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 through hole or surfacemount attachment
- High temperature plastic
- Four-wall shroud provides contact protection
- Contacts: 20, 26, 36, 40, 50, 60, 68, 80 and 100
- See Regulatory Information Appendix (RIA) for chemical compliance information

Date Modified: October 17, 2007

Physical

Insulation	
Material:	High Temperature Plastic (LCP)
Flammability:	UL 94V-0
Color:	Black (RB Plating only) or Natural
Contact	
Material:	Copper Alloy
Plating	
Underplating:	100 μ″ [2.54 μm] Nickel
Wiping Area:	30 μ″ [0.76 μm] Gold
Solder Tails:	See Ordering Information
Marking:	3M Logo, Part Number and Orientation Triangle

Electrical

Current Rating:	0.5 A
Insulation Resistance:	$> 1 \times 10^9$ Ω at 500 V_{DC}
Withstanding Voltage:	500 V_{RMS} at Sea Level

Environmental

Temperature Rating:	-55°C to +105°C
Process Rating:	Maximum 260°C (Profile per J-STD-020C)
Moisture Sensitivity Level:	1 (per J-STD-020C)

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

Table 1					
Contact Quantity	Dimensions				
	A	B	C	D Short (Ref.)	D Long (Ref.)
020	1.060 [26.92]	0.722 [18.34]	0.500 [12.70]	1.671 [42.44]	1.842 [46.79]
026	1.210 [30.73]	0.872 [22.15]	0.650 [16.51]	1.821 [46.25]	1.992 [50.60]
036	1.460 [37.08]	1.122 [28.50]	0.900 [22.86]	2.071 [52.60]	2.242 [56.95]
040	1.560 [39.62]	1.222 [31.04]	1.000 [25.40]	2.171 [55.14]	2.342 [59.49]
050	1.810 [45.97]	1.472 [37.39]	1.250 [31.75]	2.421 [61.49]	2.592 [65.84]
060	2.060 [52.32]	1.722 [43.74]	1.500 [38.10]	2.671 [67.84]	2.842 [72.19]
068	2.260 [57.40]	1.922 [48.82]	1.700 [43.18]	2.871 [72.92]	3.042 [77.27]
080	2.560 [65.02]	2.222 [56.44]	2.000 [50.80]	3.171 [80.54]	3.342 [84.89]
100	3.060 [77.72]	2.722 [69.14]	2.500 [63.50]	3.671 [93.24]	3.842 [97.59]

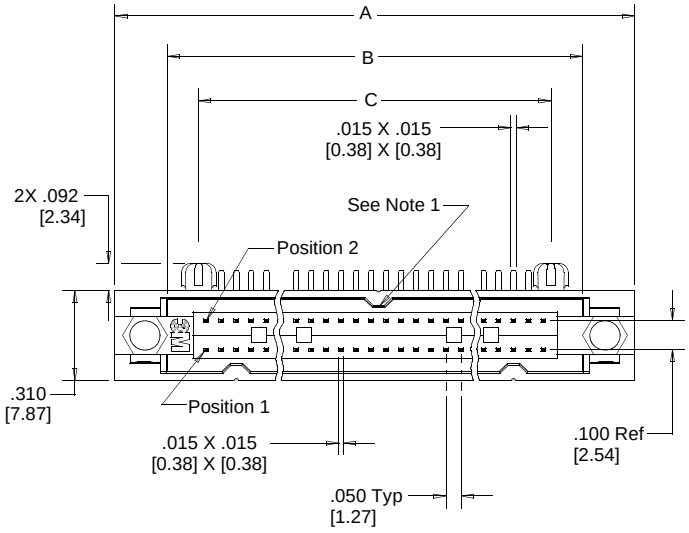
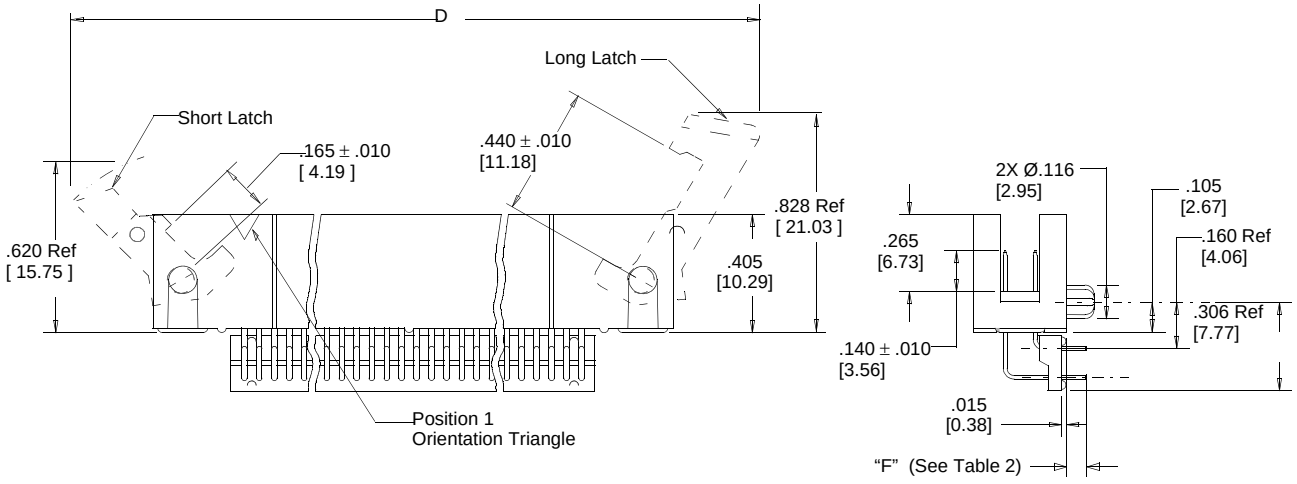


