

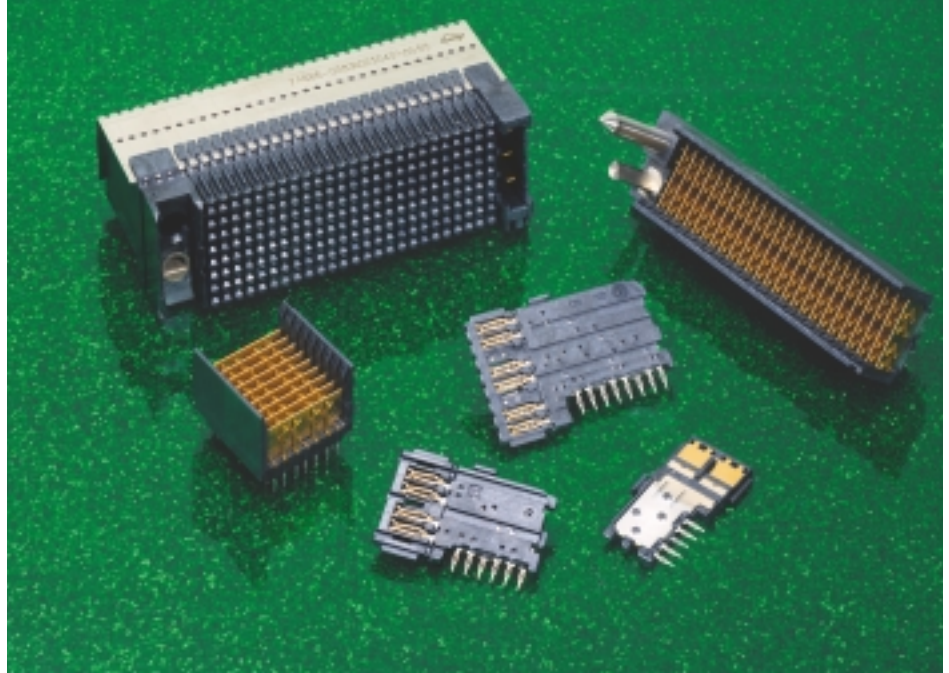
## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Up to 5.0 Gbps bandwidth per signal pair enables state-of-the-art system design and performance
- 2.00 by 2.25mm (.079 by .089") pitch provides real signal density of 10 differential pairs for 5-row and 6-row and 15 differential pairs for 8-row per centimeter (25 and 38 pairs respectively per inch)
- Minimum distance between daughtercards:
  - 5-row system offers 15.00mm (.591")
  - 6-row system offers 18.00mm (.709")
  - 8-row system offers 22.00mm (.866")
- Ground planes between signal columns provide tightly controlled impedance for rise times down to 50 picoseconds (10-90%). This ensures very low cross talk between signals within and between columns
- Ground pins are in the same grid as signal pins, allowing wider channels for PCB routing and traces up to 0.25mm (.010") wide
- 6-row or 8-row VHDM-HSD wafers can be applied to the same stiffener as standard VHDM® 6-row or 8-row wafers. The combination of VHDM and VHDM-HSD wafers, grouped together in the same stiffener, provides cost effective solutions to different performance parameters



## 2.00 by 2.25mm (.079 by .089") Pitch 5-Row, 6-Row and 8-Row VHDM-HSD™ Module-to-Backplane Connector System



The Very High Density Metric High Speed Differential (VHDM-HSD) connector system has been expanded to include 5-row, 6-row and 8-row daughtercard and backplane modules. VHDM-HSD is designed for differential-pair architecture applications that require very high interconnect density and signal integrity in a single-ended configuration.

The same great modularity features and components of VHDM are provided in the VHDM-HSD. The 5-row and 6-row systems feature 2 signal pairs per column and the 8-row system features 3 signal pairs per column in increments of 10 and 25 columns. All circuits are utilized as signal circuits without the need to use some as ground circuits.

The daughtercard connector consists of a metal stiffener just as with the VHDM system. The system combines the signal wafers, power modules and guidance modules into one continuous connector that can be ordered as a single specific part number. The card pitch of the VHDM-HSD 8-row system is the same as the standard VHDM 8-row system, allowing both signal wafer types for single ended and differential pair to be used together. This modularity and design flexibility allow engineers to incorporate both connector systems on the same platforms. The system is based on a 2.00mm (.079") pitch and includes vertical and right angle products that can be configured up to 2000 circuits. The maximum length of a daughtercard connector on a single stiffener is 300mm (12").

The backplane connectors feature headers with open ends for continuous side-to-side stacking and headers with guide pins and polarizing keys on either end to aid in proper alignment of the mating daughtercard. The power modules occupy just a small width and hold sequentially matable pins that each manage 10.0 amps of current.

Molex offers application tooling for pressing VHDM-HSD connectors into PCBs as separate modules or as complete assemblies. VHDM-HSD cable assemblies are also available for connecting backplane headers to high-performance cables.

