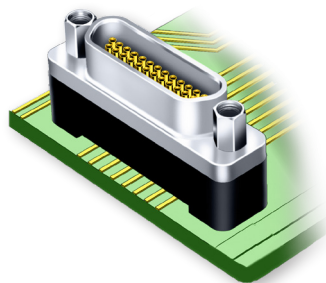




# MIL-DTL-83513/28 Thru /33 Micro-D CBS Condensed Straight PCB Terminated Connectors



**Space-Saving** — These connectors take up less room on the PC board. PC tail spacing is .075 inch (1.9mm) between rows.

**Threaded Inserts** — Stainless steel inserts are insert molded into plastic trays. These inserts provide a ground path from the PC board to the mating cable.

**Solder-Dipped** — Terminals are coated with Sn60/Pb40 tin-lead solder for best solderability.

## How To Order Straight PCB Micro-D Connectors

| Sample Part Number           |                                                                 |                     |                                     | M83513/             | 33-H                                 | 01 | C | P |  |
|------------------------------|-----------------------------------------------------------------|---------------------|-------------------------------------|---------------------|--------------------------------------|----|---|---|--|
| Base Part Number             | M83513/                                                         |                     |                                     |                     |                                      |    |   |   |  |
| Slash Number-<br>Shell Sizes | <b>Plug (Pin Contacts)</b>                                      |                     | <b>Receptacle (Socket Contacts)</b> |                     |                                      |    |   |   |  |
|                              | 28-A - 9 Contacts                                               | 28-E - 31 Contacts  | 31-A - 9 Contacts                   | 31-E - 31 Contacts  |                                      |    |   |   |  |
|                              | 28-B - 15 Contacts                                              | 28-F - 37 Contacts  | 31-B - 15 Contacts                  | 31-F - 37 Contacts  |                                      |    |   |   |  |
|                              | 28-C - 21 Contacts                                              | 29-G - 51 Contacts  | 31-C - 21 Contacts                  | 32-G - 51 Contacts  |                                      |    |   |   |  |
|                              | 28-D - 25 Contacts                                              | 30-H - 100 Contacts | 31-D - 25 Contacts                  | 33-H - 100 Contacts |                                      |    |   |   |  |
|                              | (See Table II)                                                  |                     |                                     |                     |                                      |    |   |   |  |
| PC Tail Length               | 01 - .109 Inch (2.77 mm)                                        |                     | 02 - .140 Inch (3.56 mm)            |                     | 03 - .172 Inch (4.37 mm)             |    |   |   |  |
| PC Tail Length ± .015 (0.38) |                                                                 |                     |                                     |                     |                                      |    |   |   |  |
| Shell Finish                 | C - Cadmium                                                     |                     | A - Electrodeposited Aluminum       |                     |                                      |    |   |   |  |
|                              | N - Electroless Nickel                                          |                     | K - Zinc Nickel                     |                     |                                      |    |   |   |  |
|                              | P - Passivated SST                                              |                     | T - Nickel Fluorocarbon Polymer     |                     |                                      |    |   |   |  |
| Hardware Options             | N - No Jackpost                                                 |                     | P - Jackposts Installed             |                     |                                      |    |   |   |  |
|                              | Sizes 9-51                                                      |                     | Shell Size 100 (H)                  |                     |                                      |    |   |   |  |
|                              | T - Threaded Insert in Board Mount Hole (No Jackposts)          |                     |                                     |                     | U - #4-40 Threaded Insert            |    |   |   |  |
|                              | W - Threaded Insert in Board Mount Hole and Jackposts Installed |                     |                                     |                     | Y - #4-40 Threaded Insert & Jackpost |    |   |   |  |
|                              | (See Table I)                                                   |                     |                                     |                     |                                      |    |   |   |  |

