Power Busbar Connector: **BusMate®**

Our power busbar connectors enable high-power densities needed for EVs by providing robust, customizable, pluggable connectors that save space and improve assembly consistency.

ENNOVI™

COMPACT SIZE

Ultra small footprint conserves PCB space and improves design flexibility for either Press-Fit or SMT applications.

HIGH-POWER DENSITY

Large ampacity-to-size ratio with 40-60 Amp rating (tested at 60-80 Amps).

AUTOMATIC COMPENSATION FOR MISALIGNMENT

Floating Contact Technology accommodates +/- 0.8mm blade offset, +/- 16 degrees of twist, and a range of insertion depths.

APPLICATIONS

High-voltage traction drive motors, low-voltage motion control, servo-steering motors, on-board chargers, transformers, fuses, power junction centers, power converters, inverters and distribution:

+ Electric vehicles

Servo-steering motors, motion control, transformers, fuses, power converters and inverters:

+ Commercial transportation
+ Personal mobility
+ Maritime

Transformers, fuses, junction boxes, power converters and inverters:

+ Charging stations
+ Energy storage
+ Industrial
+ Medical

01. FLOATING CONTACT TECHNOLOGY

+ Accommodates large mating tolerances: offset and angular.
  - o +/- 0.8mm mating blade offset and up to +/- 16 degrees of twist.
+ Handles a range of insertion depths.

02. BUSBAR CONNECTION

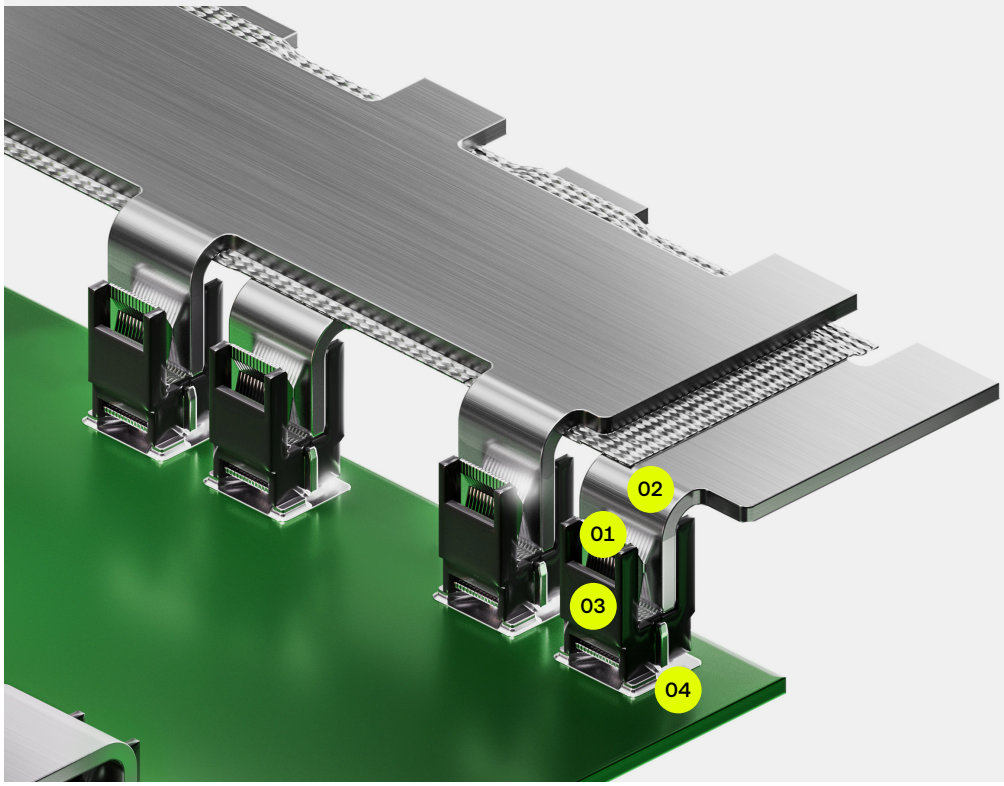
+ Large ampacity-size ratio: 40 to 60 Amp interfaces up to 60 to 80 Amps.
+ Achieves consistent power coupling by automatically compensating for variations in blade alignment.
+ Separable & pluggable: mates with 0.8mm and 1mm thick Busbars.

03. HIGH PERFORMANCE MATERIALS

+ High temperature construction, rated to 150°C.

04. MOUNT OPTIONS

+ PCB Mount: Press-Fit and Surface Mount (SMT).



DESIGN & MANUFACTURING OPTIONS

+ Customizable and scalable.
+ Configurable for: board-to-blade, board-to-board, and blade-to-blade.
+ Options for tape-and-reel packaging to support highspeed automated placement.