Table 2	
PCB Thickness	"F" Solder Tail Length ±.010
.062 [15.7]	.090 [2.29]
.094 [2.39]	.112 [2.84]
.125 [3.18]	.143 [3.63]



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 820 Series.

Ordering Information

PTH Right Angle Header

81XXX-5X0X03-XX

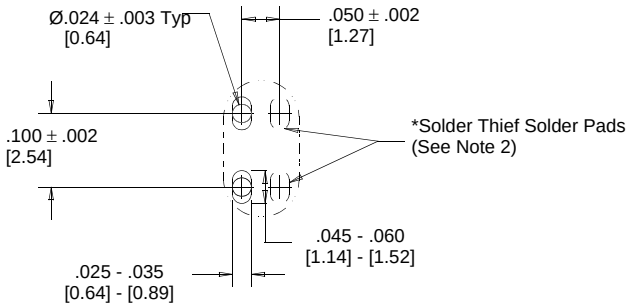
Contact Quantity (See Table 1)

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

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

Plating suffix:
blank = tin lead tails (RIA E3 & C2 apply)
RB = matte tin tails (RIA E1 & C1 apply)

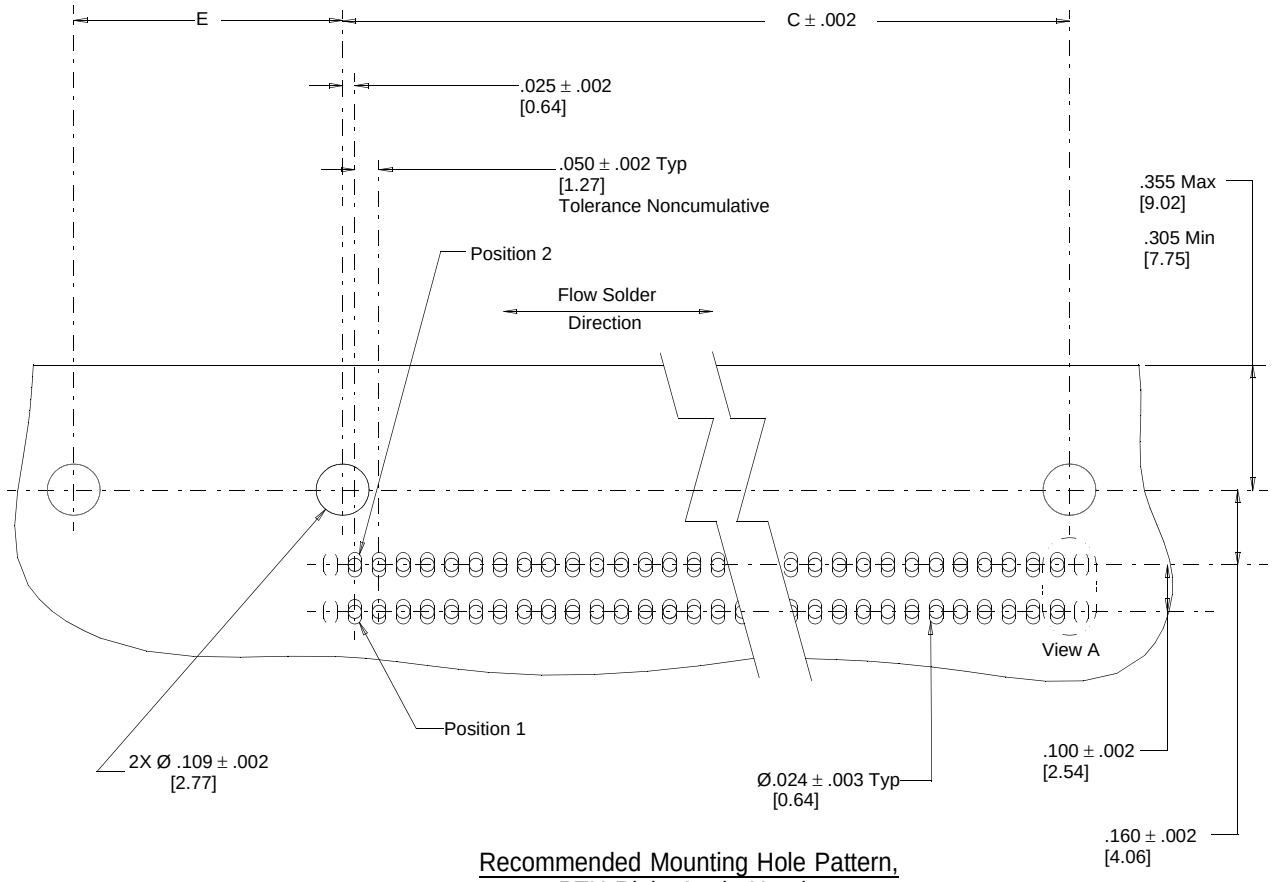
Ejector Latch
Long
3505-28 (natural)
3505-28B (black)
Short
3505-29 (natural)
3505-29B (black)



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

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

View A



Recommended Mounting Hole Pattern,
PTH Right Angle Header

(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 thiefs are only required on the end of the rows which leave the solder bath last.
3. In order to facilitate soldering it is recommended that ejector latches be installed after the soldering process.

3M™ 4-Wall, Tripolarized Header

.050″ × .100″ Latch/Ejector, PTH & SMT Straight, PTH Right Angle 810 Series

Table 4										
Contact Quantity	Dimensions									
	A		B		C Short (Ref.)		C Long (Ref.)		D	
020	1.060	[26.92]	0.722	[18.34]	1.671	[42.44]	1.842	[46.79]	0.860	[21.84]
026	1.210	[30.73]	0.872	[22.15]	1.821	[46.25]	1.992	[50.60]	1.010	[25.65]
036	1.460	[37.08]	1.122	[28.50]	2.071	[52.60]	2.242	[56.95]	1.260	[32.00]
040	1.560	[39.62]	1.222	[31.04]	2.171	[55.14]	2.342	[59.49]	1.360	[34.54]
050	1.810	[45.97]	1.472	[37.39]	2.421	[61.49]	2.592	[65.84]	1.610	[40.89]
060	2.060	[52.32]	1.722	[43.74]	2.671	[67.84]	2.842	[72.19]	1.860	[47.24]
080	2.560	[65.02]	2.222	[56.44]	3.171	[80.54]	3.342	[84.89]	2.360	[59.94]
100	3.060	[77.72]	2.722	[69.14]	3.671	[93.24]	3.842	[97.59]	2.860	[72.64]

