

# ADVANCED MICRO SOLUTIONS FOR AUTOMOTIVE APPLICATIONS >

*Supporting tier customers in their development of ADAS-Systems, digital cockpit devices and next-generation E/E vehicle control units*



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[www.molex.com/micro-products-automotive](http://www.molex.com/micro-products-automotive)

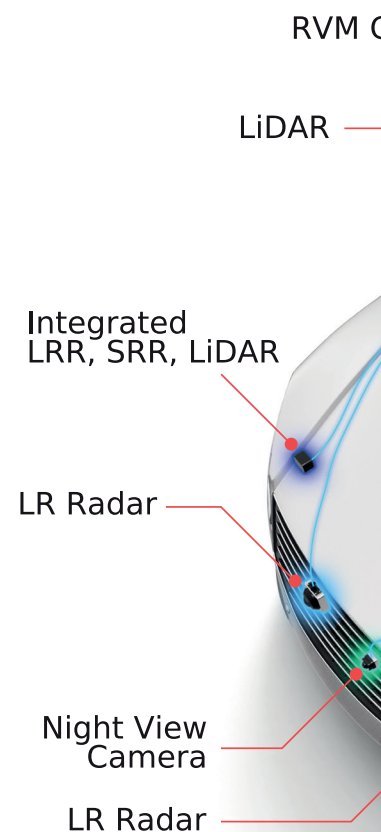
**molex**

# AUTOMATED DRIVING > ADAS/AD ECUs, CAR CAMERAS, RADARS, LIDARS

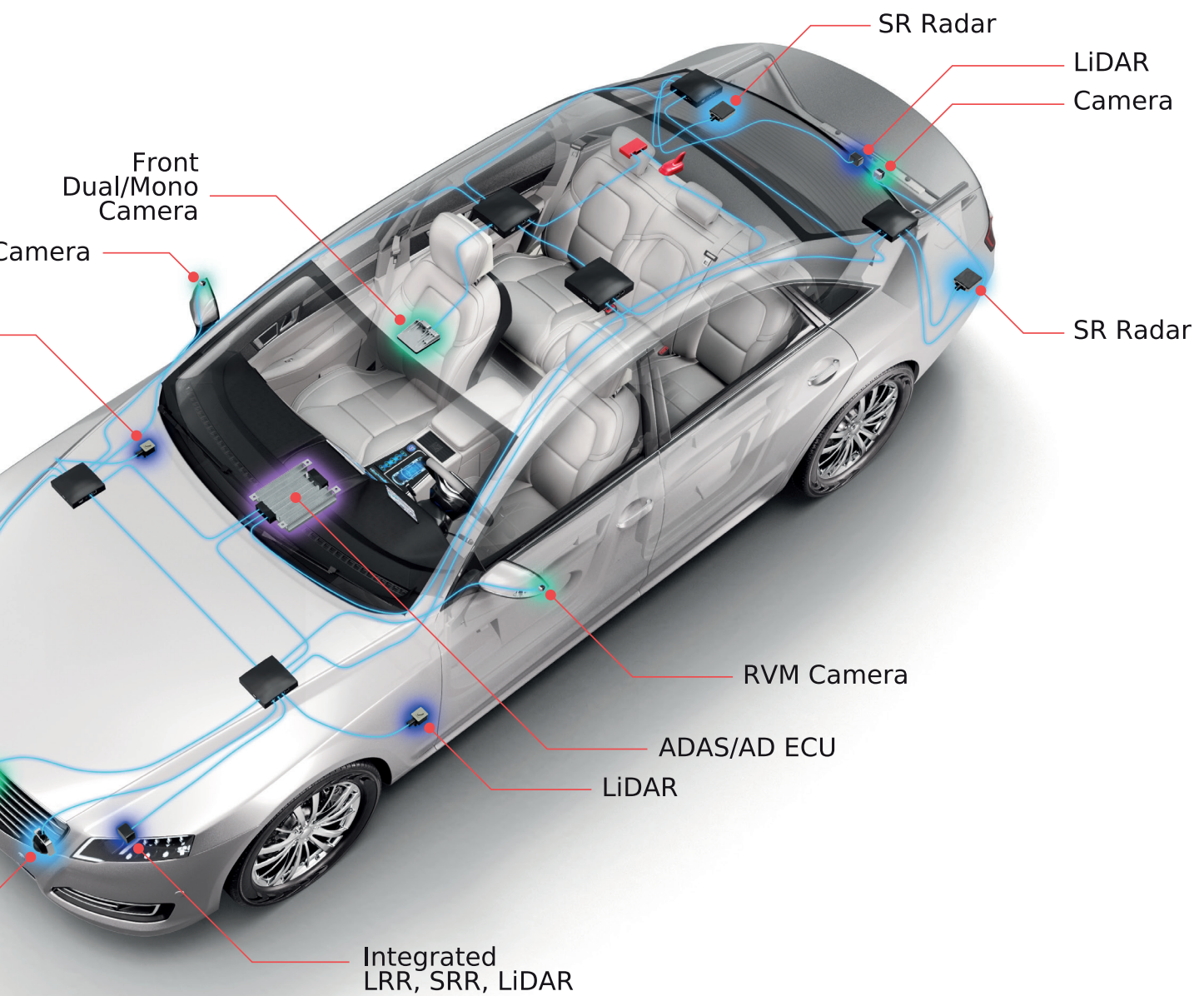
Molex envisions a future with zero accidents, zero casualties and fewer human driving errors improving lives and benefiting society.

Our solutions and technologies are designed to enable optimum safety on the road for electronic systems enabling safe, self-driving electronic mobility solutions.

As a leading supplier of advanced micro connectors, Molex supports tier customers in the development of ADAS car cameras, radar and LiDAR.