Table I: Hardware Options

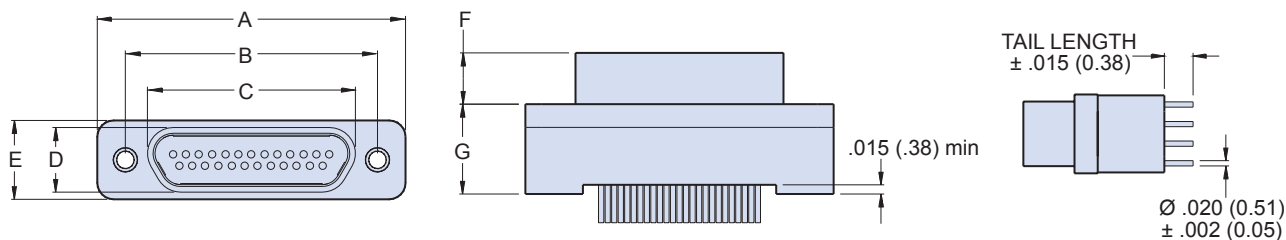
| HARDWARE OPTION N<br>NO JACKPOST, NO THREADED<br>INSERT                                                  | HARDWARE<br>OPTIONS T or U<br>THREADED INSERT,<br>NO POST                       | HARDWARE OPTION P<br>JACKPOST AND THRU-HOLE                                                                                          | HARDWARE<br>OPTIONS W or Y<br>JACKPOST AND<br>THREADED INSERT           |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|                                                                                                          |                                                                                 |                                                                                                                                      |                                                                         |
| <b>MTNG HOLE DIA.</b><br>9-51 CONTACTS<br>.096/.088 (2.44/2.24)<br>100 CONTACTS<br>.150/.145 (3.81/3.68) | <b>THREAD SIZE</b><br>9-51 CONTACTS # 2-56 UNC-2B<br>100 CONTACTS # 4-40 UNC-2B | <b>THREAD SIZE</b><br>9-51 CONTACTS # 2-56 UNC<br>100 CONTACTS # 4-40 UNC<br><b>USE WITH .156 (3.96) MAX. PC<br/>BOARD THICKNESS</b> | <b>THREAD SIZE</b><br>9-51 CONTACTS #2-56 UNC<br>100 CONTACTS #4-40 UNC |

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Micro-D  
MIL-DTL-83513

Table III: Dimensions



| Layout | A Max. |       | B              |                | C Max. |       | D Max. |      | E Max. |       | F              |                | G Max. |       |
|--------|--------|-------|----------------|----------------|--------|-------|--------|------|--------|-------|----------------|----------------|--------|-------|
|        | In.    | mm.   | In. $\pm .005$ | mm. $\pm 0.13$ | In.    | mm.   | In.    | mm.  | In.    | mm.   | In. $\pm .003$ | mm. $\pm 0.08$ | In.    | mm.   |
| 9P     | .785   | 19.94 | .565           | 14.35          | .333   | 8.46  | .185   | 4.70 | .310   | 7.87  | .183           | 4.65           | .355   | 9.02  |
| 9S     | .785   | 19.94 | .565           | 14.35          | .400   | 10.16 | .253   | 6.43 | .310   | 7.87  | .195           | 4.95           | .355   | 9.02  |
| 15P    | .935   | 23.75 | .715           | 18.16          | .483   | 12.27 | .185   | 4.70 | .310   | 7.87  | .183           | 4.65           | .355   | 9.02  |
| 15S    | .935   | 23.75 | .715           | 18.16          | .551   | 14.00 | .253   | 6.43 | .310   | 7.87  | .195           | 4.95           | .355   | 9.02  |
| 21P    | 1.085  | 27.56 | .865           | 21.97          | .633   | 16.08 | .185   | 4.70 | .310   | 7.87  | .183           | 4.65           | .355   | 9.02  |
| 21S    | 1.085  | 27.56 | .865           | 21.97          | .701   | 17.81 | .253   | 6.43 | .310   | 7.87  | .195           | 4.95           | .355   | 9.02  |
| 25P    | 1.185  | 30.01 | .965           | 24.51          | .733   | 18.62 | .185   | 4.70 | .310   | 7.87  | .183           | 4.65           | .355   | 9.02  |
| 25S    | 1.185  | 30.01 | .965           | 24.51          | .801   | 20.35 | .253   | 6.43 | .310   | 7.87  | .195           | 4.95           | .355   | 9.02  |
| 31P    | 1.335  | 33.91 | 1.115          | 28.32          | .883   | 22.43 | .185   | 4.70 | .310   | 7.87  | .183           | 4.65           | .355   | 9.02  |
| 31S    | 1.335  | 33.91 | 1.115          | 28.32          | .951   | 24.16 | .253   | 6.43 | .310   | 7.87  | .195           | 4.95           | .355   | 9.02  |
| 37P    | 1.485  | 37.72 | 1.265          | 32.13          | 1.033  | 26.24 | .185   | 4.70 | .310   | 7.87  | .183           | 4.65           | .355   | 9.02  |
| 37S    | 1.485  | 37.72 | 1.265          | 32.13          | 1.101  | 27.96 | .253   | 6.43 | .310   | 7.87  | .195           | 4.95           | .355   | 9.02  |
| 51P    | 1.435  | 36.45 | 1.215          | 30.86          | .983   | 24.97 | .228   | 5.79 | .400   | 10.16 | .183           | 4.65           | .355   | 9.02  |
| 51S    | 1.435  | 36.45 | 1.215          | 30.86          | 1.051  | 26.70 | .296   | 7.52 | .400   | 10.16 | .195           | 4.95           | .355   | 9.02  |
| 100P   | 2.170  | 55.12 | 1.800          | 45.72          | 1.383  | 35.13 | .271   | 6.88 | .510   | 12.95 | .183           | 4.65           | .430   | 10.92 |
| 100S   | 2.170  | 55.12 | 1.800          | 45.72          | 1.451  | 36.86 | .333   | 8.46 | .510   | 12.95 | .195           | 4.95           | .430   | 10.92 |

