

# "ZERO-CROSSTALK" M83513 Micro-D VersaLink™ Connectors



GVL RPM-BS, Rear Panel Mount, Straight PCB Connectors

MICRO-D VERSALINK CONNECTORS



| PART NUMBER DEVELOPMENT           |                                                                 |         |   |    |     |   |    |    |          |
|-----------------------------------|-----------------------------------------------------------------|---------|---|----|-----|---|----|----|----------|
| Sample Part Number                |                                                                 | GVL RPM | 2 | L- | 2-9 | P | BS | R3 | C - .110 |
| Series                            | GVL RPM = VersaLink Micro-D Rear Panel Mount                    |         |   |    |     |   |    |    |          |
| Shell Finish                      | 2 = Nickel 5 = Gold                                             |         |   |    |     |   |    |    |          |
| Insulator Material                | L = LCP or PPS                                                  |         |   |    |     |   |    |    |          |
| Contact Layout (V-M) <sup>1</sup> | 1-0, 1-9, 2-0, 2-9, 2-15, 2-21, 3-9, 4-0, 4-15, 4-31, 8-9, 10-0 |         |   |    |     |   |    |    |          |
| Connector Type <sup>3</sup>       | P = Plug S = Receptacle                                         |         |   |    |     |   |    |    |          |
| Connector Style                   | BS = Straight Board Mount                                       |         |   |    |     |   |    |    |          |
| Hardware <sup>4,5</sup>           | Rear panel mount jackposts (Length in Inches):                  |         |   |    |     |   |    |    |          |
|                                   | R1 = .032 panel R2 = .047 panel                                 |         |   |    |     |   |    |    |          |
|                                   | R3 = .062 panel R4 = .093 panel                                 |         |   |    |     |   |    |    |          |
| O-Ring                            | R5 = .125 panel R6 = .080 panel                                 |         |   |    |     |   |    |    |          |
|                                   | B = Threaded Inserts, No Hardware                               |         |   |    |     |   |    |    |          |
|                                   | C = Conductive N = Non-conductive (Nitrile)                     |         |   |    |     |   |    |    |          |
| PC Tail Length <sup>6</sup>       | F = Fluorosilicone                                              |         |   |    |     |   |    |    |          |
|                                   | -.080, -.110, -.140 (Length in Inches +.020/-.000)              |         |   |    |     |   |    |    |          |

## MATERIALS AND FINISHES

- Connector shell: aluminum alloy 6061
- Insulator (v): rigid dielectric
- Insulator (m): liquid crystal polymer (LCP) or polyphenylene sulfide (PPS)
- Flange seal: fluorosilicone rubber, blue
- O-ring: conductive elastomer or non-conductive nitrile rubber, blue
- Pin contact: copper alloy, gold over nickel plating
- Socket contact: copper alloy, gold over nickel plating
- Ground pin: copper alloy, gold plating
- Ground spring: stainless steel, gold plating
- Hardware: 300 series stainless steel, passivated
- Encapsulant: epoxy resin Hysol EE4215

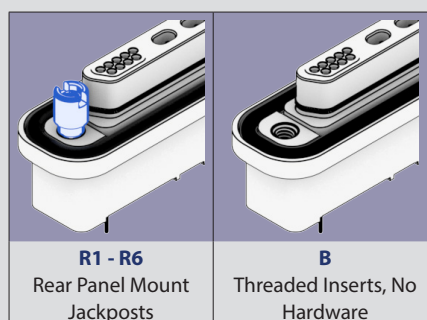
## PERFORMANCE SPECIFICATIONS

- Current rating: 3 amp (Micro-D contacts)
- DWV: 600 VAC sea level
- Insulation resistance: 5000 megohms minimum
- Operating temperature: -55° C to +150° C
- Mating force (contact m): (10 ounces) x (# of contacts)
- Mating force (contact v): (5 ounces) x (# of contacts)
- Electrical performance IAW Glenair specification GT-19-230
- Interface dimensions IAW MIL-DTL-83513
- Reference application notes AN0005 for optimal performance

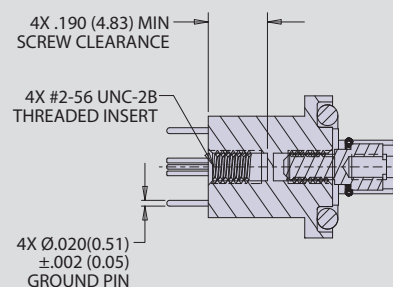
## NOTES

- Refer to GHS4-M-1000 insert arrangement for insert arrangement details on page 94.
- Refer to GVLM-1000 for GVL RPM-BS PCB footprints on page 134.
- Plug connector uses pin Micro-D contacts and socket VersaLink contacts. Receptacle uses socket Micro-D contacts and pin VersaLink contacts.
- Refer to MIL-DTL-83513 panel cutout details on page 95.
- Recommended mating dimensions must be maintained when no hardware is used, see page 95.
- PC tails are solder-dipped in 60/40 tin-lead solder.
- Refer to 500-154 for protective cover on page 164.

