

# 3M™ Four-Wall Header

.100" x .100" Low Profile, SMT Straight, Straight and Rt Angle Through-Hole

2500 Series



- Low profile, space saving design
- Center slot polarization prevents mis-insertions and reduces insertion time
- Dual slot polarization means broader compatibility with competitive polarization designs (not 8 or 10 pos.)
- Optional retainer clip for locking sockets in place and increasing connection reliability in vibration-prone environments
- Optional high temperature insulator suitable for “no lead” soldering operations
- High temperature option in through-hole version suitable for “paste in hole” reflow soldering techniques
- Exposed solder tails (on right angle version) provide ease of cleaning and reduced repair costs
- Straight surface mount version available
- RoHS Compliant. See the Regulatory Information Appendix (RIA) in the “RoHS Compliance” section of [www.3Mconnector.com](http://www.3Mconnector.com) for compliance information.

Date Modified: August 4, 2010

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Sheet 1 of 5

## Physical

### Insulator

**Material:** Glass Filled Polyester (PBT), Glass Filled Polyester (PCT)-High Temperature Option  
**Flammability:** UL 94V-0  
**Color:** Gray (PBT) or Black (PCT)  
**Contact Material:** Copper Alloy

### Plating

**Underplating:** 100  $\mu$ " [ 2.54  $\mu$ m ] Nickel - Overall  
**Wiping Area:** Gold (See Ordering Information)  
**Solder Tails:** 200  $\mu$ " [ 5.08  $\mu$ m ] Tin Lead or Matte Tin (See Ordering Information)

**Marking:** 3M Logo, Part Identification Number and Orientation Triangle

## Electrical

**Current Rating:** 2 A  
**Insulation Resistance:**  $>1 \times 10^9$  W at 500 V<sub>DC</sub>  
**Withstanding Voltage:** 1000 V<sub>RMS</sub> at Sea Level

## Environmental

**Temperature Rating:** -55°C to +105°C  
**Process Rating:** 260°C, (High Temperature and PCT insulator versions only), single pass, (profile per J-STD-020C) PBT insulator version, maximum molded insulator temperature 191°C (solder wave process only)  
**Moisture Sensitivity Level:** 1 (per J-STD-020C)

UL File No.: E68080

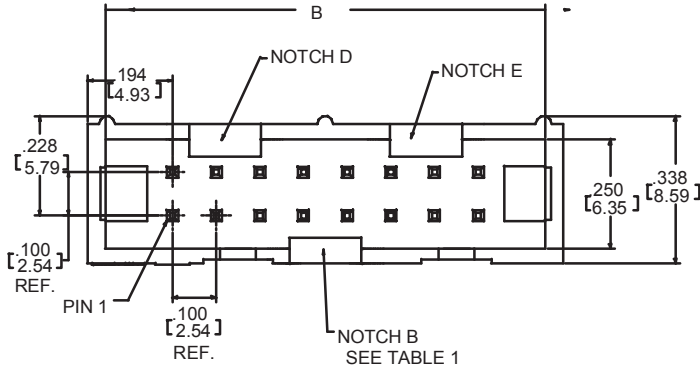
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# 3M™ Four-Wall Header

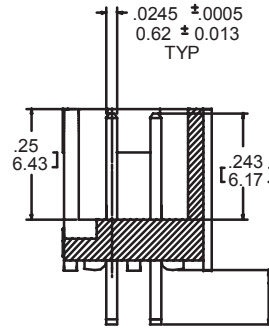
.100" x .100" Low Profile, Straight Through-Hole

