

3M™ 4-Wall, Tripolarized Header

.050" × .100" Latch/Ejector, PTH & SMT Straight, PTH Right Angle

810 Series



- Tripolarization to mating socket
- 50 mil × 100 mil halves the connector length
- Latch and eject for rugged high performance applications
- Available for thru hole or surface mount attachment
- High temperature plastic
- Four-wall shroud provides contact protection
- Contacts: 20, 26, 36, 40, 50, 60, 68, 80 and 100
- RoHS* compliant version available (RB plating suffix)

Date Modified: September 2, 2005

TS-0253-29
Sheet 1 of 7

Physical

Insulation

Material: High Temperature Plastic (LCP)
Flammability: UL 94V-0
Color: Black (RoHS compliant) or Natural

Contact

Material: Copper Alloy

Plating

Underplating: 100 μ" [2.54 μm] Nickel
Wiping Area: 30 μ" [0.76 μm] Gold
Solder Tails: 300 μ" [7.6 μm] Matte Tin (RoHS compliant) or Tin-Lead (see ordering information)

Terminal Finish Indicator: e3 (ref JESD97)

Marking: 3M Logo, Part Number and Orientation Triangle

Electrical

Current Rating: 0.5 A

Insulation Resistance: $> 1 \times 10^9 \Omega$ at 500 Vdc

Withstanding Voltage: 500 Vrms at Sea Level

Environmental

Temperature Rating: -55°C to +105°C

Process Rating: Maximum 260°C (per J-STD-020C)

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

* RoHS = Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
"RoHS compliant" means that the product or part does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's knowledge and belief based upon information provided by third party suppliers to 3M.

UL File No.: E68080

3M™ 4-Wall, Tripolarized Header

.050" × .100" Latch/Ejector, PTH & SMT Straight, PTH Right Angle

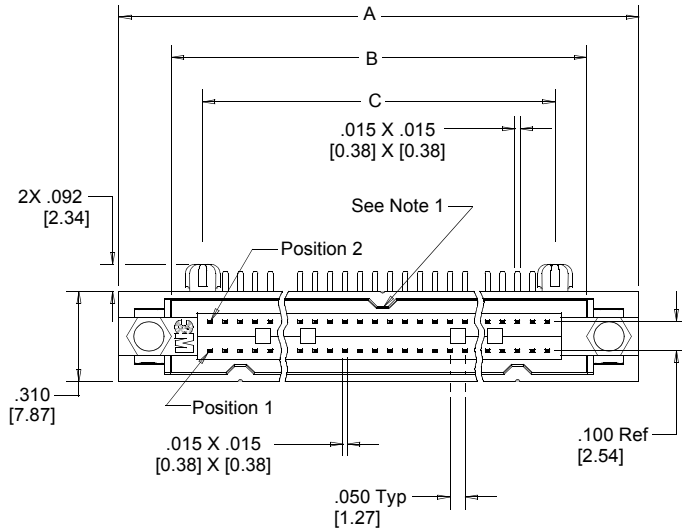
810 Series



Inch
[mm]

