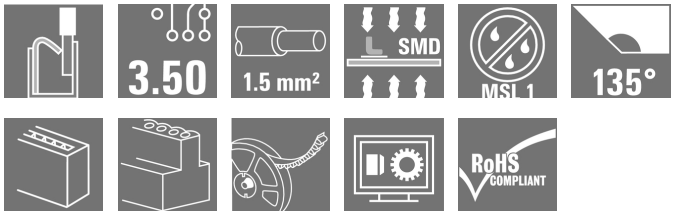
LSF-SMD 3.50/09/135 SN BK RL

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmueller.com

Product image

Similar to illustration



The innovative quick connector - simple, safe and economical:
PCB terminals with spring connection and direct PUSH IN technology. A milestone in connection technology. Amazingly simple and simply amazing in practice:

- Connect and easily detach solid wires or wires with wire-end ferrules without using tools
- Processed automatically in the reflow or vapour phase
- Potentials and clamping points marked clearly by coloured push buttons

World-class design-in and processing phases, and suitable for a vast range of applications.
PCB terminal for fully automatic assembly using reflow soldering (SMD), with PUSH IN wire connections. Conductor insertion and slider operation from the same direction (TOP).

- **Solid & flexible conductors with wire-end ferrules need only to be inserted and they are ready.**
- **When connecting stranded wires without wire-end ferrules the actuating element is used to open the terminal point**
- **Intuitive handling – since the wire-entry area and handling area are clearly separated.**
- **Packaged in tape-on-reel**
- **Conductor outlet direction 135°**

General ordering data

Version	Printed circuit board terminals, 3.50 mm, Number of poles: 9, 135°, black, PUSH IN, Clamping range, max. : 1.5 mm², Tape
Order No.	1473390000
Type	LSF-SMD 3.50/09/135 SN BK RL
GTIN (EAN)	4050118279818
Qty.	210 pc(s).
Product data	IEC: 320 V / 12 A / 0.2 - 1.5 mm² UL: 300 V / 12 A / AWG 28 - AWG 14
Packaging	Tape

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Technical data

Dimensions and weights

Depth	12.7 mm	Depth (inches)	0.5 inch
Height	14.45 mm	Height (inches)	0.569 inch
Height of lowest version	14.45 mm	Net weight	7.952 g
Width	32.2 mm	Width (inches)	1.268 inch

Temperatures

Continuous operating temp., max.	120 °C

System parameters

Product family	OMNIMATE Signal - series LSF	Wire connection method	PUSH IN
Mounting onto the PCB	SMD solder connection	Conductor outlet direction	135°
Pitch in mm (P)	3.5 mm	Pitch in inches (P)	0.138 inch
Number of poles	9	Pin series quantity	1
Fitted by customer	No	Coplanarity:	100 µm
Number of solder pins per pole	2	Stripping length	8 mm
L1 in mm	28 mm	L1 in inches	1.104 inch
Touch-safe protection acc. to DIN VDE 0470	IP 20	Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch
Volume resistance	1.60 mΩ		

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 175	Moisture Level (MSL)	1
UL 94 flammability rating	V-0	Contact material	Copper alloy
Layer structure of solder connection	4...6 µm Sn matt	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	120 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	120 °C		

Conductors suitable for connection

Clamping range, min.	0.13 mm²
Clamping range, max.	1.5 mm²
Wire connection cross section AWG, min.	AWG 28
Wire connection cross section AWG, max.	AWG 14
Solid, min. H05(07) V-U	0.2 mm²
Solid, max. H05(07) V-U	1.5 mm²
Flexible, min. H05(07) V-K	0.2 mm²
Flexible, max. H05(07) V-K	1.5 mm²
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.25 mm²
w. plastic collar ferrule, DIN 46228 pt 4, max.	0.75 mm²
w. wire end ferrule, DIN 46228 pt 1, min.	0.25 mm²
w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm²

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Clampable conductor	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.25 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,25/12 HBL	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.34 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,34/12 TK	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.5 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,5/14 OR	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	0.75 mm²	
	wire end ferrule	Stripping length	nominal	10 mm
		Recommended wire-end ferrule	H0,75/14T HBL	
	Cross-section for conductor connection	Type	fine-wired	
		nominal	1.5 mm²	
	wire end ferrule	Stripping length	nominal	7 mm
		Recommended wire-end ferrule	H1,5/7	
Reference text	Length of ferrules is to be chosen depending on the product and the rated voltage., The outside diameter of the plastic collar should not be larger than the pitch (P)			

Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	12 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	12 A
Rated current, max. number of poles (Tu=40°C)	12 A	Rated voltage for surge voltage class / pollution degree II/2	320 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	160 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	2.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	2.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV	Short-time withstand current resistance	3 x 1s with 80 A

Rated data acc. to CSA

Institute (CSA)		Certificate No. (CSA)	200039-1664286
Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group D / CSA)	300 V
Rated current (Use group B / CSA)	10 A	Rated current (Use group D / CSA)	10 A
Wire cross-section, AWG, min.	AWG 28	Wire cross-section, AWG, max.	AWG 14
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

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Technical data

Rated data acc. to UL 1059

Institute (cURus)		Certificate No. (cURus)	E60693
Rated voltage (Use group B / UL 1059)	300 V	Rated voltage (Use group D / UL 1059)	300 V
Rated current (Use group B / UL 1059)	12 A	Rated current (Use group D / UL 1059)	10 A
Wire cross-section, AWG, min.	AWG 28	Wire cross-section, AWG, max.	AWG 14
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Packing

Packaging	Tape	VPE length	330 mm
VPE width	330 mm	VPE height	60 mm
Tape depth (T2)	15.7 mm	Tape width (W)	56 mm
Tape pocket depth (K0)	15.2 mm	Tape pocket height (A0)	11.3 mm
Tape pocket width (B0)	44.06 mm	Tape pocket separation (P1)	20 mm
Tape hole separation (E)	1.75 mm	Tape pocket separation (F)	26.2 mm
Tape reel diameter ⌀ (A)	330 mm	Surface resistance	Rs = 10^9 - 10^{12} Ω

Classifications

ETIM 6.0	EC002643	ETIM 7.0	EC002643
ECLASS 9.0	27-44-04-01	ECLASS 9.1	27-44-04-01
ECLASS 10.0	27-44-04-01	ECLASS 11.0	27-46-01-01

Important note

IPC conformity	Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.
Notes	• Additional push button colours on request • Operating force of slider max. 40 N • Rated current related to rated cross-section & min. No. of poles. • Wire end ferrule with plastic collar to DIN 46228/4 • Wire end ferrule without plastic collar to DIN 46228/1 • P on drawing = pitch • Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards. • Crimping shape "A" for wire end ferrules with PZ 6/5 crimping tool recommended. • Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

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Technical data

Approvals

Approvals	
ROHS	Conform
UL File Number Search	E60693

Downloads

Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Engineering Data	STEP
Engineering Data	EPLAN, WSCAD

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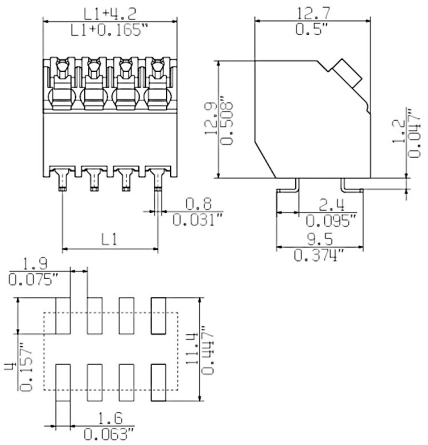
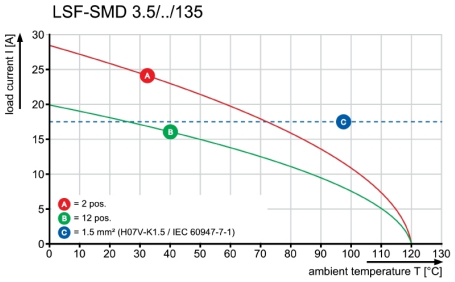
Drawings

