.150              | 29.21 | .715               | 18.16 | .945      | 24.0  | .308      | 7.75  |
| 15 Socket       | 1.390     | 35.31 | 1.150              | 29.21 | .715               | 18.16 | .945      | 24.0  | .308      | 7.75  |
| 21 Plug         | 1.690     | 42.93 | 1.450              | 36.83 | .865               | 21.97 | 1.185     | 30.09 | .308      | 7.75  |
| 21 Socket       | 1.690     | 42.93 | 1.450              | 36.83 | .865               | 21.97 | 1.185     | 30.09 | .308      | 7.75  |
| 25 Plug         | 1.740     | 44.20 | 1.500              | 38.10 | .965               | 24.51 | 1.275     | 32.38 | .308      | 7.75  |
| 25 Socket       | 1.740     | 44.20 | 1.500              | 38.10 | .965               | 24.51 | 1.275     | 32.38 | .308      | 7.75  |
| 31 Plug         | 2.040     | 51.82 | 1.800              | 45.72 | 1.115              | 28.32 | 1.575     | 40.00 | .308      | 7.75  |
| 31 Socket       | 2.040     | 51.82 | 1.800              | 45.72 | 1.115              | 28.32 | 1.575     | 40.00 | .308      | 7.75  |
| 37 Plug         | 2.340     | 59.44 | 2.100              | 53.34 | 1.265              | 32.13 | 1.875     | 47.62 | .308      | 7.75  |
| 37 Socket       | 2.340     | 59.44 | 2.100              | 53.34 | 1.265              | 32.13 | 1.875     | 47.62 | .308      | 7.75  |
| 51 Plug         | 2.270     | 57.66 | 2.000              | 50.80 | 1.215              | 30.86 | 1.775     | 45.08 | .351      | 8.92  |
| 51 Socket       | 2.270     | 57.66 | 2.000              | 50.80 | 1.215              | 30.86 | 1.775     | 45.08 | .351      | 8.92  |
| 100 Plug        | 3.070     | 77.98 | 2.800              | 71.12 | 1.800              | 45.72 | 2.585     | 65.55 | .455      | 11.56 |
| 100 Socket      | 3.070     | 77.98 | 2.800              | 71.12 | 1.800              | 45.72 | 2.585     | 65.65 | .455      | 11.56 |

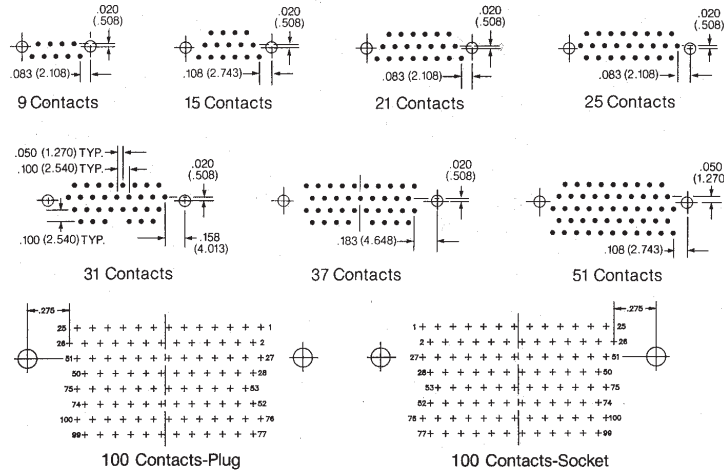
| No. of Contacts | H<br>Max. |      | J<br>± .005 (0.13) |      | K<br>Max. |      | L<br>Max. |       |
|-----------------|-----------|------|--------------------|------|-----------|------|-----------|-------|
|                 | in        | mm   | in                 | mm   | in        | mm   | in        | mm    |
| 9 Plug          | .190      | 4.83 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 9 Socket        | .200      | 5.08 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 15 Plug         | .190      | 4.83 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 15 Socket       | .200      | 5.08 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 21 Plug         | .190      | 4.83 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 21 Socket       | .200      | 5.08 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 25 Plug         | .190      | 4.83 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 25 Socket       | .200      | 5.08 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 31 Plug         | .190      | 4.83 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 31 Socket       | .200      | 5.08 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 37 Plug         | .190      | 4.83 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 37 Socket       | .200      | 5.08 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 51 Plug         | .190      | 4.83 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 51 Socket       | .200      | 5.08 | .096               | 2.44 | .165      | 4.19 | .355      | 9.02  |
| 100 Plug        | .190      | 4.83 | .125               | 3.18 | .300      | 7.62 | .550      | 13.97 |
| 100 Socket      | .200      | 5.08 | .125               | 3.18 | .300      | 7.62 | .550      | 13.97 |

**90° Narrow Termination**



**Recommended Board Layout**

(As Viewed from Bottom of Terminal Block)



NOTE: For additional connector dimensions, see page 5-10.

