

# 3M™ Mini D Ribbon (MDR) Connectors

.050" Boardmount Thru-Hole Right Angle Receptacle-Shielded

102 Series



- Wiper-on-wiper contact for reliable repetitive plugging
- Rugged die cast metal case construction
- SMT compatible PCT insulator material
- Screw or ground lock for reliable PCB retention
- Interface latch design for connection stability
- IEEE 1284C Interface as a 36 contact connector
- Contacts: 14, 20, 26, 36, 40, 50, 68, 80 and 100
- RoHS\* compliant version (-PC plating suffix) available

Date Modified: April 5, 2005

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## Physical

### Insulation

Material: Glass Reinforced Polyester (PCT)  
Flammability: UL 94V-0  
Color: Beige

### Contact

Material: Copper Alloy (C521)

### Plating

Underplating: 80  $\mu$ " (2.0  $\mu$ m) Nickel - QQ-N-290, Class 2  
Wiping Area: 30  $\mu$ " (0.76  $\mu$ m) Min Gold - MIL-G-45204, Type II, Grade C  
Solder Tail Plating: See ordering information

### Body

Material: Zinc Alloy  
Plating: Nickel

### Shroud & Latch Hook

Material: Steel  
Plating: Nickel

Marking: 3M Logo & Part Number

## Electrical

Current Rating: 1 A

Insulation Resistance:  $> 5 \times 10^8 \Omega$  at 500 VDC

Withstanding Voltage: 500 Vrms for 1 Minute

## Environmental

Temperature Rating: -55°C to +105°C

Process Rating: Reflow solder process compatible up to 240-250°C for 10 sec.

UL File No.: E68080 \*RoHS = Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.



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| Contact Quantity | Dimensions      |               |               |               |               |
|------------------|-----------------|---------------|---------------|---------------|---------------|
|                  | A               | B             | C             | D             | E             |
| 14               | 0.300 [ 7.62 ]  | 0.93 [ 23.6 ] | 1.16 [ 29.5 ] | 0.50 [ 12.6 ] | 0.77 [ 19.5 ] |
| 20               | 0.450 [ 11.43 ] | 1.08 [ 27.5 ] | 1.31 [ 33.4 ] | 0.65 [ 16.4 ] | 0.92 [ 23.4 ] |
| 26               | 0.600 [ 15.24 ] | 1.23 [ 31.3 ] | 1.46 [ 37.2 ] | 0.80 [ 20.2 ] | 1.07 [ 27.2 ] |
| 36               | 0.850 [ 21.59 ] | 1.48 [ 37.6 ] | 1.71 [ 43.5 ] | 1.05 [ 26.6 ] | 1.32 [ 33.5 ] |
| 40               | 0.950 [ 24.13 ] | 1.58 [ 40.2 ] | 1.81 [ 46.1 ] | 1.15 [ 29.1 ] | 1.42 [ 36.1 ] |
| 50               | 1.200 [ 30.48 ] | 1.83 [ 46.5 ] | 2.06 [ 52.4 ] | 1.40 [ 35.5 ] | 1.67 [ 42.4 ] |
| 68               | 1.650 [ 41.91 ] | 2.28 [ 57.9 ] | 2.51 [ 63.8 ] | 1.85 [ 46.9 ] | 2.12 [ 53.8 ] |
| 80               | 1.950 [ 49.53 ] | 2.58 [ 65.6 ] | 2.81 [ 71.5 ] | 2.15 [ 54.5 ] | 2.42 [ 61.5 ] |
| 100              | 2.450 [ 62.23 ] | 3.08 [ 78.3 ] | 3.31 [ 84.2 ] | 2.65 [ 67.2 ] | 2.92 [ 74.2 ] |