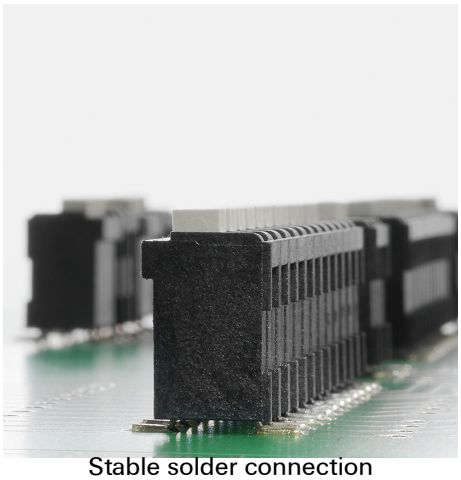
Dimensional drawing



Graph



Product benefits



Stable solder connection

Product benefits

PUSH IN wire connection

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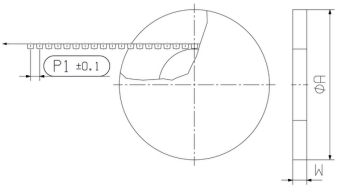
Drawings

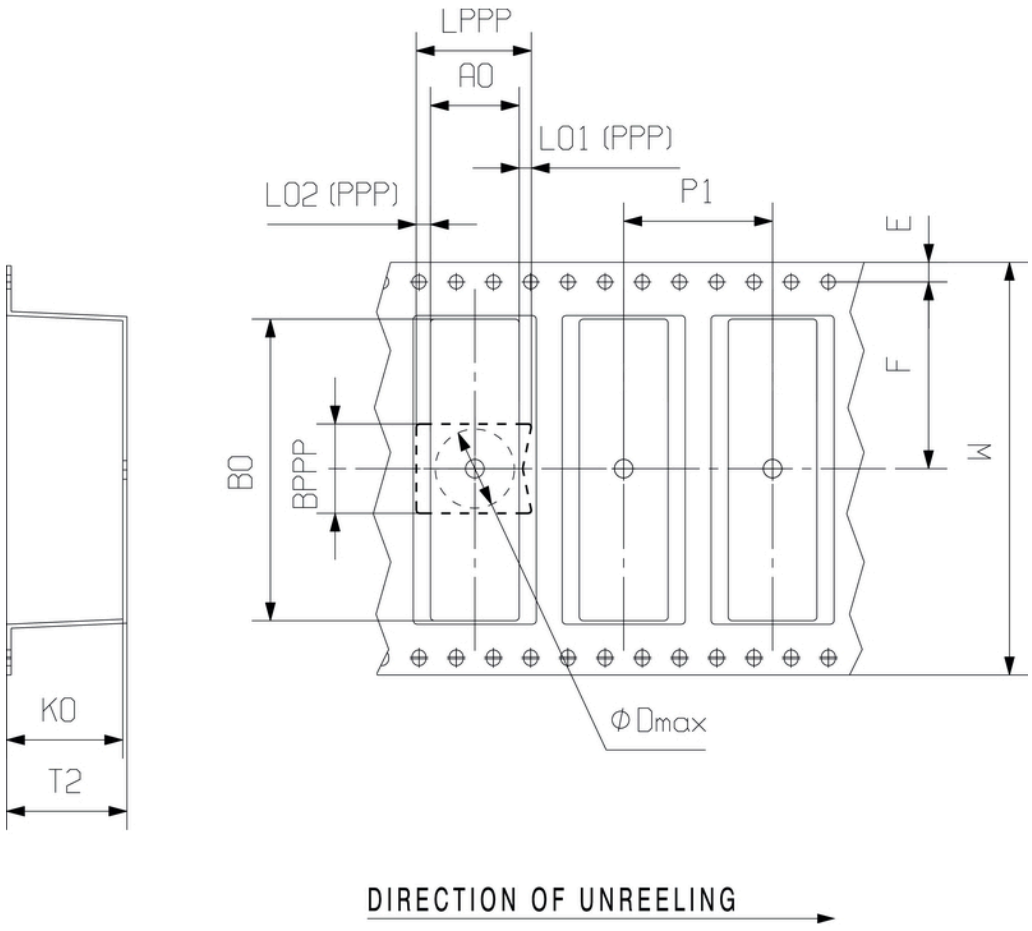
Product benefits

Packaged in tape-on-reel

Dimensional drawing

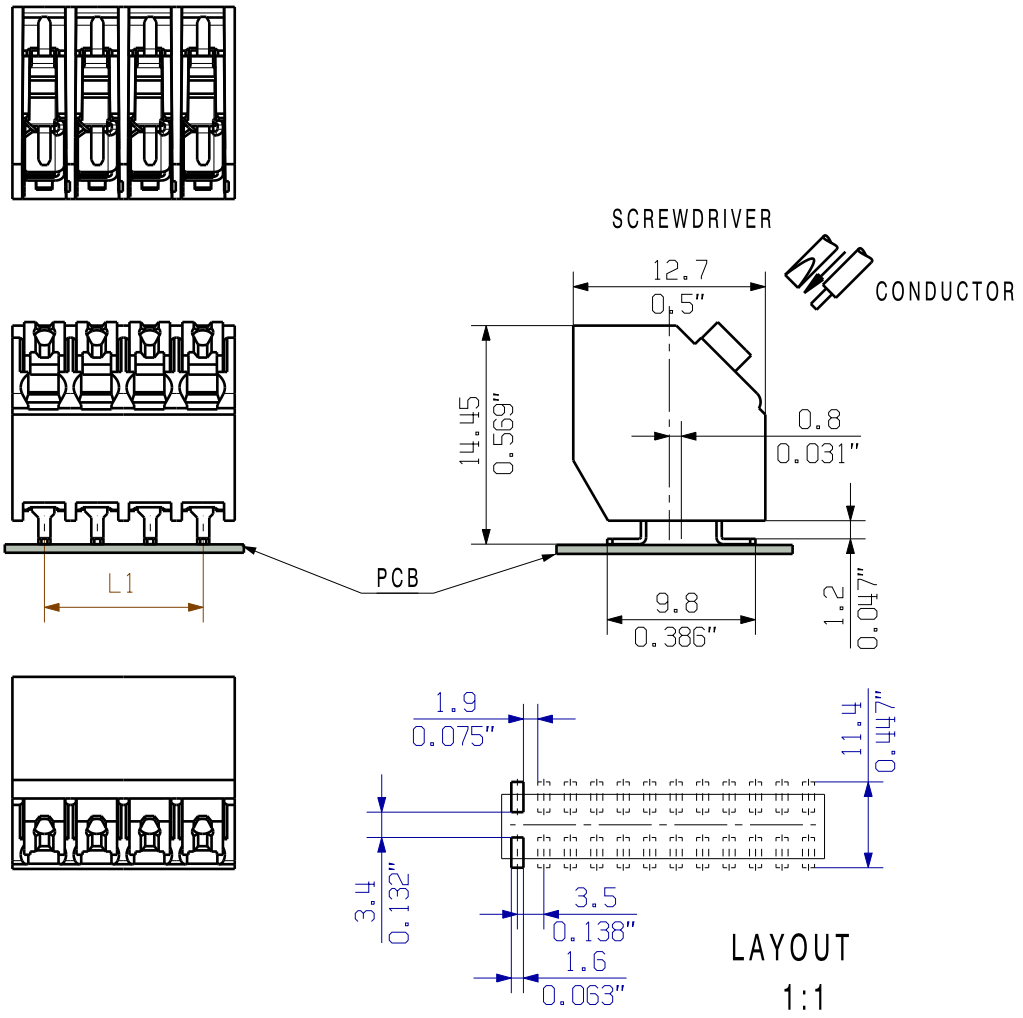


Dimensional drawing



MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE
DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

DIE DEUTSCHE VERSION IST VERBINDLICH
THE GERMAN VERSION IS BINDING



LAYOUT
1:1

For the mounting on PCBs, it should be noted that the rated data relates only to the PCB components alone.
The neccessary creepage and clearance paths must be observed in the relevnt equipment standards in accordance with IEC 664 / VDE 0110.
The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3.

Weidmüller PCB components are rated in accordance with the DIN EN 61984 standard, and are valid for its field of application. If the components are used in accordance with the intended purpose, the components will meet all requirements with respect to the occuring of electrical, mechanical, thermic and corrosive stress.

SHOWN: LSF-SMD 3.50/04/135...

n	L1 [mm]	L1 [Inch]
12	38,5	1,516
11	35,0	1,378
10	31,5	1,240
9	28,0	1,102
8	24,5	0,965
7	21,0	0,827
6	17,5	0,689
5	14,0	0,551
4	10,5	0,413
3	7,0	0,276
2	3,5	0,138

RoHS COMPLIANT

DIN ISO 2768-m

86128/5
25.01.16 KRUG_M 01
MODIFICATION

CAT.NO.: .

