

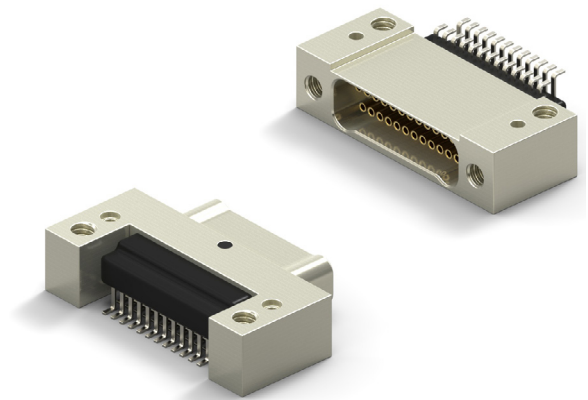
# CIRCUIT CONNECTOR RIGHT ANGLE

- Metal Shell Connector
- Surface Mount .025 x .040 (Style 28)
- 1 Piece Contact
- Flat Tail Termination
- Operating Temperature -50° C to 200° C
- 9 to 65 Contacts

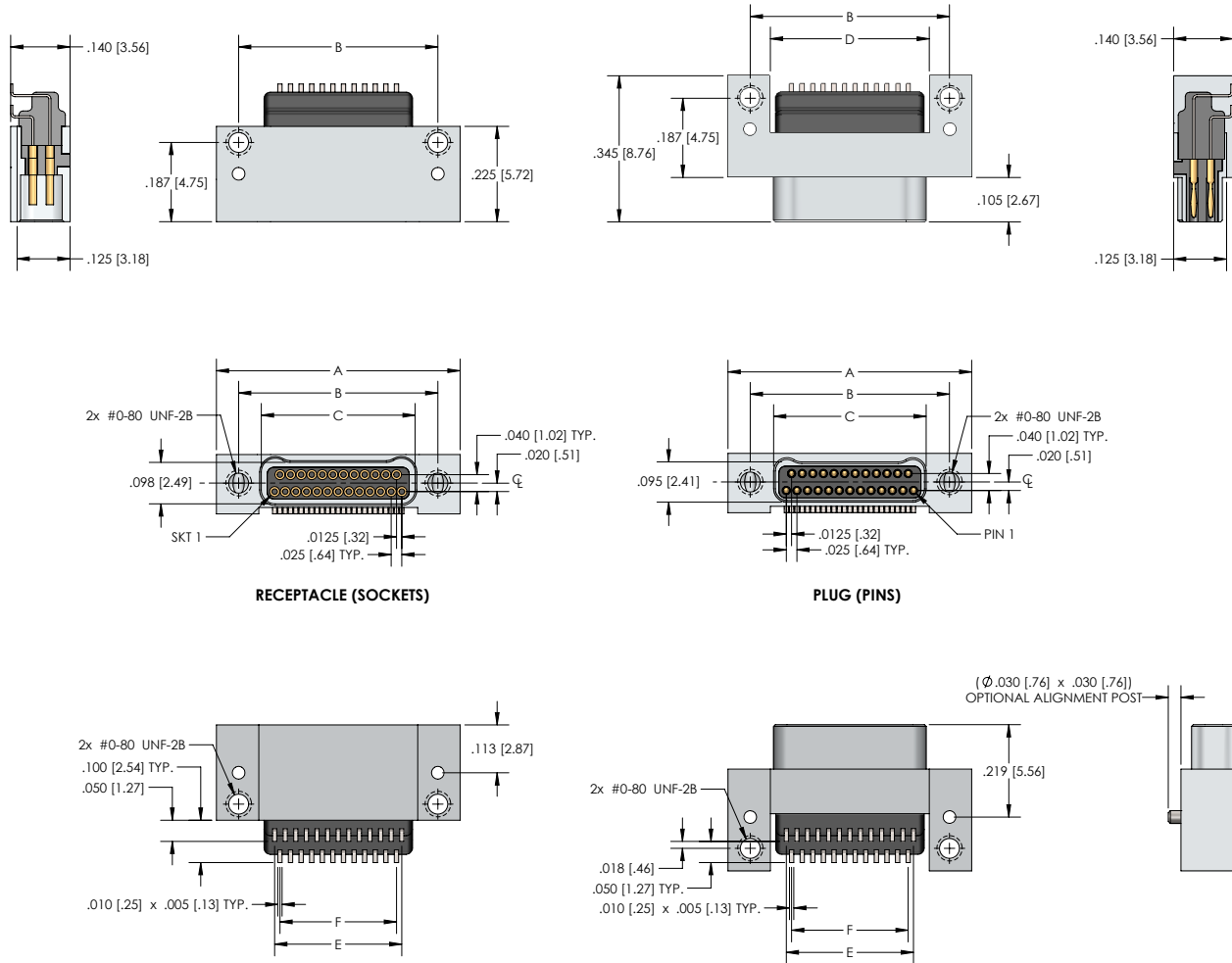
## HOW TO ORDER

\* Indicates preferred standard \*\* Consult factory for other plating options

| CN       | M              | 28       | L         | 25       | - 2            | P                                                                                   | Ø7                                                                                | 1                     | - SØ1                                                                                 |                                               |                                                                                       |
|----------|----------------|----------|-----------|----------|----------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|
|          | Series         | Style    | Insulator | Contacts | Insulator Type | Contact Gender                                                                      | Hardware                                                                          | Lead Finish           | Finish**                                                                              | Temp Range                                    | Mounting Option                                                                       |
| CN= Nano | M= Metal Shell | Style=28 | L=LCP     | Ø9       | 2= Dual Row    | P= Male/Pin (Plug Side)                                                             | Ø7= Threaded Hole                                                                 | 1= Tin plated (6Ø/4Ø) | Blank= Cadmium                                                                        | *Blank = 125C                                 | *Blank= Threaded Mounting Holes                                                       |
|          |                |          |           | 15       |                |    |  | 2= Gold plated (RoHS) |    | HT = 200°C<br>Supplied with Gold Plated Leads |    |
|          |                |          |           | 21       |                | S= Female/Socket (Receptacle Side)                                                  |                                                                                   |                       | *SØ1= Nickel                                                                          |                                               | 1= Alignment Posts with Threaded Mounting Holes                                       |
|          |                |          |           | 25       |                |  |                                                                                   |                       |  |                                               |  |
|          |                |          |           | 31       |                |                                                                                     |                                                                                   |                       | SØ3 = Black Anodize                                                                   |                                               | 2= Clearance Mounting Holes                                                           |
|          |                |          |           | 37       |                |                                                                                     |                                                                                   |                       |  |                                               |  |
|          |                |          |           | 51       |                |                                                                                     |                                                                                   |                       | SØ9= Stainless                                                                        |                                               | 3= Alignment Posts with Clearance Mounting Holes                                      |
|          |                |          |           | 65       |                |                                                                                     |                                                                                   |                       |  |                                               |  |