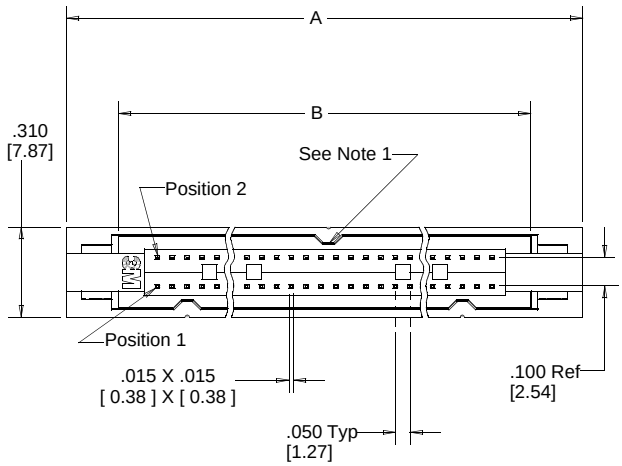
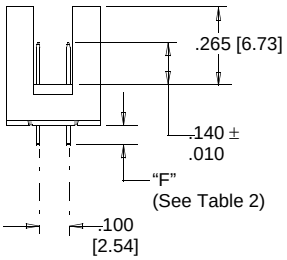
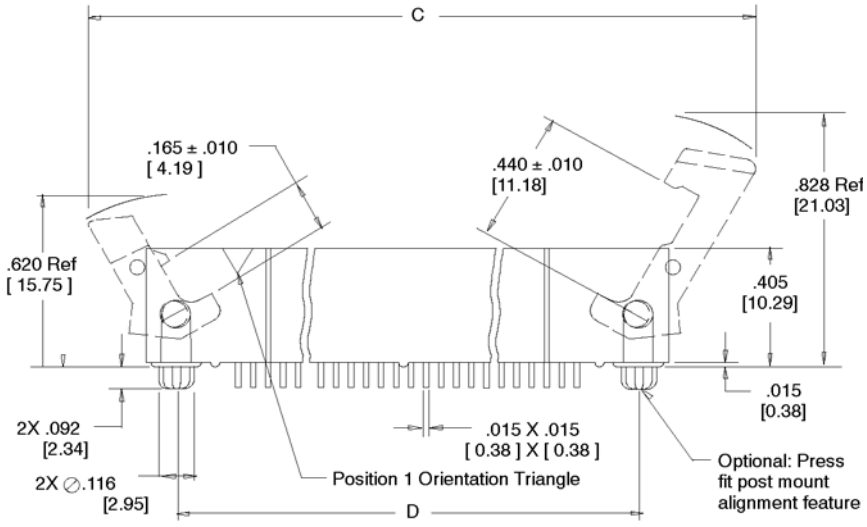


Table 5	
PCB Thickness	"F" Solder Tail Length ± .010
.062 [15.7]	.090 [2.29]
.094 [2.39]	.112 [2.84]





Notes:
1. This polarization bump does not exist on the 20 position header.
2. Recommended to be mated to the .050″ x .100″ 820 Series Socket.

Ordering Information

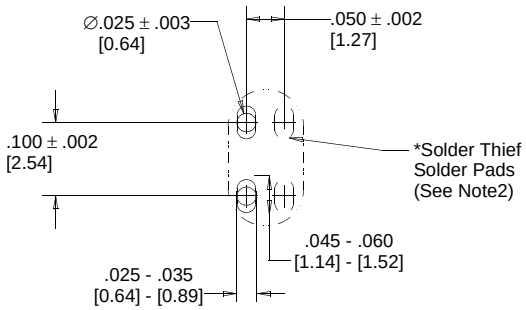
PTH Straight Header

81XXX-6X0X0X-XX

- Contact Quantity (See Table 4)
- 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 [.318] PC Board
- Plating suffix:
  blank = tin lead tails (RIA E3 & C2 apply)
  RB = matte tin tails (RIA E1 & C1 apply)

