

LSF-SMD 7.50/06/180 SN BK RL

Weidmüller Interface GmbH & Co. KG

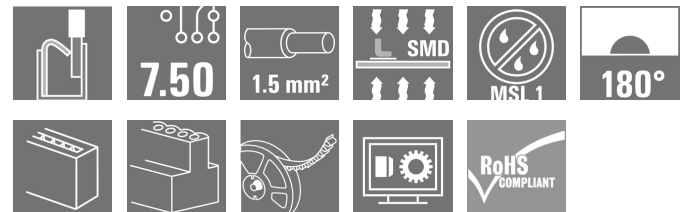
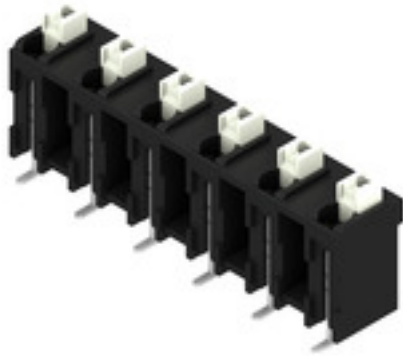
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

Product image



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 180°**

General ordering data

Version	Printed circuit board terminals, 7.50 mm, Number of poles: 6, 180°, black, PUSH IN with actuator, Clamping range, max.: 1.5 mm², Tape
Order No.	1473880000
Type	LSF-SMD 7.50/06/180 SN BK RL
GTIN (EAN)	4050118280838
Qty.	180 pc(s).
Product data	IEC: 800 V / 17.5 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	10.5 mm	Depth (inches)	0.413 inch
Height	16.3 mm	Height (inches)	0.642 inch
Height of lowest version	16.3 mm	Width	41.7 mm
Width (inches)	1.642 inch	Net weight	6.037 g

Temperatures

Continuous operating temp., max.	120 °C
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System parameters

Product family	OMNIMATE Signal - series LSF	Wire connection method	PUSH IN with actuator
Mounting onto the PCB	SMD solder connection	Conductor outlet direction	180°
Pitch in mm (P)	7.5 mm	Pitch in inches (P)	0.295 inch
Number of poles	6	Pin series quantity	1
Fitted by customer	No	Number of rows	1
Coplanarity:	100 µm	Number of solder pins per pole	2
Stripping length	8 mm	L1 in mm	37.5 mm
L1 in inches	1.475 inch	Touch-safe protection acc. to DIN VDE 0470	IP 20
Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch	Protection degree	IP20
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	Cu-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 mm ²
Clamping range, max.	1.5 mm ²
Wire connection cross section AWG, min.	AWG 28
Wire connection cross section AWG, max.	AWG 14
Solid, min. H05(07) V-U	0.2 mm ²
Solid, max. H05(07) V-U	1.5 mm ²
Flexible, min. H05(07) V-K	0.2 mm ²
Flexible, max. H05(07) V-K	1.5 mm ²
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.25 mm ²
w. plastic collar ferrule, DIN 46228 pt 4, max.	0.75 mm ²
w. wire end ferrule, DIN 46228 pt 1, min.	0.25 mm ²
w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm ²

Creation date December 4, 2023 2:22:04 PM CET

Catalogue status 24.11.2023 / We reserve the right to make technical changes.

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Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.25 mm ²
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	HO,25/12 HBL
	Cross-section for conductor connection	Type	fine-wired
		nominal	0.34 mm ²
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	HO,34/12 TK
Cross-section for conductor connection	Type	fine-wired	
	nominal	0.5 mm ²	
wire end ferrule	Stripping length	nominal 10 mm	
	Recommended wire-end ferrule	HO,5/14 OR	
Cross-section for conductor connection	Type	fine-wired	
	nominal	0.75 mm ²	
wire end ferrule	Stripping length	nominal 10 mm	
	Recommended wire-end ferrule	HO,75/14T HBL	

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)	17.5 A
Rated current, max. number of poles (Tu=20°C)	17.5 A	Rated current, min. number of poles (Tu=40°C)	17.5 A
Rated current, max. number of poles (Tu=40°C)	15 A	Rated voltage for surge voltage class / pollution degree II/2	800 V
Rated voltage for surge voltage class / pollution degree III/2	630 V	Rated voltage for surge voltage class / pollution degree III/3	500 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	6 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	6 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	6 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 C / CSA)	150 V
Rated voltage (Use group D / CSA)	300 V	Rated current (Use group B / CSA)	10 A
Rated current (Use group C / 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 C / UL 1059)	150 V
Rated voltage (Use group D / UL 1059)	300 V	Rated current (Use group B / UL 1059)	12 A
Rated current (Use group C / UL 1059)	10 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

