# 3M™ Mini D Ribbon (MDR) Connectors

.050″ Boardmount Through-Hole Vertical Receptacle - Shielded 102 Series

- Wiper-on-wiper contact for reliable repetitive plugging
- Rugged die cast metal case construction
- Screw lockdown 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
- See Regulatory Information Appendix (RIA) for chemical compliance information.

Date Modified: November 26, 2007



## Physical

| | |
|---|---|
| **Insulation** Material: | Glass Filled Polyester (PBT) or Glass Filled Polyester (PCT) - (High Temp. Option) - See ordering information |
| Flammability: | UL 94V-0 |
| Color: | Black (PBT) or Beige (PCT)-High Temp. Option - See ordering information |
| **Contact Material**: | Copper Alloy |
| **Plating** Underplating: | 100 μ″ [ 2.5 μm ] Nickel |
| Wiping Area: | 30 μ″ [ 0.76 μm ] Min. Gold |
| Solder Tail Plating: | Gold flash over Nickel (RIA E1 & C1 apply) |
| **Body** Material: | Zinc Alloy |
| Plating: | Nickel |
| **Shroud & Latch Hook** | |
| Material: | Steel |
| Plating: | Nickel |
| **Marking:** | 3M Logo and Part Number |

## Electrical

| | |
|---|---|
| **Current Rating:** | 1 A |
| **Insulation Resistance:** | $> 5 \times 10^8 \Omega$ at 500 $V_{DC}$ |
| **Withstanding Voltage:** | 500 $V_{RMS}$ for 1 Minute |

## Environmental

| | |
|---|---|
| **Temperature Rating:** | -20°C to +85°C |
| **PBT Insulation Process Rating:** | Solder Dip Test - 260°C for 10 secs., two times after 100°C max. preheat, 60 sec. max. duration. |
| **PCT Insulation Process Rating:** | **High Temp. Option:** 260°C (profile per J-STD-020C) |

UL File No.: E68080



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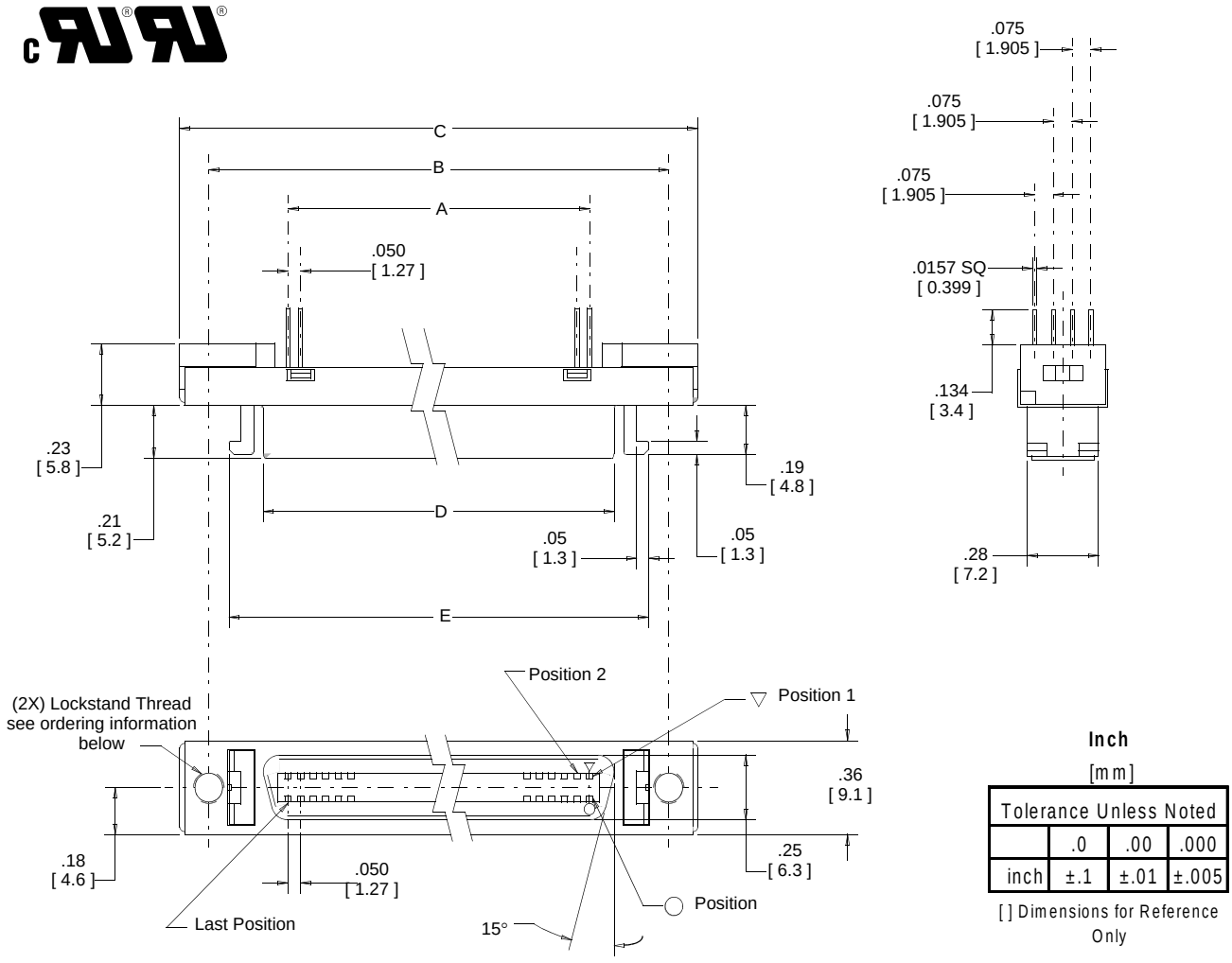
.050″ Boardmount Through-Hole Vertical Receptacle - Shielded 102 Series

