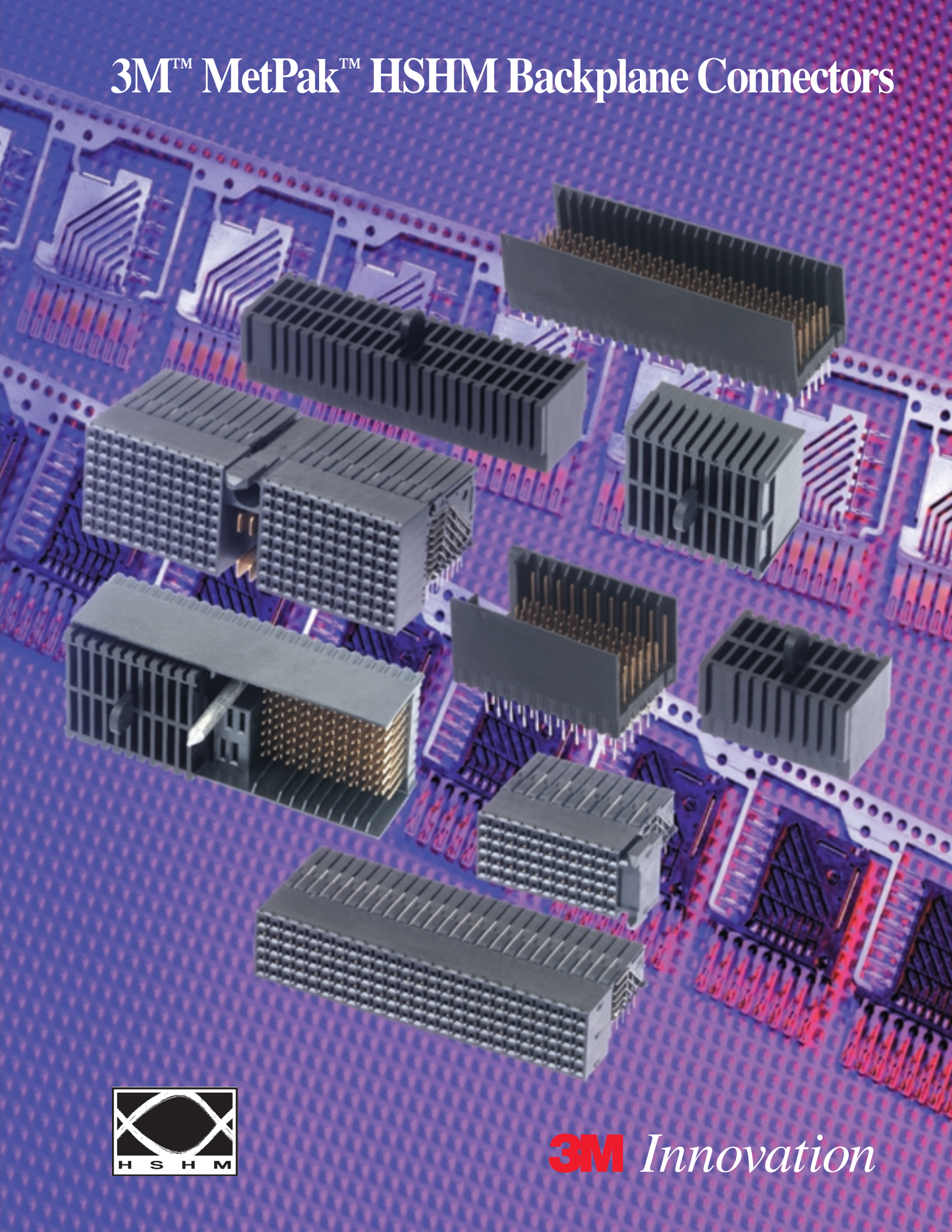
3M™ MetPak™ HSHM Backplane Connectors



HSHM

3M Innovation

Setting an Industry Standard

Ultra High-Speed Performance

3M™ MetPak™ HSHM backplane connectors – based on the industry standard 2 mm hard metric connector and in accordance with the IEC-61076-4-101 connector standard – are the high-speed solution for challenging electrical performance requirements in five and eight row 2 mm hard metric connectors.

MetPak™ HSHM backplane connectors are end-to-end stackable with standard CompactPCI®, and five and eight row hard metric connectors. Our modular design lets you customize connector performance to meet your specific application needs.