ESD Level packaging	static dissipative	Packaging	Tape
VPE length	330 mm	VPE width	330 mm
VPE height	62 mm	Tape depth (T2)	17.6 mm
Tape width (W)	56 mm	Tape pocket depth (K0)	17.1 mm
Tape pocket height (A0)	11.2 mm	Tape pocket width (B0)	43.7 mm
Tape pocket separation (P1)	20 mm	Tape hole separation (E)	1.75 mm
Tape pocket separation (F)	26.2 mm	Tape reel diameter \varnothing (A)	330 mm
Surface resistance	$R_s = 10^9 - 10^{12} \Omega$	Width Pick & Place Pad (W_{PPP})	7.5 mm
Length Pick & Place Pad (L_{PPP})	8.5 mm	Diameter of the withdrawal surface ($\varnothing D_{max}$)	9 mm

Type tests

Test: Durability of markings	Test	mark of origin, type identification, pitch, approval marking UL, durability		
	Evaluation	available		
Test: Clampable cross section	Standard	DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.02		
	Conductor type	Type of conductor and conductor cross-section	solid 0.14 mm ²	
		Type of conductor and conductor cross-section	stranded 0.14 mm ²	
		Type of conductor and conductor cross-section	solid 1.5 mm ²	
		Type of conductor and conductor cross-section	stranded 1.5 mm ²	
		Type of conductor and conductor cross-section	AWG 24/1	
		Type of conductor and conductor cross-section	AWG 24/19	
		Type of conductor and conductor cross-section	AWG 16/1	
		Type of conductor and conductor cross-section	AWG 16/19	
Evaluation	passed			

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Test for damage to and accidental loosening of conductors	Standard	DIN EN 60999-1 section 9.4 / 12.00		
	Requirement	0.2 kg		
	Conductor type	Type of conductor and conductor cross-section	AWG 24/1	
		Type of conductor and conductor cross-section	AWG 24/19	
	Evaluation	passed		
	Requirement	0.3 kg		
	Conductor type	Type of conductor and conductor cross-section	stranded 0.25 mm ²	
		Type of conductor and conductor cross-section	solid 0.5 mm ²	
	Evaluation	passed		
	Requirement	0.4 kg		
Conductor type	Type of conductor and conductor cross-section	solid 1.5 mm ²		
	Type of conductor and conductor cross-section	stranded 1.5 mm ²		
	Type of conductor and conductor cross-section	AWG 16/1		
	Type of conductor and conductor cross-section	AWG 16/19		
Evaluation	passed			
Pull-out test	Standard	DIN EN 60999-1 section 9.5 / 12.00		
	Requirement	≥10 N		
	Conductor type	Type of conductor and conductor cross-section	AWG 24/1	
		Type of conductor and conductor cross-section	AWG 24/19	
	Evaluation	passed		
	Requirement	≥20 N		
	Conductor type	Type of conductor and conductor cross-section	stranded 0.25 mm ²	
		Type of conductor and conductor cross-section	H05V-U0.5	
	Evaluation	passed		
	Requirement	≥40 N		
Conductor type	Type of conductor and conductor cross-section	H07V-U1.5		
	Type of conductor and conductor cross-section	H07V-K1.5		
	Type of conductor and conductor cross-section	AWG 16/1		
	Type of conductor and conductor cross-section	AWG 16/19		
Evaluation	passed			

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Technical data
Classifications

ETIM 6.0	EC002643	ETIM 7.0	EC002643
ETIM 8.0	EC002643	ETIM 9.0	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
ECLASS 12.0	27-46-01-01	ECLASS 13.0	27460101

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 maximum humidity 70%, 36 months

Approvals
Approvals


ROHS	Conform
UL File Number Search	UL Website
Certificate No. (cURus)	E60693

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Technical data

Downloads

Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Engineering Data	CAD data – STEP
Product Change Notification	Changeover to ESD bags for “Tape on Reel” products Umstellung auf ESD-Beutel bei „Tape on Reel“ Produkten
Catalogues	Catalogues in PDF-format
Brochures	FL DRIVES EN PI OMNIMATE LSF SMD EN FL ANALO.SIGN.CONV. EN MB DEVICE MANUF. EN FL DRIVES DE FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FLIndustr.CONTROLS EN FL MACHINE SAFETY EN FL HEATING ELECTR EN FL APPL INVERTER EN FL_BASE_STATION EN FL ELEVATOR EN FL POWER SUPPLY EN FL 72H SAMPLE SER EN PO OMNIMATE EN
White paper surface mount technology	Download Whitepaper