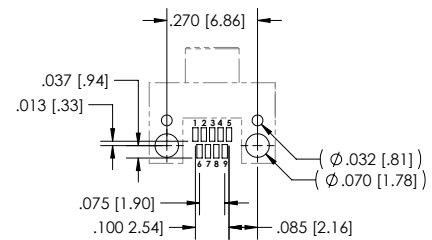
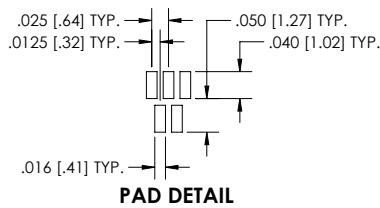
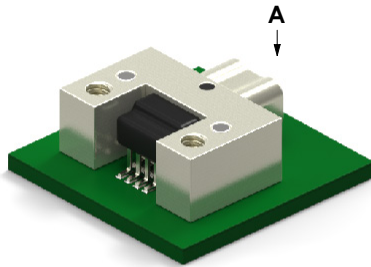
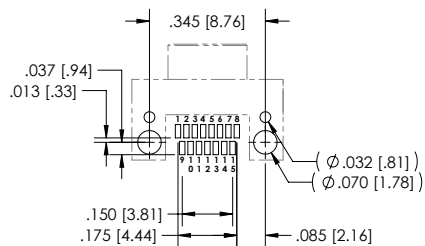
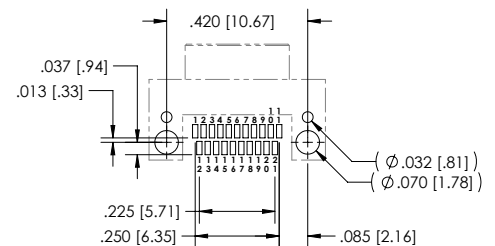
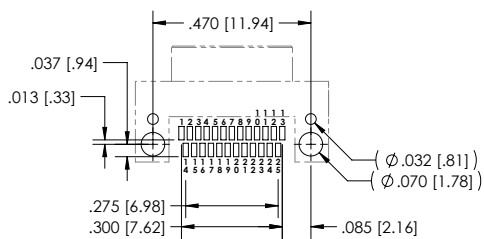
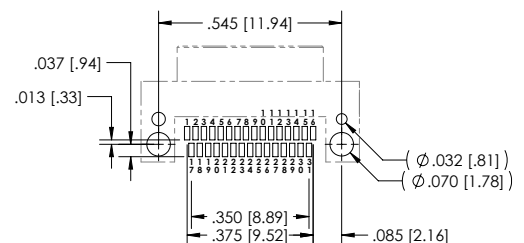
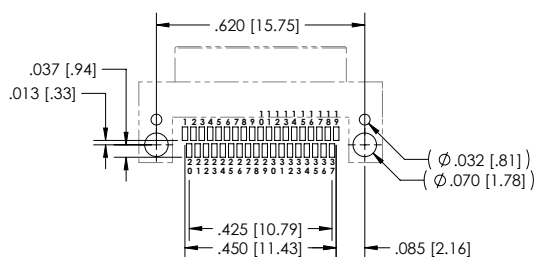
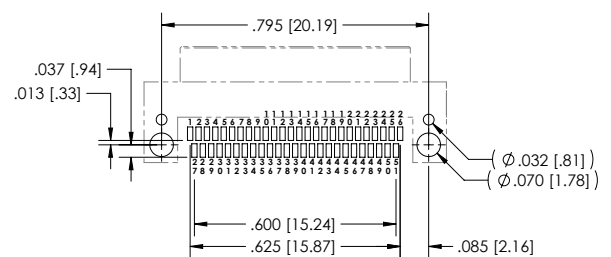
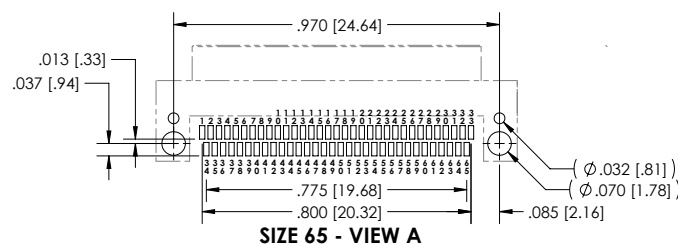
## DIMENSIONS



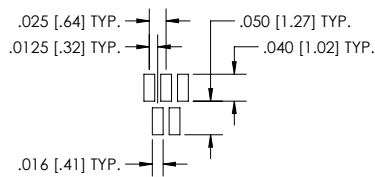
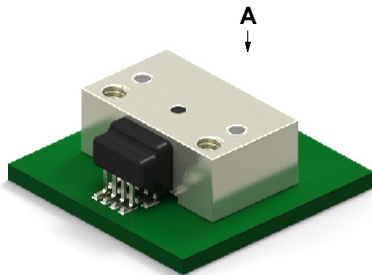
| CNM28 SERIES (DUAL ROW) |               |              |              |   |              |              |              |              |
|-------------------------|---------------|--------------|--------------|---|--------------|--------------|--------------|--------------|
| Size                    | A             | B            | Plug         | C | Receptacle   | D            | E            | F            |
| 9                       | .375 [9.52]   | .270 [6.86]  | .160 [4.06]  |   | .163 [4.14]  | .175 [4.44]  | .100 [2.54]  | .075 [1.90]  |
| 15                      | .450 [11.43]  | .345 [8.76]  | .235 [5.97]  |   | .238 [6.04]  | .250 [6.35]  | .175 [4.44]  | .150 [3.81]  |
| 21                      | .525 [13.33]  | .420 [10.67] | .310 [7.87]  |   | .313 [7.95]  | .325 [8.25]  | .250 [6.35]  | .225 [5.71]  |
| 25                      | .575 [14.60]  | .470 [11.94] | .360 [9.14]  |   | .363 [9.22]  | .375 [9.52]  | .300 [7.62]  | .275 [6.98]  |
| 31                      | .650 [16.51]  | .545 [13.84] | .435 [11.05] |   | .438 [11.12] | .450 [11.43] | .375 [9.52]  | .350 [8.89]  |
| 37                      | .725 [18.41]  | .620 [15.75] | .510 [12.95] |   | .513 [13.03] | .525 [13.33] | .450 [11.43] | .425 [10.79] |
| 51                      | .900 [22.86]  | .795 [20.19] | .685 [17.40] |   | .688 [17.47] | .700 [17.78] | .625 [15.87] | .600 [15.24] |
| 65                      | 1.075 [27.30] | .970 [24.64] | .860 [21.84] |   | .863 [21.92] | .875 [22.22] | .800 [20.32] | .775 [19.68] |

