

## MIL-DTL-55302 QPL'D 2 and 3 Row Printed Circuit Board Connectors

17, 29, 33, 41, 53, 62, 65, 72, 80.1, 84, 96, 98, 120, 126, 160 and 160.4 Contacts

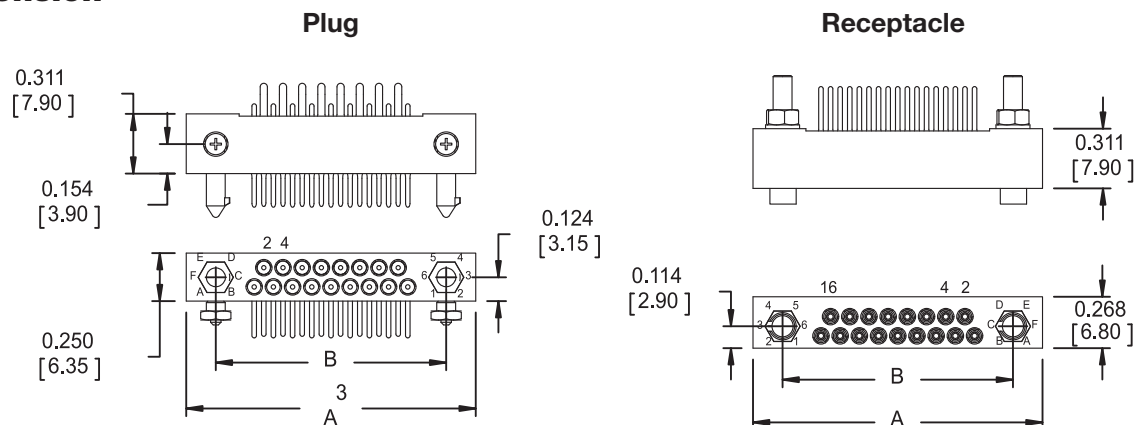
- 2 and 3 row printed circuit board connectors
- Provide applications flexibility not available with other MIL-DTL-55302 connectors
- Over 2,500 models can be constructed with available components
- 0.100 [2.54] on center (adjacent rows offset by 0.050 [1.27] to allow straight printed circuit traces)
- Straight dip, right angle solder, crimp, solder cup and Wire Wrap® terminations
- 0.024 [0.60] diameter pins/sockets rated at 4 Amps
- Average insertion/extraction force of 1 ounce per contact
- Contacts removable from wiring side (front release, rear removable)
- Front release, front removable option available on receptacle with 160 contacts
- Alignment and keying provided by the end guides – 36 combinations (user changeable)
- Male or female contacts and guides available in either plug or receptacle

General Specifications	
Number Contacts	17, 29, 33, 41, 53, 62, 65, 72, 80.1, 84, 96, 98, 120, 126, 160, 160.4
Contact Diameter	0.024 [0.60]
Current Rating	4 Amps at 30° C rise
Contact Resistance	< 5 milliohms
Extraction Force	0.30 – 2.00 oz. per contact
Contact Life Cycles	100,000
Breakdown Voltage Between Contacts	> 1600V RMS
Dielectric Withstanding Voltage	1200V RMS
Insulation Resistance	> 10 <sup>6</sup> Megohms at 500 VDC
Temperature Rating	-55° C to 125° C
Insulator	Diallyl-phthalate
Contact Material Plating	Beryllium copper wires and brass body Gold over nickel
Guide Hardware Material Plating	Brass / Stainless steel Nickel / Passivated
Plating Reference Male Pins	T = 10µin gold (min) over nickel TH = 50µin gold (min) over nickel
Female Socket	TAH = 50µin gold (min) over nickel on mating surface, 5µin gold over nickel on termination

Number of Contacts	17	29	33	41	53	65
<b>A</b> ± 0.020 [0.50]	1.508 [38.30]	2.106 [53.50]	2.307 [58.60]	2.709 [68.80]	3.307 [84.00]	3.909 [99.30]
<b>B</b>	1.200 [30.48]	1.801 [45.75]	2.000 [50.80]	2.401 [60.98]	3.000 [76.20]	3.600 [91.44]

### Connector Dimension

17 to 65 Contacts



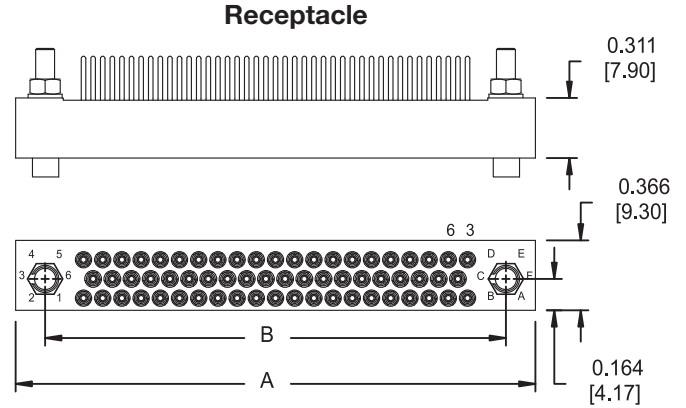
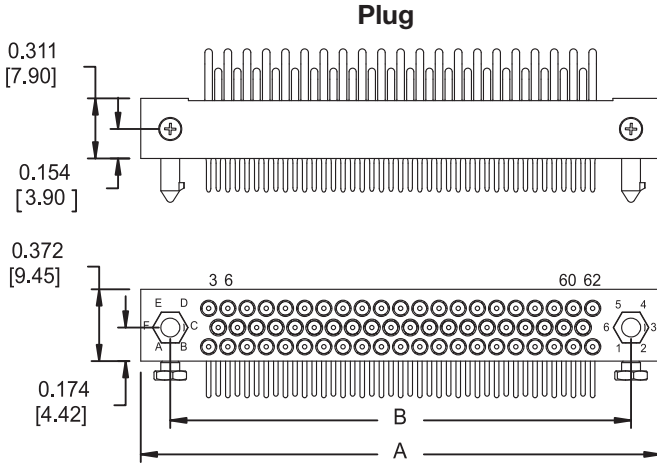
- NOTES:**
- 1) Mated length 0.622 [15.80] unless otherwise specified.
  - 2) Tolerance ± 0.02 [0.50].
  - 3) Wire Wrap is a trademark of Gardner Denver.

Dimensions are in inches [mm]

## Connector Dimensions

62, 80.1 and 98 Contacts

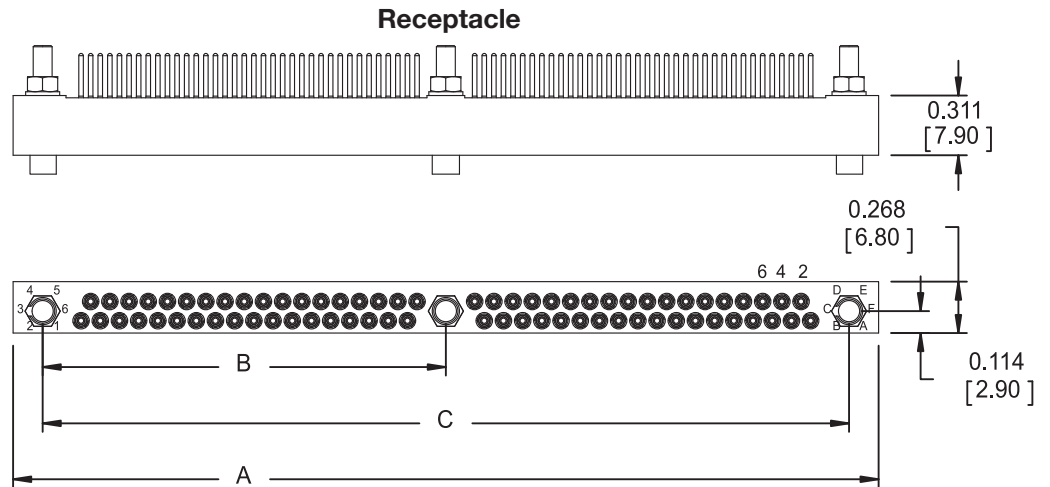
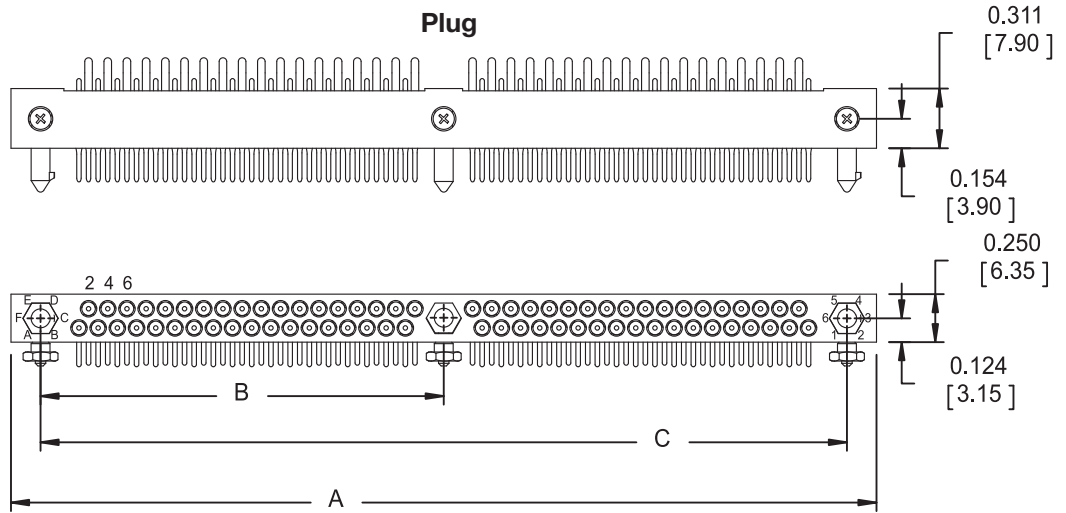
Number of Contacts	62	80.1	98
A	2.707	3.307	3.907
± 0.020 [0.50]	[68.75]	[84.00]	[99.24]
B	2.400	3.000	3.600
	[60.96]	[76.20]	[91.44]



