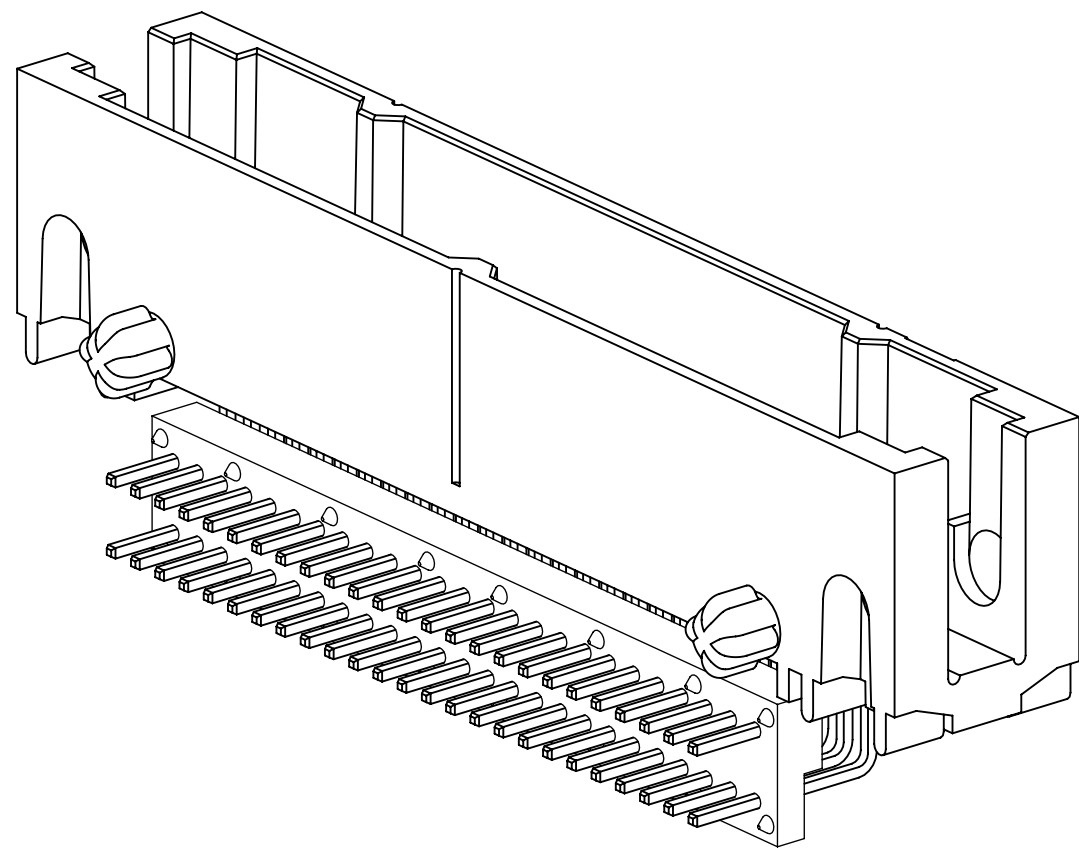
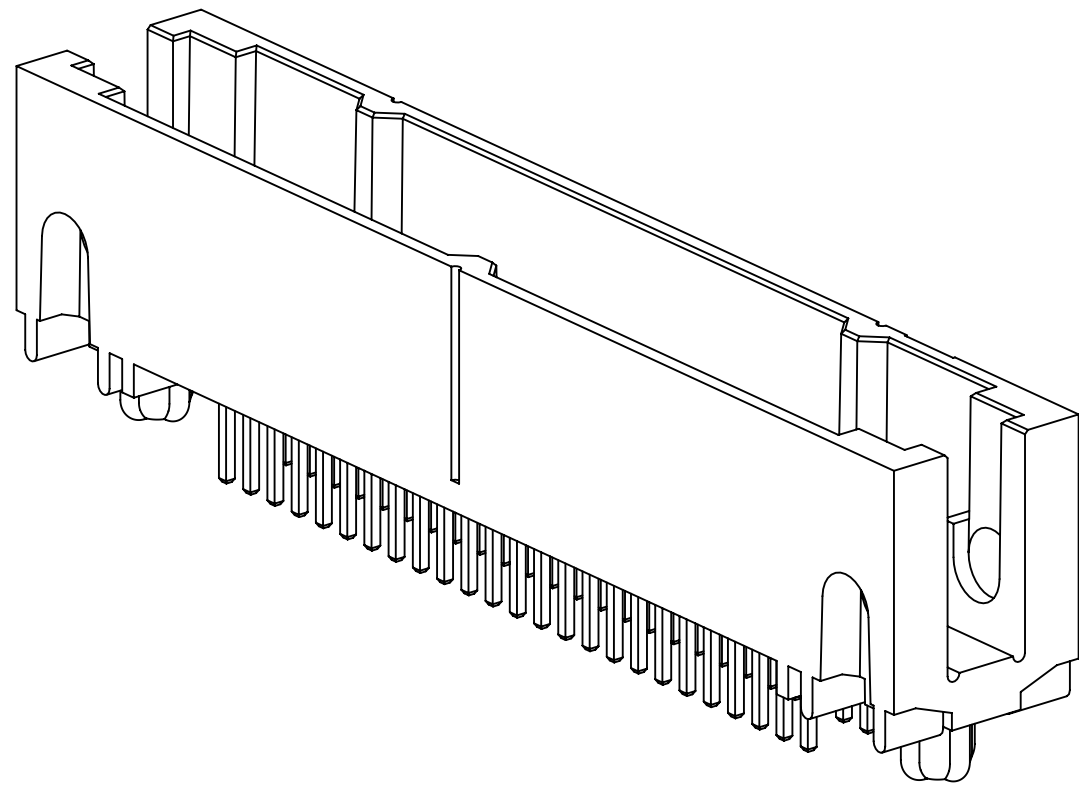


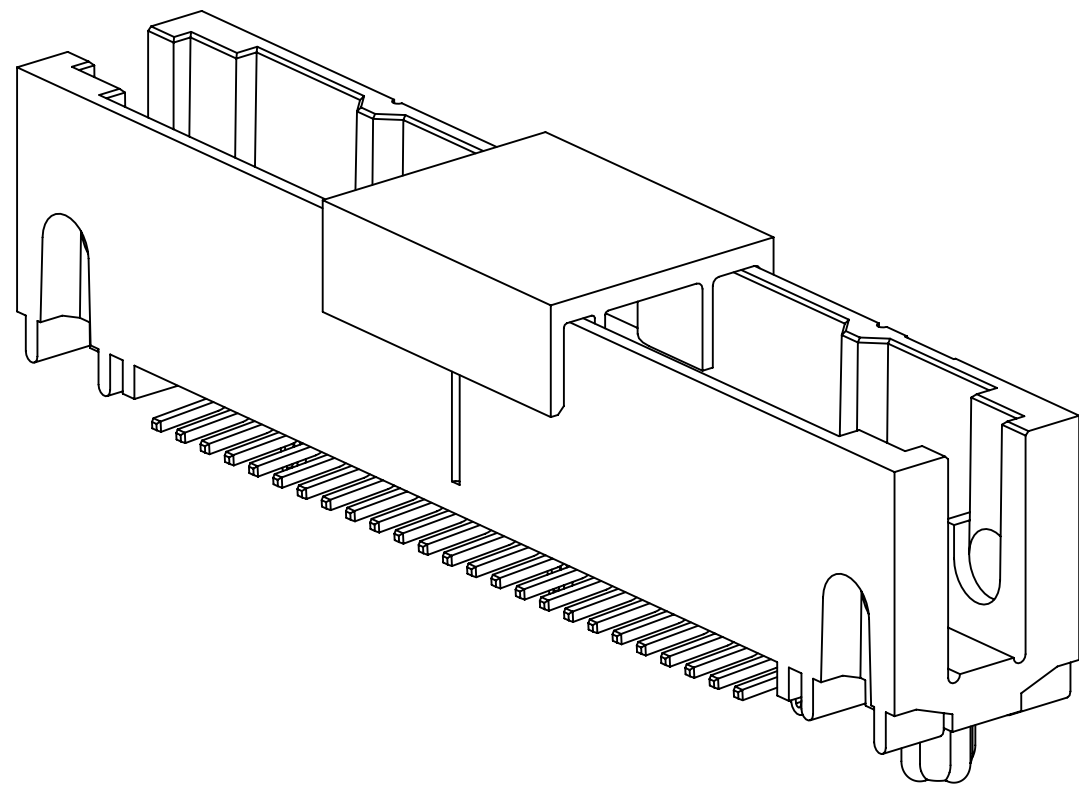
3M™ 4-WALL, TRIPOLARIZED HEADER, 810 SERIES
.050" X .100" LATCH/EJECTOR, PTH AND SMT STRAIGHT, PTH RIGHT ANGLE



RIGHT ANGLE
VERSION
81XXX-5X0X03



STRAIGHT
VERSION
81XXX-6X0X0X



SURFACEMOUNT
VERSION
81XXX-6X0C0X

3M ELECTRONICS MATERIALS SOLUTIONS DIVISION
INTERCONNECT SOLUTIONS
<http://www.3M.com/interconnect>

3M IS A TRADEMARK OF 3M COMPANY.
FOR TECHNICAL, SALES OR ORDERING
INFORMATION CALL 800-225-5373

- * TRIPOLARIZED FOR ROBUST ALIGNMENT WHEN MATING TO 3M™ 820 SERIES SOCKET.
- * .050" X .100" HALVES THE CONNECTOR LENGTH VS. TRADITIONAL .100" X .100" PRODUCTS.
- * LATCHING EJECTOR FOR RUGGED HIGH PERFORMANCE APPLICATIONS.
- * AVAILABLE FOR THROUGH HOLE OR SURFACEMOUNT ATTACHMENT.
- * HIGH TEMPERATURE PLASTIC FOR LEAD FREE SURFACEMOUNT OR PASTE-IN-HOLE SOLDERING METHODS.
- * FOUR-WALL SHROUD PROVIDES CONTACT PROTECTION.

