

# MDR Connector Selection Guide



# High Density Input/Output Connectors

## 3M™ Mini Delta Ribbon (MDR) Connectors

### Performance and Reliability in Miniature

The Mini Delta Ribbon (MDR) is a half pitch interconnect system from 3M, designed to meet the needs of high speed/density input/output applications. With more than 20 years on the market, the MDR system is an established and well-proven solution for high density I/O.

MDR enjoys widespread acceptance by offering a combination of design features:

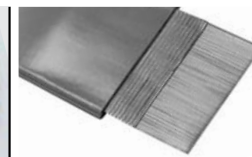
- Shielded shells provide EMI/ESD protection
- Pre-loaded ribbon contacts provide proven reliable connection
- IDC U-shaped contacts allow mass termination
- Wide range of pin counts and form factors enable design flexibility

As one of the world's most innovative companies, 3M is continually developing its products to meet your I/O needs. The current range of MDR system components can easily be expanded to meet the specific requirements of a broad range of applications.

The MDR connector system contains a ribbon-style contact based on 0.050" centerlines. Both the receptacle and the mating plug contain pre-loaded contacts for reliable contact during insertion and withdrawal cycles. The cable connectors utilize an insulation stripping U-contact to connect to the cable conductor wires. The contact is stamped from a high performance copper alloy, which provides an excellent combination of mechanical strength, electrical conductivity and corrosion resistance.










### Dedicated 3M™ Cables for Series 101xx-60x0 EC



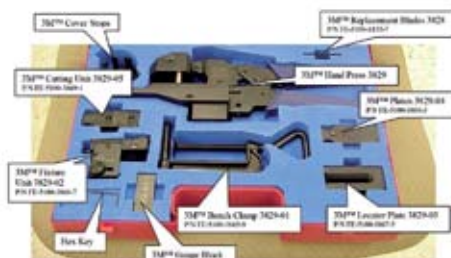
| Cable Type/Description  | Round Shielded Jacketed Discrete Wire Cable   | Round Shielded Jacketed Discrete Wire Cable   | Round Shielded Jacketed Discrete Wire Cable   | Pleated Foil Shielded Cable  |
|---|---|---|---|--|
| <b>3M Cable Series</b>  | <b>3600B</b>  | <b>3644B</b>  | <b>KU-C-KMPVV</b>   | <b>90101</b>   |
| <b>Features</b>   | <ul style="list-style-type: none"> <li>- Twisted pairs</li> <li>- Dual shielding</li> <li>- 35 db average shielding effectiveness</li> <li>- Reduced crosstalk</li> <li>- CL2 listed for external use</li> <li>- Wire OD tailored for use with MDR</li> </ul> | <ul style="list-style-type: none"> <li>- Twisted pairs</li> <li>- Dual shielding</li> <li>- 35 db average shielding effectiveness</li> <li>- Reduced crosstalk</li> <li>- Suitable for 100 Ohm balanced impedance applications</li> <li>- CL2 listed for external use</li> <li>- Wire OD tailored for use with MDR</li> </ul> | <ul style="list-style-type: none"> <li>- Twisted pairs</li> <li>- Reduced crosstalk</li> <li>- Very flexible</li> </ul> | <ul style="list-style-type: none"> <li>- Thick jacket for external applications</li> <li>- Suitable for 50 Ohm unbalanced and 100 Ohm balanced impedance applications</li> <li>- 35 db average shielding effectiveness</li> <li>- Very low crosstalk</li> <li>- CL2 listed for external use</li> </ul> |
| Conductor Size  | 28 AWG  | 28 AWG  | 28 AWG  | 30 AWG   |
| Conductor Material  | Tinned Copper   | Tinned Copper   | Tinned Copper   | Tinned Copper  |
| Conductor Stranding   | 7 x 0.127 (7x36)  | 7 x 0.127 (7x36)  | 7 x 0.127 (7x36)  | Solid  |
| Conductor Quantity  | 2 to 100 (1 x 50 Pairs)   | 14 to 100 (7 x 50 Pairs)  | 14 to 100 (7 to 50 Pairs)   | 20 to 100  |
| Primary Insulation  | PVC   | Polyolefin  | PVC   | TPE  |
| Primary Color   | Color Coded   | Color Coded   | Color Coded   | Translucent  |
| Jacket Insulation   | PVC   | PVC   | PVC   | PVC  |
| Jacket Color  | Beige (Black optional)  | Beige (Black optional)  | Cream   | Gray   |
| Shield  | Aluminum Foil + Copper Braid  | Aluminum Foil + Copper Braid  | Tinned Copper Braid   | Pleated Copper Foil  |
| Voltage Rating USA / EU [V]   | N.E.C. 725, CL2 / <50   | N.E.C. 725, CL2 / <50   | 30 / <50  | N.E.C. 725, CL2 / <50  |
| Temperature Min. [°C]   | -20   | -20   | -20   | -  |
| Temperature Max. [°C]   | +75   | +75   | +60   | +75  |
| UL Recognition / Listing  | - / ✓   | - / ✓   |   | ✓ / ✓  |
| Flammability UL / CUL   | N.E.C. 725, CL2 / FT1   | N.E.C. 725, CL2 / FT1   | VW-1  | N.E.C. 725, CL2 / FT1  |
| RoHS compliant  | ✓   | ✓   | ✓   | ✓  |
| Download by Tech Sheet Number:<br>www.3M.com/interconnects<br>[use the search window] | TS-0388   | TS-0826   | TS-2272   | TS-0285  |