## Connector Dimensions

72, 84, 96 and 120 Contacts

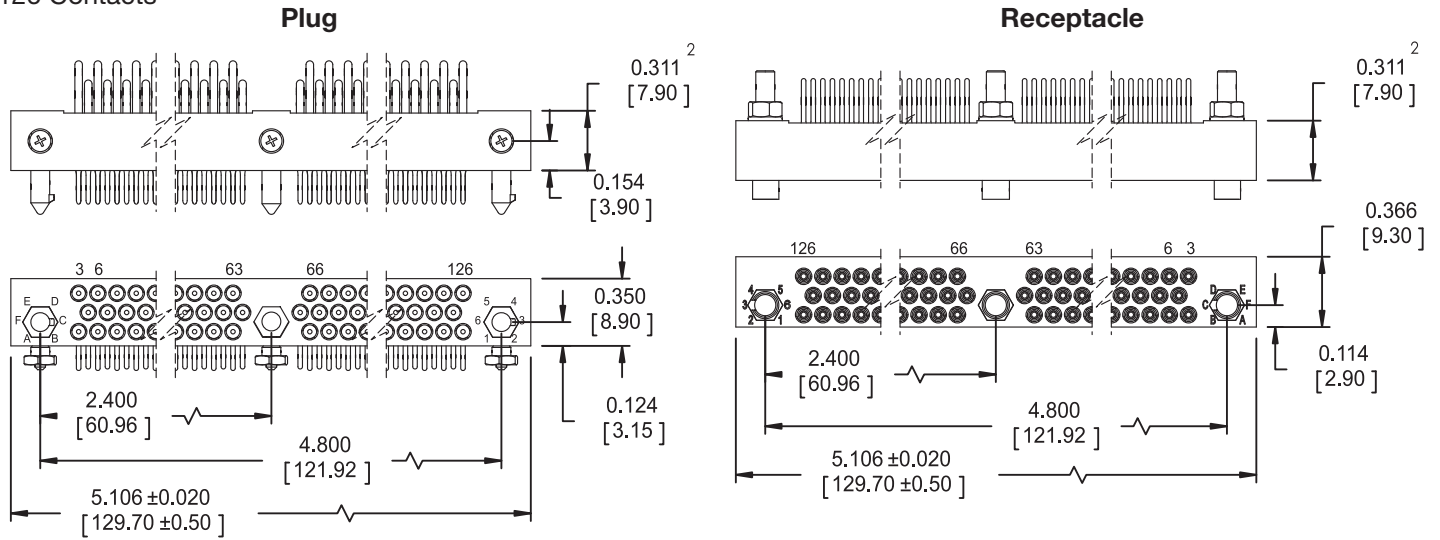
Number of Contacts	72	84	96	120
A	4.512	5.106	5.709	6.906
	[114.60]	[129.70]	[145.00]	[175.40]
B	2.100	2.400	2.700	3.300
	[53.34]	[60.96]	[68.58]	[83.82]
C	4.200	4.800	5.400	6.600
	[106.68]	[121.92]	[137.16]	[167.64]



Dimensions are in inches [mm]

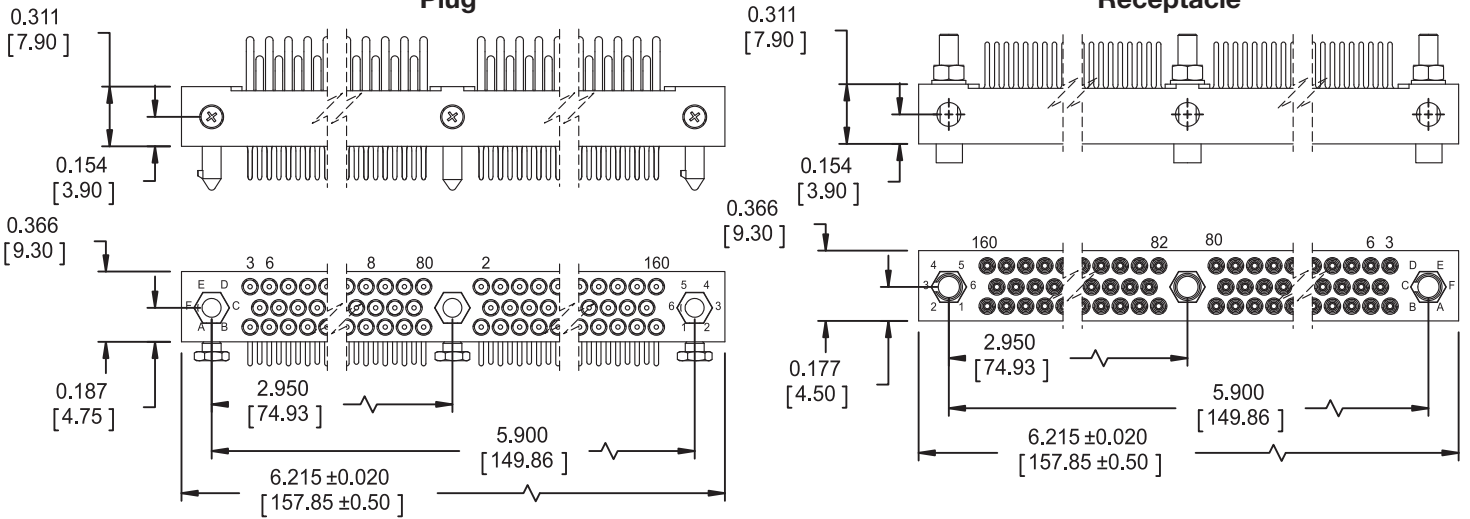
**Connector Dimensions**

126 Contacts



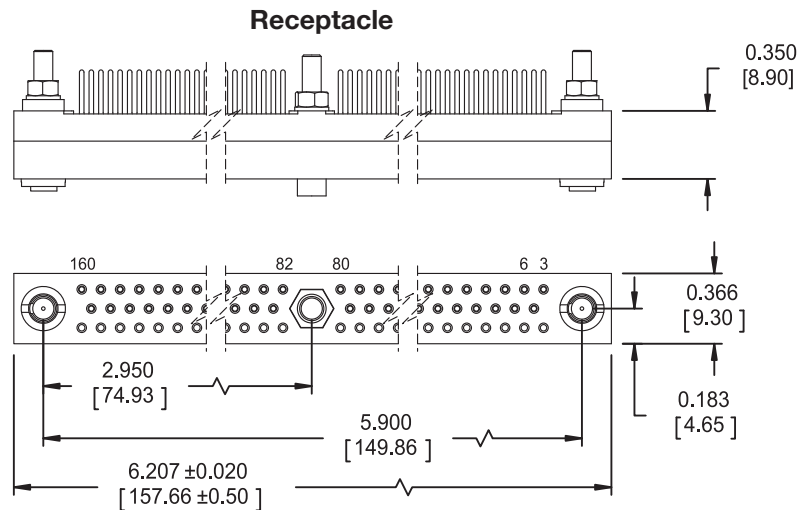
**Connector Dimensions**

160 Contacts



**Connector Dimensions**

160.4 Contacts<sup>1,2</sup>  
(Front Removable)



**NOTES:**

- 1) Only available with straight dip solder (style "D") and Wire Wrap (style "Y") tails.
- 2) Mates with standard plug.  
Mated length 0.655 [16.90].

Dimensions are in inches [mm]

## Terminal Styles

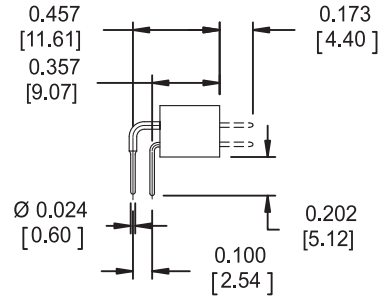
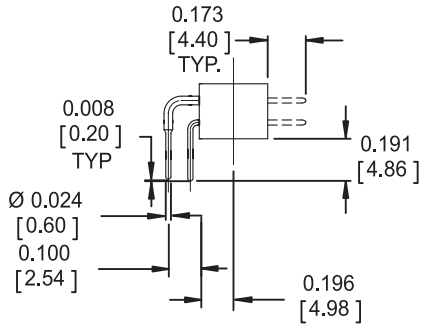
**Ref.**

**Plugs**  
Female/Male

**Receptacles**  
Female/Male

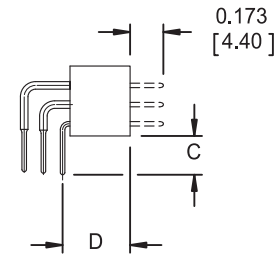
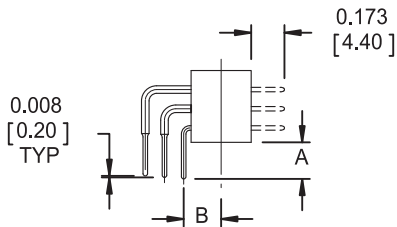
**B**

For 1/8" PC Board  
2 Row and  
KA126  
3 Row



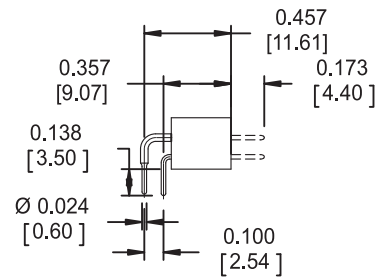
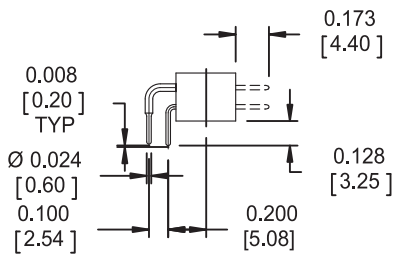
**B**

For 1/8" PC Board  
3 Row



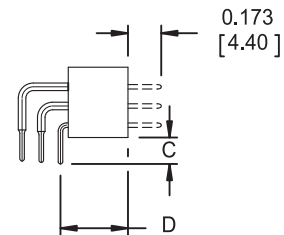
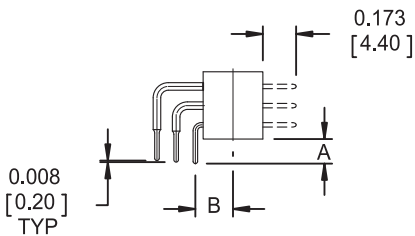
**C**