2500 Series



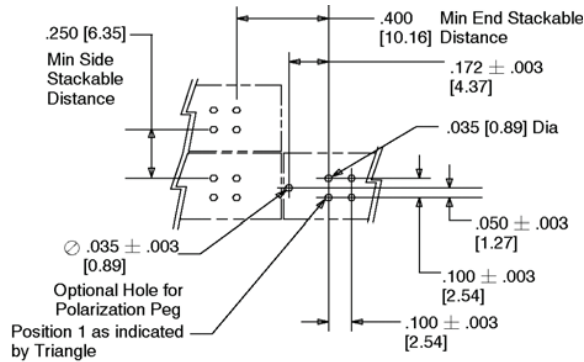
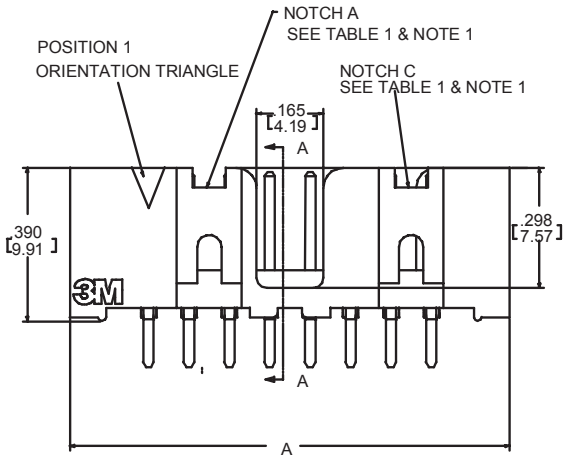
| Inch (mm)              |      |       |        |
|------------------------|------|-------|--------|
| Tolerance Unless Noted |      |       |        |
|                        | .0   | .00   | .000   |
| Inch                   | ± .1 | ± .01 | ± .005 |

[ ] Dimensions for Reference only



.112 +/- .01 [2.84] for 02&K2 versions  
.155 +/- .01 [3.94] for 03 versions

SECTION A-A



**Recommended P.C. Board Hole Pattern**  
(Shown for mounting side of board.)

| Pin Qty | Dimensions    |               | Polarizing Notches |
|---------|---------------|---------------|--------------------|
|         | A             | B             |                    |
| 8       | 0.688 (17.48) | 0.608 (15.44) | None               |
| 10      | 0.788 (20.02) | 0.708 (17.98) | BC                 |
| 14      | 0.988 (25.10) | 0.908 (22.06) | BCDE               |
| 16      | 1.088 (27.64) | 1.008 (25.60) | ABCDE              |
| 20      | 1.288 (32.72) | 1.208 (30.68) | ABCDE              |
| 24      | 1.488 (37.80) | 1.408 (35.76) | ABCDE              |
| 26      | 1.588 (40.34) | 1.508 (38.30) | ABCDE              |
| 30      | 1.788 (45.42) | 1.708 (43.38) | ABCDE              |
| 34      | 1.988 (50.50) | 1.908 (48.46) | ABCDE              |
| 40      | 2.288 (58.12) | 2.208 (56.08) | ABCDE              |
| 50      | 2.788 (70.82) | 2.708 (68.78) | ABCDE              |
| 60      | 3.288 (83.52) | 3.208 (81.48) | ABCDE              |
| 64      | 3.488 (88.60) | 3.408 (86.56) | ABCDE              |

**Notes:**

1. Notches A & C will accommodate 3M Polarizing Keys (3M Part #3518 or N3518).
2. Contact tails .0245 [0.622] wire with .0075 [0.191] corner radii & .028 [0.72] diagonal.
3. See page 4 for kink tail positions.
4. Solder stand offs facilitate .01 clearance above board for reflow soldering.

## Ordering Information

Prefix:

**N = High Temp. Black (PCT)**  
**(RB, UB, or UG Plt'g. Req'd)**  
Blank = Std. Temp. Gray (PBT)  
(UB or UG Plt'g. Req'd)

**X25XX-60XX-XX**

Pin Quantity:  
(See Table 1)

Solder Tail  
**02 = for .062 [1.57] thick board (Standard)**  
**03 = for .094 to .125 [2.39 to 3.18] thick board**  
**K2 = for .062 [1.57] thick board**

Plating:

**RB = 30µ" [0.76µm] Gold with 200µ" [5.08µm] Matte Tin Solder Tails (RIA E1 & C1 apply)**  
UG = 15µ" [0.38µm] Gold with 200µ" [5.08µm] 60:40 Tin-Lead Solder Tails (RIA E3 & C2 apply)  
UB = 30µ" [0.76µm] Gold with 200µ" [5.05µm] 60:40 Tin-Lead Solder Tails (RIA E3 & C2 apply)

