

# 3M™ Pak 50 Boardmount Plug

.050" Straight and Right Angle Maxi-Mate

P50 Series



- High density connectors with up to 200 contacts
- Horizontal, parallel and vertical mating availability
- Insulator designed to prevent mating misalignment
- RoHS Compliant. See the Regulatory Information Appendix (RIA) in the "RoHS Compliance" section of [www.3Mconnectors.com](http://www.3Mconnectors.com) for compliance information (RIA E1 and C1 apply)

Date Modified: February 3, 2012

TS-2049-C  
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## Physical

### Insulator:

Material: Glass Filled Nylon

Flammability: UL 94V-0

Color: Black

Contact Material: Phosphor Bronze

### Plating:

Underplating: Nickel

Wiping Area: 10  $\mu$ " [ .25  $\mu$ m ] Gold

Solder Tails: Gold Flash

Retaining Clips: Tin-Copper

Mating Compatibility: TS-2050

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## Electrical

**Current Rating:** 0.5 A

**Insulation Resistance:**  $> 1 \times 10^9 \Omega$  at 500 V<sub>DC</sub>

**Withstanding Voltage:** 650 V<sub>AC</sub> for 1 minute

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## Environmental

**Temperature Rating:** -55°C to +85°C

**Process Rating:** 260°C Wave Solder Compatible

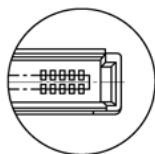
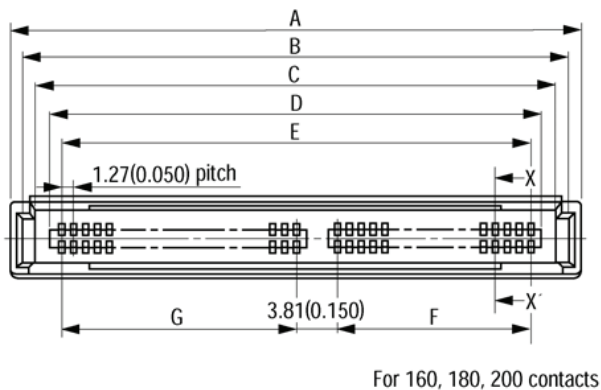
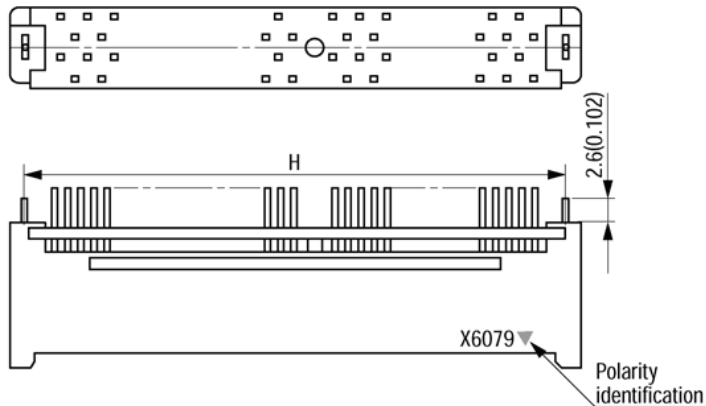
UL File No.: E68080

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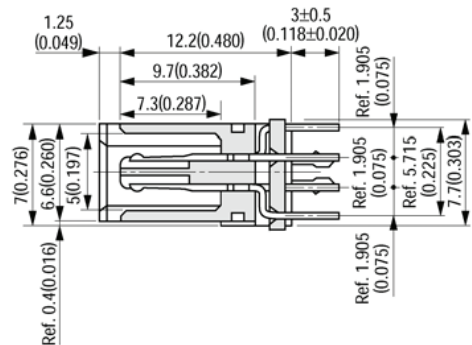
P50 Series