For 1/16" PC Board  
2 Row and  
KA126 3 Row



**C**

For 1/16" PC Board  
3 Row



3 Row Connectors				
Number of Contacts	62, 80.1 and 98		160	
	Style B	Style C	Style B	Style C
A	0.191 [4.86]	0.128 [3.25]	0.178 [4.53]	0.115 [2.92]
B	0.200 [5.08]	0.200 [5.08]	0.188 [4.78]	0.188 [4.78]
C	0.201 [5.11]	0.138 [3.50]	0.188 [4.78]	0.125 [3.17]
D	0.354 [8.98]	0.354 [8.98]	0.342 [8.68]	0.342 [8.68]

**NOTE:**  
1) All tail lengths are ± 0.015 [0.40] long.

Dimensions are in inches [mm]

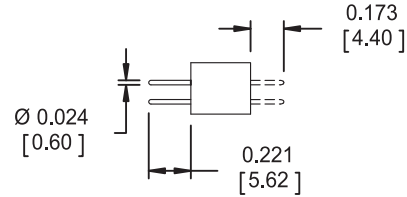
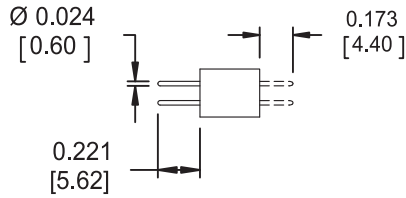
**Terminal Styles**

**Ref.**

**Plugs**  
Female/Male

**Receptacles**  
Female/Male

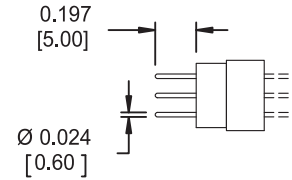
**D**



**D**

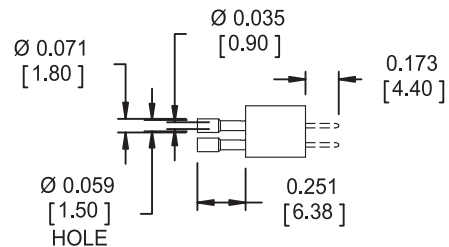
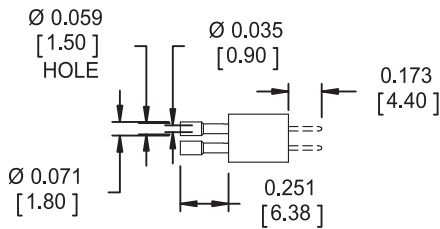
For 0.4 front removable version

Not available in Plug



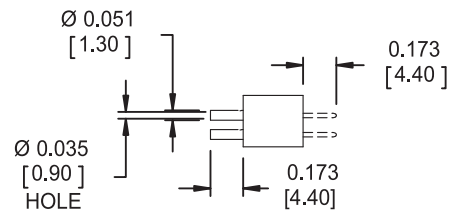
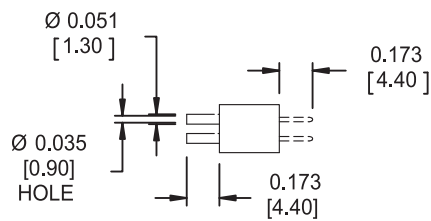
**H2**

Accepts 22, 24 and 26 AWG Wire Stripped Back 0.146 [3.70]



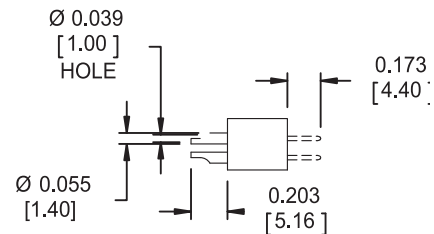
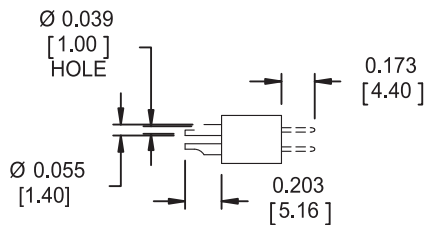
**R**

Accepts 22, 24 and 26 AWG Wire Stripped Back 0.173 [4.40]



**S**

Accepts 22 AWG Wire Stripped Back 0.126 [3.20]



Solder cup orientation staggered for commercial parts. All the same direction for MIL-DTL-55302 parts.

**NOTES:**

- 1) Crimp contacts will be shipped unmounted. When inserting contacts into the blocks/insulators be sure that the flats on the rear of the contact body are aligned with the flats in the insulator.
- 2) All tails are ± 0.015 [0.40] long.

Dimensions are in inches [mm]

## Terminal Styles

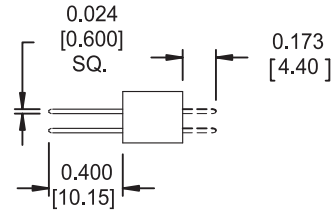
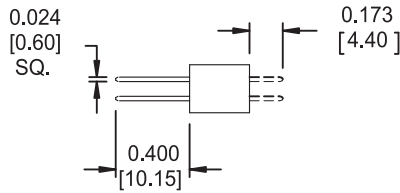
**Ref.**

**Plugs**  
Female/Male

**Receptacles**  
Female/Male

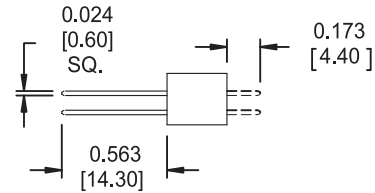
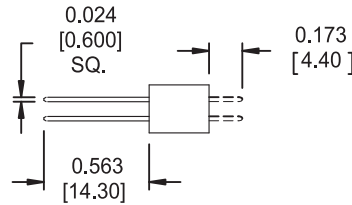
**W\*\***

2 Wraps 28 and 30 AWG



**Y**

3 Wraps 28 and 30 AWG  
2 Wraps 24 and 26 AWG



**Plating Reference**

Male Pins: G = 10µin gold (min) over nickel  
H = 50µin gold (min) over nickel

Female Sockets: AH = 50µin gold (min) over nickel on mating surface, gold flash over nickel on termination  
ANH = 50µin gold (min) over nickel on mating surface, nickel over copper flash on socket body components, gold flash over nickel on termination

**KA Series Replacement Contacts**

Ref.	Standard Sockets	Standard Pins	Beryllium Copper Pins
<b>B</b> (row 1)	YSK006-028AH	YPN006-034	YPN006-072H
<b>B</b> (row 2)	YSK006-029AH	YPN006-035	YPN006-075H
<b>B</b> (row 3)	YSK006-030AH	YPN006-036	YPN006-073H
<b>C</b> (row 1)	YSK006-013AH	YPN006-023	YPN006-048H
<b>C</b> (row 2)	YSK006-006AH	YPN006-016	YPN006-050H
<b>C</b> (row 3)	YSK006-014AH	YPN006-024	YPN006-077H
<b>D</b>	YSK006-005ANH	YPN006-015	YPN006-107H
<b>D<sup>3</sup></b>	YSK006-027AH	—	—
<b>FD<sup>4</sup></b>	YSK006-274AH	YPN006-470	YPN006-487H
<b>H<sup>2</sup></b>	YSK006-009AH	YPN006-019	—
<b>R</b>	YSK006-011ANH	YPN006-021	—
<b>S</b>	YSK006-010ANH	YPN006-020	—
<b>W</b>	YSK006-020AH	YPN006-039	—
<b>Y</b>	YSK006-012AH	YPN006-022	—

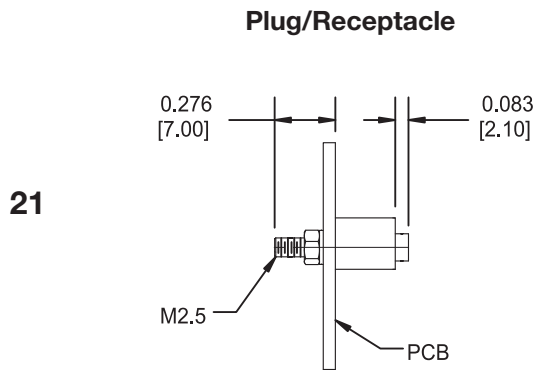
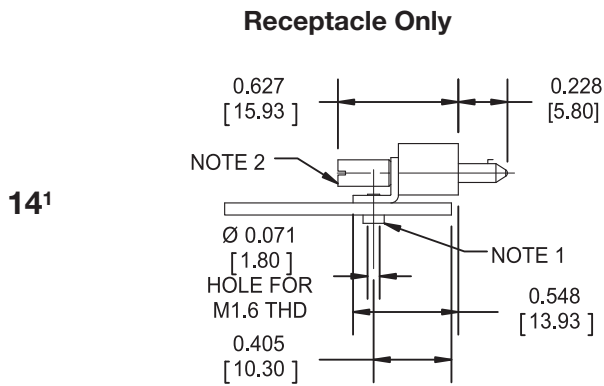
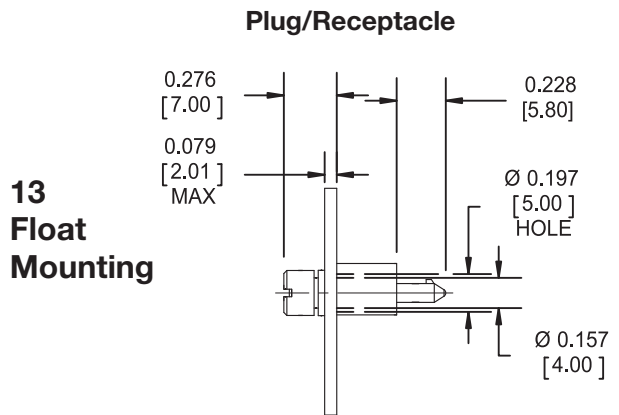
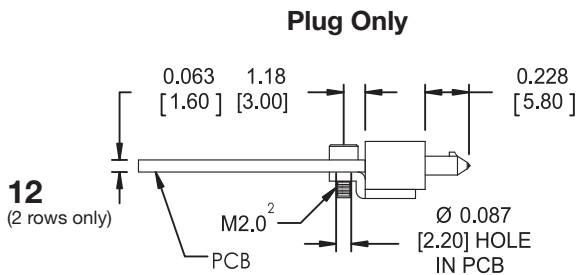
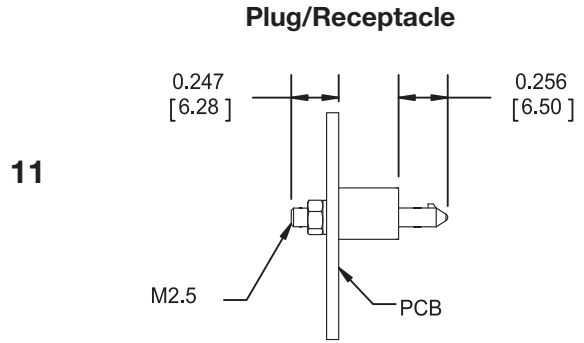
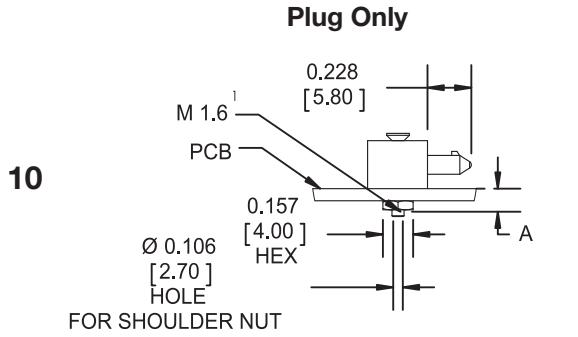
\*\* Consult factory for availability