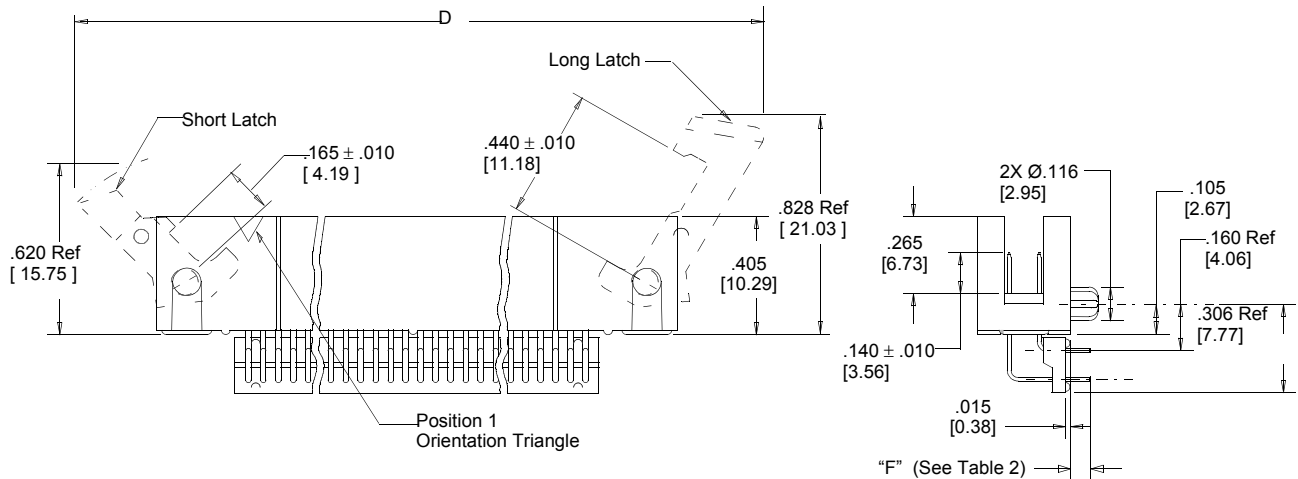
Tolerance Unless Noted			
	.0	.00	.000
inch	±.1	±.01	±.005

[] Dimensions for Reference Only



Contact Qty	Dimensions				
	A	B	C	D Short Ref	D Long Ref
020	1.060 [26.92]	.722 [18.34]	.500 [12.70]	1.671 [42.44]	1.842 [46.77]
026	1.210 [30.73]	.872 [22.15]	.850 [16.51]	1.817 [46.15]	1.987 [50.47]
036	1.460 [37.08]	1.122 [28.50]	.900 [22.86]	2.070 [52.58]	2.274 [57.76]
040	1.560 [39.62]	1.222 [31.04]	1.000 [25.40]	2.170 [55.12]	2.365 [60.07]
050	1.810 [45.97]	1.472 [37.39]	1.250 [31.75]	2.421 [61.49]	2.609 [66.27]
060	2.060 [52.32]	1.722 [43.74]	1.500 [38.10]	2.671 [67.84]	2.872 [72.95]
068	2.260 [57.40]	1.922 [48.82]	1.700 [43.18]	2.870 [72.90]	3.083 [78.31]
080	2.560 [65.02]	2.222 [56.44]	2.000 [50.80]	3.178 [80.72]	3.370 [85.60]
100	3.060 [77.72]	2.722 [69.14]	2.500 [63.50]	3.676 [93.37]	3.875 [98.43]

PCB Thickness	"F" Solder Tail Length ± .010
.062 [15.7]	.090 [2.29]
.094 [2.39]	.112 [2.79]
.125 [3.18]	.143 [3.63]



Notes:

1. This polarization bump does not exist on the 20 position header.
2. Recommended to be mated to the .050" X .100" Wiremount Socket 82XXX Series.

Ordering Information

81XXX-5X0X03-XX

Contact Quantity
(See Table 1)

Ejector/Latch System:
0 = None
5 = With Short Ejectors Installed
6 = With Long Ejector Latches Installed

Plating suffix:
blank = tin lead tails
RB = matte tin tails
(RoHS compliant)

Contact Tail:
2 = Solder Tail for .062 [1.57] PC Board
3 = Solder Tail for .094 [2.39] PC Board
4 = Solder Tail for .125 [.318] PC Board

Ejector Latch

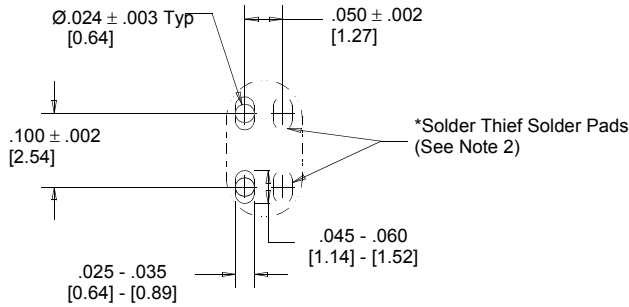
Long
3505-28 (natural)
3505-28B (black)
Short
3505-29 (natural)
3505-29B (black)