2 PHYSICAL :

INSULATION: HIGH TEMPERATURE PLASTIC (LCP)
MATERIAL: UL94V-0
FLAMMABILITY: BLACK
COLOR: BLACK
CONTACT: COPPER ALLOY
MATERIAL: COPPER ALLOY
PLATING: 50μ"-150μ" [1.27μm-3.81μm] NICKEL-OVERALL
UNDER PLATING: 30μ" [0.76μm] GOLD AVG.
WIPING AREA: 100μ"-300μ" [2.54μm-7.62μm] MATTE TIN
MARKINGS: 3M LOGO, PART No. AND ORIENTATION TRIANGLE

2 ELECTRICAL :

CURRENT RATING: 3.00 A, 1 CONTACT POWERED
2.00 A, 4CONTACTS POWERED
0.75 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 10⁹Ω AT 500 V_{DC}
WITHSTANDING VOLTAGE: 500V_{RMS} AT SEA LEVEL

2 ENVIRONMENTAL :

TEMPERATURE RATING: -55°C TO +105°C
PROCESS RATING: MAXIMUM 260°C
MOISTURE SENSITIVITY LEVEL: 1 (PER J-STD-020C)

- NOTES
1. REGULATORY INFORMATION:
VISIT 3M.com/regs
 2. UNLESS OTHERWISE NOTED, REFERENCES TO INDUSTRY SPECIFICATIONS ARE INTENDED TO INDICATE SUBSTANTIAL COMPLIANCE TO THE MATERIAL ELEMENTS OF THE SPECIFICATION. SUCH REFERENCES SHOULD NOT BE CONSTRUED AS A GUARANTEE OF COMPLIANCE TO ALL REQUIREMENTS IN A GIVEN SPECIFICATION.
 3. THIS POLARIZING SLOT DOES NOT EXIST ON THE 20 POSITION HEADER.
 4. RECOMMENDED TO BE MATED TO THE .050" X .100" 3M™ 820XX SERIES SOCKETS, TS-0254.
 5. SOLDER THIEF SOLDER PADS REQUIRED ONLY ON SOLDER SIDE OF PC BOARD.
 6. 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 THE SOLDER BATH LAST.
 7. RECOMMENDED TO PROCESS PC BOARDS THROUGH THE SOLDER BATH SUCH THAT THE CONNECTOR ENTERS END FIRST (TWO SOLDER TAILS AT A TIME). THIS WILL PREVENT SOLDER BRIDGING.
 8. IN ORDER TO FACILITATE SOLDERING IT IS RECOMMENDED THAT EJECTOR LATCHES BE INSTALLED AFTER THE SOLDERING PROCESS.