**NOTES:**

- 1) All tail lengths are ± 0.015 [0.40] long.
- 2) Contact for front removable version [0.40].
- 3) Front removable contact for standard housing.

Dimensions are in inches [mm]

**Standard Mounting Styles**



Terminal (Right Angle)	Dimension A			Dimension B			Dimension C		Dimension D	
	2 row	3 row (KA160)	3 row (Others)	2 row	3 row (KA160)	3 row (Others)	2 row	3 row	2 row	3 row
B	0.191 [4.85]	0.207 [5.25]	0.220 [5.59]	0.204 [5.18]	0.205 [5.20]	0.218 [5.53]	0.343 [8.71]	0.447 [11.36]	0.507 [12.89]	0.626 [15.89]
C	0.124 [3.15]	0.128 [3.25]	0.141 [3.58]	0.165 [4.18]	0.126 [3.20]	0.139 [3.53]	0.343 [8.71]	0.447 [11.36]	0.468 [11.89]	0.586 [14.89]

**NOTES:**  
1) 15.00 oz. in torque.  
2) 35.20 oz. in torque.  
3) 52.30 oz. in torque.

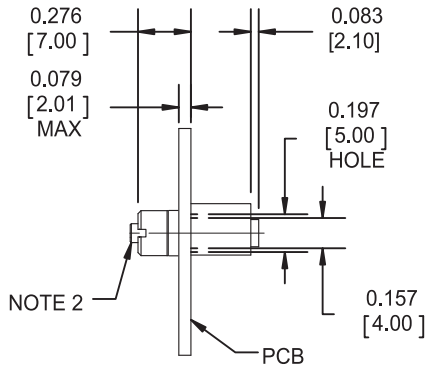
Dimensions are in inches [mm]

### Standard Mounting Styles

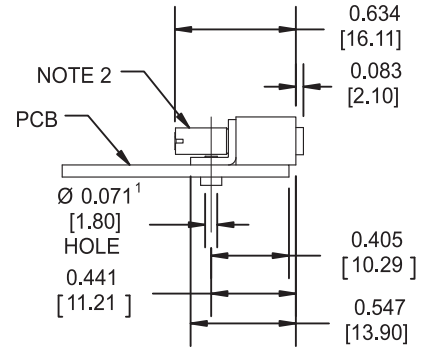
Plug/Receptacle

Plug/Receptacle

**23**  
Float  
Mounting



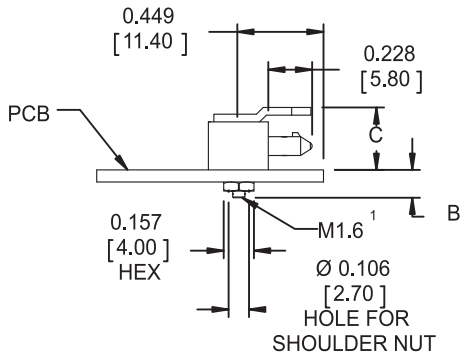
**24**



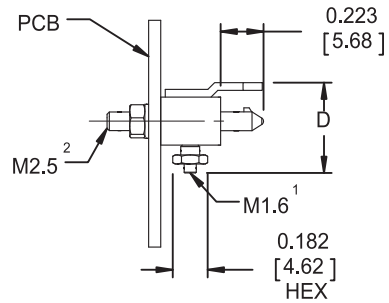
Plug Only

Plug Only

**101**



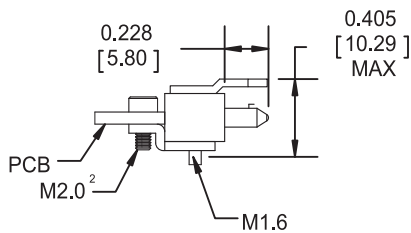
**111**



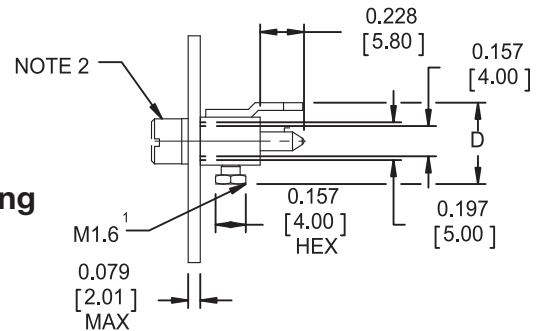
Plug Only

Plug Only

**121**  
(2 rows only)



**131**  
Float  
Mounting



Terminal (Right Angle)	Dimension A			Dimension B			Dimension C		Dimension D	
	2 row	3 row (KA160)	3 row (Others)	2 row	3 row (KA160)	3 row (Others)	2 row	3 row	2 row	3 row
<b>B</b>	0.191 [4.85]	0.207 [5.25]	0.220 [5.59]	0.204 [5.18]	0.205 [5.20]	0.218 [5.53]	0.343 [8.71]	0.447 [11.36]	0.507 [12.89]	0.626 [15.89]
<b>C</b>	0.124 [3.15]	0.128 [3.25]	0.141 [3.58]	0.165 [4.18]	0.126 [3.20]	0.139 [3.53]	0.343 [8.71]	0.447 [11.36]	0.468 [11.89]	0.586 [14.89]

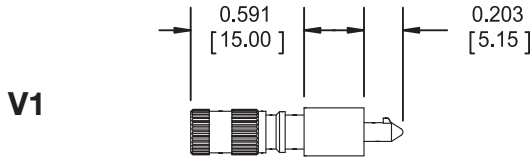
NOTES:  
1) 15.00 oz. in torque.  
2) 35.20 oz. in torque.  
3) 52.30 oz. in torque.

Dimensions are in inches [mm]

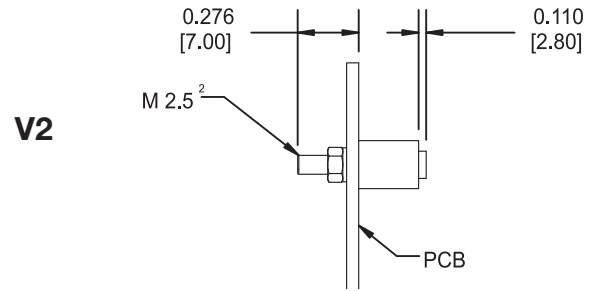


**Locking Mounting Styles**

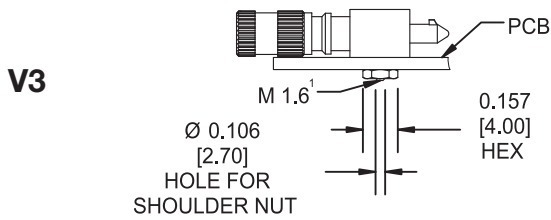
**Plug/Receptacle**



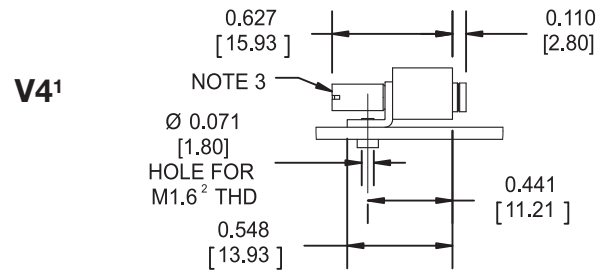
**Plug/Receptacle**



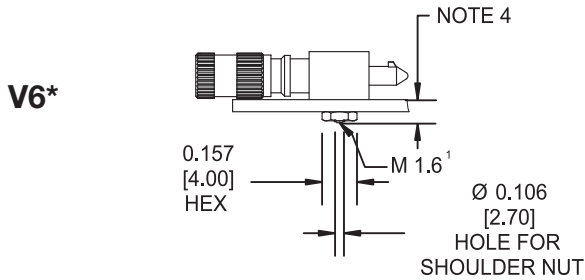
**Plug Only**



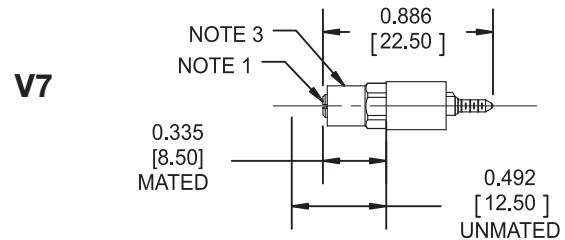
**Receptacle Only**



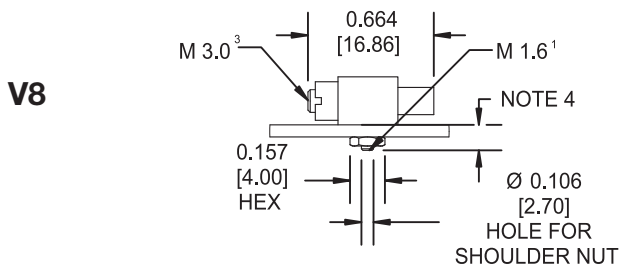
**Plug Only**



**Plug/Receptacle**



**Plug Only**



Style	Will Only Mate With	Locking Method
V1	V2, V4	Push, 1/4 Turn
V2	V1, V3, V6	Push, 1/4 Turn
V3 & V6*	V2, V4	Push, 1/4 Turn
V4	V1, V3, V6	Push, 1/4 Turn
V7	V8, V15	Screw
V8 & V9*	V7	Screw
V15	V7	Screw
V30	V33	Screw
V31	V32	Screw
V32	V31, V33	Screw
V33	V30, V32	Screw

**NOTES:**

- 1) 15.00 oz. in torque.
- 2) 35.20 oz. in torque.
- 3) 52.30 oz. in torque.
- 4) Right angle mounting screw length is determined by contact terminal length.

