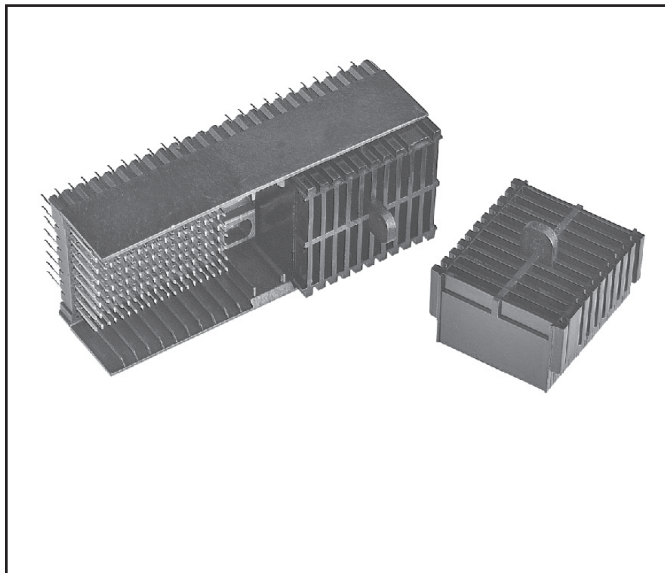# 3M™ MetPak™ HSHM Press-Fit Header

2 mm Type D, 176 Signal Contacts, 8 Rows, Straight

HSHM Series

- Up to 5 Gb/s data rates
- Low crosstalk at high frequencies
- 50/100 Ω (single-ended /differential) impedance
- Modular/scalable format IEC 61076-4-101
- 101 mated lines per linear inch
- Four integrated 8.25 A power contacts
- Integrated guide pin
- End-to-end stackable with 8 row 3M™ MetPak™ HM and HSHM headers
- See the Regulatory Information Appendix (RIA) in the "RoHS compliance" section of www.3mconnector.com for compliance information

Date Modified: November 8, 2010

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Physical

Insulation:

Material: High Temperature Thermoplastic (LCP)

Flammability: UL 94V-0

Contact:

Material: Copper Alloy

Plating: See Ordering Information

Performance

Mechanical:

Normal Force (Nominal): 0.57 N [58 g] Signal, 0.74 N [75 g] Shield

Engagement Force (Nominal): 0.32 N [33 g] Signal, 0.22 N [22 g] Shield

Separation Force (Nominal): 0.20 N [20 g] Signal, 0.20 N [20 g] Shield

Wipe (Nominal, Shortest Contact): 2.67 mm [0.105 in] Signal, 1.57 mm [0.062 in] Shield

Mate/Unmate Cycles: 250

Application: This module is suitable for stand-alone use. (Refer to IEC-61076-4-101)

Electrical:

Data Rate: 5 Gb/s

Characteristic Impedance: 50 Ω Single-ended, 100 Ω Differential

Current Rating (Fully Loaded): 1 A @ 70° C Signal

Insulation Resistance: 10^4 MΩ @ 100 V_{DC}

Withstanding Voltage: 750 V_{rms}

Environmental

Temperature Rating: -55° C to 125° C

UL File No.: E68080
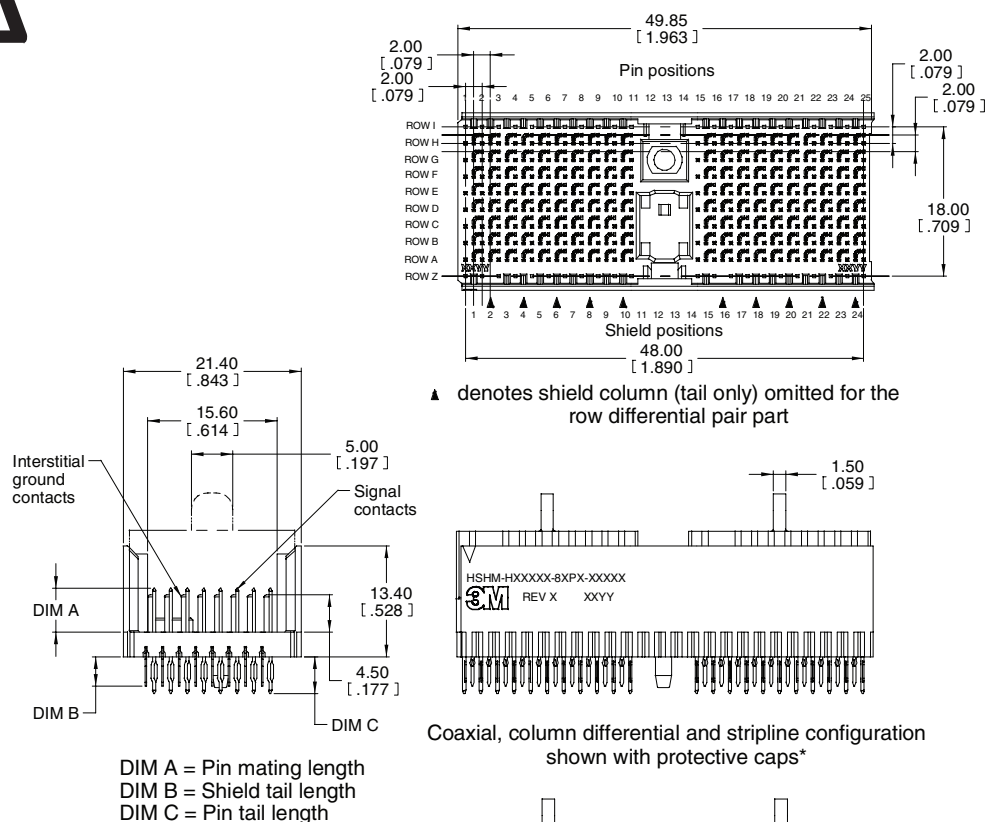
MetPak is a trademark of 3M Company.

3M™ MetPak™ HSHM Press-Fit Header

2 mm Type D, 176 Signal Contacts, 8 Rows, Straight

U(R)L

49.85
[1.963]

2.00
[.079]
2.00
[.079]

Pin positions

2.00
[.079]
2.00
[.079]

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

ROW I
ROW H
ROW G
ROW F
ROW E
ROW D
ROW C
ROW B
ROW A
ROW Z

18.00
[.709]

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Shield positions

48.00
[1.890]

▲ denotes shield column (tail only) omitted for the row differential pair part

21.40
[.843]

15.60
[.614]

5.00
[.197]

Interstitial ground contacts

Signal contacts

DIM A

13.40
[.528]

DIM B

4.50
[.177]

DIM C

DIM A = Pin mating length
DIM B = Shield tail length
DIM C = Pin tail length

1.50
[.059]

HSHM-HXXXXX-8XPX-XXXXX
3M   REV X   XXYY

Coaxial, column differential and stripline configuration
shown with protective caps*

HSHM-HXXXXX-8XPX-XXXXX
3M   REV X   XXYY

Row differential configuration
shown with protective caps*

* Caps to be removed after press-fit installation process

mm
(Inch)

Tolerance Unless Noted			
	0	0.0	0.00
mm	±3	±0.3	±0.13

( ) Dimensions used for
Reference Only

Ordering Information

HSHM-H176DPWRX-8CPX- XXXXX   (rows I and Z not loaded)

High Speed Option:

4 = Coaxial, column differential and
stripline (75 Ω) applications
5 = Row differential applications

Tail Length:

1 = 4.4 mm pin and 3.5 mm shield
2 = 2 mm pin and 2 mm shield

Plating µm [µ"]:

TG30 = 0.76 [30] Min. Au Contact Area
2.54 [100] Min. SnPb Terminal Area (RIA C2 & E2 apply)
1.27 [50] Min. Ni All over
Standard Option

TG30L = 0.76 [30] Min. Au Contact Area, Lubricated
2.54 [100] Min. SnPb Terminal Area (RIA C2 & E2 apply)
1.27 [50] Min. Ni All over
Non-Standard Option (Available with longer lead times and
higher make order quantities, MOQ)