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3M™ 4-Wall, Tripolarized Header

.050" × .100" Latch/Ejector, PTH & SMT Straight, PTH Right Angle

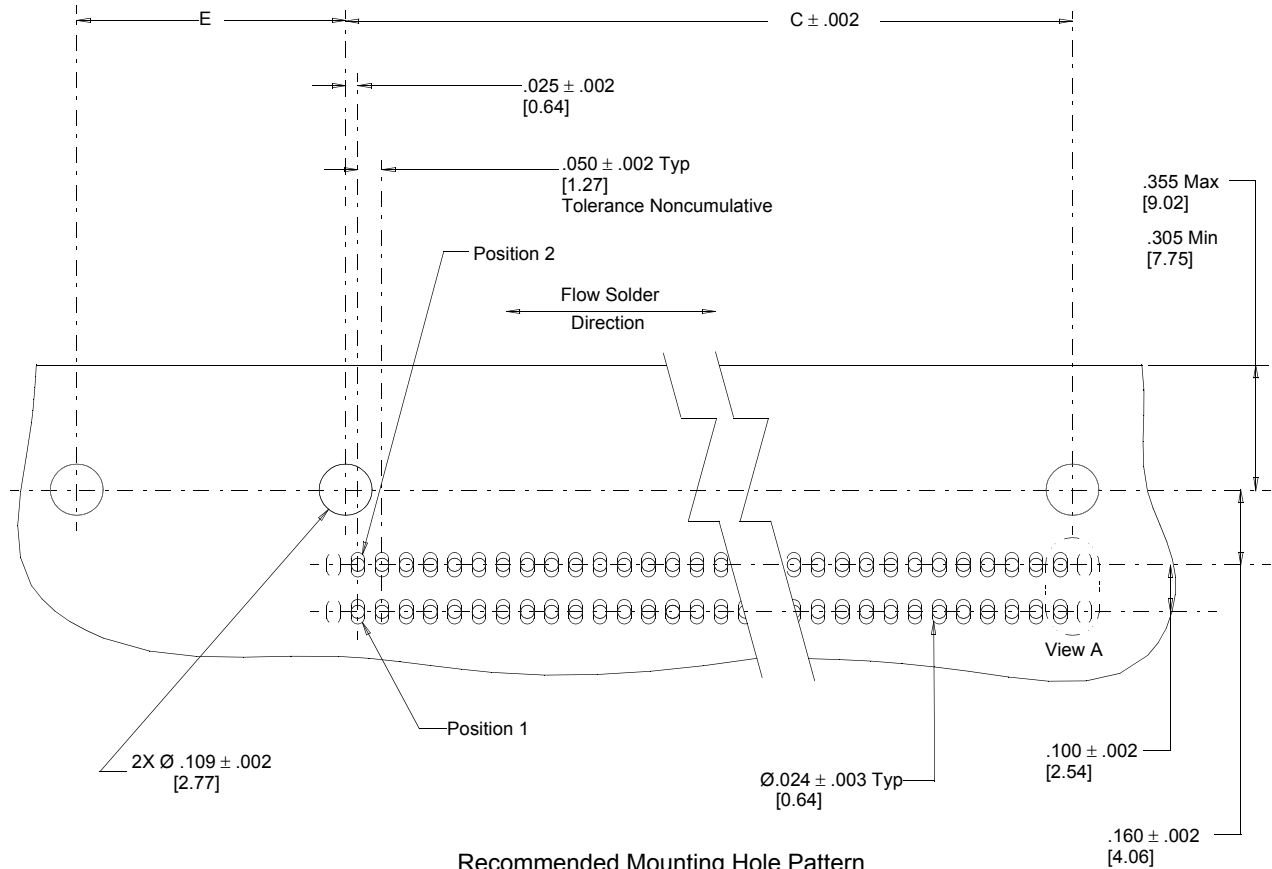
810 Series



*Solder Thief Solder Pads required only on Solder side of PC Board.