\* For contact counts: 62, 80, 1, 98 and 160 plugs

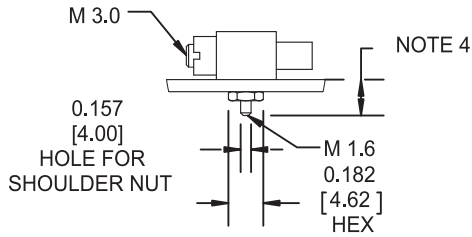
Dimensions are in inches [mm]

## Locking Mounting Styles

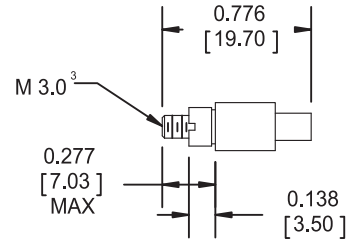
Plug Only

Plug/Receptacle

V9\*



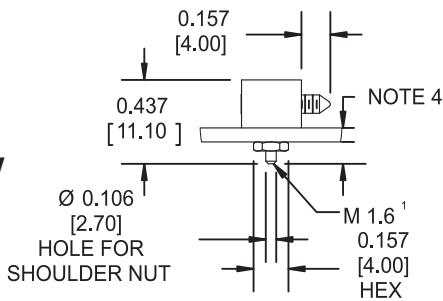
V15



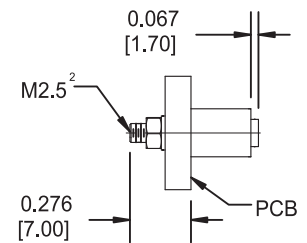
Plug Only

Plug/Receptacle

V30  
Stationary  
Jackscrew



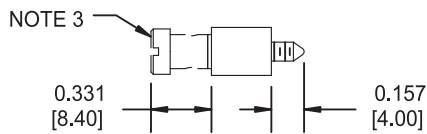
V31  
Stationary  
Jack Socket



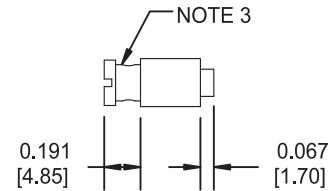
Plug/Receptacle

Plug/Receptacle

V32  
Rotating  
Jackscrew



V33  
Rotating  
Jack Socket



**NOTES:**  
 1) 15.00 oz. in torque.  
 2) 35.20 oz. in torque.  
 3) 52.30 oz. in torque.  
 4) Right angle mounting screw length is determined by contact terminal length.

\* For contact counts: 62, 80.1, 98 and 160 plugs

Style	Will Only Mate With	Locking Method
V1	V2, V4	Push, 1/4 Turn
V2	V1, V3, V6	Push, 1/4 Turn
V3 & V6*	V2, V4	Push, 1/4 Turn
V4	V1, V3, V6	Push, 1/4 Turn
V7	V8, V15	Screw
V8 & V9*	V7	Screw
V15	V7	Screw
V30	V33	Screw
V31	V32	Screw
V32	V31, V33	Screw
V33	V30, V32	Screw

Dimensions are in inches [mm]

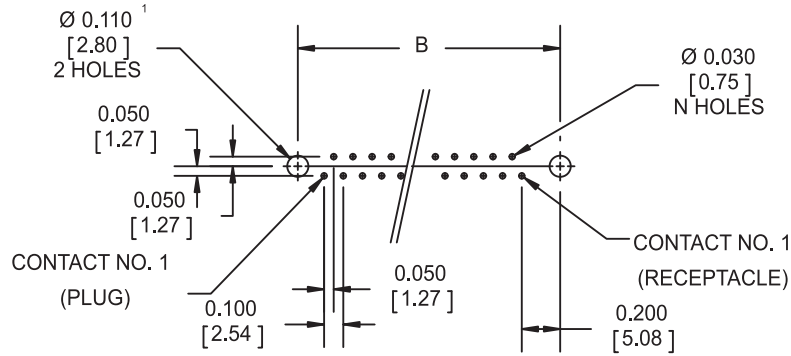
## Mounting Dimensions

### 17, 29, 33, 41, 53 and 65 Contacts

PC Board Shown From Component Side of Board

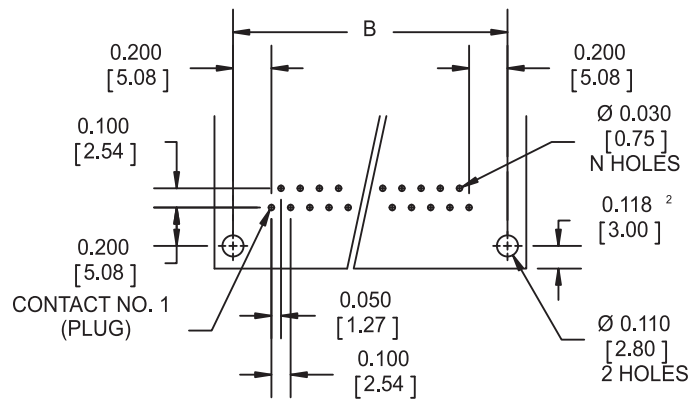
#### Mother Board Application

##### Style 11, 21, V2, V15 and V31



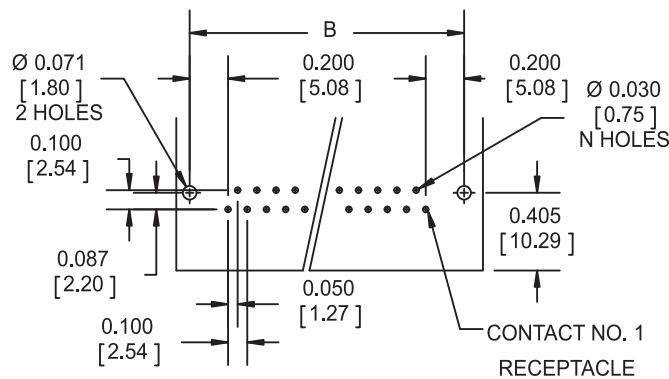
#### Daughter Board Application

##### Style 10, 30, V3, V8 and V30



#### Daughter Board Application

##### Style 24 and V4



Number of Contacts	Dimension B
17	1.200 [30.48]
29	1.800 [45.72]
33	2.000 [50.8]
41	2.400 [60.96]
53	3.000 [76.20]
65	3.600 [91.44]

**NOTES:**

- 1) For V15 locking mounting style, dimension is  $0.130 \pm 0.004$  [3.20 ± 0.10] diameter.
- 2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.

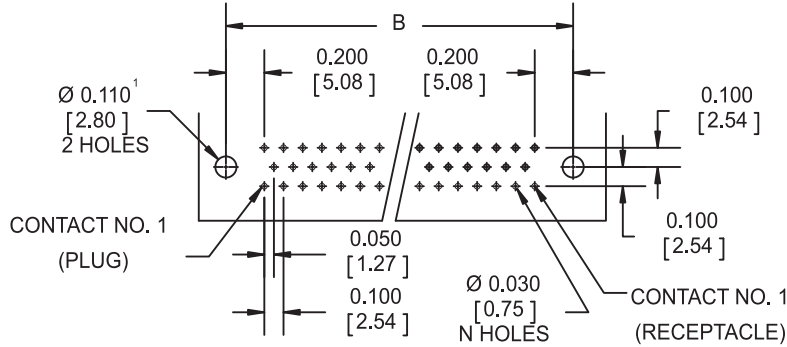
Dimensions are in inches [mm]

## Mounting Dimensions

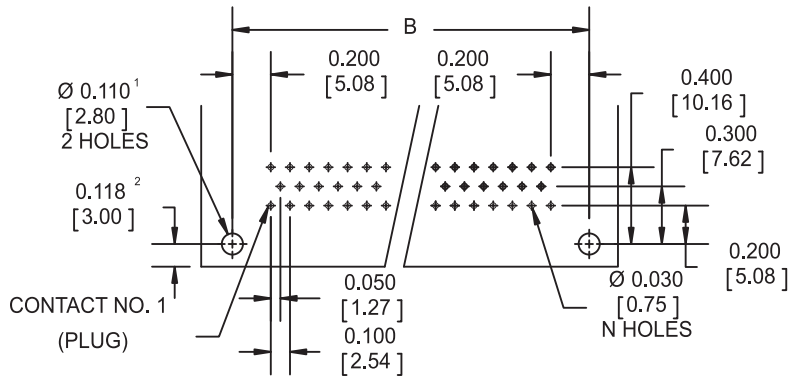
### 62, 80.1 and 98 Contacts

PC Board Shown From Component Side of Board

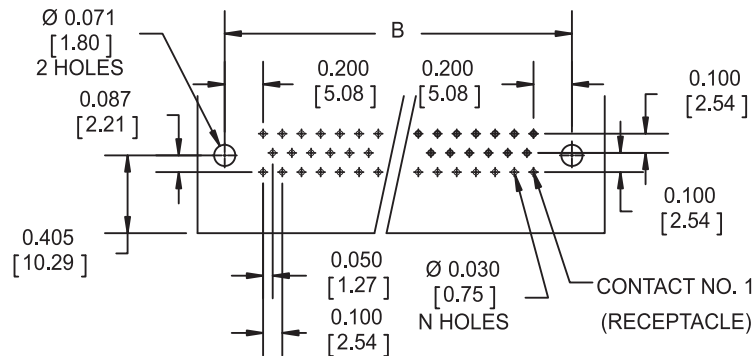
#### Mother Board Application Style 11, 21, V2, V15 and V31