## HARDWARE



## CONNECTOR CUTAWAY



## INSERT ARRANGEMENTS

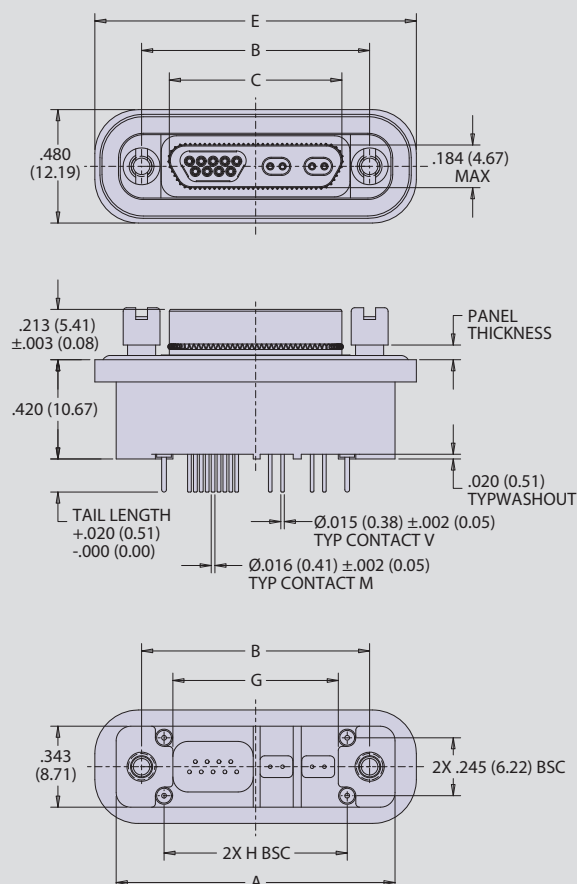
| Insert Arrangements | No. of Contacts |                  |
|---------------------|-----------------|------------------|
|                     | VersaLink (V)   | TwistPin Skt (M) |
| 1-0                 | 1               | 0                |
| 2-0                 | 2               | 0                |
| 1-9                 | 1               | 9                |
| 2-9                 | 2               | 9                |
| 4-0                 | 4               | 0                |
| 2-15                | 2               | 15               |
| 2-21                | 2               | 21               |
| 3-9                 | 3               | 9                |
| 4-15                | 4               | 15               |
| 4-31                | 4               | 31               |
| 8-9                 | 8               | 9                |
| 10-0                | 10              | 0                |

