

# 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.
- Plated through holes of the PCB must be executed 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.
- Use only with suitable press-fit tool and fixing materials (see processing instructions).

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

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



With comprehensive engineering expertise and as a pioneer for Powerelements, we will meet your requirements and find the best technical and economical solution.



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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 Würth Elektronik ICS Press-fit specifications. Particular attention should be paid to the drill diameter and the copper thickness.

### 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  $\mu\Omega$ .


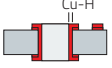
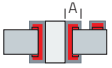
The limiting factor therefore usually lies in the PCB layout, and also in the connection of a feed line.

Depending on the system structure, the values of the derating curve shown may vary.

The plug-in elements have a contact resistance of:

- 0.2 m $\Omega$  at  $\varnothing$  3.6 mm,
- 0.09 m $\Omega$  at  $\varnothing$  6.0 mm and
- 0.05 m $\Omega$  at  $\varnothing$  10.0 mm.

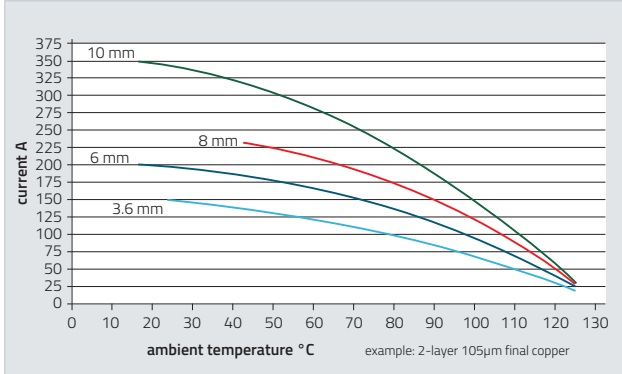
### Würth Elektronik ICS – Press-fit specification 5.1 (Example for 1.6 mm pin)

Drill $\varnothing$		drill tool drill hole	1.60 mm 1.60 - 0.025 mm
Cu		Cu - in Hole Annular Ring	Average 30 – 60 $\mu\text{m}$ min. 25 $\mu\text{m}$ , max. 80 $\mu\text{m}$ * min. 125 $\mu\text{m}$
End $\varnothing$		depends on surface HAL chem. surfaces	(1.45 +/- 0.05 mm) (1.475 +/- 0.05 mm)

**Note:** For press-fit technology, drill  $\varnothing$  and copper thickness are fix. End  $\varnothing$  for reference only.

\*single measurement points in microsection

### 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

\* Recommended value for system design based on PCB limiting temperature of 125°C

### Supplies

Press-fit tools and plates are available on demand.

For more information visit us at:  
[www.powerelement.com](http://www.powerelement.com)  
 or call: +49 7940 9810-4444

Würth Elektronik ICS GmbH & Co. KG  
 Intelligent Power & Control Systems  
 Gewerbpark Waldzimmern · Würthstraße 1  
 74676 Niedernhall · Germany  
 +49 7940 9810-0 · Fax +49 7940 9810-1099  
 ics@we-online.com · www.we-online.com/ics

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