



## verSI™

The AirBorn verSI (versatile connectors with high-speed signal integrity) open-pin field product line is designed to meet the requirements for high-speed/high-density/signal integrity 100  $\Omega$  and 85  $\Omega$  differential serial bus applications while still delivering the reliability customers have come to expect from AirBorn.





## VSM – Vertical (Male)

**Pitch: 1.27 mm**

VSM signal-integrity connectors are used in vertical, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole, plated thru-hole, and surface-mount.

### DIMENSIONS

COLUMNS	A	B	C	ROWS	D
10	1.000	0.813	0.450	4	0.300
20	1.500	1.313	0.950	5	0.350
30	2.000	1.813	1.450	6	0.400
40	2.500	2.313	1.950	8	0.500
50	3.000	2.813	2.450	10	0.600

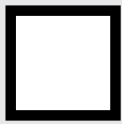
  

SPACING OPTION CODES	E		F		SPACING OPTIONS		
	inches	mm	inches	mm	E	F	
-080	0.235	5.95	0.290	7.36	8 mm	0.235	0.290
-100	0.314	7.79	0.369	9.37	10 mm	0.314	0.369
-120	0.392	9.95	0.447	11.35	12 mm	0.392	0.447
-160	0.550	13.96	0.605	15.36	16 mm	0.550	0.605
-200	0.707	17.94	0.762	19.34	20 mm	0.707	0.762
-250	0.904	22.94	0.959	24.34	25 mm	0.904	0.959

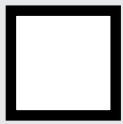
### Sample Part Number Format: VSM-04-10-080-50-02-G



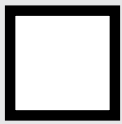
**SERIES**  
 Vertical (Male)  
 1.27 mm



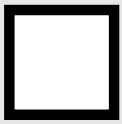
**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



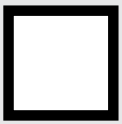
**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**BOARD SPACING\***  
 080 – 8 mm  
 100 – 10 mm  
 120 – 12 mm  
 160 – 16 mm  
 200 – 20 mm  
 250 – 25 mm



**CONTACT PLATING**  
 50 – 50 μ" Au



**TERMINATION**  
 00 – Press-fit  
 01 – Paste-In-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"  
 10<sup>1</sup> – SMT - SN63PB37 Solder Dipped  
 11<sup>1</sup> – SMT - 42Sn/57.6Bi/0.4Ag lead free, solder dipped



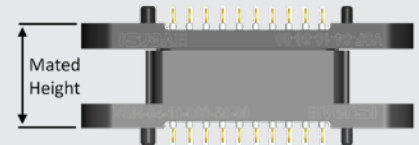
**OPTIONS**  
 Blank – No options<sup>1</sup>  
 G – Guide pin<sup>1</sup>  
 G1 – Guide pin<sup>2</sup>  
 J – Turning jackscrew<sup>1</sup>  
 J1 – Turning jackscrew<sup>2</sup>  
 L – Locking screw<sup>1</sup>  
 L1 – Locking screw<sup>2</sup>  
 N – Fixed jacknut<sup>1</sup>  
 N1 – Fixed jacknut<sup>2</sup>

### NOTES

- Connector potting is standard.
- \* Consult factory for additional board spacing options.
- <sup>1</sup> Used for PC board thickness up to 0.125"
- <sup>2</sup> Used for PC board thickness 0.125" up to 0.250"
- <sup>†</sup> Surface Mount Termination only available on 4 Row vertical connectors.
- <sup>‡</sup> No hardware supplied with blank hardware option connectors.
- AirBorn can manufacture other configurations to your exact specifications.
- RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment

BOARD SPACING		MATED HEIGHT (in)
VALUE	CODE	NOMINAL
8 mm	080	0.315
10 mm	100	0.394
12 mm	120	0.473
16 mm	160	0.630
20 mm	200	0.788
25 mm	250	0.985

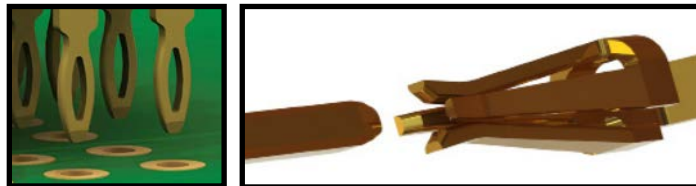
Max allowable separation between mating faces is 0.035 inches.



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## FEATURES

verSI board-mount connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.



## MATERIALS and FINISHES

- Pin Contacts: . . . . . Phos bronze per ASTM B103 or BeCu per ASTM B768 (press-fit contact)
- Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μin min
- Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80
- Contact Normal Force: . . . . . 35–40 grams
- Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320 passivated per SAE AMS-2700, Method 1, Type 2
- Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
- Solder Paste: . . . . . Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

## PERFORMANCE

- Contact Rating: . . . . . 2 amperes maximum
- Operating Temperature: . . . . . -55° C to 125° C
- Min. Contact Wipe: . . . . . 1.27 mm (0.050")
- Contact Normal Force: . . . . . 35–40 grams
- Max Recommended Voltage: . . . . . 200 V, RMS, 60 Hz
- Insulation Resistance: . . . . . 5,000 megohms minimum @ 500 VDC
- Durability: . . . . . 2500 connector mating cycles
- Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)
- Shock: . . . . . 50 g (EIA-364-27, condition E)

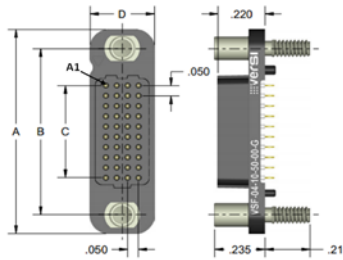


## VSF – Vertical (Female)

**Pitch: 1.27 mm**

VSF signal-integrity connectors are used in vertical, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole, plated thru-hole, and surface-mount.

### DIMENSIONS

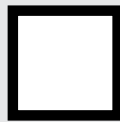


VSF DIMENSIONS					
Columns	A	B	C	Rows	D
10	1.000	0.813	0.450	4	0.300
20	1.500	1.313	0.950	5	0.350
30	2.000	1.813	1.450	6	0.400
40	2.500	2.313	1.950	8	0.500
50	3.000	2.813	2.450	10	0.600

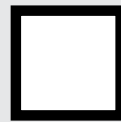
### Sample Part Number Format: VSF-04-10-50-02



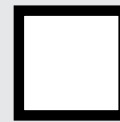
**SERIES**  
 Vertical (Female)  
 1.27 mm



**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**CONTACT PLATING**  
 50 – 50 μ" Au



**TERMINATION**  
 00 – Press-fit  
 01 – Paste-in-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"  
 10\* – SMT - SN63PB37  
     Solder Dipped  
 11\* – SMT - 42Sn/57.6Bi/0.4Ag  
     lead free, solder dipped



**OPTIONS**  
 Blank – No hardware†  
 G – Guide socket<sup>1</sup>  
 G1 – Guide socket<sup>2</sup>  
 J – Turning jackscrew<sup>1</sup>  
 J1 – Turning jackscrew<sup>2</sup>  
 L – Locking screw<sup>1</sup>  
 L1 – Locking screw<sup>2</sup>  
 N – Fixed jacknut<sup>1</sup>  
 N1 – Fixed jacknut<sup>2</sup>

### NOTES

Connector potting is standard.