**Molex micro product portfolio offers a variety of circuit sizes along with high operating temperatures, contact reliability, low heights and robustness.**

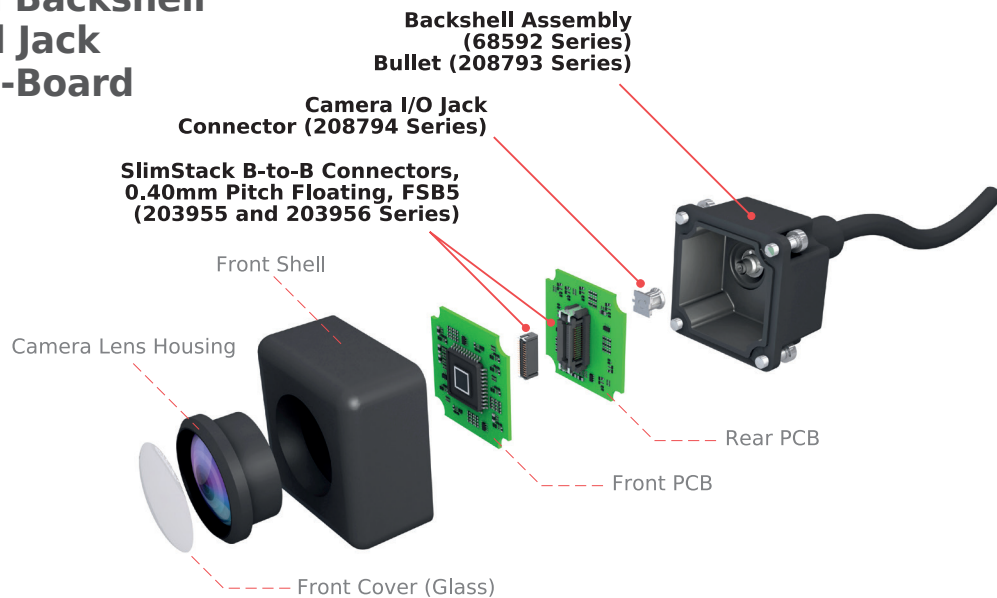


- ADAS/AD ECU
- Camera
- Radar
- Lidar

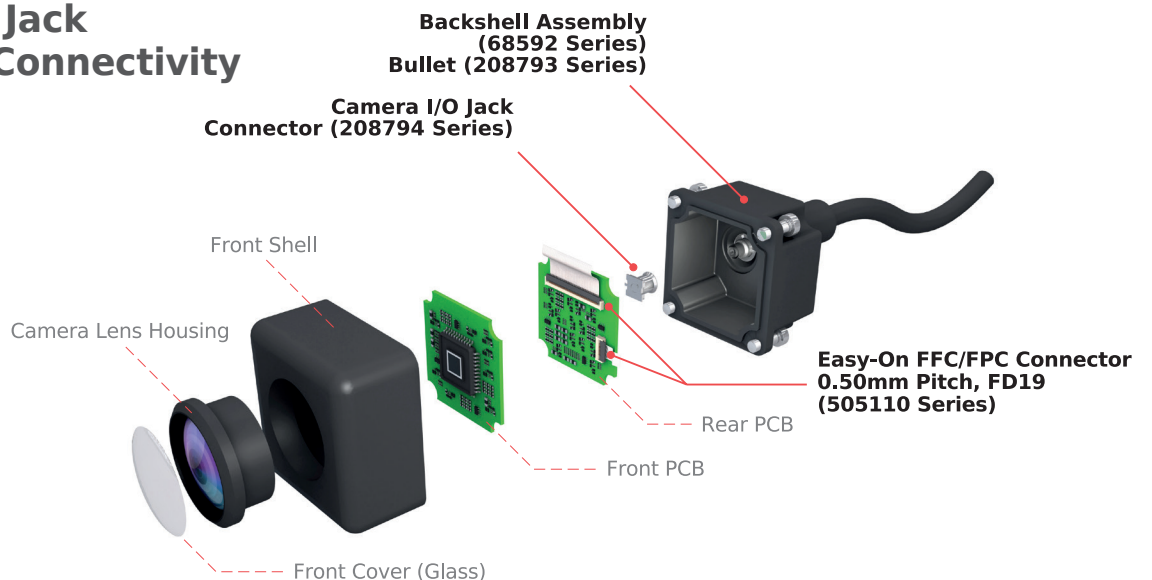
# AUTOMATED DRIVING > CAR CAMERA, ADAS/AD ECU

In support of the increased demand for car camera modules with high-speed video processing, Molex provides camera I/O backshells with coaxial bullet and jack interconnections supporting high-speed media protocols with frequency up to 3 GHz.