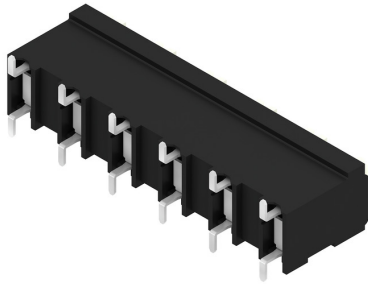
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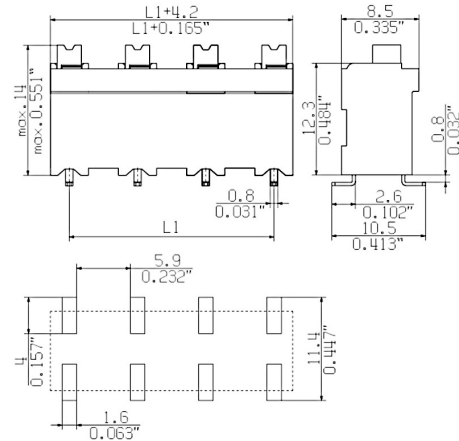
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Drawings

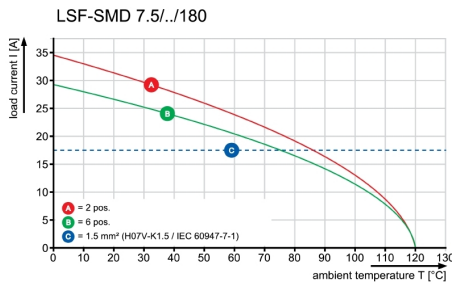
Product image



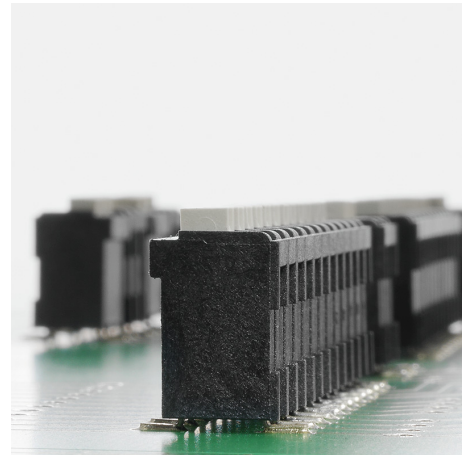
Dimensional drawing



Graph

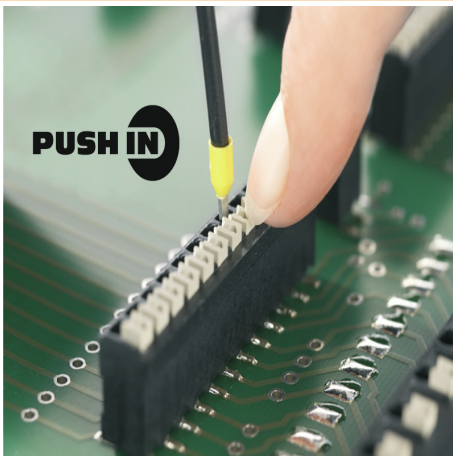


Product benefits



Stable solder connection

Product benefits



PUSH IN wire connection

Product benefits



Packaged in tape-on-reel

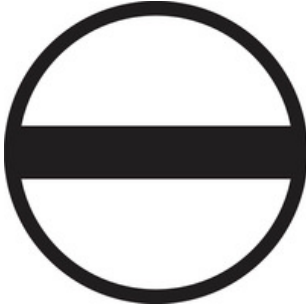
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Accessories

Slotted screwdriver

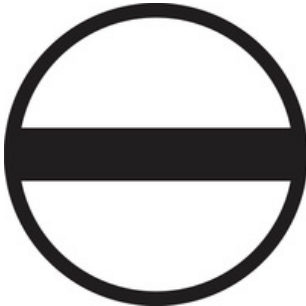


Slotted screwdriver with rounded blade SD DIN 5265, ISO 2380/2, output to DIN 5264, ISO 2380/1. ChromTop tip, SoftFinish grip

General ordering data

Type	SDS 0.4X2.5X75	Version
Order No.	9009030000	Screwdriver, Screwdriver
GTIN (EAN)	4032248266944	
Qty.	1 pc(s).	

