

## Solutions for Electronic Specialty Markets (ESM)

### Product Catalog for Electronic Specialty Markets

- 3M™ Electronic Specialty Markets - New Product Releases
- 3M™ Abrasives
- 3M™ Adhesives, Cleaners & Compounds
- 3M™ Breadboards & Test Clips
- 3M™ Cable & Assemblies
- **3M™ Copper Interconnects**
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- 3M™ Identification Systems
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### [Printer-friendly format](#) **3M™ .100" x .100" 4-Wall Header, Standard, Right Angle Through-Hole, 10 Contacts, 2510-5002UB**

**.100" x .100" Low Profile, Solder tails for .062 [1.57] thick board, Mating plating thickness solder tail versions 30µ" [0.76µm].**



[\[click to enlarge\]](#)

GTIN(UPC/EAN) : 0 00 54007 82711 5  
3M Id : 80-6105-6501-4

### Additional Information

#### Learn More . . .

#### [Packaging Data](#)

[3M™ .100 in. 4-Wall Hdr,RoHS,LP,Straight&RA,HiTemp, TS0770 - Data Sheet \(PDF 1.0 MB\)](#)

[2510-5002, 3D IGES, rev. 01 - 3D Models \(ZIP 258.0 K\)](#)

[2510-5002, 3D Parasolid, rev. 01 - 3D Models \(ZIP 272.1 K\)](#)

[2510-5002, 3D Step, rev. 01 - 3D Models \(ZIP 116.6 K\)](#)

#### **Please Note:**

Adobe® Acrobat® Reader is required to view PDF documents.



### Characteristics

<b>Contact Material</b>	Brass
<b>Contact Termination Area Plating</b>	200 µ" [5.08 µm] 90/10 Tin/Lead
<b>Contact Underplating</b>	100 µ" [2.54 µm] Nickel
<b>Contact Wiping Area Plating</b>	30 µ" [0.76 µm] Gold
<b>Current Rating</b>	2 Ampere
<b>EPC Can View</b>	Public
<b>EU RoHS Compliant</b>	No
<b>Insulation Color</b>	Black
<b>Insulation Flammability Rating</b>	UL 94V-0
<b>Insulation Material</b>	Glass Filled Polyester (PBT)

<b>Insulation Resistance</b>	>1 X 10 <sup>9</sup> Ohms @ 500 Vdc
<b>Interface Grid</b>	.100" x .100"
<b>Interface Style</b>	Header (Rectangular Plug)
<b>Latch/Ejector Type</b>	None
<b>Markings</b>	3M Logo and Orientation Triangle
<b>Mounting Option</b>	None
<b>Non-Operating Temperature</b>	-55 to 105 Degree Celsius
<b>Number of Contact Rows</b>	2
<b>Number of Contacts</b>	10
<b>Number of Walls</b>	4
<b>Orientation</b>	Horizontal
<b>Pitch</b>	0.100 Inch
<b>Polarization</b>	Military & Center Bump
<b>Primary Trademark Name</b>	3M
<b>Process Temperature Rating</b>	<=235 Degrees C, with 90 Seconds over 215 Degrees C
<b>Separable</b>	Yes
<b>Tail Length</b>	.112 Inch
<b>Termination Method</b>	Solder Tail
<b>Termination Style</b>	Printed Circuit Board
<b>Withstanding Voltage</b>	1000 Vrms at Sea Level

# 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 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 regulatory information appendix (RIA) for chemical compliance information

Date Modified: March 24, 2008

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## Physical

### Insulator

**Material:** Glass Filled Polyester (PBT), Glass Filled Polyester (PCT)-High Temperature Option  
**Flammability:** UL 94V-0  
**Color:** Gray (PBT), Beige (PCT) 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

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## Electrical

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

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## 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

**3M**

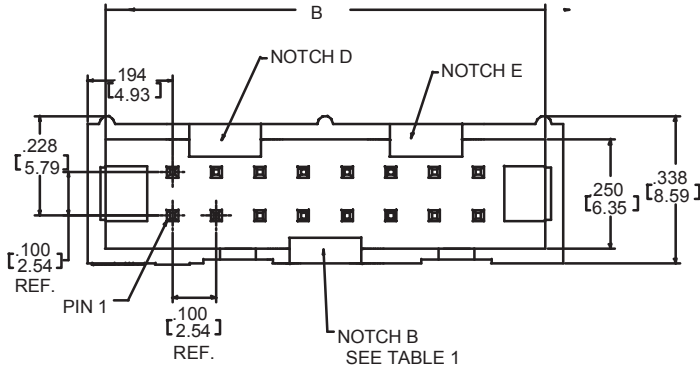
**Electronic Solutions Division**  
**Interconnect Solutions**  
<http://www.3M.com/interconnects/>