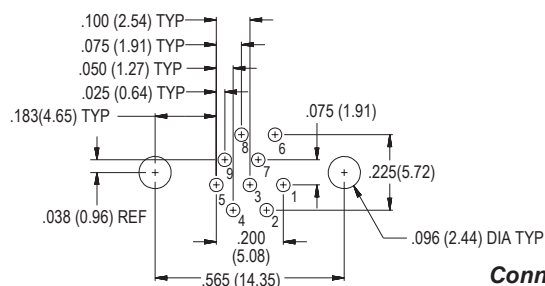
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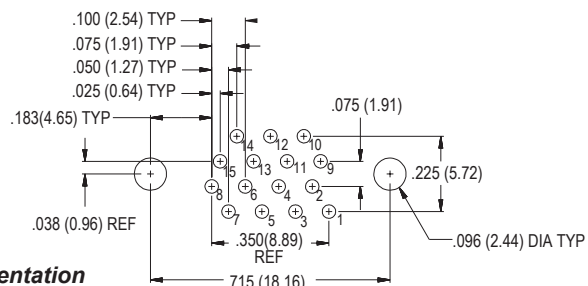
# MIL-DTL-83513/28 Thru /33 Micro-D CBS Condensed Straight PCB Terminated Connectors

## M83513/28 Thru 30 PCB Layouts – Pin Connectors

Patterns shown are for connector mounting side of PC board.