## Straight without Flanges and with Retention Clips

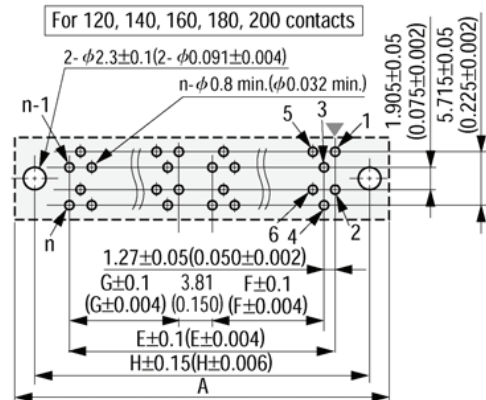


For 120, 140 contacts

## X-X' Cross Section



## Printed Circuit Board Layout (Component Side View)



▼=Polarity identification

Recommended PCB Thickness  $t=1.6\pm0.19(0.063\pm0.007)$

"n" is number of contacts.

## Ordering Information

**P50 - XXXP - XXX - EA**

Contact Quantity:  
See Table

Solder Tail, Flange and Clip Options:

- S1 = Straight, with Flanges, without Retention Clips
- SR1 = Right Angle, with Flanges, without Retention Clips
- R1 = Straight, without Flanges, with Retention Clips
- RR1 = Right Angle, without Flanges, with Retention Clips

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Electronic Solutions Division  
Interconnect Solutions  
<http://www.3Mconnectors.com>

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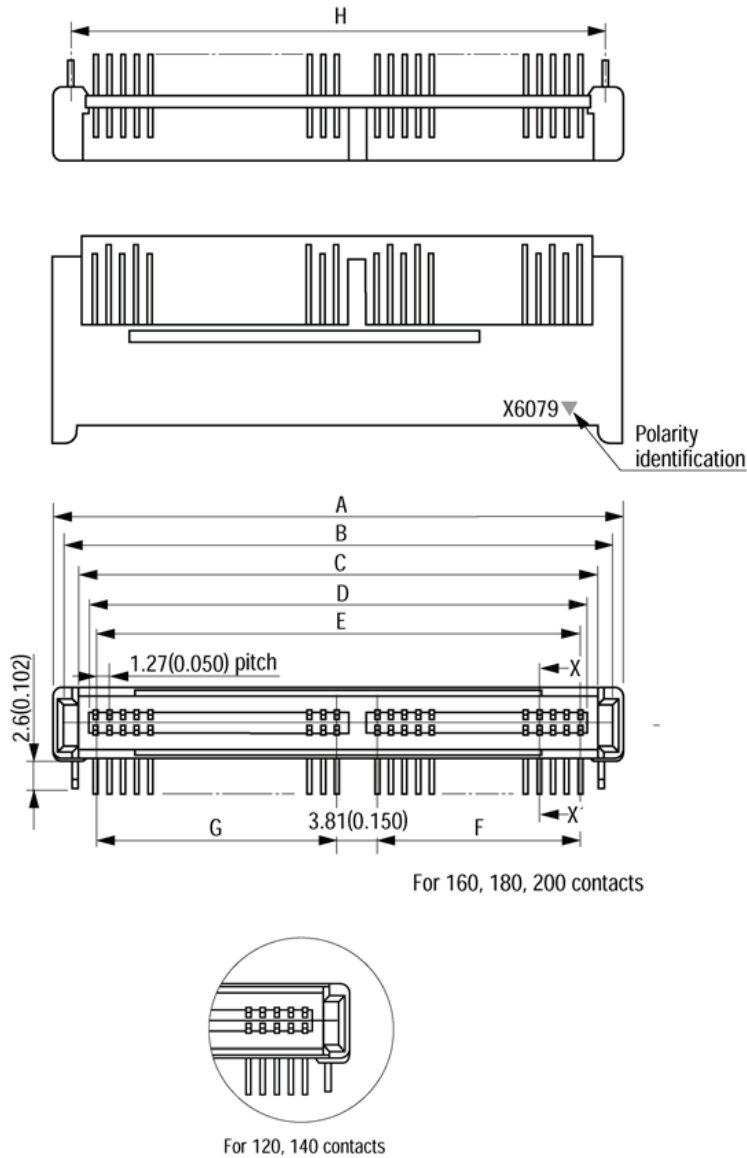
**Product Table / Dimensions for Straight and Right Angle without Flanges and with Retention Clips**