Weidmüller

C 57457 04
DRAWING NO. ISSUE NO.
SHEET 01 OF 04 SHEETS

	DATE	NAME
DRAWN	03.06.2015	KRUG_M
RESPONSIBLE		KRUG_M
CHECKED	02.02.2016	HELIS_MA
APPROVED		LANG_T

SCALE: 2:1
SUPERSEDES: .

LSF-SMD 3.50/../135
LEITERPLATTENKLEMME
PCB TERMINAL

PRODUCT FILE: LSF-SMD 3.50 7358

Reflow Solder Profile

Recommended reflow soldering profile

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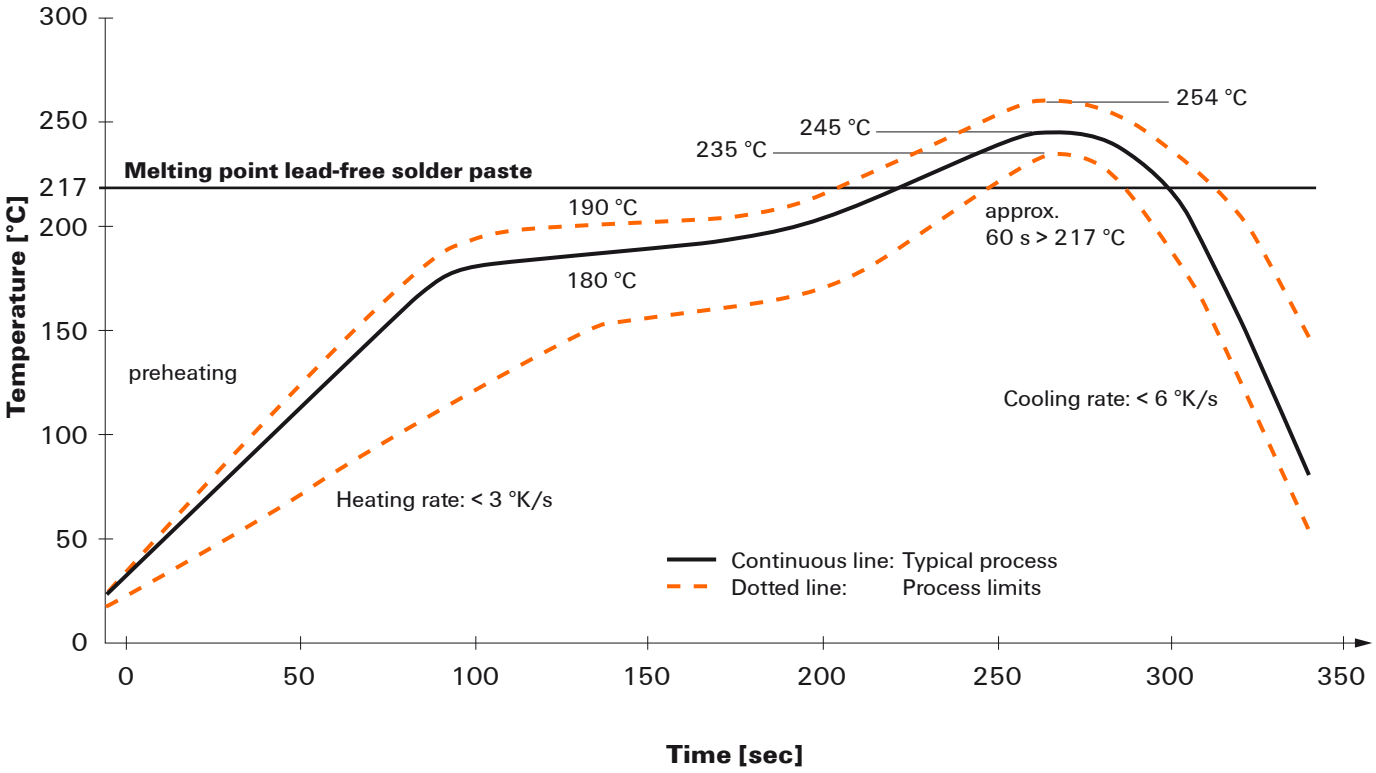

Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:
- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically ≤ +3K/s. In parallel the solder paste is ‚activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at ≥ -6K/s solder is cured. Board and components cool down while avoiding cold cracks.