Ejector Latch

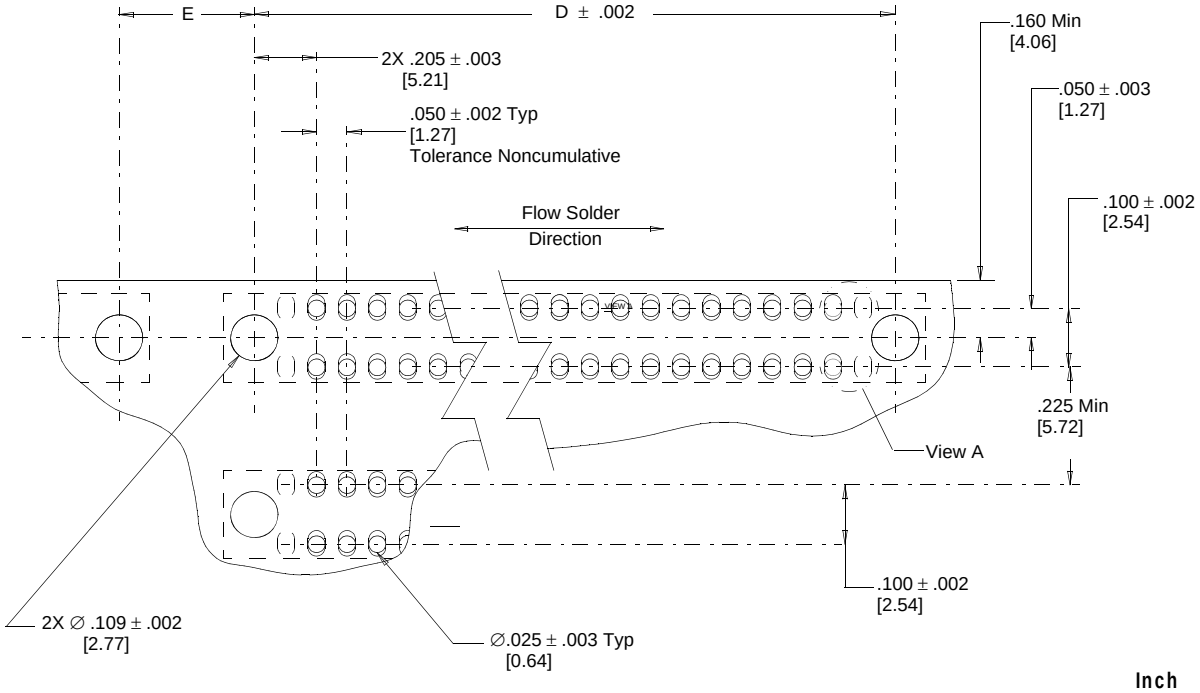
Long
3505-28 (natural)
3505-28B (black)
Short
3505-29 (natural)
3505-29B (black)



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

View A

Table 6	
Ejector/Latches	**Dimension E (Min)**
None	.215 [5.46]
Long	.650 [16.51]
Short	.525 [13.34]



Recommended Mounting Hole Pattern, PTH Vertical Header