# 3M™ Mini Delta Ribbon (MDR) System for I/O Applications, 0.050" x 0.050"

|                     | Wiremount Connectors  |   |   |  | Boardmount Plug Connectors  |  | Specialties   |
|---------------------|---|---|---|--|---|--|---|
|                     |    |  |            |  |    |   |  |
| Pincount            | IDC Wiremount Plug, Shielded  | Solder Plug, Shielded   | Non-Shielded IDC Plug   | IDC Wiremount Receptacle   | Straddle Mount Plug   | Through-Hole Plug, Right Angle, Shielded   | Through-Hole Plug, Straight   |
| 14                  | 10114-6000 EC   | 10114-3000 PC (PE)  |   |  |   |  |   |
| 20                  | 10120-6000 EC   | 10120-3000 PC (PE)  |   | 10220-0210 EC  |   | 10120-x2y2 PC  |   |
| 26                  | 10126-6000 EC   | 10126-3000 PC (PE)  |   | 10226-0210 EC  | 10126-900x PL (PC)  | 10126-x2y2 PC  |   |
| 36                  | 10136-6000 EC   | 10136-3000 PC (PE)  |   | 10236-0210 EC  |   | 10136-x2y2 PC  |   |
| 40                  | 10140-6000 EC   | 10140-3000 PC (PE)  |   | 10240-0210 EC  |   |  |   |
| 50                  | 10150-6000 EC   | 10150-3000 PC (PE)  | 10150-8x00 EE   | 10250-0210 EC  | 10150-900x PL (PC)  | 10150-x2y2 PC  | 10150-4CZ3 PL   |
| 68                  | 10168-60x0 EC   |   | 10168-8x00 EE   | 10268-0210 EC  | 10168-900x PL (PC)  |  |   |
| 72                  |   |   |   |  |   |  |   |
| 80                  | 10180-6000 EC   |   |   |  |   |  |   |
| 100                 | 101A0-6000 EC   |   |   |  | 101A0-900x PL (PC)  |  | 101A0-4CZ3 PL   |
| 136                 |   |   |   |  |   |  |   |
| 200                 |   |   |   |  |   |  |   |
|                     | Wire Accommodation:<br>x = 0 Black Cover:<br>28 AWG Stranded,<br>30 AWG Solid<br>(Standard)<br>x = 1 Gray Cover:<br>26 AWG Solid<br>(Available in<br>68 Contact only)<br><br>Assembly Press<br>10960<br>Handtool 3829 |   | x = 0 with Strain<br>Relief (Standard)<br>x = 1 without<br>Strain Relief<br>(Special Order) |  | PC = 30μ" (0.76 μm)<br>Gold<br>PL = 8μ" Flash Gold<br><br>x:<br>A = Compatible Board<br>thickness 1 mm<br>(Standard)<br><br>O = 1.6 mm (Special<br>Order)<br><br>Solder Tail-Gold Flash | x = 5 normal type<br>x = 7 reverse type<br>Panel/Board Retention<br>Feature<br>y = :<br>1 = M2.5 panel/M2.5<br>screw lock<br>B = M2.5 panel/ground lock<br>4 = # 4-40 panel/4-40<br>screw lock<br>E = # 4-40 panel/<br>ground lock |   |
| Plating Wiping Area | 30μ" (0.76 μm) Gold   | PC = 30μ" (0.76 μm) Gold<br>PE = 20μ" (0.50 μm) Gold                              | 30μ" (0.76 μm) Gold   | 30μ" (0.76 μm) Gold  | 30μ" (0.76 μm) Gold<br>8μ" (0.20 μm) Gold   | 30μ" (0.76 μm) Gold  | 8μ" (0.20 μm) Gold  |
| UL File             | E68080  | E68080  | E68080  | E68080   | E68080  | E68080   |   |
| UL Flammability     | UL 94V-0  | UL 94V-0  | UL 94V-0  | UL 94V-0   | UL 94V-0  | UL 94V-0   | UL 94V-0  |
| Temp. Range         | -20°C to +85°C  | -55°C to +105°C   | -20°C to +85°C  | -20°C to +85°C   | -20°C to +85°C  | -20°C to +85°C   | -20°C to +85°C  |
| *RoHS Compliant     | Yes   | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Tech Sheet No.      | TS-0423   | TS-0669   | TS-0514   | TS-0425  | TS-0698   | TS-0620  | TS-0716   |