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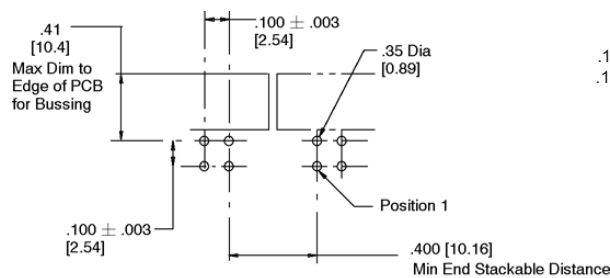
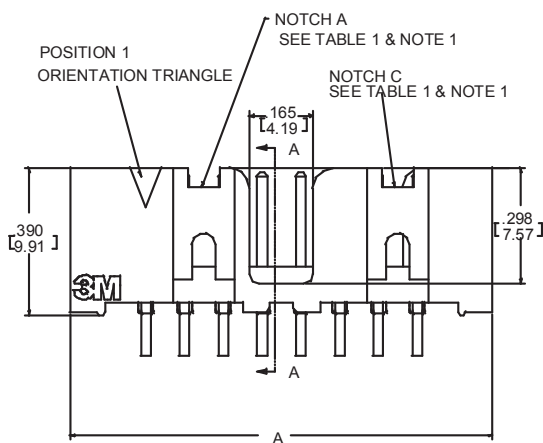
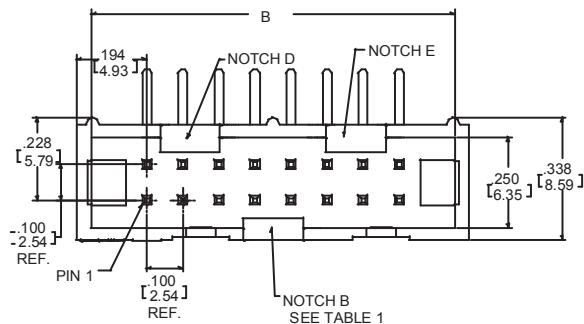
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# 3M™ Four-Wall Header

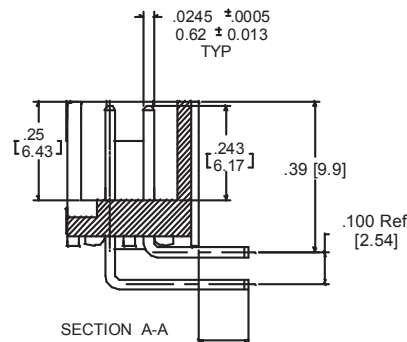
.100" x .100" Low Profile, Right Angle Through-Hole

2500 Series



Recommended Mounting Hole Pattern

| Pin Qty | Dimensions    |               | Polarizing Notches |
|---------|---------------|---------------|--------------------|
|         | A             | B             |                    |
| 8       | 0.688 (17.48) | 0.608 (15.44) | None               |
| 10      | 0.788 (20.02) | 0.708 (17.98) | BC                 |
| 14      | 0.988 (25.10) | 0.908 (22.06) | BCDE               |
| 16      | 1.088 (27.64) | 1.008 (25.60) | ABCDE              |
| 20      | 1.288 (32.72) | 1.208 (30.68) | ABCDE              |
| 24      | 1.488 (37.80) | 1.408 (35.76) | ABCDE              |
| 26      | 1.588 (40.34) | 1.508 (38.30) | ABCDE              |
| 30      | 1.788 (45.42) | 1.708 (43.38) | ABCDE              |
| 34      | 1.988 (50.50) | 1.908 (48.46) | ABCDE              |
| 40      | 2.288 (58.12) | 2.208 (56.08) | ABCDE              |
| 50      | 2.788 (70.82) | 2.708 (68.78) | ABCDE              |
| 60      | 3.288 (83.52) | 3.208 (81.48) | ABCDE              |
| 64      | 3.488 (88.60) | 3.408 (86.56) | ABCDE              |



.112 +/- .01 [2.84] for 02&K2 versions  
.155 +/- .01 [3.94] for 03 versions

| Inch (mm)              |      |       |        |
|------------------------|------|-------|--------|
| Tolerance Unless Noted |      |       |        |
|                        | .0   | .00   | .000   |
| Inch                   | ± .1 | ± .01 | ± .005 |

[ ] Dimensions for Reference only

Notes:

- Notches A & C will accommodate 3M Polarizing Keys (3M Part #3518 or N3518).
- Contacts tails .0245 [0.622] wire with .0075 [0.191] corner radii & .028 [0.71] diagonal.
- See page 4 for kink tail positions.