#### Daughter Board Application Style 10, 30, V3, V8 and V30



#### Daughter Board Application Style 24 and V4



Number of Contacts	Dimension B
62	2.400 [60.96]
80.1	3.000 [76.20]
98	3.600 [91.44]

**NOTES:**

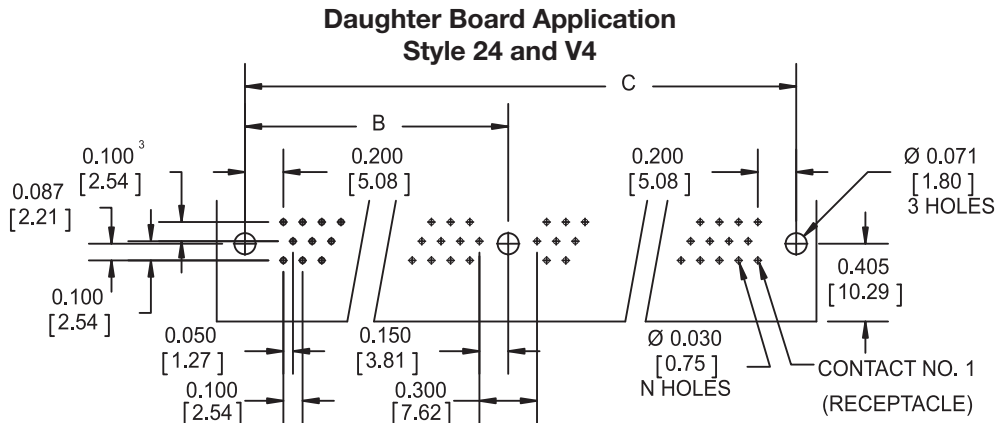
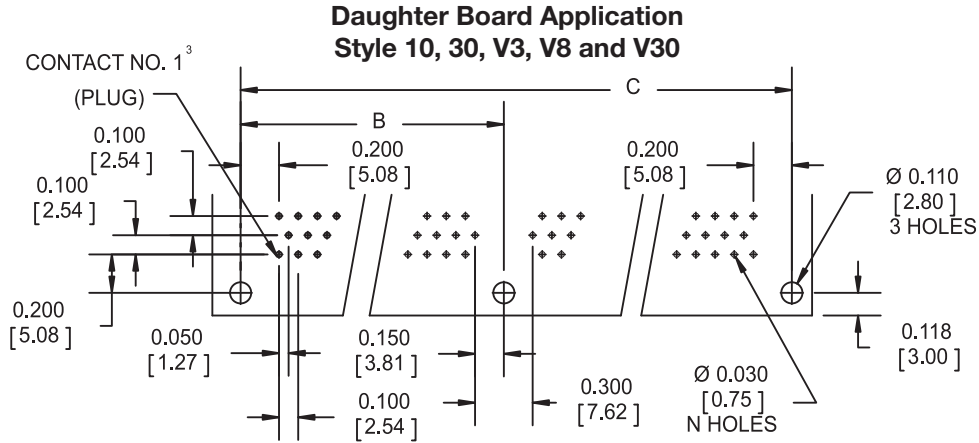
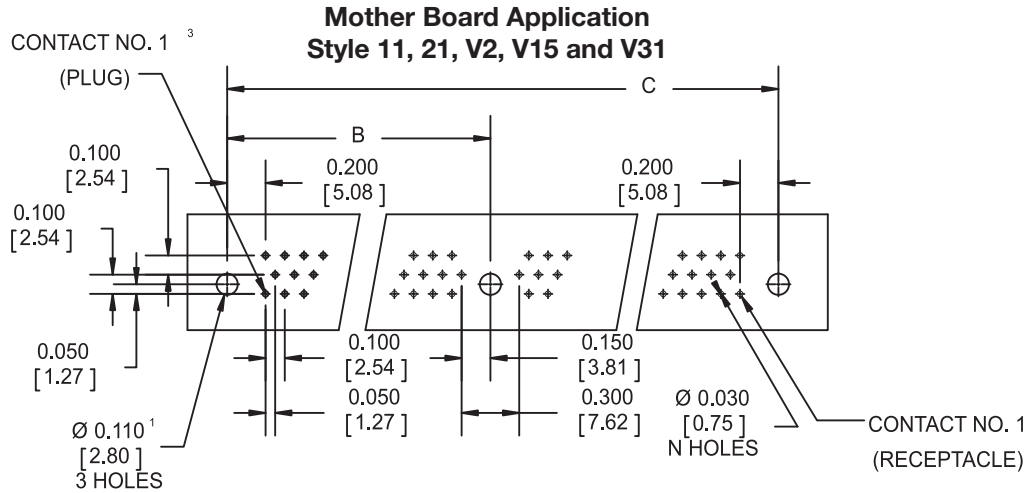
- 1) For V15 locking mounting style, dimension is  $0.130 \pm 0.004$  [3.20 ± 0.10] diameter.
- 2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.

Dimensions are in inches [mm]

## Mounting Dimensions

### 72, 84, 120 and 126 Contacts

PC Board Shown From Component Side of Board



Number of Contacts	B	C
72	2.100 [53.34]	4.200 [106.68]
84	2.400 [60.96]	4.800 [121.92]
96	2.700 [68.58]	5.400 [137.16]
120	3.300 [83.82]	6.600 [167.64]
126	2.400 [60.96]	4.800 [121.92]

**NOTES:**

- 1) For V15 locking mounting style, dimension is 0.130 ± 0.004 [3.20 ± 0.10] diameter.
- 2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.
- 3) Third row is for 126 pin version only.

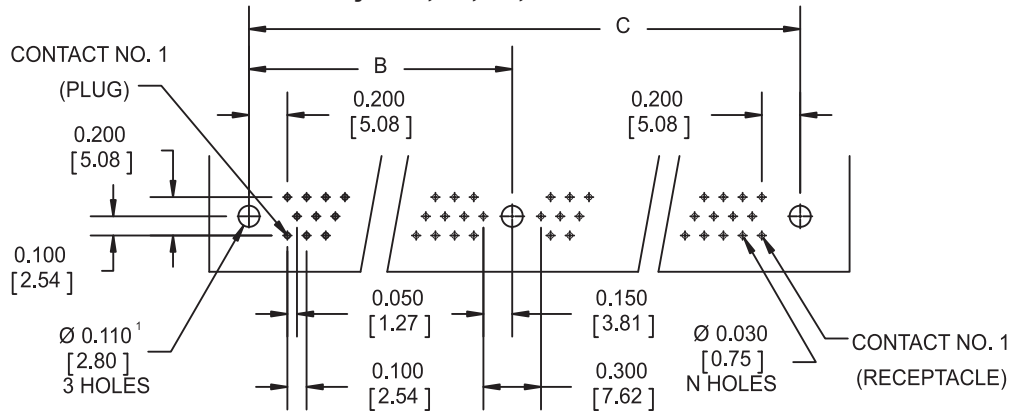
Dimensions are in inches [mm]

## Mounting Dimensions

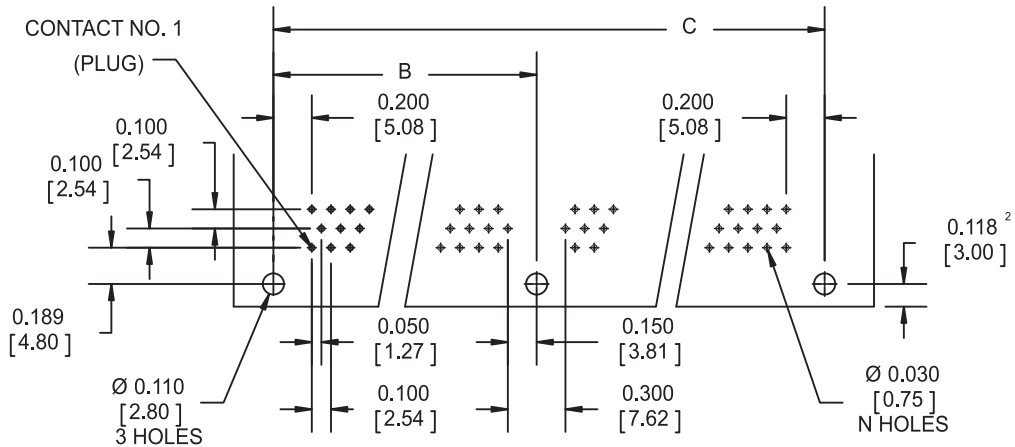
### 160 and 160.4 Contacts

PC Board Shown From Component Side of Board

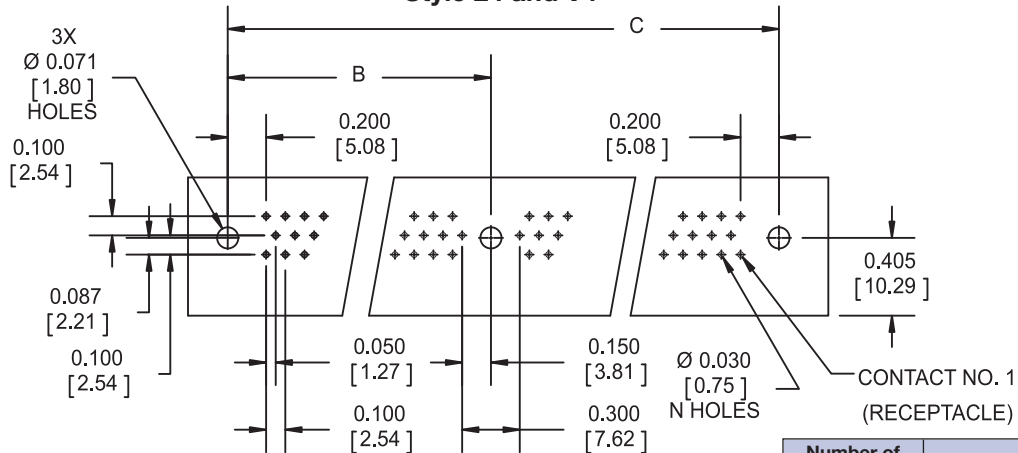
#### Mother Board Application Style 11, 21, V2, V15 and V31