<sup>1</sup> Used for PC board thickness up to 0.125"

<sup>2</sup> Used for PC board thickness 0.125" up to 0.250"

† Surface Mount Termination only available on 4 Row vertical connectors.

‡ No hardware supplied with blank hardware option connectors.

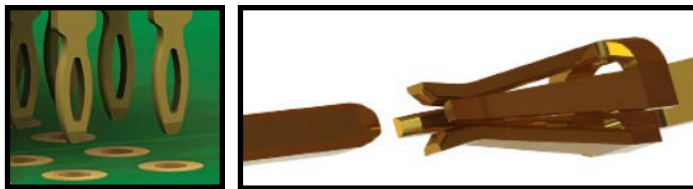
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RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment

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### FEATURES

verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.



### MATERIALS and FINISHES

Socket Contacts: ..... BeCu per ASTM B194  
 Contact Finish: ..... Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μN min  
 Molded Insulators: ..... Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Potting Compound: ..... Frey Eng. Co. insulating compound CF3003-80  
 Hardware (except washers): ..... Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320 passivated per SAE AMS-2700, Method 1, Type 2  
 Washers: ..... Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)  
 Solder Paste: ..... Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

### PERFORMANCE

Contact Rating: ..... 2 amperes maximum  
 Operating Temperature: ..... -55° C to 125° C  
 Min. Contact Wipe: ..... 1.27 mm (0.050")  
 Contact Normal Force: ..... 35–40 grams  
 Max Recommended Voltage: ..... 200 V, RMS, 60 Hz  
 Insulation Resistance: ..... 5,000 megaohms minimum @ 500 VDC  
 Durability: ..... 2500 connector mating cycles  
 Sinusoidal Vibration: ..... 20 g (EIA-364-28, condition IV)  
 Shock: ..... 50 g (EIA-364-27, condition E)

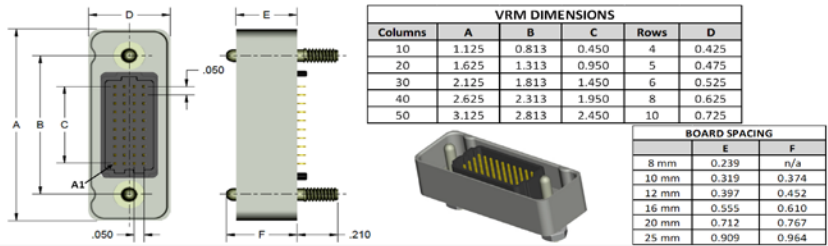


## VRM – Vertical Rugged (Male)

Pitch: 1.27 mm

VRM signal-integrity connectors are ruggedized versions of the standard VSM male connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

### DIMENSIONS



### Sample Part Number Format: VRM-04-10-100-50-02-G



**SERIES**  
 Vertical Rugged (Male)  
 1.27 mm

**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows

**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns

**BOARD SPACING\***  
 080 – 8 mm  
 100 – 10 mm  
 120 – 12 mm  
 160 – 16 mm  
 200 – 20 mm  
 250 – 25 mm

**CONTACT PLATING**  
 50 – 50 μ" Au

**TERMINATION**  
 00 – Press-fit  
 01 – Paste-in-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"  
 10<sup>1</sup> – SMT - SN63PB37 Solder Dipped  
 11<sup>1</sup> – SMT - 42Sn/57.6Bi/0.4Ag lead free, solder dipped

**OPTIONS**  
 Blank – No options<sup>†</sup>  
 G – Guide pin\*\*<sup>1</sup>  
 G1 – Guide pin\*\*<sup>2</sup>  
 J – Turning jackscrew\*\*<sup>1</sup>  
 J1 – Turning jackscrew\*\*<sup>2</sup>  
 L – Locking screw\*\*<sup>1</sup>  
 L1 – Locking screw\*\*<sup>2</sup>  
 N – Fixed jacknut\*\*<sup>1</sup>  
 N1 – Fixed jacknut\*\*<sup>2</sup>  
 E – No Hardware/EMI gasket<sup>†</sup>  
 GE – Guide pin/EMI gasket\*\*<sup>1</sup>  
 G1E – Guide pin/EMI gasket\*\*<sup>2</sup>  
 JE – Turning jackscrew/EMI gasket\*\*<sup>1</sup>  
 J1E – Turning jackscrew/EMI gasket\*\*<sup>2</sup>  
 LE – Locking screw/EMI gasket\*\*<sup>1</sup>  
 L1E – Locking screw/EMI gasket\*\*<sup>2</sup>  
 NE – Fixed jacknut/EMI gasket\*\*<sup>1</sup>  
 N1E – Fixed jacknut/EMI gasket\*\*<sup>2</sup>

### NOTES

Connector potting is standard.

\* Consult factory for additional board spacing options.

\*\* Not available with 8 mm board spacing

<sup>1</sup> Used for PC board thickness up to 0.125"

<sup>2</sup> Used for PC board thickness 0.125" up to 0.250"

<sup>†</sup> Surface Mount Termination only available on 4 Row vertical connectors.

<sup>‡</sup> No hardware supplied with blank hardware option connectors.

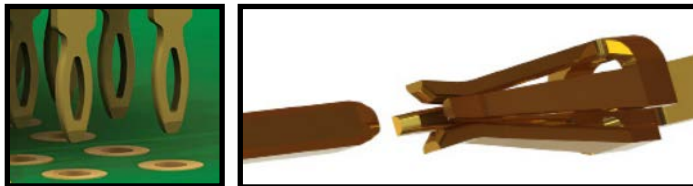
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### FEATURES

verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.



### MATERIALS and FINISHES

Shell: ..... Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8  
 Finish: ..... Electroless nickel per SAE AMS 2404, Class 3; 500 μIN min  
 Pin Contacts: ..... Phos bronze per ASTM B103 or BeCu per ASTM B768 (press-fit contact)  
 Contact Finish: ..... Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μIN min  
 Molded Insulators: ..... Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Potting Compound: ..... Frey Eng. Co. insulating compound CF3003-80  
 Hardware (except washers): ..... Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2  
 Washers: ..... Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)  
 Solder Paste: ..... Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

### PERFORMANCE

Contact Rating: ..... 2 amperes maximum  
 Operating Temperature: ..... -55° C to 125° C  
 Min. Contact Wipe: ..... 1.27 mm (0.050")  
 Contact Normal Force: ..... 35–40 grams  
 Max Recommended Voltage: ..... 200 V, RMS, 60 Hz  
 Insulation Resistance: ..... 5,000 megohms minimum @ 500 VDC  
 Durability: ..... 2500 connector mating cycles  
 Sinusoidal Vibration: ..... 20 g (EIA-364-28, condition IV)  
 Shock: ..... 50 g (EIA-364-27, condition E)

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

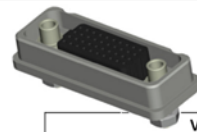
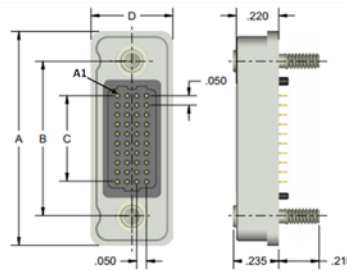