Slotted screwdriver

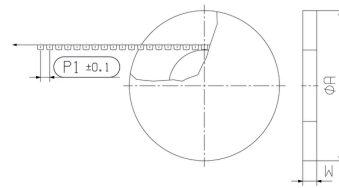


VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1. SoftFinish grip

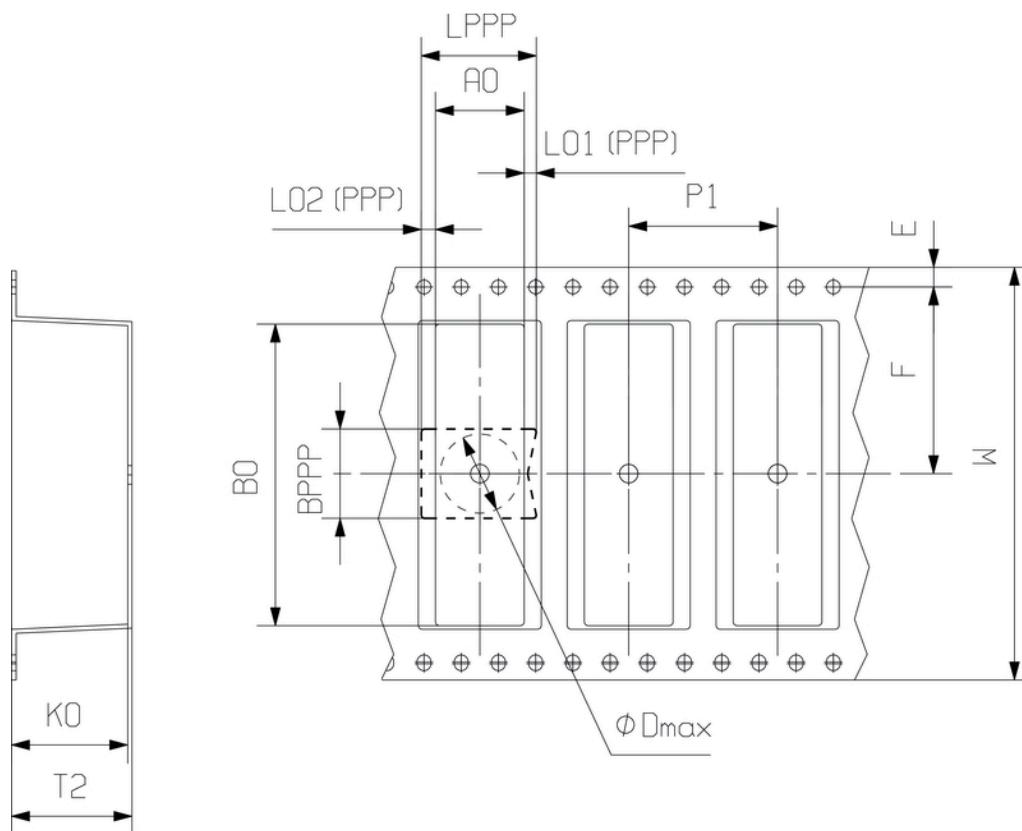
General ordering data

Type	SDIS 0.4X2.5X75	Version
Order No.	9008370000	Screwdriver, Screwdriver
GTIN (EAN)	4032248056330	
Qty.	1 pc(s).	