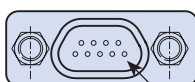


**9 PIN M83513/28-A**

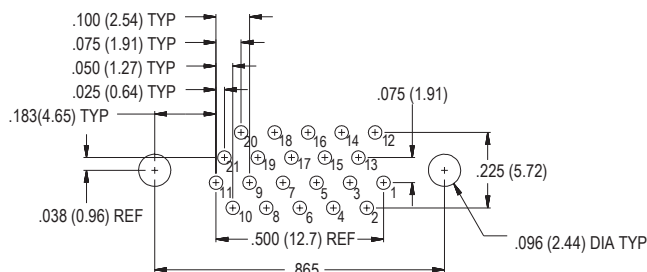


**15 PIN M83513/28-B**

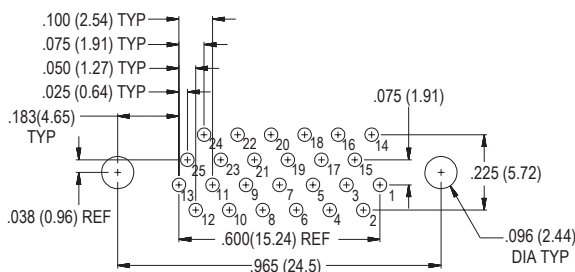
**Connector Orientation**



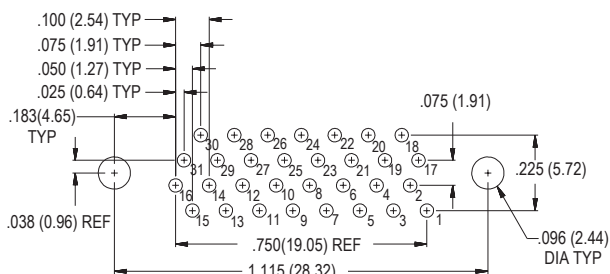
Pin #1



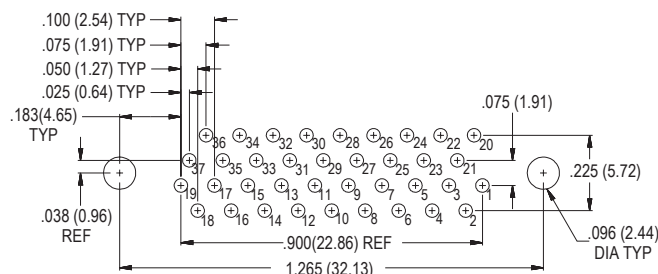
**21 PIN M83513/28-C**



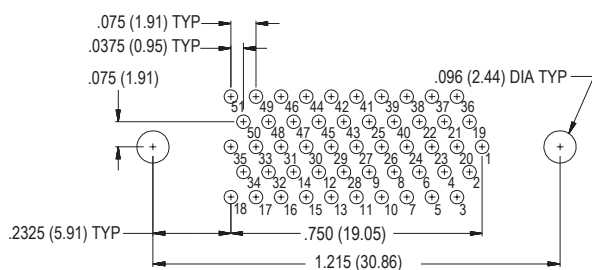
**25 PIN M83513/28-D**



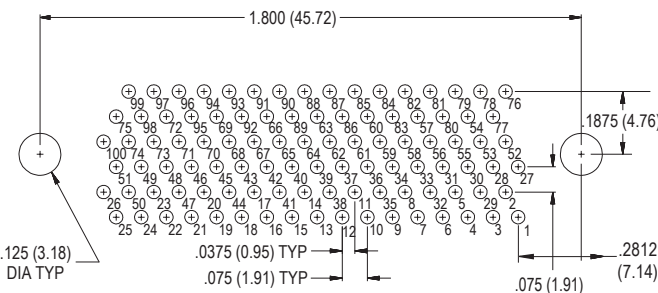
**31 PIN M83513/28-E**



**37 PIN M83513/28-F**



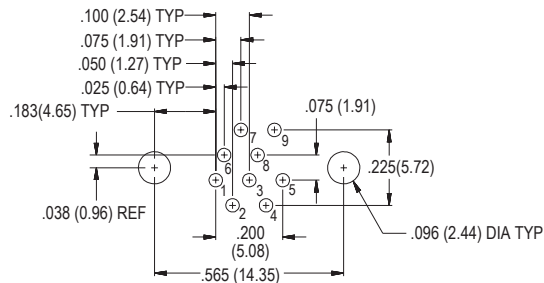
**51 PIN M83513/29-G**



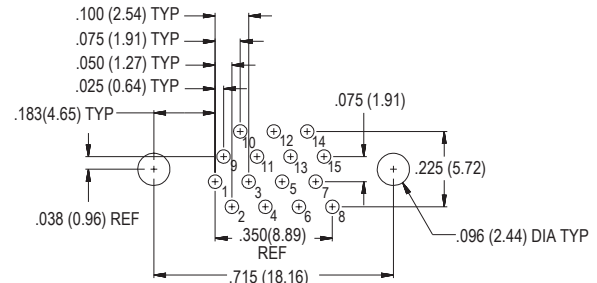
**100 PIN M83513/30-H**

## MM83513/31 Thru /33 PCB Layouts – Socket Connectors

Patterns shown are for connector mounting side of PC board.