| Contact Quantity | A                 | B                 | C                 | D                 | E                 | F                | G                | H                 |
|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|------------------|-------------------|
| 120              | 86.50<br>[3.406]  | 84.50<br>[3.327]  | 81.87<br>[3.223]  | 79.17<br>[3.117]  | 77.47<br>[3.050]  | 24.13<br>[0.950] | 49.53<br>[1.950] | 83.82<br>[3.300]  |
| 140              | 99.20<br>[3.906]  | 97.20<br>[3.827]  | 94.57<br>[3.723]  | 91.87<br>[3.617]  | 90.17<br>[3.550]  | 24.13<br>[0.950] | 62.23<br>[2.450] | 96.52<br>[3.800]  |
| 160              | 111.90<br>[4.406] | 109.90<br>[4.327] | 107.27<br>[4.223] | 104.57<br>[4.117] | 102.87<br>[4.050] | 36.83<br>[1.450] | 62.23<br>[2.450] | 109.22<br>[4.300] |
| 180              | 124.60<br>[4.906] | 122.60<br>[4.827] | 119.97<br>[4.723] | 117.27<br>[4.617] | 115.57<br>[4.550] | 49.53<br>[1.950] | 62.23<br>[2.450] | 121.92<br>[4.800] |
| 200              | 137.30<br>[5.406] | 135.30<br>[5.327] | 132.67<br>[5.223] | 129.97<br>[5.117] | 128.27<br>[5.050] | 62.23<br>[2.450] | 62.23<br>[2.450] | 134.62<br>[5.300] |

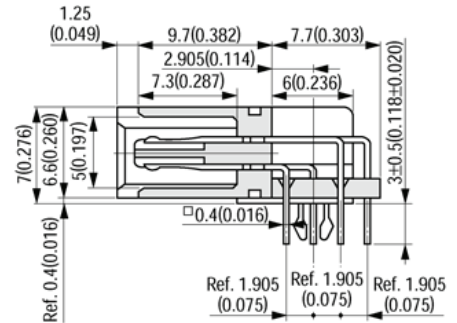
**Notes:**

These connectors do not have a symmetrical board layout pattern. The 120 pin connectors have 80 pins on one side and 40 pins on the other. All other pin counts have 100 pins on one side and the balance on the other side.

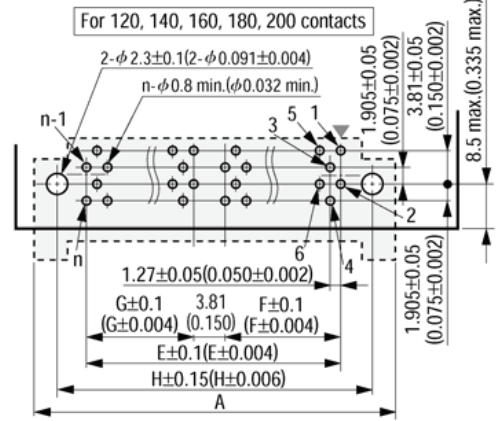
**Right Angle without Flanges and with Retention Clips**