Dimensional drawing

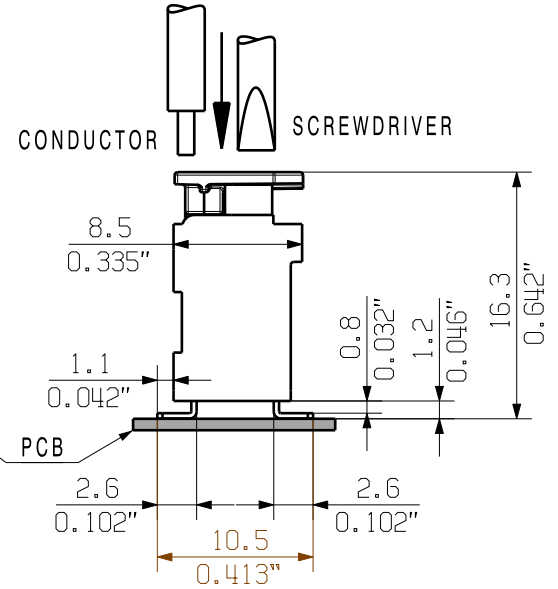
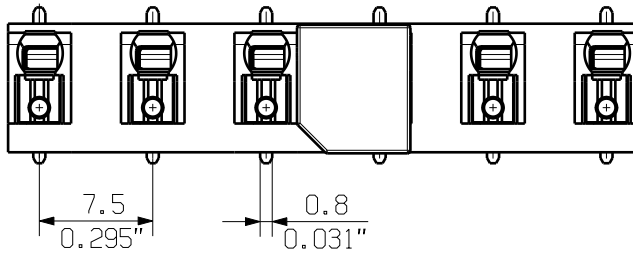
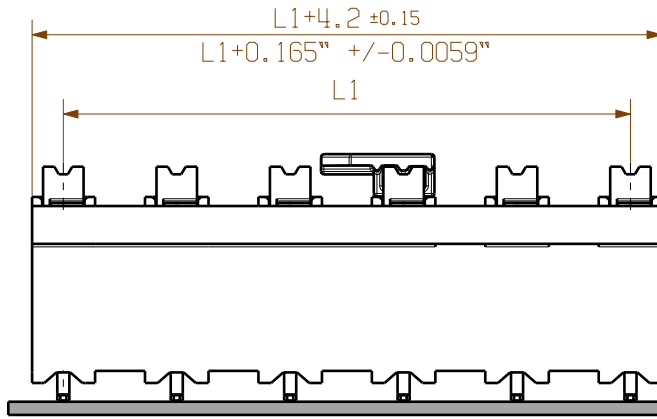
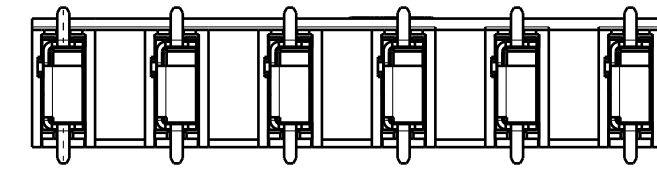


Dimensional drawing

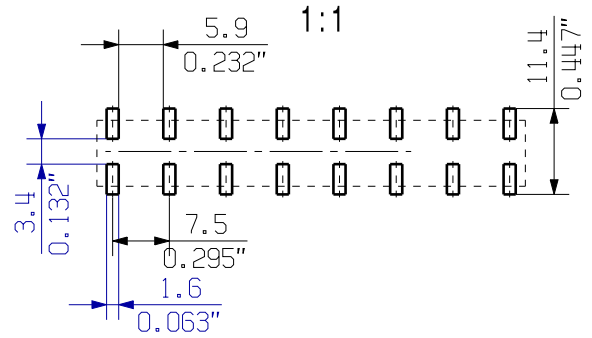


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DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

DIE DEUTSCHE VERSION IST VERBINDLICH
THE GERMAN VERSION IS BINDING



LAYOUT



For the mounting on PCBs, it should be noted that the rated data relates only to the PCB components alone. The necessary creepage and clearance paths must be observed in the relevant 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 occurring of electrical, mechanical, thermal and corrosive stress.

SHOWN: LSF-SMD 7.50/06/180

6	37,50	1,476
5	30,00	1,181
4	22,50	0,886
3	15,00	0,591
2	7,50	0,295
n	L1 [mm]	L1 [Inch]

	DIN ISO 2768-m	78009/5 09.09.14 HELIS_MA 00	CAT.NO.: . . .	
	MODIFICATION		C 58000 02	
	DATE	NAME	DRAWING NO. ISSUE NO.	
	DRAWN	10.03.2014	HELIS_MA	SHEET 01 OF 02 SHEETS
	RESPONSIBLE		KRUG_M	
SCALE: 2:1	CHECKED	30.09.2014	HELIS_MA	
SUPERSEDES: .	APPROVED		LANG_T	
<p>LSF-SMD 7.50/.. /180... LEITERPLATTENKLEMME PCB TERMINAL</p>			PRODUCT FILE: LSF-SMD 7401	

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Empfohlene Wellen-Lötprofile