Typ. Hole Dia. = .040" (1.02 mm)

| No. of Contacts | A     |       | B     |       | C    |       |
|-----------------|-------|-------|-------|-------|------|-------|
|                 | in    | mm    | in    | mm    | in   | mm    |
| 9 Plug          | .785  | 19.94 | .565  | 14.35 | .308 | 7.82  |
| 9 Socket        | .785  | 19.94 | .565  | 14.35 | .308 | 7.82  |
| 15 Plug         | .935  | 23.75 | .715  | 18.16 | .308 | 7.82  |
| 15 Socket       | .935  | 23.75 | .715  | 18.16 | .308 | 7.82  |
| 21 Plug         | 1.085 | 27.56 | .865  | 21.97 | .308 | 7.82  |
| 21 Socket       | 1.085 | 27.56 | .865  | 21.97 | .308 | 7.82  |
| 25 Plug         | 1.085 | 30.10 | .965  | 24.51 | .308 | 7.82  |
| 25 Socket       | 1.185 | 30.10 | .965  | 24.51 | .308 | 7.82  |
| 31 Plug         | 1.335 | 33.91 | 1.115 | 28.32 | .308 | 7.82  |
| 31 Socket       | 1.335 | 33.91 | 1.115 | 28.32 | .308 | 7.82  |
| 37 Plug         | 1.485 | 37.72 | 1.265 | 32.13 | .308 | 7.82  |
| 37 Socket       | 1.485 | 37.72 | 1.265 | 32.13 | .308 | 7.82  |
| 51 Plug         | 1.435 | 36.45 | 1.215 | 30.86 | .351 | 8.92  |
| 51 Socket       | 1.435 | 36.45 | 1.215 | 30.86 | .351 | 8.92  |
| 100 Plug        | 2.175 | 55.25 | 1.800 | 45.72 | .394 | 10.00 |
| 100 Socket      | 2.175 | 55.25 | 1.800 | 45.72 | .394 | 10.00 |

| No. of Contacts | F    |      | G    |       | H     |       | J    |      |
|-----------------|------|------|------|-------|-------|-------|------|------|
|                 | in   | mm   | in   | mm    | in    | mm    | in   | mm   |
| 9 Plug          | .230 | 5.84 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 9 Socket        | .230 | 5.84 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 15 Plug         | .130 | 3.30 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 15 Socket       | .130 | 3.30 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 21 Plug         | .130 | 3.30 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 21 Socket       | .130 | 3.30 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 25 Plug         | .130 | 3.30 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 25 Socket       | .130 | 3.30 | .250 | 6.35  | .420  | 10.67 | .096 | 2.44 |
| 31 Plug         | .130 | 3.30 | .250 | 6.35  | .520  | 13.21 | .996 | 2.44 |
| 31 Socket       | .130 | 3.30 | .250 | 6.35  | .520  | 13.21 | .096 | 2.44 |
| 37 Plug         | .130 | 3.30 | .250 | 6.35  | .520  | 13.21 | .096 | 2.44 |
| 37 Socket       | .130 | 3.30 | .250 | 6.35  | .520  | 13.21 | .096 | 2.44 |
| 51 Plug         | .150 | 3.81 | .300 | 7.62  | .650  | 16.51 | .096 | 2.44 |
| 51 Socket       | .150 | 3.81 | .300 | 7.62  | .650  | 16.51 | .096 | 2.44 |
| 100 Plug        | .200 | 5.08 | .400 | 10.16 | 1.000 | 25.40 | .125 | 3.18 |
| 100 Socket      | .200 | 5.08 | .400 | 10.16 | 1.000 | 25.40 | .125 | 3.18 |

**Dura-Con**  
**High Reliability**  
**MIL-C-83513**

.050" (1.27mm) Density  
 Solder Cup/Wire  
 D-Microminiature



FEATURES

- All-plastic and metal shell wire versions available in solder cup, gold-plated solid wire, and insulated stranded wire.
- PCB mount "terminal block" type connectors available in straight or right angle.
- Sizes offered - 9, 15, 21, 25, 31, 35, 51, and 100 (metal shell only).
- All products are qualified to the requirements of MIL-C-83513 and marked with the M83513 part number.
- Optional shell platings and insulator materials offer high performance in harsh environments.
- Mounting hardware per MIL-C-83513.