#### Daughter Board Application Style 10, 30, V3, V9 and V30



#### Daughter Board Application Style 24 and V4



Number of Contacts	Dimension B	Dimension C
160	2.950 [74.93]	5.900 [149.86]
160.4	2.950 [74.93]	5.900 [149.86]

**NOTES:**

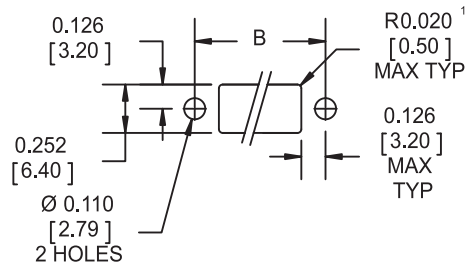
- 1) For V15 locking mounting style, dimension is  $0.130 \pm 0.004$  [3.20  $\pm$  0.10] diameter.
- 2) PC board may be extended to 0.453 [11.50] max for use as a pin protector.

Dimensions are in inches [mm]

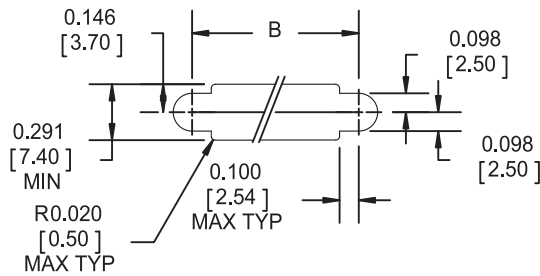
## Cutout for Panel Application

17, 29, 33, 41, 53 and 65 Contacts

### Fixed Mounting Styles 11, 21, V2, V15 and V31



### Float Mounting Styles 13 and 23

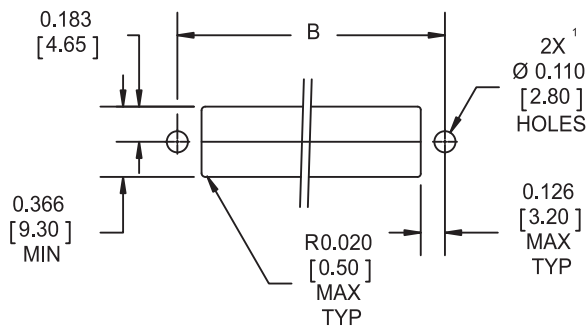


Number of Contacts	Dimension B
17	1.200 [30.48]
29	1.800 [45.72]
33	2.000 [50.8]
41	2.400 [60.96]
53	3.000 [76.20]
65	3.600 [91.44]

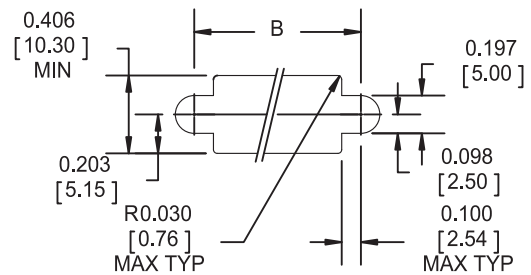
## Cutout for Panel Application

62, 80.1 and 98 Contacts

### Fixed Mounting Styles 11, 21, V2, V15 and V31



### Float Mounting Styles 13 and 23



Number of Contacts	Dimension B
62	2.40 [60.96]
80.1	3.00 [76.20]
98	3.60 [91.44]

**NOTE:**

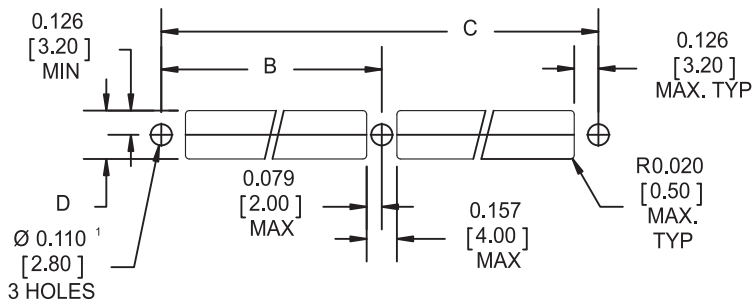
1) For V15 locking mounting style, dimension is 0.130 ± 0.004 [3.20 ± 0.10] dia.

Dimensions are in inches [mm]

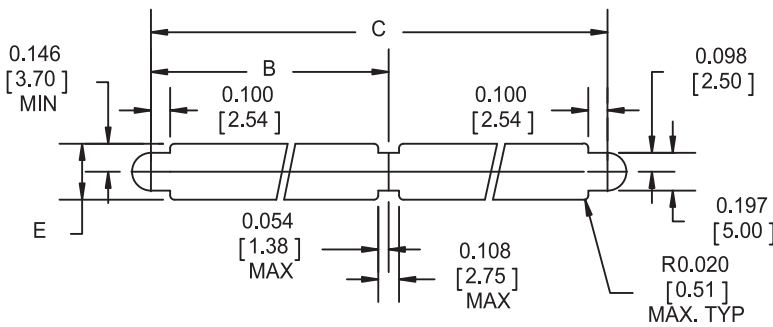
### Cutout for Panel Application

72, 84, 120 and 126 Contacts

**Fixed Mounting Styles 11, 21, V2, V15 and V31**



**Float Mounting Styles 13 and 23**

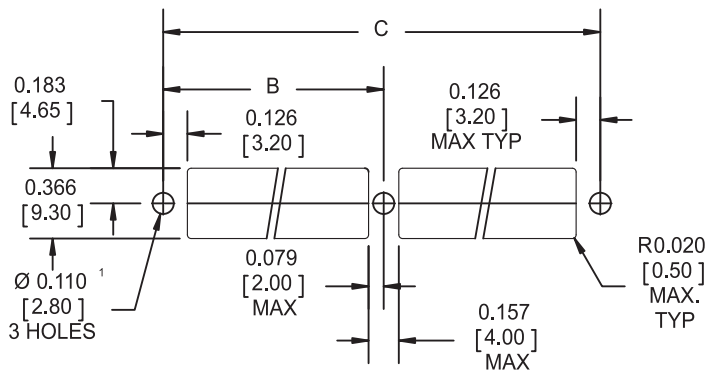


Number of Contacts	B	C	D <sub>Min</sub>	E <sub>Min</sub>
72	2.100 [53.34]	4.200 [106.68]	0.252 [6.40]	0.291 [7.50]
84	2.400 [60.96]	4.800 [121.92]	0.252 [6.40]	0.291 [7.50]
96	2.700 [68.58]	5.400 [137.16]	0.252 [6.40]	0.291 [7.50]
120	3.300 [83.82]	6.600 [167.64]	0.252 [6.40]	0.291 [7.50]
126	2.400 [60.96]	4.800 [121.92]	0.366 [9.30]	0.406 [10.30]