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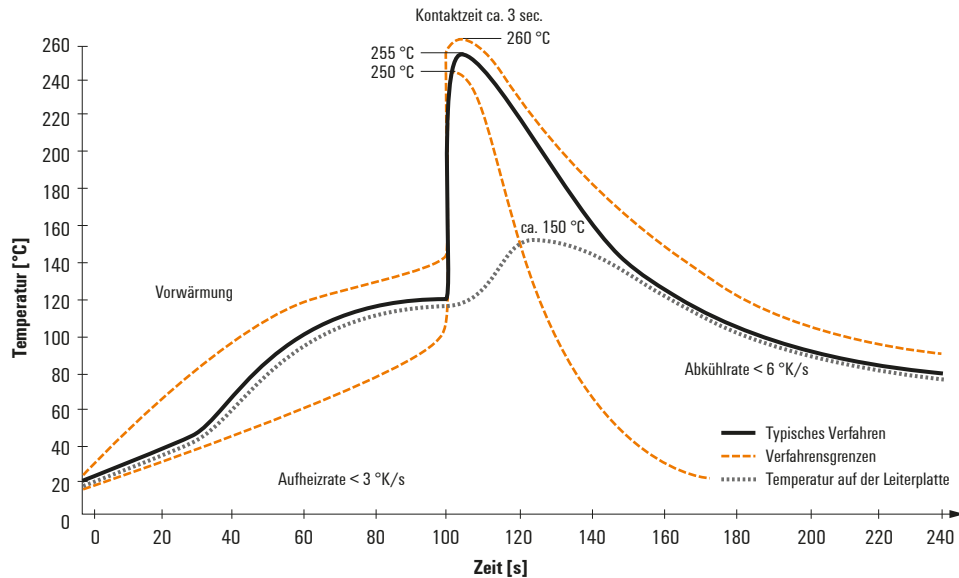
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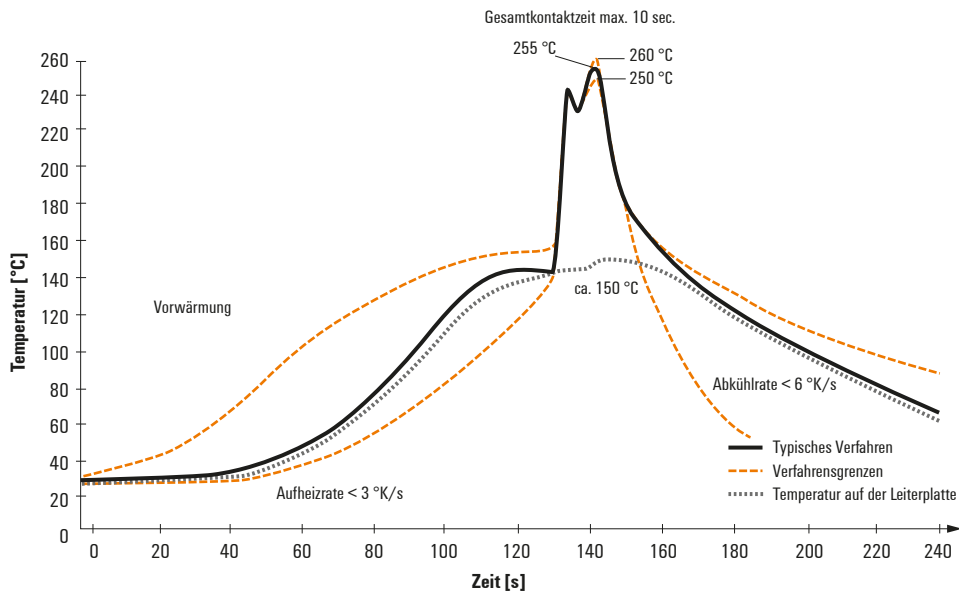
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Einzelwelle:



Doppelwelle:



Wellen-Lötprofile

Bedrahtete Anschlüsselemente sind in Anlehnung an die Norm DIN EN 61760-1 zu verarbeiten. Anbei zwei Empfehlungen für praxisbezogene Wellenlötprofile, mit denen Leiterplattenanschlussklemmen und Steckverbinder von Weidmüller qualifiziert sind.

Bei der Wahl eines passenden Profils für Ihre Anwendung sind unter anderem folgende Faktoren zu beachten:

- Stärke der Leiterplatte
- Cu-Anteile in den Lagen
- Ein-/Beidseitige Bestückung
- Produktspektrum
- Aufheiz- und Abkühlrate

Die Einzel- und Doppelwelle zeigt jeweils den empfohlenen Verarbeitungsbereich inkl. der maximalen Löttemperatur von 260°C. In der Praxis liegt die maximale Löttemperatur sehr häufig weit unter dem o.g. Maximalprofil.

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 $\leq +3\text{K/s}$. 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 $\geq -6\text{K/s}$ solder is cured. Board and components cool down while avoiding cold cracks.