MetPak HSHM Products

5 - Row		8 - Row	
Header Type (Pin Count)	Socket Type (Pin Count)	Header Type (Pin Count)	Socket Type (Pin Count)
A (110)	A (110)	D (176)	D (176)
B (125)	B (125)	E (200)	E (200)
CL (055)	CL (055)	FL (088)	FL (088)
CR (055)	CR (055)	FR (088)	FR (088)
		D/PWR (176)	D/PWR (176)

HSHM Accessories

- Guide Pins and Sockets
- Universal Power headers and sockets
- Polarization coding keys

HSHM Features

- Data rates up to 5 Gb/s
- Low crosstalk at high frequencies
- 50/100 Ohms (Single-ended/Differential impedance)
- Modular/scaleable format
- Press-Fit headers and sockets
- 101 mated lines per inch for eight row
- 63 mated lines per inch for five row
- Protective/termination caps for headers (removable after termination)
- Dual beam construction

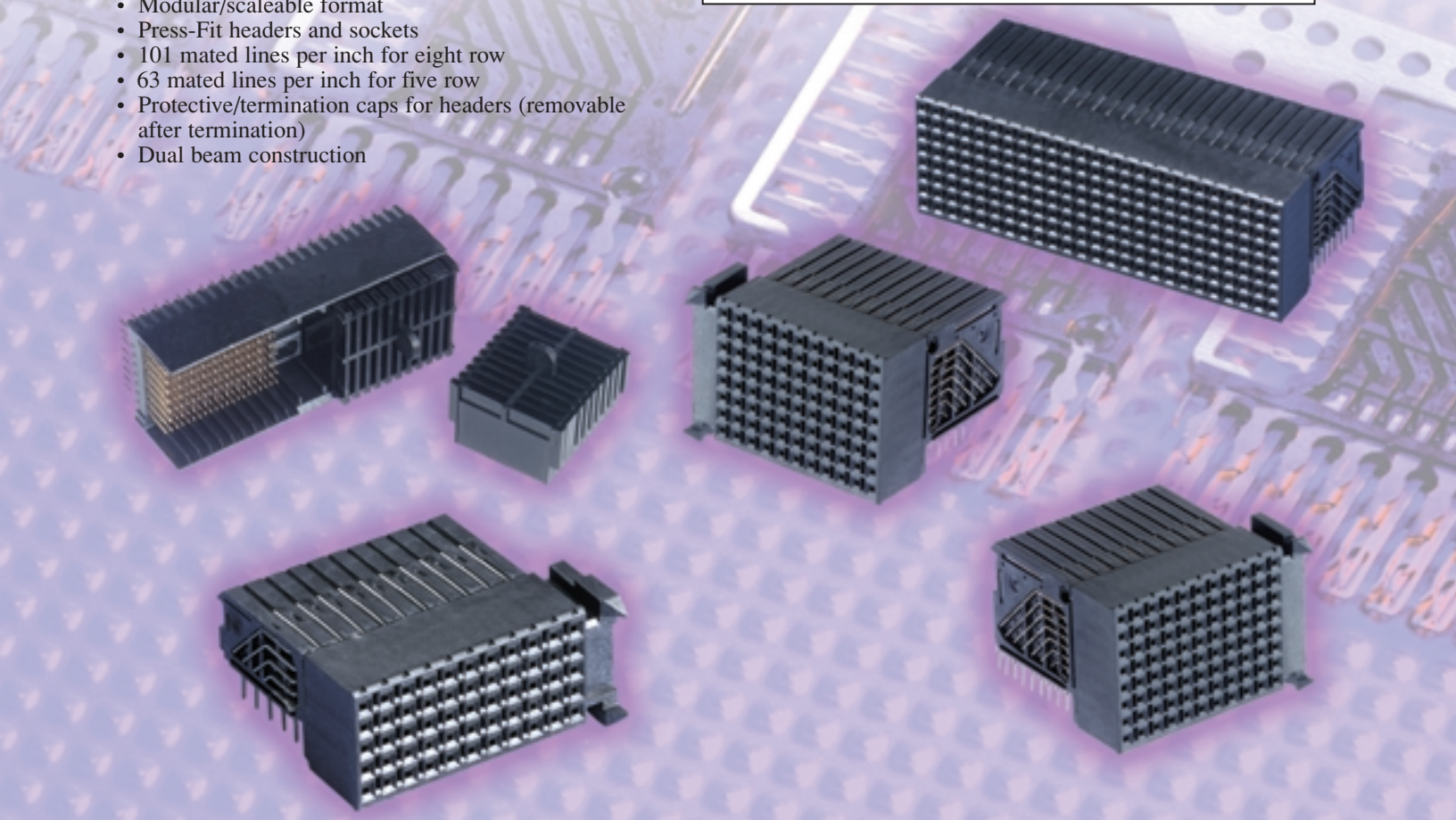
With data rate speeds up to 5 Gb/s, our MetPak HSHM connectors provide maximum performance with minimal cross talk, low skew and exceptional flexibility.

