

ULTRAWIZE WIRE-TO-BOARD, HIGH-CURRENT POWER CONNECTORS AND CABLE ASSEMBLIES

As electrical current requirements increase, PCB space is at a premium. This drives customers' demand for greater power density in a small footprint connector. UltraWize connectors and cable assemblies offer 170.0A in a compact design for improved production efficiency that minimizes manufacturing costs and increases the speed to market.

NPI INNOVATION

MARCH 2024

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ULTRAWIZE WIRE-TO-BOARD (W-T-B), HIGH-CURRENT POWER CONNECTORS AND CABLE ASSEMBLIES

Achieve superior power distribution with UltraWize Power Connectors and Cable Assemblies, specifically engineered for demanding data center applications. These products utilize proven Coeur socket technology which incorporates conical sockets to ensure a large conductive surface area. This reduces contact resistance and voltage drop to minimize heat generation and deliver high-current carrying capacity for UltraWize products. Additionally, the cable-side exit configuration uses minimal space and further enhances efficiency and design flexibility. UltraWize Power Connectors and Cable Assemblies provide reliable, robust and space-saving power distribution in data center environments.

Key Product Information

Category:	Power, Wire-to-Board Connectors and Cable Assemblies
Current:	170.0A
Voltage:	125V
Pitch:	13.58mm
Operating	
Temperatures:	-40 to +125°C
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Download Datasheet

Series

218567 UltraWize Wire-to-Board Headers
226269 UltraWize Right-Angle to Right-Angle Cable Assembly
226270 UltraWize Right-Angle to Vertical Cable Assembly
226271 UltraWize Vertical to Vertical Cable Assembly

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UltraWize Wire-to-Board, High-Current Power Connectors and Cable Assemblies

VITAL PRODUCT INFORMATION



What makes this product different from the competition?

The UltraWize connector system's primary competitive advantage is its design that enables the wires to exit out the side of the receptacle, eliminating cable-bend radius and allowing customers to increase the power density of their devices.

How does this product/solution create value for our customers?

UltraWize connectors reduce manufacturing costs because of their surfacemount reflow-capable headers in a pick-and-place package. UltraWize headers can pass through a reflow oven with no post-processing required. For customers, this results in lower manufacturing costs and increased profits.

What is the Molex Advantage?

UltraWize power connectors and cable assemblies allow engineers to design for greater power density in a smaller PCB footprint, while minimizing manufacturing costs. As electrical current requirements increase, PCB space remains limited. UltraWize headers allow customers to increase the power (wattage) of their devices without increasing the product size.

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PRODUCT OVERVIEW

Excellent Space Savings

The UltraWize right-angle cable exit of the receptacle housing eliminates cable-bend radius, allowing for significant space savings. The angled placement of the pins on the header and the crimp contacts in the receptacle also minimize PCB real estate requirements.

Design Flexibility

With the elimination of cable-bend radius required by straight-exit connectors, UltraWize connectors provide low mated heights. Customers can design devices with greatly reduced overall heights.

Cost Efficiency

Customers can use automated pick-and-place machines to position the headers on PCBs and run the PCBs through reflow ovens to minimize processing costs.



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UltraWize Wire-to-Board, High-Current Power Connectors and Cable Assemblies

MARKETS AND APPLICATIONS



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SOLVING INDUSTRY CHALLENGES

Industry Need	Industry Challenge	Industry Solution	Anticipated Results
Compact design	Customers require connectors with a small PCB footprint. Electrical current requirements are increasing, while PCB space is at a premium. This demand drives the need for a small footprint connector.	UltraWize Connectors and Cable Assemblies offer a staggered pin design that minimizes space required on the PCB, allowing more room for additional components.	Engineers no longer are obligated to choose between compactness and performance. Customers can avoid PCB crowding and have the space required for their product design.
Greater power density	Manufacturers need greater power density in a small footprint connector.	UltraWize Connectors and Cable Assemblies deliver 170.0A of power and feature a side-exit cable design that eliminates the need to accommodate the cable bend radius and minimizes the stack height for greater power density.	Customers can expect increased power density for better utilization of available space on the PCB.
Improved production efficiency	Customers are challenged to increase profits and lower manufacturing costs. Customers want greater productivity.	UltraWize Connectors and Cable Assemblies offer SMT reflow- capable headers in a pick-and-place package. This minimizes manufacturing costs and increases the speed to market.	Manufacturers will minimize cost and maximize profit growth by increasing the speed to market and improving production efficiency.