## ADAS Camera Backshell Assembly and Jack with Board-to-Board Connectivity



## ADAS Camera Backshell Assembly and Jack with FFC/FPC Connectivity

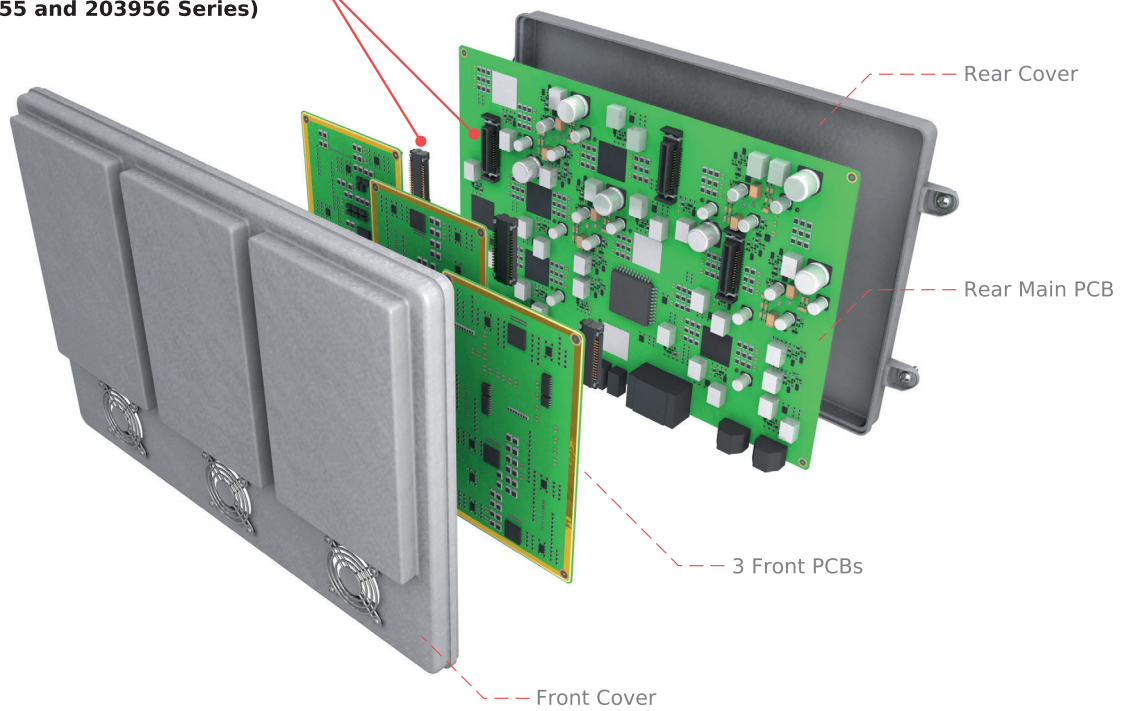




We are addressing the increased demand for flexible and reliable connections that can be robotically assembled by providing Board-to-Board solutions made of robust materials and are easy to mate due to exceptionally wide floating range.

## ADAS/AD ECU

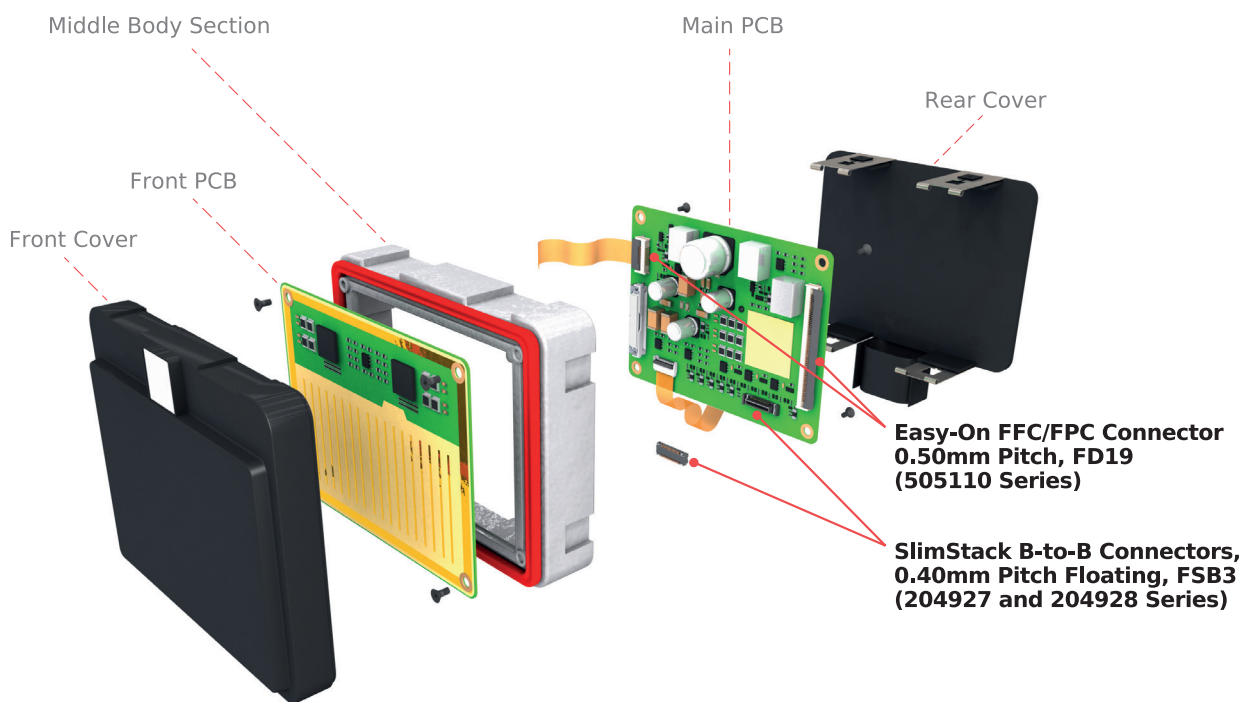
**SlimStack B-to-B Connectors,  
0.40mm Pitch Floating,  
FSB5 (203955 and 203956 Series)**



# AUTOMATED DRIVING > RADARS, LIDARS

In support of the increased demand for car cameras, radars and LiDARs Molex offers a broad range of solutions in a wide variety of circuit sizes along with high operating temperatures, contact reliability, low heights and robustness.

