



## Micro-D GRPM-CBS Condensed Vertical Rear Panel Mount Wide Flange Printed Circuit Board Connectors



**Save Space On Your Circuit Board** – These Micro-D connectors feature .075 inch row spacing. The board footprint is reduced to match the size of the connector body.

**Solder-Dipped** – Terminals are coated with Sn60/Pb40 tin-lead solder for best solderability. Optional gold-plated terminals are available for RoHS compliance.

**High Performance** – These connectors meet the demanding requirements of MIL-DTL-83513.

### How To Order GRPM Condensed Vertical Connector

| Sample Part Number                      | GRPM                                                                                                                                                                        | 2 | L- | 15 | P | CBS | R3 | T | N | -.110 | -513 |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|----|---|-----|----|---|---|-------|------|
| <b>Series</b>                           | GRPM Glenair Rear Panel Mount                                                                                                                                               |   |    |    |   |     |    |   |   |       |      |
| <b>Shell Material and Finish</b>        | Aluminum Shell      Stainless Steel Shell<br><b>1</b> - Cadmium <b>2</b> - Nickel <b>3</b> - Passivated<br><b>4</b> - Black Anodize<br><b>5</b> - Gold <b>6</b> - Chem Film |   |    |    |   |     |    |   |   |       |      |
| <b>Insulator Material</b>               | <b>L</b> - LCP or PPS<br>LCP - 30% Glass-Filled Liquid Crystal Polymer<br>PPS - 40% Glass Filled Polyphenylene Sulfide                                                      |   |    |    |   |     |    |   |   |       |      |
| <b>Contact Layout</b>                   | <b>9, 15, 21, 25, 31, 37, 51-2, 51, 69, 75, 100, 130</b> (See Table I)                                                                                                      |   |    |    |   |     |    |   |   |       |      |
| <b>Contact Type</b>                     | <b>P</b> – Pin <b>S</b> – Socket                                                                                                                                            |   |    |    |   |     |    |   |   |       |      |
| <b>Termination Type</b>                 | <b>CBS</b> - Condensed Board Straight                                                                                                                                       |   |    |    |   |     |    |   |   |       |      |
| <b>Rear Panel Mount Hardware Option</b> | <b>B</b> - No hardware <b>R1</b> - .032 panel <b>R2</b> - .047 panel<br><b>R3</b> - .062 panel <b>R4</b> - .093 panel <b>R5</b> - .125 panel <b>R6</b> - .080 panel         |   |    |    |   |     |    |   |   |       |      |
| <b>Threaded Insert Option</b>           | <b>T</b> - Threaded Insert in Board Mount Hole <b>Omit</b> for none<br>9-69 Contacts - <b>2-56</b> 75-130 Contacts - <b>4-40</b>                                            |   |    |    |   |     |    |   |   |       |      |
| <b>O-Ring</b>                           | <b>C</b> - Conductive <b>N</b> - Non-Conductive (Nitrile) <b>B</b> - Supplied Less O-ring <b>F</b> - Fluorosilicone                                                         |   |    |    |   |     |    |   |   |       |      |
| <b>Lead Length</b>                      | <b>.080, .110, .125, .140, .150, .172, .190, .250</b>                                                                                                                       |   |    |    |   |     |    |   |   |       |      |
| <b>Gold-Plated Terminal Mod Code</b>    | These connectors are solder-dipped in 60/40 tin-lead solder.<br>To delete the solder dip and change to gold-plated terminals, add code <b>-513</b>                          |   |    |    |   |     |    |   |   |       |      |

| Materials and Finishes |                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------|
| Connector Shell        | Aluminum Alloy 6061 or Stainless Steel, 300 Series, passivated. See Ordering Info for Plating Options |
| Insulator              | Liquid Crystal Polymer (LCP) or Polyphenylene Sulfide (PPS)                                           |
| Interfacial Seal       | Fluorosilicone Rubber, Blue                                                                           |
| Pin Contact            | Beryllium Copper Gold over Nickel Plating                                                             |
| Socket Contact         | Copper Alloy Gold Over Nickel Plating                                                                 |
| Hardware               | 300 Series Stainless Steel                                                                            |
| Encapsulant            | Epoxy Resin Hysol EE4215                                                                              |

