# 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 6, 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
- See the Regulatory Information Appendix (RIA) in the "RoHS Compliance" section of www.3Mconnectors.com for compliance information.

Date Modified: December 15, 2011



## Physical

| | |
|---|---|
| **Insulator** | |
| Material: | Glass Filled Polyester (PBT),<br>Glass Filled Polyester (PCT) - High Temperature Option |
| Flammability: | UL 94V-0 |
| Color: | Gray (PBT) or Black (PCT) |
| Contact Material: | Copper Alloy |
| **Plating** | |
| Underplating: | 100 µ" [ 2.54 µm ] Nickel - Overall |
| Wiping Area: | Gold (See Ordering Information) |
| Solder Tails: | 200 µ" [ 5.08 µm ] Tin Lead or Matte Tin (See Ordering Information) |
| **Marking:** | 3M Logo, Part Identification Number and Orientation Triangle |

## Electrical

**Current Rating:** 5.00 A, 1 Contact Powered
3.00 A, 6 Contacts Powered
1.75 A, All Contacts Powered
Rating Conditions: EIA-364-070 Method 2, 30°C maximum temperature rise, 20% derated.
Reference appropriate 3M Product Specification for detailed current derating curves.

**Insulation Resistance:** >1 x $10^9$ Ω at 500 $V_{DC}$

**Withstanding Voltage:** 1000 $V_{RMS}$ at Sea Level

## Environmental

**Temperature Rating:** -55°C to +105°C

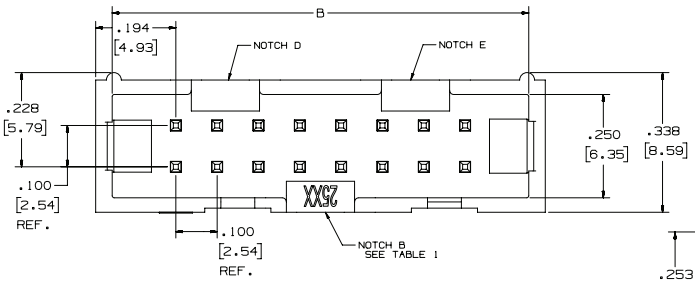
**Process Rating:** High Temp PCT insulator version: 260°C, per J-STD-020C, single pass
PBT insulator version: 191°C, maximum insulator temperature, solder wave process only

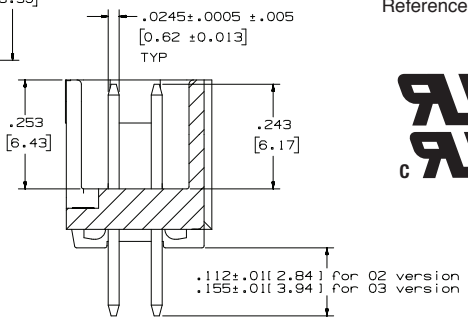
**Moisture Sensitivity Level:** 1 (per J-STD-020C)

UL File No.: E68080

# 3M™ Four-Wall Header

.100" x .100" Low Profile, Straight Through-Hole 2500 Series



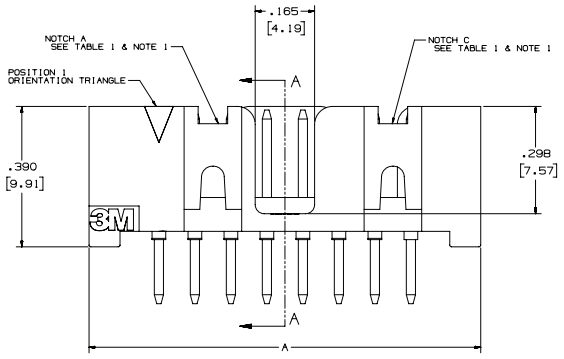



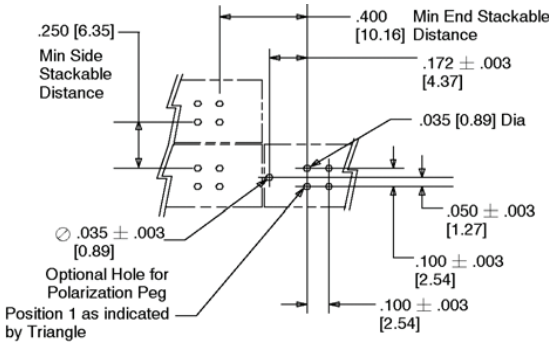

SECTION A - A

Inch
(mm)

| Tolerance Unless Noted | | | |
|---|---|---|---|
| | .0 | .00 | .000 |
| | ± | ± .01 | ± .005 |