MATERIALS

**Insulator:** UL94V-0 rated glass-filled polyester per MIL-M-24519 or diallyl phthalate (DAP) per MIL-M-14.  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy  
**Contact Plating:** .000050 in gold per MIL-G-45204  
**Shell Material (Metal Shell Only):** Aluminum alloy  
**Shell Plating (Metal Shell Only):** Yellow chromate over cadmium (std.) or electroless nickel

ENVIRONMENTAL

**Operating Temperature:** -55°C to +125°C

ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level  
**Contact Resistance:** 8 milliohms maximum

MECHANICAL

**Durability:** 500 mate/unmate cycles  
**Individual Contact:** Forces 6 oz. (170.40 g) maximum insertion;  
 0.5 oz. (14.20 g) minimum withdrawal  
**Mating / Unmating Force:** See table

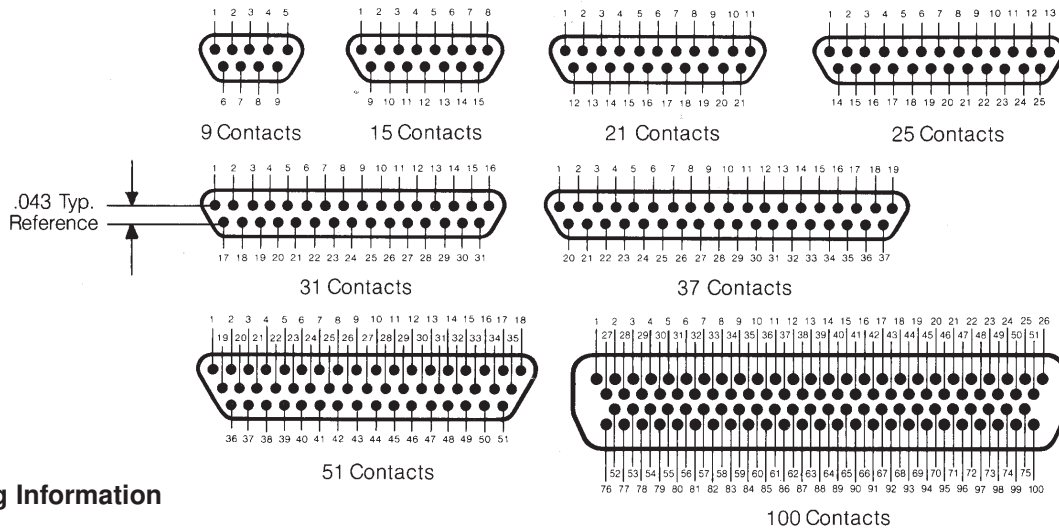
| No. of Contacts | Maximum Mating Force |       | Minimum Unmating Force |     |
|-----------------|----------------------|-------|------------------------|-----|
|                 | Lb.                  | Kg    | Lb.                    | Kg  |
| 9               | 5.63                 | 2.56  | .28                    | .13 |
| 15              | 9.38                 | 4.26  | .47                    | .21 |
| 21              | 13.13                | 5.96  | .66                    | .30 |
| 25              | 15.63                | 7.10  | .78                    | .35 |
| 31              | 19.38                | 8.80  | .97                    | .44 |
| 37              | 23.13                | 10.50 | 1.16                   | .53 |
| 51              | 31.88                | 14.47 | 1.59                   | .72 |

**Metal Shell**

**Contact Arrangements**

(Face view of pin insert)

(Use reverse order for socket side)



**Ordering Information**

**M83513/04 - A 03 C**

**Connector Type**

- 01 - Metal Shell D Plugs with Solder Cup Termination
- 02 - Metal Shell D Sockets with Solder Cup Termination
- 03 - Metal Shell D Plugs with Wire Leads
- 04 - Metal Shell D Sockets with Wire Leads

**Insert Arrangements**

(No. of Contacts)