View A

Table 3	
Ejector Latches	Dimension E Min
None	.575 [14.61]
Long	1.010 [25.65]
Short	.885 [22.48]



Recommended Mounting Hole Pattern
(Shown for mounting side of PC Board)

Notes:

1. Recommended to process PC Boards through the solder bath such that the connector enters end first (two solder tails at a time). This will help prevent solder bridging.
2. A Dummy or Solder Thief Solder Pad at the end of each row is recommended on the bottom or solder side of the PC Board in order to help prevent solder bridging on the end solder tails. The solder thieves are only required on the end of the rows which leave the solder bath last.
3. In order to facilitate flow soldering. It is recommended that ejector latches be installed after the soldering process.

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Sheet 3 of 7

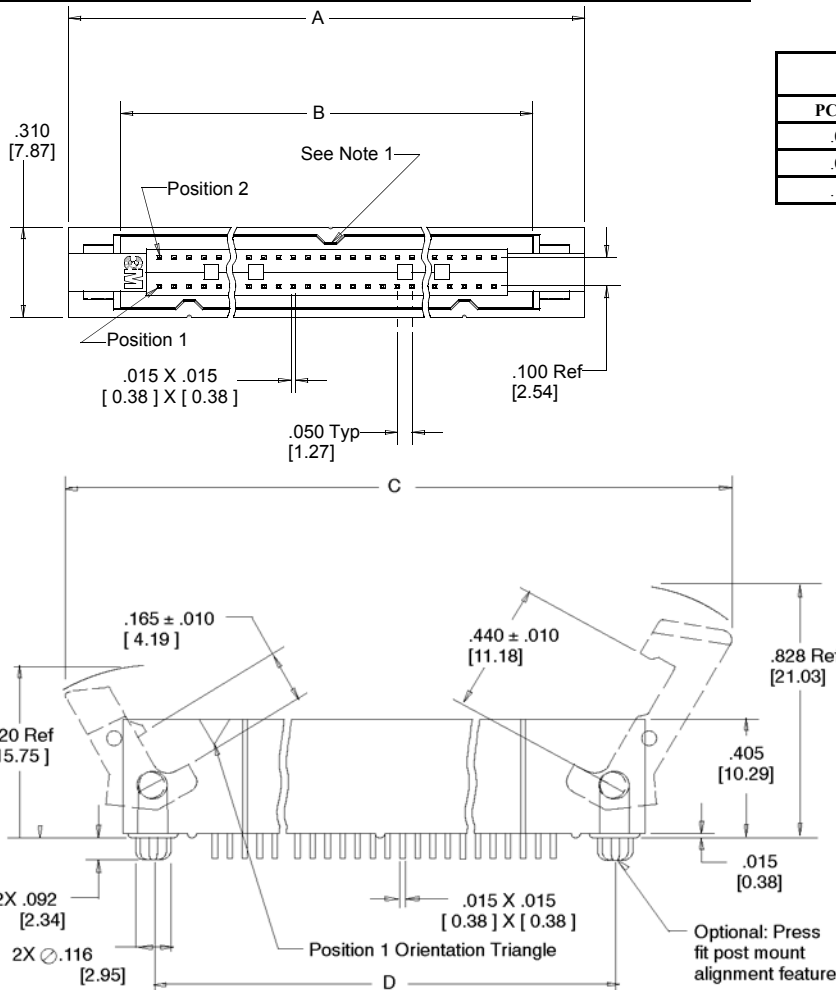
3M™ 4-Wall, Tripolarized Header

.050" × .100" Latch/Ejector, PTH & SMT Straight, PTH Right Angle

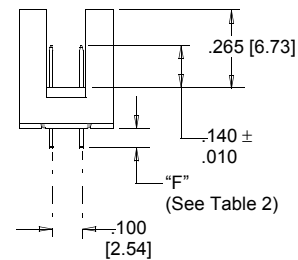
810 Series



Contact Qty	Dimensions				
	A	B	C Short Ref	C Long Ref	D
020	1.060 [26.92]	.722 [18.34]	1.671 [42.44]	1.842 [46.77]	.860 [21.84]
026	1.210 [30.73]	.872 [22.15]	1.817 [46.15]	1.987 [50.47]	1.010 [25.65]
036	1.460 [37.08]	1.122 [28.50]	2.070 [52.58]	2.274 [57.76]	1.260 [32.00]