## 3M™ MDR Hand Tool Kit 3829

For the assembly of 3M™ MDR Wiremount Plug 101xx-60x0 (14-68 pos) Series onto 3M™ Round Jacketed Discrete Wire Cables (e.g. Series 3600, 3647, KU-C-).



## 3M™ MDR Assembly Press 10960

For the assembly of the 3M™ MDR Wiremount Plug 101XX-60x0 (14-100 pos.) Series onto 3M™ Round Jacketed Discrete Wire Cables (e.g. Series 3600, 3647, KU-C-).

### Accessories:

- 10960 Hand Press
- 10961 Cutting Unit; includes 2 spare blades (10970-9)
- 10962-2000 Fixture Unit; includes 14, 20, 26, 36, 40, 50, 68, 80 and 100 position connector stops
- 10964-1 Cable Clamp; Black, 14-50 position
- 10964-2 Cable Clamp; Silver, 68-100 position



## Through-Hole Receptacle Connectors



| Right Angle Condo Receptacle                    | Receptacle, Right Angle, SCSI-2 Layout                              | Receptacle, Straight, Through-Hole, Solder Tails   | Receptacle, Right Angle, Through-Hole Solder Tails, Shielded, Diecast   |   | Receptacle, Right Angle, Through-Hole, Solder Tails, Shielded   | Receptacle, Straight, Through-Hole, Compliant Pin, Shielded   |                                       |
|---|---|--|---|---|---|---|---------------------------------------|
|   |   | x10214-62y2 PC   | x10214-52y2 PC  | x10214-52y3 PC  | 10214-55x3 PC   | 10214-R2xTS   | 10214-R2xCS                           |
|   |   | x10220-62y2 PC   | x10220-52y2 PC  | x10220-52y3 PC  | 10220-55x3 PC   |   | 10220-R2xCS                           |
|   |   | x10226-62y2 PC   | x10226-52y2 PC  | x10226-52y3 PC  | 10226-55x3 PC   | 10226-R2xTS   | 10226-R2xCS                           |
|   |   | x10236-62y2 PC   | x10236-52y2 PC  | x10236-52y3 PC  | 10236-55x3 PC   | 10236-R2xTS   | 10236-R2xCS                           |
| 10220-M218 PE<br>10220-L8A9 PE                  |   | x10240-62y2 PC   | x10240-52y2 PC  | x10240-52y3 PC  | 10240-55x3 PC   | 10240-R2xTS   | 10240-R2xCS                           |
|   |   | x10250-62y2 PC   | x10250-52y2 PC  | x10250-52y3 PC  | 10250-55x3 PC   | 10250-R2xTS   | 10250-R2xCS                           |
|   | 10268-5JBE PC   | x10268-62y2 PC   | x10268-52y2 PC  | x10268-52y3 PC  | 10268-55x3 PC   | 10268-R2xTS   | 10268-R2xCS                           |
| 10236-M218 PE                                   |   |  |   |   |   |   |                                       |
|   |   | x10280-62y2 PC   | x10280-52y2 PC  | x10280-52y3 PC  |   | 10280-R2xTS   | 10280-R2xCS                           |