DIMENSIONS: INCHES [MM]
[MM] IS REF. ONLY

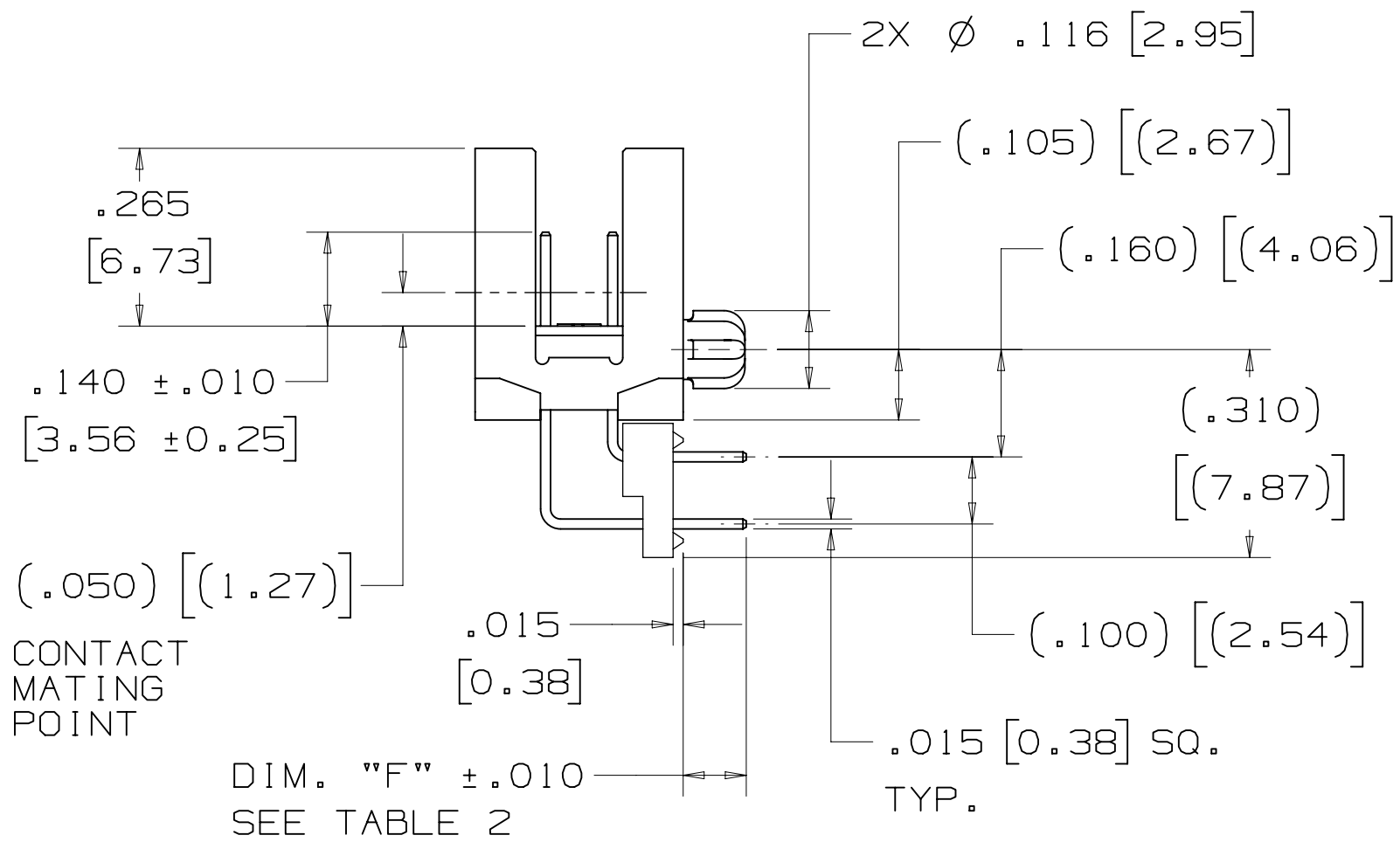
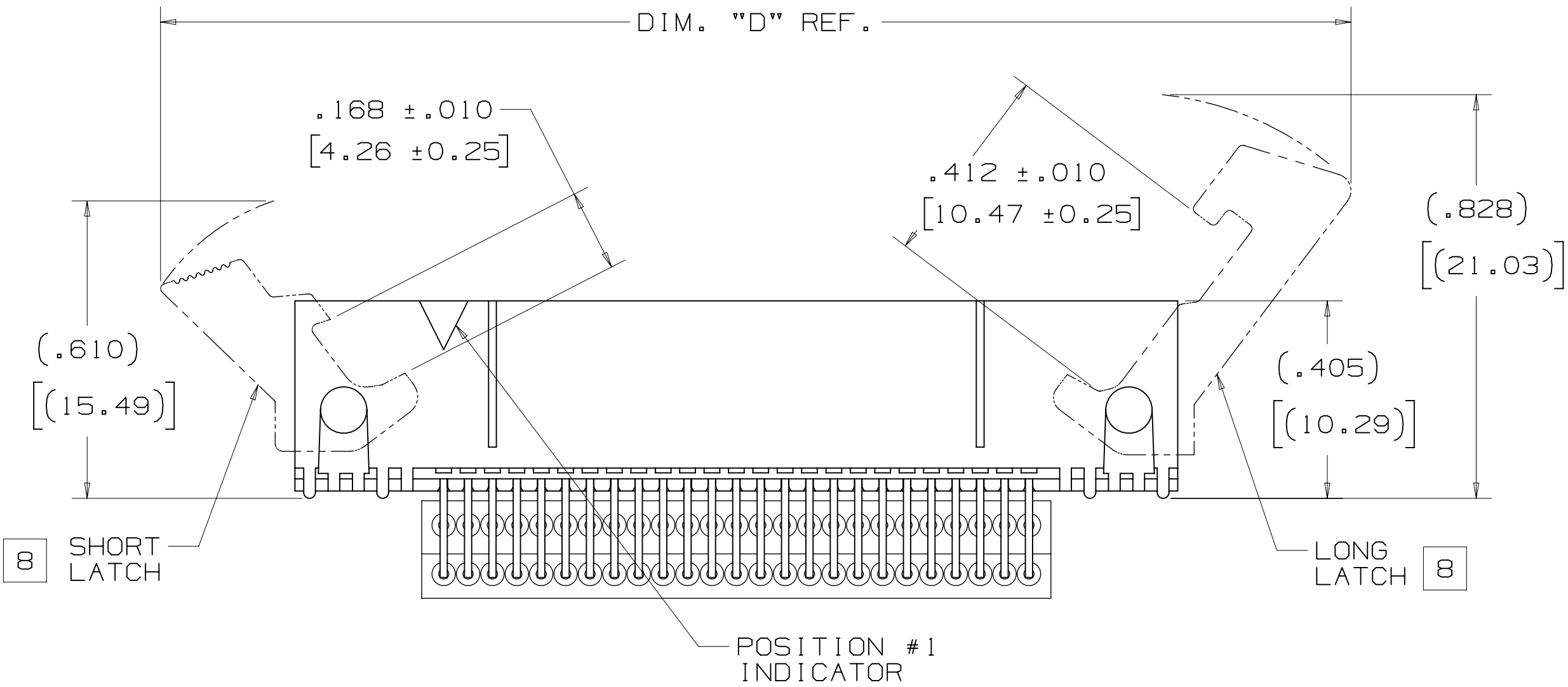
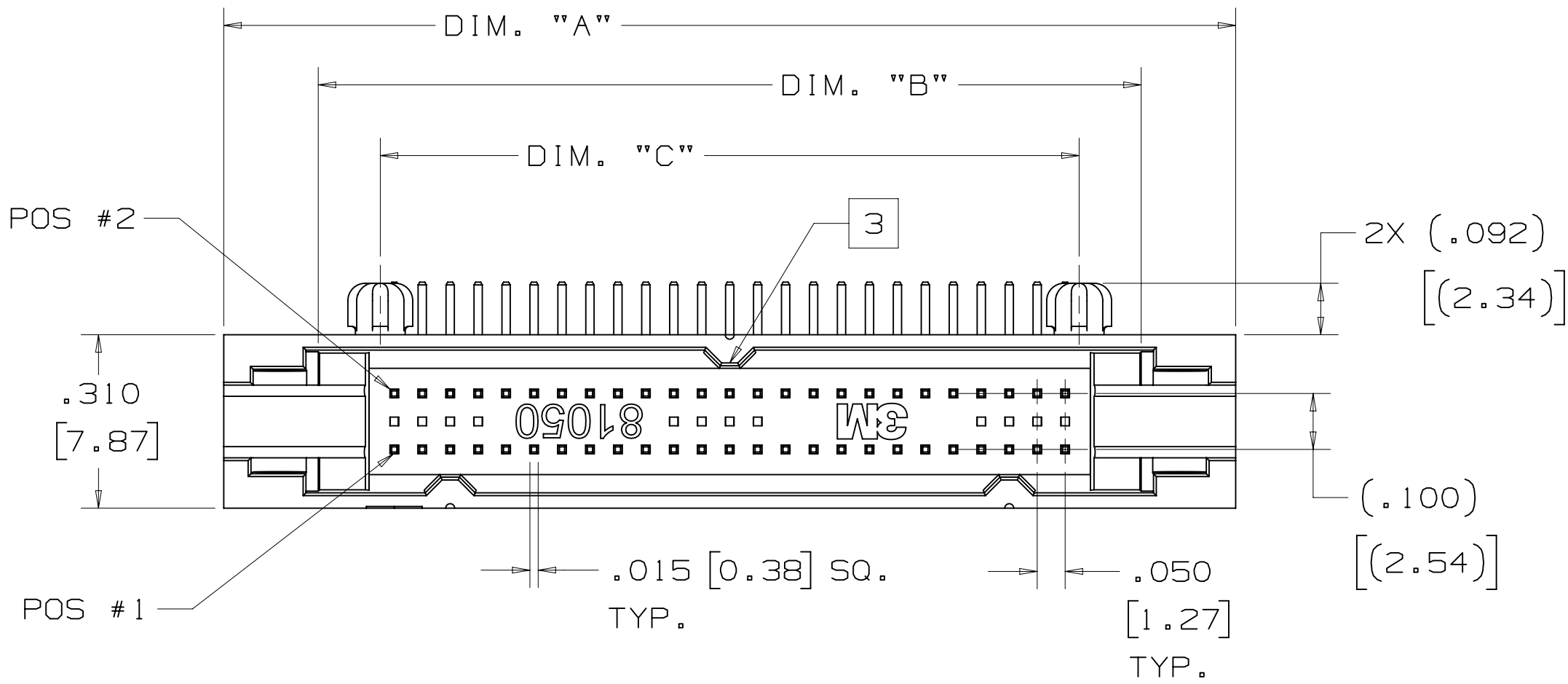
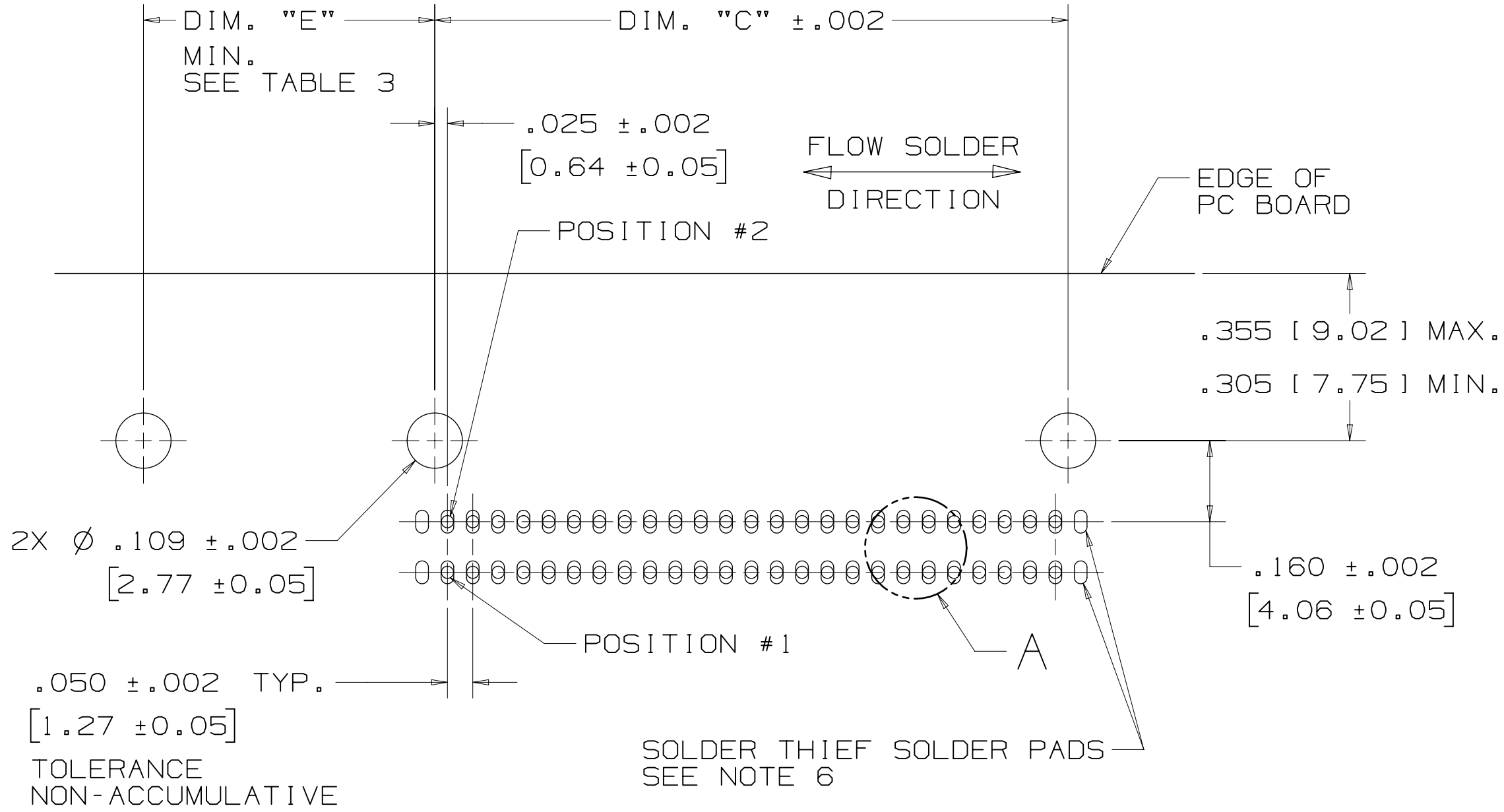
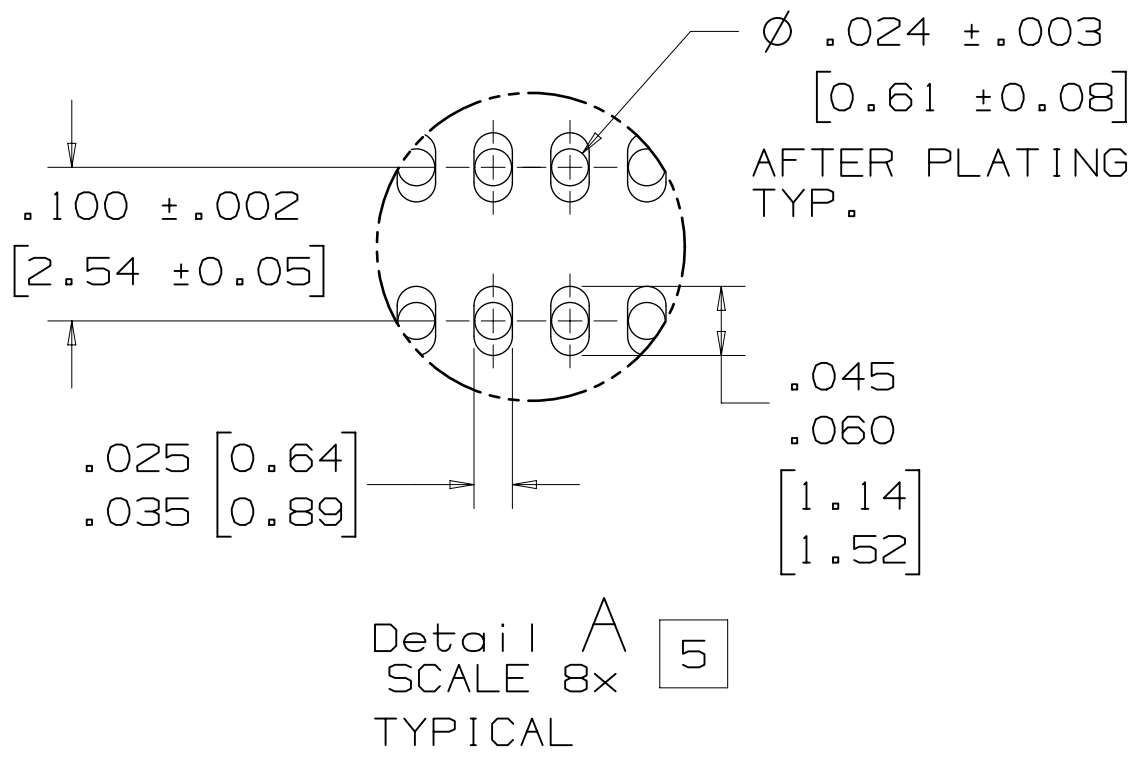
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ADDRESS CODES				DRT1 CAST IGL 1 ONE		DATE JAN 13, 2022		MFG	DATE
				CHKD		DATE		ASPL S - NEU	DATE JAN 13, 2022
DIVISION		DIVISION CODE EMSD		3M 3M Center St. Paul, MN 55144		© 3M COPYRIGHT 2022 This document and the information it contains are 3M property and may not be reproduced or further distributed without 3M permission, or used or disclosed other than for 3M authorized purposes. All rights reserved.			
DO NOT SCALE DRAWING		TOLERANCES EXCEPT AS NOTED							
		INCHES		TITLE TRIPOLARIZED HEADER, 4-WALL, LATCH/EJECT, .050" X .100"					
		.00 ± .01 .00 ± .01 .000 ± .005 .0000 ± .0002							
THIRD ANGLE PROJECTION		MILLIMETERS		CAGE NUMBER SIZE DRAWING NO. REV. D 78-5100-0253-4 L					
INTERPRET PER ASME Y14.5 - 2018		.00 ± .00 ± .000 ± .000 ±							
MAX SURFACE ROUGHNESS		SURFACES		MODEL 810 DET. LISTS ☐ YES ☒ NO SHT 1 OF 5					
☒ MARKED ONLY		ANGLES							