# "ZERO-CROSSTALK" M83513 Micro-D VersaLink™ Connectors

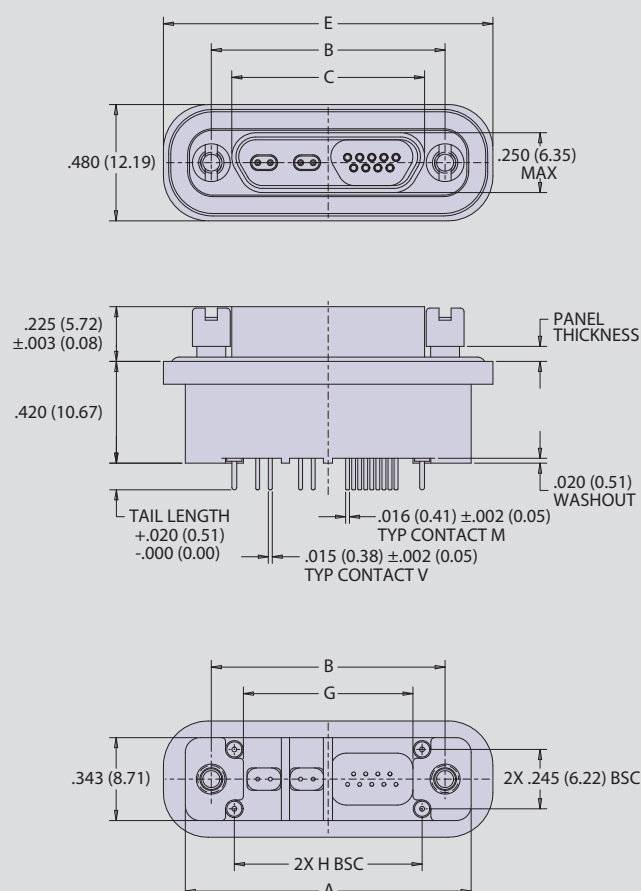


## GVL RPM-BS, Rear Panel Mount, Straight PCB Connectors

### GVL RPM-BS PCB STRAIGHT PLUG CONNECTOR



### GVL RPM-BS PCB STRAIGHT RECEPTACLE CONNECTOR



PLUG DIMENSIONS

| LAYOUT | A MAX            | B ±.005          | C MAX            | E MAX            | G ±.005          | H ±.005          |
|--------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1-0P   | 0.785<br>(19.94) | 0.565<br>(14.35) | 0.333<br>(8.46)  | 0.965<br>(24.51) | 0.300<br>(7.62)  | 0.375<br>(9.53)  |
| 2-0P   | 0.935<br>(23.75) | 0.715<br>(18.16) | 0.483<br>(12.27) | 1.115<br>(28.32) | 0.450<br>(11.43) | 0.525<br>(13.34) |
| 1-9P   | 1.085<br>(27.56) | 0.865<br>(21.97) | 0.633<br>(16.08) | 1.265<br>(32.13) | 0.600<br>(15.24) | 0.675<br>(17.15) |
| 2-9P   | 1.185<br>(30.10) | 0.965<br>(24.51) | 0.733<br>(18.62) | 1.365<br>(34.67) | 0.700<br>(17.78) | 0.775<br>(19.69) |
| 4-0P   | 1.185<br>(30.10) | 0.965<br>(24.51) | 0.733<br>(18.62) | 1.365<br>(34.67) | 0.700<br>(17.78) | 0.775<br>(19.69) |
| 2-15P  | 1.335<br>(33.91) | 1.115<br>(28.32) | 0.833<br>(21.16) | 1.515<br>(38.48) | 0.850<br>(21.59) | 0.925<br>(23.50) |
| 3-9P   | 1.485<br>(37.72) | 1.265<br>(32.13) | 1.033<br>(26.24) | 1.665<br>(42.29) | 1.000<br>(25.40) | 1.075<br>(27.31) |
| 4-15P  | 1.835<br>(46.61) | 1.615<br>(41.02) | 1.384<br>(35.15) | 2.015<br>(51.18) | 1.350<br>(34.29) | 1.425<br>(36.20) |
| 4-31P  | 2.235<br>(56.77) | 2.015<br>(51.18) | 1.784<br>(45.31) | 2.415<br>(61.34) | 1.750<br>(44.45) | 1.825<br>(46.36) |
| 8-9P   | 2.235<br>(56.77) | 2.015<br>(51.18) | 1.784<br>(45.31) | 2.415<br>(61.34) | 1.750<br>(44.45) | 1.825<br>(46.36) |
| 10-0P  | 2.235<br>(56.77) | 2.015<br>(51.18) | 1.784<br>(45.31) | 2.415<br>(61.34) | 1.750<br>(44.45) | 1.825<br>(46.36) |

RECEPTACLE DIMENSIONS

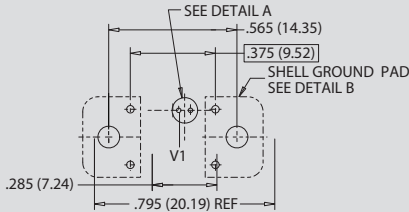
| LAYOUT | A MAX            | B ±.005          | C MAX            | E MAX            | G ±.005          | H ±.005          |
|--------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1-0S   | 0.785<br>(19.94) | 0.565<br>(14.35) | .400<br>(10.16)  | 0.965<br>(24.51) | 0.300<br>(7.62)  | 0.375<br>(9.53)  |
| 2-0S   | 0.935<br>(23.75) | 0.715<br>(18.16) | .551<br>(14.00)  | 1.115<br>(28.32) | 0.450<br>(11.43) | 0.525<br>(13.34) |
| 1-9S   | 1.085<br>(27.56) | 0.865<br>(21.97) | .701<br>(17.81)  | 1.265<br>(32.13) | 0.600<br>(15.24) | 0.675<br>(17.15) |
| 2-9S   | 1.185<br>(30.10) | 0.965<br>(24.51) | .801<br>(20.35)  | 1.365<br>(34.67) | 0.700<br>(17.78) | 0.775<br>(19.69) |
| 4-0S   | 1.185<br>(30.10) | 0.965<br>(24.51) | .801<br>(20.35)  | 1.365<br>(34.67) | 0.700<br>(17.78) | 0.775<br>(19.69) |
| 2-15S  | 1.335<br>(33.91) | 1.115<br>(28.32) | .951<br>(24.16)  | 1.515<br>(38.48) | 0.850<br>(21.59) | 0.925<br>(23.50) |
| 3-9S   | 1.485<br>(37.72) | 1.265<br>(32.13) | 1.101<br>(27.97) | 1.665<br>(42.29) | 1.000<br>(25.40) | 1.075<br>(27.31) |
| 4-15S  | 1.835<br>(46.61) | 1.615<br>(41.02) | 1.450<br>(36.83) | 2.015<br>(51.18) | 1.350<br>(34.29) | 1.425<br>(36.20) |
| 4-31S  | 2.235<br>(56.77) | 2.015<br>(51.18) | 1.850<br>(46.99) | 2.415<br>(61.34) | 1.750<br>(44.45) | 1.825<br>(46.36) |
| 8-9S   | 2.235<br>(56.77) | 2.015<br>(51.18) | 1.850<br>(46.99) | 2.415<br>(61.34) | 1.750<br>(44.45) | 1.825<br>(46.36) |
| 10-0S  | 2.235<br>(56.77) | 2.015<br>(51.18) | 1.850<br>(46.99) | 2.415<br>(61.34) | 1.750<br>(44.45) | 1.825<br>(46.36) |