040	1.560 [39.62]	1.222 [31.04]	2.170 [55.12]	2.365 [60.07]	1.360 [34.54]
050	1.810 [45.97]	1.472 [37.39]	2.421 [61.49]	2.609 [66.27]	1.610 [40.89]
060	2.060 [52.32]	1.722 [43.74]	2.671 [67.84]	2.872 [72.95]	1.860 [47.24]
068	2.260 [57.40]	1.922 [48.82]	2.870 [72.90]	3.083 [78.31]	2.060 [52.32]
080	2.560 [65.02]	2.222 [56.44]	3.178 [80.72]	3.370 [85.60]	2.360 [59.94]
100	3.060 [77.72]	2.722 [69.14]	3.676 [93.37]	3.875 [98.43]	2.860 [72.64]



PCB Thickness	"F" Solder Tail Length ± .010
.062 [15.7]	.090 [2.29]
.094 [2.39]	.112 [2.79]
.125 [3.18]	.143 [3.63]



- Notes:
1. This polarization bump does not exist on the 20 position header.
 2. Recommended to be mated to the .050" x .100" 82XXX Series Socket.

Ordering Information Header

81XXX-6X0X0X-XX

Contact Quantity
(See Table 1)

Ejector/Latch System:

- 0 = None
- 5 = With Short Ejectors Installed
- 6 = With Long Ejector latches Installed

Board Mounting Options:

- 1 = None
- 3 = Press fit posts both ends

Contact Tail: (See Table 2)

- 2 = Solder Tail for .062 [1.57] PC Board
- 3 = Solder Tail for .094 [2.39] PC Board
- 4 = Solder Tail for .125 [3.18] PC Board

Plating suffix:
blank = tin lead tails
RB = matte tin tails
(RoHS compliant)

Ejector Latch

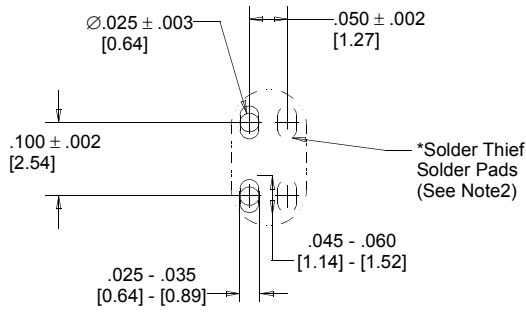
- Long
- 3505-28 (natural)
- 3505-28B (black)
- Short
- 3505-29 (natural)
- 3505-29B (black)