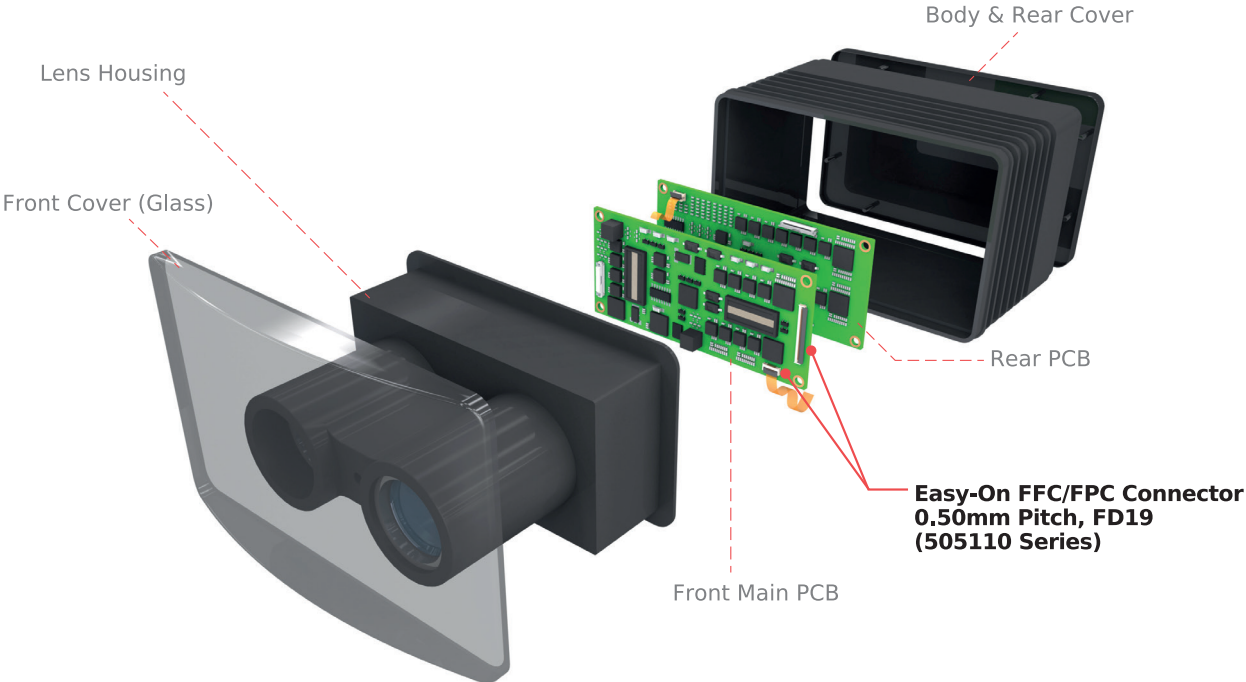
## RADAR





Reliable and robust connections for ADAS applications providing positive locking features and a dual-contact design. Wide variety of actuator options, including zero insertion force (ZIF), slider and flip, help establish a secure connection between the FFC/FPC connectors and terminals.

### LIDAR





# COMFORT AND CONVENIENCE WHILE SAFE DRIVING > DIGITAL COCKPIT AND IN-VEHICLE INFOTAINMENT EXPERIENCE

Enjoyable comfort and convenience while driving in combination with connectivity are key drivers to achieve the full potential of the connected and autonomous car.

In our increasingly complex world, there is demand for simpler, more user-friendly information management inside the vehicle—all while expecting new capabilities, including automated driving and the seamless integration of mobile devices.

Molex strives to increase convenience, efficiency and control throughout the vehicle environment.

**Molex portfolio of Board-to-Board, FFC/FPC, I/O Camera and backshell solutions are designed to support next-generation information management in digital cockpit designs.**

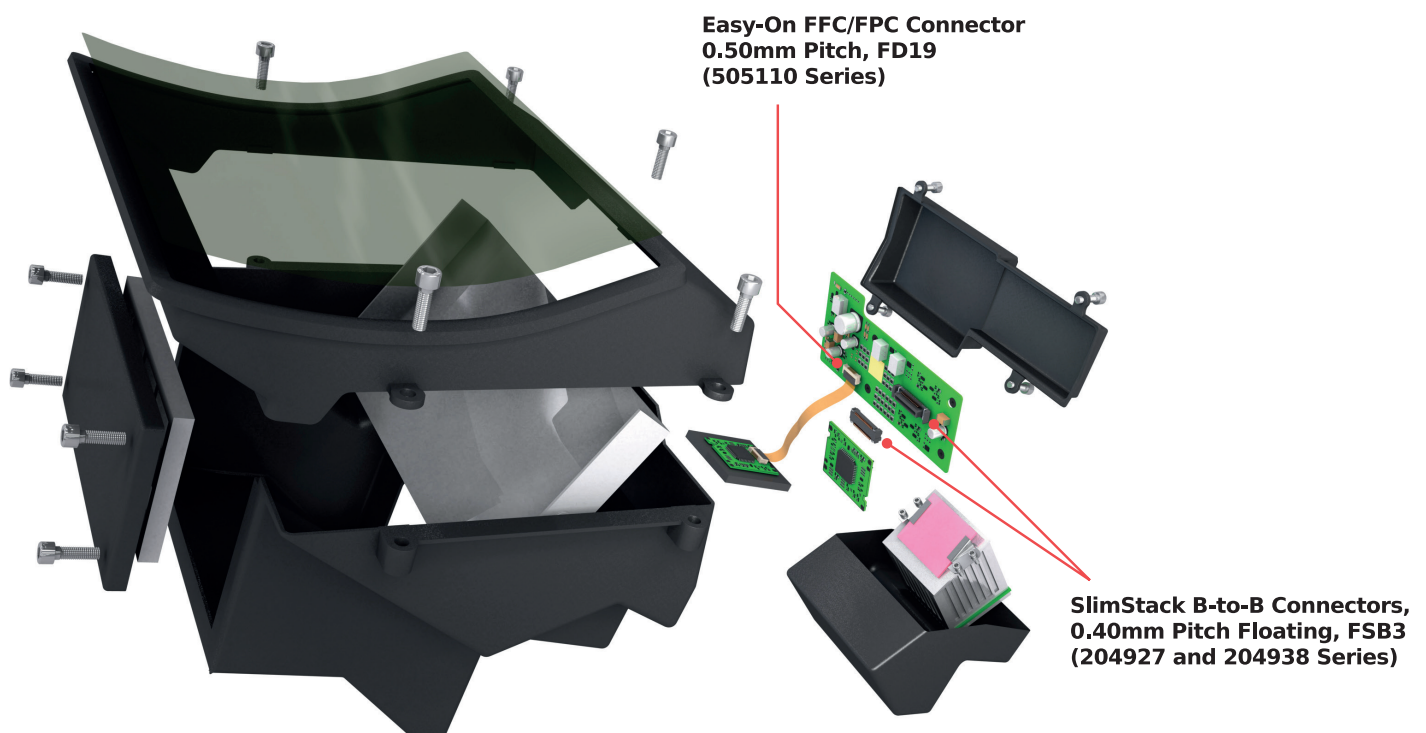


# DIGITAL COCKPIT AND IN-VEHICLE INFOTAINMENT EXPERIENCE > HEAD-UP DISPLAY, CENTRAL INFORMATION DISPLAY, DRIVER MONITORING SYSTEM

Safety, connectivity and user experience are driving future digital cockpit developments.