[ ] Dimensions for Reference only




Recommended P.C. Board Hole Pattern

(Shown for mounting side of board.)

**Table 1**

| Pin Qty | Dimensions A | | Dimensions B | | Polarizing Notches |
|---|---|---|---|---|---|
| 6 | 0.588 | (14.94) | 0.508 | (12.90) | B |
| 8 | 0.688 | (17.48) | 0.608 | (15.44) | B |
| 10 | 0.788 | (20.02) | 0.708 | (17.98) | BC |
| 14 | 0.988 | (25.10) | 0.908 | (23.06) | 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 |
| 36 | 2.088 | (53.04) | 2.008 | (51.00) | 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 accomodate 3M Polarizing Keys (3M Part #3518 or N3518).
2. Contact tails .0245 [0.622] wire with .0075 [0.191] corner radii & .028 [.072] diagonal.
3. Solder stand offs facilitate .01 clearance above board for reflow soldering.

## Ordering Information

**X25XX - 60XX - XX**

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

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

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

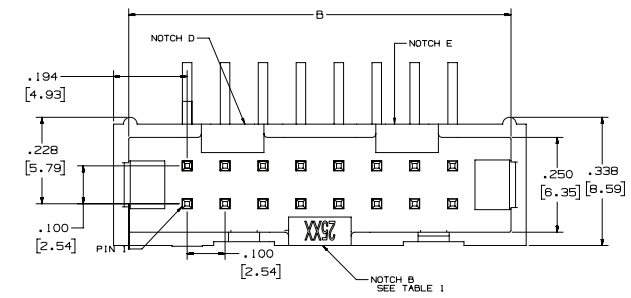


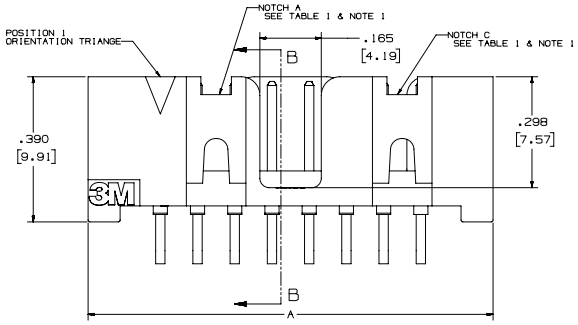
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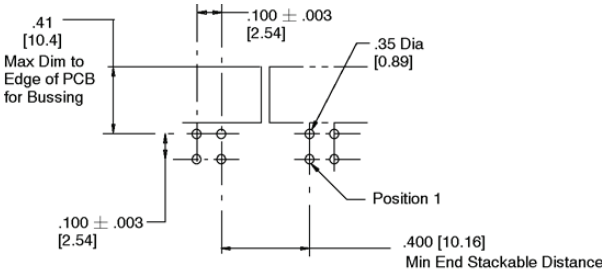
# 3M™ Four-Wall Header