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Sheet 4 of 7

3M™ 4-Wall, Tripolarized Header

.050" × .100" Latch/Ejector, PTH & SMT Straight, PTH Right Angle

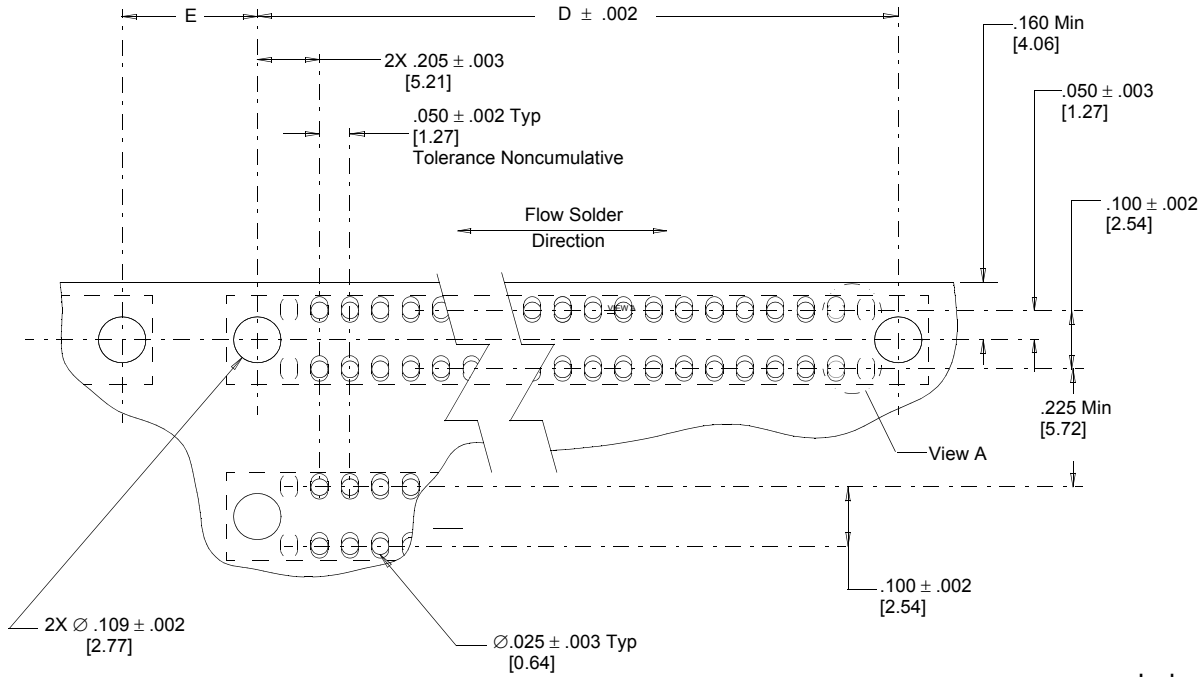
810 Series



*Solder Thief Solder Pads required only on Solder side of PC Board.

View A

Ejector/Latches	Dimension E (Min)
None	.215 [5.46]
Long	.650 [16.51]
Short	.525 [13.34]



Recommended Mounting Hole Pattern

(Shown for mounting side of PC Board)

Inch
[mm]

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

[] Dimensions for Reference Only

Notes:

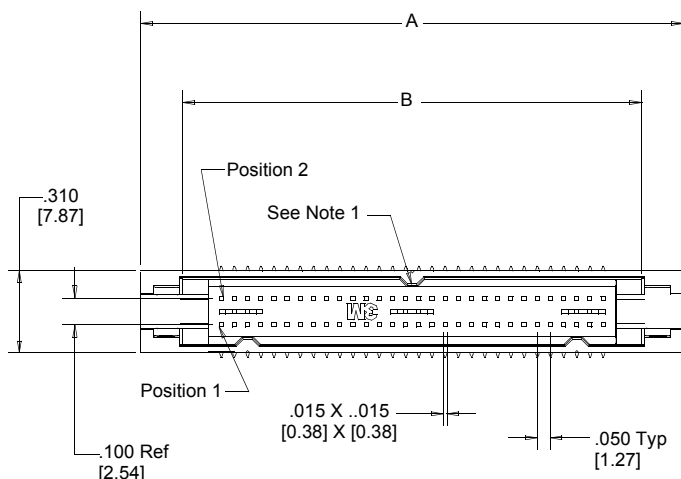
1. Recommended to process PC Boards through the solder bath such that the connector enters end first (two solder tails at a time). This will help prevent solder bridging.
2. A Solder Thief Solder Pad (Dummy Pad) at the end of each row is recommended on the bottom or solder side of the PC Board in order to help prevent solder bridging on the end solder tails. The Solder Thiefs are only required on the end of the rows which leave the solder bath last.