| Performance Specifications   |                               |
|------------------------------|-------------------------------|
| Current Rating               | 3 AMP                         |
| DWV                          | 600 VAC Sea level             |
| Insulation Resistance        | 5000 Megohms Minimum          |
| Contact Resistance           | 8 Milliohms Maximum           |
| Low Level Contact Resistance | 32 Milliohms Maximum          |
| Magnetic Permeability        | 2 μ Maximum                   |
| Operating Temperature        | -55° C. to +150° C.           |
| Shock, Vibration             | 50 g., 20g.                   |
| Mating Force                 | (10 Ounces) X (# of Contacts) |

### Notes:

- Performance data per MIL-DTL-83513
- Interface dimensions per MIL-DTL-83513

- PCB layout per Glenair MWDMCBS catalog data. See Section C

# Micro-D GRPM-CBS

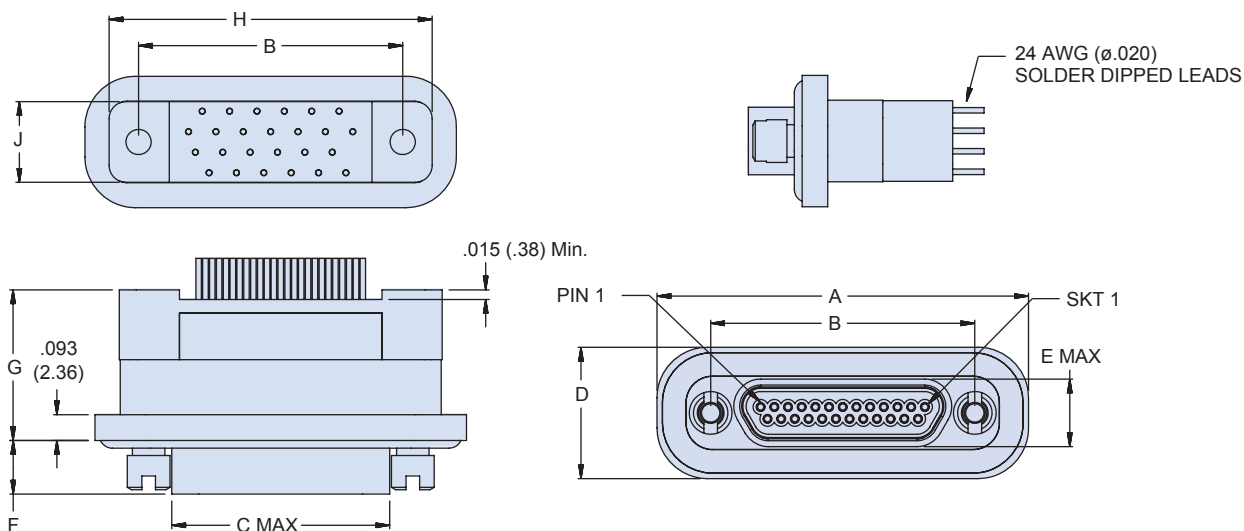
## Condensed Vertical Rear Panel Mount

### Wide Flange Printed Circuit Board Connectors



Micro-D PCB

Table I: Dimensions



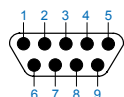
| Layout | A             |              | B             |              | C Max |       | D             |              | E Max |      | F ± .003      |              | G Max |       | H Max |       | J Max |       |
|--------|---------------|--------------|---------------|--------------|-------|-------|---------------|--------------|-------|------|---------------|--------------|-------|-------|-------|-------|-------|-------|
|        | in.<br>± .005 | mm.<br>± .13 | in.<br>± .003 | mm.<br>± .08 | in.   | mm.   | in.<br>± .005 | mm.<br>± .13 | in.   | mm.  | in.<br>± .003 | mm.<br>± .08 | in.   | mm.   | in.   | mm.   | in.   | mm.   |
| 9P     | 0.960         | 24.38        | 0.565         | 14.35        | 0.334 | 8.48  | 0.480         | 12.19        | 0.184 | 4.67 | 0.183         | 4.65         | 0.555 | 14.10 | 0.785 | 19.94 | 0.310 | 7.87  |
| 9S     | 0.960         | 24.38        | 0.565         | 14.35        | 0.400 | 10.16 | 0.480         | 12.19        | 0.250 | 6.35 | 0.195         | 4.95         | 0.555 | 14.10 | 0.785 | 19.94 | 0.310 | 7.87  |
| 15P    | 1.110         | 28.19        | 0.715         | 18.16        | 0.484 | 12.29 | 0.480         | 12.19        | 0.184 | 4.67 | 0.183         | 4.65         | 0.555 | 14.10 | 0.935 | 23.75 | 0.310 | 7.87  |
| 15S    | 1.110         | 28.19        | 0.715         | 18.16        | 0.550 | 13.97 | 0.480         | 12.19        | 0.250 | 6.35 | 0.195         | 4.95         | 0.555 | 14.10 | 0.935 | 23.75 | 0.310 | 7.87  |
| 21P    | 1.260         | 32.00        | 0.865         | 21.97        | 0.634 | 16.10 | 0.480         | 12.19        | 0.184 | 4.67 | 0.183         | 4.65         | 0.555 | 14.10 | 1.085 | 27.56 | 0.310 | 7.87  |
| 21S    | 1.260         | 32.00        | 0.865         | 21.97        | 0.700 | 17.78 | 0.480         | 12.19        | 0.250 | 6.35 | 0.195         | 4.95         | 0.555 | 14.10 | 1.085 | 27.56 | 0.310 | 7.87  |
| 25P    | 1.360         | 34.54        | 0.965         | 24.51        | 0.734 | 18.64 | 0.480         | 12.19        | 0.184 | 4.67 | 0.183         | 4.65         | 0.555 | 14.10 | 1.185 | 30.10 | 0.310 | 7.87  |
| 25S    | 1.360         | 34.54        | 0.965         | 24.51        | 0.800 | 20.32 | 0.480         | 12.19        | 0.250 | 6.35 | 0.195         | 4.95         | 0.555 | 14.10 | 1.185 | 30.10 | 0.310 | 7.87  |
