POWERLAMELLA PRESS-FIT

Powerelements

PowerLamella Press-fit Powerelements are the pluggable high current contacts from Würth Elektronik ICS. They are fully compatible with PowerRadsok bolts. This allows you to reduce the assembly work for your service technicians or your customers. In addition to the bush, we also offer the matching pin for the board-to-board connection, and the cable lug for the wire-to-board connection. Depending on the layout, currents up to 400 amperes are possible.

Applications

- Contacting of switches, fuses, etc.
- Wire-to-board
- Board-to-board

Processing

PowerLamella Press-fit Powerelements are pressed into the PCB. Soldering is not required, so there is no temperature stress. The manufacturing step easily fits into the process and is highly cost effective. With the aid of corresponding tools, several Powerelements can be pressed-in simultaneously.

Processing information

- For assembling prototypes, no special equipment is required for pressing-in, as a simple toggle press is sufficient.
- The PCB has to be supported during the press-fit process.
- 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.
- The PowerLamella Press-fit high current contacts are designed for pressing-in, so please note a soldering process is not intended.
- Cable lug has to be processed with suitable crimping tool.
- Only use suitable press-fit tools.

Technical data	
Current carrying capacity	see table on the back
Material	base body and bolt: CuZn39Pb3 basket: stainless steel
Surfaces	base body and bolt: tin-plated (standard) basket: tin-plated

Dimensions (standard)	
Length x width	from 9 x 9 mm
Height above PCB	from 14.0 to 40.2 mm
Pin length	3.5 mm, others on demand
Pin diagonal	1.6 mm, others on demand

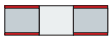
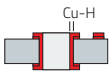
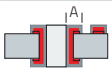
PCB	
Base material	FR4 (EP-GC-)
PCB thickness	from 1.5 mm
Drilling diameter	1.60 - 0.025 mm
Final diameter ▪ HAL surface ▪ chemical surface	 1.45 +/- 0.05 mm 1.475 +/- 0.05 mm
Copper in hole thickness	min. 25 µm, max. 80 µm

Processing parameters	
Press-in force	min. 60 N per pin max. 250 N per pin
Retention force	60 – 80 % of the press-in force
Press-in speed	100 – 250 mm/min

REACH COMPLIANT **RoHS** COMPLIANT

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 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.			

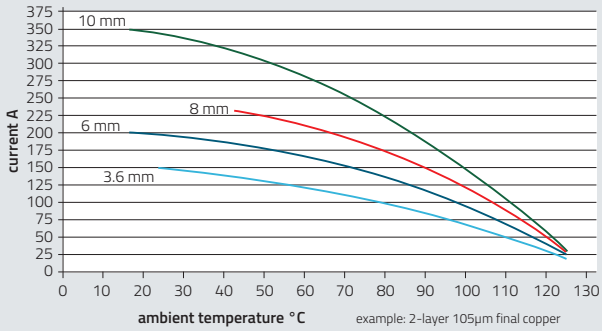
*single measurement points in microsection

Current carrying capacity
The current carrying capacity of a press-fit connection always has to be considered in the context of the overall system. The press-fit zone has a very low electrical contact resistance of 100 – 200 µΩ.
The limiting factor therefore usually lies in the PCB layout, and also in the connection of a feed line.

The plug-in elements have a contact resistance of:

- 0.2 mΩ at Ø 3.6 mm,
- 0.09 mΩ at Ø 6.0 mm and
- 0.05 mΩ at Ø 10.0 mm.

Derating curve for PowerLamella Press-fit



Overview of PowerLamella Press-fit standard products

Diameter plug-in system	3.6 mm	6.0 mm	8.0 mm	10.0 mm
Bolt Part-No.	K93324	K93325	K93326	K95722
Bush Part-No.	S96774	S96651	S97061	S96777
Cable lug Part-No.	LA96718	LA96722	LA96728	LA96736
Current carrying capacity at 20 °C*	~151 A	~ 199 A	~ 246 A	~ 345 A
Current carrying capacity at 85 °C*	~ 91 A	~ 125 A	~ 156 A	~ 208 A
Plug-in force	24 N	43 N	46 N	54 N
Drawing force	16 N	26 N	44 N	53 N

* referred to a limit temperature of 125 °C

Supplies
Press-fit tools and plates are available on demand.

For more information visit us at:
www.powerelement.com
or call: **+49 7940 9810-4444**

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