- A = 9
- B = 15
- C = 21
- D = 25
- E = 31
- F = 37
- G = 51
- H = 100

**Shell Finish**

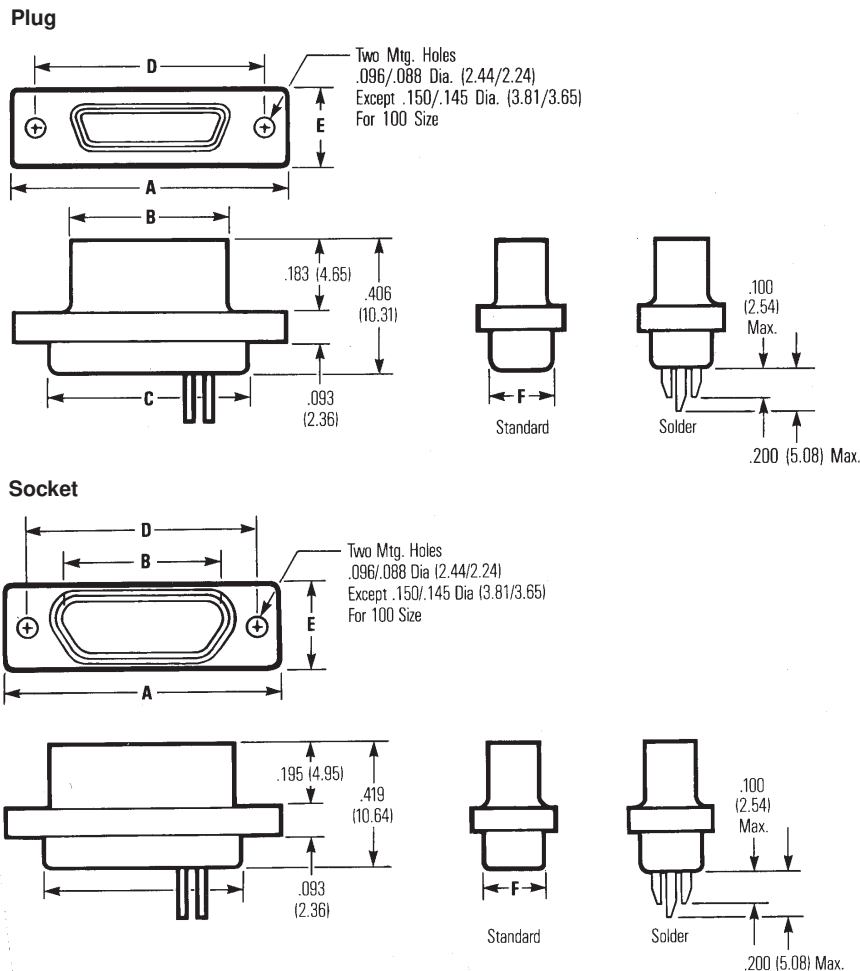
- C = Cadmium
- N = Electroless Nickel

**Wire Type (Use only for /03 & /04, otherwise omit)**

- 01 - M22759/11-26-9, 18 inches, White (see note below)
- 02 - M22759/11-26-9, 36 inches, White (see note below)
- 03 - M22759/11-26-( ), 18 inches, Color Coded (see note below)
- 04 - M22759/11-26-( ), 36 inches, Color Coded (see note below)
- 05 - QQ-W-343, 25 AWG, 0.5 inch, Gold-Plated
- 06 - QQ-W-343, 25 AWG, 1.0 inch, Gold-Plated
- 07 - QQ-W-343, 25 AWG, 0.5 inch, Tin-Plated
- 08 - QQ-W-343, 25 AWG, 1.0 inch, Tin-Plated
- 09 - M22759/33-26-9, 18 inches, White
- 10 - M22759/33-26-9, 36 inches, White
- 11 - M22759/33-26-( ), 18 inches, Color Coded
- 12 - M22759/33-26-( ), 36 inches, Color Coded
- 13 - M22759/11-26-9, 72 inches, White
- 14 - M22759/11-26-( ), 72 inches, Color Coded
- 15 - M22759/33-26-9, 72 inches, White
- 16 - M22759/33-26-( ), 72 inches, Color Coded

Note: See page 5-31 for M83513 mounting hardware.

**Connector Dimensions - Metal Shell**



| No. of Contacts | A              |       | B Max. (Plug)<br>Min. (Socket) |       | C<br>+ .010" (.254)<br>- .018" (.457) |       | D              |       | E              |      | F Max. |      |
|-----------------|----------------|-------|--------------------------------|-------|---------------------------------------|-------|----------------|-------|----------------|------|--------|------|
|                 | ± .010" (.254) |       |                                |       |                                       |       | ± .005" (.127) |       | ± .010" (.254) |      |        |      |
|                 | in             | mm    | in                             | mm    | in                                    | mm    | in             | mm    | in             | mm   | in     | mm   |
| 9 Plug          | .775           | 19.68 | .3338                          | 8.48  | .390                                  | 9.91  | .565           | 14.35 | .298           | 7.57 | .270   | 6.68 |
| 9 Socket        | .775           | 19.68 | .3342                          | 8.49  | .390                                  | 9.91  | .565           | 14.35 | .298           | 7.57 | .270   | 6.68 |
| 15 Plug         | .925           | 23.50 | .4838                          | 12.29 | .540                                  | 13.72 | .715           | 18.16 | .298           | 7.57 | .270   | 6.68 |
| 15 Socket       | .925           | 23.50 | .4842                          | 12.30 | .540                                  | 13.72 | .715           | 18.16 | .298           | 7.57 | .270   | 6.68 |
| 21 Plug         | 1.075          | 27.30 | .6338                          | 16.10 | .690                                  | 17.53 | .865           | 21.97 | .298           | 7.57 | .270   | 6.68 |
| 21 Socket       | 1.075          | 27.30 | .6342                          | 16.11 | .690                                  | 17.53 | .865           | 21.97 | .298           | 7.57 | .270   | 6.68 |
| 25 Plug         | 1.175          | 29.84 | .7338                          | 18.64 | .790                                  | 20.07 | .965           | 24.51 | .298           | 7.57 | .270   | 6.68 |
| 25 Socket       | 1.175          | 29.84 | .7342                          | 18.65 | .790                                  | 20.07 | .965           | 24.51 | .298           | 7.57 | .270   | 6.68 |
| 31 Plug         | 1.325          | 33.66 | .8838                          | 22.45 | .940                                  | 23.88 | 1.115          | 28.32 | .298           | 7.57 | .270   | 6.68 |
| 31 Socket       | 1.325          | 33.66 | .8842                          | 22.46 | .940                                  | 23.88 | 1.115          | 28.32 | .298           | 7.57 | .270   | 6.68 |
| 37 Plug         | 1.475          | 37.46 | 1.0338                         | 26.26 | 1.090                                 | 27.69 | 1.265          | 32.13 | .298           | 7.57 | .270   | 6.68 |
| 37 Socket       | 1.475          | 37.46 | 1.0342                         | 26.27 | 1.090                                 | 27.69 | 1.265          | 32.13 | .298           | 7.57 | .270   | 6.68 |
| 51 Plug         | 1.425          | 36.20 | .9838                          | 24.99 | 1.040                                 | 26.42 | 1.215          | 30.86 | .341           | 8.66 | .310   | 7.87 |
| 51 Socket       | 1.425          | 36.20 | .9842                          | 25.00 | 1.040                                 | 26.42 | 1.215          | 30.86 | .341           | 8.66 | .310   | 7.87 |
| 100 Plug        | 2.160          | 54.86 | 1.3838                         | 35.15 | 1.432                                 | 36.38 | 1.800          | 45.71 | .384           | 9.75 | .360   | 9.15 |
| 100 Socket      | 2.160          | 54.86 | 1.3842                         | 35.16 | 1.432                                 | 36.38 | 1.800          | 45.71 | .384           | 9.75 | .360   | 9.15 |