| 31P    | 1.510         | 38.35        | 1.115         | 28.32        | 0.884 | 22.45 | 0.480         | 12.19        | 0.184 | 4.67 | 0.183         | 4.65         | 0.555 | 14.10 | 1.335 | 33.91 | 0.310 | 7.87  |
| 31S    | 1.510         | 38.35        | 1.115         | 28.32        | 0.950 | 24.13 | 0.480         | 12.19        | 0.250 | 6.35 | 0.195         | 4.95         | 0.555 | 14.10 | 1.335 | 33.91 | 0.310 | 7.87  |
| 37P    | 1.660         | 42.16        | 1.265         | 32.13        | 1.034 | 26.26 | 0.480         | 12.19        | 0.184 | 4.67 | 0.183         | 4.65         | 0.555 | 14.10 | 1.485 | 37.72 | 0.310 | 7.87  |
| 37S    | 1.660         | 42.16        | 1.265         | 32.13        | 1.100 | 27.94 | 0.480         | 12.19        | 0.250 | 6.35 | 0.195         | 4.95         | 0.555 | 14.10 | 1.485 | 37.72 | 0.310 | 7.87  |
| 51-2P  | 2.010         | 51.05        | 1.615         | 41.02        | 1.384 | 35.15 | 0.480         | 12.19        | 0.184 | 4.67 | 0.183         | 4.65         | 0.555 | 14.10 | 1.835 | 46.61 | 0.310 | 7.87  |
| 51-2S  | 2.010         | 51.05        | 1.615         | 41.02        | 1.450 | 36.83 | 0.480         | 12.19        | 0.250 | 6.35 | 0.195         | 4.95         | 0.555 | 14.10 | 1.835 | 46.61 | 0.310 | 7.87  |
| 51P    | 1.660         | 42.16        | 1.215         | 30.86        | 0.984 | 24.99 | 0.525         | 13.34        | 0.224 | 5.69 | 0.183         | 4.65         | 0.555 | 14.10 | 1.435 | 36.45 | 0.400 | 10.16 |
| 51S    | 1.660         | 42.16        | 1.215         | 30.86        | 1.050 | 26.67 | 0.525         | 13.34        | 0.293 | 7.44 | 0.195         | 4.95         | 0.555 | 14.10 | 1.435 | 36.45 | 0.400 | 10.16 |
| 69P    | 1.960         | 49.78        | 1.515         | 38.48        | 1.284 | 32.61 | 0.525         | 13.34        | 0.224 | 5.69 | 0.183         | 4.65         | 0.555 | 14.10 | 1.735 | 44.07 | 0.400 | 10.16 |
| 69S    | 1.960         | 49.78        | 1.515         | 38.48        | 1.358 | 34.49 | 0.525         | 13.34        | 0.293 | 7.44 | 0.195         | 4.95         | 0.555 | 14.10 | 1.735 | 44.07 | 0.400 | 10.16 |
| 75P    | 2.150         | 54.61        | 1.705         | 43.31        | 1.384 | 35.15 | 0.525         | 13.34        | 0.224 | 5.69 | 0.183         | 4.65         | 0.555 | 14.10 | 2.080 | 52.83 | 0.400 | 10.16 |
| 75S    | 2.150         | 54.61        | 1.705         | 43.31        | 1.450 | 36.83 | 0.525         | 13.34        | 0.293 | 7.44 | 0.195         | 4.95         | 0.555 | 14.10 | 2.080 | 52.83 | 0.400 | 10.16 |
| 100P   | 2.385         | 60.58        | 1.800         | 45.72        | 1.384 | 35.15 | 0.600         | 15.24        | 0.270 | 6.86 | 0.183         | 4.65         | 0.640 | 16.26 | 2.170 | 55.12 | 0.510 | 12.95 |
| 100S   | 2.385         | 60.58        | 1.800         | 45.72        | 1.451 | 36.86 | 0.600         | 15.24        | 0.333 | 8.46 | 0.195         | 4.95         | 0.640 | 16.26 | 2.170 | 55.12 | 0.510 | 12.95 |
| 130P   | 2.735         | 69.47        | 2.150         | 54.61        | 1.735 | 44.07 | .600          | 15.24        | .270  | 6.86 | .183          | 4.65         | .640  | 16.26 | 2.520 | 64.01 | .510  | 12.95 |
| 130S   | 2.735         | 69.47        | 2.150         | 54.61        | 1.795 | 45.60 | .600          | 15.24        | .333  | 8.46 | .195          | 4.95         | .640  | 16.26 | 2.520 | 64.01 | .510  | 12.95 |



