

# 3M™ Pak 50 Boardmount Plug

.050" Through-Hole, Straight and Right Angle, with Ret. Clips, Flng. Option

P50 Series



- Contact design features two contact points and straight beam construction for connector reliability and low insertion force
- Retention clip secures connector for wave soldering eliminating additional hardware expenses
- Horizontal, parallel or vertical mating available
- Insulator design prevents mis-insertion errors and contact damage
- Available with and without flanges
- RoHS Compliant. See the Regulatory Information Appendix (RIA) in the "RoHS Compliance" section of [www.3Mconnector.com](http://www.3Mconnector.com) for compliance information (RIA E1 and C1 apply)

Date Modified: February 10, 2010

TS-2046-B  
Sheet 1 of 6

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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  $\mu$ " [ 0.25  $\mu$ m ] Gold

Solder Tails: Gold Flash

Retaining Clips: Tin-Copper

Mating Compatibility: TS-2047

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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:** 500 V<sub>rms</sub> at Sea Level

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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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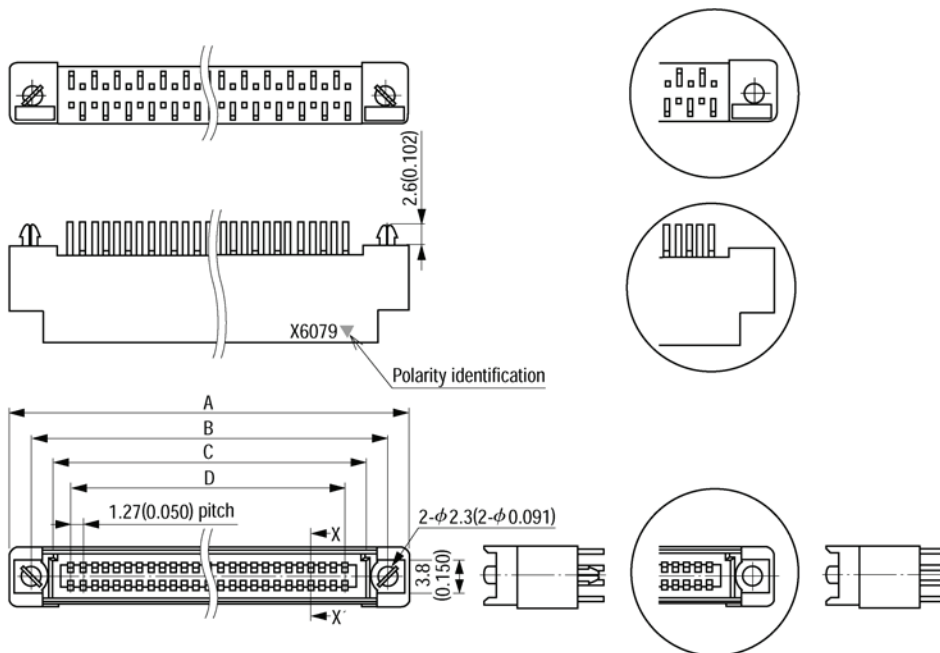
Product Table / Dimensions for Straight with Flanges, with or without Retention Clips

| Contact Quantity | A                | B                | C                | D                |
|------------------|------------------|------------------|------------------|------------------|
| 20               | 25.43<br>[1.001] | 20.32<br>[0.800] | 15.83<br>[0.623] | 11.43<br>[0.450] |
| 26               | 29.24<br>[1.151] | 24.13<br>[0.950] | 19.64<br>[0.773] | 15.24<br>[0.600] |
| 30               | 31.78<br>[1.251] | 26.67<br>[1.050] | 22.18<br>[0.873] | 17.78<br>[0.700] |
| 32               | 33.05<br>[1.301] | 27.94<br>[1.100] | 23.45<br>[0.923] | 19.05<br>[0.750] |
| 34               | 34.32<br>[1.351] | 29.21<br>[1.150] | 24.72<br>[0.973] | 20.32<br>[0.800] |
| 40               | 38.13<br>[1.501] | 33.02<br>[1.300] | 28.53<br>[1.123] | 24.13<br>[0.950] |

