

# 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
- 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 26, 2011

TS-0770-K  
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:** 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:**  $>1 \times 10^9 \Omega$  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:** 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

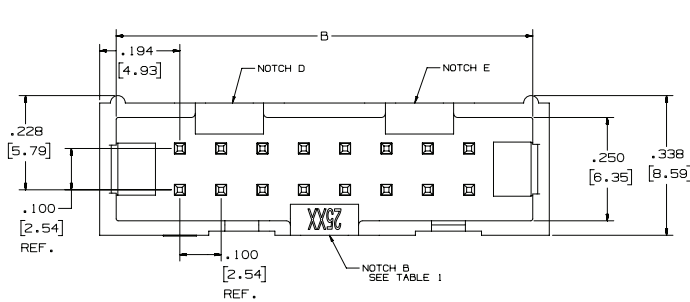
**Moisture Sensitivity Level:** 1 (per J-STD-020C)

UL File No.: E68080

# 3M™ Four-Wall Header

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

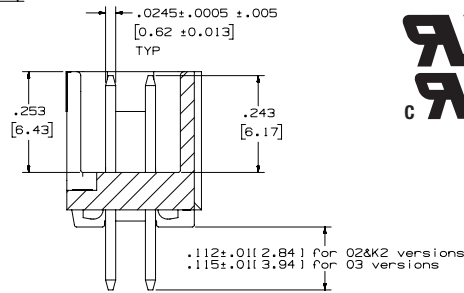
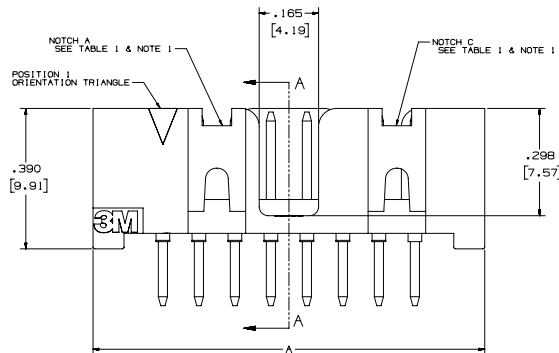
2500 Series



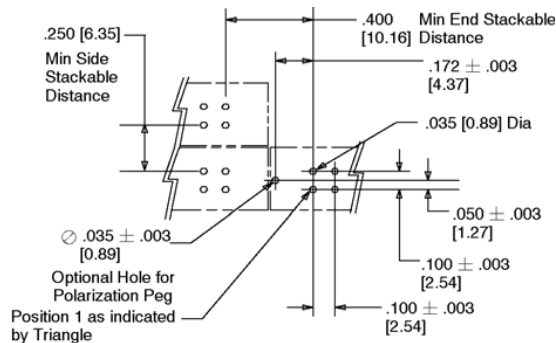
Inch (mm)

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

[ ] Dimensions for Reference only



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)	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
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:**

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

## Ordering Information

Prefix:

**N = High Temp. Black (PCT)**  
(RB, UB, or UG Pltg. Req'd)

Blank = Std. Temp. Gray (PBT)  
(UB or UG Pltg. 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" [5.08 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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Sheet 2 of 5



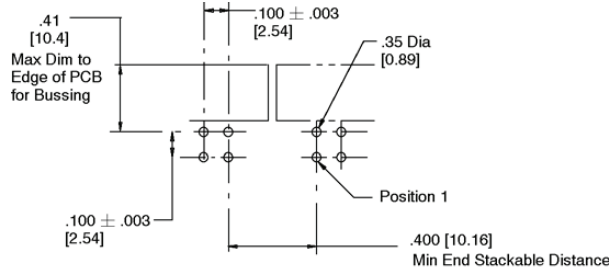
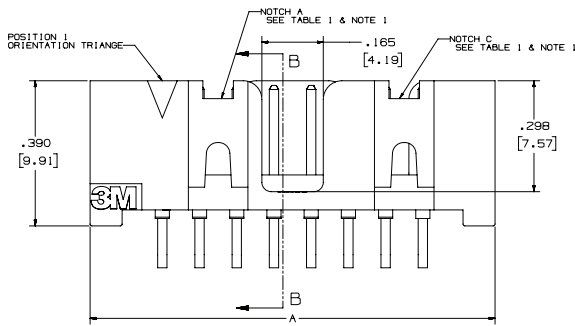
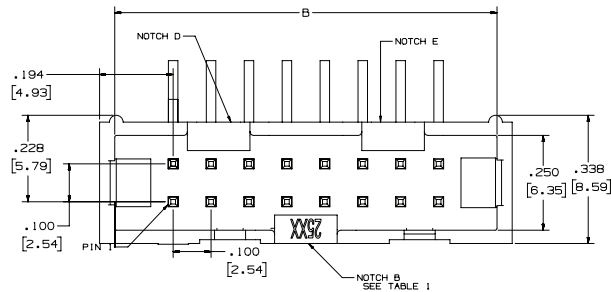
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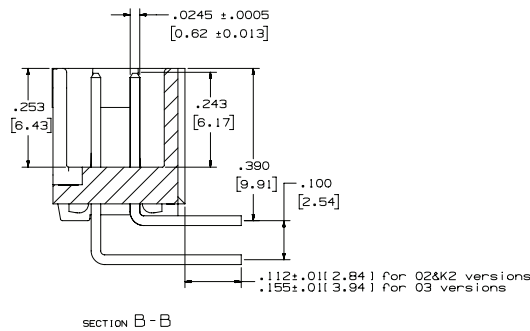
# 3M™ Four-Wall Header

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

2500 Series



Pin Qty	Dimensions		Polarizing Notches
	A	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
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