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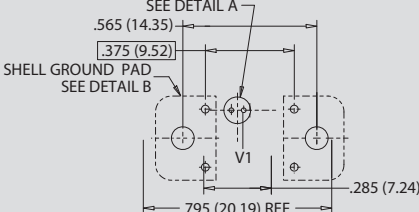
GVLM-1000: GVL RPM-BS, Rear Panel Mount, Straight PCB Connector Footprints

Plug Layout 1-0



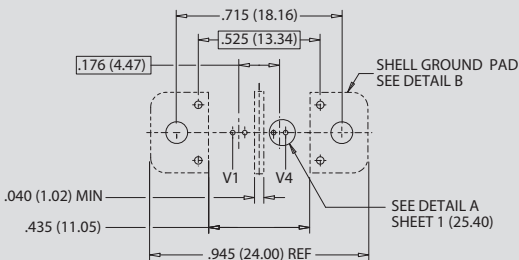
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

Receptacle Layout 1-0



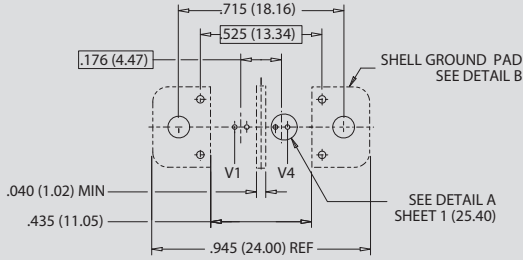
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

Plug Layout 2-0



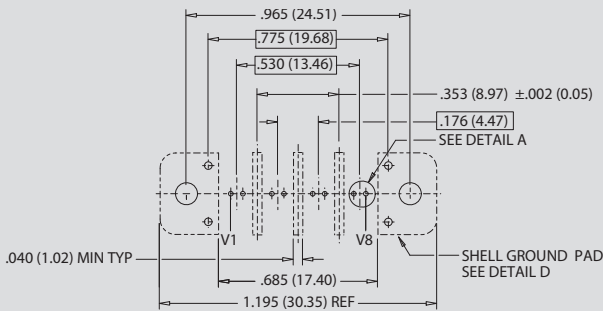
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

Receptacle Layout 2-0



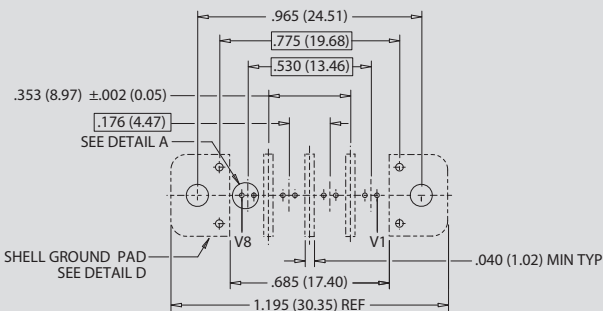
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

Plug Layout 4-0



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

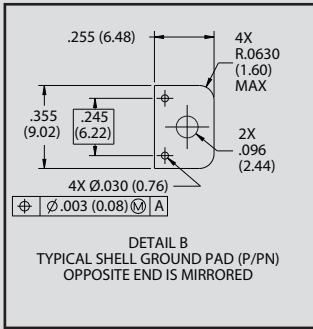
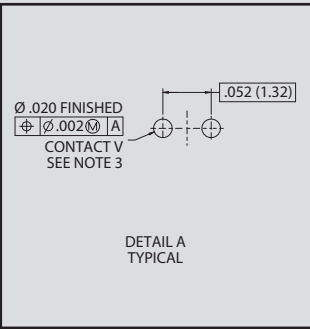
Receptacle Layout 4-0



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

## NOTES

1. Patterns shown are for connector mounting side of PC board.
2. Reference GVL RPM-BS for connector details.
3. Reference application notes AN0005 for optimal performance.