| Contact Quantity | Dim ensions | | | | |
|---|---|---|---|---|---|
| | A | B | C | D | E |
| 14 | 0.300 [ 7.62 ] | 0.93 [ 23.6 ] | 1.16 [ 29.5 ] | 0.50 [ 12.6 ] | .77 [ 19.5 ] |
| 20 | 0.450 [ 11.43 ] | 1.08 [ 27.5 ] | 1.31 [ 33.4 ] | .65 [ 16.4 ] | .92 [ 23.4 ] |
| 26 | .600 [ 15.24 ] | 1.23 [ 31.3 ] | 1.46 [ 37.2 ] | .80 [ 20.2 ] | 1.07 [ 27.2 ] |
| 36 | .850 [ 21.59 ] | 1.48 [ 37.6 ] | 1.71 [ 43.5 ] | 1.05 [ 26.6 ] | 1.32 [ 33.5 ] |
| 40 | .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

**X 102 XX - 62 X 2 P C**

- Blank = Stand., PBT Insulator
  N = High Temp. Option, PCT Insulator
- Contact Quantity (See Table)
  A0 = 100 pos.
- Lockstand Thread
  0 = M 2.6 (Special)
  1 = M 2.5 (Standard)



3M
**Interconnect Solutions**
http://www.3M.com/interconnects/

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For technical, sales or ordering information call
**800-225-5373**

# 3M™ Mini D Ribbon (MDR) Connectors

.050″ Boardmount Through-Hole Vertical Receptacle - Shielded 102 Series

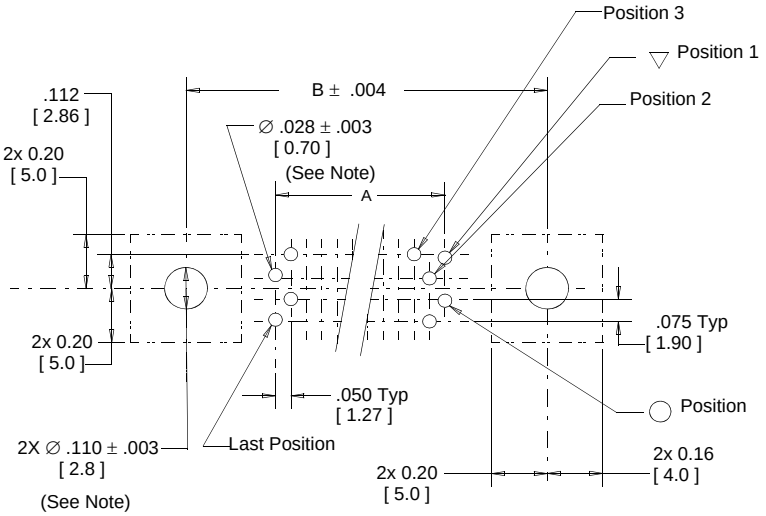
| Contact Quantity | Dimensions | |
|---|---|---|
| | A | B |
| 20 | .450 [ 11.43 ] | 1.081 [ 27.45 ] |
| 36 | .850 [ 21.59 ] | 1.481 [ 37.61 ] |
| 40 | .950 [ 24.13 ] | 1.581 [ 40.15 ] |
| 68 | 1.650 [ 41.91 ] | 2.281 [ 57.93 ] |
| 80 | 1.950 [ 49.53 ] | 2.581 [ 65.55 ] |
| 100 | 2.450 [ 62.23 ] | 3.081 [ 78.25 ] |

| Contact Quantity | Dimensions | |
|---|---|---|
| | A | B |
| 14 | .300 [ 7.62 ] | 0.931[ 23.64 ] |
| 26 | .600 [ 15.24 ] | 1.231 [ 31.26 ] |
| 50 | 1.200 [ 30.48 ] | 1.831 [ 46.50 ] |