| Contact Quantity | A                | B                | C                | D                |
|------------------|------------------|------------------|------------------|------------------|
| 50               | 44.48<br>[1.751] | 39.37<br>[1.550] | 34.88<br>[1.373] | 30.48<br>[1.200] |
| 52               | 45.75<br>[1.801] | 40.64<br>[1.600] | 36.15<br>[1.423] | 31.75<br>[1.250] |
| 60               | 50.83<br>[2.001] | 45.72<br>[1.800] | 41.23<br>[1.623] | 36.83<br>[1.450] |
| 68               | 55.91<br>[2.201] | 50.80<br>[2.000] | 46.31<br>[1.823] | 41.91<br>[1.650] |
| 80               | 63.53<br>[2.501] | 58.42<br>[2.300] | 53.93<br>[2.123] | 49.53<br>[1.950] |
| 100              | 76.23<br>[3.001] | 71.12<br>[2.800] | 66.63<br>[2.623] | 62.23<br>[2.450] |

With Retention Clips

Without Retention Clips



X-X' Cross Section



Shown with Retention Clips

TS-2046-B  
Sheet 2 of 5

# 3M™ Pak 50 Boardmount Plug

.050" Through-Hole, Straight and Right Angle, with Ret. Clips, Flng. Option

P50 Series

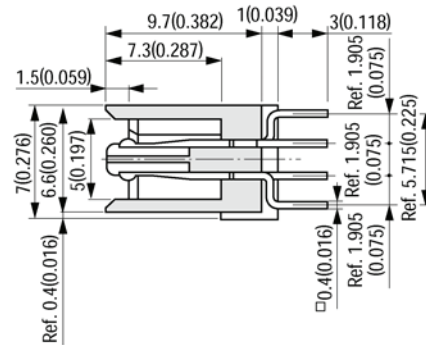
## Product Table / Dimensions for Straight without Flanges

| Contact Quantity | A                | B                | C                |
|------------------|------------------|------------------|------------------|
| 20               | 17.83<br>[0.702] | 15.83<br>[0.623] | 11.43<br>[0.450] |
| 26               | 21.64<br>[0.852] | 19.64<br>[0.773] | 15.24<br>[0.600] |
| 30               | 24.18<br>[0.952] | 22.18<br>[0.873] | 17.78<br>[0.700] |
| 32               | 25.45<br>[1.002] | 23.45<br>[0.923] | 19.05<br>[0.750] |
| 34               | 26.72<br>[1.052] | 24.72<br>[0.973] | 20.32<br>[0.800] |
| 40               | 30.53<br>[1.202] | 28.53<br>[1.123] | 24.13<br>[0.950] |

| Contact Quantity | A                | B                | C                |
|------------------|------------------|------------------|------------------|
| 50               | 36.88<br>[1.452] | 34.88<br>[1.373] | 30.48<br>[1.200] |
| 52               | 38.15<br>[1.502] | 36.15<br>[1.423] | 31.75<br>[1.250] |
| 60               | 43.23<br>[1.702] | 41.23<br>[1.623] | 36.83<br>[1.450] |
| 68               | 48.31<br>[1.902] | 46.31<br>[1.823] | 41.91<br>[1.650] |
| 80               | 55.93<br>[2.202] | 53.93<br>[2.123] | 49.53<br>[1.950] |
| 100              | 68.63<br>[2.702] | 66.63<br>[2.623] | 62.23<br>[2.450] |



### X-X' Cross Section



## Ordering Information

### P5X - XXXP - XXX - EA

Mounting Options:

- 0 = With Flanges
- 1 = Without Flanges, offered without retention clips only

Contact Quantity:  
See Table

Solder Tail and Clip Options:

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

TS-2046-B  
Sheet 3 of 5

# 3M™ Pak 50 Boardmount Plug

.050" Through-Hole, Straight and Right Angle, with Ret. Clips, Flng. Option

P50 Series

**Product Table / Dimensions for Right Angle with Flanges, with or without Retention Clips**

| Contact Quantity | A                | B                | C                | D                |
|------------------|------------------|------------------|------------------|------------------|
| 20               | 25.43<br>[1.001] | 20.32<br>[0.800] | 15.83<br>[0.623] | 11.43<br>[0.450] |
| 26               | 29.24<br>[1.151] | 24.13<br>[0.950] | 19.64<br>[0.773] | 15.24<br>[0.600] |
| 30               | 31.78<br>[1.251] | 26.67<br>[1.050] | 22.18<br>[0.873] | 17.78<br>[0.700] |
| 32               | 33.05<br>[1.301] | 27.94<br>[1.100] | 23.45<br>[0.923] | 19.05<br>[0.750] |
| 34               | 34.32<br>[1.351] | 29.21<br>[1.150] | 24.72<br>[0.973] | 20.32<br>[0.800] |
| 40               | 38.13<br>[1.501] | 33.02<br>[1.300] | 28.53<br>[1.123] | 24.13<br>[0.950] |