TG50 = 1.27 [50] Min. Au Contact Area, Lubricated
2.54 [100] Min. SnPb Terminal Area (RIA C2 & E2 apply)
1.27 [50] Min. Ni All over
Non-Standard Option (Available with longer lead times and
higher make order quantities, MOQ)

Standard Configuration
DIM A = 5.3 mm for rows A through H
For non--standard configurations contact sales representative
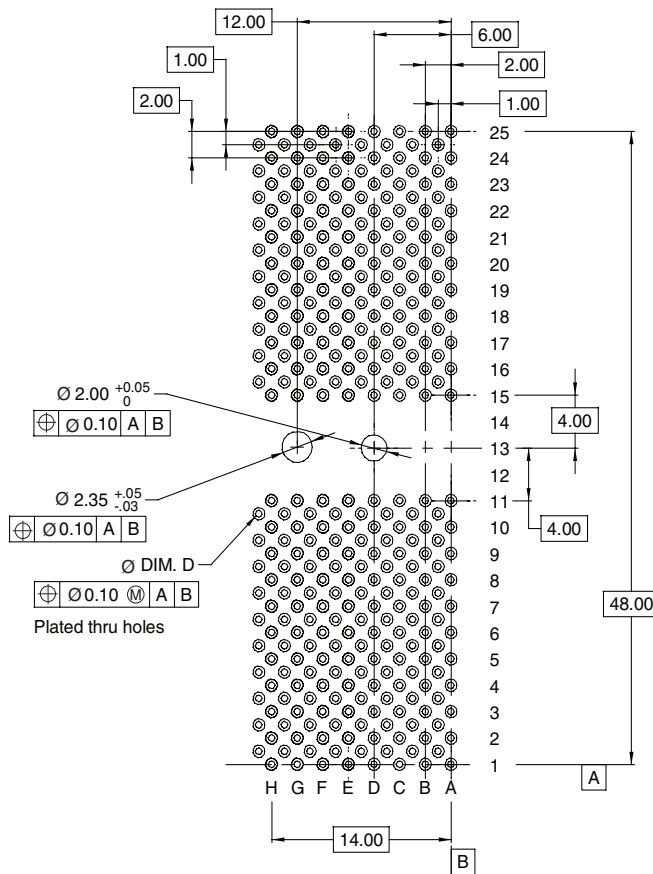
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Ø 2.00 $^{+0.05}_{0}$

⊕ Ø 0.10 A B

Ø 2.35 $^{+.05}_{-.03}$

⊕ Ø 0.10 A B

Ø DIM. D

⊕ Ø 0.10 Ⓜ A B

Plated thru holes

12.00   6.00
1.00   2.00
2.00   1.00

4.00
4.00
48.00

14.00

H G F E D C B A

Recommended PCB hole mounting pattern for
coaxial, column differential and stripline applications

H G F E D C B A
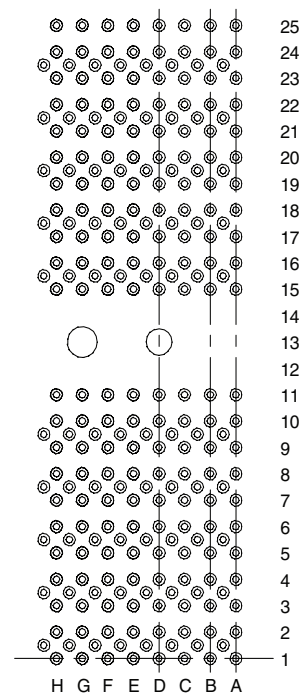
Recommended PCB hole mounting pattern for row
differential applications

(Same geometry as left view without the ground vias)

Hole Plating Table mm			
Finished Hole Dia.	Cu. Thickness	SnPb Thickness	Drilled Hole Dia.
0.457 - 0.559 [.0180 - .0220]	0.025 - 0.045 [.0010 - .0018]	0.008 -0.018 [.0003 - .0007]	0.584 - 0.625 [.0230 - .0246]

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