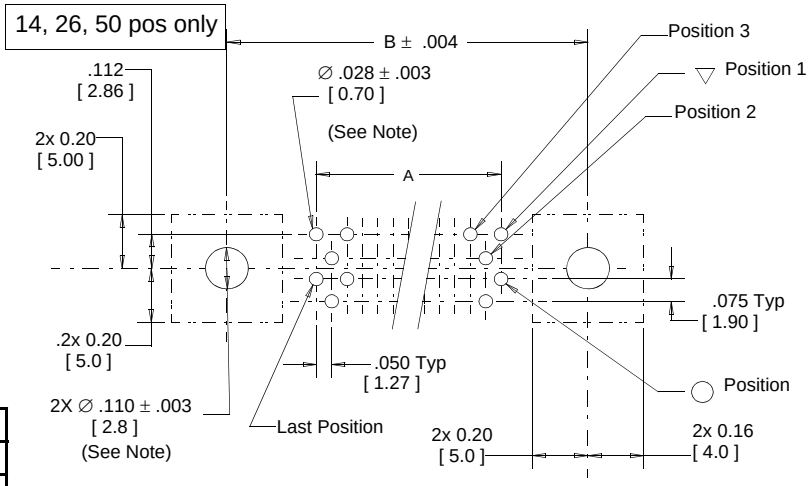
| Contact Quantity | Dimensions | |
|---|---|---|
| | C | D |
| 14 | .78 [ 20.0 ] | .93 [ 23.64 ] |
| 20 | .94 [ 23.8 ] | 1.08 [ 27.45 ] |
| 26 | 1.09 [ 27.6 ] | 1.23 [ 31.26 ] |
| 36 | 1.33 [ 33.9 ] | 1.48 [ 37.61 ] |
| 40 | 1.44 [ 36.5 ] | 1.58 [ 40.15 ] |
| 50 | 1.69 [ 42.8 ] | 1.83 [ 46.50 ] |
| 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 ] |

Recommended Board Layout
Viewed from Connector Side

20, 36, 40, 68, 80 and 100 pos only

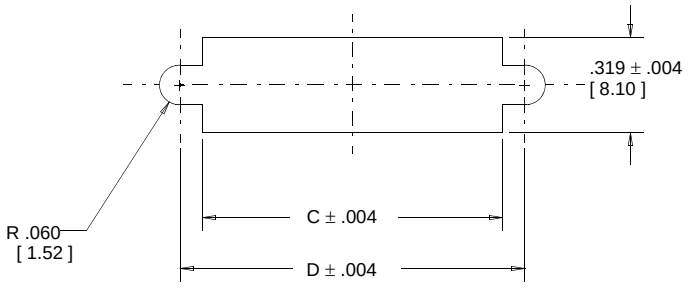



14, 26, 50 pos only




Note: Plated through holes for .062″ board thickness.

Recommended Panel Cut-Out




Note: Panel thickness .079 [ 2.00 ] Max.

TS-0427-B
Sheet 3 of 3

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# Regulatory Information Appendix

## 3M Electronic Solutions Division/Interconnect

## EUROPE

## Appendix E1: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product is RoHS Compliant 2005/95/EC.**

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

## Appendix E2: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product contains lead in the compliant pin area in excess of the maximum concentration value allowed but is compliant by exemption under EU Commission Decision 2005/747/EC.**

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

## Appendix E3: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment as amended by Commission Decision 2005/618/EC.

**This product contains lead in the solder tail area in excess of the maximum concentration value allowed**.

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In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

## Appendix E4: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product contains decaBDE in the insulating material in excess of the maximum concentration value allowed but is compliant by exemption under EU Commission Decision 2005/717/EC.**

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

## Appendix E5: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product contains lead in excess of the maximum concentration value allowed but is compliant by exemption under Item 6 of the Annex to the Directive.**

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

# CHINA

## Appendix C1: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.
This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does not** contain any of the following substances in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

## Appendix C2: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.
This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product's life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量 Name and Content of Hazardous Substances or Elements

| 部件名称 (Part or Component Name) | 有毒有害物质或元素 (Hazardous Substances or Elements) | | | | | |
|---|---|---|---|---|---|---|
| | 铅(Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 端子镀层(contact plating) | × | ○ | ○ | ○ | ○ | ○ |

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)

# Appendix C3: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.

This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product's life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量 Name and Content of Hazardous Substances or Elements

| 部件名称 (Part or Component Name) | 有毒有害物质或元素 (Hazardous Substances or Elements) | | | | | |
|---|---|---|---|---|---|---|
| | 铅(Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 合金(Metal alloy) | × | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)

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**3M Electronics**
**Interconnect Products**
6801 River Place Blvd.
Austin, TX 78726-9000
U.S.A.
1-800-225-5373
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Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А