

PowerLamella

Pluggable High Current Contacts



Original
POWERELEMENT

400 A combinable
reliable established
easy to maintain system
high contact durability



PowerLamella Power Supply Terminals are the pluggable High Current Contacts from Würth Elektronik ICS. PowerLamella is fully compatible with PowerRadsok. Reduce the assembly time of your service engineers or the efforts of your customers. Simply plug-in, no screwing, done! Depending on the layout, currents of up to 400 amperes are possible.

Application Possibilities

- Board-to-board
- Wire-to-board
- Retainers / fastenings, fuses
- Easy to maintain connections through plugging instead of screwing
- In combination with or instead of PowerRadsok

Processing

Würth Elektronik ICS PowerLamella Powerelements are pressed in into the circuit board. Soldering is not necessary, temperature stress does not occur in the first place. This manufacturing step easily fits in to the process chain and is highly cost efficient. With the aid of the corresponding tools, several Powerelements can be pressed in simultaneously.

Processing Information

- For assembling prototypes, no special equipment is needed for pressing-in, a simple toggle press is sufficient
- The circuit board needs support during the pressing procedure
- The pressing force must be executed in a 90° angle to the circuit board
- Plated through holes of the circuit board must be executed according to our indications
- PowerLamella are constructed for pressing, soldering is not intended
- Cable shoes must be processed with adequate crimping tools

Technical Data

Current carrying capacity at 85 °C	see table on the back
Material	base body: CuZn39Pb3 basket: stainless steel
Surfaces	base body and bolt: tin-plated (standard) basket: tin-plated

Dimensions

Length x width	from 9 x 9 to 18 x 18 mm
Height	from 17.5 to 43.7 mm
Height above PCB	from 14 to 40.2 mm
Pin length	3.5 mm
Pin diagonal	1.60 mm

Circuit Board

Base material	FR4 (EP-GC-)
PCB thickness	from 1.5 mm
Drilling diameter	1.60 - 0.025 mm
Final diameter	HAL surface: 1.45 +/- 0.05 mm chemical surface: 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

Compliant





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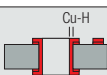
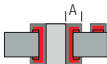
Circuit Board Design

For the solid press-fit technology the PCBs are to be finished according to the Würth Elektronik ICS Press-Fit Specification (see table on the side). Particular attention should be paid to the drill diameter and the copper thickness. Due to the different layer thicknesses of Hot Air Levelling compared to chemical surfaces, the final diameters vary.

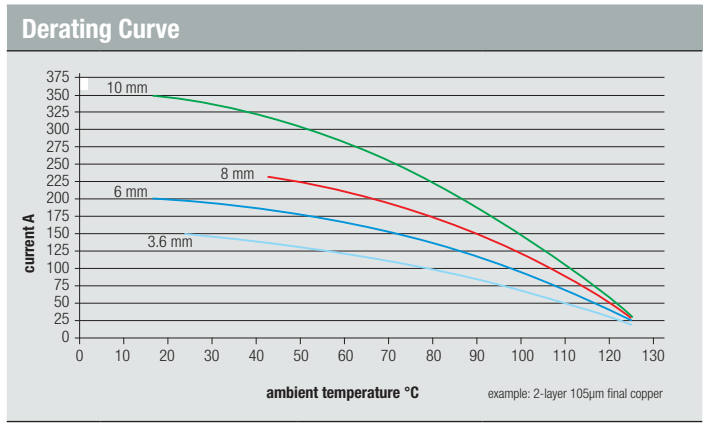
Current Carrying Capacity

The current carrying capacity of a press-fit connection needs to be seen in the context of the overall system. The press-fit zone has a very low electrical contact resistance of 100 – 200 µOhm. The limiting factor therefore usually lies in the circuit board layout or in the connection of a feed line. The plugging elements have an electrical contact resistance of 0.2 mOhm at Ø 3.6 mm, 0.09 mOhm at Ø 6.0 mm and 0.05 mOhm at Ø 10.0 mm.

Reference values for a pre-dimensioning can be found in the table below.





Würth Elektronik ICS – Press-Fit-Specification 5.1			
Drill Ø		drill tool drill hole	1.60 mm 1.60 - 0.025 mm
Cu		Cu – in Hole Annular 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



Overview of Standard Products



					
		Ø 3.6	Ø 6.0	Ø 8.0	Ø 10.0
Bolt	Part-No.	93324	93325	93326	95722
Bush	Part-No.	96774	96651	97061	96777
Ring connector	Part-No.	96718	96722	96728	96736
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

Supplies

Press-fit tools and die plates as well as suitable crimping tools for the professional mounting of cable shoes, are available on demand.

For more information visit us at:
www.we-online.com/pe
 or call our Hotline: +49 7940 9810-4444