| 10250-M218 PE<br>10250-PB17 PE<br>10250-L219 PE |   | x102A0-62y2 PC   | x102A0-52y2 PC  | x102A0-52y3 PC  |   |   |                                       |
| 10268-M218 PE<br>10268-L219 PE                  |   |  |   |   |   |   |                                       |
| 102A0-M218 PE                                   |   |  |   |   |   |   |                                       |
|   | Solder Tail Length 0.15" (3.9 mm)<br><br>PC = Flash<br>Gold over Ni | Solder Tail Length 0.134" (3.4 mm) Standard<br><br>PC = Flash<br>Gold over Ni<br>x:<br>Blank = -20°C to +85°C<br>N = -55°C to +105°C<br>Lockstand thread:<br>y = 0 M2.6 (Special)<br>y = 1 M2.5 (Standard) | Solder Tail Length 0.15" (3.9 mm) Standard<br>14-40 postion<br>x:<br>Blank = -20°C to +85°C<br>N = -55°C to +105°C<br>Panel/Board Retention Features y =<br>1 = M2.5 panel/ M2.5 screw lock<br>B = M2.5 panel/ground lock<br>G = M2.5 panel with 0.86" ground lock (-52y3)<br>50-100 postion<br>Panel/Board Retention Features y =<br>4 = # 4-40 panel/4-40 screw lock<br>E = # 4-40 panel/ground lock<br>G = # 4-40 panel with 0.86" ground lock (-52y3) | Solder Tail Length 0.11" (2.8 mm) Special Order<br><br>Panel/Board Retention Features y =<br>1 = M2.5 panel/ M2.5 screw lock<br>B = M2.5 panel/ground lock<br>G = M2.5 panel with 0.86" ground lock (-52y3) | Solder Tail Length 0.11" (2.8 mm) Standard<br>14-40 postion,<br>Panelmount thread size:<br>x = G M2.5<br><br>20, 36, 50, 68 pos,<br>Panelmount thread size:<br>x = H # 4-40<br><br>PC = Flash<br>Gold over Ni | PCB Press-Fit Hole<br>T = Solder plated<br><br>Lockstand thread:<br>x = 0 M2.6 (Special)<br>x = 1 M2.5 (Standard)<br>x = H # 4-40<br>Assembly Tooling<br>10991 Stopper Block<br>10992 Press Block | PCB Press-Fit Hole<br>C = Cu/pre flux |
| 20µ" (0.50 µm) Gold                             | 30µ" (0.76 µm) Gold   | 30µ" (0.76 µm) Gold  | 30µ" (0.76 µm) Gold   |   | 30µ" (0.76 µm) Gold   | 30µ" (0.76 µm) Gold   | 30µ" (0.76 µm) Gold                   |
| E68080  | E68080  | E68080   | E68080  |   | E68080  | E68080  | E68080                                |
| UL 94V-0  | UL 94V-0  | UL 94V-0   | UL 94V-0  |   | UL 94V-0  | UL 94V-0  | UL 94V-0                              |
| -20°C to +85°C                                  | -55°C to +85°C  | See option x: above  | See option x: above   |   | -55°C to +105°C   | -20°C to +85°C  |                                       |
| Yes   | Yes   | Yes  | Yes   |   | Yes   | Yes   |                                       |
| TS-0671   | TS-2216   | TS-0427  | TS-0531   |   | TS-0621   | TS-0961   |                                       |