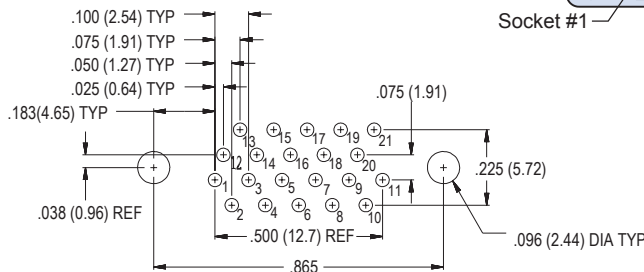
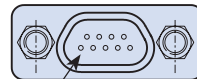


**9 SOCKET M83513/31-A**

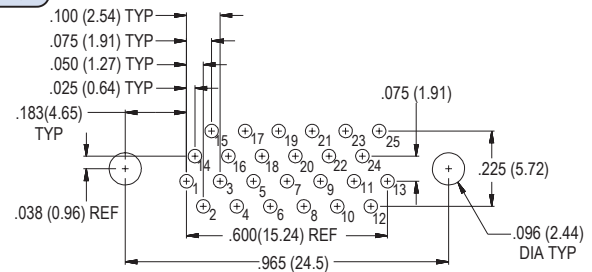


**15 SOCKET M83513/31-B**

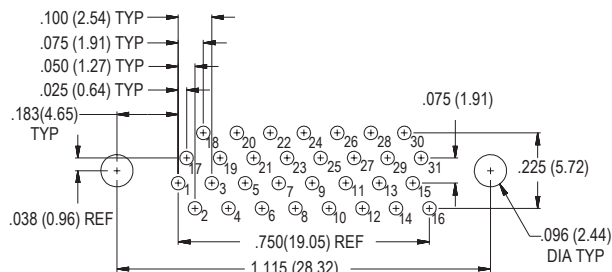
### Connector Orientation



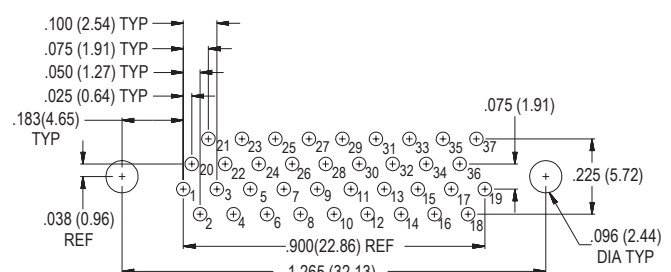
**21 SOCKET M83513/31-C**



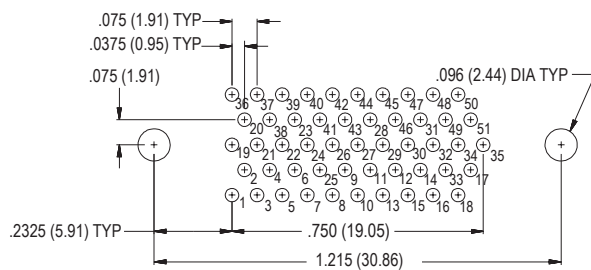
**25 SOCKET M83513/31-D**



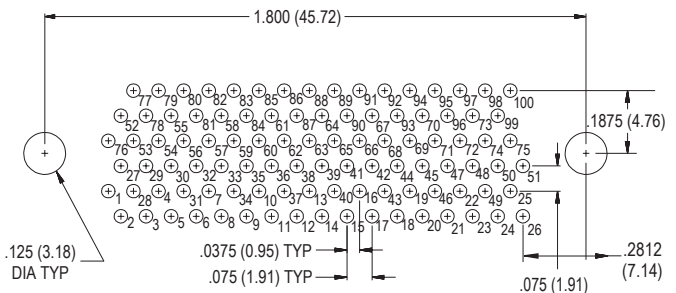
**31 SOCKET M83513/31-E**



**37 SOCKET M83513/31-F**



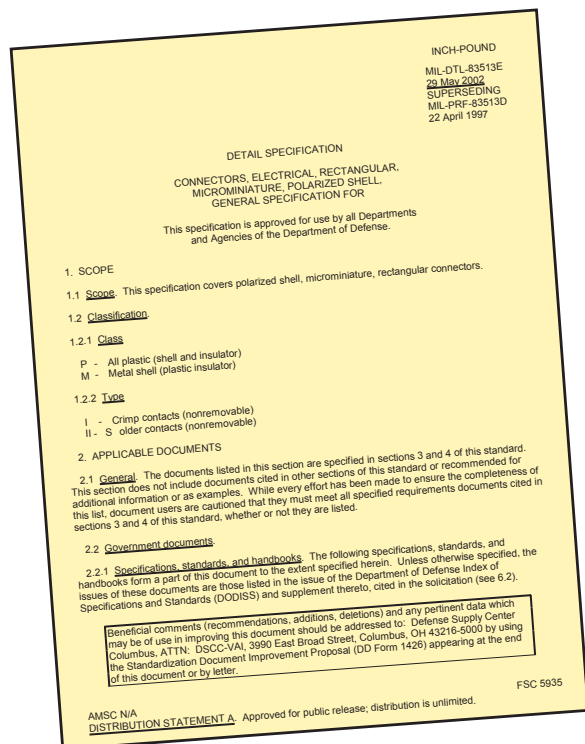
**51 SOCKET M83513/32-G**



**100 SOCKET M83513/33-H**



## MIL-DTL-83513 At-A-Glance



### What is the difference between a Glenair COTS Micro-D and a Glenair Mil Spec Micro-D? Which is less expensive?

All Glenair Micro-D's, whether mil spec or COTS, are built with the same components and meet identical requirements. A COTS Micro-D is not a lower cost version of a mil spec part. COTS versions offer more options than the mil spec versions.

Which is more readily available:

Mil Spec or COTS?

All M83513 aluminum shell connectors are in stock. All standard COTS versions are also stocked.

### What is the difference between a Glenair Mil Spec connector and another brand?

MIL-DTL-83513 allows the use of low-cost stamped contacts; however, the Glenair Micro-D connector features the high performance TwistPin contact system. Glenair M83513 connectors are 100% Made in USA. Glenair's industry-leading Micro-D capacity and capabilities offer quick worldwide access to the full range of QPL items.