3M™ 4-WALL, TRIPOLARIZED HEADER, 810 SERIES
.050" X .100" LATCH/EJECTOR, PTH AND SMT STRAIGHT, PTH RIGHT ANGLE

TABLE 1					
CONTACT QTY.	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D" SHORT	DIM. "D" LONG
020	1.060 [26.92]	.722 [18.34]	.500 [12.70]	1.671 [42.44]	1.842 [46.79]
026	1.210 [30.73]	.872 [22.15]	.650 [16.51]	1.821 [46.25]	1.992 [50.60]
036	1.460 [37.80]	1.122 [28.50]	.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	DIM. "F"
.062 [1.57]	.090 [2.29]
.094 [2.39]	.112 [2.84]
.125 [3.18]	.143 [3.63]

TABLE 3	
ADJACENT CONNECTOR	
EJECTOR LATCHES	DIM. "E"
NONE	.575 [14.61]
LONG	1.010 [25.65]
SHORT	.885 [22.48]



ORDERING INFORMATION

PTH RIGHT ANGLE HEADER

81XXX-5X0X03-RB

CONTACT QTY:
(SEE TABLE 1)

CONTACT SOLDER TAIL:
2 = FOR .062 [1.75] PC BOARD (STANDARD)
3 = FOR .094 [2.39] PC BOARD (SPECIAL ORDER)
4 = FOR .125 [3.18] PC BOARD (SPECIAL ORDER)

EJECTOR/LATCH SYSTEM:
0 = NONE (SPECIAL ORDER)
5 = WITH SHORT EJECTORS INSTALLED (SPECIAL ORDER)
6 = WITH LONG EJECTORS INSTALLED (STANDARD)

EJECTOR LATCHES

(IF ORDERED SEPARATELY)