# CIRCUIT CONNECTOR RIGHT ANGLE PCB LAYOUT MALE

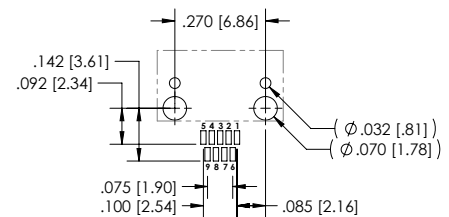
NANO D – PID 135

**SIZE 9 - VIEW A****SIZE 15 - VIEW A****SIZE 21 - VIEW A****SIZE 25 - VIEW A****SIZE 31 - VIEW A****SIZE 37 - VIEW A****SIZE 51 - VIEW A****SIZE 65 - VIEW A**

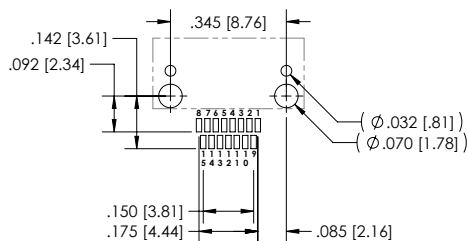
# CIRCUIT CONNECTOR RIGHT ANGLE PCB LAYOUT FEMALE



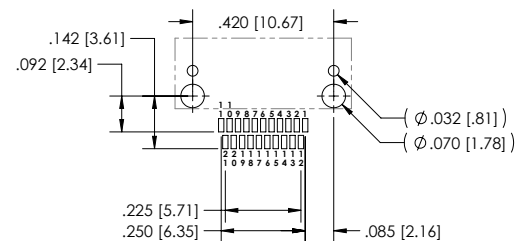
PAD DETAIL



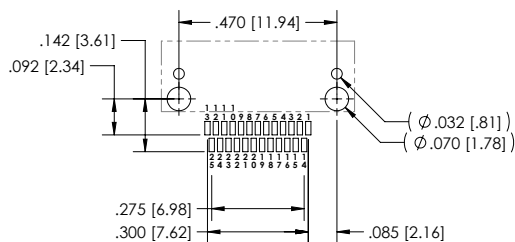
SIZE 9 - VIEW A



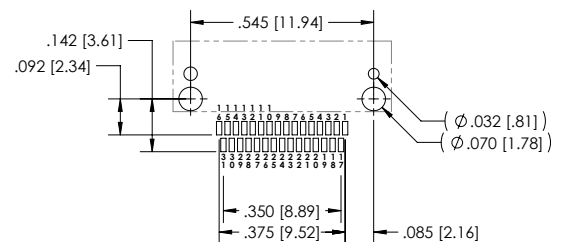
SIZE 15 - VIEW A



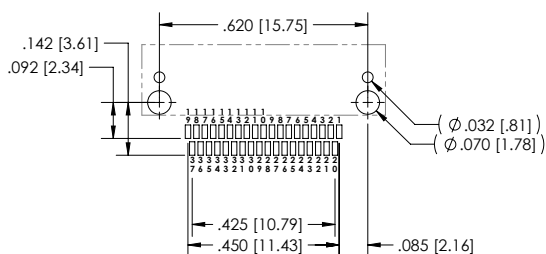
SIZE 21 - VIEW A



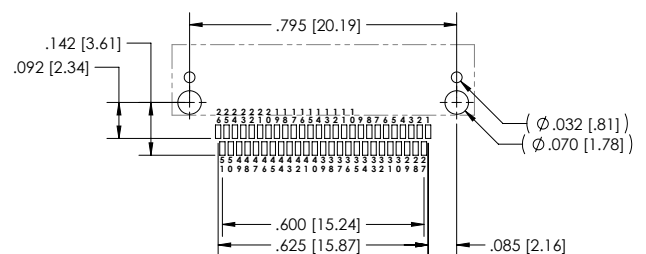
SIZE 25 - VIEW A



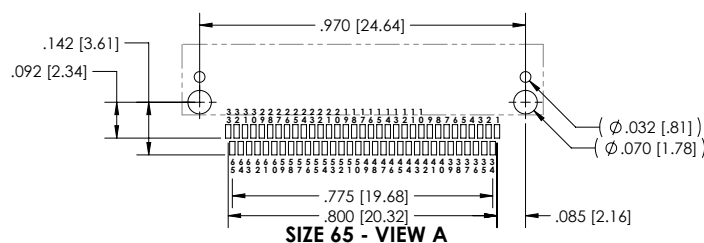
SIZE 31 - VIEW A



SIZE 37 - VIEW A



SIZE 51 - VIEW A



SIZE 65 - VIEW A

# NANO-D CIRCUIT RIGHT ANGLE CONNECTOR METAL PERFORMANCE DATA, MATERIALS AND FINISHES

## PERFORMANCE DATA

| 133-E                             | ELECTRICAL                                   |
|-----------------------------------|----------------------------------------------|
| CONTACT RESISTANCE:               | 0.033 mΩ max.@ 1.0 A                         |
| CURRENT RATING (SIGNAL CONTACTS): | 1.0 A max.                                   |
| DIELECTRIC WITHSTANDING VOLTAGE:  | 250 VAC at sea level , 100 VAC at 70,000 ft. |
| INSULATION RESISTANCE:            | 5,000 MΩ min.                                |

| 123-M                     | MECHANICAL                                                                                          |
|---------------------------|-----------------------------------------------------------------------------------------------------|
| CONTACT ENGAGING FORCE:   | 5 oz max. (Contact average is 2 oz.)                                                                |
| CONTACT SEPARATING FORCE: | 0.4 oz. min.                                                                                        |
| CONNECTOR MATING FORCE:   | 7 oz. x number of contacts max.                                                                     |
| CONNECTOR UNMATING FORCE: | 7 oz. x number of contacts max.                                                                     |
| VIBRATION:                | No damage or interruption detected (one microsecond sensitivity) EIA-364-28 Condition IV            |
| SHOCK:                    | No damage or interruption detected (one microsecond sensitivity) EIA-364-28 Condition IV            |
| DURABILITY:               | No mechanical or electrical defects after 200 matings.                                              |
| SALT SPRAY:               | No exposure of base metal or loss of performance after 96 hours for both Nickel and Cadmium plating |