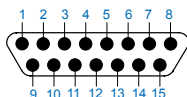
# Micro-D Contact Arrangements

## A

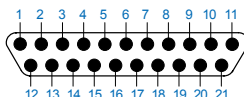
### Face View Pin Connector – Micro-D Contact Arrangements



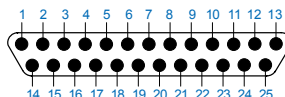
9 pin



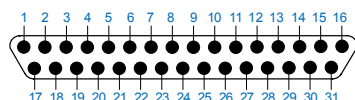
15 pin



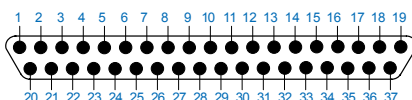
21 pin



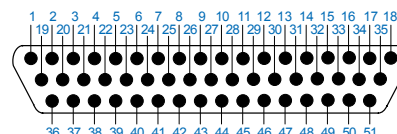
25 pin



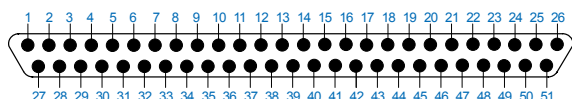
31 pin



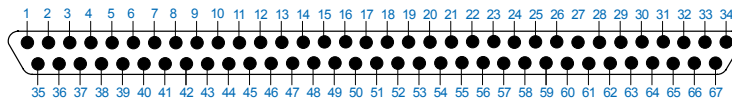
37 pin



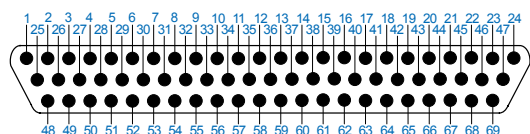
51 pin



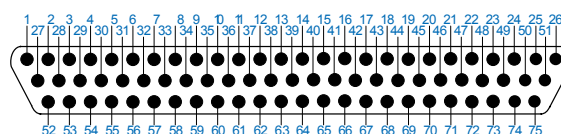
51 pin (special 2 row)



