Miniature high performance twist pin Connectors

Micro-D & Nano-D, Rectangular & Circular

www.axon-cable.com
RECTANGULAR MICRO-D CONNECTORS

GENERAL INFORMATION

- Micro-D glossary of terms .................................................. 22
- D-Line® connector mating guide ...................................... 23
- Micro-D general characteristics ......................................... 24
- Micro-D REACH & RoHS compliance ................................... 25
- Micro-D contact arrangements
  - Male rectangular connector ........................................... 26
  - Female rectangular connector ...................................... 27
- Micro-D weights .............................................................. 28
- Micro-D wire codes ......................................................... 29
- Micro-D colour codes ....................................................... 30
- Micro-D rear panel mounting guide .................................... 32
- Micro-D front panel mounting guide ................................... 33
- Micro-D panel cutouts ...................................................... 34

MIL-DTL-83513

Micro-D QPL - CAGE CODE: OKOJ2

M83513 /01 & /02
- Solder cup connector - Metal shell .................................... 38

M83513 /03 & /04
- Pigtail connector - Metal shell ........................................ 40

M83513 /06 & /07
- Solder cup connector - Plastic shell .................................. 42

M83513 /08 & /09
- Pigtail connector - Plastic shell ....................................... 44

M83513 /10 TO /15
- PCB connector - Narrow profile - Right angle
  - 0.100" pitch - Metal shell ........................................... 46
- PCB layout for QPL narrow profile .................................... 48

M83513 /16 TO /21
- PCB connector - Standard profile - Right angle
  - 0.100" pitch - Metal shell ............................................ 50
- PCB layout for QPL standard profile ................................ 52

M83513 /22 TO /27
- PCB connector - Straight - 0.100" pitch - Metal shell .......... 54
- PCB layout for QPL Straight - 0.100" pitch ....................... 56

M83513 /28 TO /33
- PCB connector - Straight - 0.075" pitch - Metal shell .......... 58
- PCB layout for QPL Straight - 0.075" pitch ....................... 60

MILITARY CROSS REFERENCE CHART .................................... 417
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

RECTANGULAR CONNECTORS
- Pigtail connector - Metal shell .......................................................... 64
- Pigtail connector - Low profile - Metal shell ..................................... 66
- Pigtail connector - Plastic shell ......................................................... 68
- Solder cup connector - Metal shell .................................................... 70
- Solder cup connector - Low profile - Metal shell ............................. 72
- Solder cup connector - Plastic shell .................................................. 74

PCB RECTANGULAR CONNECTORS
- PCB connectors overview ................................................................. 76
- CBR (Condensed Board Right Angle) type - 0.100" pitch
  Metal shell ................................................................. 78
- CBR (Condensed Board Right Angle) type - 0.100" pitch
  Plastic shell ................................................................. 80
  PCB layout for CBR type ....................................................... 82
- CBP (Condensed Board Right Angle) type - 0.100" pitch
  Low profile - Metal shell ...................................................... 86
- CBP (Condensed Board Right Angle) type - 0.100" pitch
  Low profile - Plastic shell .................................................... 88
  PCB layout for CBP type ....................................................... 90
- BR (Board Right Angle) type - 0.100" pitch - Metal shell ............... 92
  PCB layout for BR type ...................................................... 94
- BS (Board Straight) type - 0.100" pitch - Metal shell ...................... 98
  PCB layout for BS type ..................................................... 100
- CBR (Condensed Board Right Angle) type - 0.075" pitch
  Metal shell ................................................................. 106
  PCB layout for CBR 0.075" type ........................................ 108
- CBR (Condensed Board Right Angle) type - 0.075" pitch
  Metal shell - Based on BS MIL standard layout .............................. 112
  PCB layout for CBR 0.075" type
  Based on BS MIL standard layout ........................................ 114
- BS (Board Straight) type - 0.075" pitch - Metal shell ...................... 116
- BS (Board Straight) type - 0.075" pitch - Plastic shell .................... 118
  PCB layout for BS 0.075" type – MIL standard layout .................... 120
  PCB layout for BS 0.075" type – Specific layout – Plugs ............... 122
  PCB layout for BS 0.075" type – Specific layout – Receptacles .......... 124

CONNECTOR SAVERS
- One piece design - Metal or plastic shell .................................. 126
- One piece design - Low profile - Metal shell ............................. 127
- Back to back assembly - Metal or plastic shell .......................... 128
- Back to back assembly - Low profile - Metal shell ...................... 129
## MICROSTRIP CONNECTORS
- Pigtail & solder cup assemblies .......................... 130
- PCB connector .............................................. 132
- Microstrip general information ............................ 134
  - PCB layout for microstrip connector - 0.050" pitch .......................... 137

## HIGH DENSITY CONNECTORS ................................ 140

## COMBO-D CONNECTORS ........................................ 140

### COMBO-D GENERAL INFORMATION
- Rectangular Combo Micro-D connectors .................... 142
- Contact arrangements ....................................... 143
- Coaxial and power contacts and cables ..................... 144
- General characteristics ..................................... 147

### PCB COMBO CONNECTORS
- PCB connectors .............................................. 148
  - Board Straight type (BS) - 0.075" pitch ...................... 149
  - Condensed Board Right angle (CBR) - 0.100" pitch .......... 153

### PIGTAIL COMBO CONNECTORS
- Male and female pigtail connectors ......................... 157

## SPECIAL COMBO CONNECTORS ................................. 160

## HERMETIC CONNECTORS ........................................ 160
- Introduction to hermetic connectors ......................... 164
- Rear panel mounting guide .................................. 165
- Hermetic connectors ......................................... 166

## NON-MAGNETIC CONNECTORS ................................ 170

### PIGTAIL CONNECTORS
- Non-magnetic metal shell connectors ...................... 172
- Non-magnetic low profile metal shell connectors ........ 173
- Non-magnetic plastic shell connectors .................... 174

### PCB CONNECTORS
- PCB connectors overview .................................... 175
- Non-magnetic PCB connectors .............................. 176
120 WAY CONNECTORS

- 120 way Micro-D connectors .................................. 178
- 120 way connectors for cable and harnesses .......... 181
- Surface mount PCB card edge connectors ............. 182
- BS connector .................................................. 183
- Connector saver ............................................. 183
- PCB layouts .................................................. 184

ACCESSORIES

BACKSHELL
- Micro-D EMI-backshell ...................................... 186
- AXOCLAMP® EMI band termination .................. 189

HARDWARE
- Removable jackscrews ...................................... 190
- Removable jackposts ...................................... 192
- Rear panel mount jackposts for pigtails connectors .... 193
- Removable jackposts for PCB connectors .......... 194
- Rear panel mount jackposts for PCB connectors .... 196
- Non-removable hardware .................................. 198
- Float mount inserts ....................................... 199
- U-clip mounting jackscrews ............................. 200

MICRO-D & NANO-D ASSEMBLY KIT ......................... 201
# Pigtails, Solder Cup, PCB, Savers & Microstrip Connectors

## Rectangular Connectors
- Pigtail connector - Metal shell ........................................... 64
- Pigtail connector - Low profile - Metal shell .......................... 66
- Pigtail connector - Plastic shell ........................................... 68
- Solder cup connector - Metal shell ....................................... 70
- Solder cup connector - Low profile - Metal shell ...................... 72
- Solder cup connector - Plastic shell ..................................... 74

## PCB Rectangular Connectors
- PCB connectors overview .................................................... 76
- CBR (Condensed Board Right Angle) type - 0.100" pitch
  - Metal shell ................................................................. 78
- CBR (Condensed Board Right Angle) type - 0.100" pitch
  - Plastic shell ............................................................. 80
  - PCB layout for CBR type ................................................... 82
- CBP (Condensed Board Right Angle) type - 0.100" pitch
  - Low profile - Metal shell ............................................... 86
- CBP (Condensed Board Right Angle) type - 0.100" pitch
  - Low profile - Plastic shell ............................................. 88
  - PCB layout for CBP type .................................................. 90
- BR (Board Right Angle) type - 0.100" pitch - Metal shell ........... 92
  - PCB layout for BR type ................................................... 94
- BS (Board Straight) type - 0.100" pitch - Metal shell .............. 98
- BS (Board Straight) type - 0.100" pitch - Plastic shell ............ 100
  - PCB layout for BS type .................................................. 102
- CBR (Condensed Board Right Angle) type - 0.075" pitch Metal shell 106
  - PCB layout for CBR 0.075" type ....................................... 108
- CBR (Condensed Board Right Angle) type - 0.075" pitch
  - Metal shell - Based on BS MIL standard layout ..................... 112
  - PCB layout for CBR 0.075" type – Based on BS MIL standard layout 114
- BS (Board Straight) type - 0.075" pitch - Metal shell ............. 116
- BS (Board Straight) type - 0.075" pitch - Plastic shell ........... 118
  - PCB layout for BS 0.075" type – MIL standard layout ............. 120
  - PCB layout for BS 0.075" type – Specific layout – Plugs .......... 122
  - PCB layout for BS 0.075" type – Specific layout – Receptacles ... 124

## Connector Savers
- One piece design - Metal or plastic shell ............................. 126
- One piece design - Low profile - Metal shell ......................... 127
- Back to back assembly - Metal or plastic shell ...................... 128
- Back to back assembly - Low profile - Metal shell ................. 129

## Microstrip Connectors
- Pigtail & solder cup assemblies ......................................... 130
- PCB connectors .................................................................. 132
- Microstrip general information ............................................ 134
  - PCB layout for microstrip connectors ................................ 137

## High Density Connectors
- ...................................................................................... 140
### Rectangular Connectors

#### Pigtail Connector

**Metal Shell**
- High performance metal connector and PTFE wire.
- Environmentally sealed.
- Operating temperature: 150°C or 200°C.

---

**Identification Code**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>51</th>
<th>S</th>
<th>4</th>
<th>L</th>
<th>050</th>
<th>B</th>
</tr>
</thead>
</table>

**Connector Type**

- **1**: Cadmium shell / **Z**: Black zinc nickel aluminium shell + potting 150°C.
- **2**: Nickel aluminium shell + potting 150°C.
- **3**: Nickel aluminium shell + potting 200°C.
- **S**: Passivated stainless steel shell + potting 200°C.

**Number of Contacts**

- 09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.
  - See pages 26 & 27 for contact arrangements.

**Connector Gender**

- **P**: Male (pin contacts).
- **S**: Female (socket contacts).

**Wire Type**

- **1**: E 2607, AWG 26, 7 strands, 600V.
- **4**: E 2619, AWG 26, 19 strands, 600V.
- **6**: E 2807, AWG 28, 7 strands, 600V.
- **8**: E 3007, AWG 30, 7 strands, 600V.
- **A**: E 2407, AWG 24, 7 strands, 600V.
- **B**: E 22759/11, AWG 26, 19 strands, 600V.
- **F**: E2607, AWG26, 7 strands, 600V.
- **G**: M22759/11, AWG26, 19 strands, 600V.
- **T**: M22759/33, AWG 26, 19 strands, 600V.

**Colour Code**

- **F**: All yellow.
- **L**: All white.
- **V**: MIL-STD-681 striped (only for wire types 3 and F).

**Wire Length** (in cm)

<table>
<thead>
<tr>
<th>L (cm)</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 10</td>
<td>-0 / +0.5</td>
</tr>
<tr>
<td>10 &lt; L ≤ 100</td>
<td>-0 / +3</td>
</tr>
<tr>
<td>L &gt; 100</td>
<td>-0 / +5</td>
</tr>
</tbody>
</table>

**Hardware**

- **B**: No hardware.
- **C**: U-clips with low profile hex socket head jackscrews (removable).
- **D**: U-clips with low profile slot head jackscrews (removable).
- **M**: Low profile hex socket head jackscrews (removable).
- **N**: High profile hex socket head jackscrews (removable).
- **S**: Low profile slot head jackscrews (removable).
- **T**: High profile slot head jackscrews (removable).
- **P**: Jackposts (removable).
- **Px**: Panel mount jackposts.
- **K**: High profile slot head jackscrews (non-removable).
- **L**: Low profile socket head jackscrews (non-removable).
- **F**: Float mount, front panel mount (non-removable).
- **FR**: Float mount, rear panel mount (non-removable).

See pages 190 to 200 for hardware description.
### Rectangular Micro-D Connectors

**PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS**

**DIMENSIONS**

Dimensions are in millimetres (inches).