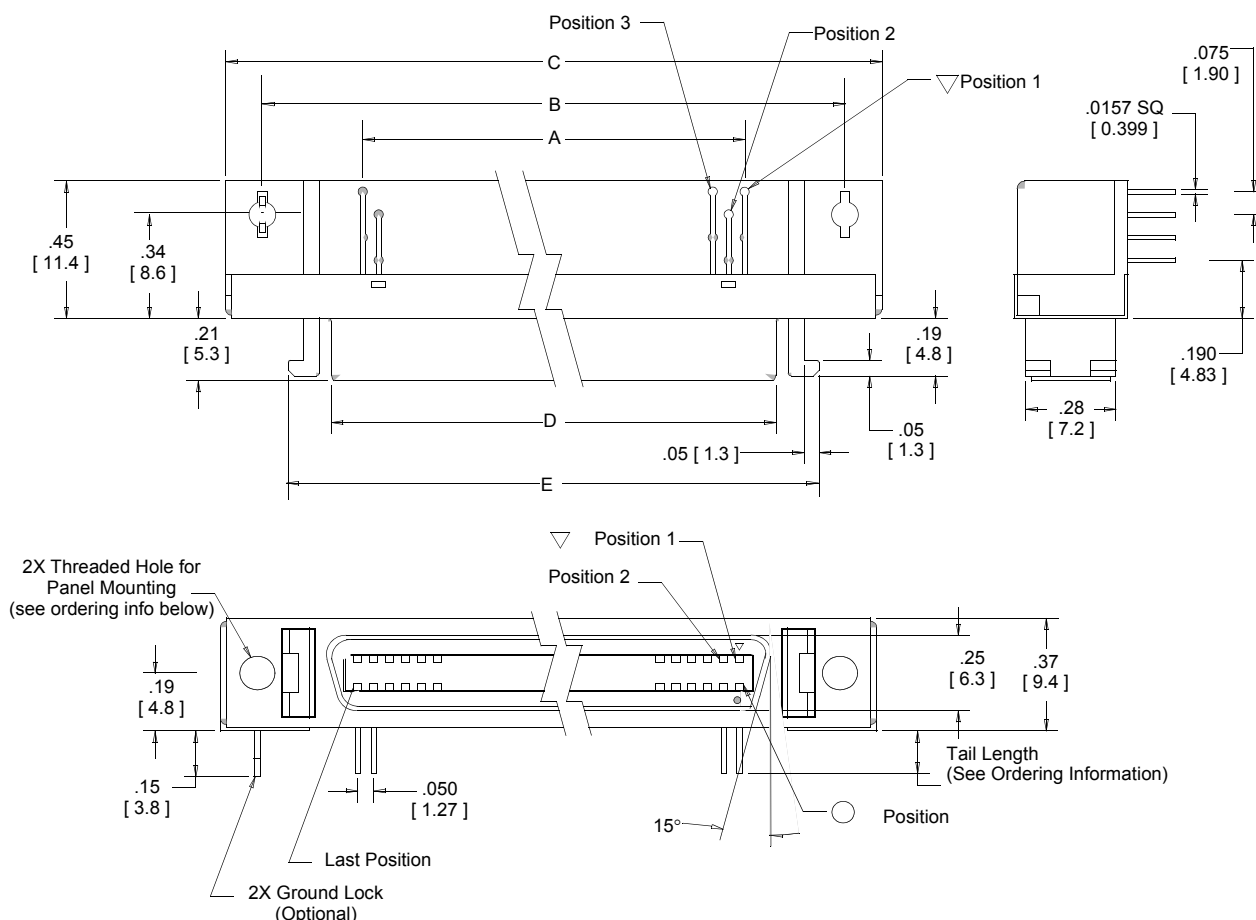


Inch

[mm]

| Tolerance Unless Noted |     |      |       |
|------------------------|-----|------|-------|
|                        | .0  | .00  | .000  |
| inch                   | ±.1 | ±.01 | ±.005 |

[ ] Dimensions for Reference Only



## Ordering Information

**N102XX-52XXXC**

Contact Quantity  
(See Table)  
A0 = 100 pos.