**X-X' Cross Section**



**Printed Circuit Board Layout (Component Side View)**



▼ = Polarity identification  
 Recommended PCB Thickness  $t = 1.6 \pm 0.19 (0.063 \pm 0.007)$   
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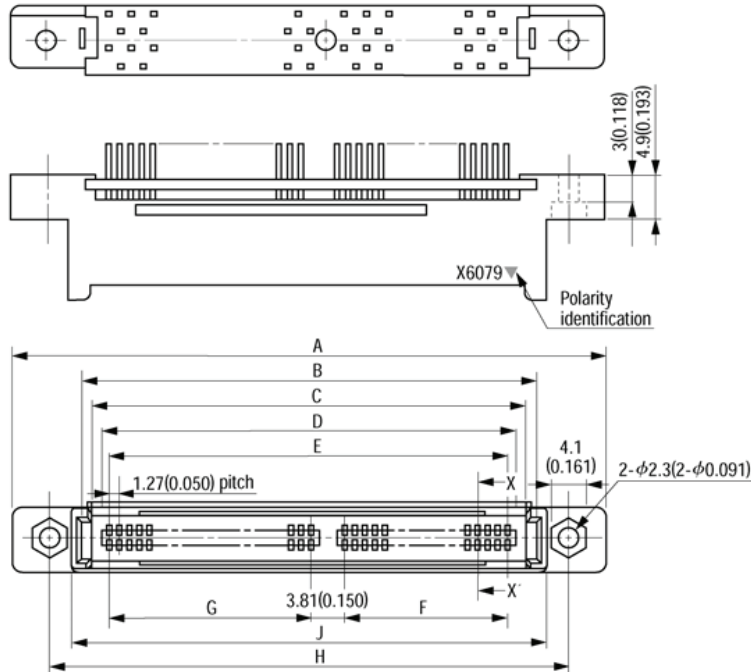
**Product Table / Dimensions for Straight and Right Angle with Flanges and without Retention Clips**

| Contact Quantity | A                 | B                 | C                 | D                 | E                 | F                | G                | H                 | J                 |
|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|------------------|-------------------|-------------------|
| 120              | 99.20<br>[3.906]  | 84.50<br>[3.327]  | 81.87<br>[3.223]  | 79.17<br>[3.117]  | 77.47<br>[3.050]  | 24.13<br>[0.950] | 49.53<br>[1.950] | 91.44<br>[3.600]  | 86.50<br>[3.406]  |
| 140              | 111.90<br>[4.406] | 97.20<br>[3.827]  | 94.57<br>[3.723]  | 91.87<br>[3.617]  | 90.17<br>[3.550]  | 24.13<br>[0.950] | 62.23<br>[2.450] | 104.14<br>[4.100] | 99.20<br>[3.906]  |
| 160              | 124.60<br>[4.906] | 109.90<br>[4.327] | 107.27<br>[4.223] | 104.57<br>[4.117] | 102.87<br>[4.050] | 36.83<br>[1.450] | 62.23<br>[2.450] | 116.84<br>[4.600] | 111.90<br>[4.406] |
| 180              | 137.30<br>[5.406] | 122.60<br>[4.827] | 119.97<br>[4.723] | 117.27<br>[4.617] | 115.57<br>[4.550] | 49.53<br>[1.950] | 62.23<br>[2.450] | 129.54<br>[5.100] | 124.60<br>[4.906] |
| 200              | 150.00<br>[5.906] | 135.30<br>[5.327] | 132.67<br>[5.223] | 129.97<br>[5.117] | 128.27<br>[5.050] | 62.23<br>[2.450] | 62.23<br>[2.450] | 142.24<br>[5.600] | 137.30<br>[5.406] |

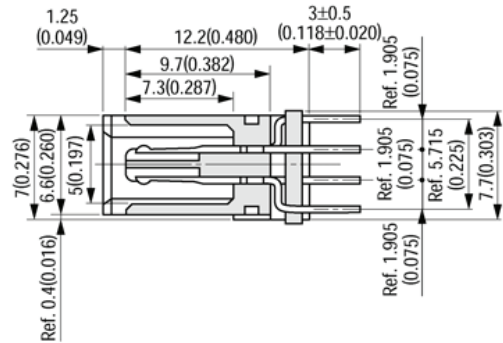
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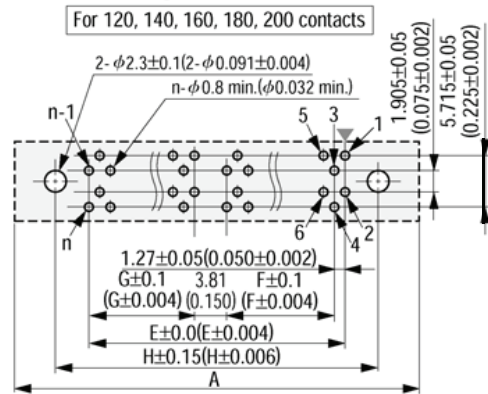
**Straight with Flanges and without Retention Clips**