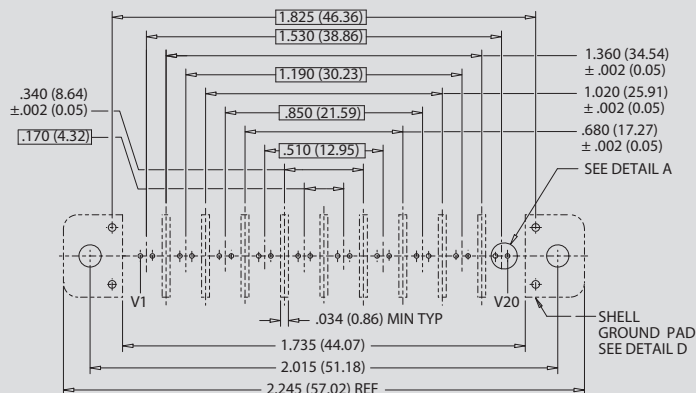


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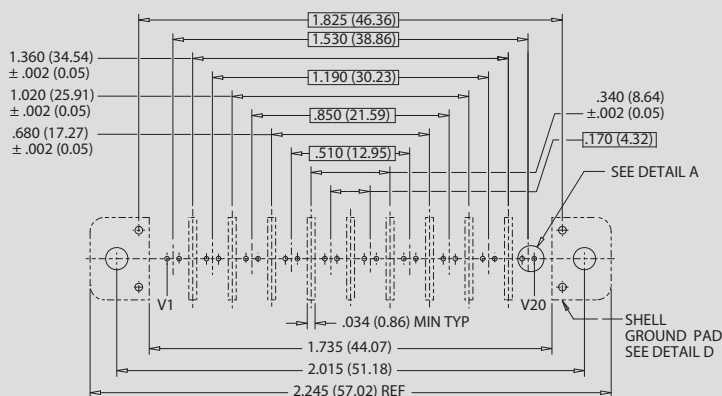


GVLN-1000: GVLNPM-BS, Rear Panel Mount, Straight PCB Connector Footprints

Plug Layout 10-0



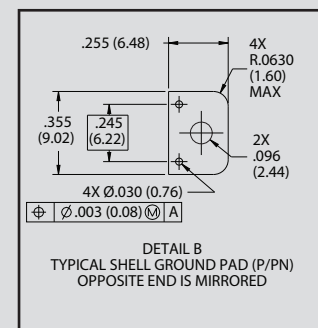
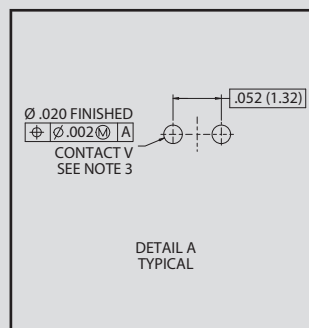
Receptacle Layout 10-0



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

## NOTES

1. Patterns shown are for connector mounting side of PC board.
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3. Reference application notes AN0005 for optimal performance.

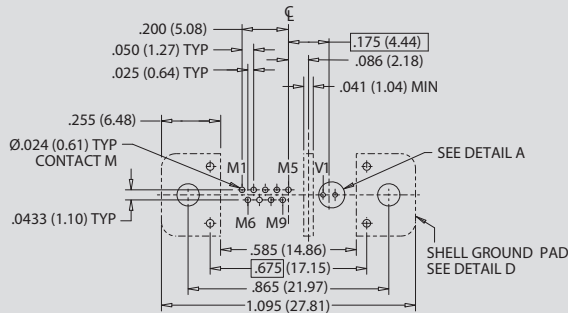


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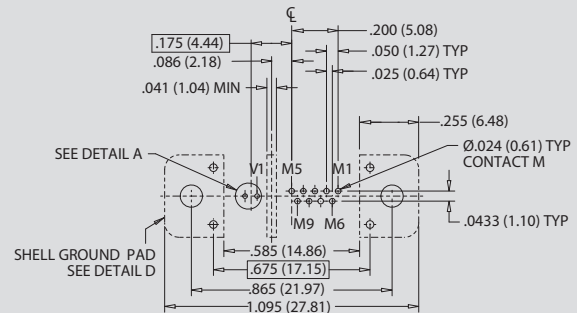
## GVLM-1000: GVL RPM-BS, Rear Panel Mount, Straight PCB Connector Footprints

**Plug Layout 1-9**



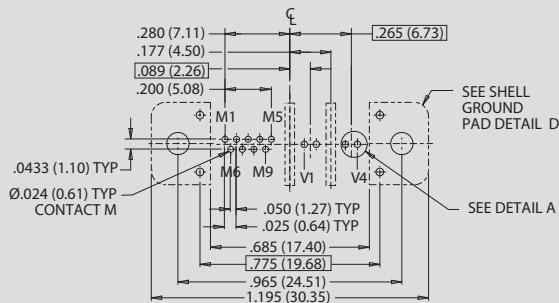
**REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)**