Solder tail plating:  
V = tin-lead over Ni  
P = flash gold over Ni (RoHS compliant)

Tail Length  
2 = .15 [ 3.9 ] (Standard)  
3 = .11 [ 2.8 ] (Special Order)

Panel/Board Retention Features  
 Contacts 14-40: 1 = M2.5 panel/M2.5 screw lock  
 B = M2.5 panel/ground lock  
 G = M2.5 panel / with .086 [ 2.2 ] ground lock (Special Order see note)  
 Contacts 50-100: 4 = 4-40 panel/4-40 screw lock  
 E = 4-40 panel/ground lock  
 G = 4-40 panel/with .086 [ 2.2 ] ground lock (Special Order see note)

Note: Option G is used with the 52X3 Tail length only.

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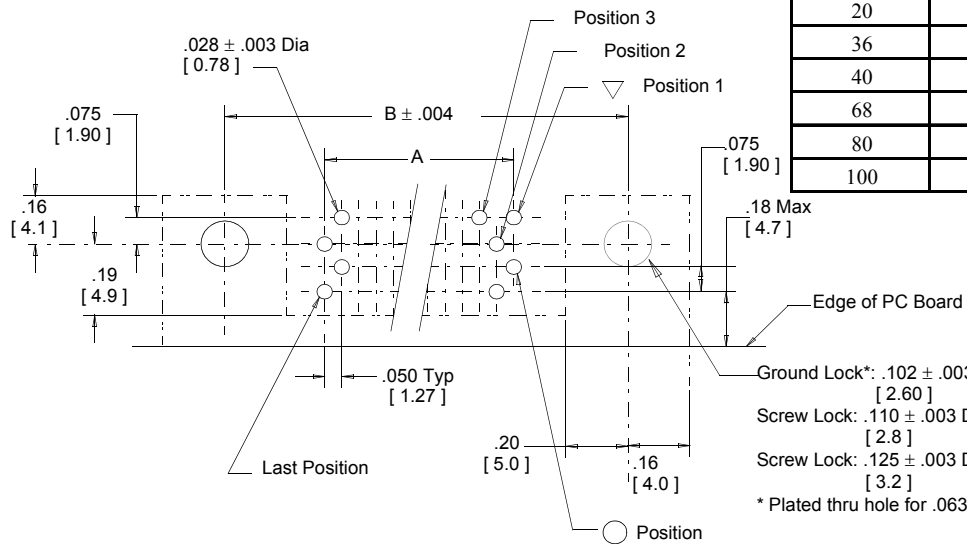
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## Recommended Board Layout

(Viewed from Connector Side for 20, 36, 40, 68, 80 and 100 position only)

