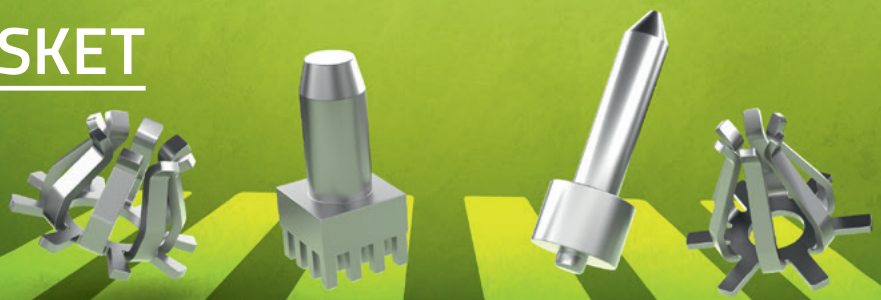
LF POWERBASKET

Powerelements



LF PowerBasket Powerelements are lead-free, pluggable high current contacts for use on printed circuit boards. For PCB assembly we offer different variants: Press-fit, SMT, THT and THR. A major advantage of pluggable solutions is the significantly reduced assembly effort required for production and servicing. Due to the special design of the contact blades, the insertion forces are significantly reduced compared to other pluggable systems. In combination with a position tolerance of up to 0.6 mm, several contacts can be used simultaneously. This opens up completely new applications, especially in the field of board-to-board connections. A special contact alloy also enables use up to a continuous operating temperature of 150 °C.

The LF Powerelements from Wurth Elektronik ICS are lead-free high current contacts with the same performance and application range as the original Powerelements. However, they already now meet the future requirements of the RoHS Directive without any exemptions.

Applications

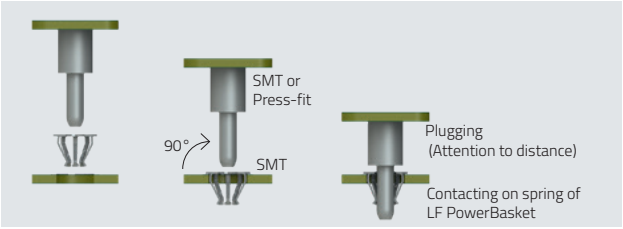
- Contacting of switches, fuses, etc.
- Wire-to-board
- Board-to-board
- Phase connection

Processing

LF PowerBasket Press-fit Powerelements are pressed into the PCB. The housing protects the contact system during the press-fit and mating process.

- For assembling prototypes, no special equipment is required for pressing-in, as a simple toggle press is sufficient.
- The PCB must 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 Wurth Elektronik ICS.
- Use only with suitable press-fit tool and fixing materials (see processing instructions).

LF PowerBasket SMD Powerelements are soldered onto the PCB and easily fit into an SMT assembly line. Delivery on reel in an ESD blister packaging enables fast and cost-effective assembly.



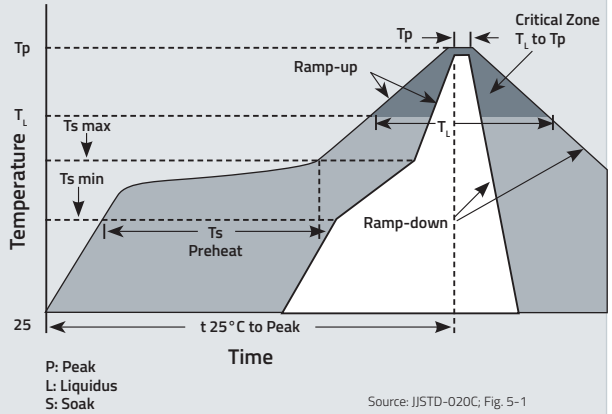
Technical data	
Material	CuSn6, CuNiSi
Surface	silver-plated, tin-plated
	other surfaces on request

Dimensions (standard)	
Diameter / Length x Width	from 9 mm / 9 x 9 mm
Total height	from 9 mm

Plug-in force			
Dimension	3 mm	4 mm	6 mm
Plug-in force from	3 N	15 N	15 N

PCB	
Base material	FR4 (EP-GC-)
PCB thickness Press-fit SMT	 from 1.5 mm from 1.0 mm

Würth Elektronik test arrangement - Soldering profile



Source: JJSTD-020C; Fig. 5-1

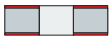
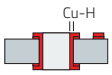
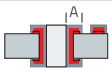
LEAD-FREE

REACH COMPLIANT

RoHS COMPLIANT

PCB design
The PCB has to be designed in accordance with the latest edition of IPC A 600.
Information on the footprints for the different product variants is available.
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)

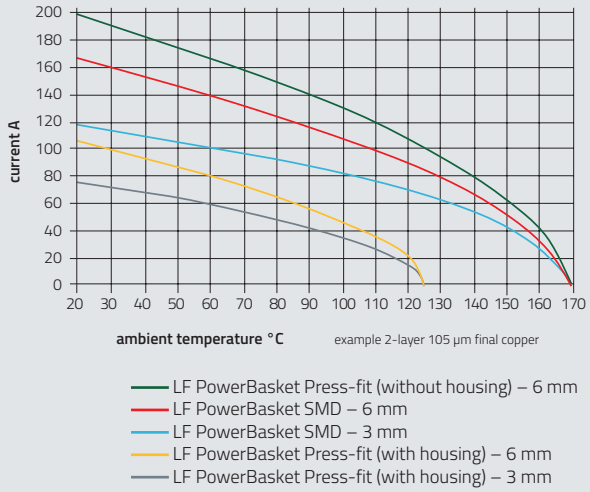
Drill Ø 	drill tool drill hole	1.60 mm 1.60 - 0.025 mm
Cu 	**Cu** - in **H**ole **A**nnular Ring	Average 30 – 60 µm min. 25 µm, max. 80 µm* min. 125 µm
End Ø 	**depends on surface** **HAL** **chem. surfaces**	 (1.45 +/- 0.05 mm) (1.475 +/- 0.05 mm)
Note: For press-fit technology, drill Ø and copper thickness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

*single measurement points in microsection

Current carrying capacity
The current carrying capacity always has to be considered in the context of the overall system. The contact resistance, depending on the PCB assembly, has an extremely low value of 100 – 350 µΩ. Our measurements have shown that the limiting factor 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.

Qualification
LF PowerBasket Press-fit high current contacts have successfully passed the vibration test according to ISO 16750-3:2012 4.1.2.7.2 Random Test VII.
LF PowerBasket SMD high current contacts have successfully passed the test following LV214 PG19.

Derating curve LF PowerBasket



Product overview LF PowerBasket (standard products)

Diameter	3 mm	4 mm	6 mm
LF PowerBasket SMD	K99763	-	K99600
LF PowerBasket Press-fit (with housing)	S98050	S98107	S95746
LF PowerBasket Press-fit (without housing)	-	-	K902364
PowerOne SMD bolt	K900167	On request	K900168
PowerOne Press-fit bolt	K900172	On request	K900146

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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