.100" x .100" Low Profile, Right Angle Through-Hole — 2500 Series

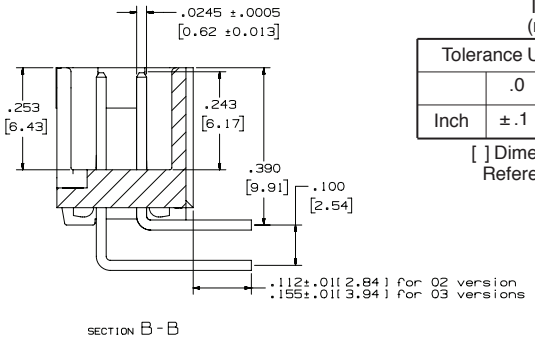



| Table 1 | | | |
|---|---|---|---|
| Pin Qty | Dimensions | | Polarizing Notches |
| | A | B | |
| 6 | 0.588 (14.94) | 0.508 (12.90) | B |
| 8 | 0.688 (17.48) | 0.608 (15.44) | B |
| 10 | 0.788 (20.02) | 0.708 (17.98) | BC |
| 14 | 0.988 (25.10) | 0.908 (23.06) | BCDE |
| 16 | 1.088 (27.64) | 1.008 (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 |
| 36 | 2.088 (53.04) | 2.008 (51.00) | 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 |




Recommended Mounting Hole Pattern




Inch
(mm)

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

[ ] Dimensions for Reference only

Notes:
1. Notches A & C will accomodate 3M Polarizing Keys (3M Part #3518 or N3518).
2. Contacts tails .0245 [0.622] wire with .0075 [0.191] corner radii & .028 [.071] diagonal.

## Ordering Information

**X25XX - 50XX - XX**

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

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

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)



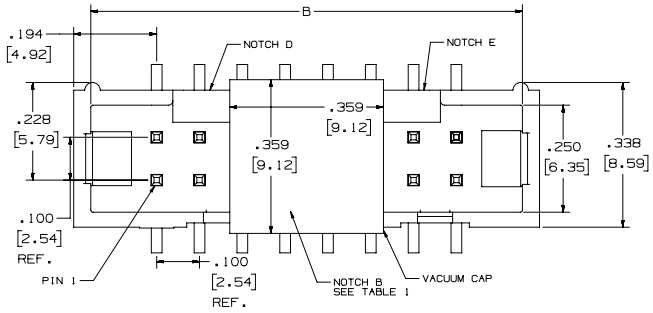
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# 3M™ Four-Wall Header

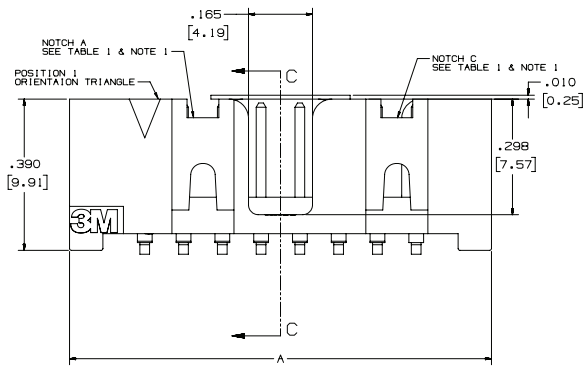
.100" x .100" Low Profile, Surface Mount Straight