## Wire Accommodations and Accessories

|  | Part Number        | Technical Sheet | Type   | Cable                             | Shell  | Dust Cover                | Tooling              |
|--|--------------------|-----------------|--|-----------------------------------|--|---------------------------|----------------------|
| <b>MDR Screws</b><br>For Boardlock and Panel Mounting<br>TS-0142<br><br><b>MDR Jack Sockets</b><br>For I/O Panel Mounting<br>TS-0142 | <b>101xx-3000</b>  | TS-0669         | Shielded Solder Plug                         | Discrete 24-30 AWG                | 103xx-52F0<br>103xx-52y0-008<br>103xx-42y0-008 | 3412-102xx<br><br>TS-0399 |                      |
|  | <b>101xx-60x0</b>  | TS-0423         | Shielded IDC Plug                            | Discrete 26-30 AWG                | See Chart                                      |                           | 10960 Hand Tool 3829 |
|  | <b>101xx-8000</b>  | TS-0514         | Non-Shielded IDC Plug                        | 0.025" pitch flat<br>Solid 30 AWG | N/A  |                           | 10980-3              |
|  | <b>101xx-900A</b>  | TS-0698         | Straddlemount Plug                           | -                                 | N/A  |                           | N/A                  |
|  | <b>102xx-0210</b>  | TS-0425         | Panelmount IDC Receptacle                    | 0.050" pitch flat<br>28-30 AWG    | N/A  |                           | 10951                |
|  | <b>102xx-R2xxS</b> | TS-0961         | Boardmount Compliant Pin Shielded Receptacle | -                                 | N/A  |                           | 10991-xx / 10992-xx  |