#### MALE connector

![Male Connector Diagram]

#### FEMALE connector

![Female Connector Diagram]

### SUMMARY OF CHARACTERISTICS

#### ELECTRICAL & MECHANICAL PERFORMANCE

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A ± 0.25 (±.010)</strong></td>
<td>19.69</td>
<td>8.48</td>
</tr>
<tr>
<td><strong>B max.</strong></td>
<td>10.16</td>
<td>9.91</td>
</tr>
<tr>
<td><strong>C -0.46/0.25 (-.018/+.010)</strong></td>
<td>14.35</td>
<td>13.72</td>
</tr>
<tr>
<td><strong>D ± 0.13 (±.005)</strong></td>
<td>7.57</td>
<td>2.49 (0.098)</td>
</tr>
<tr>
<td><strong>E ± 0.25 (±.010)</strong></td>
<td>4.69</td>
<td>2.49 (0.098)</td>
</tr>
<tr>
<td><strong>F max.</strong></td>
<td>6.35</td>
<td>2.49 (0.098)</td>
</tr>
<tr>
<td><strong>G max.</strong></td>
<td>6.86</td>
<td>5.03 (.198)</td>
</tr>
</tbody>
</table>

### MATERIAL & FINISH

#### SHELL

Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options

#### MOULDED INSULATOR

Liquid Crystal Polymer (LCP)

#### INTERFACIAL SEAL

Fluorosilicone rubber

#### PIN CONTACT

Copper and beryllium copper, gold over nickel plating

#### SOCKET CONTACT

Copper alloy, gold over nickel plating

#### ENCAPSULANT

Epoxy resin

#### HARDWARE

300 series stainless steel, passivated

---

**Current Rating**

3 A max.

**Contact Resistance**

8 mΩ max.

**Insulation Resistance**

5000 MΩ min. @ 500 Vcc

**Dielectric Withstanding Voltage**

Sea level: 600 V; Altitude 21 km (70,000 ft): 150 V

**Contact Engaging Force**

170 g max. (6 oz)

**Contact Separating Force**

14 g min. (0.5 oz)

**Contact Retention**

2.26 kg (5 lbs)

**Durability**

500 mating cycles min.

**Vibration**

20g’s – No discontinuity > 1 µs

**Shock**

50g’s – No discontinuity > 1 µs

---

See page 24 for more information.
RECTANGULAR CONNECTORS

PIGTAIL CONNECTOR

LOW PROFILE METAL SHELL
- High performance metal connector and PTFE wire.
- Operating temperature: 150°C or 200°C.
- 9 to 51 contacts.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON’ standard series.

CONNECTOR TYPE
1: Cadmium aluminium shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

WIRE TYPE
For colour codes F, L, W
1: E 2607, AWG 26, 7 strands, 600V.
4: E 2619, AWG 26, 19 strands, 600V.
6: E 2807, AWG 28, 7 strands, 600V.
8: E 3007, AWG 30, 7 strands, 600V.
A: E 2407, AWG 24, 7 strands, 600V.
C: E 2419, AWG 24, 19 strands, 600V.
E: M22759/33, AWG 26, 19 strands, 600V.

For colour code V only
3: M22759/11, AWG 26, 19 strands, 600V.
F: E 2607, AWG 26, 7 strands, 600V.
G: AWG 25 gold plated wires.
T: AWG 24 tin plated wires.

See page 29 for wire types.

COLOUR CODE
F: All yellow.
L: All white.
W: 10 colour repeat.
V: MIL-STD-681 striped (only for wire types 3 and F).
See page 30 for colour code.

WIRE LENGTH (in cm)
Attention! Wire length in centimetres - (1cm = 0.394”).

HARDWARE
B: No hardware.
C: U-clips with low profile hex socket head jackscrews (removable).
D: U-clips with low profile slot head jackscrews (removable).
M: Low profile hex socket head jackscrews (removable).
N: High profile hex socket head jackscrews (removable).
S: Low profile slot head jackscrews (removable).
T: High profile slot head jackscrews (removable).
P: Jackposts (removable).
Px (c: 1 to 5): Panel mount jackposts.
K: High profile slot head jackscrews (non-removable).
L: Low profile hex socket head jackscrews (non-removable).
F: Float mount, front panel mount (non-removable).
FR: Float mount, rear panel mount (non-removable).

See pages 190 to 200 for hardware description.

METAL CONNECTORS ARE SUPPLIED WITH ANTI STATIC PROTECTIVE DUST CAPS
**DIMENSIONS**
Dimensions are in millimetres (inches).

**MALE connector**

**FEMALE connector**

<table>
<thead>
<tr>
<th>A (± 0.25)</th>
<th>B max.</th>
<th>C -0.46/0.25</th>
<th>D ± 0.13</th>
<th>E ± 0.25</th>
<th>F max.</th>
<th>G max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 P / 9 S</td>
<td>19.76</td>
<td>7.47</td>
<td>9.65</td>
<td>10.11</td>
<td>14.35</td>
<td>5.28</td>
</tr>
<tr>
<td>15 P / 15 S</td>
<td>23.57</td>
<td>11.28</td>
<td>13.46</td>
<td>13.92</td>
<td>18.16</td>
<td>5.28</td>
</tr>
<tr>
<td>21 P / 21 S</td>
<td>27.38</td>
<td>15.09</td>
<td>17.27</td>
<td>17.73</td>
<td>21.97</td>
<td>5.28</td>
</tr>
<tr>
<td>25 P / 25 S</td>
<td>29.92</td>
<td>17.63</td>
<td>19.81</td>
<td>20.27</td>
<td>24.51</td>
<td>5.28</td>
</tr>
<tr>
<td>31 P / 31 S</td>
<td>33.73</td>
<td>21.44</td>
<td>23.62</td>
<td>24.08</td>
<td>28.32</td>
<td>5.28</td>
</tr>
<tr>
<td>37 P / 37 S</td>
<td>37.54</td>
<td>25.25</td>
<td>27.43</td>
<td>27.89</td>
<td>32.13</td>
<td>5.28</td>
</tr>
<tr>
<td>51 P / 51 S</td>
<td>36.27</td>
<td>23.98</td>
<td>26.16</td>
<td>26.62</td>
<td>30.86</td>
<td>6.35</td>
</tr>
</tbody>
</table>

**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**
- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 V ac
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 V ac
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz)
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz)
- **CONTACT RETENTION**: 2.26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s - No discontinuity > 1µs
- **SHOCK**: 50g’s - No discontinuity > 1µs

**MATERIAL & FINISH**
- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **OCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **HARDWARE**: 300 series stainless steel, passivated

**SEE PAGE 24 FOR MORE INFORMATION**
PIGTAIL CONNECTOR

PLASTIC SHELL
- Low cost plastic connector.
- Operating temperature: 150°C or 200°C.
- 9 to 51 contacts.

IDENTIFICATION CODE

SERIES
MDA. Micro-D AXON® standard series.

CONNECTOR TYPE
P: LCP shell + potting 150°C.
L: LCP shell + potting 200°C.

NUMBER OF CONTACTS 09, 15, 21, 25, 31, 37, 51.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

WIRE TYPE
For colour codes F, L, W
1: E 2607, AWG 26, 7 strands, 600V.
4: E 2619, AWG 26, 19 strands, 600V.
6: E 2807, AWG 28, 7 strands, 600V.
8: E 3007, AWG 30, 7 strands, 600V.
A: E 2407, AWG 24, 7 strands, 600V.
C: E 2419, AWG 24, 19 strands, 600V.
E: M22759/33, AWG 26,19 strands, 600V.

For colour code V only
3: M22759/11, AWG26, 19 strands, 600V.
F: E2607, AWG26, 7 strands, 600V.
G: AWG 25 gold plated.
T: AWG 24 tin plated.
See page 29 for wire types.

COLOUR CODE
F: All yellow.
L: All white.
W: 10 colour repeat.
V: MIL-STD-681 striped (only for wire types 3 and F).
See page 30 for colour code.

WIRE LENGTH (in cm)
Attention! wire length in centimetres -(1cm = 10mm = 0.394”).

L in cm (inches) | 0 ≤ L ≤ 10 | 10 < L ≤ 30 | L > 30
TOLERANCE | -0 / +0.5 | -0 / +1 | -0 / +1.97

HARDWARE
B: No hardware.
C: U-clips with low profile hex socket head jackscrews (removable).
D: U-clips with low profile slot head jackscrews (removable).
M: Low profile hex socket head jackscrews (removable).
N: High profile hex socket head jackscrews (removable).
F: Float mount, front panel mount (non removable).
L: Low profile hex socket head jackscrews (non removable).
F: Float mount, rear panel mount (non removable).
Px (x: 1 to 5): Panel mount jackscrews.
K: High profile slot head jackscrews (non removable).
R: Low profile slot head jackscrews (removable).
**Dimensions**

Dimensions are in millimetres (inches).

**Male Connector**

**Female Connector**

### Dimensions

<table>
<thead>
<tr>
<th>A (± 0.25 ≤ 0.10)</th>
<th>B max.</th>
<th>C (±0.13 ≤ 0.01)</th>
<th>D (± 0.25 ≤ 0.05)</th>
<th>E</th>
<th>F max.</th>
<th>G max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 P / 9 S 19.76</td>
<td>7.41</td>
<td>9.65</td>
<td>10.11</td>
<td>14.35</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>15 P / 15 S 12.57</td>
<td>11.22</td>
<td>13.46</td>
<td>13.92</td>
<td>18.16</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>21 P / 21 S 27.38</td>
<td>15.03</td>
<td>17.27</td>
<td>17.32</td>
<td>21.97</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>25 P / 25 S 29.92</td>
<td>17.57</td>
<td>19.81</td>
<td>20.27</td>
<td>24.51</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>31 P / 31 S 33.73</td>
<td>21.38</td>
<td>23.62</td>
<td>24.08</td>
<td>28.32</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>37 P / 37 S 37.54</td>
<td>25.19</td>
<td>27.43</td>
<td>27.89</td>
<td>32.13</td>
<td>5.28</td>
<td>3.40</td>
</tr>
<tr>
<td>51 P / 51 S 42.27</td>
<td>23.92</td>
<td>26.16</td>
<td>26.62</td>
<td>30.86</td>
<td>6.35</td>
<td>4.50</td>
</tr>
</tbody>
</table>

**Summary of Characteristics**

**Electrical & Mechanical Performance**

- **Current Rating**: 3 A max.
- **Contact Resistance**: 8 mΩ max.
- **Insulation Resistance**: 5000 MΩ min. @ 500 VAC
- **Dielectric Withstanding Voltage**: Sea level: 600 VAC
  
  Altitude: 22 km (70,000 ft): 150 VAC
- **Contact Engaging Force**: 170 g max. (6 oz)
- **Contact Retention**: 22.6 g min. (0.5 oz)
- **Durability**: 500 mating cycles min.
- **Vibration**: 20g’s – No discontinuity > 1 µs
- **Shock**: 50g’s – No discontinuity > 1 µs

**Material & Finish**

- **Moulded Shell**: Liquid Crystal Polymer (LCP)
- **Pin Contact**: Copper and beryllium copper, gold over nickel plating
- **Socket Contact**: Copper Alloy, gold over nickel plating
- **Encapsulant**: Epoxy resin
- **Hardware**: 300 series stainless steel, passivated

---

**Rectangular Micro-D Connectors**

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

See page 24 for more information.
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

SOLDER CUP CONNECTOR

METAL SHELL
- High performance metal connector and solder cup contacts.
- Environmentally sealed.
- Ideal for prototyping or where pigtail type connectors cannot be used.
- Operating temperature: 150°C or 200°C.
- 9 to 100 contacts.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON’ standard series.

CONNECTOR TYPE
1: Cadmium al. shell / 2: Black zinc nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 150°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

SOLDER CUP

HARDWARE
B: No hardware.
C: U-clips with low profile hex socket head jackscrews (removable).
D: U-clips with low profile slot head jackscrews (removable).
M: Low profile hex socket head jackscrews (removable).
N: High profile hex socket head jackscrews (removable).
S: Low profile slot head jackscrews (removable).
T: High profile slot head jackscrews (removable).
P: Jackposts (removable).
Px (x: 1 to 5): Panel mount jackposts.
K: High profile slot head jackscrews (non removable).
L: Low profile hex socket head jackscrews (non removable).
F: Float mount, front panel mount (non removable).
FR: Float mount, rear panel mount (non removable).
See pages 190 to 200 for hardware description.
### DIMENSIONS

Dimensions are in millimetres (inches).

**MALE connector**

- 2.79 (.110) MAX
- 5.06 (.200) MAX

**FEMALE connector**

- 2.79 (.110) MAX
- 5.06 (.200) MAX

---

### SUMMARY OF CHARACTERISTICS

**ELECTRICAL & MECHANICAL PERFORMANCE**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A ± .25</strong></td>
<td>19.69</td>
<td>8.48</td>
</tr>
<tr>
<td><strong>B max.</strong></td>
<td>.775</td>
<td>.334</td>
</tr>
<tr>
<td><strong>C -0.46/+0.25</strong></td>
<td>23.50</td>
<td>12.19</td>
</tr>
<tr>
<td><strong>D ± 0.13</strong></td>
<td>.997</td>
<td>.484</td>
</tr>
<tr>
<td><strong>E ± 0.25</strong></td>
<td>21.73</td>
<td>16.10</td>
</tr>
<tr>
<td><strong>F max.</strong></td>
<td>.724</td>
<td>.701</td>
</tr>
<tr>
<td><strong>G max.</strong></td>
<td>.910</td>
<td>.950</td>
</tr>
</tbody>
</table>

**MALE**

**Current Rating**

3 A max.

**Contact Resistance**

8 mΩ max.