LONG LATCHES: 3505-28
SHORT LATCHES: 3505-29

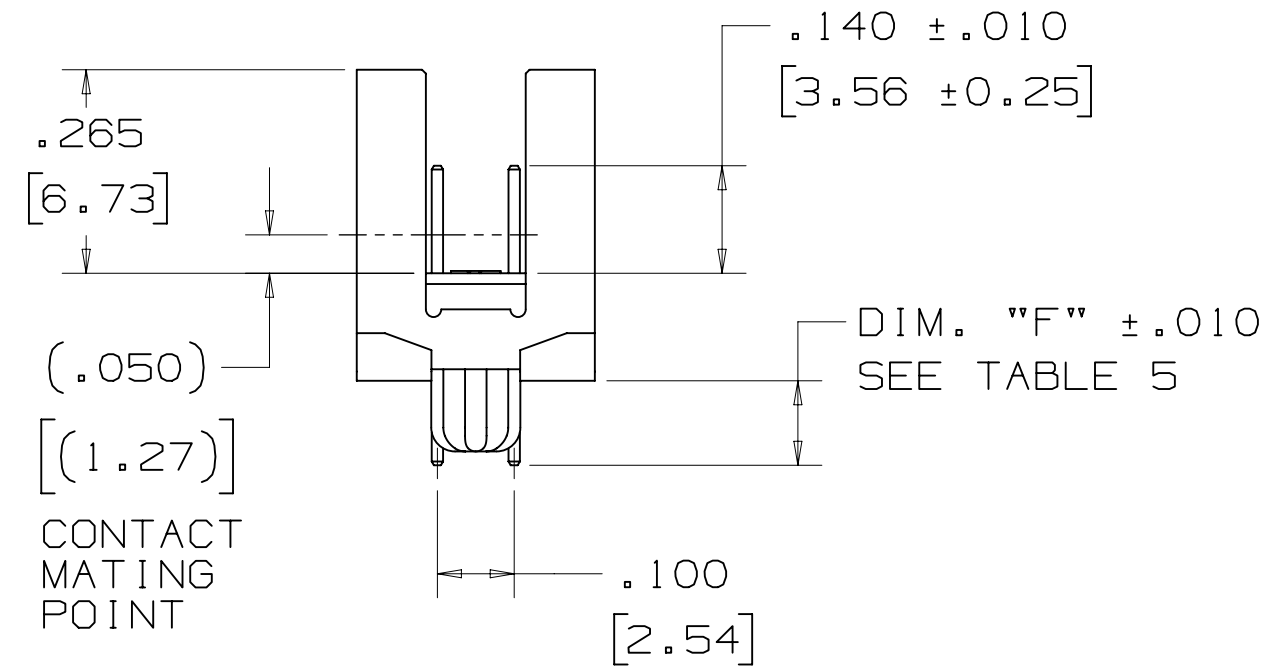
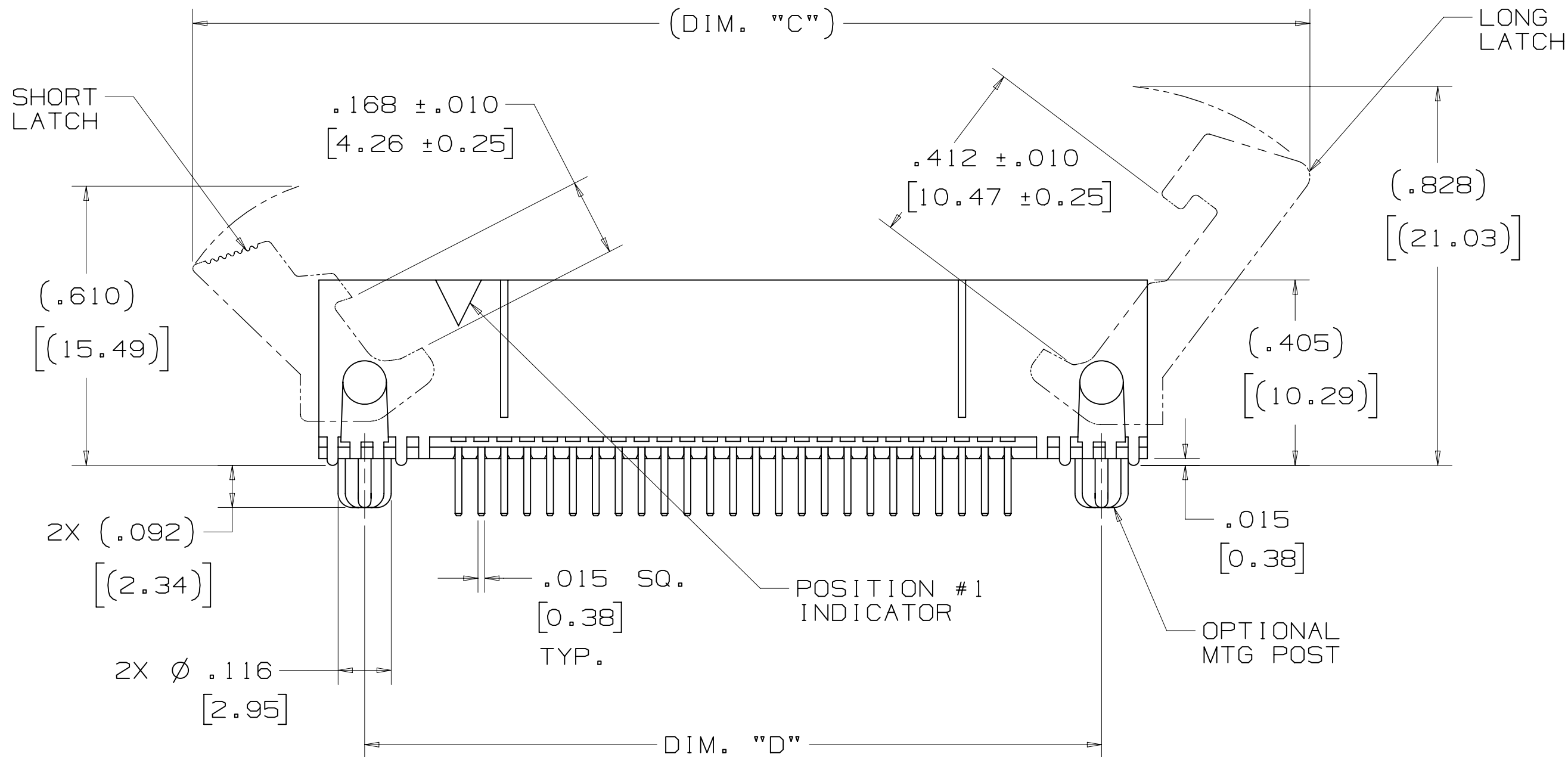
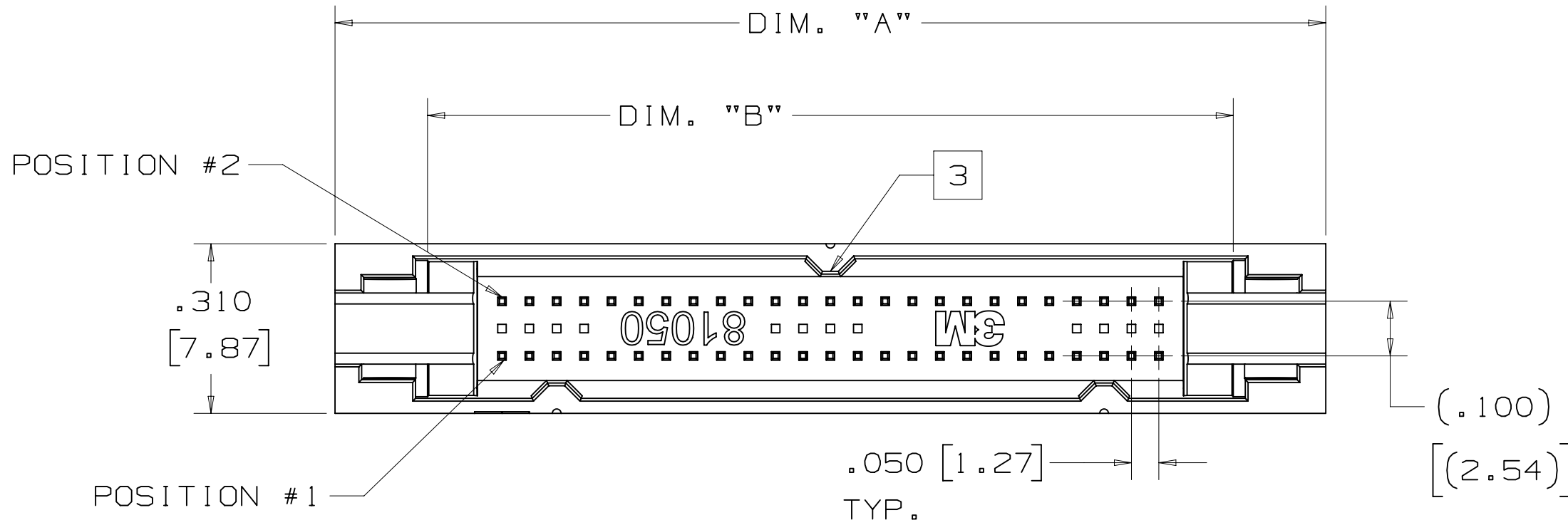
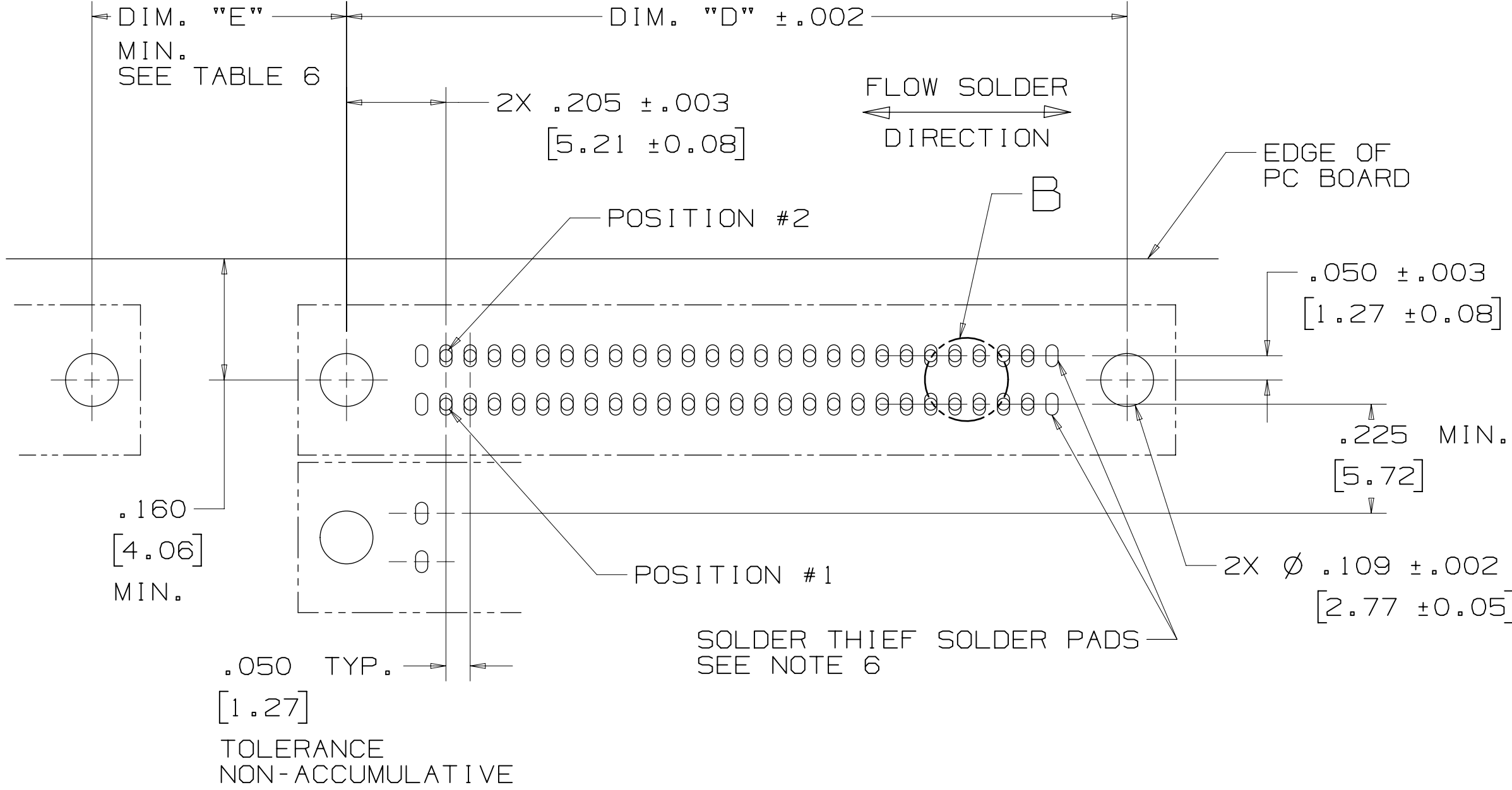
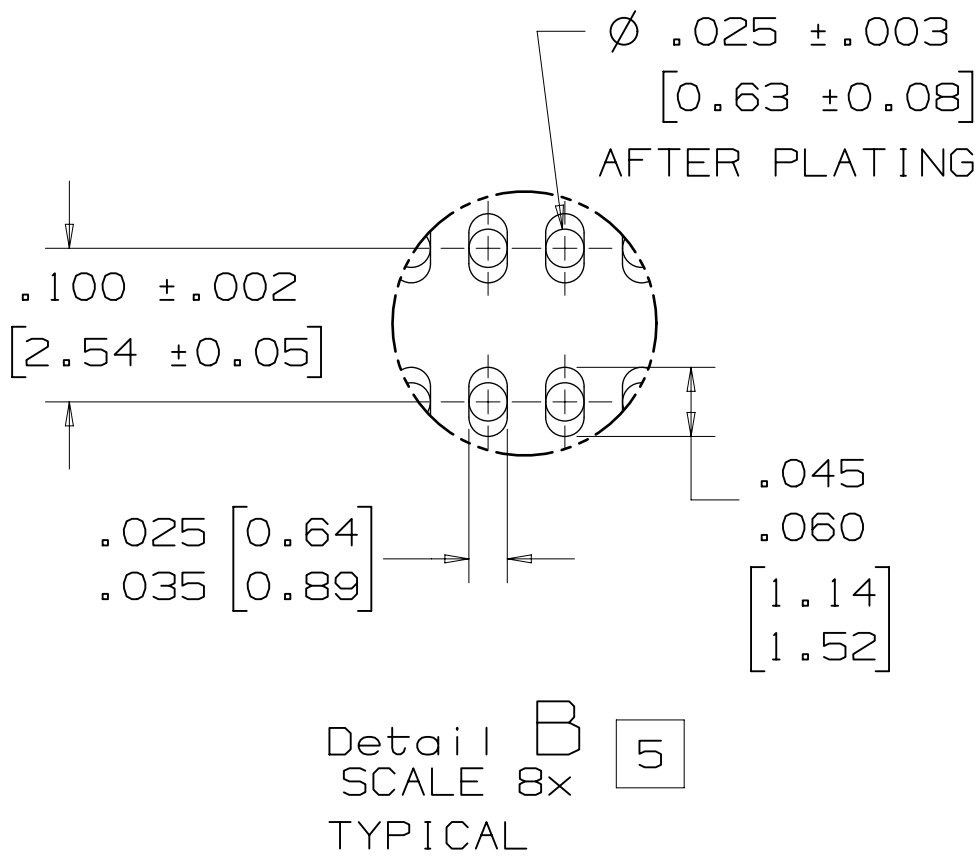
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REV		ECO		REVISED AND REDRAWN		DATE		CHKD	
CSTIGLIONE		DATE		JAN 13,2022		MFG		DATE	
CHGD		DATE		APPR		S. NEU		DATE	
DIVISION		DIVISION CODE		EMSD		3M		3M Center St. Paul, MN 55144	
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THIRD ANGLE PROJECTION		INTERPRET PER ASME Y14.5 - 2018		INCHES .00 ±.01 .000 ±.005 .0000 ±.0002		MILLIMETERS 0 ±.00 ±.000 ±.000		TITLE	
MAX SURFACE ROUGHNESS		SURFACES		MARKED ONLY		CAGE NUMBER		DRAWING NO.	
D		D		D		D		D	
MODEL		810		LISTS		YES		NO	
SHT		2		OF		5		REV.	