# 3M™ Shrunk Delta Ribbon System

## SMT Receptacle Connectors



## SMT Receptacle Connectors



## Through-Hole Connectors



| Receptacle, Shielded, SMT, Straight           | Die-Cast Receptacle, Shielded, SMT, Right Angle                            | Receptacle, Shielded, SMT, Right Angle                | Receptacle, Shielded SMT, Straight                            | Receptacle, Shielded, Through-Hole, Right Angle                                 | Receptacle, Shielded, SMT, Right Angle  | Receptacle, Shielded, Through-Hole, Straight                                    | Pincount            |
|---|--|---|---|---|---|---|---------------------|
|   | 10214-1S10-PC  | 10214-1210 PE   |   | 12214-51x0-00 FR  | 12214-82x0-00 FR  | 12214-11x0-00 FR  | 14                  |
| 10220-22x0 PE                                 | 10220-1S10-PC  | 10220-1210 PE   |   |   |   |   | 20                  |
| 10226-22x0 PE                                 | 10226-1S10-PC  | 10226-1210 PE   | 10226-1A10 PE   | 12226-51x0-00 FR PE   | 12226-82x0-00 FR  | 12226-11x0-00 FR  | 26                  |
| 10236-22x0 PE                                 |  |   |   |   |   |   | 36                  |
|   | 10240-1S10-PC  | 10240-1210 PE   |   |   |   |   | 40                  |
|   | 10250-1S10-PC  | 10250-1210 PE   |   | 12250-51X0-00 FR  |   |   | 50                  |
|   |  |   |   |   |   |   | 68                  |
|   |  |   |   |   |   |   | 72                  |
|   |  |   |   |   |   |   | 80                  |
|   |  |   |   |   |   |   | 100                 |
|   |  |   |   |   |   |   | 132                 |
|   |  |   |   |   |   |   | 200                 |
| Panel/Board Retention for high data rate      | Rugged die-cast body resists tipping during automated soldering operations | Ultra low signal skew for high data rate transmission | Ultra low signal skew for high data rate transmission         | X = 0 without Jack Socket<br>X = 5 with Jack Socket                             | X = 0 without Jack Socket<br>X = 5 with Jack Socket                             | X = 0 without Jack Socket<br>X = 5 with Jack Socket                             |                     |
| x = 1 M2.5 (Standard)<br>x = 0 M2.6 (Special) | Ultra low signal skew for high data rate transmission                      |   | Horizontally balanced to resist tipping during wave soldering | I/O Mounting Hardware<br>Jack Sockets<br>12600-S-08<br>12600-S-10<br>12600-S-12 | I/O Mounting Hardware<br>Jack Sockets<br>12600-S-08<br>12600-S-10<br>12600-S-12 | I/O Mounting Hardware<br>Jack Sockets<br>12600-S-08<br>12600-S-10<br>12600-S-12 |                     |
|   |  |   |   | TS-2123   | TS-2123   | TS-2123   |                     |
| 20µ" (0.76 µm) Gold                           | L = 8 µ" Gold with Lubricant Treatment, E = 20 µ" Gold, C = 30 µ" Gold     | 20µ" (0.76 µm) Gold                                   | 20µ" (0.76 µm) Gold   | 30µ" (0.76 µm) Gold   | 30µ" (0.76 µm) Gold   | 30µ" (0.76 µm) Gold   | Plating Wiping Area |
| E68080  | E68080   | E68080  | E68080  | E68080  | E68080  | E68080  | UL-File             |
| UL 94V-0                                      | UL 94V-0   | UL 94V-0  | UL 94V-0  | UL 94V-0  | UL 94V-0  | UL 94V-0  | UL-Flammability     |
| -55°C to +85°C                                | -55°C to +85°C   | -55°C to +85°C  | -55°C to +85°C  | -40°C to +70°C  | -40°C to +70°C  | -40°C to +70°C  | Temp. Range         |
| Yes   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes   | *RoHS Compliant     |
| TS-0638                                       | TS-2242  | TS-0755   | TS-0874   | TS-2124   | TS-2125   | TS-2126   | Tech Sheet No.      |

## MDR Connector Mating Chart



| Part No.                  | Tech Sheet         | Description                      | Surfacemount  |                                | Through-Hole  |                                |  |
|---------------------------|--------------------|----------------------------------|---------------|--------------------------------|---------------|--------------------------------|--|
|                           |                    |                                  | Straight      | Right Angle                    | Straight      | Right Angle                    | Condo  |
| 101xx-3000                | TS-0669            | MDR Solder Plug, Shielded        | 102xx-22x0 PE | 102xx-1210 PE<br>10226-1A10 XE | 102xx-62x2 PC | 102xx-55x3 PC<br>102xx-52xx PC | 102xx-M218<br>10220-L8A9 PE<br>10250-PB17 PE |
| 101xx-60x0                | TS-0423            | MDR IDC Wiremount Plug, Shielded |               | 102xx-1210 PE<br>102xx-1S10 XE |               |                                |  |
| 101xx-900x                | TS-0698            | MDR Straddlemount Plug           | N/A           | 102xx-1210 PE<br>102xx-1S10 XE | 102xx-62x2 PC | 102xx-55x3 PC<br>102xx-52xx PC | N/A  |
| Part No.                  | Tech Sheet         | Description                      | Straddlemount | Wiremount                      | Solder        |                                |  |
| 102xx-0210<br>102xx-R2xxS | TS-0425<br>TS-0961 | MDR Boardmount Plug              | 101xx-900x    | 101xx-60x0 xx                  | 101xx-3000 xx |                                |  |