## VRF – Vertical Rugged

Pitch: 1.27 mm

VRF signal-integrity connectors are ruggedized versions of the standard VSF female connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

### DIMENSIONS

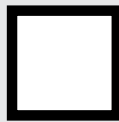


VRF DIMENSIONS					
Columns	A	B	C	Rows	D
10	1.125	0.813	0.450	4	0.425
20	1.625	1.313	0.950	5	0.475
30	2.125	1.813	1.450	6	0.525
40	2.625	2.313	1.950	8	0.625
50	3.125	2.813	2.450	10	0.725

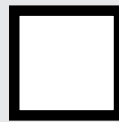
### Sample Part Number Format: VRF-04-10-50-04-J



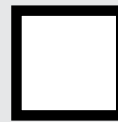
**SERIES**  
 Vertical Rugged  
 (Female)  
 1.27 mm



**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**CONTACT PLATING**  
 50 – 50 μ Au



**TERMINATION**  
 00 – Press-fit  
 01 – Paste-in-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"  
 10\* – SMT - SN63PB37  
     Solder Dipped  
 11\* – SMT - 42Sn/57.6Bi/0.4Ag  
     lead free, solder dipped



**OPTIONS**  
 Blank – No hardware<sup>‡</sup>  
 G – Guide socket<sup>‡</sup>  
 G1 – Guide socket<sup>‡</sup>  
 J – Turning jackscrew<sup>‡</sup>  
 J1 – Turning jackscrew<sup>‡</sup>  
 L – Locking screw<sup>‡</sup>  
 L1 – Locking screw<sup>‡</sup>  
 N – Fixed jacknut<sup>‡</sup>  
 N1 – Fixed jacknut<sup>‡</sup>  
 E – No hardware/EMI gasket<sup>‡</sup>  
 GE – Guide socket/EMI gasket<sup>‡</sup>  
 G1E – Guide socket/EMI gasket<sup>‡</sup>  
 JE – Turning jackscrew/EMI gasket<sup>‡</sup>  
 J1E – Turning jackscrew/EMI gasket<sup>‡</sup>  
 LE – Locking screw/EMI gasket<sup>‡</sup>  
 L1E – Locking screw/EMI gasket<sup>‡</sup>  
 NE – Fixed jacknut/EMI gasket<sup>‡</sup>  
 N1E – Fixed jacknut/EMI gasket<sup>‡</sup>

### NOTES

Connector potting is standard.

<sup>1</sup> Used for PC board thickness up to 0.125"

<sup>2</sup> Used for PC board thickness 0.125" up to 0.250"

<sup>†</sup> Surface Mount Termination only available on 4 Row vertical connectors.

<sup>‡</sup> No hardware supplied with blank hardware option connectors.

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RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment

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### MATERIALS and FINISHES

Shell: ..... Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8  
 Finish: ..... Electroless nickel per SAE AMS-2404, Class 3; 500 μin min  
 Socket Contact: ..... BeCu per ASTM B194  
 Contact Finish: ..... Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 μin min  
 Molded Insulators: ..... Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Potting Compound: ..... Frey Eng. Co. insulating compound CF3003-80  
 Hardware (except washers): ..... Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2  
 Washers: ..... Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)  
 EMI Gasket (GE, G1E, NE and N1E options only): ..... Conductive Elastomer per MIL-DTL-83528 Type D  
 Solder Paste: ..... Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

### PERFORMANCE

Contact Rating: ..... 2 amperes maximum  
 Operating Temperature: ..... -55° C to 125° C  
 Min. Contact Wipe: ..... 1.27 mm (0.050")  
 Contact Normal Force: ..... 35–40 grams  
 Max Recommended Voltage: ..... 200 V, RMS, 60 Hz  
 Insulation Resistance: ..... 5,000 megohms minimum @ 500 VDC  
 Durability: ..... 2500 connector mating cycles  
 Sinusoidal Vibration: ..... 20 g (EIA-364-28, condition IV)  
 Shock: ..... 50 g (EIA-364-27, condition E)

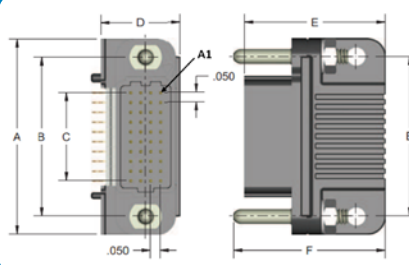


## VSRAM – Right Angle (Male)

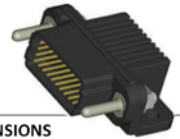
**Pitch: 1.27 mm**

VSRAM signal-integrity connectors are used in right angle, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole.

### DIMENSIONS



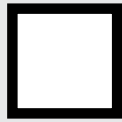
VSRAM DIMENSIONS							
Columns	A	B	C	Rows	D	E	F
10	1.000	.813	.450	4	.400	.713	.768
20	1.500	1.313	.950	5	.450	.763	.818
30	2.000	1.813	1.450	6	.500	.813	.868
40	2.500	2.313	1.950	8	.600	.913	.968
50	3.000	2.813	2.450	10	.700	1.013	1.068



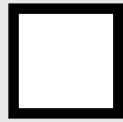
### Sample Part Number Format: VSRAM-04-10-50-02-G



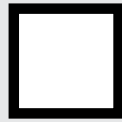
**SERIES**  
 Right Angle (Male)  
 1.27 mm



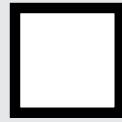
**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



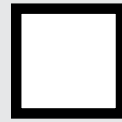
**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**CONTACT PLATING**  
 50 – 50 μ" Au



**TERMINATION**  
 00 – Press-fit  
 01 – Paste-in-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"



**OPTIONS**  
 Blank – No options\*  
 G – Guide pin  
 N – Fixed jacknut  
 J – Turning jackscrew  
 L – Locking screw

### NOTES

Connector potting is standard.

\* No hardware supplied with blank hardware option connectors.

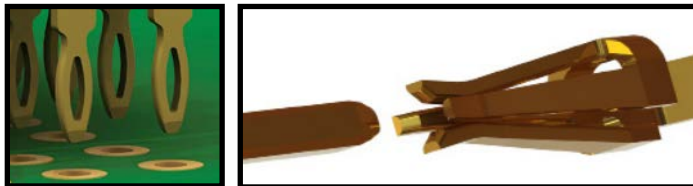
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### FEATURES

verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.