Tolerance Unless Noted		
Inch	(mm)	
.0	.00	.000
±.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 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**  
**K2 = for .062 [1.57] thick board**

**X25XX - 50XX - XX**

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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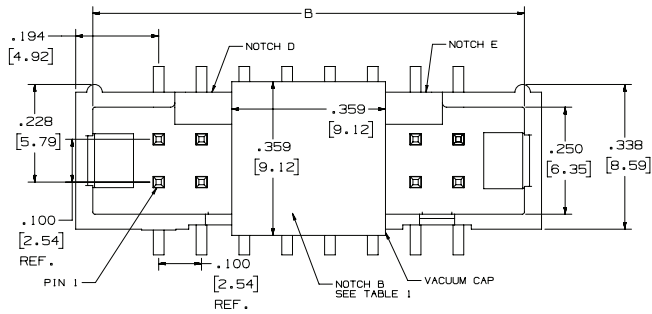
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# 3M™ Four-Wall Header

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

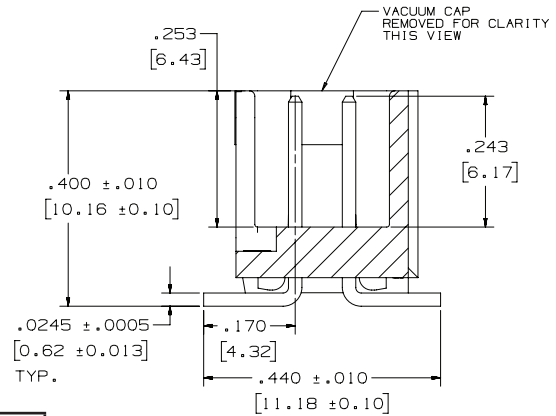
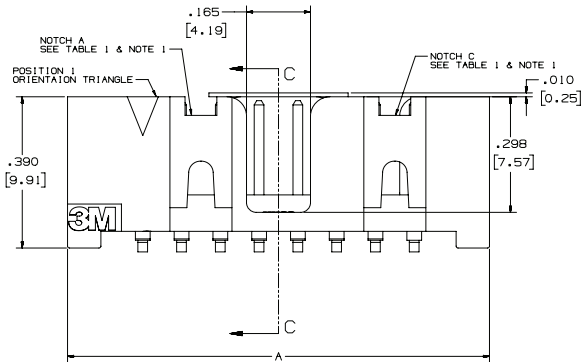
2500 Series



Inch (mm)

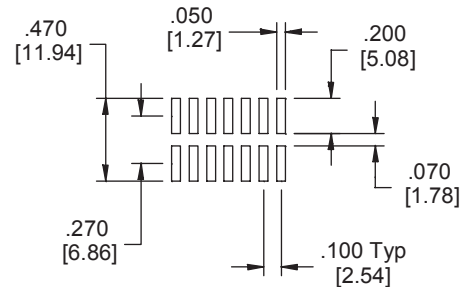
Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.01	±.005

[ ] Dimensions for Reference only



SECTION C - C

Pin Qty	Dimensions		Polarizing Notches	Tape and Reel PKG Code
	A	B		
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)
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

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

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# 3M™ Four-Wall Header

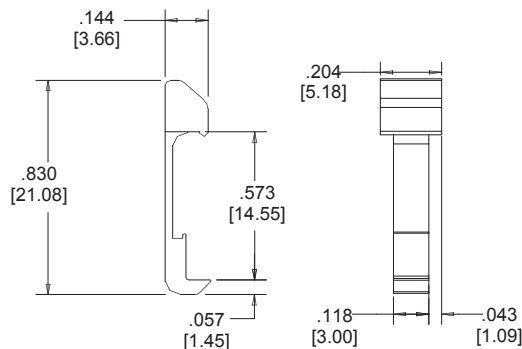
.100" x .100" Low Profile, Accessories

2500 Series

Dimensions					
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.

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



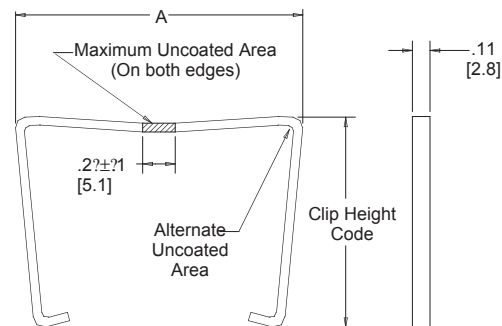
Note: Latches not compatible with reflow soldering. For reflow soldering, attach latches after soldering.

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)

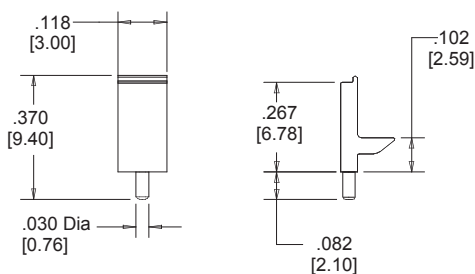
Clip Height Code  
0 = .31 [7.9] for Sockets W/O Strain Relief  
1 = .53 [13.5] for Sockets with Strain Relief



## Short/Long Socket Retainer Clip

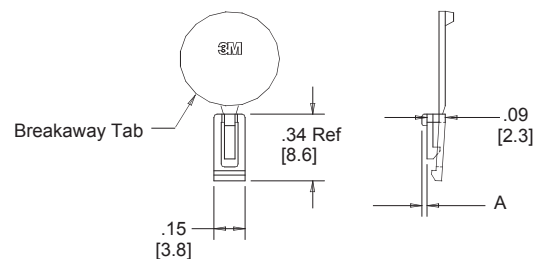
Note: Stainless steel with gray polyurethane coating.

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

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