**Insulation Resistance**

5000 MΩ min. @ 500 Vac

**Dielectric Withstanding Voltage**

Sea level: 600 Vac

**Contact Engaging Force**

170 g max. (6 oz)

**Contact Separating Force**

14 g min. (0.5 oz)

**Contact Retention**

2.26 kg (5 lbs)

**Durability**

500 mating cycles min.

**Vibration**

20g's – No discontinuity > 1 μs

**Shock**

50g's – No discontinuity > 1 μs

---

**MATERIAL & FINISH**

**Shell**

Aluminium Alloy 6061 or 300 series stainless steel, see ordering info for plating options

**Moulded Insulator**

Liquid Crystal Polymer (LCP)

**Interfacial Seal**

Fluorosilicone rubber

**Pin Contact**

Copper and beryllium copper, gold over nickel plating

**Socket Contact**

Copper alloy, gold over nickel plating

**Solder Cup**

Copper alloy, gold over nickel plating

**Encapsulant**

Epoxy resin

**Hardware**

300 series stainless steel, passivated

---

SEE PAGE 24 FOR MORE INFORMATION
RECTANGULAR CONNECTORS

SOLDER CUP CONNECTOR

LOW PROFILE METAL SHELL
- High performance metal connector and solder cup contacts.
- Ideal for prototyping or when pigtail type connectors cannot be used.
- Operating temperature: 150°C or 200°C.
- 9 to 51 contacts.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON® standard series.

CONNECTOR TYPE
1: Cadmium al. shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

SOLDER CUP HARDWARE
B: No hardware.
C: U-clips with low profile hex socket head jackscrews (removable).
D: U-clips with low profile slot head jackscrews (removable).
M: Low profile hex socket head jackscrews (removable).
N: High profile hex socket head jackscrews (removable).
S: Low profile slot head jackscrews (removable).
T: High profile slot head jackscrews (removable).
P: Jackposts (removable).
Px (x: 1 to 5): Panel mount jackposts.
K: High profile slot head jackscrews (non removable).
L: Low profile hex socket head jackscrews (non removable).
F: Float mount, front panel mount (non removable).
FR: Float mount, rear panel mount (non removable).
See pages 190 to 200 for hardware description.
Rectangular Micro-D Connectors

**PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS**

**DIMENSIONS**
Dimensions are in millimetres (inches).

**MALE connector**

**FEMALE connector**

**DIMENSIONS**
Dimensions are in millimetres (inches).

**SUMMARY OF CHARACTERISTICS**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>A ± 0.25 (±.010)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B max.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C -0.46/+0.25 (-.018/+.010)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D ± 0.13 (±.005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E ± 0.25 (±.010)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F max.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G max.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ELECTRICAL & MECHANICAL PERFORMANCE**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 Vac.
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 Vac.
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz)
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz)
- **CONTACT RETENTION**: 2,26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s - No discontinuity > 1µs
- **SHOCK**: 50g’s - No discontinuity > 1µs

**MATERIAL & FINISH**

- **MOULDED SHELL**: Liquid Crystal Polymer (LCP)
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **SOLDER CUP**: Copper alloy, gold over nickel plating
- **ENCAPSULENT**: Epoxy resin
- **HARDWARE**: 300 series stainless steel, passivated

**SEE PAGE 24 FOR MORE INFORMATION**
## Rectangular Micro-D Connectors

### Pigtails, Solder Cup, PCB Savers & Microstrip Connectors

**Identification Code**

<table>
<thead>
<tr>
<th>MDA</th>
<th>P</th>
<th>51</th>
<th>S</th>
<th>FS</th>
<th>B</th>
</tr>
</thead>
</table>

#### Series

**MDA:** Micro-D AXON® standard series.

#### Connector Type

- **P:** LCP shell + potting 150°C.
- **L:** LCP shell + potting 200°C.

#### Number of Contacts

- **09, 15, 21, 25, 31, 37, 51.**
  
  See pages 26 & 27 for contact arrangements.

#### Connector Gender

- **P:** Male (pin contacts).
- **S:** Female (socket contacts).

#### Solder Cup

- **B:** No hardware.
- **C:** U-clips with low profile hex socket head jackscrews (removable).
- **D:** U-clips with low profile slot head jackscrews (removable).
- **M:** Low profile hex socket head jackscrews (removable).
- **N:** High profile hex socket head jackscrews (removable).
- **S:** Low profile slot head jackscrews (removable).
- **T:** High profile slot head jackscrews (removable).
- **P:** Jackposts (removable).
- **P**x (x: 1 to 5): Panel mount jackposts.
- **K:** High profile slot head jackscrews (non-removable).
- **L:** Low profile hex socket head jackscrews (non-removable).
- **F:** Float mount, front panel mount (non-removable).
- **FR:** Float mount, rear panel mount (non-removable).

  See pages 190 to 200 for hardware description.
DIMENSIONS
Dimensions are in millimetres (inches).

MALE connector

FEMALE connector

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>A ± 0.25 (±.010)</td>
<td>19.76</td>
<td>7.41</td>
<td>9.65</td>
<td>2.79 (1.10) MAX</td>
</tr>
<tr>
<td>B max.</td>
<td>.778</td>
<td>.292</td>
<td>.380</td>
<td>5.06 (.200) MAX</td>
</tr>
<tr>
<td>C -0.46/+0.25 (-.018/+.010)</td>
<td>.98</td>
<td>.598</td>
<td>.548</td>
<td>2.54 (.100) MAX</td>
</tr>
<tr>
<td>D ± 0.13 (±.005)</td>
<td>14.35</td>
<td>.565</td>
<td>.715</td>
<td>10.03 (.396) MAX</td>
</tr>
<tr>
<td>E ± 0.25 (±.010)</td>
<td>5.28</td>
<td>.208</td>
<td>.218</td>
<td>5.10 (.201) MAX</td>
</tr>
<tr>
<td>F max.</td>
<td>5.34</td>
<td>.218</td>
<td>.218</td>
<td>5.10 (.201) MAX</td>
</tr>
<tr>
<td>G max.</td>
<td>4.39</td>
<td>.173</td>
<td>.173</td>
<td>5.10 (.201) MAX</td>
</tr>
</tbody>
</table>

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE

- CURRENT RATING: 3 A max.
- CONTACT RESISTANCE: 8 mΩ max.
- INSULATION RESISTANCE: 5000 MΩ min. @ 500 Vdc
- DIELECTRIC WITHSTANDING VOLTAGE: Sea level: 600 Vdc, Altitude 21 km (70,000 ft): 150 Vdc
- CONTACT ENGAGING FORCE: 170 g max. (6 oz)
- CONTACT SEPARATING FORCE: 14 g min. (0.5 oz)
- CONTACT RETENTION: 2.26 kg (5 lbs)
- DURABILITY: 500 mating cycles min.
- VIBRATION: 20g’s – No discontinuity > 1 µs
- SHOCK: 50g’s – No discontinuity > 1 µs

MATERIAL & FINISH

- MOULDED SHELL: Liquid Crystal Polymer (LCP)
- PIN CONTACT: Copper and beryllium copper, gold over nickel plating
- SOCKET CONTACT: Copper alloy, gold over nickel plating
- SOLDER CUP: Copper alloy, gold over nickel plating
- ENCAPSULANT: Epoxy resin
- HARDWARE: 300 series stainless steel, passivated
AXON® Micro-D Printed Circuit Board connectors are designed for interconnection of PCB’s inside-the-box to external cables. AXON® Micro-D PCB connectors are available in two layouts (0.100” pitch and 0.075” pitch) and in two configurations (vertical mount and right angle mount connector) for flexible and rigid printed circuit boards.

**NOTE:** typically, the PCB connector tends to be female, however male versions are equally available.

### PCB CONNECTORS 0.100” PITCH

**BS 0.100” Vertical mount**
- Available from 9 to 100 ways
- Available in metal and plastic shell
- PCB code: BS

**BR 0.100” Right Angle mount**
- Available from 9 to 100 ways
- Available in metal shell
- PCB code: BR

**CBR 0.100” Condensed Right Angle mount**
- Available from 9 to 100 ways
- Available in metal and plastic shell
- PCB code: CBR

**CBP 0.100” Condensed Right Angle mount low profile**
- Available from 9 to 51 ways
- Available in metal and plastic shell
- PCB code: CBP

### PCB CONNECTORS 0.075” PITCH

**BS 0.075” Vertical mount**
- Available from 9 to 100 ways
- Available in metal and plastic shell
- PCB code: 75SA / 75SB

**CBR 0.075” Condensed Right Angle mount**
- Available from 9 to 100 ways
- Available in metal shell
- PCB code: 75RB / 75RC
PCB CONNECTOR VERSIONS

Differences in length and width

Example of the 51 way connectors

The main advantage of the Micro-D PCB connectors with a pitch of 0.075 inch in comparison to the 0.1 inch version is to save space on the PCB layout.

VERTICAL CONNECTOR

The 0.075" BS version has more or less the same width as the 0.100" BS version but is shorter in length.

RIGHT ANGLE CONNECTOR

The 0.100" CBR connector is a little wider, but substantially shorter than the 0.100" BR connector.

The 0.075" CBR connector is more or less the same length as the 0.100" CBR version, but is narrower in width in comparison to both the CBR and even the BR connectors in the 0.100" format.

SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>ELECTRICAL &amp; MECHANICAL PERFORMANCE</th>
<th>MATERIAL &amp; FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT RATING</strong></td>
<td>Aluminium alloy 6061,300 series stainless steel or LCP, see ordering info for plating options</td>
</tr>
<tr>
<td><strong>CONTACT RESISTANCE</strong></td>
<td>Moulded Insulator: Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td><strong>INSULATION RESISTANCE</strong></td>
<td>Interface Seal: Fluorosilicone rubber (metal version)</td>
</tr>
<tr>
<td><strong>DIELECTRIC WITHSTANDING VOLTAGE</strong></td>
<td>Pin Contact: Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td><strong>CONTACT ENGAGING FORCE</strong></td>
<td>Socket Contact: Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td><strong>CONTACT SEPARATING FORCE</strong></td>
<td>Encapsulant: Epoxy resin</td>
</tr>
<tr>
<td><strong>CONTACT RETENTION</strong></td>
<td>Moulded Tray: Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td><strong>DURABILITY</strong></td>
<td>PCB Terminals: See ordering info for PCB terminals material</td>
</tr>
<tr>
<td><strong>VIBRATION</strong></td>
<td>Hardware: 300 series stainless steel, passivated</td>
</tr>
<tr>
<td><strong>SHOCK</strong></td>
<td></td>
</tr>
</tbody>
</table>

SEE PAGE 24 FOR MORE INFORMATION
## PCB RECTANGULAR CONNECTORS

### CBR TYPE

**0.100" PITCH**

**METAL SHELL**
- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

### IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>51</th>
<th>S</th>
<th>CBR</th>
<th>P</th>
<th>G</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td><strong>MDA</strong></td>
<td>Micro-D AXON® standard series.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONNECTOR TYPE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NUMBER OF CONTACTS</strong></td>
<td>09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.</td>
<td>See pages 26 &amp; 27 for contact arrangements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONNECTOR GENDER</strong></td>
<td><strong>P</strong>: Male (pin contacts).</td>
<td><strong>S</strong>: Female (socket contacts).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PCB VERSION</strong></td>
<td><strong>CBR</strong>: 0.100&quot; Condensed Board Right Angle.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HARDWARE</strong></td>
<td><strong>B</strong>: No hardware.</td>
<td><strong>P</strong>: Jackposts.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Px</strong> (x: 1 to 5): Panel mount jackposts.</td>
<td><strong>T</strong>: Threaded inserts installed.</td>
<td><strong>W</strong>: Jackposts and threaded inserts installed.</td>
<td><strong>Wx</strong> (x: 1 to 5): Panel mount jackposts and threaded inserts installed.</td>
<td>See pages 190 to 200 for hardware description.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CONDUCTOR TYPE</strong></td>
<td><strong>G</strong>: Gold plated solid conductor AWG 25.</td>
<td><strong>T</strong>: Tin plated solid conductor AWG 24.</td>
<td>See page 29 for conductor types.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>TAIL LENGTH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: 2.80 mm (0.110&quot;).</td>
<td>2: 3.80 mm (0.150&quot;).</td>
<td>3: 4.80 mm (0.190&quot;).</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>4: 6.35 mm (0.250&quot;).</td>
<td>5: 3.25 mm (0.127&quot;).</td>
<td>6: 3.56 mm (0.140&quot;).</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7: 4.37 mm (0.172&quot;).</td>
<td>Tolerance: ± 0.38 mm (0.015&quot;).</td>
<td>Other lengths available on request.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
SUMMARY OF CHARACTERISTICS