### MATERIALS and FINISHES

Pin Contacts (Mating Face): . . . . . Phos bronze per ASTM B103  
 Pin Contacts (Termination): . . . . . BeCu per ASTM B768 (press-fit contact) or brass alloy per ASTM B36 (PIH or PTH)  
 Contact Finish (Mating Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C over nickel per ASTM B689 Type I, 50 μN min  
 Contact Finish (Termination): . . . . . Localized gold finish per ASTM B488, Type II, Code C, 50 μN min over nickel per ASTM B689 Type I, 50 μN min (Press Fit) or Localized Gold per ASTM B488 Type I, Code A or C, 10-25 μN over nickel per ASTM B689 Type I, 50 μN min (PIH or PTH)  
 Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80  
 Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2  
 Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

### PERFORMANCE

Contact Rating: . . . . . 2 amperes maximum  
 Operating Temperature: . . . . . -55° C to 125° C  
 Min. Contact Wipe: . . . . . 1.27 mm (0.050")  
 Contact Normal Force: . . . . . 35-40 grams  
 Max Recommended Voltage: . . . . . 200 V, RMS, 60 Hz  
 Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC  
 Durability: . . . . . 2500 connector mating cycles  
 Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)  
 Shock: . . . . . 50 g (EIA-364-27, condition E)

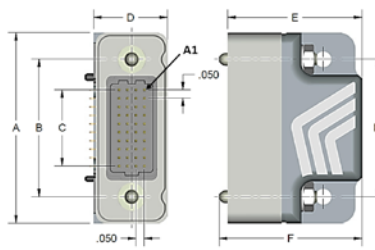


## VRRAM – Rugged Right Angle (Male)

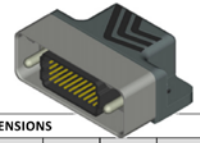
**Pitch: 1.27 mm**

VRRAM signal-integrity connectors are ruggedized versions of the standard VSRAM male connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

### DIMENSIONS



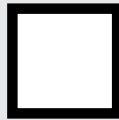
VRRAM DIMENSIONS							
Columns	A	B	C	Rows	D	E	F
10	1.125	0.813	0.450	4	0.438	0.798	0.847
20	1.625	1.313	0.950	5	0.488	0.848	0.897
30	2.125	1.813	1.450	6	0.538	0.898	0.947
40	2.625	2.313	1.950	8	0.638	0.998	1.047
50	3.125	2.813	2.450	10	0.738	1.098	1.147



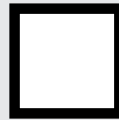
### Sample Part Number Format: VRRAM-04-10-50-02-N



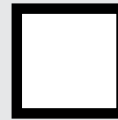
**SERIES**  
 Rugged Right Angle (Male)  
 1.27 mm



**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**CONTACT PLATING**  
 50 – 50 μ" Au



**TERMINATION**  
 00 – Press-fit  
 01 – Paste-in-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"



**OPTIONS**  
 Blank – Standard<sup>1</sup>  
 G – Guide pin<sup>1</sup>  
 N – Fixed jacknut<sup>1</sup>  
 J – Turning jackscrew<sup>2</sup>  
 L – Locking screw<sup>2</sup>  
 E – Standard/EMI gasket<sup>1</sup>  
 GE – Guide pin/EMI gasket<sup>1</sup>  
 NE – Fixed jacknut/EMI gasket<sup>1</sup>  
 JE – Turning jackscrew/EMI gasket<sup>2</sup>  
 LE – Locking screw/EMI gasket<sup>2</sup>

### NOTES

<sup>1</sup> Shells & hardware supplied uninstalled.

<sup>2</sup> Connectors come pre-assembled with shells & hardware.

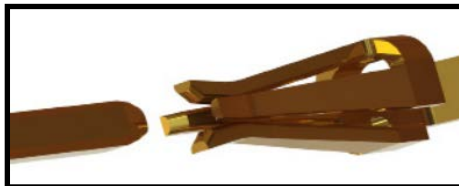
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### FEATURES

verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.



### MATERIALS and FINISHES

Shell: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8  
 Finish: . . . . . Electroless nickel per SAE AMS-2404, Class 3, 500 μN min  
 Pin Contacts (Mating Face): . . . . . Phos bronze per ASTM B103  
 Pin Contacts (Termination): . . . . . BeCu per ASTM B768 (press-fit contact) or brass alloy per ASTM B36 (PIH or PTH)  
 Contact Finish (Mating Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C, over nickel per ASTM B689 Type I 50 μN min  
 Contact Finish (Termination Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C, 50 μN min over nickel per ASTM B689 Type I, 50 μN min (Press Fit) or Localized Gold per ASTM B488, Type 1, Code A or C, 10-25 μN over nickel per ASTM B689 Type I, 50 μN min (PIH or PTH)  
 Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Potting Compound: . . . . . Frey Eng. Co. insulating compound CF3003-80  
 Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2  
 Washers: . . . . . Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700).

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

### PERFORMANCE

Contact Rating: . . . . . 2 amperes maximum  
 Operating Temperature: . . . . . -55° C to 125° C  
 Min. Contact Wipe: . . . . . 1.27 mm (0.050")  
 Contact Normal Force: . . . . . 35-40 grams  
 Max Recommended Voltage: . . . . . 200 V, RMS, 60 Hz  
 Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC  
 Durability: . . . . . 2500 connector mating cycles  
 Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)  
 Shock: . . . . . 50 g (EIA-364-27, condition E)

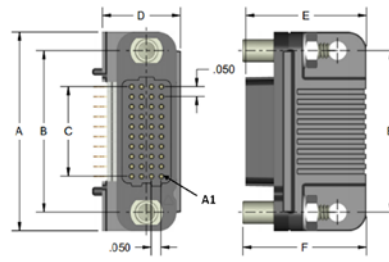


## VSRAF – Right Angle (Female)

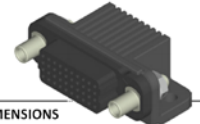
**Pitch: 1.27 mm**

VSRAF signal-integrity connectors are used in right angle, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole.

### DIMENSIONS



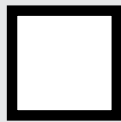
VSRAF DIMENSIONS							
Columns	A	B	C	Rows	D	E	F
10	1.000	.813	.450	4	.400	.619	.634
20	1.500	1.313	.950	5	.450	.669	.684
30	2.000	1.813	1.450	6	.500	.719	.734
40	2.500	2.313	1.950	8	.550	.769	.784
50	3.000	2.813	2.450	10	.600	.819	.834



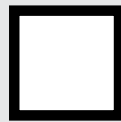
### Sample Part Number Format: VSRAF-04-10-50-02-N



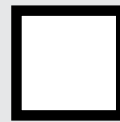
**SERIES**  
 Right Angle  
 (Female)  
 1.27 mm



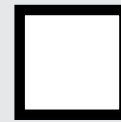
**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**CONTACT PLATING**  
 50 – 50 μ Au



**TERMINATION**  
 00 – Press-fit  
 01 – Paste-in-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"



**OPTIONS**  
 Blank – No options<sup>‡</sup>  
 G – Guide socket  
 N – Fixed jacknut  
 J – Turning jackscrew  
 L – Locking screw

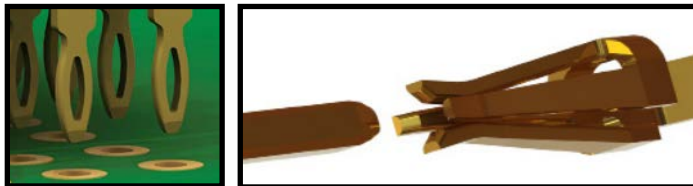
### NOTES

- Connector potting is standard.
- <sup>‡</sup> No hardware supplied with blank hardware option connectors.
- AirBorn can manufacture other configurations to your exact specifications.
- RoHS Compliant; certificate of conformance available upon request with each shipment

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### FEATURES

verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.