3M™ 4-WALL, TRIPOLARIZED HEADER, 810 SERIES
.050" X .100" LATCH/EJECTOR, PTH AND SMT STRAIGHT, PTH RIGHT ANGLE

TABLE 4					
CONTACT QTY.	DIM. "A"	DIM. "B"	DIM. "C" SHORT	DIM. "C" LONG	DIM. "D"
020	1.060 [26.92]	.722 [18.34]	1.671 [42.44]	1.842 [46.79]	.860 [21.84]
026	1.210 [30.73]	.872 [22.15]	1.821 [46.25]	1.992 [50.60]	1.010 [25.65]
036	1.460 [37.80]	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]
068	2.260 [57.40]	1.922 [48.82]	2.871 [72.92]	3.042 [77.27]	2.060 [52.32]
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	DIM. "F"
.062 [1.57]	.092 [2.34]
.094 [2.39]	.110 [2.79]

TABLE 6	
ADJACENT CONNECTOR	
EJECTOR LATCHES	DIM. "E"
NONE	.215 [5.46]
LONG	.650 [16.51]
SHORT	.525 [13.34]



ORDERING INFORMATION
PTH STRAIGHT HEADER

81XXX-6X0X0X-RB

CONTACT QTY:
(SEE TABLE 4)

BOARD MOUNTING OPTIONS:
1 = NONE (SPECIAL ORDER)
3 = PRESS FIT POSTS BOTH ENDS (STANDARD)

EJECTOR/LATCH SYSTEM:
0 = NONE (SPECIAL ORDER)
5 = WITH SHORT EJECTORS INSTALLED (SPECIAL ORDER)
6 = WITH LONG EJECTORS INSTALLED (STANDARD)

CONTACT SOLDER TAIL:
2 = FOR .062 [1.75] PC BOARD (STANDARD)
3 = FOR .094 [2.39] PC BOARD (SPECIAL ORDER)
4 = FOR .125 [3.18] PC BOARD (SPECIAL ORDER)

EJECTOR LATCHES

(IF ORDERED SEPARATELY)