**DIMENSIONS**
Dimensions are in millimetres (inches).

**FEMALE connector**

---

**31-69 way connectors**

---

**100 way connectors**

---

**9-25 way connectors**

---

**SUMMARY OF ELECTRICAL & MECHANICAL PERFORMANCE**

<table>
<thead>
<tr>
<th>A max.</th>
<th>B ± 0.13 (±0.05)</th>
<th>C max.</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G ± 0.25 (±0.01)</th>
<th>H ± 0.25 (±0.01)</th>
<th>L max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 P / 9 S</td>
<td>19.94</td>
<td>14.35</td>
<td>8.48</td>
<td>10.16</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>10.80</td>
</tr>
<tr>
<td>15 P / 15 S</td>
<td>23.75</td>
<td>18.16</td>
<td>12.29</td>
<td>14.00</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>10.80</td>
</tr>
<tr>
<td>21 P / 21 S</td>
<td>27.56</td>
<td>21.97</td>
<td>16.10</td>
<td>17.81</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>10.80</td>
</tr>
<tr>
<td>25 P / 25 S</td>
<td>30.10</td>
<td>24.51</td>
<td>18.64</td>
<td>20.35</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>10.80</td>
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<td>31 P / 31 S</td>
<td>33.91</td>
<td>28.32</td>
<td>22.45</td>
<td>24.16</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>13.34</td>
</tr>
<tr>
<td>37 P / 37 S</td>
<td>37.72</td>
<td>32.13</td>
<td>26.26</td>
<td>27.96</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>13.34</td>
</tr>
<tr>
<td>51DR P / 51DR S</td>
<td>46.61</td>
<td>41.02</td>
<td>35.15</td>
<td>36.83</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>13.34</td>
</tr>
<tr>
<td>51 P / 51 S</td>
<td>43.45</td>
<td>38.86</td>
<td>24.99</td>
<td>26.70</td>
<td>4.69</td>
<td>6.35</td>
<td>7.82</td>
<td>13.34</td>
</tr>
<tr>
<td>69 P / 69 S</td>
<td>44.07</td>
<td>38.48</td>
<td>32.61</td>
<td>34.29</td>
<td>5.79</td>
<td>7.44</td>
<td>8.92</td>
<td>19.06</td>
</tr>
<tr>
<td>100 P / 100 S</td>
<td>55.11</td>
<td>45.72</td>
<td>35.15</td>
<td>36.86</td>
<td>6.88</td>
<td>8.46</td>
<td>10.01</td>
<td>25.65</td>
</tr>
</tbody>
</table>

**MATERIAL & FINISH**

- **SHELL**: Aluminium Alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **INTERFACIAL SEAL**: Fluorosilicone rubber
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

See page 24 for more information.

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**PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS**

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Rectangular Micro-D connecters

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SEE CONTACT LAYOUT ON PCB PAGES 82 TO 85
**PCB Rectangular Connectors**

**CBR Type**

**0.100" Pitch**

- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

### Identification Code

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA: Micro-D AXON® standard series.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTOR TYPE</td>
<td>P: LCP shell + potting 150°C.</td>
</tr>
<tr>
<td></td>
<td>L: LCP shell + potting 200°C.</td>
</tr>
<tr>
<td>NUMBER OF CONTACTS</td>
<td>09, 15, 21, 25, 31, 37, 51.</td>
</tr>
<tr>
<td></td>
<td>See pages 26 &amp; 27 for contact arrangements.</td>
</tr>
<tr>
<td>CONNECTOR GENDER</td>
<td>P: Male (pin contacts).</td>
</tr>
<tr>
<td></td>
<td>S: Female (socket contacts).</td>
</tr>
<tr>
<td>PCB VERSION</td>
<td>CBR: 0.100&quot; Condensed Board Right Angle.</td>
</tr>
<tr>
<td>HARDWARE</td>
<td>B: No hardware.</td>
</tr>
<tr>
<td></td>
<td>P: Jackposts.</td>
</tr>
<tr>
<td></td>
<td>Px (x: 1 to 5): Panel mount jackposts.</td>
</tr>
<tr>
<td></td>
<td>T: Threaded inserts installed.</td>
</tr>
<tr>
<td></td>
<td>W: Jackposts and threaded inserts installed.</td>
</tr>
<tr>
<td></td>
<td>Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.</td>
</tr>
<tr>
<td></td>
<td>See pages 190 to 200 for hardware description.</td>
</tr>
<tr>
<td>CONDUCTOR TYPE</td>
<td>G: Gold plated solid conductor AWG 25.</td>
</tr>
<tr>
<td></td>
<td>T: Tin plated solid conductor AWG 24.</td>
</tr>
<tr>
<td></td>
<td>See page 29 for conductor types.</td>
</tr>
</tbody>
</table>

### Tail Length

| 1 | 2.80 mm (0.110”) |
| 2 | 3.80 mm (0.150”) |
| 3 | 4.80 mm (0.190”) |
| 4 | 6.35 mm (0.250”) |
| 5 | 3.25 mm (0.127”) |
| 6 | 3.56 mm (0.140”) |
| 7 | 4.37 mm (0.172”) |

Tolerance: ± 0.38 mm (0.015”).

Other lengths available on request.
DIMENSIONS
Dimensions are in millimetres (inches).

FEMALE connector

9-25 way connectors

31-51 way connectors

SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>ELECTRICAL &amp; MECHANICAL PERFORMANCE</th>
<th>MATERIAL &amp; FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT RATING</td>
<td>3 A max.</td>
</tr>
<tr>
<td>CONTACT RESISTANCE</td>
<td>8 mΩ max.</td>
</tr>
<tr>
<td>INSULATION RESISTANCE</td>
<td>5000 MΩ min. ∅ 500 Vcc</td>
</tr>
<tr>
<td>DIELECTRIC WITHSTANDING VOLTAGE</td>
<td>Sea level: 600 Vcc</td>
</tr>
<tr>
<td>ALTITUDE</td>
<td>Altitude 21 km (70,000 ft): 150 Vcc</td>
</tr>
<tr>
<td>CONTACT ENGAGING FORCE</td>
<td>170 g max. (6 oz)</td>
</tr>
<tr>
<td>CONTACT SEPARATING FORCE</td>
<td>14 g min. (0.5 oz)</td>
</tr>
<tr>
<td>CONTACT RETENTION</td>
<td>2.26 kg (5 lbs)</td>
</tr>
<tr>
<td>DURABILITY</td>
<td>500 mating cycles min.</td>
</tr>
<tr>
<td>VIBRATION</td>
<td>20g’s – No discontinuity &gt; 1 µs</td>
</tr>
<tr>
<td>SHOCK</td>
<td>56g’s – No discontinuity &gt; 1 µs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATERIAL &amp; FINISH</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MOULDED SHELL</td>
<td>Liquid Crystal Polymer (LCP)</td>
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<tr>
<td>PIN CONTACT</td>
<td>Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>SOCKET CONTACT</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>ENCAPSULANT</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>MOULDED TRAY</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PCB TERMINALS</td>
<td>See ordering info for PCB terminals material</td>
</tr>
<tr>
<td>HARDWARE</td>
<td>300 series stainless steel, passivated</td>
</tr>
</tbody>
</table>

SEE PAGE 24 FOR MORE INFORMATION
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

9 CONTACTS - view B
PCB BOARD LAYOUT

15 CONTACTS - view B
FRONT FACE OF THE FLANGE

21 CONTACTS - view B
FRONT FACE OF THE FLANGE

25 CONTACTS - view B
FRONT FACE OF THE FLANGE

31 CONTACTS - view B
FRONT FACE OF THE FLANGE

37 CONTACTS - view B
FRONT FACE OF THE FLANGE
PCB LAYOUT FOR CBR TYPE
0.100" PITCH - FEMALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B
RECTANGULAR CONNECTORS

CBP TYPE

LOW PROFILE CBR
0.100" PITCH

METAL SHELL
- Low profile condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>CONNECTOR TYPE</th>
<th>NUMBER OF CONTACTS</th>
<th>CONNECTOR GENDER</th>
<th>PCB VERSION</th>
<th>HARDWARE</th>
<th>CONDUCTOR TYPE</th>
<th>TAIL LENGTH</th>
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</thead>
<tbody>
<tr>
<td>MDA</td>
<td>1: Cadmium shell / Z: Black zinc nickel aluminium shell + potting 150°C.</td>
<td>L09, L15, L21, L25, L31, L37, L51.</td>
<td>P: Male (pin contacts) / S: Female (socket contacts).</td>
<td>CBP: 0.100&quot; Condensed Board Right Angle, low profile.</td>
<td>B: No hardware. / P: Jackposts. / Px (x: 1 to 5): Panel mount jackposts. / T: Threaded inserts installed. / W: Jackposts and threaded inserts installed. / Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.</td>
<td>G: Gold plated solid conductor AWG 26. / T: Tin plated solid conductor AWG 24.</td>
<td>1: 2.80 mm (0.110”). / 2: 3.80 mm (0.150”). / 3: 4.80 mm (0.190”). / 4: 6.35 mm (0.250”). / 5: 3.25 mm (0.127”). / 6: 3.56 mm (0.140”). / 7: 4.37 mm (0.172”).</td>
</tr>
</tbody>
</table>

Tolerance: ± 0.38 mm (0.015”). Other lengths available on request.
### DIMENSIONS
Dimensions are in millimetres (inches).

#### FEMALE connector

![FEMALE connector diagram](image)

#### 9-25 way connectors

![9-25 way connectors diagram](image)

#### 31-51 way connectors

![31-51 way connectors diagram](image)

---

#### SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>A ± 0.25 (±0.010)</th>
<th>B ± 0.13 (±0.005)</th>
<th>C max.</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G ± 0.25 (±0.010)</th>
<th>H ± 0.25 (±0.010)</th>
<th>L max.</th>
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<td>.250</td>
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<td>.224</td>
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<td>.250</td>
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<td>37 P / 37 S</td>
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</tr>
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<td>.660</td>
<td>.300</td>
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</table>

**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 V oc
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 V ac, Altitude 21 km (70,000 ft): 150 V ac
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz)
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz)
- **CONTACT RETENTION**: 2.26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s - No discontinuity > 1μs
- **SHOCK**: 50g’s - No discontinuity > 1μs

**MATERIAL & FINISH**

- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

**SEE PAGE 24 FOR MORE INFORMATION**
# PCB Rectangular Connectors

## CBP Type

### Low Profile CBR

#### 0.100" Pitch

**Plastic Shell**
- Low profile condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

## Identification Code

<table>
<thead>
<tr>
<th>SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA: Micro-D AXON® standard series.</td>
</tr>
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</table>

## Connector Type

<table>
<thead>
<tr>
<th>Connector Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>P: LCP shell + potting 150°C.</td>
</tr>
<tr>
<td>L: LCP shell + potting 200°C.</td>
</tr>
</tbody>
</table>

## Number of Contacts

<table>
<thead>
<tr>
<th>Number of Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>09, 15, 21, 25, 31, 37, 51.</td>
</tr>
</tbody>
</table>

*See pages 26 & 27 for contact arrangements.*

## Connector Gender

<table>
<thead>
<tr>
<th>Connector Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>P: Male (pin contacts).</td>
</tr>
<tr>
<td>S: Female (socket contacts).</td>
</tr>
</tbody>
</table>

## PCB Version

<table>
<thead>
<tr>
<th>PCB Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBP: 0.100&quot; Condensed Board Right Angle, low profile.</td>
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</tbody>
</table>

## Hardware

<table>
<thead>
<tr>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: No hardware.</td>
</tr>
<tr>
<td>P: Jackposts.</td>
</tr>
<tr>
<td>Px (x: 1 to 5): Panel mount jackposts.</td>
</tr>
<tr>
<td>T: Threaded inserts installed.</td>
</tr>
<tr>
<td>W: Jackposts and threaded inserts installed.</td>
</tr>
<tr>
<td>Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.</td>
</tr>
</tbody>
</table>

*See pages 190 to 200 for hardware description.*

## Conductor Type

<table>
<thead>
<tr>
<th>Conductor Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>G: Gold plated solid conductor AWG 25.</td>
</tr>
<tr>
<td>T: Tin plated solid conductor AWG 24.</td>
</tr>
</tbody>
</table>

*See page 29 for conductor types.*

## Tail Length

<table>
<thead>
<tr>
<th>Tail Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: 2.80 mm (0.110&quot;).</td>
</tr>
<tr>
<td>2: 3.80 mm (0.150&quot;).</td>
</tr>
<tr>
<td>3: 4.80 mm (0.190&quot;).</td>
</tr>
<tr>
<td>4: 6.35 mm (0.250&quot;).</td>
</tr>
<tr>
<td>5: 3.25 mm (0.127&quot;).</td>
</tr>
<tr>
<td>6: 3.56 mm (0.140&quot;).</td>
</tr>
<tr>
<td>7: 4.37 mm (0.172&quot;).</td>
</tr>
</tbody>
</table>

*Tolerance: ± 0.38 mm (0.015"). Other lengths available on request.*

---

**Rectangular Micro-D Connectors**

**PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS**

**Rectangular Micro-D connectors**

**DIMENSIONS**
Dimensions are in millimetres (inches).

**FEMALE** connector

**31-51 way connectors**

**9-25 way connectors**

Ø2.44 ±0.08 (±.006 ±.003)
or THD INSERT 2-56 UNC 2B

**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**

<table>
<thead>
<tr>
<th></th>
<th>A max.</th>
<th>B ± 0.13 (±.005)</th>
<th>C max.</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G ± 0.25 (±.010)</th>
<th>H ± 0.25 (±.010)</th>
<th>L max.</th>
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</thead>
<tbody>
<tr>
<td>9 P / 9 S</td>
<td>19.94</td>
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<td>9.65</td>
<td>3.40</td>
<td>5.53</td>
<td>5.70</td>
<td>10.80</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>.565</td>
<td>.292</td>
<td>.380</td>
<td>.134</td>
<td>.218</td>
<td>.224</td>
<td>.425</td>
</tr>
<tr>
<td>15 P / 15 S</td>
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<td>.260</td>
<td>.268</td>
<td>.660</td>
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</table>

**MATERIAL & FINISH**

- **MOULDED SHELL**: Liquid Crystal Polymer (LCP)
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

**SEE PAGE 24 FOR MORE INFORMATION**
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

PCB LAYOUT FOR CBP TYPE
0.100" PITCH - MALE CONNECTORS

VIEW A

9 CONTACTS - VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B

51 CONTACTS - VIEW B
PCB LAYOUT FOR CBP TYPE 0.100" PITCH - FEMALE CONNECTORS

VIEW A

CONNECTOR MATING FACE

9 CONTACTS - VIEW B

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B

51 CONTACTS - VIEW B

## PCB Rectangular Connectors

**BR Type**

*0.100" Pitch*

### Metal Shell
- Board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

Please contact us for Class P (Plastic) BR Connectors.