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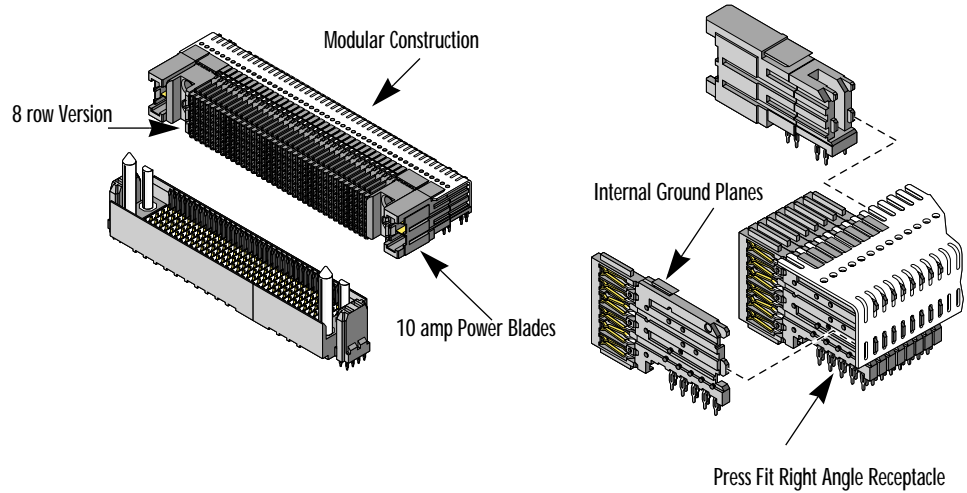
### Applications

The VHDM-HSD products are used in very high speed, short rise-time, high circuit count applications connecting daughtercards to the backplane:

- Network Switches
- Routers
- Computer Servers
- Telecommunication Equipment
- Internetworking Devices



# 2.00 by 2.25mm (.079 by .089") Pitch 5-Row, 6-Row and 8-Row VHDM-HSD™ Module-to-Backplane Connector System



## ORDERING INFORMATION

| Daughtercard Assembly   | Configuration                           | 5-Row      | 6-Row      | 8-Row      |
|---|---|------------|------------|------------|
| Signal wafers, power modules and guide modules sequentially assigned by application | VHDM-HSD wafers                         | 74670-XXXX | 74880-XXXX | 74680-XXXX |
|   | Combination of VHDM and VHDM-HSD wafers | 74686-XXXX | 74886-XXXX | 74686-XXXX |

| Backplane Header<br>Signal Module Standard Loaded | Pin Height<br>0.76µm (30µ") Gold | 5-Row      |            | 6-Row      |            | 8-Row      |            |
|---|----------------------------------|------------|------------|------------|------------|------------|------------|
|   |                                  | 10-Column  | 25-Column  | 10-Column  | 25-Column  | 10-Column  | 25-Column  |
| Open Ended  | 4.25mm (.167")                   | 74695-1003 | 74695-2503 | 74979-1003 | 74979-2503 | 74649-1003 | 74649-2503 |
|   | 4.75mm (.187")                   | 74695-1001 | 74695-2501 | 74979-1001 | 74979-2501 | 74649-1001 | 74649-2501 |
|   | 5.15mm (.203")                   | 74695-1004 | 74695-2504 | 74979-1004 | 74979-2504 | 74649-1004 | 74649-2504 |
|   | 6.25mm (.266")                   | 74695-1002 | 74695-2502 | 74979-1002 | 74979-2502 | 74649-1002 | 74649-2502 |
| Left Guide Pin<br>No Polarizing Key               | 4.25mm (.167")                   | 74696-1003 | 74696-2503 | -          | -          | 74650-1003 | 74650-2503 |
|   | 4.75mm (.187")                   | 74696-1001 | 74696-2501 | -          | -          | 74650-1001 | 74650-2501 |
|   | 5.15mm (.203")                   | 74696-1004 | 74696-2504 | -          | -          | 74650-1004 | 74650-2504 |
|   | 6.25mm (.266")                   | 74696-1002 | 74696-2502 | -          | -          | 74650-1002 | 74650-2502 |
| Left Guide Pin<br>"A" Polarizing Key              | 4.25mm (.167")                   | 74696-1013 | 74696-2513 | -          | -          | 74650-1013 | 74650-2513 |
|   | 4.75mm (.187")                   | 74696-1011 | 74696-2511 | -          | -          | 74650-1011 | 74650-2511 |
|   | 5.15mm (.203")                   | 74696-1014 | 74696-2514 | -          | -          | 74650-1014 | 74650-2514 |
|   | 6.25mm (.266")                   | 74696-1012 | 74696-2512 | -          | -          | 74650-1012 | 74650-2512 |
| Right Guide Pin<br>No Polarizing Key              | 4.25mm (.167")                   | 74697-1003 | 74697-2503 | -          | -          | 74651-1003 | 74651-2503 |
|   | 4.75mm (.187")                   | 74697-1001 | 74697-2501 | -          | -          | 74651-1001 | 74651-2501 |
|   | 5.15mm (.203")                   | 74697-1004 | 74697-2504 | -          | -          | 74651-1004 | 74651-2504 |
|   | 6.25mm (.266")                   | 74697-1002 | 74697-2502 | -          | -          | 74651-1002 | 74651-2502 |
| Right Guide Pin<br>"A" Polarizing Key             | 4.25mm (.167")                   | 74697-1013 | 74697-2513 | -          | -          | 74651-1013 | 74651-2513 |
|   | 4.75mm (.187")                   | 74697-1011 | 74697-2511 | -          | -          | 74651-1011 | 74651-2511 |
|   | 5.15mm (.203")                   | 74697-1014 | 74697-2514 | -          | -          | 74651-1014 | 74651-2514 |
|   | 6.25mm (.266")                   | 74697-1012 | 74697-2512 | -          | -          | 74651-1012 | 74651-2512 |

| Backplane Power and Guide Components | 5-Row and 6-Row | 8-Row           |
|--------------------------------------|-----------------|-----------------|
| Power Module                         | 74029-6000      | 74029-8000      |
| Keying Post                          | 74069-0010      | 74069-0010      |
| Guide Pin                            | 74076-0001/0002 | 74076-0001/0002 |

Note: VHDM and VHDM-HSD are trademarks or registered trademarks of Teradyne, Inc.

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