LONG LATCHES: 3505-28
SHORT LATCHES: 3505-29

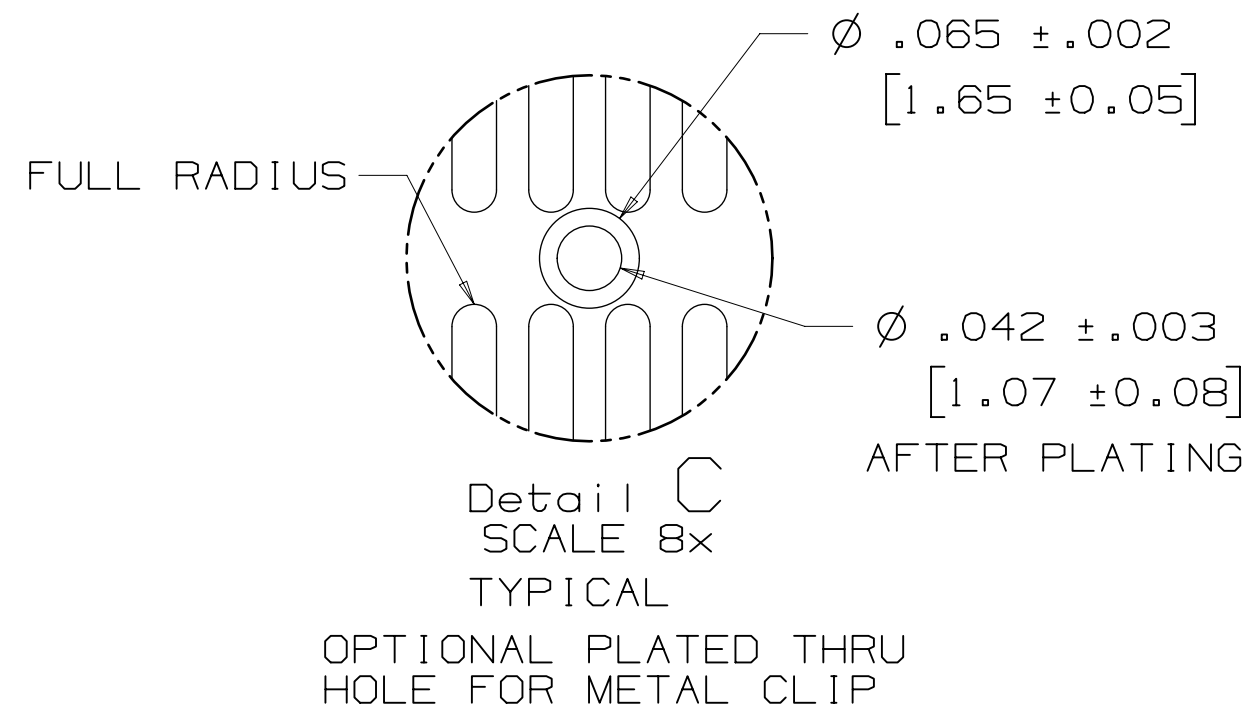
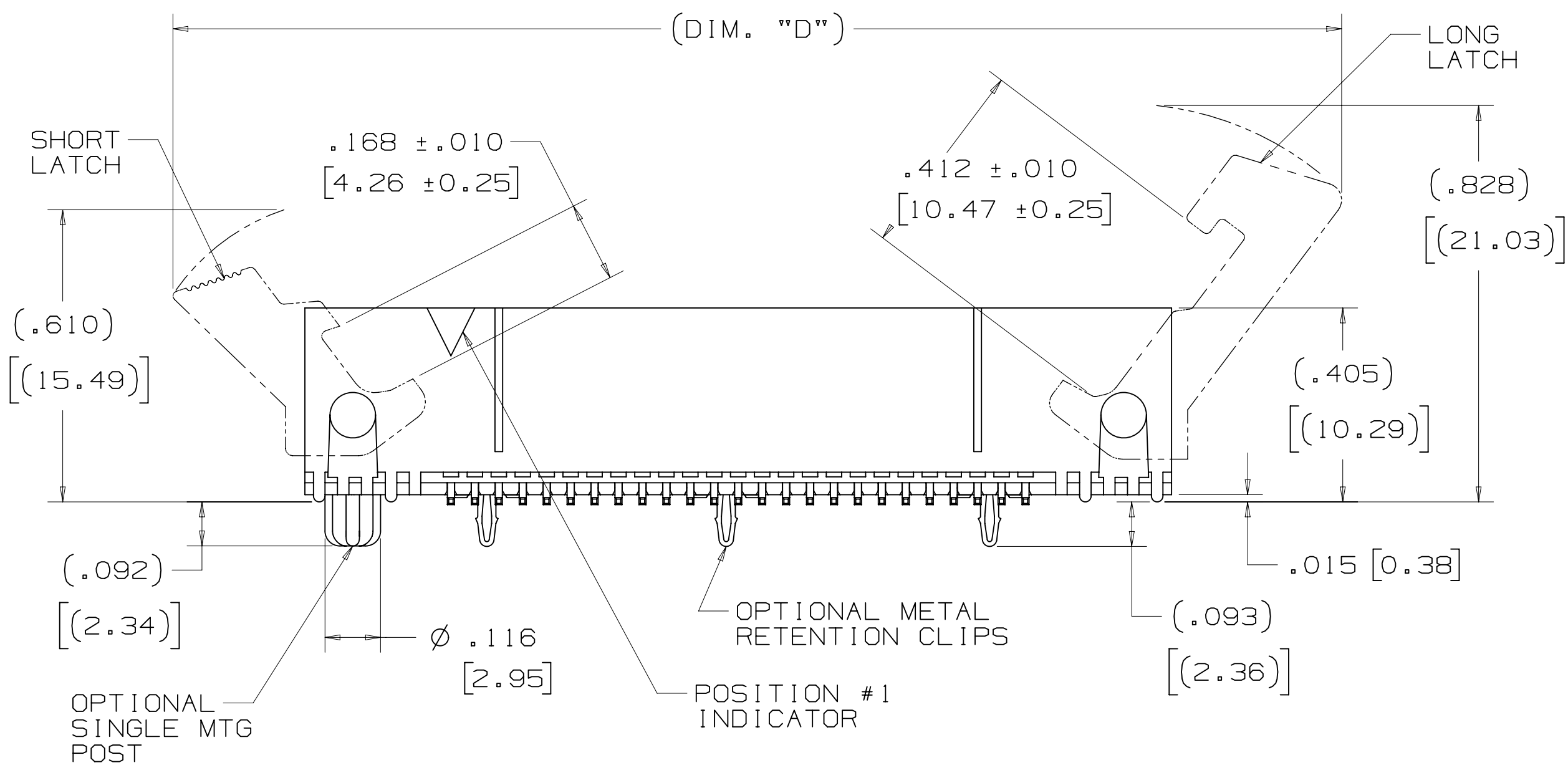
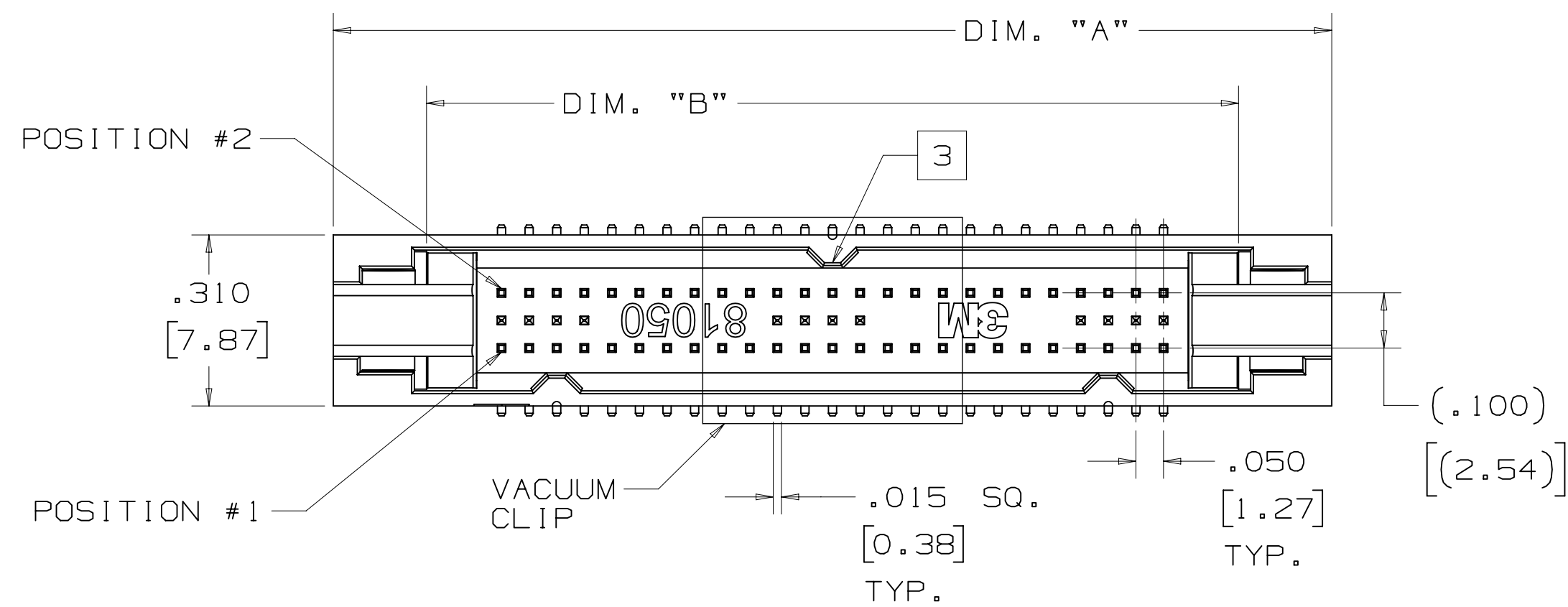
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REV	ECO	ISSUE DATE AND DESCRIPTION	DRFT	CHKD	
CASTIGLIONE	DATE JAN 13, 2022	MFG	DATE		
CHKD	DATE	APPRV S. NEU	DATE JAN 13, 2022		
DIVISION	DIVISION CODE EMSD	3M Center St. Paul, MN 55144	© 3M COPYRIGHT 2022 This document and the information it contains are 3M property and may not be reproduced or further distributed without 3M permission, or used or disclosed other than for 3M authorized purposes. All rights reserved.		
DO NOT SCALE DRAWING	SCALE	TOLERANCES EXCEPT AS NOTED	TITLE TRIPOLARIZED HEADER, 4-WALL, LATCH/EJECT, .050" X .100"		
THIRD ANGLE PROJECTION	INTERPRET PER ASME Y14.5 - 2018	INCHES .0 ±.1 .00 ±.01 .000 ±.005 .0000 ±.0002	MILLIMETERS 0 ±.1 .00 ±.01 .000 ±.005 .0000 ±.0002		
MAX SURFACE ROUGHNESS	MAX SURFACES	0 ±.1 .00 ±.01 .000 ±.005	CAGE NUMBER D78-5100-0253-4	SIZE	DRAWING NO.
MARKED ONLY	ANGLES	0 ±.1 .00 ±.01 .000 ±.005	MODEL 810	REV. L	DET LISTS YES NO SHT 3 OF 5