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PRODUCT ADVANTAGES AND FEATURES

Minimizes stack height

The cable side-exit design eliminates the need to accommodate the cable-bend radius.

Enhances electrical performance

The Coeur socket technology design contains a large conductive surface area, minimizing voltage drop and contact resistance.

Reduces processing costs and increases speed to market

SMT reflow-capable headers in pick-and-place packaging allow the header to be run through a reflow oven with no post-processing required.

Secures mating of the connector

A positive lock helps prevent the connector from accidentally unmating.



Key Specifications		
Current	170.0A	
Voltage	125V	
Mating Cycles	200	
Flammability Rating	UL 94V-0	
Operating Temperatures	-40 to +125°C	



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PRODUCT ADVANTAGES AND FEATURES (CONT'D)

Reduces mis-mating in production and allows for fewer defects

The connectors are mechanically keyed and have locating pegs to ensure correct mating.

Minimizes PCB footprint requirements

The staggered pin design reduces the space required on the PCB and allows more room for additional components.



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UNIQUE AND USEFUL DIFFERENTIATION VS. SIMILAR MOLEX PRODUCT

	Molex UltraWize Power Connectors		Molex PowerWize Connectors	
Series Number	Connectors	Cable Assemblies	Header	Receptacle
	218269	226269, 226270, 226271	204060	204061
PCB Keep-Out Zone (mm)	26.0 x 26.0	N/A	25.9 x 46.3	
Mated Height (mm) Right-Angle Configuration	31.0	31.0	N	Ά
Current (A)	170.0	170.0	200.0	
Operating Temperatures	-40 to +125°C	-40 to +125°C	-40 to	+105°C



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SPECIFICATIONS AND SUPPORTING INFORMATION

Connectors

Reference Information

Packaging: Embossed tape with cover Designed In: Millimeters RoHS: Yes Halogen Free: Yes

Electrical

Voltage (max.): 125V Current (max.): 170.0A Contact Resistance: 0.4 milliohms Dielectric Withstanding Voltage: 125V AC Insulation Resistance: 500V DC

Mechanical

Pitch: 13.58mm Mated Height: Standard Header: 31.00mm Tall Header: 47.00mm Circuit Size: 2 circuits Durability (max.): 200 cycles

Physical

Header Housing: LCP Cable Assembly Housing: PBT Flammability: UL 94 V-0 Contact: Copper Alloy Plating: Header Pin—Silver Cable Assembly Socket—Gold Operating Temperatures: -40 to +125°C

Additional Resources

Veb Overview Page	www.molex.com
Datasheet	987652-7051
Training Presentation	UltraWize W-t-B, High-Current Power Connectors and CableAssemblies PRES.pdf
Global Product Manager	Jeff Gaumer

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SPECIFICATIONS AND SUPPORTING INFORMATION

Cable Assemblies

Reference Information

Packaging: Tray or bag depending on part Designed In: Millimeters RoHS: Yes Halogen Free: Yes

Electrical

Voltage (max.): 125V Current (max.): 170.0A Contact Resistance: 0.4 milliohms Dielectric Withstanding Voltage: 125V AC Insulation Resistance: 500V DC

Mechanical

Pitch: 13.58mm Mated Height: Standard Header: 31.00mm Tall Header: 47.00mm Circuit Size: 2 circuits Durability (max.): 200 cycles

Physical

Cable Assembly Housing: PBT Flammability: UL 94 V-0 Contact: Copper Alloy Plating: Cable Assembly Socket—Gold Operating Temperatures: -40 to +125°C

Additional Resources		
Web Overview Page	www.molex.com	
Datasheet	987652-6421	
Training Presentation	UltraWize W-t-B, High-Current Power Connectors and Cable Assemblies PRES.pdf	
Global Product Manager	Vinesh K	

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THANK YOU

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