Performance Specifications:

Signal Contact:		
	Normal Force	0.55 N (55 grams) nominal
	Insertion Force	0.33 N (33 grams) nominal
	Withdrawal Force	0.20 N (20 grams) nominal
	Contact Wipe	2.5 mm minimum
Shield:		
	Normal Force	0.75 N (75 grams) nominal
	Insertion Force	0.22 N (22 grams) nominal
Horizontal and Vertical Misalignment:		±2 mm with guidance
Angular Misalignment:		±2° with guidance
Header Pin Retention:		10.0 N (2.25 lb.) minimum
Header Shield Tail Retention:		55 N (12.3 lb.) minimum
Receptacle Contact Retention:		4.4 N (1.00 lb.) minimum
Receptacle Shield Tail Retention:		4.4 N (1.00 lb.) minimum
Temperature Range:		-55° C to + 125° C
Durability:		250 Cycles with 5µ" Gold over 40µ" PdNi over 4µ" Pd Strike

Materials:

Insulators:	LCP, UL-94 V-0
Receptacle Signal Contacts:	0.20 mm Thick Copper Alloy
Receptacle Horizontal Shields:	0.10 mm Thick Copper Alloy
Receptacle Vertical Shields:	0.20 mm Thick Copper Alloy
Receptacle Tail Shields:	0.20 mm Thick Copper Alloy
Header Signal Pins:	0.38 mm Thick Copper Alloy
Header Shields:	0.20 mm Thick Copper Alloy
Header Protective Caps:	High Temperature Nylon

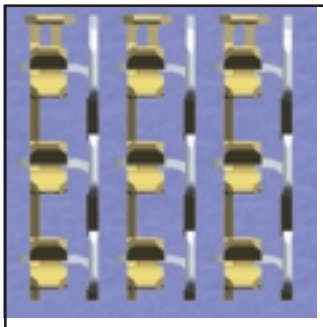


Virtual Coaxial Box Shielding

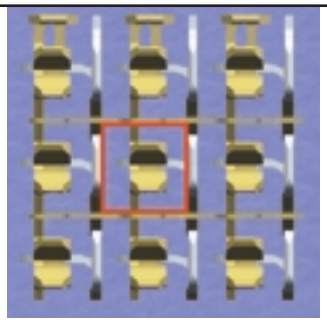
A variety of shielding options allow for backplane and midplane application design flexibility.

X-axis horizontal and tail shields along with Y-axis vertical shields form a ‘virtual coaxial box”

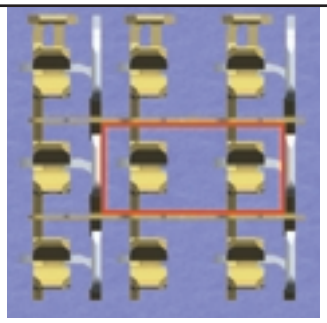
shield around signal contacts individually and/or in pairs for optimum performance. Sockets are available without shielding (Hard Metric), or with various shielding options (High Speed Hard Metric).



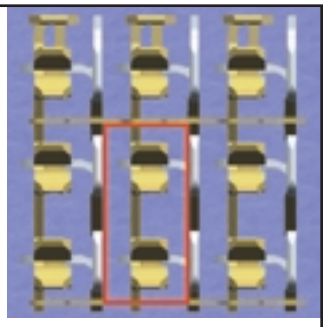
- HSHM
- Y-axis shielding
- Stripline shielding



- HSHM
- X and Y-axis shielding individual contacts
- Coaxial shielding



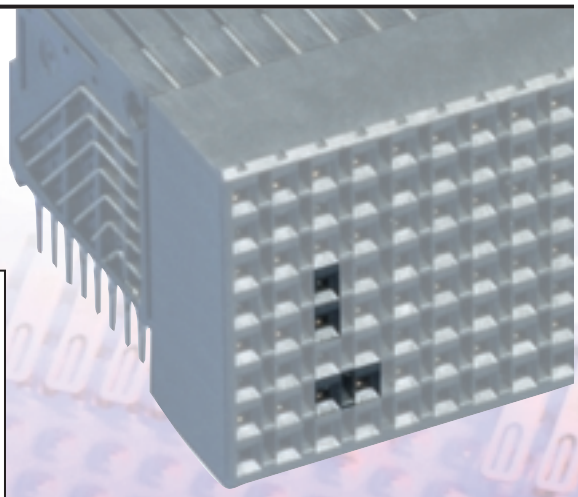
- HSHM
- X and Y axis shielding contact pairs in rows
- Differential pair shielding (rows)