**Receptacle Layout 1-9**



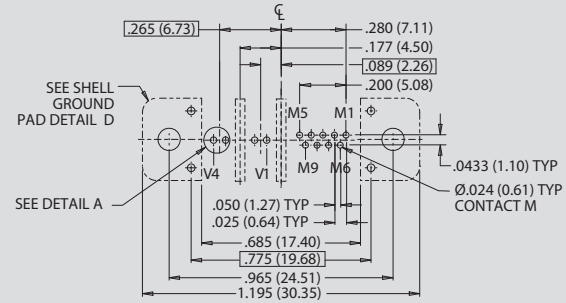
**REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)**

**Receptacle Layout 2-9**



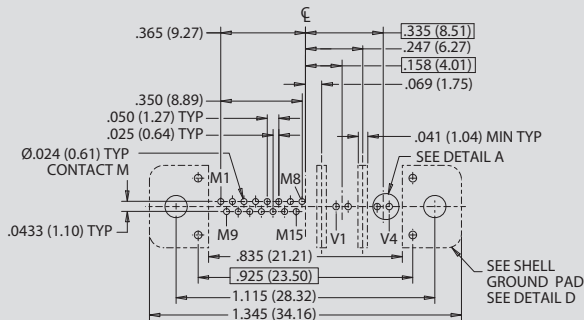
**REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)**

**Receptacle Layout 2-9**



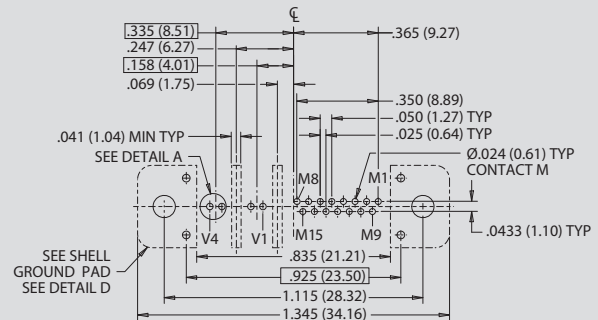
**REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)**

**Plug Layout 2-15**



**REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)**

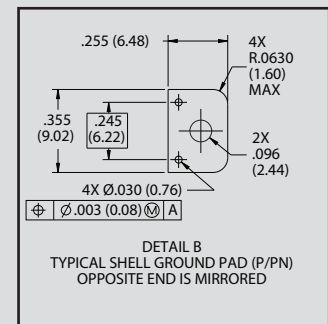
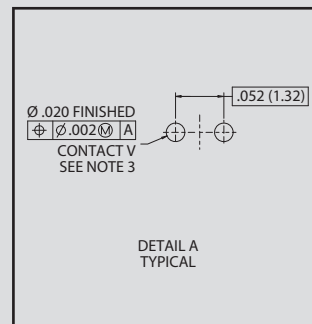
**Receptacle Layout 2-15**



**REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)**

### NOTES

1. Patterns shown are for connector mounting side of PC board.
2. Reference GVL RPM-BS for connector details.
3. Reference application notes AN0005 for optimal performance.

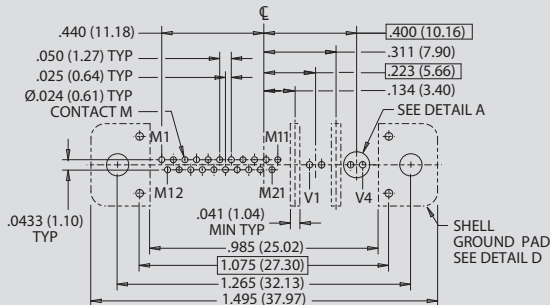


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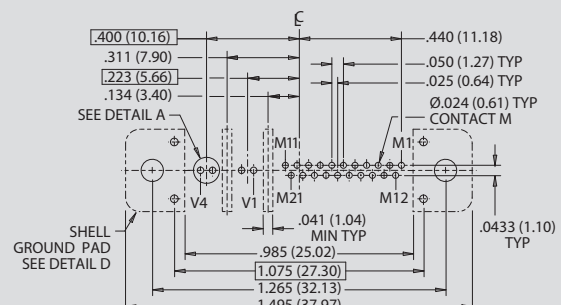
GVLN-1000: GVLNPM-BS, Rear Panel Mount, Straight PCB Connector Footprints

**Plug Layout 2-21**



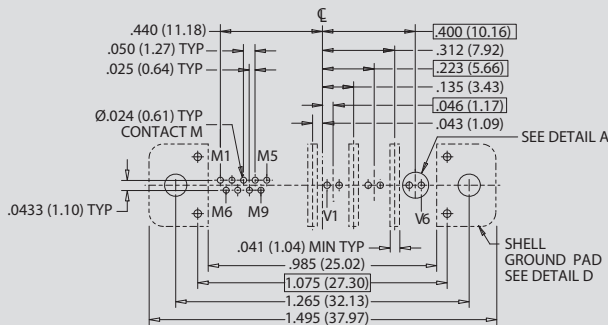
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