## Ordering Information

Prefix:

**N = High Temp. Black (PCT)**

(RB, UB, or UG Plt'g. Req'd)

Blank = Std. Temp. Gray (PBT)(UB or UG Plt'g. Req'd)

**X25XX - 50XX - XX**

Pin Quantity:  
(See Table 1)

Solder Tail

02 = for .062 [1.57] thick board (Standard)

03 = for .094 to .125 [2.39 to 3.18] thick board

K2 = for .062 [1.57] thick board

Plating:

**RB = 30μ" [0.76μm] Gold with 200μ" [5.08μm]**

**Matte Tin Solder Tails (RIA E1 & C1 apply)**

UG = 15μ" [0.38μm] Gold with 200μ" [5.08μm] 60:40

Tin-Lead Solder Tails (RIA E3 & C2 apply)

UB = 30μ" [0.76μm] Gold with 200μ" [5.05μm] 60:40

Tin-Lead Solder Tails (RIA E3 & C2 apply)

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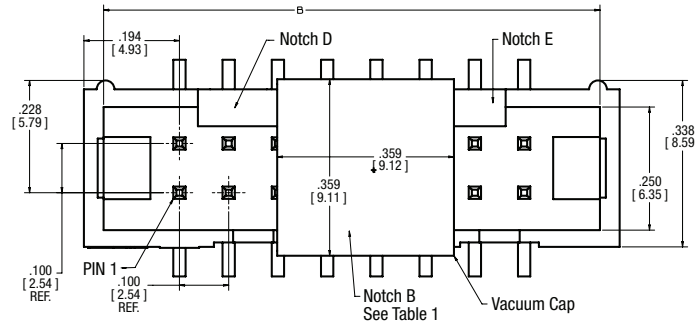
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# 3M™ Four-Wall Header

.100" x .100" Low Profile, Surface Mount Straight

2500 Series



| Tolerance Unless Noted |      |       |        |
|------------------------|------|-------|--------|
| Inch                   | [mm] |       |        |
| .0                     | .00  | .000  |        |
| Inch                   | ± .1 | ± .01 | ± .005 |

[ ] Dimensions for Reference only

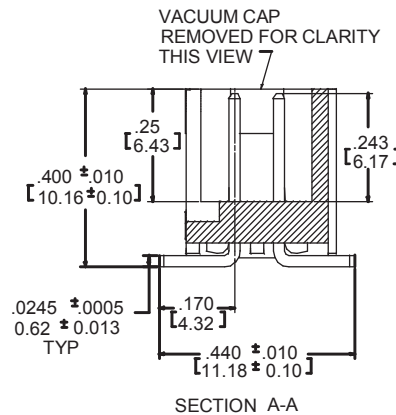
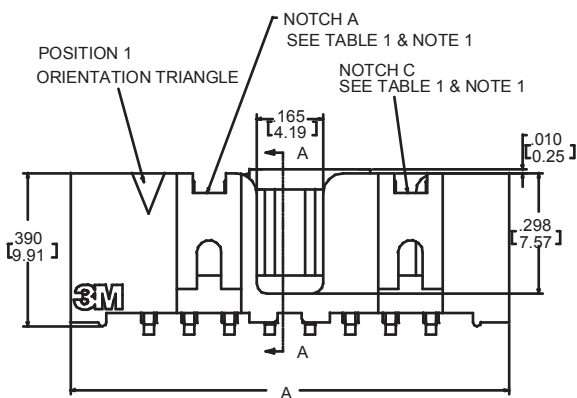
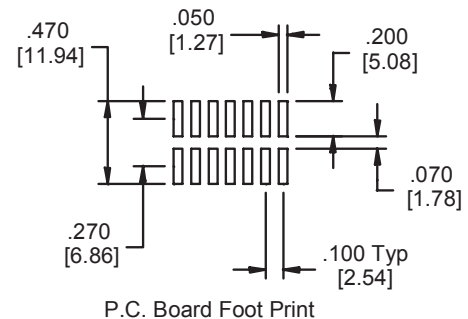