---

### Identification Code

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA: Micro-D AXON® standard series.</th>
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<table>
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<tr>
<th>CONNECTOR TYPE</th>
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<tr>
<td>1: Cadmium al. shell / 2: Black zinc nickel aluminium shell + potting 150°C.</td>
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<tr>
<td>2: Nickel aluminium shell + potting 150°C.</td>
</tr>
<tr>
<td>3: Nickel aluminium shell + potting 200°C.</td>
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<td>S: Passivated stainless steel shell + potting 200°C.</td>
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<table>
<thead>
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<th>NUMBER OF CONTACTS</th>
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</thead>
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<tr>
<td>09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.</td>
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</tbody>
</table>

See pages 26 & 27 for contact arrangements.

<table>
<thead>
<tr>
<th>CONNECTOR GENDER</th>
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<tbody>
<tr>
<td>P: Male (pin contacts).</td>
</tr>
<tr>
<td>S: Female (socket contacts).</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PCB VERSION</th>
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</thead>
<tbody>
<tr>
<td>BR: 0.100&quot; Board Right Angle.</td>
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<table>
<thead>
<tr>
<th>HARDWARE</th>
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</thead>
<tbody>
<tr>
<td>B: No hardware.</td>
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<tr>
<td>P: Jackposts.</td>
</tr>
<tr>
<td>Px (x: 1 to 5): Panel mount jackposts.</td>
</tr>
<tr>
<td>T: Threaded inserts installed.</td>
</tr>
<tr>
<td>W: Jackposts and threaded inserts installed.</td>
</tr>
<tr>
<td>Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.</td>
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See pages 190 to 200 for hardware description.

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<tr>
<th>CONDUCTOR TYPE</th>
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<tr>
<td>G: Gold plated solid conductor AWG 25.</td>
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<td>T: Tin plated solid conductor AWG 24.</td>
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See page 29 for conductor types.

<table>
<thead>
<tr>
<th>TAIL LENGTH</th>
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<tbody>
<tr>
<td>1: 2.80 mm (0.110”).</td>
</tr>
<tr>
<td>2: 3.80 mm (0.150”).</td>
</tr>
<tr>
<td>3: 4.80 mm (0.190”).</td>
</tr>
<tr>
<td>4: 6.35 mm (0.250”).</td>
</tr>
<tr>
<td>5: 3.25 mm (0.127”).</td>
</tr>
<tr>
<td>6: 3.56 mm (0.140”).</td>
</tr>
<tr>
<td>7: 4.37 mm (0.172”).</td>
</tr>
</tbody>
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Tolerance: ± 0.38 mm (0.015”).

Other lengths available on request.

---

**Metal Connectors are supplied with anti-static protective dust caps**

**DIMENSIONS**
Dimensions are in millimetres (inches).

**FEMALE connector**

<table>
<thead>
<tr>
<th>9-P / 9-S</th>
<th>B ± 0.18 (±0.007)</th>
<th>C ± 0.13 (±0.005)</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
<th>G ± 0.25 (±0.010)</th>
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<td>.334</td>
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<td>.185</td>
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**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**

| CURRENT RATING | 3 A max. |
| CONTACT RESISTANCE | 8 mΩ max. |
| INSULATION RESISTANCE | 5000 MΩ min. @ 500 Vac |
| DIELECTRIC WITHSTANDING VOLTAGE | Sea level: 600 Vac |
| CONTACT ENGAGING FORCE | 170 g max. x number of contacts |
| CONTACT SEPARATING FORCE | 14 g min. x number of contacts |
| CONTACT RETENTION | 2.26 kg (5 lbs) |
| DURABILITY | 500 mating cycles min. |
| VIBRATION | 20g’s – No discontinuity > 1 μs |
| SHOCK | 50g’s – No discontinuity > 1 μs |

**MATERIAL & FINISH**

| SHELL | Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options |
| MOLDED INSULATOR | Liquid Crystal Polymer (LCP) |
| INTERFACIAL SEAL | Fluorosilicone rubber |
| PIN CONTACT | Copper and beryllium copper, gold over nickel plating |
| SOCKET CONTACT | Copper alloy, gold over nickel plating |
| ENCAPSULANT | Epoxy resin |
| MOLDED TRAY | Liquid Crystal Polymer (LCP) |
| PCB TERMINALS | See ordering info for PCB terminals material |
| HARDWARE | 300 series stainless steel, passivated |
PCB LAYOUT FOR BR TYPE
0.100" PITCH - MALE CONNECTORS

9 CONTACTS - view B

15 CONTACTS - view B

21 CONTACTS - view B

25 CONTACTS - view B

31 CONTACTS - view B

37 CONTACTS - view B

PCB LAYOUT FOR BR TYPE
0.100" PITCH - MALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

PCB LAYOUT FOR BR TYPE
0.100" PITCH - FEMALE CONNECTORS

9 CONTACTS - view B

15 CONTACTS - view B

21 CONTACTS - view B

25 CONTACTS - view B

31 CONTACTS - view B

37 CONTACTS - view B
PCB LAYOUT FOR BR TYPE

0.100" PITCH - FEMALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B
PCB RECTANGULAR CONNECTORS

BS TYPE
0.100" PITCH

METAL SHELL
- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

IDENTIFICATION CODE

| SERIES | MDA: Micro-D AXON® standard series. |
| CONNECTOR TYPE | 1: Cadmium al. shell
Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C. |
| NUMBER OF CONTACTS | 09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100. See pages 26 & 27 for contact arrangements. |
| CONNECTOR GENDER | P: Male (pin contacts). S: Female (socket contacts). |
| PCB VERSION | BS: 0.100" Board Straight. |
| TAIL LENGTH | 1: 2.80 mm (0.110"). 2: 3.80 mm (0.150"). 3: 4.80 mm (0.190"). 4: 6.35 mm (0.250"). 5: 3.25 mm (0.127"). 6: 3.56 mm (0.140"). 7: 4.37 mm (0.172"). Tolerance: ± 0.38 mm (0.015"). Other lengths available on request. |

METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

**SUMMARY OF CHARACTERISTICS**

### ELECTRICAL & MECHANICAL PERFORMANCE

<table>
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<tr>
<th>A max.</th>
<th>B ± 0.18 (±.007)</th>
<th>C ± 0.13 (±.005)</th>
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<td>1.800</td>
<td>36.86</td>
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</table>

### MATERIAL & FINISH

- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **INTERFACIAL SEAL**: Fluorosilicone rubber
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

**DIMENSIONS**

Dimensions are in millimetres (inches).

**FEMALE connector**

- ** Ø2.44 ±0.08 (.096 ±.003) or TPH INSERT 2-56 UNC 2B 100 contacts**
- ** Ø3.18 ±0.09 (.125 ±.003) or TPH INSERT 4-40 UNC 2B**

**See contact layout on PCB pages 102 & 105.**
### PCB Rectangular Connectors

#### BS Type

**0.100" Pitch**

**Plastic Shell**
- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

---

**Identification Code**

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<th>SERIES</th>
<th>MDA</th>
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</tr>
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</table>

**Connector Type**

- **P**: LCP shell + potting 150°C.
- **L**: LCP shell + potting 200°C.

**Number of Contacts**

- 09, 15, 21, 25, 31, 37, 51.
- See pages 26 & 27 for contact arrangements.

**Connector Gender**

- **P**: Male (pin contacts).
- **S**: Female (socket contacts).

**PCB Version**

- **BS**: 0.100" Board Straight.

**Hardware**

- **B**: No hardware.
- **P**: Jackposts.
- **Px** (x: 1 to 5): Panel mount jackposts.
- **T**: Threaded inserts installed.
- **W**: Jackposts and threaded inserts installed.
- **Wx** (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
- See pages 190 to 200 for hardware description.

**Conductor Type**

- **G**: Gold plated solid conductor AWG 25.
- **T**: Tin plated solid conductor AWG 24.
- See page 29 for conductor types.

**Tail Length**

- 1: 2.80 mm (0.110").
- 2: 3.80 mm (0.150").
- 3: 4.80 mm (0.190").
- 4: 6.35 mm (0.250").
- 5: 3.25 mm (0.127").
- 6: 3.56 mm (0.140").
- 7: 4.37 mm (0.172").

Tolerance: ± 0.38 mm (0.015").

Other lengths available on request.
DIMENSIONS
Dimensions are in millimetres (inches).

FEMALE connector

<table>
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<tr>
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</thead>
<tbody>
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<td>15 P / 15 S</td>
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<td>5.53</td>
</tr>
<tr>
<td>51 P / 51 S</td>
<td>67.66</td>
<td>± 0.18</td>
<td>50.80</td>
<td>30.86</td>
<td>23.92</td>
<td>26.16</td>
<td>4.50</td>
<td>6.60</td>
</tr>
</tbody>
</table>

SUMMARY OF CHARACTERISTICS

ELECTRICAL & MECHANICAL PERFORMANCE

- CURRENT RATING: 3 A max.
- CONTACT RESISTANCE: 8 mΩ max.
- INSULATION RESISTANCE: 5000 MΩ min. @ 500 Vac
- DIELECTRIC WITHSTANDING VOLTAGE: Sea level: 600 Vac
- Altitude 21 km (70,000 ft): 150 Vac
- CONTACT ENGAGING FORCE: 170 g max. (6 oz)
- CONTACT SEPARATING FORCE: 14 g min. (0.5 oz)
- CONTACT RETENTION: 2.26 kg (5 lbs)
- DURABILITY: 500 mating cycles min.
- VIBRATION: 20g’s – No discontinuity > 1 µs
- SHOCK: 50g’s – No discontinuity > 1 µs

MATERIAL & FINISH

- MOULDED SHELL: Liquid Crystal Polymer (LCP)
- PIN CONTACT: Copper and beryllium copper, Gold over nickel plating
- SOCKET CONTACT: Copper alloy, gold over nickel plating
- ENCAPSULANT: Epoxy resin
- MOULDED TRAY: Liquid Crystal Polymer (LCP)
- PCB TERMINALS: See ordering info for PCB terminals material
- HARDWARE: 300 series stainless steel, passivated

SEE PAGE 24 FOR MORE INFORMATION
PCB LAYOUT FOR BS TYPE
0.100" PITCH - MALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW A

51 CONTACTS - VIEW A

69 CONTACTS - VIEW A

100 CONTACTS - VIEW A
PCB LAYOUT FOR BS TYPE
0.100" PITCH - FEMALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW A

51 CONTACTS - VIEW A

69 CONTACTS - VIEW A

100 CONTACTS - VIEW A
PCB RECTANGULAR CONNECTORS

CBR TYPE
0.075" PITCH

METAL SHELL
- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

PLEASE CONTACT US FOR A PLASTIC VERSION OF 0.075" RIGHT ANGLE CONNECTOR.

IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>51</th>
<th>S</th>
<th>75RB</th>
<th>P</th>
<th>G</th>
<th>3</th>
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<tr>
<td>CONNECTOR TYPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1: Cadmium al. shell / Z: Black zinc nickel aluminium shell + potting 150°C.
2: Nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
S: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS
09, 15, 21, 31, 37, 51DR, 51, 69, 100.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

PCB VERSION
75RB: 0.075" pitch condensed board right angle specific layout.
Other option available 75RC see page 112.

HARDWARE
B: No hardware.
P: Jackposts.
Px (x: 1 to 5): Panel mount jackposts.
T: Threaded inserts installed.
W: Jackposts and threaded inserts installed.
Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
See pages 190 to 200 for hardware description.

CONDUCTOR TYPE
G: Gold plated solid conductor AWG 25.
T: Tin plated solid conductor AWG 24.
See page 29 for conductor types.

TAIL LENGTH
1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).
Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.

METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS

**DIMENSIONS**

Dimensions are in millimetres (inches).