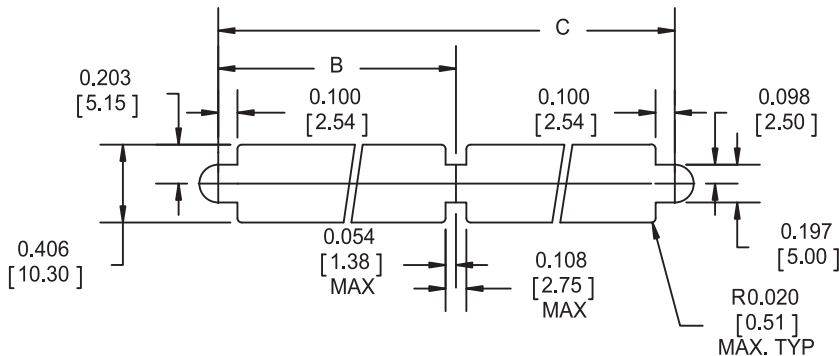
### Cutout for Panel Application

160 and 160.4 Contacts

**Fixed Mounting Styles 11, 21, V2, V15 and V31**



**Float Mounting Styles 13 and 23**

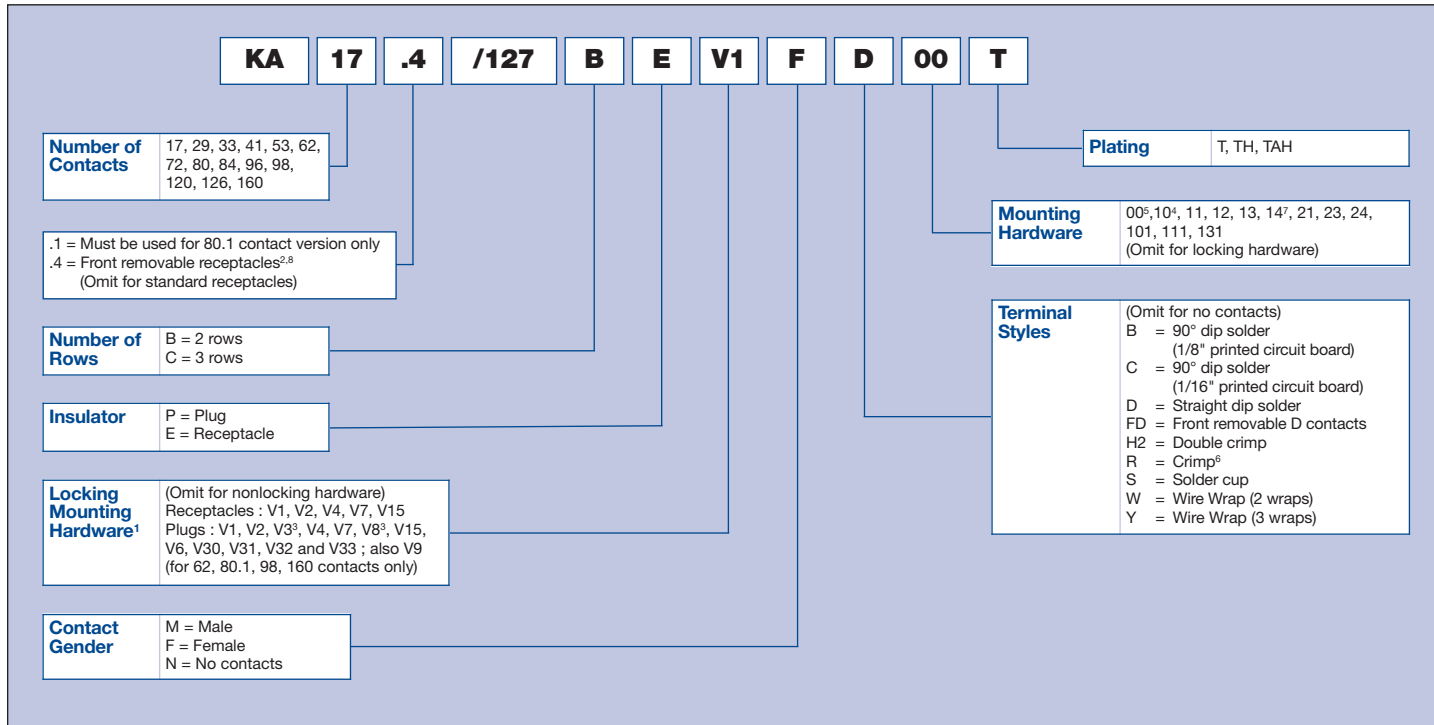


Number of Contacts	Dimension B	Dimension C
160	2.950 [74.93]	5.900 [149.86]
160.4	2.950 [74.93]	5.900 [149.86]

Dimensions are in inches [mm]



## Ordering Information For 2 and 3 Row Connectors



## Accessories

### Extraction Tools:

For standard contacts .....S/DEM 1.0060

### Crimp Tools:

#### Ref. R and H2 contacts – 1 crimp

Manual crimp tool.....MS3198.1 or M22520/2-01 or AFM8  
Positioner for contacts .....K547

#### Ref. H2 contacts

#### 2 crimps in two operations

Manual crimp tool.....MS3198.1 or M22520/2-01 or AFM8  
Positioner for contacts (wire).....K547  
Positioner for contacts (insulation) .....K640

#### 2 crimps in operation

This requires a special tool. Please submit wire samples and consult factory for further information. Crimping instructions doc number S50063

### Other Accessories:

Insertion tool .....S/MONT 1.0060  
Spanner wrench for receptacle with front removable contacts.....T136  
Spanner wrench for V8, V9, V10, and V15 .....T249

### Replacement Contacts: see page 3/54

### Comb:

For positioning right angle dip solder contact tails.

**YCM017-001**

Number of contacts \_\_\_\_\_

### NOTES:

- 1) Important! See Mating Combination Chart for Inter-matability.
- 2) Available with Ref. D (Straight Dip Solder) and Ref. Y (Wire Wrap) terminal styles only.
- 3) Not available in three row versions.
- 4) Available with plugs only.
- 5) In order to keep mating forces as low as possible, it is recommended that the connectors are fixtured during soldering, contact engineering for details.

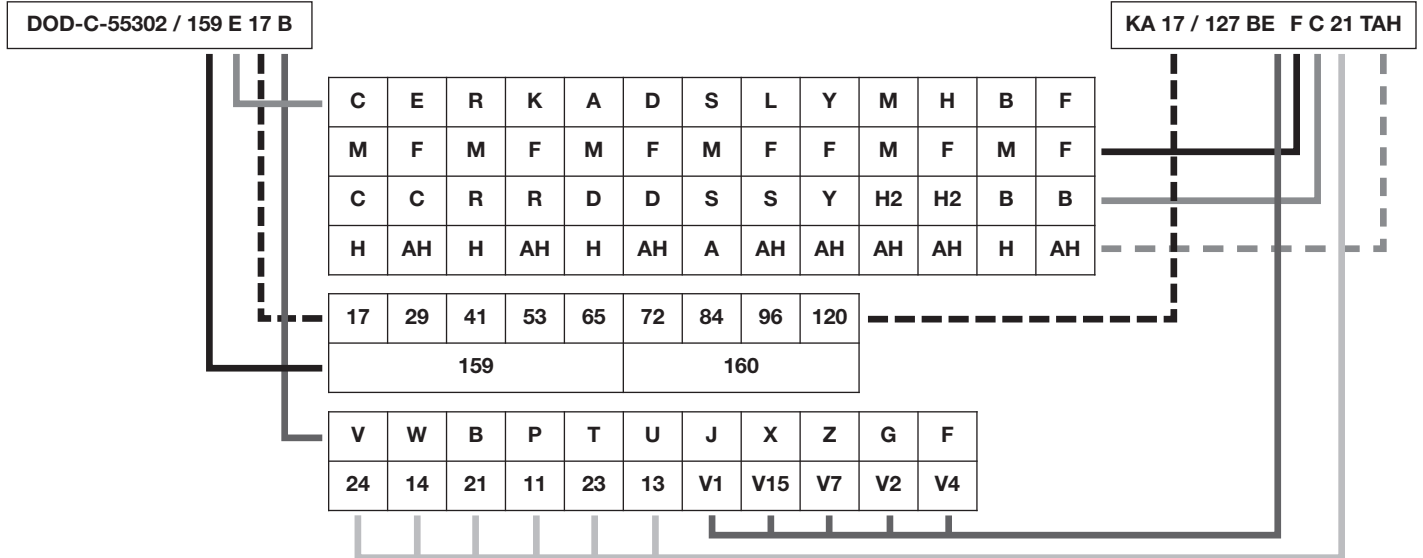
- 6) Connectors with no hardware.
- 7) Crimp contacts will be shipped unmounted. When inserting contacts into the blocks/insulators be sure that the two flats at the rear of the contact body are aligned with the flats in the insulator.
- 8) Receptacles only.
- 9) Available in 160 contact version only.

Dimensions are in inches [mm]

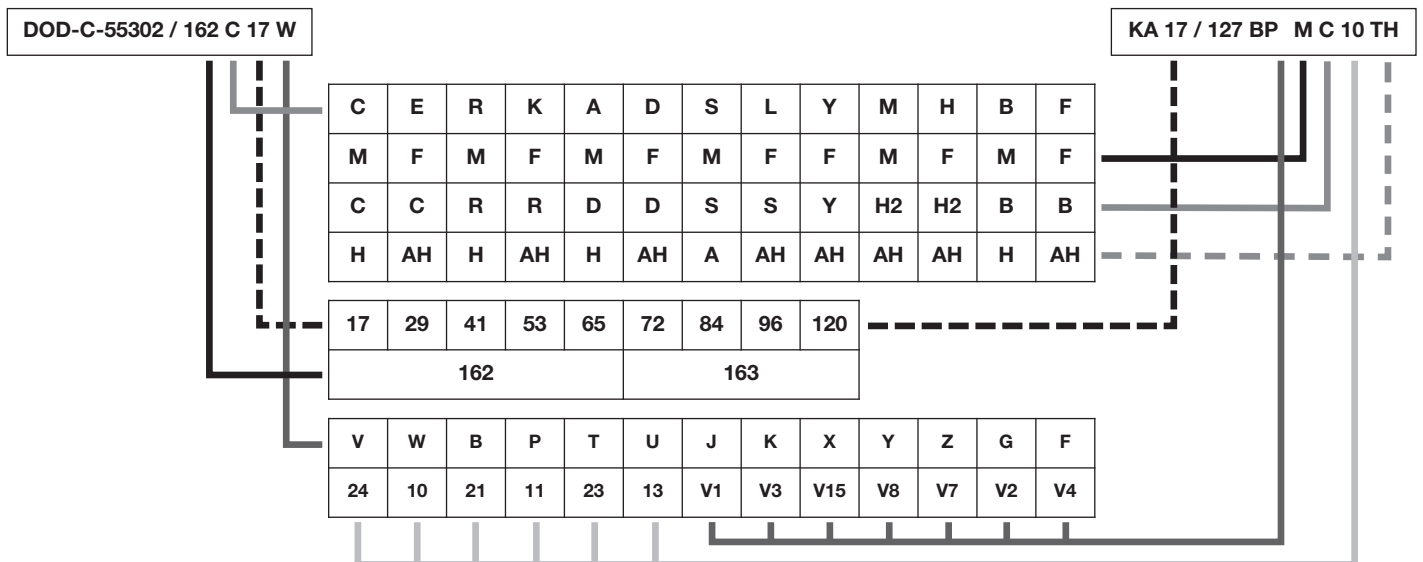
# Military Part Number – Hypertronics Part Number Cross Reference

Numbers Are DOD Instead of MIL Due to Metric Design

Slash Sheets 159 and 160  
 Receptacle 2 Row Insulator Styles  
 For 17 – 120 Contact Positions



Slash Sheets 162 and 163  
 Receptacle 2 Row Insulator Styles  
 For 17 – 120 Contact Positions



**Military Part Number – Hypertronics Part Number Cross Reference**  
Numbers Are DOD Instead of MIL Due to Metric Design

**Slash Sheet 161**  
**160 Position Split Shell Receptacles**  
**The Following Models Are Approved**

D55302/161 J 160 G KA 160.4/127CEFD21TAH  
 D55302/161 G 160 G KA 160.4/127CEFY21TAH  
 D55302/161 P 160 G KA 160.4/127CEMD21TAH  
 D55302/161 Q 160 G KA 160.4/127CEMY21TAH

**Slash Sheet 164**  
**160 Contact Position Plugs and Receptacles**