### About The Mil Spec

The United States Department of Defense, Defense Logistics Agency, Defense Supply Center, Columbus, Ohio (DSCC, pronounced "Dessy"), maintains a vast library of military specifications covering all kinds of components used in defense equipment. These mil specs simplify system design and procurement, because mil spec parts do not require costly testing for suitability. Easy multiple sourcing is another key advantage of a mil spec part. MIL-DTL-83513 is a detail spec controlling dimensions, materials, performance and testing. This spec covers plastic and metal shell Micro-D connectors.

### The QPL At-A-Glance

Manufacturers are required to perform a series of mechanical, electrical and environmental tests in order to be eligible for listing as an approved supplier. When DSCC approval is granted, the manufacturer is added to the Qualified Products List (QPL). Glenair is QPL approved for all M83513 variations.

### The "Slash Sheets" At-A-Glance

In addition to the general specification, MIL-DTL-83513 contains a total of 33 Detail Specification Sheets, nicknamed "slash sheets" because a forward slash is used in the numbering system.

### How to get a copy of the spec

DSCC specs are available for download. The documents include:

MIL-DTL-83513 Detail Specification (the general spec)

MIL-DTL-83513 Slash Sheets (33 individual specs)

These specs can be found at:

<http://www.dsccl.dla.mil/Programs/MilSpec/DocSearch.asp>

The QPL can be found at:

<http://www.dsccl.dla.mil/programs/qmlqpl/default.asp>

### Glenair CAGE Codes

A **CAGE** (**C**ommercial **A**nd **G**overnment **E**ntity) Code is a five position code that identifies companies doing or wishing to do business with the Federal Government. Glenair uses two CAGE codes to identify M83513 products: **06324**, Glenair, Glendale, California  
**0CA77**, Glenair Microway Division, Lincolnwood Illinois.