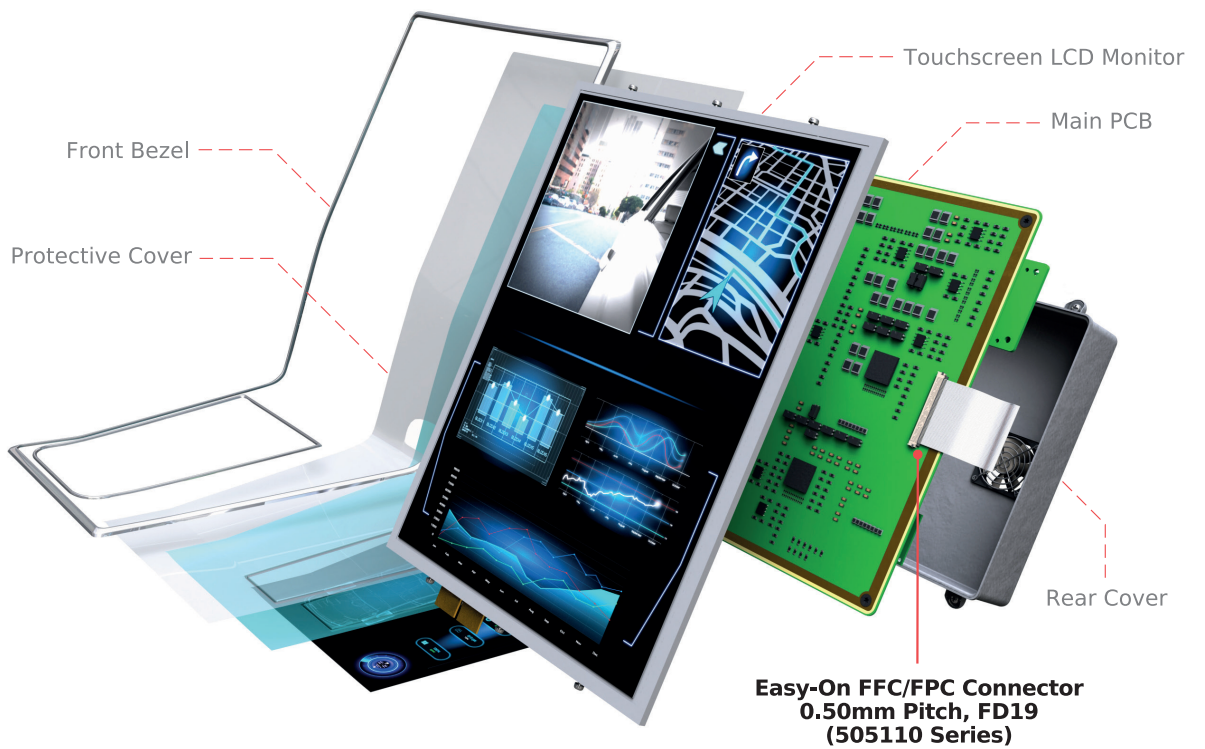
While vehicle manufacturers include instrument cluster applications as part of the digital cockpit domain controllers, Molex portfolio of Board-to-Board, FFC/FPC, I/O camera and backshell solutions offer variety of connectivity solutions supporting next-generation car cockpits.

