

PowerLamella

Pluggable

Original
POWER ELEMENT
 Intelligent Systems

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



PowerLamella Power Elements are the pluggable high current terminal blocks and spacers of Würth Elektronik. 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 ampere are possible. Therefore Power Elements perfectly qualify as connecting elements for fuses, switches and cables to the circuit board or as mounting elements.

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 PowerLamella Power Elements are pressed in into the circuit board. Soldering is not necessary. Therefore the PCBs are not exposed to temperature stress. This processing step easily blends in to the processing chain and is highly cost efficient. With the aid of the corresponding Press Fit tools, several Power Elements can be pressed in simultaneously.

- For assembling prototypes, no special equipment is required 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
- 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. 40 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

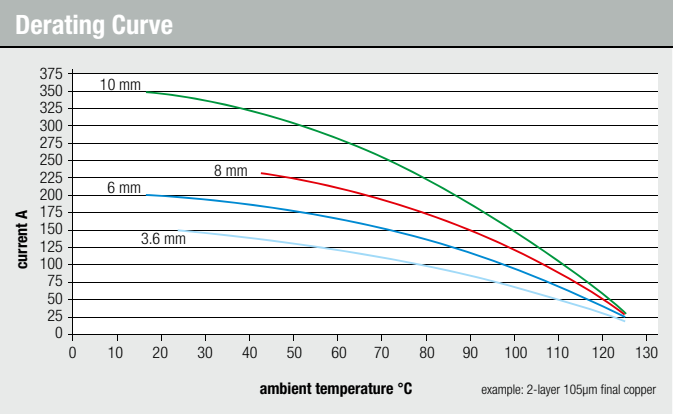
For the massive Press Fit Technology the PCBs are to be finished according to the Würth Elektronik ICS Press Fit specifications (see table on the side). Particular attention should be paid to the drill diameter and the copper thickness. Due to the different layer thicknesses of Hot Air Levelling compared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

Würth Elektronik ICS – Press Fit Specification 5.1			
Drill Ø			1,6 +/- 0,025 mm
Cu		Cu - in Hole Annular Ring	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

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.



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