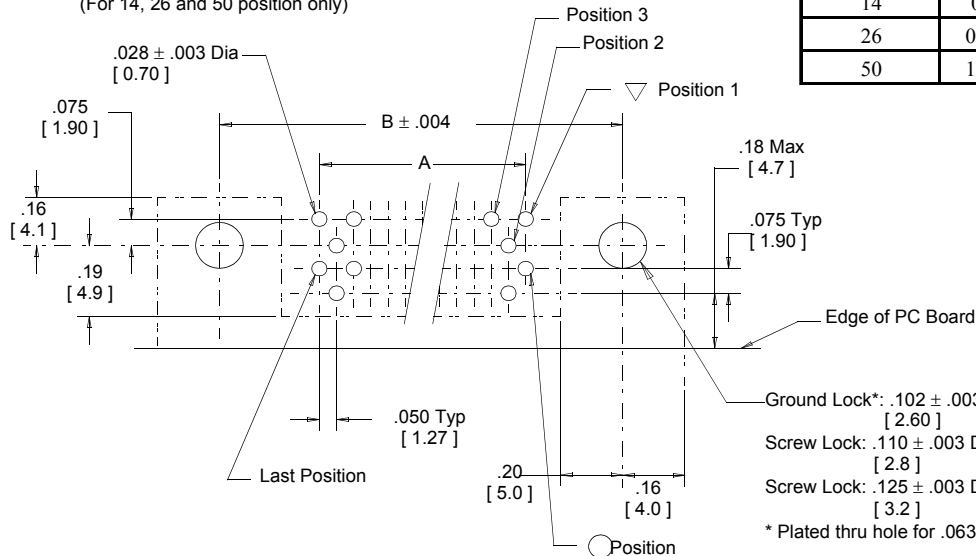


| Contact Quantity | Dimensions      |                 |
|------------------|-----------------|-----------------|
|                  | A               | B               |
| 20               | 0.450 [ 11.43 ] | 1.081 [ 27.45 ] |
| 36               | 0.850 [ 21.59 ] | 1.481 [ 37.61 ] |
| 40               | 0.950 [ 24.13 ] | 1.581 [ 40.15 ] |
| 68               | 1.650 [ 41.91 ] | 2.281 [ 57.93 ] |
| 80               | 1.950 [ 49.53 ] | 2.581 [ 65.55 ] |
| 100              | 2.450 [ 62.23 ] | 3.081 [ 78.25 ] |

Ground Lock\*: .102 ± .003 Dia 2X [ 2.60 ]  
 Screw Lock: .110 ± .003 Dia (14-40 pos) 2X [ 2.8 ]  
 Screw Lock: .125 ± .003 Dia. (50-100 pos) 2X [ 3.2 ]  
 \* Plated thru hole for .063" board thickness

## Recommended Board Layout

(For 14, 26 and 50 position only)

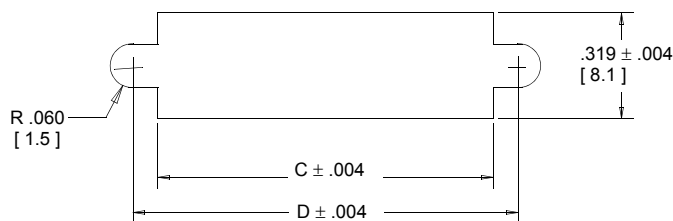


| Contact Quantity | Dimensions      |                 |
|------------------|-----------------|-----------------|
|                  | A               | B               |
| 14               | 0.300 [ 7.62 ]  | 0.931 [ 23.64 ] |
| 26               | 0.600 [ 15.24 ] | 1.231 [ 31.26 ] |
| 50               | 1.200 [ 30.48 ] | 1.831 [ 46.50 ] |

Ground Lock\*: .102 ± .003 Dia 2X [ 2.60 ]  
 Screw Lock: .110 ± .003 Dia (14-40 pos) 2X [ 2.8 ]  
 Screw Lock: .125 ± .003 Dia. (50-100 pos) 2X [ 3.2 ]  
 \* Plated thru hole for .063" board thickness

## Recommended Panel Cut-out

Note: Panel thickness .079 [ 2.00 ] Max.



| Contact Quantity | Dimensions    |                |
|------------------|---------------|----------------|
|                  | C             | D              |
| 14               | .78 [ 19.9 ]  | .93 [ 23.64 ]  |
| 20               | .94 [ 23.8 ]  | 1.08 [ 27.45 ] |
| 26               | 1.09 [ 27.6 ] | 1.23 [ 31.26 ] |
| 36               | 1.33 [ 33.9 ] | 1.48 [ 37.61 ] |
| 40               | 1.44 [ 36.5 ] | 1.58 [ 40.15 ] |
| 50               | 1.69 [ 42.8 ] | 1.83 [ 46.50 ] |
| 68               | 2.13 [ 54.2 ] | 2.28 [ 57.93 ] |
| 80               | 2.44 [ 61.9 ] | 2.58 [ 65.55 ] |
| 100              | 2.94 [ 74.6 ] | 3.08 [ 78.25 ] |

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