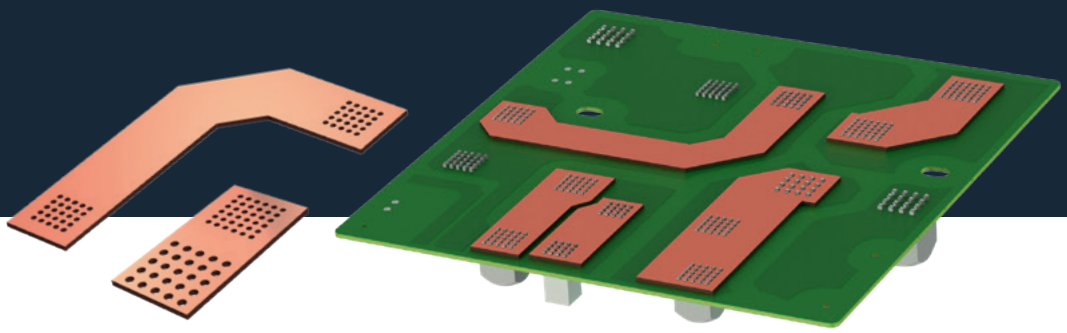
POWERBUSBAR PCB

PowerBusbars



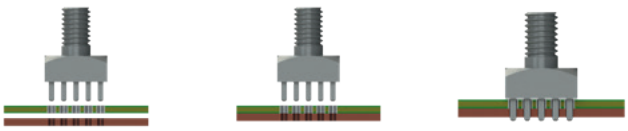
PowerBusbar PCB are copper busbars from Würth Elektronik ICS. They are used in particular where high currents need to be distributed to PCBs. The copper busbars are pressed together with Würth Elektronik ICS Powerelements and the PCBs in a single operation.
The PowerBusbar design is provided by the customer as a sketch and designed by us for production.

Advantages of the PowerBusbars

- The current carrying capacity of the PCB can be increased selectively and/or over a large area.
- The busbar, with its high copper cross-section, can replace thick copper PCBs or special PCBs with copper inlays.
- As copper has a high thermal conductivity, busbars can efficiently dissipate heat from the overall system (heat conductor). This helps to improve reliability and current carrying capacity and avoids hot spots.
- Cost benefits through the use of standard PCBs

Processing

PowerBusbar PCB are pressed together with Würth Elektronik ICS Powerelements in a single operation with the PCB. Additional fixing of the busbar is not required. The recommended assembly sequence is Powerelement – PCB – busbar.



Align the Powerelement, PCB and PowerBusbar PCB and press in the Powerelement

Processing information

- For assembling prototypes, no special equipment is required for pressing-in, as a simple toggle press is sufficient.
- The PCB and busbar must be supported and positioned in relation to each other during the press-fit process.
- The Powerelement must be pressed first into the circuit board and then into the busbar.
- The press force has to be applied at a 90° angle to the PCB.
- PCB through-hole plating has to be performed according to the specifications of Würth Elektronik ICS.
- Use only with suitable press-in tools and fixing materials (see processing instructions).

Technical data	
Current carrying capacity	The current carrying capacity must be considered in the context of the overall system. It depends, among other things, on the PCB layout, the Powerelements, the busbar design or the connection of external supply lines.
Material	Cu-ETP
Surfaces	Blank, tin

Dimensions PowerBusbar	
Length x width	Customised dimensions according to application
Thickness (typical)	1.0 mm or 1.5 mm

PCB (in conjunction with PowerBusbar PCB)	
Base material	FR4 (EP-GC-)
PCB thickness	up to 2.0 mm

Processing parameters (when inserting the busbar with the Powerelement)	
Press-in force	min. 60 N per pin max. 350 N per pin
Retention force	60 – 80 % of the press-in force
Press-in speed	100 – 250 mm/min