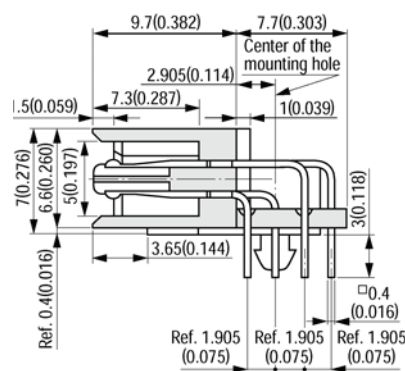
| Contact Quantity | A                | B                | C                | D                |
|------------------|------------------|------------------|------------------|------------------|
| 50               | 44.48<br>[1.751] | 39.37<br>[1.550] | 34.88<br>[1.373] | 30.48<br>[1.200] |
| 52               | 45.75<br>[1.801] | 40.64<br>[1.600] | 36.15<br>[1.423] | 31.75<br>[1.250] |
| 60               | 50.83<br>[2.001] | 45.72<br>[1.800] | 41.23<br>[1.623] | 36.83<br>[1.450] |
| 68               | 55.91<br>[2.201] | 50.80<br>[2.000] | 46.31<br>[1.823] | 41.91<br>[1.650] |
| 80               | 63.53<br>[2.501] | 58.42<br>[2.300] | 53.93<br>[2.123] | 49.53<br>[1.950] |
| 100              | 76.23<br>[3.001] | 71.12<br>[2.800] | 66.63<br>[2.623] | 62.23<br>[2.450] |

With Retention Clips

Without Retention Clips



**X-X' Cross Section**



TS-2046-B  
Sheet 4 of 5

# 3M™ Pak 50 Boardmount Plug

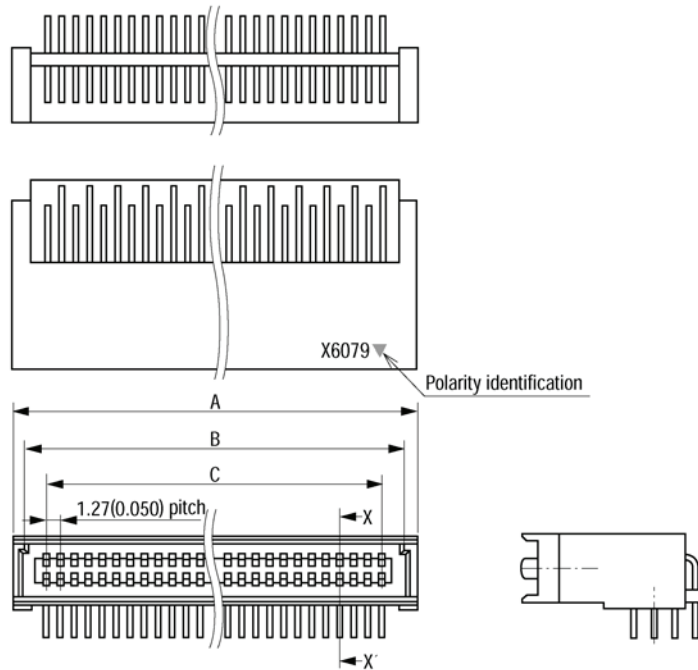
.050" Through-Hole, Straight and Right Angle, with Ret. Clips, Flng. Option