3M™ 4-WALL, TRIPOLARIZED HEADER, 810 SERIES
.050" X .100" LATCH/EJECTOR, PTH AND SMT STRAIGHT, PTH RIGHT ANGLE

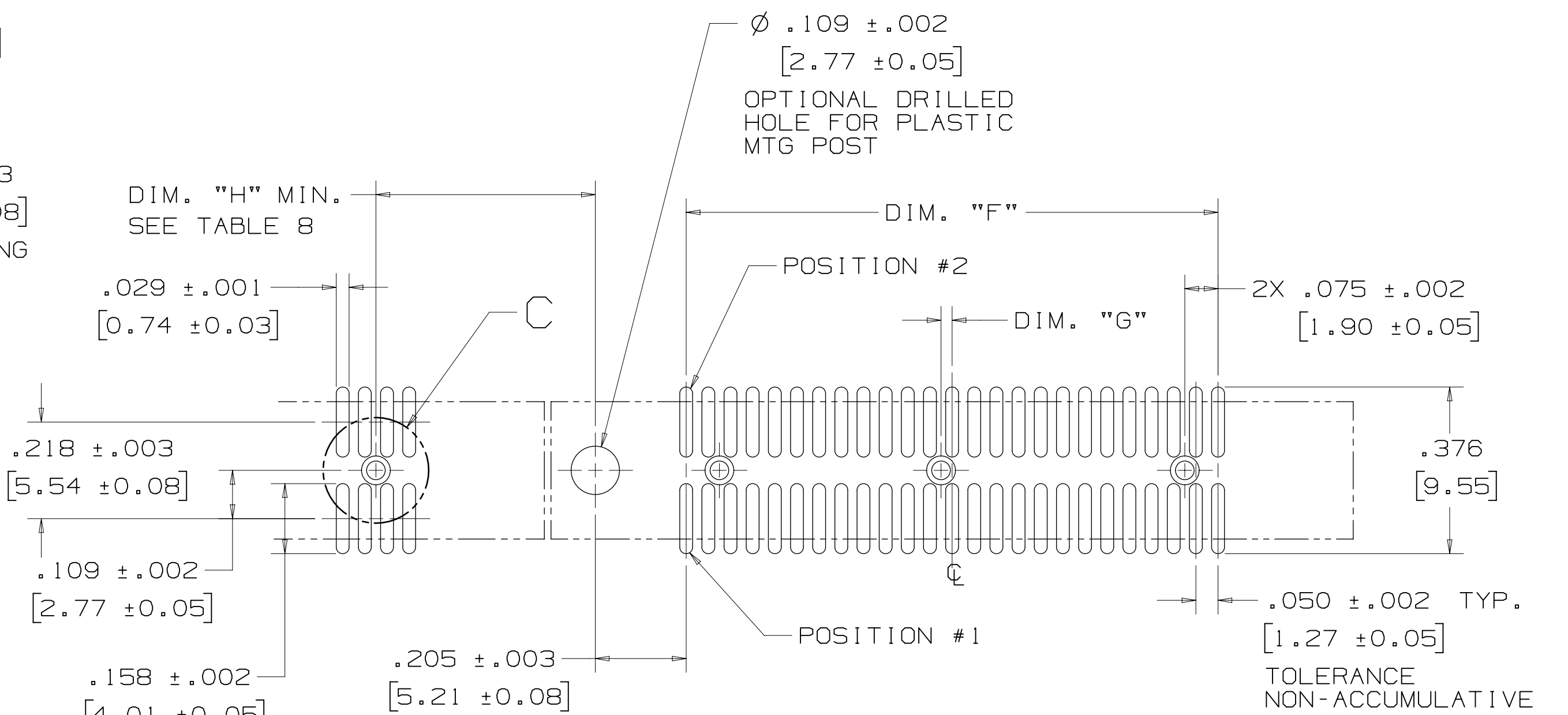
CONTACT QTY.	DIM. "A"	DIM. "B"	DIM. "D" SHORT	DIM. "D" LONG	DIM. "F"	DIM. "G"	TAPE AND REEL SUFFIX
020	1.060 [26.92]	.722 [18.34]	1.671 [42.44]	1.842 [46.79]	.450 [11.43]	N/A	WF
026	1.210 [30.73]	.872 [22.15]	1.821 [46.25]	1.992 [50.60]	.600 [15.24]	.025 [0.64]	WF
036	1.460 [37.80]	1.122 [28.50]	2.071 [52.60]	2.242 [56.95]	.850 [21.59]	N/A	WG
040	1.560 [39.62]	1.222 [31.04]	2.171 [55.14]	2.342 [59.49]	.950 [24.13]	N/A	WG
050	1.810 [45.97]	1.472 [37.39]	2.421 [61.49]	2.592 [65.84]	1.200 [30.48]	.025 [0.64]	WG
060	2.060 [52.32]	1.722 [43.74]	2.671 [67.84]	2.842 [72.19]	1.450 [36.83]	0.000	WG
068	2.260 [57.40]	1.922 [48.82]	2.871 [72.92]	3.042 [77.27]	1.650 [41.91]	0.000	WH
080	2.560 [65.02]	2.222 [56.44]	3.171 [80.54]	3.342 [84.89]	1.950 [49.53]	0.000	WH
100	3.060 [77.72]	2.722 [69.14]	3.671 [93.24]	3.842 [97.59]	2.450 [62.23]	0.000	WH

NOTE:

1. LATCHES SUPPLIED IN THE "OPEN" POSITION UNLESS SPECIFIED OTHERWISE
2. SUFFIX DETERMINED WITH NO POSTS OR CLIPS.
3. ADDITION OF POSTS OR CLIPS MAY INCREASE SUFFIX.
4. 120MM (WH) IS THE MAXIMUM WIDTH OF POCKET TAPE.



EJECTOR LATCHES	DIM. "H"
NONE	.775 [19.69]
LONG	1.085 [27.56]
SHORT	1.21 [30.73]



RECOMMENDED MOUNTING PAD PATTERN

SURFACE MOUNT HEADER

(SHOWN FOR MOUNTING SIDE OF PC BOARD)

7

ORDERING INFORMATION

SURFACE MOUNT STRAIGHT HEADER

81 XXX - 6X0C0X - RB - XX

CONTACT QTY: -
(SEE TABLE 7)

— PACKAGING OPTIONS:
BLANK = TRAYS
WX = TAPE AND REEL PACKAGE
SEE TABLE 7

```

- BOARD MOUNTING OPTIONS:
  1 = NONE
  4 = PRESS FIT POST AT POSITION 1 END
  7 = METAL RETENTION CLIPS
  8 = POS #1 END POST AND METAL RETENTION CLIPS
    (SPECIAL ORDER)

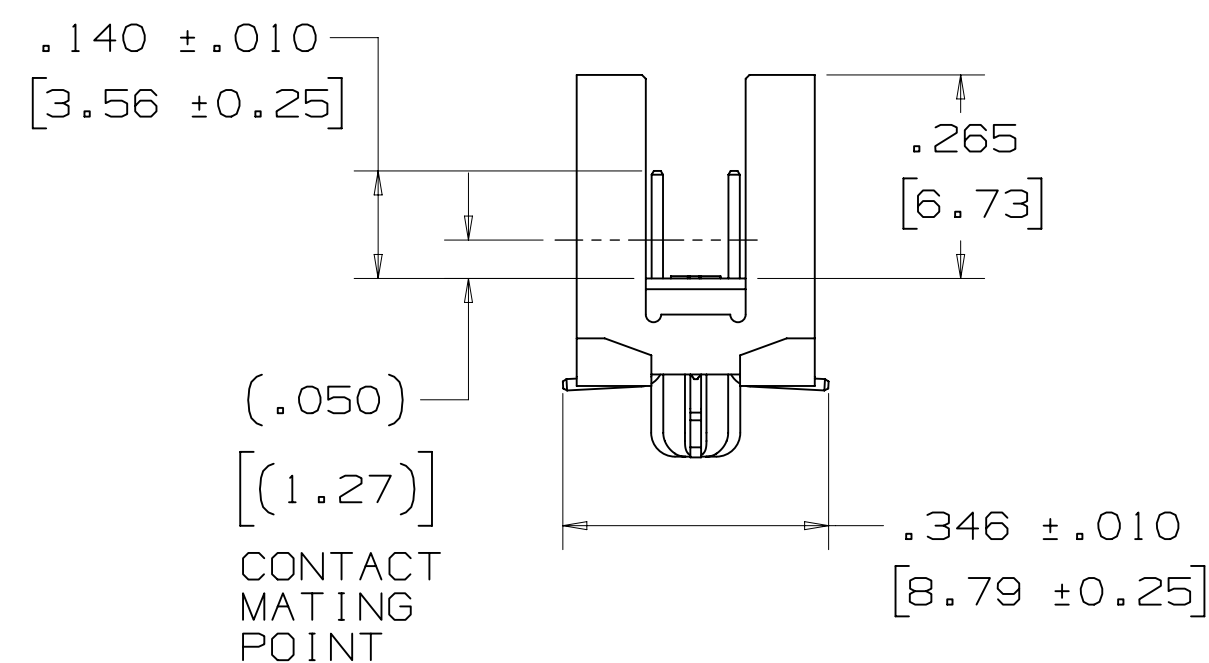
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EJECTOR LATCHES

(IF ORDERED SEPARATELY)

LONG LATCHES: 3505-28

SHORT LATCHES: 3505-29



DESIGN REFERENCE NEXT ASSEMBLY		L I01674 JAN 13, 2022 JNC SAN	
REV ECO ISSUE DATE AND DESCRIPTION DRFT CHKD		REVISED AND REDRAWN	
APPR CODES		DATE JAN 13, 2022 MFG DATE	
DIVISION		DATE JAN 13, 2022	
DIVISION CODE EMSD		DATE JAN 13, 2022	
DO NOT SCALE DRAWING		TOLERANCES EXCEPT AS NOTED	
		INCHES .0 ± .1 .00 ± .01 .000 ± .005 .0000 ± .0002	
THIRD ANGLE PROJECTION		MILLIMETERS .0 ± .00 ± .000 ±	
INTERPRET PER ASME Y14.5 - 2018		MAX. SURFACE ROUGHNESS ALL SURFACES	
MARKED ONLY		ANGLE	
TITLE TRIPOLARIZED HEADER , 4 - WALL , LATCH/EJECT , .050" X .100"		CASE NUMBER D 78-5100-0253-4	
MODEL B10		SIZE DRAWING NO. DET. LISTS QYES XNO SHT 4 OF 5	

3M™ 4-WALL, TRIPOLARIZED HEADER, 810 SERIES

.050" X .100" LATCH/EJECTOR, PTH AND SMT STRAIGHT, PTH RIGHT ANGLE

Regulatory: For regulatory information about this product, visit 3M.com/regs or contact your 3M representative.

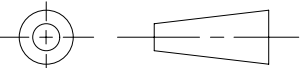
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REV				ECO		ISSUE DATE AND DESCRIPTION				DRFT CHKD	
APPR CODES				CAST GLIGONE		DATE JAN 13, 2022		MFG		DATE	
CHKD						DATE		APPR S. NEU		DATE JAN 13, 2022	
DIVISION				DIVISION CODE EMSD		© 3M COPYRIGHT 2022					
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 THIRD ANGLE PROJECTION				INCHES 0.00 ± .01 0.000 ± .005 0.0000 ± .0002		TITLE TRIPOLARIZED HEADER, 4-WALL, LATCH/EJECT, .050" X .100"					
INTERPRET PER ASME Y14.5 - 2018				MILLIMETERS 0 ± 0.00 ± 0.000 ±		CAGE NUMBER SIZE DRAWING NO. D 78-5100-0253-4					
MAX SURFACE ROUGHNESS ✓ ☐ ALL SURFACES ☒ MARKED ONLY				ANGLES 0 ± 0.00 ± 0.000 ±		REV. L DET. LISTS ☒ YES ☒ NO SHT 5 OF 5					
MODEL				810							