**X-X' Cross Section**



**Printed Circuit Board Layout (Component Side View)**



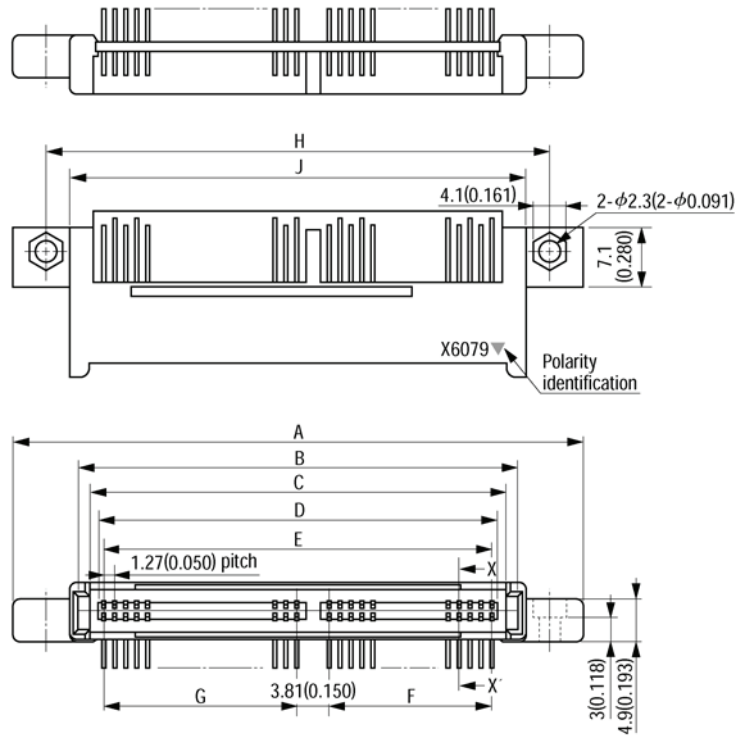
▼=Polarity identification  
Recommended PCB Thickness t=1.6±0.19(0.063±0.007)  
"n" is number of contacts.

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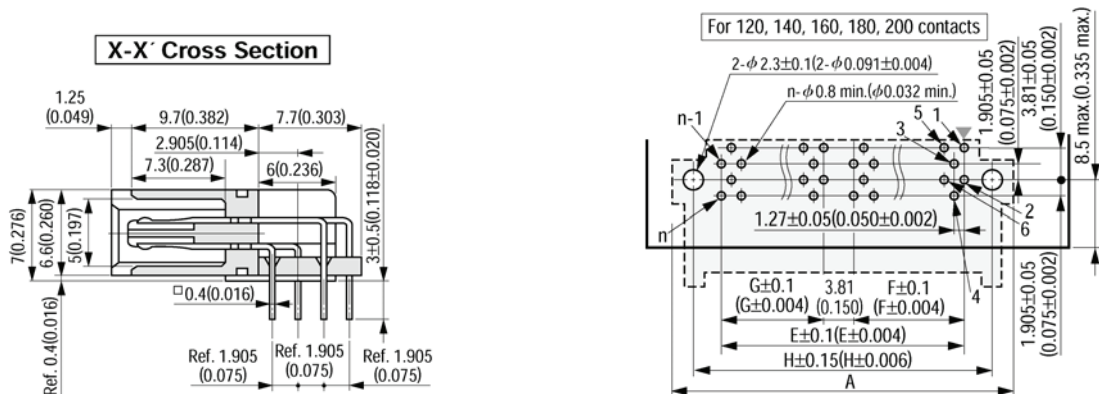
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## Right Angle with Flanges and without Retention Clips



## Printed Circuit Board Layout (Component Side View)



▼ = Polarity identification  
 Recommended PCB Thickness  $t = 1.6 \pm 0.19 (0.063 \pm 0.007)$   
 \*n\* is number of contacts.

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