### MATERIALS and FINISHES

- Socket Contact (Mating Face): BeCu per ASTM B194
- Socket Contact (Termination): Brass alloy per ASTM B36 (PIH or PTH) or BeCu per ASTM B768 (press-fit contact)
- Contact Finish (Mating Face): Localized gold finish per ASTM B488, Type II, Code C over nickel per ASTM B689 Type I, 50 μIN min
- Contact Finish (Termination): Localized gold finish per ASTM B488, Type II, Code C, 50 μIN min over nickel per ASTM B689 Type I, 50 μIN min (Press Fit) or localized gold per ASTM B488, Type I, Code A or C, 10-25 μIN over nickel per ASTM B689 Type I, 50 μIN min (PIH or PTH)
- Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
- Washers: Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700).

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

### PERFORMANCE

- Contact Rating: 2 amperes maximum
- Operating Temperature: -55° C to 125° C
- Min. Contact Wipe: 1.27 mm (0.050")
- Contact Normal Force: 35-40 grams
- Max Recommended Voltage: 200 V, RMS, 60 Hz
- Insulation Resistance: 5,000 megaohms minimum @ 500 VDC
- Durability: 2500 connector mating cycles
- Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
- Shock: 50 g (EIA-364-27, condition E)



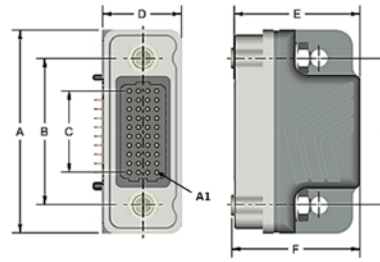


## VRRAF – Rugged Right Angle (Female)

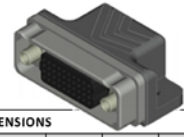
**Pitch: 1.27 mm**

VRRAM signal-integrity connectors are ruggedized versions of the standard VSRAF female connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

### DIMENSIONS



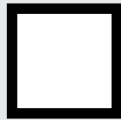
VRRAF DIMENSIONS							
Columns	A	B	C	Rows	D	E	F
10	1.125	0.813	0.450	4	0.438	0.698	0.714
20	1.625	1.313	0.950	5	0.488	0.748	0.764
30	2.125	1.813	1.450	6	0.538	0.798	0.814
40	2.625	2.313	1.950	8	0.638	0.898	0.914
50	3.125	2.813	2.450	10	0.738	0.998	1.014



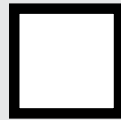
### Sample Part Number Format: VRRAF-04-10-50-00-G



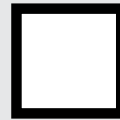
**SERIES**  
 Rugged Right Angle (Female)  
 1.27 mm



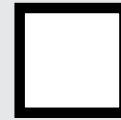
**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**CONTACT PLATING**  
 50 – 50 μ" Au



**TERMINATION**  
 00 – Press-fit  
 01 – Paste-in-hole  
 02 – PTH 0.078"  
 03 – PTH 0.109"  
 04 – PTH 0.140"  
 05 – PTH 0.156"  
 06 – PTH 0.172"



**OPTIONS**  
 Blank – Standard<sup>1</sup>  
 G – Guide socket<sup>1</sup>  
 N – Fixed jacknut<sup>1</sup>  
 J – Turning jackscrew<sup>2</sup>  
 L – Locking screw<sup>2</sup>  
 E – Standard/EMI gasket<sup>1</sup>  
 GE – Guide socket/EMI gasket<sup>1</sup>  
 NE – Fixed jacknut/EMI gasket<sup>1</sup>  
 JE – Turning jackscrew/EMI gasket<sup>2</sup>  
 LE – Locking screw/EMI gasket<sup>2</sup>

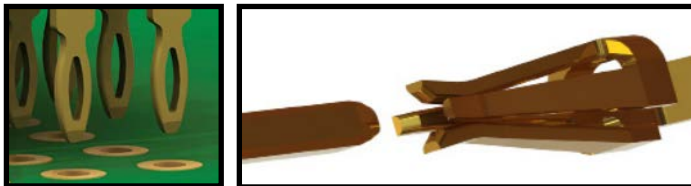
### NOTES

- <sup>1</sup> Shells & hardware supplied uninstalled.
  - <sup>2</sup> Connectors come pre-assembled with shells & hardware.
- AirBorn can manufacture other configurations to your exact specifications.  
 RoHS Compliant; certificate of conformance available upon request with each shipment

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### FEATURES

verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.



### MATERIALS and FINISHES

Shell: . . . . . Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8  
 Finish: . . . . . Electroless nickel per AMS-2404, Class 3; 500 μN min  
 Socket Contact (Mating Face): . . . . . BeCu per ASTM B194  
 Socket Contact (Termination): . . . . . Brass alloy per ASTM B36 (PIH or PTH) or BeCu per ASTM B768 (press-fit contact)  
 Contact Finish (Mating Face): . . . . . Localized gold finish per ASTM B488, Type II, Code C over nickel per ASTM B689, Type I, 50 μN min  
 Contact Finish (Termination): . . . . . Localized gold finish per ASTM B488, Type II, Code C, 50 μN min over nickel per ASTM B689, Type I, 50 μN min (Press Fit) or localized gold per ASTM B488, Type 1, Code A or C, 10-25 μN over nickel per ASTM B689 Type I, 50 μN min (PIH or PTH)  
 Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Potting Compound: . . . . . Frey Eng. Co insulating compound CF3003-80  
 Hardware (except washers): . . . . . Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2  
 Washers: . . . . . Stainless steel & passivated per NASM35333  
 EMI Gasket (GE and NE options only): . . . . . Conductive Elastomer per MIL-DTL-83528 Type D

### PERFORMANCE

Contact Rating: . . . . . 2 amperes maximum  
 Operating Temperature: . . . . . -55° C to 125° C  
 Min. Contact Wipe: . . . . . 1.27 mm (0.050")  
 Contact Normal Force: . . . . . 35-40 grams  
 Max Recommended Voltage: . . . . . 200 V, RMS, 60 Hz  
 Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC  
 Durability: . . . . . 2500 connector mating cycles  
 Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)  
 Shock: . . . . . 50 g (EIA-364-27, condition E)

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

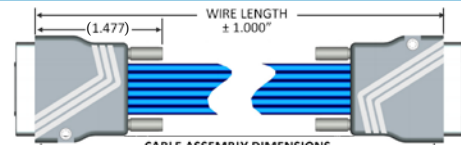
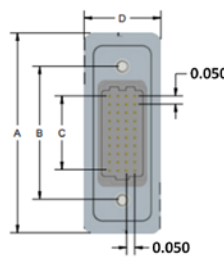


## VRD – Differential Pair Twinax Cable Assembly

**Pitch: 1.27 mm**

VRD cable assemblies are designed for twinax applications. These cable assemblies come in standard lengths but custom lengths and configurations can also be requested. Ruggedized hoods are standard.