## MATERIALS AND FINISHES

| 131-M&F                                                | MATERIALS AND FINISHES                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pin Contacts                                           | Pins: BeCu alloy strip per ASTM-B-194                                                                                                                                                                                                                                                                                                                                            |
| Socket Contacts                                        | Sockets: BeCu per ASTM-B-194                                                                                                                                                                                                                                                                                                                                                     |
| Contact Plating                                        | Gold plate per ASTM B488, or SAE AMS 2422                                                                                                                                                                                                                                                                                                                                        |
| Metal Shells                                           | Aluminum alloy per SAE-AMS-QQ-A-200/8, Type 6061-T6, with electroless nickel SAE AMS2404, class 3 or 4<br>Aluminum alloy per SAE-AMS-QQ-A-200/8, Type 6061-T6, with cadmium plating per SAE-AMS-QQ-P-416, Type II, class 1<br>Aluminum alloy per SAE-AMS-QQ-A-200/8, Type 6061-T6, with black anodize plating per MIL-A-8625, Type III, class 2<br>Stainless Steel per ASTM A582 |
| Molded Insulator Into Metal Housing/<br>Lead Organizer | LCP (Liquid Crystal Polymer) GLCP-30F OR PPS PER MIL-M-24519 GST-40F                                                                                                                                                                                                                                                                                                             |
| Alignment Post                                         | Corrosion resistant steel per ASTM A 582/A582 or ASTM A 581/A581M, Passivated per SAE AMS-2700                                                                                                                                                                                                                                                                                   |