**Receptacle Layout 2-21**



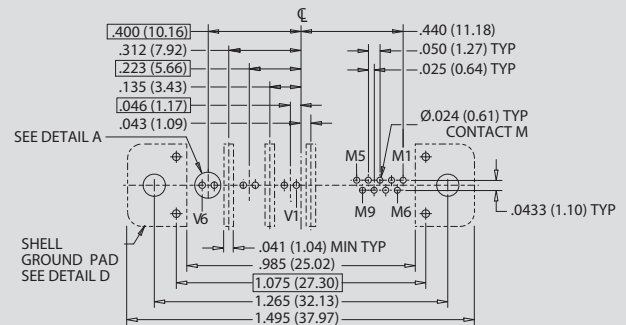
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

**Plug Layout 3-9**



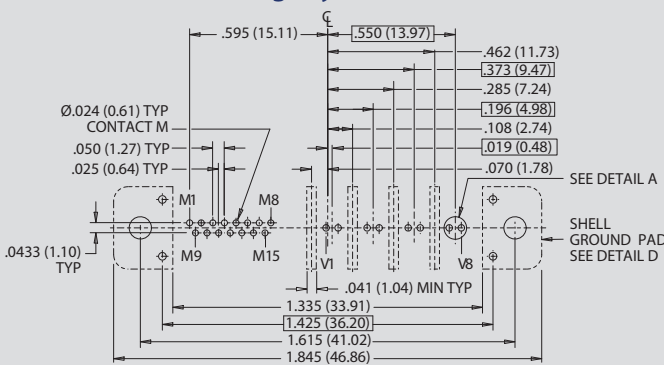
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

**Receptacle Layout 3-9**



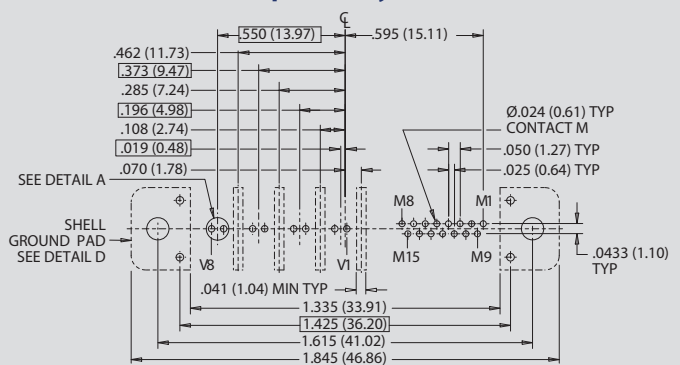
REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

**Plug Layout 4-15**



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

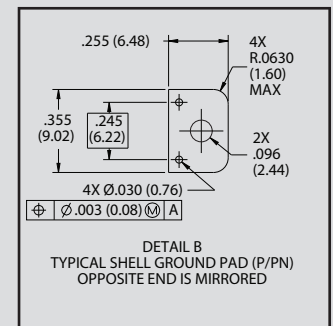
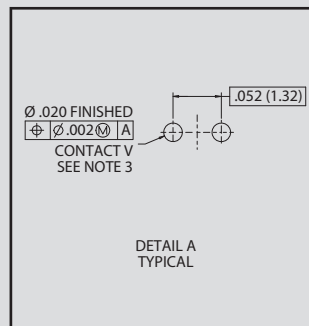
**Receptacle Layout 4-15**



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

## NOTES

1. Patterns shown are for connector mounting side of PC board.
2. Reference GVLNPM-BS for connector details.
3. Reference application notes AN0005 for optimal performance.