P50 Series

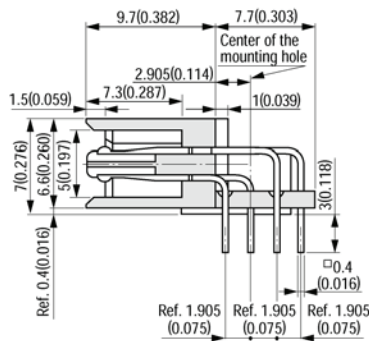
Product Table / Dimensions for Right Angle without Flanges

| Contact Quantity | A                | B                | C                |
|------------------|------------------|------------------|------------------|
| 20               | 17.83<br>[0.702] | 15.83<br>[0.623] | 11.43<br>[0.450] |
| 26               | 21.64<br>[0.852] | 19.64<br>[0.773] | 15.24<br>[0.600] |
| 30               | 24.18<br>[0.952] | 22.18<br>[0.873] | 17.78<br>[0.700] |
| 32               | 25.45<br>[1.002] | 23.45<br>[0.923] | 19.05<br>[0.750] |
| 34               | 26.72<br>[1.052] | 24.72<br>[0.973] | 20.32<br>[0.800] |
| 40               | 30.53<br>[1.202] | 28.53<br>[1.123] | 24.13<br>[0.950] |

| Contact Quantity | A                | B                | C                |
|------------------|------------------|------------------|------------------|
| 50               | 36.88<br>[1.452] | 34.88<br>[1.373] | 30.48<br>[1.200] |
| 52               | 38.15<br>[1.502] | 36.15<br>[1.423] | 31.75<br>[1.250] |
| 60               | 43.23<br>[1.702] | 41.23<br>[1.623] | 36.83<br>[1.450] |
| 68               | 48.31<br>[1.902] | 46.31<br>[1.823] | 41.91<br>[1.650] |
| 80               | 55.93<br>[2.202] | 53.93<br>[2.123] | 49.53<br>[1.950] |
| 100              | 68.63<br>[2.702] | 66.63<br>[2.623] | 62.23<br>[2.450] |



X-X' Cross Section



TS-2046-B  
Sheet 5 of 5

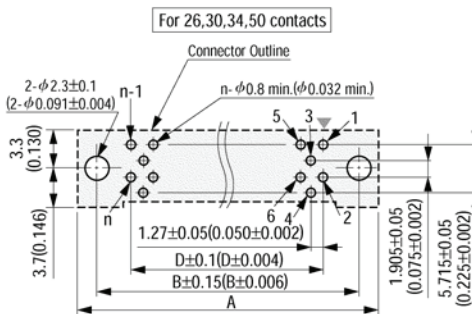
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P50 Series

## Printed Circuit Board Layout (Component Side View)

### STRAIGHT WITH FLANGES (with and without Retention Clips)

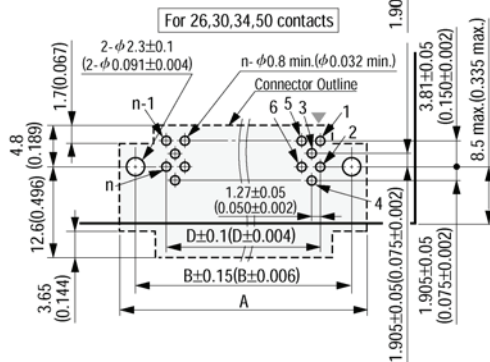


### STRAIGHT WITHOUT FLANGES

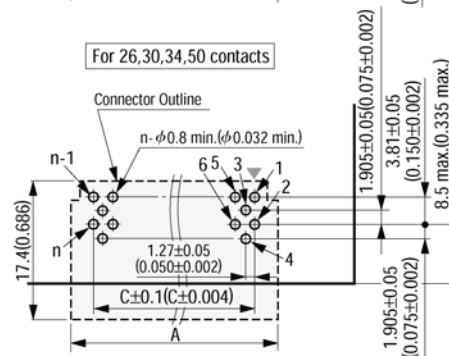
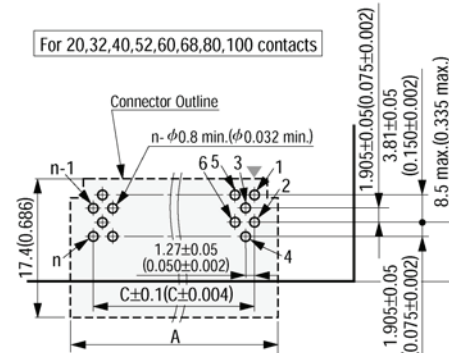


▼=Polarity identification  
Recommended PCB Thickness  $t = 1.6 \pm 0.19 (0.063 \pm 0.007)$   
"n" is number of contacts.

### RIGHT ANGLE WITH FLANGES (with and without Retention Clips)



### RIGHT ANGLE WITHOUT FLANGES



TS-2046-B  
Sheet 6 of 5

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