**FEMALE connector**

9-69 way connectors

100 way connectors

**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 Vdc
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 Vdc
  - Altitude 21 km (70,000 ft): 150 Vdc
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz)
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz)
- **CONTACT RETENTION**: 2.26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s – No discontinuity > 1 µs
- **SHOCK**: 50g’s – No discontinuity > 1 µs

**MATERIAL & FINISH**

- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **INTERFACIAL SEAL**: Fluorosilicone rubber
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

See contact layout on PCB pages 108 to 111.
Rectangular Micro-D connectors
PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

PCB LAYOUT FOR CBR TYPE
0.075" PITCH - MALE CONNECTORS

9 CONTACTS - view B

15 CONTACTS - view B

21 CONTACTS - view B

25 CONTACTS - view B

31 CONTACTS - view B

37 CONTACTS - view B
PCB LAYOUT FOR CBR TYPE
0.075" PITCH - MALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B

front face of the flange

ø 2.44 (.096) typ
4.32 (1.70) ref
41.02 (1.615)
6.35 (.250)
1.91 (.075) typ
1.91 (.075) typ
1.91 (.075) typ
1.91 (.075) typ
0.96 (.0375) ref
0.79 (.0312) ref
ø 1.02 (.040) typ
ø 1.02 (.040) typ
ø 1.02 (.040) typ
ø 1.02 (.040) typ
ø 1.02 (.040) typ
ø 1.02 (.040) typ
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ø 1.02 (.040) typ
Rectangular Micro-D connectors

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

PCB LAYOUT FOR CBR TYPE
0.075" PITCH - FEMALE CONNECTORS

9 CONTACTS - VIEW B

15 CONTACTS - VIEW B

21 CONTACTS - VIEW B

25 CONTACTS - VIEW B

31 CONTACTS - VIEW B

37 CONTACTS - VIEW B
PCB LAYOUT FOR CBR TYPE
0.075" PITCH - FEMALE CONNECTORS

51 CONTACTS (DOUBLE ROW) - VIEW B

51 CONTACTS - VIEW B

69 CONTACTS - VIEW B

100 CONTACTS - VIEW B
**PCB RECTANGULAR CONNECTORS**

**CBR TYPE**

**0.075" PITCH**

**METAL SHELL**

**BASED ON BS MIL STANDARD LAYOUT**

- Condensed board right angle connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

Please contact us for a plastic version of 0.075" right angle connector.

**IDENTIFICATION CODE**

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<th>SERIES</th>
<th>MDA</th>
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<th>51</th>
<th>S</th>
<th>75RC</th>
<th>P</th>
<th>G</th>
<th>3</th>
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<tbody>
<tr>
<td>CONNECTOR TYPE</td>
<td>MDA: Micro-D AXON® standard series.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Cadmium al. shell /</td>
<td>Z: Black zinc nickel aluminium shell + potting 150°C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2: Nickel aluminium shell + potting 150°C.</td>
<td>3: Nickel aluminium shell + potting 200°C.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4: Passivated stainless steel shell + potting 200°C.</td>
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<td></td>
</tr>
<tr>
<td>NUMBER OF CONTACTS</td>
<td>09, 15, 21, 25, 31, 37, 51, 69, 100. See pages 26 &amp; 27 for contact arrangements.</td>
<td></td>
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</tr>
<tr>
<td>CONNECTOR GENDER</td>
<td>P: Male (pin contacts).</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>S: Female (socket contacts).</td>
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</tr>
<tr>
<td>PCB VERSION</td>
<td>75RC: 0.075&quot; pitch condensed board right angle based on BS MIL standard layout. Other option available 75RB see page 106.</td>
<td></td>
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</tr>
<tr>
<td>HARDWARE</td>
<td>B: No hardware.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>P: Jackposts.</td>
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<tr>
<td>Px (x: 1 to 5): Panel mount jackposts.</td>
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<tr>
<td>T: Threaded inserts installed.</td>
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<tr>
<td>W: Jackposts and threaded inserts installed.</td>
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<tr>
<td>Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed. See pages 190 to 200 for hardware description.</td>
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</tr>
<tr>
<td>CONDUCTOR TYPE</td>
<td>G: Gold plated solid conductor AWG 25.</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>T: Tin plated solid conductor AWG 24. See page 29 for conductor types.</td>
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<td></td>
</tr>
<tr>
<td>TAIL LENGTH</td>
<td>1: 2.80 mm (0.110&quot;).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2: 3.80 mm (0.150&quot;).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3: 4.80 mm (0.190&quot;).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4: 6.35 mm (0.250&quot;).</td>
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<tr>
<td>5: 3.25 mm (0.127&quot;).</td>
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<td></td>
</tr>
<tr>
<td>6: 3.56 mm (0.140&quot;).</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7: 4.37 mm (0.172&quot;).</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tolerance: ± 0.38 mm (0.015"). Other lengths available on request.
SUMMARY OF CHARACTERISTICS

**ELECTRICAL & MECHANICAL PERFORMANCE**

- **CURRENT RATING**: 3 A max.
- **CONTACT RESISTANCE**: 8 mΩ max.
- **INSULATION RESISTANCE**: 5000 MΩ min. @ 500 Vcc
- **DIELECTRIC WITHSTANDING VOLTAGE**: Sea level: 600 Vcc; Altitude 21 km (70,000 ft): 150 Vcc
- **CONTACT ENGAGING FORCE**: 170 g max. (6 oz)
- **CONTACT SEPARATING FORCE**: 14 g min. (0.5 oz)
- **CONTACT RETENTION**: 2.26 kg (5 lbs)
- **DURABILITY**: 500 mating cycles min.
- **VIBRATION**: 20g’s – No discontinuity > 1 µs
- **SHOCK**: 50g’s – No discontinuity > 1 µs

**MATERIAL & FINISH**

- **SHELL**: Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options
- **MOULDED INSULATOR**: Liquid Crystal Polymer (LCP)
- **INTERFACIAL SEAL**: Fluorosilicone rubber
- **PIN CONTACT**: Copper and beryllium copper, gold over nickel plating
- **SOCKET CONTACT**: Copper alloy, gold over nickel plating
- **ENCAPSULANT**: Epoxy resin
- **MOULDED TRAY**: Liquid Crystal Polymer (LCP)
- **PCB TERMINALS**: See ordering info for PCB terminals material
- **HARDWARE**: 300 series stainless steel, passivated

See contact layout on PCB pages 114 to 115.

Dimensions are in millimetres (inches).
PCB LAYOUT FOR CBR TYPE - 0.075" PITCH
BASED ON BS MIL STANDARD LAYOUT - MALE CONNECTORS

9 CONTACTS - VIEW B

15 CONTACTS - VIEW B

25 CONTACTS - VIEW B

37 CONTACTS - VIEW B

69 CONTACTS - VIEW B

21 CONTACTS - VIEW B

31 CONTACTS - VIEW B

51 CONTACTS - VIEW B

100 CONTACTS - VIEW B

CONNECTOR MATING FACE

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

www.axon-cable.com
**PCB Rectangular Connectors**

**BS Type**

**0.075" Pitch**

**Metal Shell**
- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

---

**Identification Code**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>2</th>
<th>37</th>
<th>S</th>
<th>75SB</th>
<th>P</th>
<th>G</th>
<th>3</th>
</tr>
</thead>
</table>

**Connector Type**

- **MDA**: Micro-D AXON® standard series.
- **Z**: Black zinc nickel aluminium shell + potting 150°C.
- **S**: Passivated stainless steel shell + potting 200°C.
- **N**: Nickel aluminium shell + potting 150°C.
- **N2**: Nickel aluminium shell + potting 200°C.

**Number of Contacts**

- 09, 15, 21, 25, 31, 37, 51DR, 51, 69, 100.
- 51DR & 69 ways are available for 75SB PCB version only.

**Connector Gender**

- **P**: Male (pin contacts).
- **S**: Female (socket contacts).

**PCB Version**

- **75SA**: 0.075" pitch board straight MIL standard layout.
- **75SB**: 0.075" pitch board straight specific layout.

**Hardware**

- **B**: No hardware.
- **P**: Jackposts.
- **Px** (x: 1 to 5): Panel mount jackposts.
- **T**: Threaded inserts installed.
- **W**: Jackposts and threaded inserts installed.
- **Wx** (x: 1 to 5): Panel mount jackposts and threaded inserts installed.

**Conductor Type**

- **G**: Gold plated solid conductor AWG 25.
- **T**: Tin plated solid conductor AWG 24.

**Tail Length**

- 1: 2.80 mm (0.110")
- 2: 3.80 mm (0.150")
- 3: 4.80 mm (0.190")
- 4: 6.35 mm (0.250")
- 5: 3.25 mm (0.127")
- 6: 3.56 mm (0.140")
- 7: 4.37 mm (0.172")

Tolerance: ± 0.38 mm (0.015”).

Other lengths available on request.

---

*Metal Connectors are supplied with Anti-Static Protective Dust Caps*

**Rectangular Micro-D connectors**

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

**DIMENSIONS**

Dimensions are in millimetres (inches).

**FEMALE connector**

![Diagrams of female connectors](image)

**SUMMARY OF CHARACTERISTICS**

**ELECTRICAL & MECHANICAL PERFORMANCE**

<table>
<thead>
<tr>
<th></th>
<th>A max.</th>
<th>B ± 0.13 (± 0.005)</th>
<th>C max.</th>
<th>D max.</th>
<th>E max.</th>
<th>F max.</th>
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<td>6.35</td>
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<td>6.35</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>26.70</td>
<td>1.051</td>
<td>5.79</td>
<td>.228</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.44</td>
<td>.293</td>
<td>.400</td>
<td>.355</td>
</tr>
<tr>
<td>69 P / 69 S</td>
<td>44.07</td>
<td>1.735</td>
<td>38.48</td>
<td>1.515</td>
<td>32.61</td>
<td>1.264</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34.29</td>
<td>1.350</td>
<td>5.79</td>
<td>.228</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.44</td>
<td>.293</td>
<td>.400</td>
<td>.355</td>
</tr>
<tr>
<td>100 P / 100 S</td>
<td>55.12</td>
<td>2.170</td>
<td>46.72</td>
<td>1.800</td>
<td>35.15</td>
<td>1.384</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>36.86</td>
<td>1.451</td>
<td>6.88</td>
<td>.271</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8.46</td>
<td>.333</td>
<td>.510</td>
<td>.430</td>
</tr>
</tbody>
</table>

**MATERIAL & FINISH**

| SHELL               | Aluminium alloy 6061 or 300 series stainless steel, see ordering info for plating options |
| MOULDED INSULATOR   | Liquid Crystal Polymer (LCP) |
| INTERFACIAL SEAL    | Fluorosilicone rubber |
| PIN CONTACT         | Copper and beryllium copper, gold over nickel plating |
| SOCKET CONTACT      | Copper alloy, gold over nickel plating |
| ENCAPSULANT         | Epoxy resin |
| MOULDED TRAY        | Liquid Crystal Polymer (LCP) |
| PCB TERMINALS       | See ordering info for PCB terminals material |
| HARDWARE            | 300 series stainless steel, passivated |

**SHIELDING & SOLDERABILITY**

Rectangular Micro-D connectors

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

BS TYPE
0.075" PITCH

PLASTIC SHELL

- Board straight connector for flexible and rigid printed circuit boards.
- Operating temperature: 150°C or 200°C.
- Several tail lengths available.

IDENTIFICATION CODE

SERIES
MDA: Micro-D AXON® standard series.

SHELL TYPE
P: LCP shell + potting 150°C.
L: LCP shell + potting 200°C.

NUMBER OF CONTACTS
09, 15, 21, 25, 31, 37, 51.
See pages 26 & 27 for contact arrangements.

CONNECTOR GENDER
P: Male (pin contacts).
S: Female (socket contacts).

PCB VERSION
75SA: 0.075" pitch board straight MIL standard layout.
75SB: 0.075" pitch board straight specific layout.

HARDWARE
B: No hardware.
P: Jackposts.
Px (x: 1 to 5): Panel mount jackposts.
T: Threaded inserts installed.
W: Jackposts and threaded inserts installed.
Wx (x: 1 to 5): Panel mount jackposts and threaded inserts installed.
See pages 190 to 200 for hardware description.

CONDUCTOR TYPE
G: Gold plated solid conductor AWG 25.
T: Tin plated solid conductor AWS 24.
See page 29 for conductor types.

TAIL LENGTH

1: 2.80 mm (0.110”).
2: 3.80 mm (0.150”).
3: 4.80 mm (0.190”).
4: 6.35 mm (0.250”).
5: 3.25 mm (0.127”).
6: 3.56 mm (0.140”).
7: 4.37 mm (0.172”).

Tolerance: ± 0.38 mm (0.015”).
Other lengths available on request.
### Dimensions

Dimensions are in millimetres (inches).