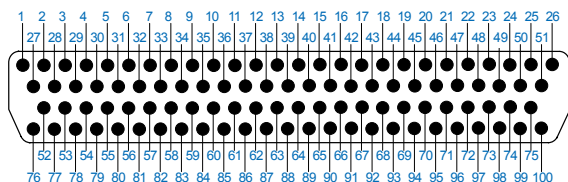
67 pin



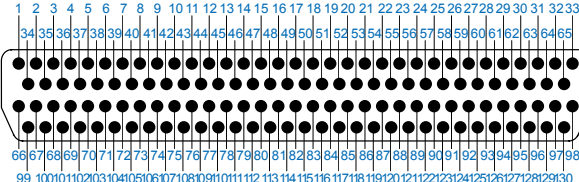
69 pin



75 pin



100 pin



130 pin

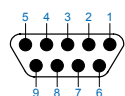
# Micro-D Contact Arrangements



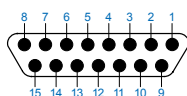
Introduction

A

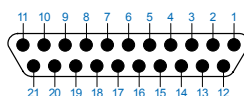
## Face View Socket Connector – Micro-D Contact Arrangements



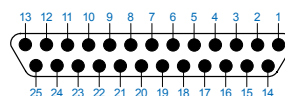
9 socket



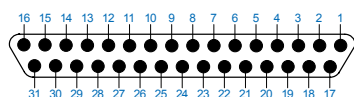
15 socket



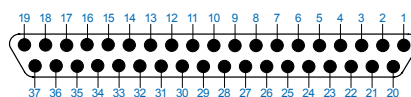
21 socket



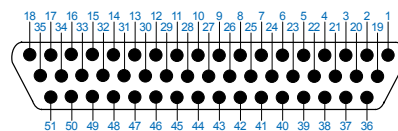
25 socket



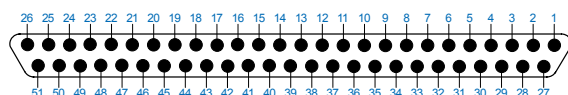
31 socket



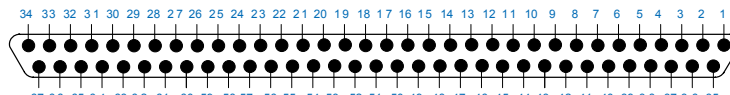
37 socket



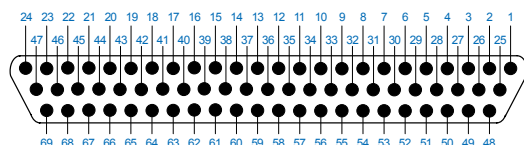
51 socket



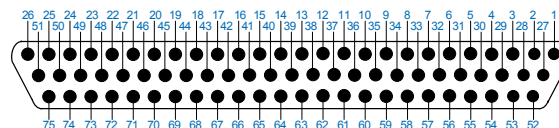
51 socket (special 2 row)



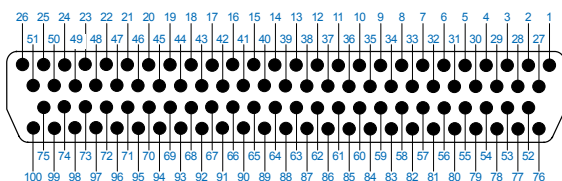
67 socket



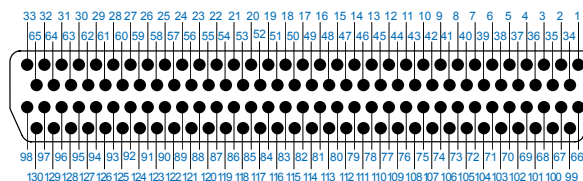
69 socket



75 socket



100 socket



130 socket