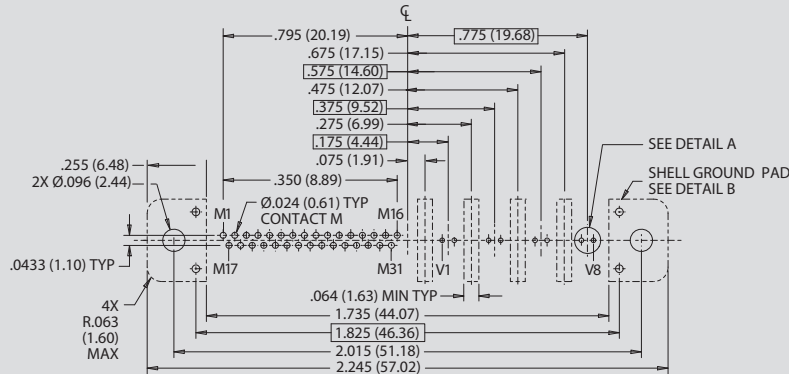


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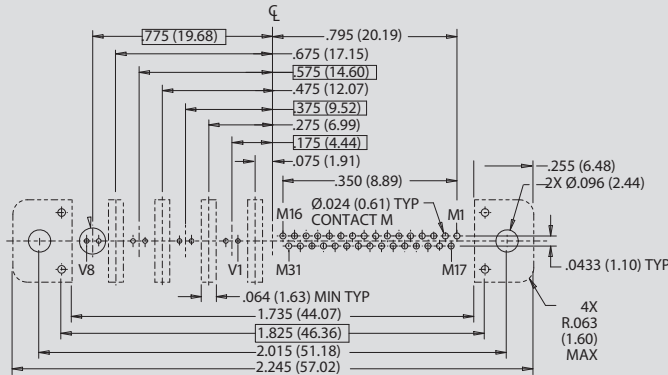
GVLM-1000: GVL RPM-BS, Rear Panel Mount, Straight PCB Connector Footprints

Pin Layout 4-31



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

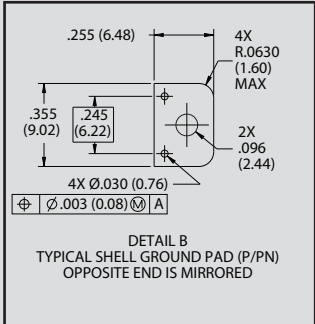
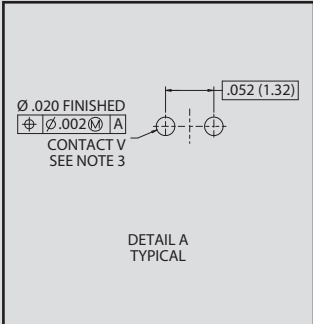
Receptacle Layout 4-31



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT (R1 THRU R6)

## NOTES

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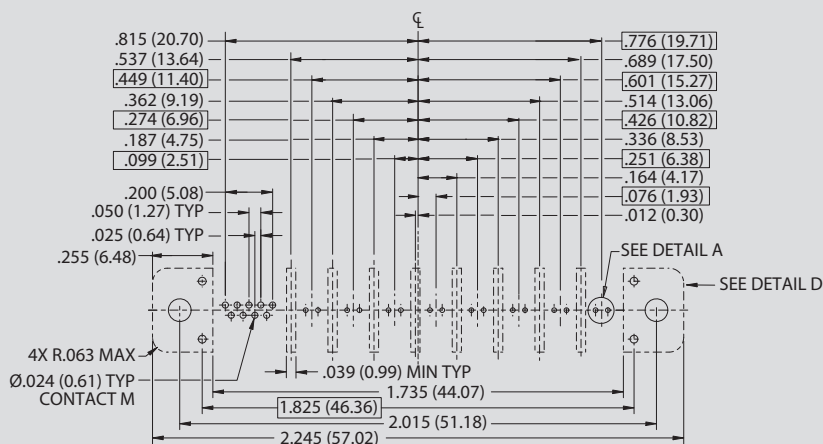


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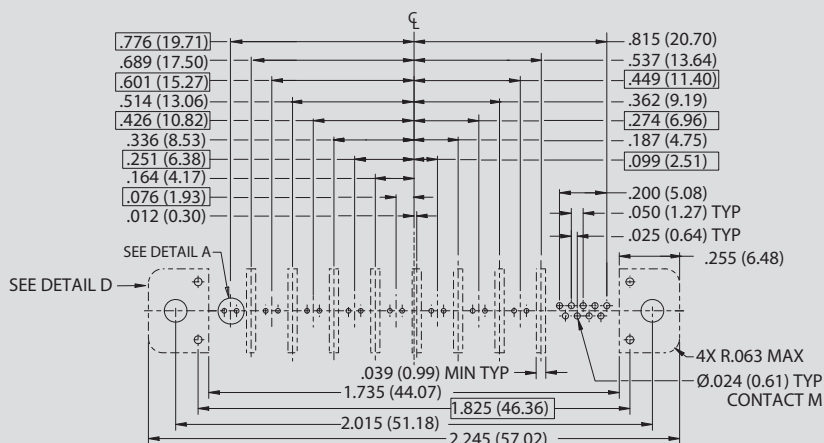
GVLN-1000: GVLNPM-BS, Rear Panel Mount, Straight PCB Connector Footprints

Plug Layout 8-9



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT  
(R1 THRU R6)

Receptacle Layout 8-9



REAR PANEL MOUNT JACKPOSTS  
WHEN USING PEM NUT  
(R1 THRU R6)

## NOTES

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3. Reference application notes AN0005 for optimal performance.