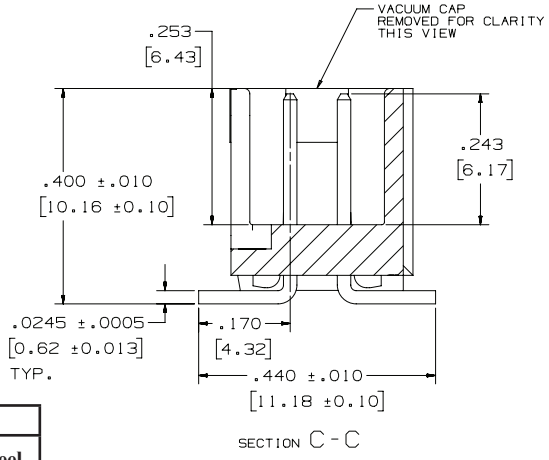
2500 Series




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

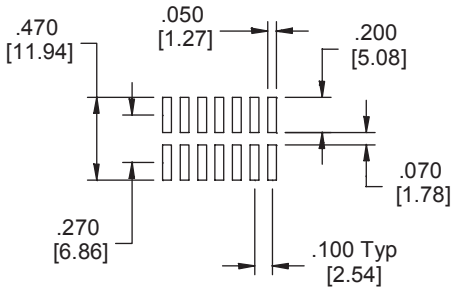
[ ] Dimensions for Reference only




SECTION C - C

| Table 1 | | | | |
|---|---|---|---|---|
| Pin Qty | Dimensions A | Dimensions B | Polarizing Notches | Tape and Reel PKG Code |
| 6 | 0.588 (14.94) | 0.508 (12.90) | B | WD (44 mm) |
| 8 | 0.688 (17.48) | 0.608 (15.44) | B | WD (44 mm) |
| 10 | 0.788 (20.02) | 0.708 (17.98) | BC | WD (44 mm) |
| 14 | 0.988 (25.10) | 0.908 (23.06) | 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) |
| 36 | 2.088 (53.04) | 2.008 (51.00) | ABCDE | WG (88 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) |




P.C. Board Foot Print

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

## Ordering Information

**N25XX - 6V0C - XX-XX**

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

Pin Quantity:
(See Table)

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

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



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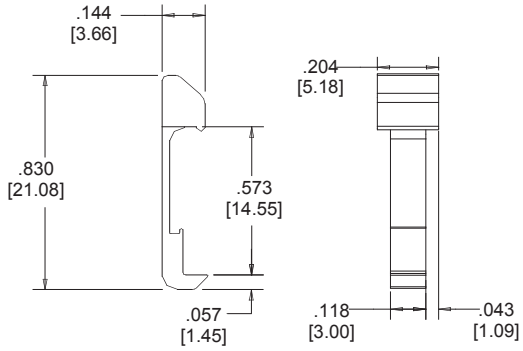
# 3M™ Four-Wall Header

.100” x .100” Low Profile, Accessories

2500 Series

| Connector Pin Qty | Dimension A |
|---|---|
| 6 | N/A |
| 8 | N/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) |
| 36 | N/A |
| 40 | 2.33 (59.2) |
| 50 | 2.83 (71.9) |
| 60 | 3.33 (84.6) |
| 64 | 3.53 (89.7) |

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

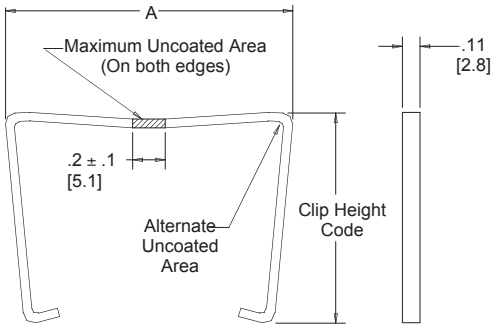



Note: Latches not compatible with reflow soldering. For reflow soldering, attach latches after soldering.

**3505-8XXX**

Connector Pin Count: (See Table)

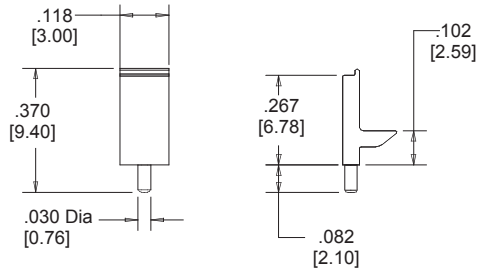
Clip Height Code
0 = .31 [7.9] for Sockets W/O Strain Relief
1 = .53 [13.5] for Sockets with Strain Relief




Short/Long Socket Retainer Clip

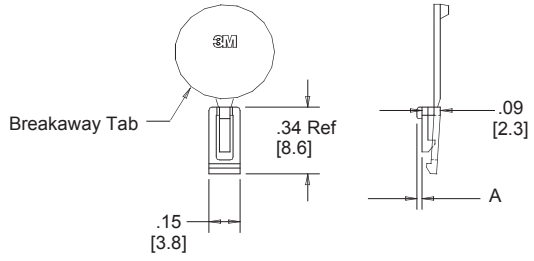
Note: Stainless steel with gray polyurethane coating.

| 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

TS-0770-L
Sheet 5 of 5




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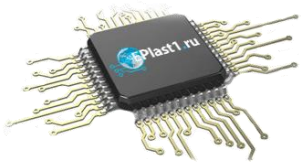
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