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**800-225-5373**

# 3M™ Four-Wall Header

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

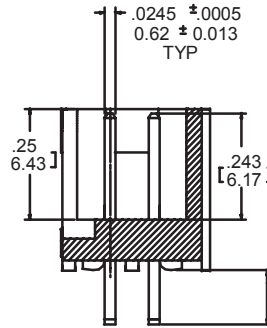
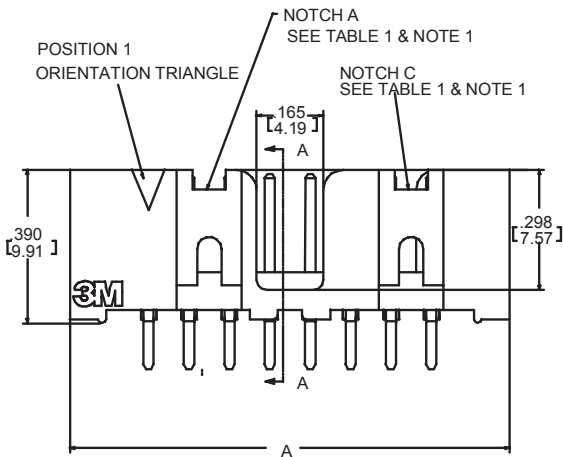
2500 Series



Inch (mm)

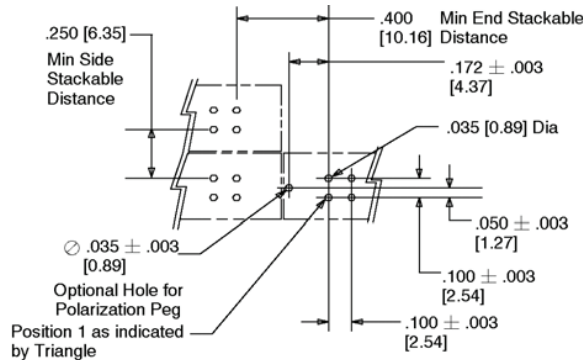
Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.01	±.005

[ ] 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	
10	.788 (20.02)	.708 (17.98)	BC
14	.988 (25.10)	.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:**

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

**X25XX-60XX-XX**

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

**Plating:**

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

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Electronic Solutions Division  
Interconnect Solutions

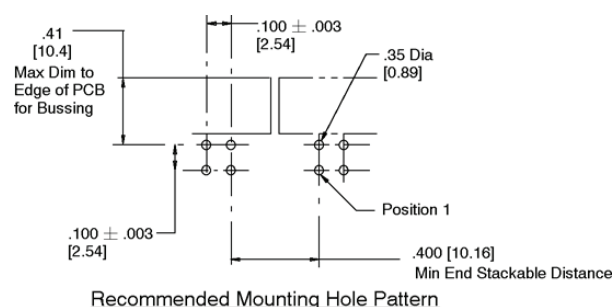
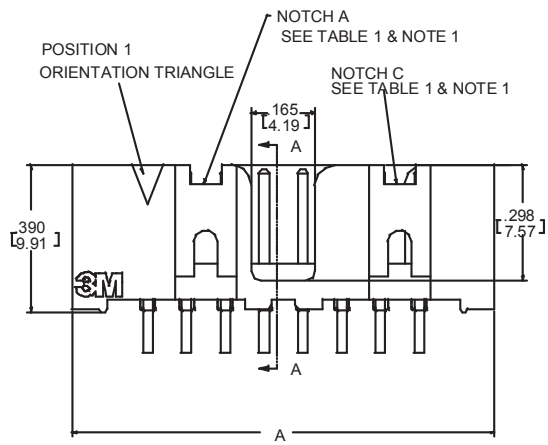
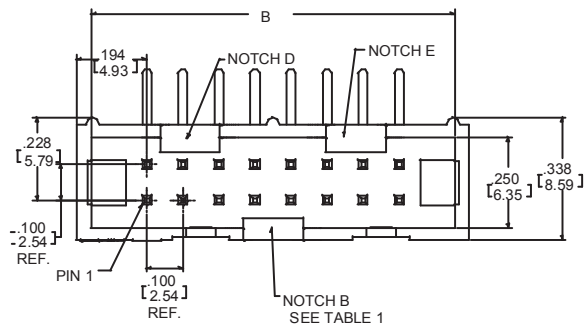
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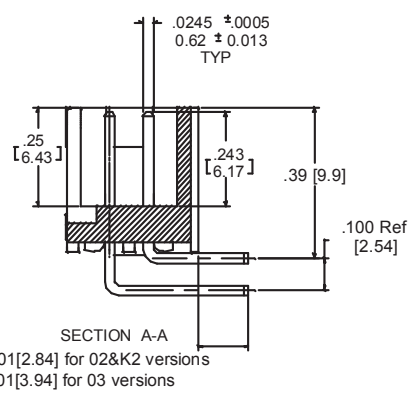
# 3M™ Four-Wall Header

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

2500 Series



Pin Qty	Dimensions		Polarizing Notches
	A	B	
10	.788 (20.02)	.708 (17.98)	BC
14	.988 (25.10)	.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
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64	3.488 (88.60)	3.408 (86.56)	ABCDE



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

**X25XX-50XX-XX**

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

Pin Quantity: (See Table 1)  
 Solder Tail  
 02 = for .062 [1.57] thick board  
 03 = for .094 to .125 [2.39 to 3.18] thick board  
 K2 = for .062 [1.57] thick board

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