(Shown for mounting side of PC Board)

Inch

[mm]

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

[ ] Dimensions for Reference Only

Note:

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.

3M™ 4-Wall, Tripolarized Header

.050″ × .100″ Latch/Ejector, PTH & SMT Straight, PTH Right Angle 810 Series

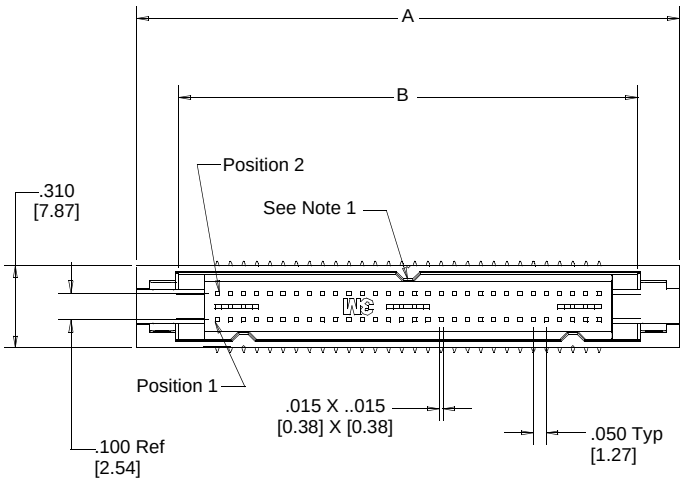
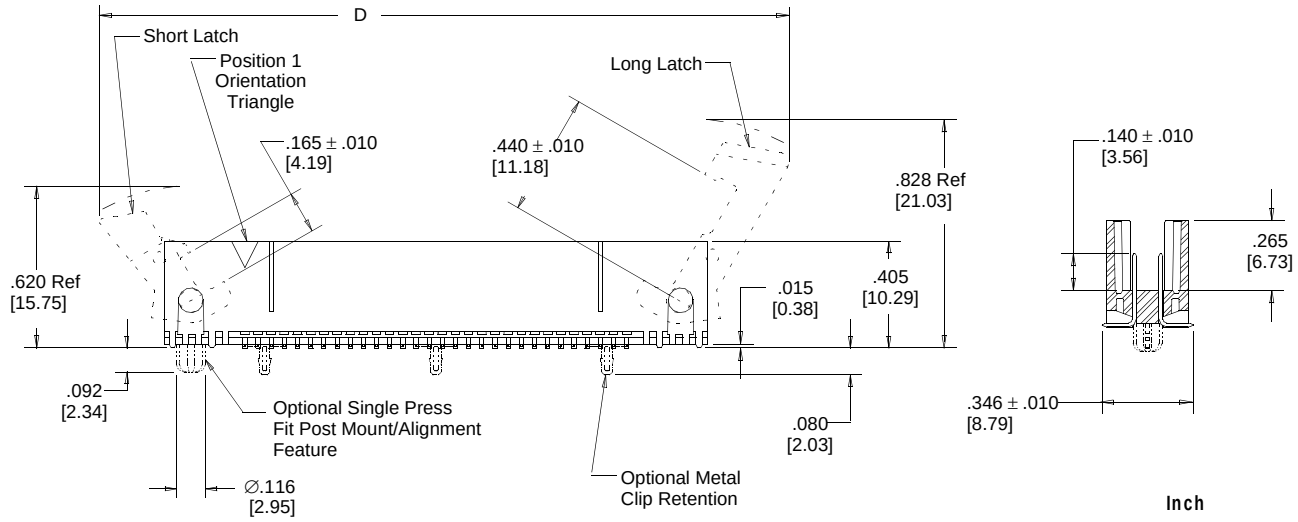