Table 1

| Pin Qty | Dimensions    |               | Polarizing Notches | Tape and Reel Pkg Code |
|---------|---------------|---------------|--------------------|------------------------|
|         | A             | B             |                    |                        |
| 8       | 0.688 (17.48) | 0.608 (15.44) | None               | WD (44 mm)             |
| 10      | 0.788 (20.02) | 0.708 (17.98) | BC                 | WD (44 mm)             |
| 14      | 0.988 (25.10) | 0.908 (22.06) | BCDE               | WD (44 mm)             |
| 16      | 1.088 (27.64) | 1.008 (25.60) | ABCDE              | WD (44 mm)             |
| 20      | 1.288 (32.72) | 1.208 (30.68) | ABCDE              | WE (56 mm)             |
| 24      | 1.488 (37.80) | 1.408 (35.76) | ABCDE              | WE (56 mm)             |
| 26      | 1.588 (40.34) | 1.508 (38.30) | ABCDE              | WE (56 mm)             |
| 30      | 1.788 (45.42) | 1.708 (43.38) | ABCDE              | WF (72 mm)             |
| 34      | 1.988 (50.50) | 1.908 (48.46) | ABCDE              | WF (72 mm)             |
| 40      | 2.288 (58.12) | 2.208 (56.08) | ABCDE              | WG(88 mm)              |
| 50      | 2.788 (70.82) | 2.708 (68.78) | ABCDE              | WG (88 mm)             |
| 60      | 3.288 (83.52) | 3.208 (81.48) | ABCDE              | WH (120 mm)            |
| 64      | 3.488 (88.60) | 3.408 (86.56) | ABCDE              | WH (120 mm)            |

Notes:

- Notches A & C will accommodate 3M Polarizing Key N3518.
- Vacuum cap will be centered on connectors.
- Coplanarity .004 for less than 30 position, .006 for 30 and above.



## Ordering Information

### X25XX-6V0C-XX-XX

Prefix: \_\_\_\_\_  
N = High Temp Black (PCT) (RB Plating Req'd)

Pin Quantity: \_\_\_\_\_  
(See Table)

Packaging Options:  
WX = tape & reel packaging (see table 1)

Plating:  
RB = 30µ" [0.76µm] Gold with 200µ" [5.08µm] Matte  
Tin Solder Tails (RIA E1 & C1 apply)

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Sheet 4 of 5

# 3M™ Four-Wall Header

.100" x .100" Low Profile, Accessories

2500 Series

| 2500 & 3000 Series Shrouded Header |                        |                  |    |    |    |
|------------------------------------|------------------------|------------------|----|----|----|
| Total Number of Pins               | Number of Tails Kinked | Positions Kinked |    |    |    |
|                                    |                        | 3                | 4  | 7  | 8  |
| 10                                 | 4                      | 3                | 4  | 7  | 8  |
| 14                                 | 4                      | 3                | 4  | 11 | 12 |
| 16                                 | 4                      | 3                | 4  | 13 | 14 |
| 20                                 | 4                      | 3                | 4  | 17 | 18 |
| 24                                 | 4                      | 3                | 4  | 21 | 22 |
| 26                                 | 4                      | 3                | 4  | 23 | 24 |
| 30                                 | 4                      | 5                | 6  | 25 | 26 |
| 34                                 | 4                      | 7                | 8  | 27 | 28 |
| 36                                 | 4                      | 7                | 8  | 27 | 28 |
| 40                                 | 4                      | 7                | 8  | 33 | 34 |
| 50                                 | 4                      | 7                | 8  | 43 | 44 |
| 60                                 | 4                      | 11               | 12 | 49 | 50 |
| 64                                 | 4                      | 11               | 12 | 53 | 54 |

Kinked Tail Detail:  
Kink is located .05" below bottom surface of plastic.  
External radius of kink toward part centerline.