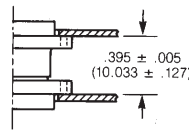
**Panel Mounting Dimensions - Metal Shell**

**Panel Mounting Dimensions**

Pin and socket, rear mounted



Pin and socket, front mounted



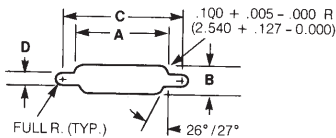
Pin, front mounted  
 Socket, rear mounted



**Front Mounting**

**Panel Cutout Dimensions - Metal Shell**

| No. of Contacts | A               |       | B               |      | C               |       | D               |      |
|-----------------|-----------------|-------|-----------------|------|-----------------|-------|-----------------|------|
|                 | +.004" (.101mm) |       | +.004" (.101mm) |      | +.005" (.127mm) |       | +.005" (.127mm) |      |
|                 | -.000" (.000mm) |       | -.000" (.000mm) |      | -.000" (.000mm) |       | -.000" (.000mm) |      |
|                 | in              | mm    | in              | mm   | in              | mm    | in              | mm   |
| 9               | .408            | 10.36 | .270            | 6.86 | .570            | 14.48 | .089            | 2.26 |
| 15              | .558            | 14.17 | .270            | 6.86 | .720            | 18.29 | .089            | 2.26 |
| 21              | .708            | 17.98 | .270            | 6.86 | .870            | 22.10 | .089            | 2.26 |
| 25              | .808            | 20.52 | .270            | 6.86 | .970            | 24.64 | .089            | 2.26 |
| 31              | .958            | 24.33 | .270            | 6.86 | 1.120           | 28.45 | .089            | 2.26 |
| 37              | 1.108           | 28.14 | .270            | 6.86 | 1.270           | 32.26 | .089            | 2.26 |
| 51              | 1.058           | 26.87 | .315            | 8.00 | 1.220           | 30.99 | .089            | 2.26 |
| 100             | 1.450           | 36.84 | .361            | 9.17 | 1.805           | 45.86 | .117            | 2.97 |



**Rear Mounting**

| No. of Contacts | A               |       | B               |      | C               |       | D               |      |
|-----------------|-----------------|-------|-----------------|------|-----------------|-------|-----------------|------|
|                 | +.004" (.101mm) |       | +.004" (.101mm) |      | +.005" (.127mm) |       | +.005" (.127mm) |      |
|                 | -.000" (.000mm) |       | -.000" (.000mm) |      | -.000" (.000mm) |       | -.000" (.000mm) |      |
|                 | in              | mm    | in              | mm   | in              | mm    | in              | mm   |
| 9               | .408            | 10.36 | .256            | 6.50 | .570            | 14.48 | .089            | 2.26 |
| 15              | .558            | 14.17 | .256            | 6.50 | .720            | 18.29 | .089            | 2.26 |
| 21              | .708            | 17.98 | .256            | 6.50 | .870            | 22.10 | .089            | 2.26 |
| 25              | .808            | 20.52 | .256            | 6.50 | .970            | 24.64 | .089            | 2.26 |
| 31              | .958            | 24.33 | .256            | 6.50 | 1.120           | 28.45 | .089            | 2.26 |
| 37              | 1.108           | 28.14 | .256            | 6.50 | 1.270           | 32.26 | .089            | 2.26 |
| 51              | 1.058           | 26.87 | .300            | 7.62 | 1.220           | 30.99 | .089            | 2.26 |
| 100             | 1.450           | 36.84 | .338            | 8.58 | 1.805           | 45.86 | .117            | 2.97 |