## Head-Up Display

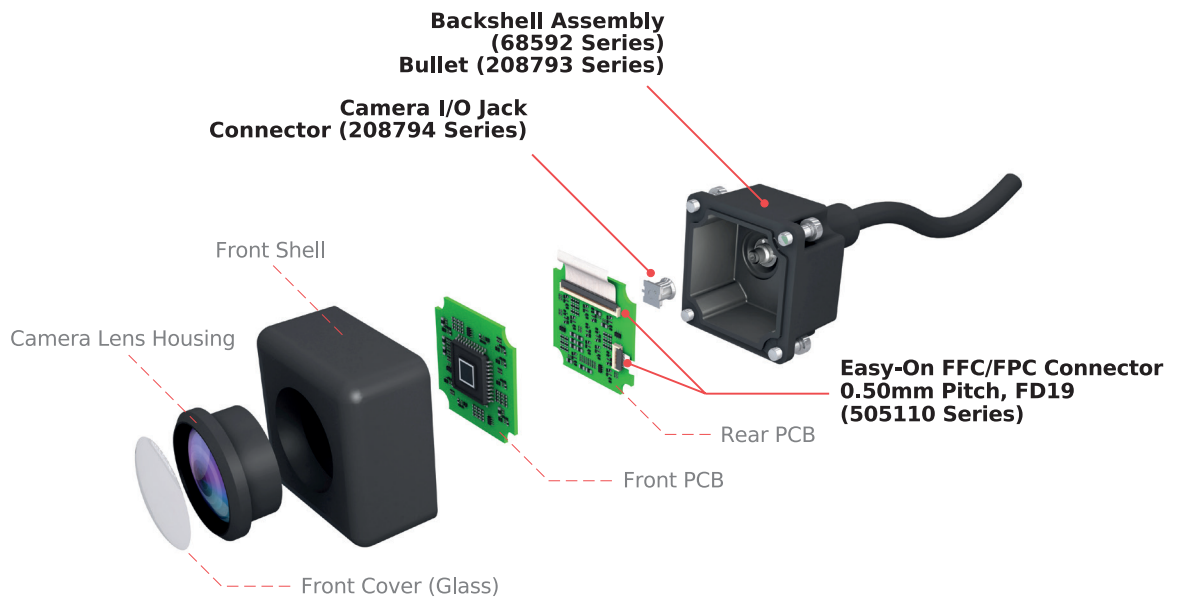




## Central Information Display



## Driver Monitoring System

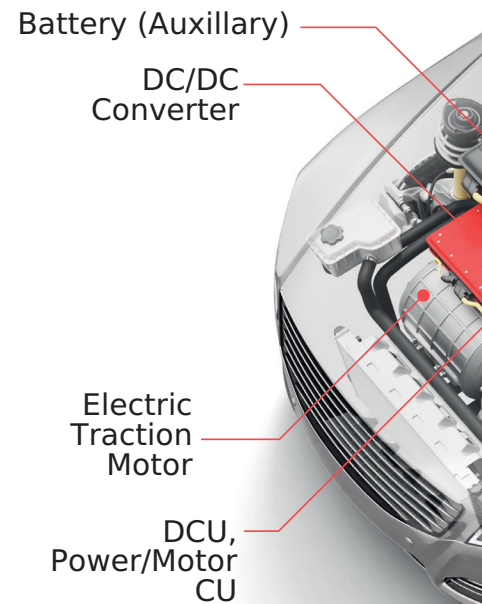


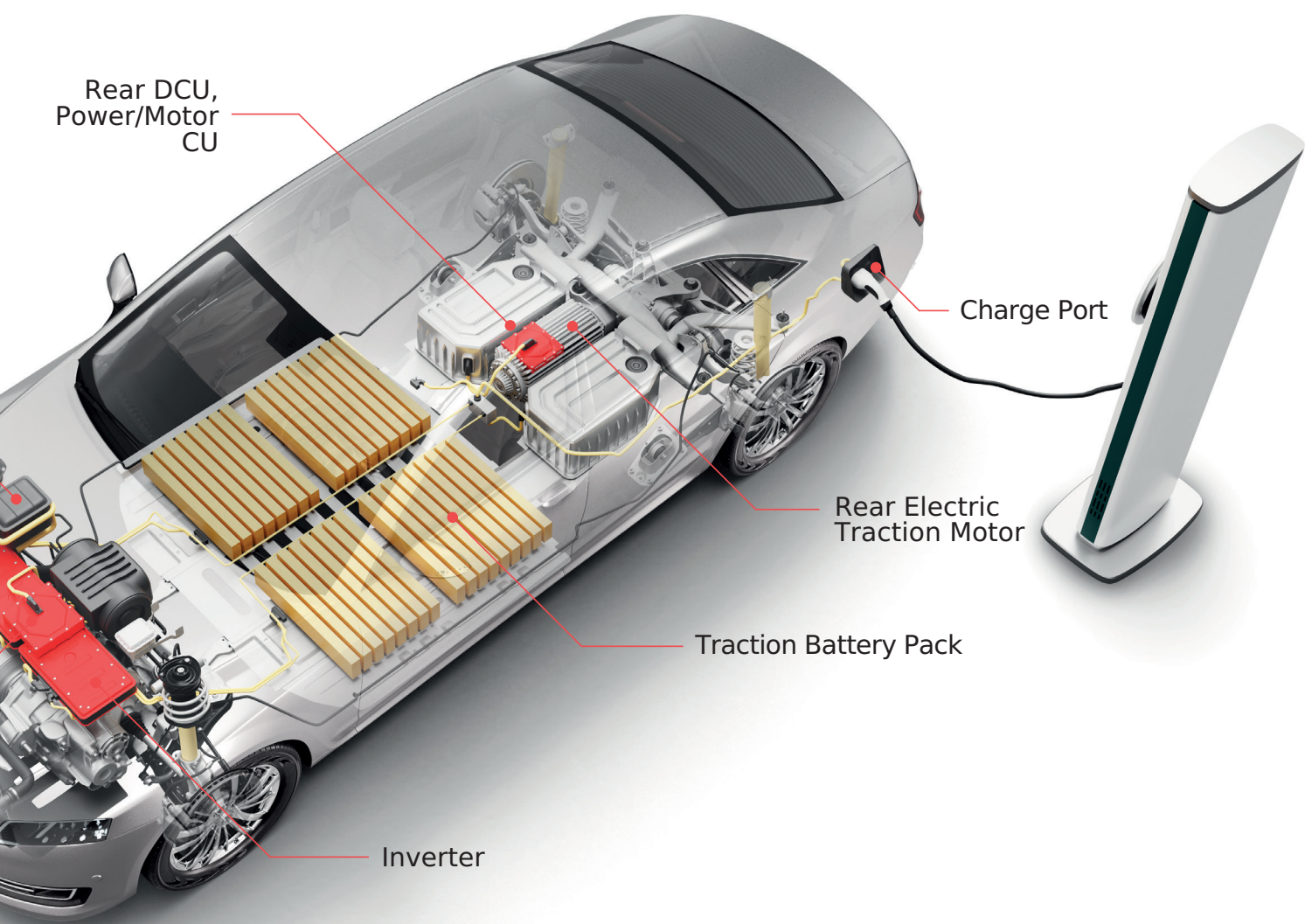
# NEXT-GENERATION E/E VEHICLE ARCHITECTURE > EV POWERTRAIN

As the popularity of electric cars increases, design requirements for control units and their management are evolving.

Most EVs replace mechanical control systems with electronic versions, which require compatible and flexible micro products.

Molex is addressing the increased demand for flexible and reliable micro connections that can be robotically assembled.