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Sheet 5 of 7

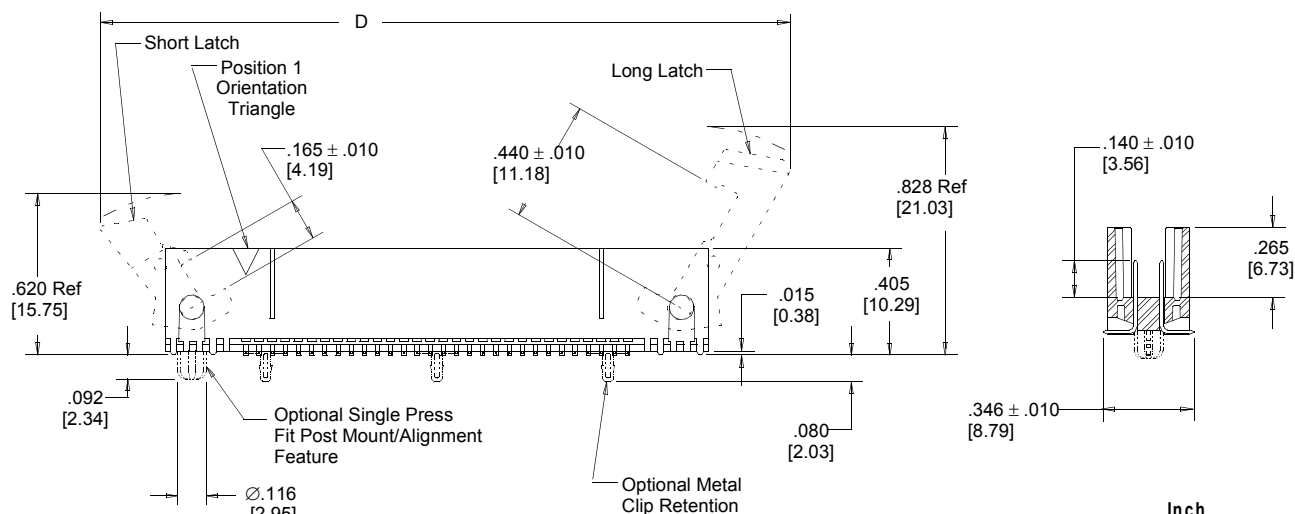
3M™ 4-Wall, Tripolarized Header

.050" × .100" Latch/Ejector, PTH & SMT Straight, PTH Right Angle

810 Series



Contact Qty	Dimensions				tape & suffix reel
	A	B	D Short Ref	D Long Ref	
020	1.060 [26.92]	.722 [18.34]	1.671 [42.44]	1.842 [46.77]	WD
026	1.210 [30.73]	.872 [22.15]	1.817 [46.15]	1.987 [50.47]	WE
036	1.460 [37.08]	1.122 [28.50]	2.070 [52.58]	2.274 [57.76]	
040	1.560 [39.62]	1.222 [31.04]	2.170 [55.12]	2.365 [60.07]	
050	1.810 [45.97]	1.472 [37.39]	2.421 [61.49]	2.609 [66.27]	WF
060	2.060 [52.32]	1.722 [43.74]	2.671 [67.84]	2.872 [72.95]	WG
068	2.260 [57.40]	1.922 [48.82]	2.870 [72.90]	3.083 [78.31]	
080	2.560 [65.02]	2.222 [56.44]	3.178 [80.72]	3.370 [85.60]	
100	3.060 [77.72]	2.722 [69.14]	3.676 [93.37]	3.875 [98.43]	WH



Inch
[mm]

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

[] Dimensions for Reference Only

Notes:

1. This polarization bump does not exist on the 20 position header.
2. Recommended to be mated to the .050" X .100" 82XXX Series Wiremount Socket.

Ordering Information

Header

81XXX-6X0C0X-XX-XX

Contact Quantity
(See Table 1)

Ejector/Latch System:
0 = None
5 = With Short Ejectors Installed
6 = With Long Ejector Latches Installed

Board Mounting Options:
1 = None
4 = Press Fit Post Mount at Position 1 end
7 = Metal retention clips
8 = #1 end press fit post & metal retention clips

Packaging Options:
Blank = Trays
WX = Tape & Reel Package
(see table)

Plating suffix:
blank = tin lead tails
RB = matte tin tails
(RoHS compliant)

Ejector Latch

Long
3505-28 (natural)
3505-28B (black)
Short
3505-29 (natural)
3505-29B (black)