#### Female connector

![Image of female connector]

**Dimension Table**

<table>
<thead>
<tr>
<th>Model</th>
<th>A (max.)</th>
<th>B (± 0.13)</th>
<th>C (max.)</th>
<th>D (max.)</th>
<th>E (max.)</th>
<th>F (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15P / 15S</td>
<td>23.75 .935</td>
<td>18.16 .715</td>
<td>11.22 .442</td>
<td>13.46 .530</td>
<td>3.40 .134</td>
<td>.218 .310</td>
</tr>
<tr>
<td>21P / 21S</td>
<td>27.56 1.085</td>
<td>21.97 .865</td>
<td>15.03 .592</td>
<td>17.27 .680</td>
<td>3.40 .134</td>
<td>.218 .310</td>
</tr>
<tr>
<td>37P / 37S</td>
<td>37.72 1.485</td>
<td>32.13 1.265</td>
<td>25.19 .992</td>
<td>27.43 1.080</td>
<td>3.40 .134</td>
<td>.218 .310</td>
</tr>
<tr>
<td>51P / 51S</td>
<td>36.45 1.435</td>
<td>30.86 1.215</td>
<td>23.92 .942</td>
<td>26.16 1.030</td>
<td>4.50 .177</td>
<td>.260 .400</td>
</tr>
</tbody>
</table>

### Summary of Characteristics

#### Electrical & Mechanical Performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating</td>
<td>3 A max.</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>8 mΩ max.</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>5000 MΩ min. @ 500 Vdc</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>Sea level: 600 Vdc; Altitude 21 km (70,000 ft): 150 Vdc</td>
</tr>
<tr>
<td>Contact Engaging Force</td>
<td>170 g max. (6 oz)</td>
</tr>
<tr>
<td>Contact Separating Force</td>
<td>14 g min. (0.5 oz)</td>
</tr>
<tr>
<td>Contact Retention</td>
<td>2.26 kg (5 lbs)</td>
</tr>
<tr>
<td>Durability</td>
<td>500 mating cycles min.</td>
</tr>
<tr>
<td>Vibration</td>
<td>20g’s – No discontinuity &gt; 1 µs</td>
</tr>
<tr>
<td>Shock</td>
<td>50g’s – No discontinuity &gt; 1 µs</td>
</tr>
</tbody>
</table>

#### Material & Finish

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moulded Shell</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>Pin Contact</td>
<td>Copper and beryllium copper, gold over nickel plating</td>
</tr>
<tr>
<td>Socket Contact</td>
<td>Copper alloy, gold over nickel plating</td>
</tr>
<tr>
<td>Encapsulant</td>
<td>Epoxy resin</td>
</tr>
<tr>
<td>Moulded Tray</td>
<td>Liquid Crystal Polymer (LCP)</td>
</tr>
<tr>
<td>PCB Terminals</td>
<td>See ordering info for PCB terminals material</td>
</tr>
<tr>
<td>Hardware</td>
<td>300 series stainless steel, passivated</td>
</tr>
</tbody>
</table>

---

See Page 24 for more information
PCB LAYOUT FOR BS TYPE - 0.075" PITCH - 75SB
SPECIFIC LAYOUT - MALE CONNECTORS

9 CONTACTS - view A

15 CONTACTS - view A

21 CONTACTS - view A

25 CONTACTS - view A

31 CONTACTS - view A

37 CONTACTS - view A
PCB LAYOUT FOR BS TYPE - 0.075" PITCH - 75SB
SPECIFIC LAYOUT - FEMALE CONNECTORS

9 CONTACTS - view A

21 CONTACTS - view A

31 CONTACTS - view A

15 CONTACTS - view A

25 CONTACTS - view A

37 CONTACTS - view A
51 CONTACTS (DOUBLE ROW) - VIEW A

51 CONTACTS - VIEW A

69 CONTACTS - VIEW A

100 CONTACTS - VIEW A
### IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA</th>
<th>Micro-D AXON® standard series.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTOR TYPE</td>
<td>P: LCP shell + potting 150°C.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L: LCP shell + potting 200°C.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1: Cadmium al. shell / Z: Black zinc nickel aluminium shell + potting 150°C.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2: Nickel aluminium shell + potting 150°C.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: Nickel aluminium shell + potting 200°C.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S: Passivated stainless steel shell + potting 200°C.</td>
<td></td>
</tr>
<tr>
<td>NUMBER OF CONTACTS</td>
<td>09, 15, 21, 25, 31, 37, 51DR*, 51, 69*, 100*.</td>
<td></td>
</tr>
<tr>
<td>*: 51DR, 69 &amp; 100 way only available for 1, Z, 2, 3 &amp; S connector types. See pages 26 &amp; 27 for contact arrangements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRODUCT TYPE</td>
<td>CS: Connector saver (plug to receptacle connector).</td>
<td></td>
</tr>
<tr>
<td>ONE PIECE DESIGN ASSEMBLY</td>
<td>1: One piece design assembly.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L = 10 mm (0.394”).</td>
<td></td>
</tr>
<tr>
<td>HARDWARE</td>
<td>B: No hardware.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P1: Removable long jackposts on the female connector.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P2: Removable long jackposts on the male connector.</td>
<td></td>
</tr>
</tbody>
</table>

### METAL OR PLASTIC SHELL
- One piece design version L = 10 mm (0.394”) between flanges.
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

### CONNECTOR SAVERS
ONE PIECE DESIGN

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**


www.axon-cable.com
### Connector Saver

**One Piece Design**

#### Low Profile Metal Shell
- One piece design version L = 10 mm (.394") between flanges.
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

#### Identification Code

<table>
<thead>
<tr>
<th>SERIES</th>
<th>CONNECTOR TYPE</th>
<th>NUMBER OF CONTACTS</th>
<th>PRODUCT TYPE</th>
<th>ONE PIECE DESIGN ASSEMBLY</th>
<th>HARDWARE</th>
<th></th>
</tr>
</thead>
</table>

#### Hardware

- **P1**: Removable long jackposts on the female connector.
- **P2**: Removable long jackposts on the male connector.

---

**Metal Connectors are Supplied with Anti-Static Protective Dust Caps**


---

- Rectangular Micro-D Connectors
- Pigtails, Solder Cup, PCB, Savers & Microstrip Connectors

---

L = 10 mm (.394")
**CONNECTOR SAVERS**

**CONNECTOR SAVER**

**BACK TO BACK ASSEMBLY**

**METAL OR PLASTIC SHELL**
- Back to back assembly version (L ≥ 50 mm / 1.97") between flanges.
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

**IDENTIFICATION CODE**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA: Micro-D AXON® standard series.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTOR TYPE</td>
<td>1. Cadmium aluminium shell /</td>
</tr>
<tr>
<td></td>
<td>P. LCP shell + Potting 150°C.</td>
</tr>
<tr>
<td>NUMBER OF CONTACTS</td>
<td>09, 15, 21, 25, 31, 37, 51DR*, 51, 69*, 100*.</td>
</tr>
<tr>
<td>*: 51DR, 69 &amp; 100 way only available for 1, 2, 3 &amp; S connector types. See pages 26 &amp; 27 for contact arrangements.</td>
<td></td>
</tr>
<tr>
<td>PRODUCT TYPE</td>
<td>CS: Connector saver (receptacle to plug connector).</td>
</tr>
<tr>
<td></td>
<td>DP: Dual Pin connector (plug to plug connector).</td>
</tr>
<tr>
<td></td>
<td>DS: Dual Socket connector (receptacle to receptacle connector).</td>
</tr>
<tr>
<td>BACK TO BACK ASSEMBLY - LENGTH (in cm)</td>
<td>Attention! Wire length in centimetres (1 cm = 10 mm = .394&quot;).</td>
</tr>
<tr>
<td>WIRE TYPE</td>
<td>1: E2607, AWG 26, 7 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>2: E2619, AWG 26, 19 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>3: E2807, AWG 28, 7 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>4: E3007, AWG 30, 7 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>A: AW204, AWG24, 7 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>B: E2419, AWG 24, 19 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>C: 22759/1, AWG 26, 19 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>D: 22759/2, AWG 26, 19 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>E: 22759/3, AWG 26, 19 strands - 600 V.</td>
</tr>
<tr>
<td></td>
<td>See page 29 for wire types.</td>
</tr>
<tr>
<td>COLOUR CODE</td>
<td>F: All yellow - L: all white.</td>
</tr>
<tr>
<td>1st CONNECTOR HARDWARE</td>
<td>(For CS 1st connector is the female one).</td>
</tr>
<tr>
<td></td>
<td>A: U-clips with low profile hex socket head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>B: No hardware.</td>
</tr>
<tr>
<td></td>
<td>C: U-clips with low profile hex socket head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>D: U-clips with low profile slot head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>E: U-clips with low profile hex socket head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>M: U-clips with low profile hex socket head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>N: U-clips with low profile hex socket head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>P: U-clips with low profile hex socket head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>Px: Panel mount jack posts (removable).</td>
</tr>
<tr>
<td></td>
<td>F: Low profile slot head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>L: High profile slot head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>T: High profile slot head jack screws (removable).</td>
</tr>
<tr>
<td></td>
<td>See pages 190 to 200 for hardware description.</td>
</tr>
<tr>
<td>2nd CONNECTOR HARDWARE</td>
<td>(For CS 2nd connector is the male one). See 1st connector hardware for the list of choices.</td>
</tr>
<tr>
<td>Other hardware available on request</td>
<td></td>
</tr>
</tbody>
</table>

**METAL CONNECTORS ARE SUPPLIED WITH ANTI-STATIC PROTECTIVE DUST CAPS**

CONNECTOR SAVERS

BACK TO BACK ASSEMBLY

LOW PROFILE METAL SHELL

- Back to back assembly version (L ≥ 50 mm / 1.970") between flanges.
- Ideal for applications requiring many mating / demating cycles.
- Reduces wear and tear on systems and test equipment.
- Operating temperature: 150°C or 200°C.

IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MDA 2 L51 CS 010 1 L B B</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA: Micro-D AXON® standard series.</td>
<td></td>
</tr>
</tbody>
</table>

CONNECTOR TYPE

1: Cadmium aluminium shell
2: Black zinc nickel aluminium shell + potting 150°C.
3: Nickel aluminium shell + potting 200°C.
4: Passivated stainless steel shell + potting 200°C.

NUMBER OF CONTACTS

See pages 26 & 27 for contact arrangements.

PRODUCT TYPE

CS: Connector Saver (receptable to plug connector).
DP: Dual Pin connector (plug to plug connector).
DS: Dual Socket connector (receptacle to receptacle connector).

BACK TO BACK ASSEMBLY - LENGTH (in cm)

Attention! Wire length in centimetres (1cm = 10mm = .394”).

<table>
<thead>
<tr>
<th>L in cm (inches)</th>
<th>5 ≤ L ≤ 10</th>
<th>10 &lt; L ≤ 100</th>
<th>L &gt; 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOLERANCE</td>
<td>+/-0.5</td>
<td>+/-1.970</td>
<td>+/-0.5</td>
</tr>
</tbody>
</table>

WIRE TYPE

A: E 2607, AWG 26, 7 strands - 600V.
B: E 2619, AWG 26, 19 strands - 600V.
C: E 2907, AWG 26, 7 strands - 600V.
D: E 2419, AWG 24, 19 strands - 600V.
E: M22759/33, AWG 26, 19 strands - 600V.
See page 29 for wire types.

COLOUR CODE

F: All yellow.
L: All white.

1st CONNECTOR HARDWARE

(FOR CS 1st connector is the female one).
A: U-clips with low profile slot head jackcrews (removable).
B: No hardware.
C: U-clips with low profile hex socket head jackcrews (removable).
D: U-clips with low profile slot head jackcrews (removable).
E: Low profile hex socket head jackcrews (removable).
F: Jackcrews (removable).
G: Low profile slot head jackcrews (removable).
H: High profile slot head jackcrews (removable).
I: High profile hex socket head jackcrews (removable).
J: High profile slot head jackcrews (removable).
K: High profile hex socket head jackcrews (removable).
L: High profile slot head jackcrews (removable).
M: Low profile slot head jackcrews (removable).
N: Low profile hex socket head jackcrews (removable).
O: Low profile slot head jackcrews (removable).
P: Low profile hex socket head jackcrews (removable).
Q: High profile slot head jackcrews (removable).
R: High profile hex socket head jackcrews (removable).
S: High profile slot head jackcrews (removable).
T: High profile hex socket head jackcrews (removable).
U: High profile slot head jackcrews (removable).
V: High profile hex socket head jackcrews (removable).
W: High profile slot head jackcrews (removable).
X: High profile hex socket head jackcrews (removable).
Y: High profile slot head jackcrews (removable).
Z: High profile hex socket head jackcrews (removable).

2nd CONNECTOR HARDWARE

(FOR CS 1st connector is the female one).
See 1st connector hardware for the list of choices.

Other hardware available on request.
Rectangular Micro-D connectors

PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS

1.27 mm (0.050") PITCH

- Single row plastic connector for space and weight saving applications.
- Guide pin(s) or latch(es) available on female connector (blank cavity(ies) or latch(box(es) on male connector).

IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MSA P107S4L050G06L2E</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSA: Micro Strip AXON' standard series.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STRIP TYPE</th>
<th>P: LCP shell + potting 150°C, L: LCP shell + potting 200°C</th>
</tr>
</thead>
</table>

| NUMBER OF ROWS: | 1 |

| NUMBER OF ELECTRICAL CAVITIES: | 02 TO 40 |

Mechanical cavities are used for polarization, must not be counted here but can reduce the maximum number of available electrical cavities (see page 134).