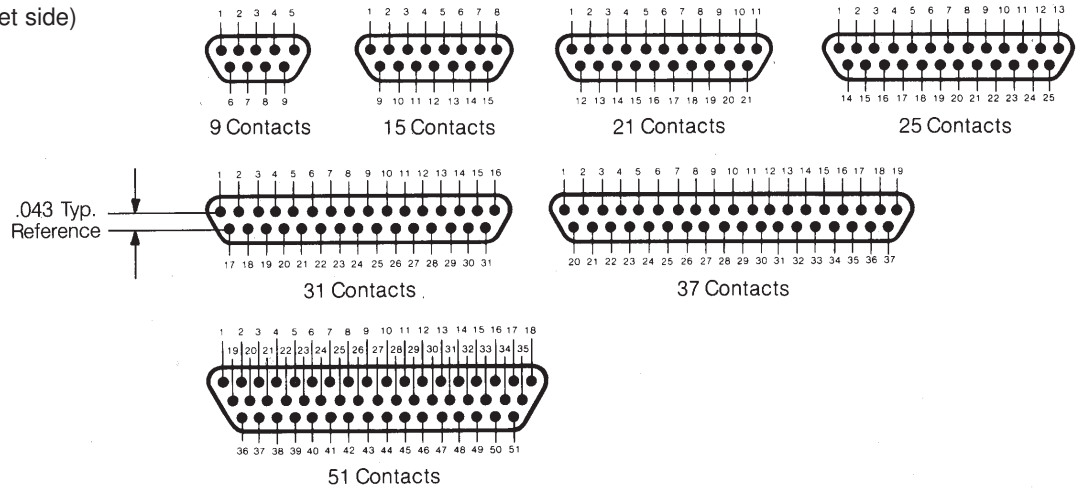
**Edgeboard Mounting**

| No. of Contacts | C               |       | D               |      |
|-----------------|-----------------|-------|-----------------|------|
|                 | +.005" (.127mm) |       | +.005" (.127mm) |      |
|                 | -.000" (.000mm) |       | -.000" (.000mm) |      |
|                 | in              | mm    | in              | mm   |
| 9               | .570            | 14.48 | .089            | 2.26 |
| 15              | .720            | 18.29 | .089            | 2.26 |
| 21              | .870            | 22.10 | .089            | 2.26 |
| 25              | .970            | 24.64 | .089            | 2.26 |
| 31              | 1.120           | 28.45 | .089            | 2.26 |
| 37              | 1.270           | 32.26 | .089            | 2.26 |
| 51              | 1.220           | 30.99 | .089            | 2.26 |
| 100             | 1.805           | 45.86 | .117            | 2.97 |

**Plastic Shell**

**Contact Arrangements**

(Face view of pin insert)  
 (Use reverse order for socket side)



**Ordering Information**

**M83513/06-A 04**

**Connector Type**

- 06 - Plastic Shell Plugs with Solder Cup Termination
- 07 - Plastic Shell Sockets with Solder Cup Termination
- 08 - Plastic Shell Plugs with Wire Leads
- 09 - Plastic Shell Sockets with Wire Leads

**Insert Arrangements**

(No. of Contacts)