### DIMENSIONS

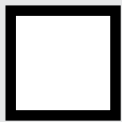


Columns	A	B	C	Rows	D
10	1.222	0.813	0.450	4	0.470
20	1.722	1.313	0.950	5	0.520
30	2.222	1.813	1.450	6	0.570
40	2.722	2.313	1.950	8	0.670
50	3.222	2.813	2.450	10	0.770

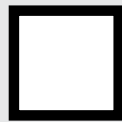
### Sample Part Number Format: VRD-04-10-50-01-03-060



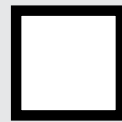
**SERIES**  
 Differential Pair  
 Twinax Cable  
 Assembly  
 1.27 mm



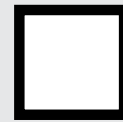
**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



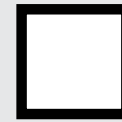
**CONTACT PLATING**  
 50 – 50 μ" Au



**CONNECTOR 1**  
 01G – Male with guide pins  
 01N – Male with threaded nut #2-56  
 01L – Male with locking screw #2-56  
 01J – Male with jackscrew #2-56  
 03G – Female with guide sockets  
 03N – Female with threaded nut #2-56  
 03L – Female with locking screw #2-56  
 03J – Female with jackscrew #2-56



**CONNECTOR 2**  
 000 – Flying Leads  
 01G – Male with guide pins  
 01N – Male with threaded nut #2-56  
 01L – Male with locking screw #2-56  
 01J – Male with jackscrew #2-56  
 03G – Female with guide sockets  
 03N – Female with threaded nut #2-56  
 03L – Female with locking screw #2-56  
 03J – Female with jackscrew #2-56



**LENGTH\***  
 030 – 0.30 M  
 040 – 0.40 M  
 050 – 0.50 M  
 060 – 0.60 M  
 070 – 0.70 M  
 080 – 0.80 M  
 090 – 0.90 M  
 100 – 1.00 M  
 150 – 1.50 M  
 200 – 2.00 M  
 300 – 3.00 M

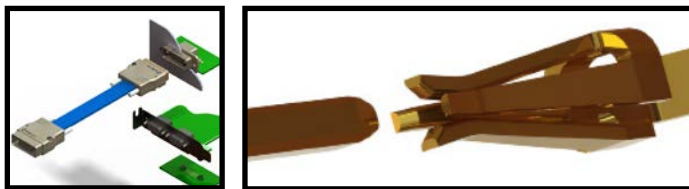
### NOTES

\* Other cable lengths and configurations available.  
 AirBorn can manufacture other configurations to your exact specifications.

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

### FEATURES

VerSI connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



### MATERIALS and FINISHES

Shell: . . . . . Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T6511 per QQ-A-200/8  
 Finish: . . . . . Electroless nickel per SAE AMS-C-26074, Grade B, Class 3  
 Socket Contact: . . . . . BeCu per ASTM B194  
 Pin Contacts: . . . . . Phos bronze per ASTM B103  
 Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I  
 Wire: . . . . . 30 AWG\*; 19/42 silver-plated copper  
 Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Hardware: . . . . . Stainless steel per ASTM A582/A582M or ASTM A320; passivated per SAE AMS-2700  
 Embedment: . . . . . Frey Eng. Co. insulating compound CF3003-80 and L-I-49 or equiv.

### PERFORMANCE

Contact Rating: . . . . . 2 amperes maximum  
 Operating Temperature: . . . . . -55° C to 125° C  
 Min. Contact Wipe: . . . . . 1.27 mm (0.050")  
 Contact Normal Force: . . . . . 35–40 grams  
 Max Recommended Voltage: . . . . . 200 V, RMS, 60 Hz  
 Insulation Resistance: . . . . . 5,000 megaohms minimum @ 500 VDC  
 Durability: . . . . . 2500 connector mating cycles  
 Sinusoidal Vibration: . . . . . 20 g (EIA-364-28, condition IV)  
 Shock: . . . . . 50 g (EIA-364-27, condition E)

### SI DATA – Simulated (Connectors Only)

1	Diff. Insertion Loss	-0.25 dB @ 5 GHz	-3dB @ 16 GHz
2	Diff. Return Loss	-20 dB @ 5 GHz	-6 dB @ 14 GHz
3	Diff. Impedance	100 ohm ±10% @ 50 ps rise time	
4	Diff. Skew	< 2 psec	

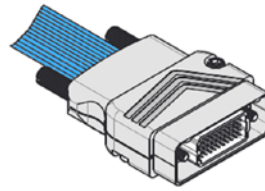


## VRW – Discrete Wire Cable Assembly with Internal Solder Connection

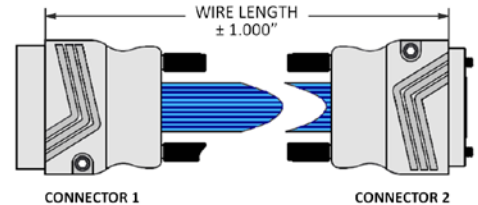
Pitch: 1.27 mm

VRW cable assemblies come in standard wire and lengths but custom wire and length options are available. Ruggedized shells are standard.

### DIMENSIONS



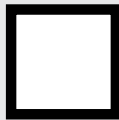
See next page for detailed drawings



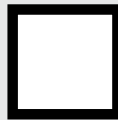
### Sample Part Number Format: VRW-04-10-50-03J-01J-A030



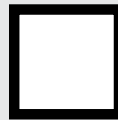
**SERIES**  
 Discrete Wire Cable Assembly  
 1.27 mm



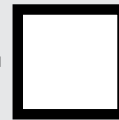
**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



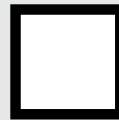
**CONTACT PLATING**  
 50 – 50 μ" Au



**CONNECTOR 1**  
 01G – Male with guide pins  
 01N – Male with threaded nut #2-56  
 01L – Male with locking screw #2-56  
 01J – Male with jackscrew #2-56  
 03G – Female with guide sockets  
 03N – Female with threaded nut #2-56  
 03L – Female with locking screw #2-56  
 03J – Female with jackscrew #2-56



**CONNECTOR 2**  
 000 – Flying Leads  
 01G – Male with guide pins  
 01N – Male with threaded nut #2-56  
 01L – Male with locking screw #2-56  
 01J – Male with jackscrew #2-56  
 03G – Female with guide sockets  
 03N – Female with threaded nut #2-56  
 03L – Female with locking screw #2-56  
 03J – Female with jackscrew #2-56



**WIRE CODE**  
 XXXX  
 (Four characters are required -- see blue columns in the chart below.)

### NOTES

All VRW part numbers are non-RoHS-compliant.

Wire colors per M83513 are ten (10) solid colors, repeating.

Per M83513, corrosion has been experienced on connectors that are pre-wired with 22759/33 and stored in sealed environments. Caution should be exercised when using this wire.