## 3M™ Shielded Cable Junction Shell – Round

## – Flat

| Plastic   |   |  | Metal   |  | Metal   | Dedicated Connectors                              |
|---|---|--|---|--|---|---|
|  |  |                   |  |  |  |   |
| 10314-3210-000  |   |  | 10314-A200-00   | 10314- A500-00   |   | 10114-6000 EC                                     |
| 10320-3210-000  |   |  | 10320-A200-00   |  | 10320-1230-00   | 10120-6000 EC                                     |
| 10326-3210-000  |   |  | 10326-A200-00   | 10326- A500-00   | 10326-1230-00   | 10126-6000 EC                                     |
| 10336-3210-000  |   | 10326-32J0-00x   | 10336-A200-00   | 10336- A500-00   | 10336-1230-00   | 10136-6000 EC                                     |
| 10340-3210-000  |   |  | 10340-A200-00   | 10340- A500-00   | 10340-1230-00   | 10140-6000 EC                                     |
| 10350-3210-000  | 10350-3280-000-x  | 10350-32J0-00x   | 10350-A200-00   | 10350- A500-00   | 10350-1230-00   | 10150-6000 EC                                     |
| 10368-3210-000  | 10368-3280-000-x  | 10368-32J0-00x   | 10368-A200-00   | 10368- A500-00   | 10368-12R1-00   | 10168-6000 EC                                     |
|   | 10380-3280-000-x  |  |   | 10380- A500-00   | 10380-12R1-00   | 10180-6000 EC                                     |
|   |   |  | 103A0-A200-00   |  | 103A0-12R1-00   | 101A0-6000 EC                                     |
| Beige (Standard)<br>Options: Medium Gray,<br>Black                                | Cable Exit Inside<br>Diameter<br>of Bushing x:<br><br>0 = 10.0 mm<br>1 = 11.0 mm  | Beige (Standard)<br>x:<br>0 = Beige (Standard)<br>3 = Medium Gray (Special)<br>6 = Black (Special) |   |  |   | Comments  |
| UL 94V-0  | UL 94V-0  | UL 94V-0   |   |  |   | UL Flammability                                   |
| Yes   | Yes   | Yes  | Yes   | Yes  | Yes   | *RoHS Compliant                                   |
| 3600<br>3647<br>KU-C-..   | 3600<br>3647<br>KU-C-..   | 3600<br>3647<br>KU-C-..  | 3600<br>3647<br>KU-C-..   | 3600<br>3647<br>KU-C-..  | 3749<br>90102, 90201<br>90111, 90211  | Dedicated<br>Cables for Series<br>(101xx-60x0 EC) |
| TS-0571   | TS-0534   | TS-0535  | TS-0341   | TS-0394  | TS-0655 (-1230-00)<br>TS-0396 (-1230-00)<br>TS-0666 (-12R1)                         | Tech Sheet No.                                    |

## 3M™ Unshielded Round Cable Junction Shell

| Plastic   |   |  |                                       |  |
|---|---|--|---------------------------------------|--|
|  |  |  |                                       | Dedicated Connectors   |
| 10314-52A0-008  | 10314-52F0-008  | 10314-42A0-008                               | 10314-42F0-008                        | 10114-3000 PC (PE)   |
| 10320-52A0-008  | 10320-52F0-008  | 10320-42A0-008                               | 10320-42F0-008                        | 10120-3000 PC (PE)   |
| 10326-52A0-008  | 10326-52F0-008  | 10326-42A0-008                               | 10326-42F0-008                        | 10126-3000 PC (PE)   |
| 10336-52A0-008  | 10336-52F0-008  | 10336-42A0-008                               | 10336-42F0-008                        | 10136-3000 PC (PE)   |
|   |   |  |                                       | 10140-3000 PC (PE)   |
| 10350-52A0-008  | 10350-52F0-008  | 10350-42A0-008                               | 10350-42F0-008                        | 10150-3000 PC (PE)   |
| Plastic Shell, Unshielded<br>Groundplate attached<br>M2.6 Jack Screw                | Plastic Shell, Unshielded<br>Groundplate attached<br>Latch                          | Plastic Shell, Unshielded<br>M2.6 Jack Screw | Plastic Shell, Unshielded<br>Latch    | Comments   |
| UL 94V-0  | UL 94V-0  | UL 94V-0                                     | UL 94V-0                              | UL Flammability  |
| Yes   | Yes   | Yes  | Yes                                   | *RoHS Compliant  |
| Solderable discrete wire round cable  |   |  |                                       | Dedicated Cables for<br>Series 101xx-3000<br>(101xx-60x0 EC) |
| Contact your local<br>3M sales office   | TS-0670   | Contact your local<br>3M sales office        | Contact your local<br>3M sales office | Tech Sheet No.   |