Table 7

Contact Quantity	Dimensions				
	A	B	D Short (Ref.)	D Long (Ref.)	Tape & Reel Suffix
020	1.060 [26.92]	0.722 [18.34]	1.671 [42.44]	1.842 [46.79]	WD
026	1.210 [30.73]	0.872 [22.15]	1.821 [46.25]	1.992 [50.60]	WE
036	1.460 [37.08]	1.122 [28.50]	2.071 [52.60]	2.242 [56.95]	
040	1.560 [39.62]	1.222 [31.04]	2.171 [55.14]	2.342 [59.49]	
050	1.810 [45.97]	1.472 [37.39]	2.421 [61.49]	2.592 [65.84]	WF
060	2.060 [52.32]	1.722 [43.74]	2.671 [67.84]	2.842 [72.19]	
068	2.260 [57.40]	1.922 [48.82]	2.871 [72.92]	3.042 [77.27]	WG
080	2.560 [65.02]	2.222 [56.44]	3.171 [80.54]	3.342 [84.89]	
100	3.060 [77.72]	2.722 [69.14]	3.671 [93.24]	3.842 [97.59]	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″ 820 Series Wiremount Socket.

Ordering Information

SMT Straight Header

81XXX-6X0C0X-XX-XX

- Contact Quantity (See Table 7)
- 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
- Plating suffix:
  blank = tin lead tails (RIA E3 & C2 apply)
  RB = matte tin tails (RIA E1 & C1 apply)
- Packaging Options:
  Blank = Trays
  WX = Tape & Reel Package (see table)

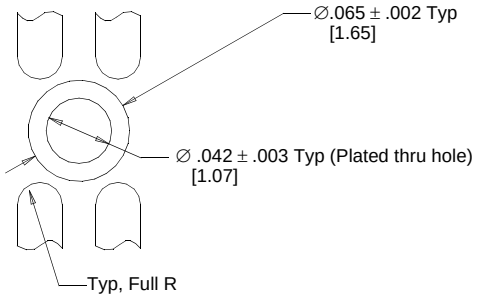
Ejector Latch
Long
3505-28 (natural)
3505-28B (black)
Short
3505-29 (natural)
3505-29B (black)