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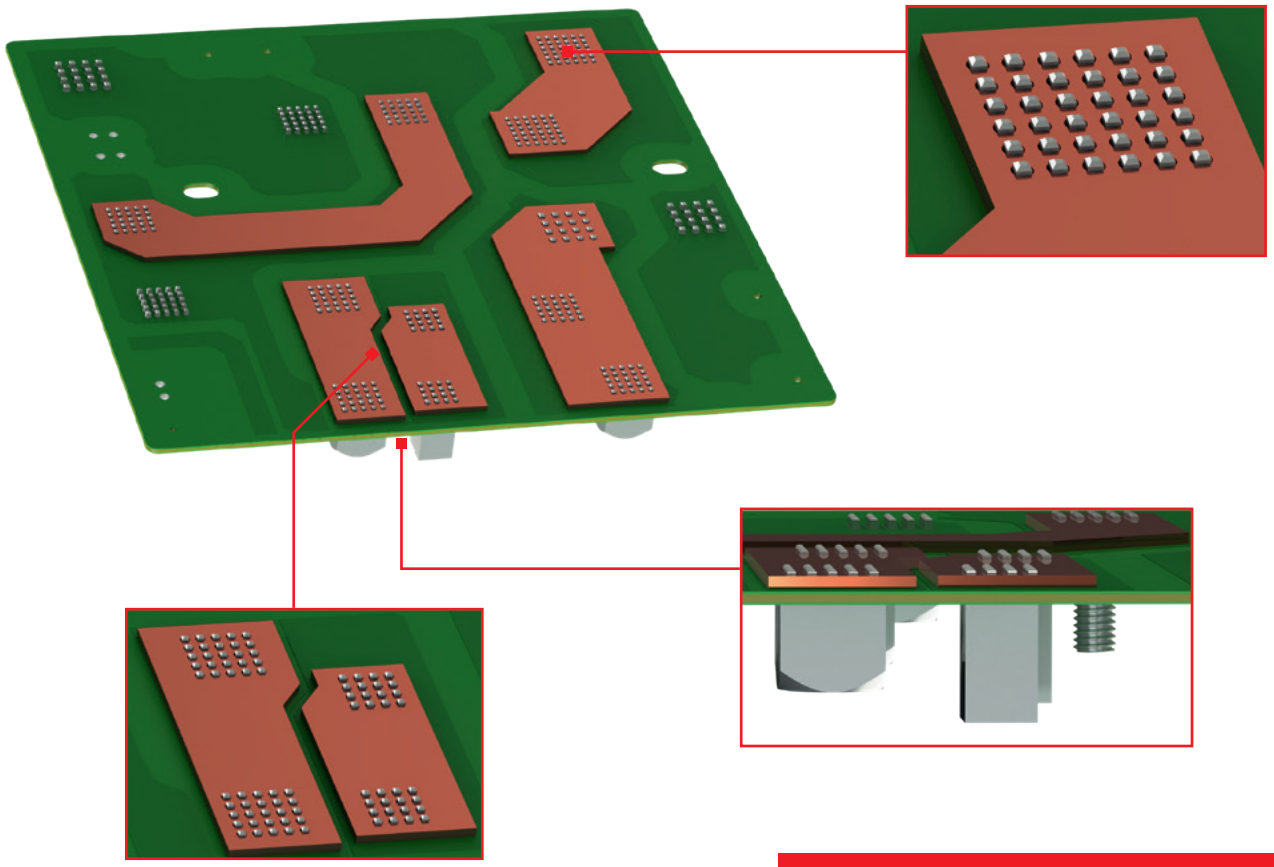
PCB design
The PCB has to be designed in accordance with the latest edition of IPC A 600. For solid press-fit technology, the PCBs are to be finished according to the Würth Elektronik ICS Press-fit specifications. Particular attention should be paid to the drill diameter and the copper thickness.

Würth Elektronik ICS – Press-fit specification 5.1 (Example for 1.6 mm pin)		
Drill Ø	drill tool drill hole	1.60 mm 1.60 - 0.025 mm
Cu	**Cu** - in **H**ole **A**nnular Ring	Average 30 – 60 µm min. 25 µm, max. 80 µm* min. 125 µm
End Ø	**depends on surface** **HAL** **chem. surfaces**	 (1.45 +/- 0.05 mm) (1.475 +/- 0.05 mm)
Note: For press-fit technology, drill Ø and copper thickness are fix. End Ø for reference only.		

*single measurement points in microsection

Design options for PowerBusbar PCB
As the PowerBusbar PCB products are always customised to suit the application and existing components, an example of the busbar design is shown below.



For more information visit us at:
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