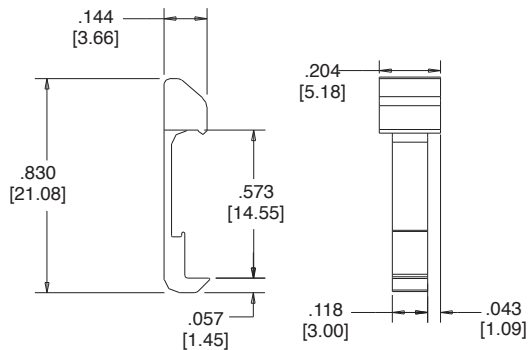
| Connector Pin Qty | Dimension A |
|-------------------|-------------|
| 10                | .81 (20.6)  |
| 14                | 1.02 (25.9) |
| 16                | 1.12 (28.4) |
| 20                | 1.32 (33.5) |
| 24                | 1.52 (38.7) |
| 26                | 1.63 (41.4) |
| 30                | 1.83 (46.4) |
| 34                | 2.03 (51.6) |
| 40                | 2.33 (59.2) |
| 50                | 2.83 (71.9) |
| 60                | 3.33 (84.6) |
| 64                | 3.53 (89.7) |

**3505-8XXX**

Connector Pin Count:  
(See Table)

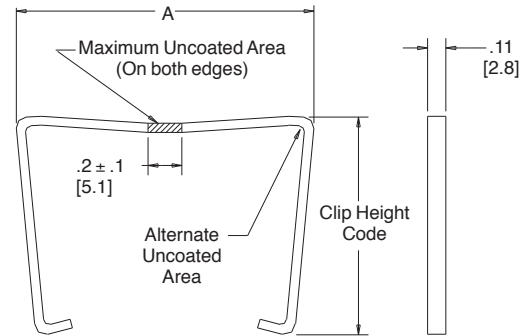
Clip Height Code  
0 = .31 [7.9] for Sockets W/O Strain Relief  
1 = .53 [13.5] for Sockets with Strain Relief

| Part Number | Material | Color |
|-------------|----------|-------|
| 3505-33B    | Nylon    | Black |
| 3505-33     | Nylon    | Gray  |



Long Snap In Latch

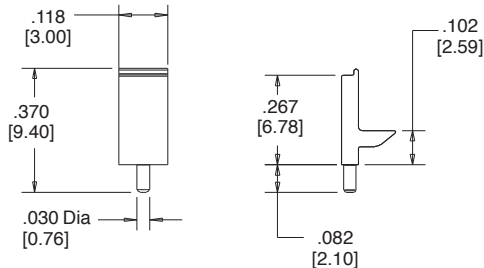
Note: Latches not compatible with reflow soldering. For reflow soldering, attach latches after soldering.



Short/Long Socket Retainer Clip

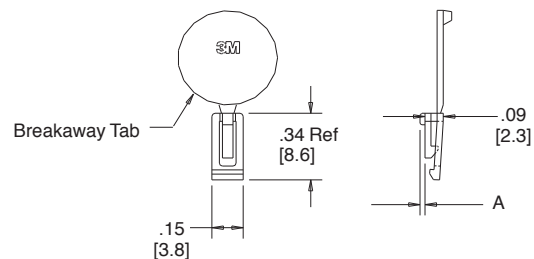
Note: Stainless steel with gray polyurethane coating.

| Part Number | Material | Color |
|-------------|----------|-------|
| 3201-3      | PCT      | Black |
| 3201-1      | PBT      | Gray  |



Polarizing Post

| Part Number | Material | Color | Dim A |
|-------------|----------|-------|-------|
| N3518       | LCP      | Black | 0.02  |
| 3518        | PBT      | Gray  | 0.02  |



Polarizing Keys

Note: 3M™ Scotch-Weld™ Epoxy Adhesive 2216 B/A

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Sheet 5 of 5

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