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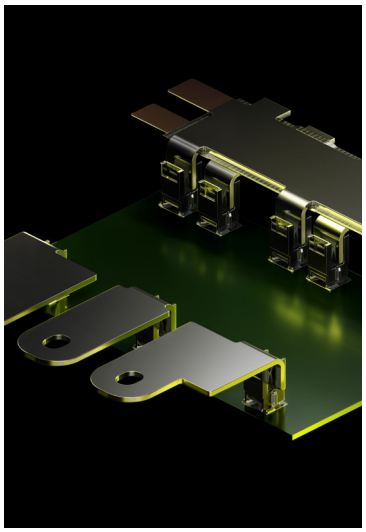
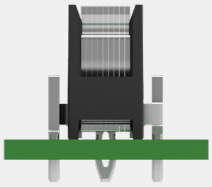
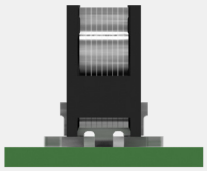


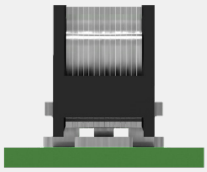
PRODUCT OFFERING



Press-Fit (9 Lam.)
Part No.: IPX-30013
DC Current: 40 – 60Amps
ROA Temperature: 23°C – 50°C



Surface Mount (9 Lam.)
Part No.: IPX-30035
DC Current: 40 – 60Amps
ROA Temperature: 25°C – 53°C



Surface Mount (14 Lam.)
Part No.: IPX-30055
DC Current: 60 – 80Amps
ROA Temperature:
34°C – 59°C (40Amps at 17°C)

ROA is Rise Over Ambient; Ambient Temperature is 23°C. Test Specifications are listed below.

PERFORMANCE SPECIFICATIONS

Test Temperature -40°C to 125°C

PF stands for Press-Fit | SMT stands for Surface-Mount Technology. Note: All testing utilize 0.8mm busbar blade. Users must always validate and qualify BusMate® in their own application.

VALIDATION TEST	DESCRIPTION	SPECIFICATION	TESTS CRITERIA		TEST RESULTS		CONCLUSION
Insertion Force	9 Lam. PF			90N +/- 10N		88N	
	9 Lam. SMT	Top Mating Busbar	Average:	90N +/- 10N	Average:	95N	**Pass**
	14 Lam. SMT			135N +/- 10N		136N	
4-Wire Contact	9 Lam. PF					0.104mΩ	
Resistance	9 Lam. SMT	SAE/USCAR2-6 5.3.1	Max Resistance:	less than 1.5mΩ	Max:	0.097mΩ	**Pass**
	14 Lam. SMT					0.077mΩ	
Current Rating	9 Lam. PF		Constant Current	> 40Amps		> 60Amps	
	9 Lam. SMT	SAE/ USCAR2-6 5.3.3	at 55°C ROA:	> 60Amps	Average:	> 58Amps	**Pass**
	14 Lam. SMT					> 77Amps	
Current Cycling	9 Lam. PF					46°C	
	9 Lam. SMT	SAE/USCAR2-6 5.3.4	ROA at rated current:	< 55°C	Max ROA:	46°C	**Pass**
	14 Lam. SMT					42°C	
Mechanical Shock	9 Lam. PF		No discontinuity				
	9 Lam. SMT	SAE/USCAR2-6 5.4.6	(1 microsecond increment)		Not Applicable		**Pass**
	14 Lam. SMT		Visual Inspection				
Vibration with	9 Lam. PF		No discontinuity				
Thermal Cycling	9 Lam. SMT	SAE/USCAR2-6 5.4.6	(1 microsecond increment)		Not Applicable		**Pass**
	14 Lam. SMT		Visual Inspection				
Thermal Shock	9 Lam. PF					0.118mΩ	
	9 Lam. SMT	GMW 3191 4.4.2	Max Resistance:	< 1.5mΩ	Max:	0.122mΩ	**Pass**
	14 Lam. SMT					0.084mΩ	
Temperature Cycling	9 Lam. PF					0.136mΩ	
with Humidity	9 Lam. SMT	SAE/USCAR2-6 5.6.2	Max Resistance:	< 1.5mΩ	Max:	0.112mΩ	**Pass**
	14 Lam. SMT					0.071mΩ	
High Temperature	9 Lam. PF					0.118 mΩ	
Humidity Exposure	9 Lam. SMT	GMW 3191 4.4.4	Max Resistance:	< 1.5mΩ	Max:	0.120mΩ	**Pass**
	14 Lam. SMT					0.087mΩ	
High Temperature	9 Lam. PF					0.121mΩ	
Exposure - Dry	9 Lam. SMT	SAE/USCAR2-6 5.6.3	Max Resistance:	< 1.5mΩ	Max:	0.115mΩ	**Pass**
	14 Lam. SMT					0.084mΩ	
Mixed Flow Gas	9 Lam. PF					0.141mΩ	
	9 Lam. SMT	VW75174 EN 60512-11-14	Max Resistance:	< 1.5mΩ	Max:	0.122mΩ	**Pass**
	14 Lam. SMT					0.094mΩ	

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