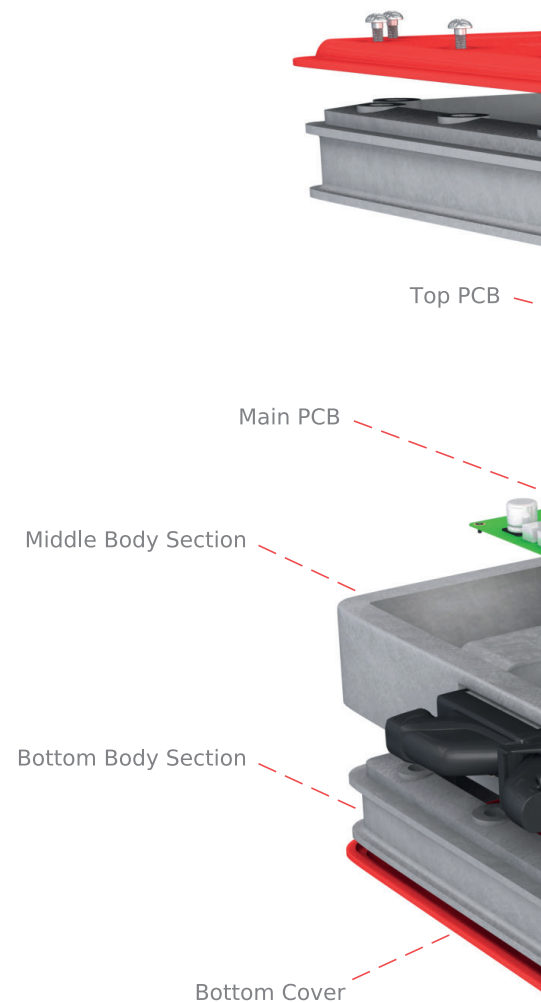


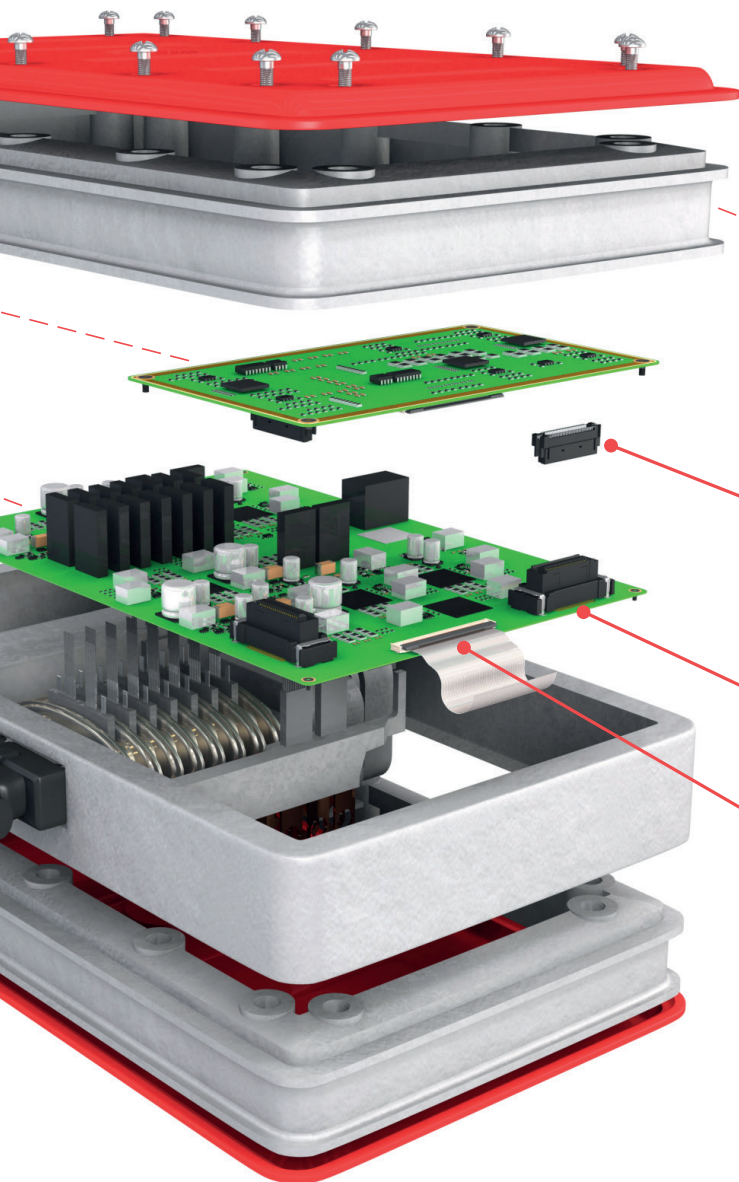
# NEXT-GENERATION E/E VEHICLE ARCHITECTURES

## POWER CONTROL UNITS

As a leading supplier of advanced micro connectors, Molex supports customers in the development of power control units for next generation E/E vehicle architectures.

Saving space is critical for today's automotive engineers as they require components that deliver high quality, reliability, resistance to heat and vibration while being designed for miniaturized space requirements.





Top Cover

Top Body Section

**SlimStack B-to-B Connectors,  
0.635mm Pitch, Plug  
(53627 Series)**

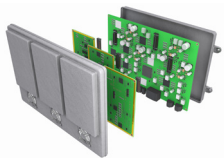


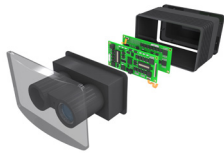
**SlimStack B-to-B Connectors,  
0.635mm Pitch Floating Receptacle  
(209168 Series)**

**Easy-On FFC/FPC Connector  
0.50mm Pitch, FD19  
(505110 Series)**


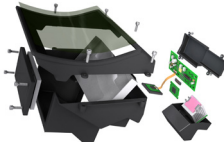
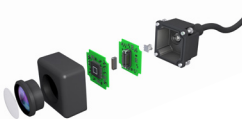

# BEST-IN-CLASS MICRO CONNECTIVITY SOLUTIONS

## ENABLING TECHNOLOGY THAT MEETS EVER-CHANGING CUSTOMER CONNECTIVITY NEEDS

High performance and superior connectivity are expectations throughout the vehicle, including the essential components at the heart of every car. Molex micro connectivity solutions for automotive black box applications are offered at a variety of circuit sizes and heights to meet the automotive requirements.

Safety Applications				
Application	ADAS/AD ECU	Car Camera	Radar	LiDAR
Tear Down Image				
Micro Product Solutions	<b>SlimStack Board-to-Board Connectors:</b> FSB5 Floating	<b>SlimStack Board-to-Board Connectors:</b> FSB5 Floating  <b>FFC/FPC Connector:</b> FD19  <b>I/O Connectors:</b> Backshell Assembly	<b>SlimStack Board-to-Board Connector:</b> FSB3 Floating  <b>FFC/FPC Connectors:</b> FD19	<b>Easy-On FFC/FPC Connector:</b> FD19
Alternative Recommendations	<b>Easy-On FFC/FPC Connectors:</b> FD19 LA75  <b>SlimStack Board-to-Board Connectors:</b> FSB5 Floating	<b>SlimStack Board-to-Board Connectors:</b> FSB3 Floating  <b>Easy-On FFC/FPC Connector:</b> LA75	<b>Easy-On FFC/FPC Connector:</b> BackFlip  <b>Wire-to-Board Connectors:</b> Pico-Clasp 1.0 Pico-Lock 1.0 Micro-Lock Plus 1.25 CLIK-Mate 1.5	<b>SlimStack Board-to-Board Connectors:</b> FSB3 Floating FSB5 Floating  <b>Wire-to-Board Connectors:</b> Pico-Clasp 1.0 Pico-Lock 1.0 Micro-Lock Plus 1.25 CLIK-Mate 1.5