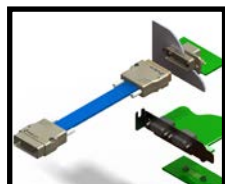
PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

### FEATURES

Versi connectors feature low mating force/high-reliability contact system with four points of contact. The open pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

### MATERIALS and FINISHES

Shell: . . . . . Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T6511 per QQ-A-200/8  
 Finish: . . . . . Electroless nickel per SAE AMS-2404, Class 3; 500 μ", min.  
 Socket Contact: . . . . . BeCu per ASTM B194  
 Pin Contacts: . . . . . Phos bronze per ASTM B103  
 Contact Finish: . . . . . Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I  
 Molded Insulators: . . . . . Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Embedment: . . . . . Frey Eng. Co. insulating compound CF3003-80 and L-II-49 or equiv.  
 Hardware: . . . . . Stainless steel per ASTM A582/A582M or ASTM A320; passivated per SAE AMS-2700



### WIRE CODES

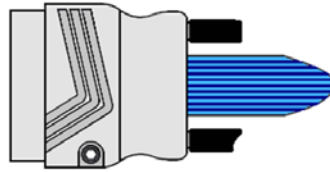
COLOR (per 83513) and GAGE	LENGTH		
	A	M	FT
NEMA HP3 EXBEB (24 AWG) – Multicolored	A		
White	B	010	0.10 0.328
NEMA HP3 EXBDB (26 AWG) – Multicolored	C	020	0.20 0.656
White	D	030	0.30 0.984
NEMA HP3 EXBCB (28 AWG) – Multicolored	E	040	0.40 1.312
White	F	050	0.50 1.640
NEMA HP3 EXBBB (30 AWG) – Multicolored	G	060	0.60 1.969
White	H	070	0.70 2.297
SAE AS22759/33-24 (AWG) – Multicolored	J	080	0.80 2.625
White	K	090	0.90 2.953
SAE AS22759/33-26 (AWG) – Multicolored	L	100	1.00 3.281
White	M	150	1.50 4.921
SAE AS22759/33-28 (AWG) – Multicolored	N	200	2.00 6.562
White	P	300	3.00 9.843
SAE AS22759/33-30 (AWG) – Multicolored	R		
White	S		

\* AirBorn can manufacture special configurations to your exact specifications. \*

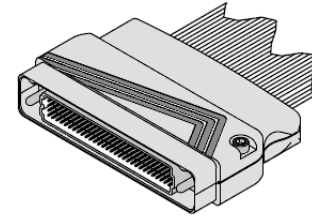


## VRW DIMENSIONS

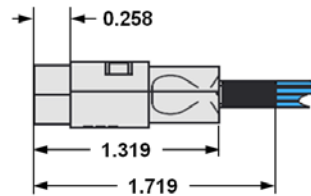
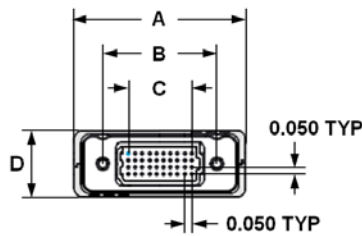
### Male (Connector 1)



(Dimensional drawings shown with turning hardware)



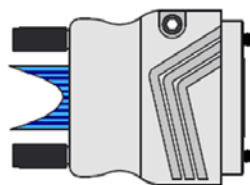
(Connector with guide pin hardware)



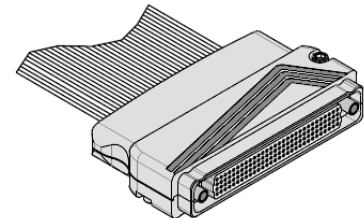
Columns	A	B	C	Rows	D
10	1.222	0.813	0.450	4	0.470
20	1.722	1.313	0.950	5	0.520
30	2.222	1.813	1.450	6	0.570
40	2.722	2.313	1.950	8	0.670
50	3.222	2.813	2.450	10	0.770

Tolerances (unless otherwise specified):  $\pm 0.010$ "

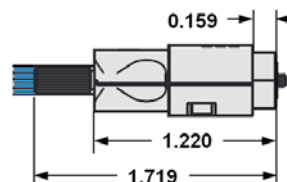
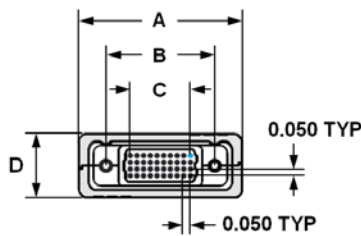
### Female (Connector 2)



(Dimensional drawings shown with turning hardware)



(Connector with guide socket hardware)



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## VRW PINOUTS

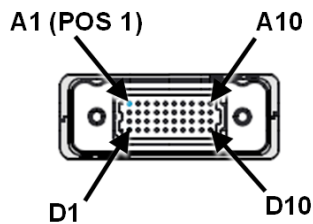
### 1-TO-1 WIRE CHART FOR JUMPER ASSEMBLIES

(Table illustrates connections for a 4-row, 10-column connector)

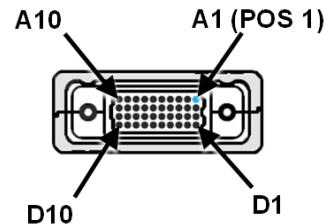
Connector 1	Connector 2	Connector 1	Connector 2	Connector 1	Connector 2	Connector 1	Connector 2
A1 — BLK — A1	B1 — BLK — B1	C1 — BLK — C1	D1 — BLK — D1	A2 — BRN — A2	B2 — BRN — B2	C2 — BRN — C2	D2 — BRN — D2
A3 — RED — A3	B3 — RED — B3	C3 — RED — C3	D3 — RED — D3	A4 — ORN — A4	B4 — ORN — B4	C4 — ORN — C4	D4 — ORN — D4
A5 — YEL — A5	B5 — YEL — B5	C5 — YEL — C5	D5 — YEL — D5	A6 — GRN — A6	B6 — GRN — B6	C6 — GRN — C6	D6 — GRN — D6
A7 — BLU — A7	B7 — BLU — B7	C7 — BLU — C7	D7 — BLU — D7	A8 — VIO — A8	B8 — VIO — B8	C8 — VIO — C8	D8 — VIO — D8
A9 — GRY — A9	B9 — GRY — B9	C9 — GRY — C9	D9 — GRY — D9	A10 — WHT — A10	B10 — WHT — B10	C10 — WHT — C10	D10 — WHT — D10

Wire colors per M83513 are ten (10) solid colors, repeating when there are more than 10 columns.

#### MALE



#### FEMALE



Sample part number:  
 VRW-04-10-30-01G-03G-A030

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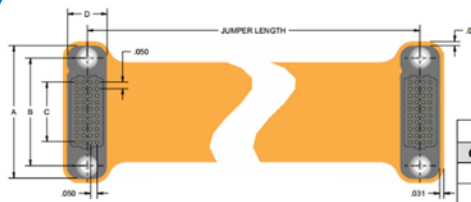


## VSX – Flexible Circuit Jumper Assembly

**Pitch: 1.27 mm**

VSX flexible circuit jumpers come in standard lengths and wiring configurations, but custom specifications can be requested.

### DIMENSIONS

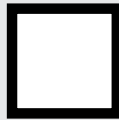


FLEX JUMPER DIMENSIONS					
Columns	A	B	C	Rows	D
10	1.000	0.813	0.450	4	0.300
20	1.500	1.313	0.950	5	0.350
30	2.000	1.813	1.450	6	0.400
40	2.500	2.313	1.950	8	0.500
50	3.000	2.813	2.450	10	0.700

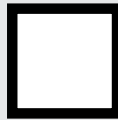
### Sample Part Number Format: VSX-04-10-50-01G-03A-030



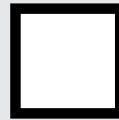
**SERIES**  
 Flexible Circuit Jumper  
 1.27 mm



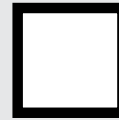
**ROWS**  
 04 – 4 Rows  
 05 – 5 Rows  
 06 – 6 Rows  
 08 – 8 Rows  
 10 – 10 Rows



**COLUMNS**  
 10 – 10 Columns  
 20 – 20 Columns  
 30 – 30 Columns  
 40 – 40 Columns  
 50 – 50 Columns



**CONTACT PLATING**  
 50 – 50 μ" Au



**CONNECTOR 1**  
 01A – Male; no hardware  
 03A – Female  
 01G – Male; guide pin  
 03G – Female; guide socket



**CONNECTOR 2**  
 01A – Male; no hardware  
 03A – Female  
 01G – Male; guide pin  
 03G – Female; guide socket



**LENGTH\***  
 015 – 0.15 M  
 030 – 0.30 M  
 045 – 0.45 M

### NOTES

\* Other cable lengths and configurations available.  
 AirBorn can manufacture other configurations to your exact specifications.