- HSHM
- X and Y axis shielding contact pairs in columns
- Differential pair shielding (columns)

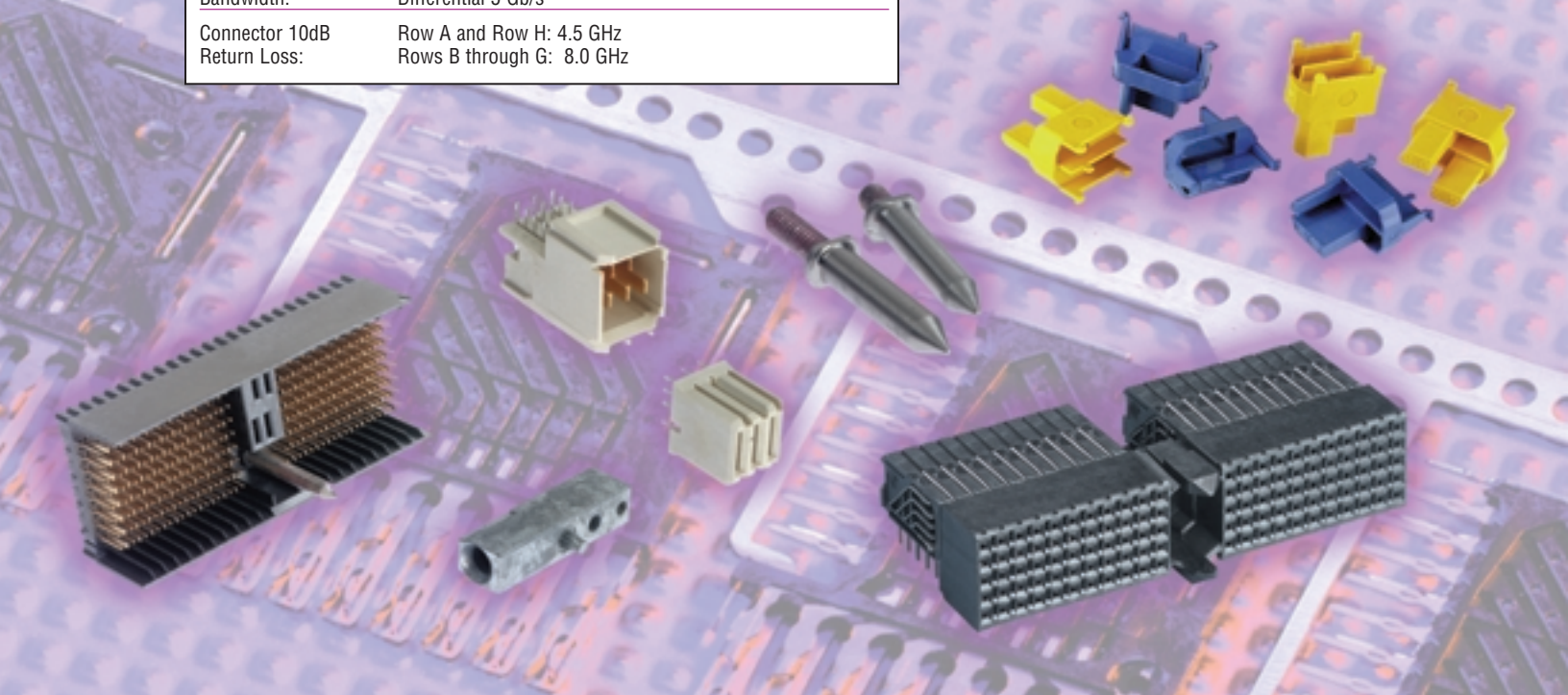
Single-ended or Differential Pairs

Our unique design lets you configure the connectors for either stripline-shielded signals, single-ended signals or differential paired signals in either rows or columns. Running the differential pairs in rows eliminates the problem of skew inherent to column differential pairs.



8-Row Connector - Select Signal Integrity Data:

Characteristic Impedance @ 100 ps risetime			
Crosstalk:	Multiline single ended	(250ps risetime), near end	7.0%
Crosstalk:	Multiline single ended	(250ps risetime), far end	4.5%
Crosstalk:	Mulitpair differential	(100ps risetime), near end	6.0%
Crosstalk:	Multipair differential	(100ps risetime), far end	3.0%
Propagation Delay:	Row A: 96ps Row H: 182ps		
Bandwidth:	Differential 5 Gb/s		
Connector 10dB Return Loss:	Row A and Row H: 4.5 GHz Rows B through G: 8.0 GHz		



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For ordering information, technical information, product information or to request a copy of the Material Safety Data Sheet, you can reach us at:

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6801 River Place Blvd.
Austin, TX 78726-9000
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