- A = 9
- B = 15
- C = 21
- D = 25
- E = 31
- F = 37
- G = 51

**Wire Type (Use only for /08 & /09, otherwise omit)**

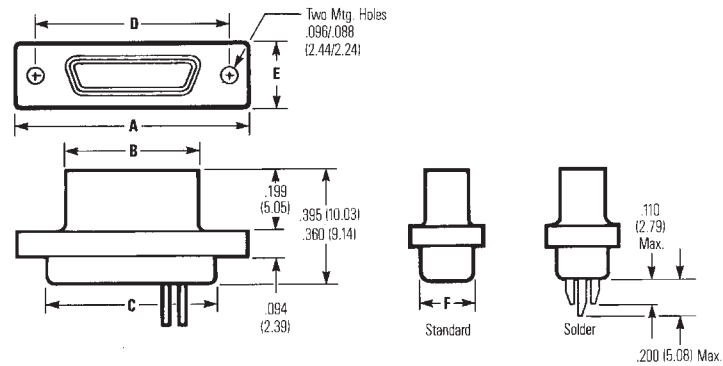
- 01 - M22759/11-26-9, 18 inches, White
- 02 - M22759/11-26-9, 36 inches, White
- 03 - M22759/11-26-(), 18 inches, Color Coded
- 04 - M22759/11-26-(), 36 inches, Color Coded
- 05 - QQ-W-343, 25 AWG, 0.5 inch, Gold-Plated
- 06 - QQ-W-343, 25 AWG, 1.0 inch, Gold-Plated
- 07 - QQ-W-343, 25 AWG, 0.5 inch, Tin-Plated
- 08 - QQ-W-343, 25 AWG, 1.0 inch, Tin-Plated
- 09 - M22759/33-26-9, 18 inches, White
- 10 - M22759/33-26-9, 36 inches, White
- 11 - M22759/33-26-(), 18 inches, Color Coded
- 12 - M22759/33-26-(), 36 inches, Color Coded
- 13 - M22759/11-26-9, 72 inches, White
- 14 - M22759/11-26-(), 72 inches, Color Coded
- 15 - M22759/33-26-9, 72 inches, White
- 16 - M22759/33-26-(), 72 inches, Color Coded

Note: See page 5-31 for M83513 mounting hardware.

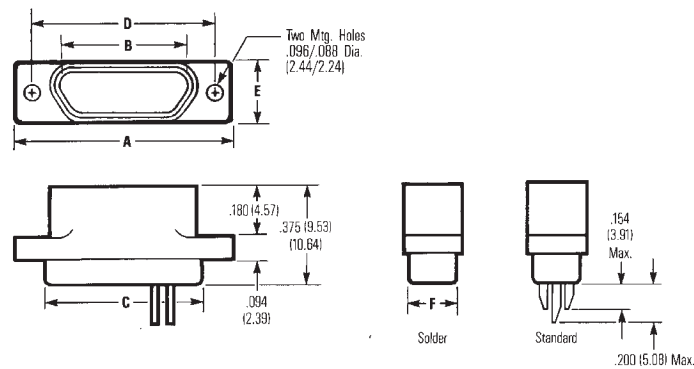


**Shell Dimensions - (All-Plastic Version)**

**Plug**



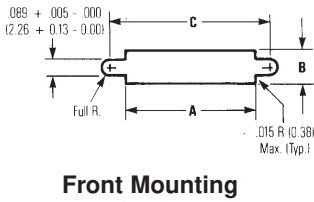
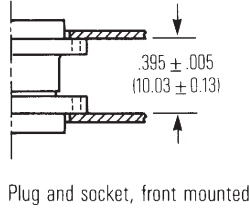
**Socket**



| No. of Contacts | A             |       | B Max. (Plug)<br>Min. (Socket) |       | C<br>+.010" (.254)<br>-.018" (.457) |       | D             |       | E             |      | F Max. |      |
|-----------------|---------------|-------|--------------------------------|-------|-------------------------------------|-------|---------------|-------|---------------|------|--------|------|
|                 | ±.010" (.254) |       |                                |       |                                     |       | ±.005" (.127) |       | ±.010" (.254) |      |        |      |
|                 | in            | mm    | in                             | mm    | in                                  | mm    | in            | mm    | in            | mm   | in     | mm   |
| 9 Plug          | .778          | 19.76 | .2918                          | 7.41  | .398                                | 10.11 | .565          | 14.35 | .208          | 5.28 | .173   | 4.39 |
| 9 Socket        | .778          | 19.76 | .2922                          | 7.42  | .398                                | 10.11 | .565          | 14.35 | .208          | 5.28 | .173   | 4.39 |
| 15 Plug         | .928          | 23.57 | .4418                          | 11.22 | .548                                | 13.92 | .715          | 18.16 | .208          | 5.28 | .173   | 4.39 |
| 15 Socket       | .928          | 23.57 | .4422                          | 11.23 | .548                                | 13.92 | .715          | 18.16 | .208          | 5.28 | .173   | 4.39 |
| 21 Plug         | 1.078         | 27.38 | .5918                          | 15.03 | .698                                | 17.73 | .865          | 21.97 | .208          | 5.28 | .173   | 4.39 |
| 21 Socket       | 1.078         | 27.38 | .5922                          | 15.04 | .698                                | 17.73 | .865          | 21.97 | .208          | 5.28 | .173   | 4.39 |
| 25 Plug         | 1.178         | 29.92 | .6918                          | 17.57 | .798                                | 20.27 | .965          | 24.51 | .208          | 5.28 | .173   | 4.39 |
| 25 Socket       | 1.178         | 29.92 | .6922                          | 17.58 | .798                                | 20.27 | .965          | 24.51 | .208          | 5.28 | .173   | 4.39 |
| 31 Plug         | 1.328         | 33.73 | .8418                          | 21.38 | .948                                | 24.08 | 1.115         | 28.32 | .208          | 5.28 | .173   | 4.39 |
| 31 Socket       | 1.328         | 33.73 | .8422                          | 21.39 | .948                                | 24.08 | 1.115         | 28.32 | .208          | 5.28 | .173   | 4.39 |
| 37 Plug         | 1.478         | 37.54 | .9918                          | 25.19 | 1.098                               | 27.89 | 1.265         | 32.13 | .208          | 5.28 | .173   | 4.39 |
| 37 Socket       | 1.478         | 37.54 | .9922                          | 25.20 | 1.098                               | 27.89 | 1.265         | 32.13 | .208          | 5.28 | .173   | 4.39 |
| 51 Plug         | 1.428         | 36.27 | .9418                          | 23.92 | 1.048                               | 26.62 | 1.215         | 30.86 | .250          | 6.35 | .220   | 5.59 |
| 51 Socket       | 1.428         | 36.27 | .9422                          | 23.93 | 1.048                               | 26.62 | 1.215         | 30.86 | .250          | 6.35 | .220   | 5.59 |