Application	Digital cockpit and In-Vehicle Infotainment Experience			E/E Architecture
	In-Vehicle Infotainment		Safety	EV Powertrain
	Central Information Display	Head-Up Display	Digital Rear View System	Power Control Unit
<b>Tear Down Image</b>				
<b>Micro Product Solutions</b>	<b>Easy-On FFC/FPC Connector:</b> FD19	<b>SlimStack Board-to-Board Connector:</b> FSB3 Floating  <b>Easy-On FFC/FPC Connector:</b> FD19	<b>SlimStack Board-to-Board Connectors:</b> FSB5 Floating FSB3 Floating  <b>Easy-On FFC/FPC Connector:</b> FD19  <b>I/O Connectors:</b> Backshell Assembly	<b>SlimStack Board-to-Board Connector:</b> 0.635 Floating  <b>Easy-On FFC/FPC Connector:</b> FD19
<b>Alternative Recommendations</b>	<b>Easy-On FFC/FPC Connector:</b> LA75  <b>Wire-to-Board Connectors:</b> Pico-Lock 1.0 Micro-Lock Plus 1.25 CLIK-Mate 1.5 Nano-Fit	<b>SlimStack Board-to-Board Connectors:</b> FSB5 Floating  <b>Wire-to-Board Connectors:</b> CLIK-Mate 1.5 Micro-Lock Plus 2.0 Nano-Fit Micro-Fit	<b>SlimStack Board-to-Board Connectors:</b> FSB3 Floating  <b>Easy-On FFC/FPC Connector:</b> LA75	<b>Wire-to-Board Connectors:</b> Pico-Clasp 1.0 Pico-Lock 1.0 Micro-Lock Plus 1.25 CLIK-Mate 1.5 Nano-Fit Micro-Fit Mini-Fit

# MOLEX DELIVERS A DIVERSE PRODUCT PORTFOLIO >

## BOARD-TO-BOARD, FFC/FPC, POWER AND SIGNAL WIRE-TO-BOARD CONNECTORS

Molex connectors have been trusted for more than 80 years across a wide range of industries including automotive, data communication, industrial, commercial vehicle and medical.

### SlimStack Board-to-Board Connectors, Floating

Pitch (mm)	Product Family	Mated Height (mm)	Current Rating	Rated Voltage	Operating Temperature	Circuit Size	Floating Range (mm)
0.40	FSB3 Floating	3.00	0.3A	50V	-40 to 125 °C	20 to 60	± 0.3
	FSB5 Floating	5.00	0.3A	40V	-40 to 125 °C	20 to 60	± 0.5
0.635	0.635 Floating	12.00 to 16.00	0.5A	100V	-40 to 125 °C	40 to 80	± 0.7

### SlimStack Board-to-Board Connectors

Pitch (mm)	Product Family	Mated Height (mm)	Current Rating	Rated Voltage	Operating Temperature	Circuit Size
0.635	0.635 Rigid	6.00 to 16.00	0.5A	100V	-40 to 105 °C	20 to 240

### Easy-On FFC/FPC Connectors

Pitch (mm)	Product Name	Mated Height (mm)	Current Rating	Rated Voltage	Operating Temperature	Circuit Size
0.50	FD19	1.90	0.5A	50V	-40 to 150 °C	4 to 80
1.00	FD19	1.90	1.0A	125V	-40 to 150 °C	4 to 30



**Power and Signal Wire-to-Board / Wire-to-Wire Connectors**

Pitch (mm)	Product Family	Rows	Current Rating (Max.)	Rated Voltage	Plating	Circuit Size
1.00	Pico-Lock	Single	2.5A	150V	Gold	2 to 6
	Pico-Clasp	Single	2.0A	50V	Tin, Gold	2 to 15
		Single	1.5A	50V	Tin, Gold	2 to 15
		Dual	1.0A	50V	Gold	20 to 50
1.20	Pico-EZmate	Single	2.5A	50V	Gold	2 to 7
	Pico-EZmate Slim	Single	2.5A	50V	Gold	2
1.25	Micro Lock Plus	Single	3.6A	50V	Tin, Gold	2 to 16 (Potting Available)
		Dual	2.4A	50V	Tin, Gold	8 to 42 (Potting Available: 4-14)
	Board-In	Single	1.0A	125V	Tin	2 to 6
1.50	Pico-Lock	Single	3.5A	150V	Tin	2 to 12
	CLIK-Mate	Single	3.0A	100V	Tin, Gold	2 to 15
		Dual	2.5A	100V	Tin, Gold	8 to 34 (Vertical) 8 to 26 (Right Angle)
1.80	Squba	Single	6.5A	125V	Tin	2 to 4
2.00	Pico-Lock	Single	6.5A	250V	Gold	2 to 6
	Micro-Lock Plus	Single	4.7A	250V	Tin, Gold	2 to 16
	iGrid	Dual	3.0A	250V	Tin, Gold	10 to 40
	Board-In	Single	2.0A	125V	Tin	2 to 15
2.50	Mini-Lock	Single	3.5A	250V	Tin	2 to 15
	Board-In	Single	4.0A	250V	Tin	2 to 16
	Nano-Fit	Single	8.0A	250V	Tin	2 to 8
		Dual			Gold	4 to 16
3.00	Micro-Fit	Single	8.5A	600V	Tin	2 to 8
		Dual			Gold	4 to 16
3.50	Ultra-Fit	Single	14.0A	600V	Tin	2 to 8
		Dual			Gold	4 to 16
3.60	Squba	Single	14.0A	600V	Tin	2 to 10
4.20	Mini-Fit	Single	13.0A	600V	Tin	2 to 6
		Dual			Gold	2 to 22

Molex makes a connected world possible by enabling  
technology that transforms the future and improves lives  
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