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

### FEATURES

verSI connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.



### MATERIALS and FINISHES

Socket Contact: ..... BeCu per ASTM B194  
 Pin Contacts: ..... Phos bronze per ASTM B103 or per BeCu ASTM B768 (press-fit contact)  
 Contact Finish: ..... Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I  
 Molded Insulators: ..... Glass-filled liquid crystal polymer (LCP) per ASTM D5138  
 Hardware: ..... Stainless steel per ASTM A582/A582M or ASTM A320; passivated per ASTM A967, SAE AMS-QQ-P-35

### SI DATA – Simulated (Connectors Only)

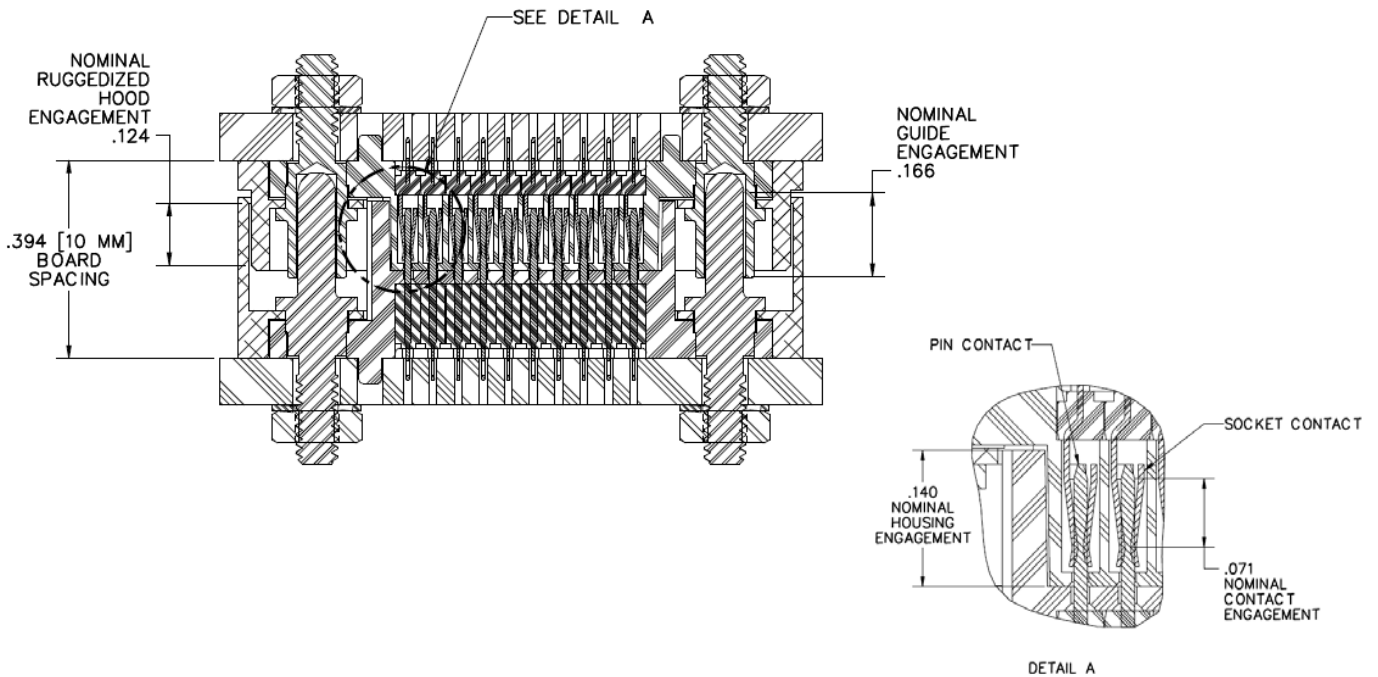
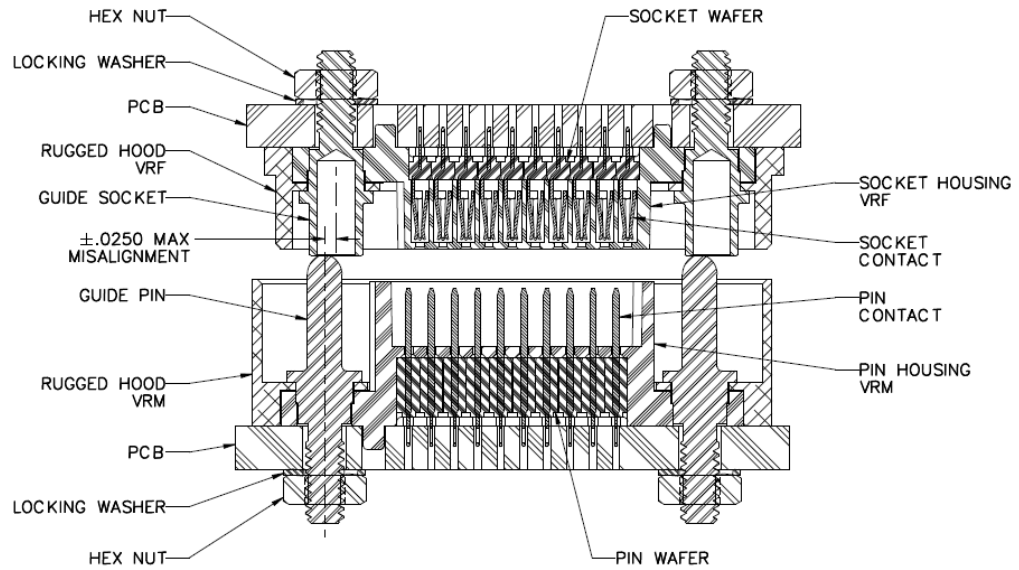
1	Diff. Insertion Loss	22 GHz @ -2 db	
2	Diff. Return Loss	7.5 GHz @ -20 db	17.5 GHz @ -10 db
3	Diff. Impedance	100 ohm ±10%	
4	Diff. Skew	< 2 psec	

### PERFORMANCE

Contact Rating: ..... 2 amperes maximum  
 Operating Temperature: ..... -55° C to 125° C  
 Min. Contact Wipe: ..... 1.27 mm (0.050")  
 Contact Normal Force: ..... 35–40 grams  
 Max Recommended Voltage: ..... 200 V, RMS, 60 Hz  
 Insulation Resistance: ..... 5,000 megaohms minimum @ 500 VDC  
 Durability: ..... 2500 connector mating cycles  
 Sinusoidal Vibration: ..... 20 g (EIA-364-28, condition IV)  
 Shock: ..... 50 g (EIA-364-27, condition E)



## verSI VERTICAL MISALIGNMENT AND ENGAGEMENT DIAGRAM



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