# High Speed MDR Cable Assemblies

## 3M™ Mini Delta Ribbon (MDR) High Speed Transmission System

The 3M MDR High Speed Transmission System is a digital interconnect system designed to meet the needs of today's high performance data transmission applications.

Low Voltage Differential Signaling (LVDS) technology meets the requirements for a general purpose, high bandwidth interface for serial and parallel data at speeds up to 655 Mbps. The LVDS Standard is based on the use of 100 Ohm differential impedance transmission medium from driver to receiver. Signal skew is the largest factor inhibiting speed within a system and can occur at all points along the transmission path: driver to receiver circuits, circuit board traces, cables and connectors. Both types of skew within pair skew and channel skew can prohibit optimum performance in high speed transmission systems. 3M MDR Connectors provide an excellent solution for the demanding requirements of LVDS applications.

### 3M™ LVDS/TMDS High Speed Cable Assemblies Transmission Systems



- Several shielded differential pairs (according to application)
- Supports **VESA/DFP** standard for 20-position MDR at host device
- LCD monitor assembly for Panel Link™/TMDS interface
- Solution for Digital Displays, Datacom and Telecom applications
- Supports **LVDS FP Link, Flat Link™, Channel Link™, Panel Link™/TMDS** electrical interfaces
- Each differential twin-ax pair has foil shield and drain wire
- Entire cable bundle is shielded with foil and braid for additional signal protection
- Rugged MDR ribbon type contact
- Quick release latches or thumbscrews
- RoHS\* compliant

#### \*RoHS Statement:

"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. This information represents 3M's knowledge and belief, which may be based in whole or in part on 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 (see back cover).

### 3M™ MDR High Speed Cable Assemblies for Camera Link® Standard Machine Vision Applications

- Supports the Automated Imaging Association's Camera Link Standard for industrial camera to frame grabber communications
- 11 shielded twisted pairs and four drain wires
- Entire cable bundle is shielded with foil and braid for additional signal protection
- Rugged MDR ribbon type contact
- Rugged thumbscrew retention
- EMI shielded junction shell in either plastic or overmolded construction
- RoHS\* compliant



### 3M™ Shrunk Delta Ribbon (SDR) High Speed Cable Assemblies for Mini Camera Link® Standard Machine Vision Applications

- Supports AIA Industrial Mini Camera Link Standard for new Mini C/L camera to frame grabber applications
- 11 shielded twisted pairs with four drain wires
- Entire cable bundle is shielded with foil and braid for additional signal protection
- Rugged ribbon contact type
- Rugged thumbscrew retention
- Available right angle overmolded SDR backshells eliminate bend radius
- EMI shielded cable assembly
- Available in configurations to mate between Mini Camera Link and Camera Link products



**3M is a trademark of 3M Company. Channel Link is a trademark of National Semiconductor. Flat Link is a trademark of Texas Instruments. Mini Camera Link and Camera Link are certification marks of Automated Imaging Association. Panel Link is a trademark of Silicon Image, Inc.**

**Important Notice**

Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

**Warranty; Limited Remedy; Limited Liability.**

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