<table>
<thead>
<tr>
<th>CONNECTOR GENDER</th>
<th>P: Male (pin contacts), S: Female (socket contacts)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>MOUNTING HOLE OPTION</th>
<th>A: With mounting holes, B: No mounting holes</th>
</tr>
</thead>
</table>

| TERMINATION / WIRE TYPE |

For colour codes F, L, W
T: E 2607, AWG 26, 7 strands, 600V,
E 2919, AWG 26, 19 strands, 600V,
E 2807, AWG 28, 7 strands, 600V,
B: E 3007, AWG 30, 7 strands, 600V,
A: E 2407, AWG 24, 7 strands, 600V,
E 2419, AWG 24, 19 strands, 600V,
E M22759/33, AWG 26, 19 strands, 600V.

For colour code V only
3: M22759/11, AWG26, 19 strands, 600V,
E 2607, AWG26, 7 strands, 600V,
Sold uninsulated wires.
G: AWG 25 gold plated.
T: AWG 24 tin plated.
FS: solder cup.
See page 29 for wire types.

| COLOUR CODE |

F: All yellow,
L: All white,
W: MIL-STD-681 striped (for wire types 3 and F only),
V: MIL-STD-681 striped (for wire types 3 and F only).

| WIRE LENGTH (in cm) |

BLANK: If wire type is FS.
Attention: Wire length in centimetres (1cm = 10 mm = .394").

| POLARIZATION |

G2E: Guide pin / guide hole both ends,
GCE: Guide pin / guide hole centered,
GXX: Guide pin / guide hole in xx position,
L2E: Latch spring / latch box both ends,
LCE: Latch spring / latch box centered,
LXX: Latch spring / latch box in xx position.

See page 29 for wire types.

IF NEEDED, YOU CAN COMBINE SEVERAL HARDWARE OPTIONS

EXAMPLES:
- 2 GUIDE-PINS OR LATCH-SPRINGS AT 2 PARTICULAR POSITIONS: MSAP109SB4L025 G02 G08 (OR L02 L08)
- 1 GUIDE-HOLE CENTERED + 1 LATCH-BOX AT A PARTICULAR POSITION: MSAP112PAR2T3 GCE L07
- 1 GUIDE-PIN CENTERED + LATCH-SPRING BOLTH ENDS: MSA111S02F012 GCE L2E

ONLY 2 RULES TO BUILD YOUR P/N:

- DEFINE ALL GUIDE PIN CODES FIRST, FOLLOWED BY LATCH CODES
- DEFINE STANDARD CODES (G2E / GCE / L2E / LCE) FIRST, FOLLOWED BY SPECIFIC POSITION CODES (GXX / LXX) AFTERWARDS

**Dimensions**

Dimensions are in millimetres (inches).

**Male Micro Strip Connector**

**Female Micro Strip Connector**

---

**To Determine Connector Width A ± 0.3 mm (.012")**

Example:

11 cavity strip with mounting holes

Multiply the number of mechanical cavities in one row by 1.27 mm (.050")

11 x 1.27 = 13.97

Add 0.25 mm (.010")

+ 0.25 = 14.22

Add 7.62 mm (.300") if mounting hole option is selected

+ 7.62 = 21.84

For detailed information concerning microstrip connectors, see pages 134 to 136.

**Summary of Characteristics**

**Electrical & Mechanical Performance**

- **Current Rating**: 3 A max.
- **Contact Resistance**: 8 mΩ max.
- **Insulation Resistance**: 5000 MΩ min. @ 500 Vdc
- **Dielectric Withstanding Voltage**: Sea level: 600 Vdc, Altitude 21 km (70,000 ft): 150 Vdc
- **Contact Engaging Force**: 170 g max (6 oz)
- **Contact Separating Force**: 14 g min (0.5 oz)
- **Contact Retention**: 2.26 kg (5 lbs)
- **Durability**: 500 mating cycles min.

**Material & Finish**

- **Shell**: Liquid Crystal Polymer (LCP)
- **Pin Contact**: Copper and Beryllium copper, gold over nickel plating
- **Socket Contact**: Copper alloy, gold over nickel plating
- **Encapsulant**: Epoxy resin
- **Guide Pin**: 300 series stainless steel, passivated
- **Latch**: Beryllium copper, nickel plating

SEE PAGE 24 FOR MORE INFORMATION
### MICROSTRIP CONNECTORS

#### PCB CONNECTOR

**1.27 mm (0.050") PITCH**

- Single row plastic connector for space and weight saving applications.
- Guide pin(s) or latch(es) available on female connector (blank cavity(ies) or latch box(es) on male connector).

#### IDENTIFICATION CODE

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MSA: Micro Strip AXON® standard series.</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRIP TYPE</td>
<td>P: LCP shell + potting 150°C. L: LCP shell + potting 200°C.</td>
</tr>
<tr>
<td>NUMBER OF ELECTRICAL CAVITIES</td>
<td>02 to 40. Mechanical cavities are used for polarization, must not be counted here but can reduce the maximum number of available electrical cavities (see page 134).</td>
</tr>
<tr>
<td>CONNECTOR GENDER</td>
<td>P: Male (pin contacts). S: Female (socket contacts).</td>
</tr>
<tr>
<td>MOUNTING HOLE OPTION</td>
<td>A: With mounting holes. B: No mounting holes.</td>
</tr>
<tr>
<td>VERSION TYPE</td>
<td>S1: Straight. S2: Straight, 2.54 mm (0.100&quot;) offset. R1: Right-angle in line. R2: Right-angle, 1.27 mm (0.50&quot;) offset. R3: Right-angle, 2.54 mm (0.100&quot;) offset.</td>
</tr>
<tr>
<td>TAIL LENGTH</td>
<td>1: 2.80 mm (0.110&quot;). 2: 3.80 mm (0.150&quot;). 3: 4.80 mm (0.190&quot;). 4: 6.35 mm (0.250&quot;). Tolerance: ± 0.38 mm (0.015&quot;). Other lengths upon request.</td>
</tr>
</tbody>
</table>

---

**Examples:**

- 2 Guide pins or latch springs at 2 particular positions: **MSA/P109B4L025 G2E G08 L02 L08**
- 1 Guide hole centered + 1 latch box at a particular position: **MSA/P119B4L23 GCE L07**
- Only 2 rules to build your P/N:
  - Define all guide pin codes first, followed by latch codes.
  - Define standard codes (G2E / GCE / L2E / LCE) first, followed by specific position codes (GXX / LXX) afterwards.

---

**Rectangular Micro-D connectors**

- **PIGTAIL, SOLDER CUP, PCB, SAVERS & MICROSTRIP CONNECTORS**
### DIMENSIONS
Dimensions are in millimetres (inches).

#### MALE MICRO STRIP CONNECTOR

![Male Micro Strip Connector Diagram]

#### FEMALE MICRO STRIP CONNECTOR

![Female Micro Strip Connector Diagram]

**TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")**

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 CAVITY STRIP WITH MOUNTING HOLES</td>
<td>11 x 1.27 = 13.97 + 0.25 = 14.22 + 7.62 = 21.84</td>
</tr>
</tbody>
</table>

*For detailed information concerning microstrip connectors, see pages 134 to 136.*
MICROSTRIIP GENERAL INFORMATION

- All cavities used, whether for electrical (pin or socket) contacts or for hardware options, (guide pin or latch) are considered as mechanical positions.
- G2E & L2E: 2 mechanical positions to count.
- GCE & LCE: 1 mechanical position to count.
- Gxx & Lxx: 1 mechanical position to count for each occurrence.

NB: If G2E or L2E are chosen, first and last cavities cannot be used for another polarization option (ex: if L2E is chosen, guide pin in position 1 is not possible)

- When specifying the number of ways, only electrical positions (cavities containing pin or socket contacts) are counted.
Example: a 7 way strip with 2 latches at the end and a guide pin would have 10 mechanical positions, but would still be called a 7 way connector.

TO DETERMINE CONNECTOR WIDTH A ± 0.3 mm (.012")

<table>
<thead>
<tr>
<th>EXAMPLE: 11 CAVITY STRIP WITH MOUNTING HOLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTIPLY the number of mechanical cavities in one row by 1.27 mm (.050&quot;)</td>
</tr>
<tr>
<td>ADD 0.25 mm (.010&quot;)</td>
</tr>
<tr>
<td>ADD 7.62 mm (.300&quot;) if mounting hole option is selected</td>
</tr>
</tbody>
</table>

- To determine hardware location number for centered hardware (GCE / LCE):
  - Divide the total number of mechanical cavities by two.
  - Round to the next whole number if result is a fraction.

$$6/2 = 3 \quad \Rightarrow \text{HARDWARE IN CAVITY N°3}$$

$$7/2 = 3.5 \quad \Rightarrow \text{HARDWARE IN CAVITY N°4}$$

Hardware options

POLARIZATION BY GUIDE PIN
The guide pin is inserted into the female connector, and there is a guide hole in the opposite cavity in the male connector.

LATCHED RETENTION
The latch spring is mounted on the female connector, with the corresponding latch box installed on the male connector. When the first and/or last mechanical positions are chosen for the latches they will be mounted on the connector edges, making the connector wider but not longer. For all other positions the latches will be mounted on top of the connector, directly above the corresponding mechanical position. Wherever a latch is fitted the corresponding cavity will be filled, and therefore mechanical only in function.
EXAMPLES

Latch box at the end of the strip, with filled cavity

Latch spring at the end of the strip, with filled cavity

Guiding hole in mechanical position n°6

Guide-pin in mechanical position n°6

Electrical position:

1  2  3  4  5  6  7

Mechanical position:

1  2  3  4  5  6  7  8  9  10

P/N: MSA P 1 07 P B xxxxx G06 L2E

Electrical position:

6  5  4  3  2  1

Mechanical position:

6  5  4  3  2  1  2  3  4  5  6

P/N: MSA P 1 07 S B xxxxx G06 L2E

Latch box on top of the strip, with filled cavity

Latch spring on top of the strip, with filled cavity

Electrical position:

1  2  3  4  5  6  7

Mechanical position:

1  2  3  4  5  6  7  8

P/N: MSA P 1 07 P B R3 xx L04

Electrical position:

7  6  5  4  3  2  1

Mechanical position:

7  6  5  4  3  2  1  2  3  4  5

P/N: MSA P 1 07 S B xxx L04
MOUNTING HOLES OPTION

- Position of holes

- Special case: mounting holes + hardware

When mounting holes are selected, first and last mechanical cavities are “after the holes area”.

- EXAMPLE WITH GUIDE PIN
  Hardware code G2E
  Guide pin / guide holes to be in first and last mechanical cavities.

- EXAMPLE WITH LATCHING
  Hardware code L2E
  Latch spring / latch box to be above first and last mechanical cavities, not on the edges of the strip.
VERSION S1: STRAIGHT

EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR

MATING FACE

1 2 3 4 5 6 7 8 9 10 11 12 13

PCB LAYOUT

1 2 3 4 5 6 7 8 9 10 11 12 13

MSA P 1 13 P B S1 G2

EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR

MATING FACE

1 2 3 4 5 6 7 8 9 10

PCB LAYOUT

1 2 3 4 5 6 7 8 9 10

MSA P 1 10 P A S1 G2 G08 L2E

VERSION S2: STRAIGHT - .100" OFFSET

EXAMPLE OF A 13 WAY CONNECTOR

MALE MICROSTRIP CONNECTOR

MATING FACE

1 2 3 4 5 6 7 8 9 10 11 12 13

PCB LAYOUT

1 2 3 4 5 6 7 8 9 10 11 12 13

MSA P 1 13 P B S2 G2

EXAMPLE OF A 10 WAY CONNECTOR WITH GUIDE-PIN, LATCHES AND MOUNTING HOLES

MALE MICROSTRIP CONNECTOR

MATING FACE

1 2 3 4 5 6 7 8 9 10

PCB LAYOUT

1 2 3 4 5 6 7 8 9 10

MSA P 1 10 P A S2 G2 G08 L2E
## Rectangular Micro-D Connectors

### Version R1: Right Angle In Line

#### Example of a 13 Way Connector

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="PCB Layout" /></td>
<td><img src="image2.png" alt="PCB Layout" /></td>
</tr>
</tbody>
</table>

#### Example of a 10 Way Connector with Guide-Pin, Latches and Mounting Holes

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="PCB Layout" /></td>
<td><img src="image4.png" alt="PCB Layout" /></td>
</tr>
</tbody>
</table>

### Version R2: Right Angle, .050" Offset

#### Example of a 13 Way Connector

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="PCB Layout" /></td>
<td><img src="image6.png" alt="PCB Layout" /></td>
</tr>
</tbody>
</table>

#### Example of a 10 Way Connector with Guide-Pin, Latches and Mounting Holes

<table>
<thead>
<tr>
<th>Male Microstrip Connector</th>
<th>Female Microstrip Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="PCB Layout" /></td>
<td><img src="image8.png" alt="PCB Layout" /></td>
</tr>
</tbody>
</table>