3M™ 4-Wall, Tripolarized Header

.050″ × .100″ Latch/Ejector, PTH & SMT Straight, PTH Right Angle 810 Series

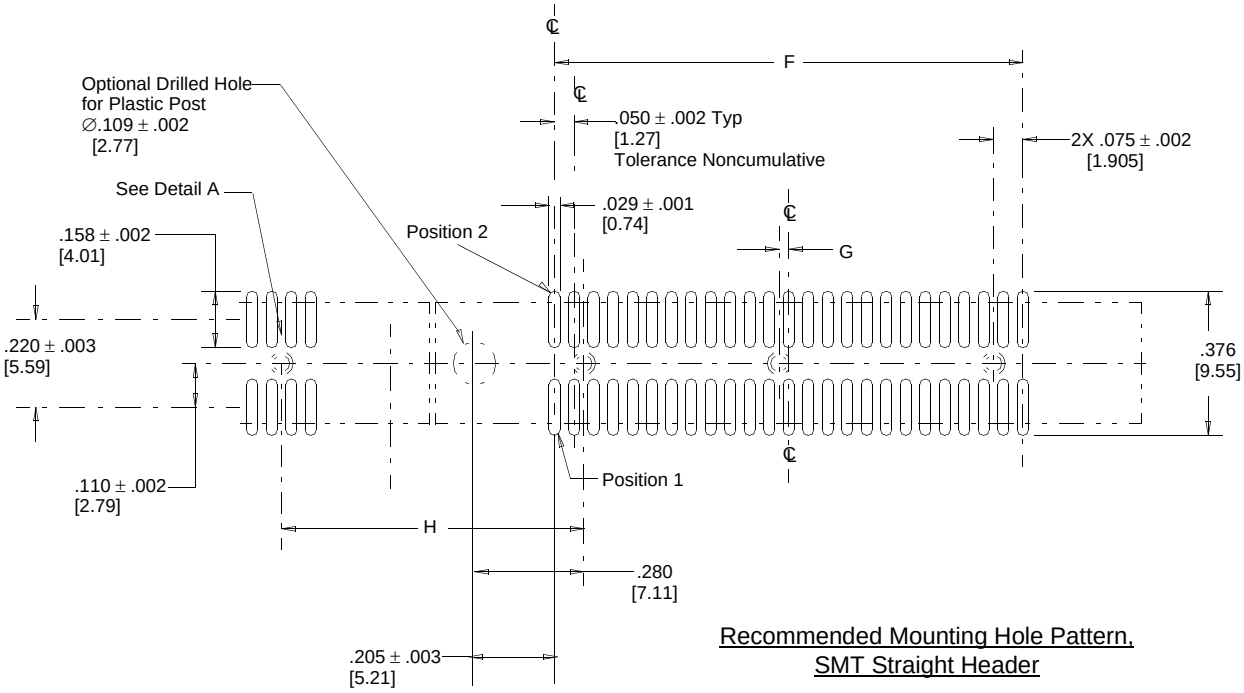
Ejector Latches	Dimensions
	H Min
No	.775 [19.69]
Short	1.085 [27.56]
Long	1.21 [30.73]

No. of Positions	Dimensions	
	F	G
20	.450 [11.43]	N/A
26	.600 [15.24]	.025 [0.64]
36	.850 [21.59]	N/A
40	.950 [24.13]	N/A
50	1.200 [30.48]	.025 [.64]
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



Detail A

Optional plated thru hole
for metal clip retention



Recommended Mounting Hole Pattern,
SMT Straight Header

(Shown for mounting side of PC Board)

Regulatory Information Appendix

3M Electronic Solutions Division/Interconnect

EUROPE

Appendix E1: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

This product is RoHS Compliant 2005/95/EC.

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix E2: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

This product contains lead in the compliant pin area in excess of the maximum concentration value allowed but is compliant by exemption under EU Commission Decision 2005/747/EC.

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix E3: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment as amended by Commission Decision 2005/618/EC.

This product contains lead in the solder tail area in excess of the maximum concentration value allowed.

Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix E4: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

This product contains decaBDE in the insulating material in excess of the maximum concentration value allowed but is compliant by exemption under EU Commission Decision 2005/717/EC.

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.product Warranty stated below.

Appendix E5: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

This product contains lead in excess of the maximum concentration value allowed but is compliant by exemption under Item 6 of the Annex to the Directive.

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

CHINA

Appendix C1: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.
This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, 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: (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 best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix C2: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.
This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (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 best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product's life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量 Name and Content of Hazardous Substances or Elements

部件名称 (Part or Component Name)	有毒有害物质或元素 (Hazardous Substances or Elements)					
	铅(Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
端子镀层(contact plating)	×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)

Appendix C3: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.

This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (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 best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product's life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量 Name and Content of Hazardous Substances or Elements

部件名称 (Part or Component Name)	有毒有害物质或元素 (Hazardous Substances or Elements)					
	铅(Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
合金(Metal alloy)	×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)

Important Notice

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