**Panel Mounting Dimensions - All-Plastic**

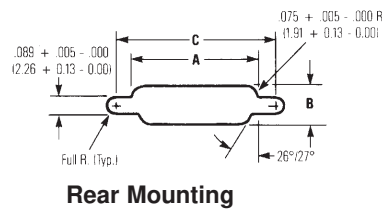


**Panel Cutout Dimensions**

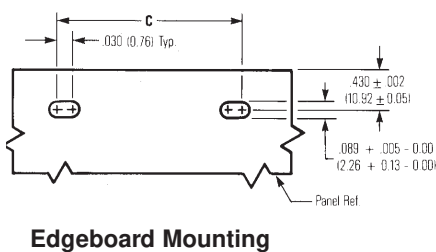
| No. of Contacts | A<br>+.004" (.101mm)<br>-.000" (.000mm) |       | B<br>+.004" (.101mm)<br>-.000" (.000mm) |      | C<br>+.005" (.127mm)<br>-.000" (.000mm) |       |
|-----------------|---|-------|---|------|---|-------|
|                 | in                                      | mm    | in                                      | mm   | in                                      | mm    |
| 9               | .408                                    | 10.36 | .172                                    | 4.37 | .570                                    | 14.48 |
| 15              | .558                                    | 14.17 | .172                                    | 4.37 | .720                                    | 18.29 |
| 21              | .708                                    | 17.98 | .172                                    | 4.37 | .870                                    | 22.10 |
| 25              | .808                                    | 20.52 | .172                                    | 4.37 | .970                                    | 24.64 |
| 31              | .958                                    | 24.33 | .172                                    | 4.37 | 1.120                                   | 28.45 |
| 37              | 1.108                                   | 28.14 | .172                                    | 4.37 | 1.270                                   | 32.26 |
| 51              | 1.058                                   | 26.87 | .215                                    | 5.46 | 1.220                                   | 30.99 |

**Rear Cutout Dimensions**

| No. of Contacts | A<br>+.004" (.101mm)<br>-.000" (.000mm) |       | B<br>+.004" (.101mm)<br>-.000" (.000mm) |      | C<br>+.005" (.127mm)<br>-.000" (.000mm) |       |
|-----------------|---|-------|---|------|---|-------|
|                 | in                                      | mm    | in                                      | mm   | in                                      | mm    |
| 9               | .373                                    | 9.47  | .216                                    | 5.49 | .570                                    | 14.48 |
| 15              | .523                                    | 13.28 | .216                                    | 5.49 | .720                                    | 18.29 |
| 21              | .674                                    | 17.12 | .216                                    | 5.49 | .870                                    | 22.10 |
| 25              | .774                                    | 19.66 | .216                                    | 5.49 | .970                                    | 24.64 |
| 31              | .924                                    | 23.47 | .216                                    | 5.49 | 1.120                                   | 28.45 |
| 37              | 1.074                                   | 27.28 | .216                                    | 5.49 | 1.270                                   | 32.26 |
| 51              | 1.024                                   | 26.01 | .259                                    | 6.58 | 1.220                                   | 30.99 |



**Edgeboard Mounting Cutout Dimensions**



| No. of Contacts | D<br>+.005" (.127mm)<br>-.000" (.000mm) |       |
|-----------------|---|-------|
|                 | in                                      | mm    |
| 9               | .570                                    | 14.48 |
| 15              | .720                                    | 18.29 |
| 21              | .870                                    | 22.10 |
| 25              | .970                                    | 24.64 |
| 31              | 1.120                                   | 28.45 |
| 37              | 1.270                                   | 32.26 |
| 51              | 1.220                                   | 30.99 |