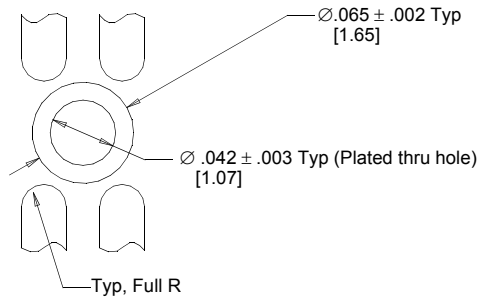
TS-0253-98
Sheet 6 of 7

3M™ 4-Wall, Tripolarized Header

.050" × .100" Latch/Ejector, PTH & SMT Straight, PTH Right Angle

810 Series

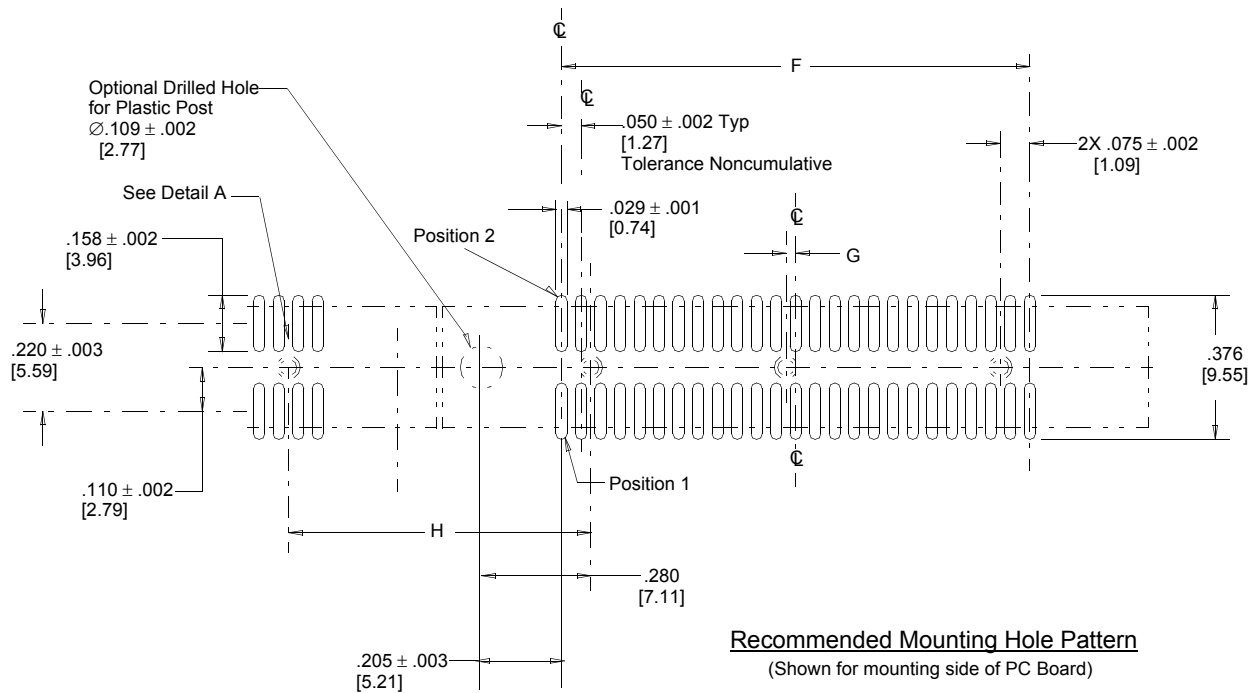
Ejector Latches	Dimensions
	H Min
No	.775 [19.69]
Short	1.085 [27.56]
Long	1.21 [30.73]



Detail A

Optional plated thru hole for metal clip retention

No. of Positions	Dimensions	
	F	G
20	.450 [11.43]	N/A
26	.600 [15.24]	N/A
36	.850 [21.59]	N/A
40	.950 [24.13]	N/A
50	1.200 [30.48]	.025 [6.35]
60	1.450 [36.83]	0.000
68	1.650 [41.91]	0.000
80	1.950 [49.53]	0.000
100	2.450 [62.23]	0.000



Recommended Mounting Hole Pattern
(Shown for mounting side of PC Board)

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