

OMNIMATE Signal - series LSF
LSF-SMT 3.50/03/135 3.5SN BK TU**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

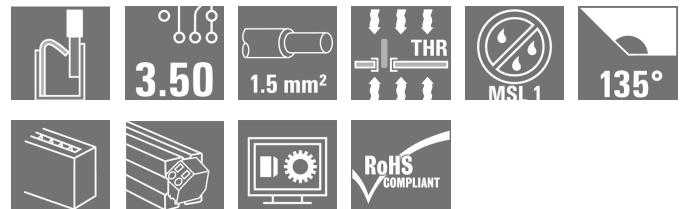
D-32758 Detmold

Germany

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PCB terminal for fully automatic assembly in reflow soldering (SMT), with PUSH IN conductor connection system. Conductor inserted and slider operated in same direction (TOP). Packed in box or as tape on reel. Pin lengths optimised at 1.5 mm or 3.5 mm.

General ordering data

Type	LSF-SMT 3.50/03/135 3.5SN BK TU
Order No.	1885660000
Version	Printed circuit board terminals, 3.50 mm, Number of poles: 3, 135°, Solder pin length (l): 3.5 mm, black, PUSH IN, Clamping range, max.: 1.5 mm², Tube
GTIN (EAN)	4032248490578
Qty.	49 pc(s).
Product data	IEC: 320 V / 17.5 A / 0.2 - 1.5 mm² UL: 300 V / 12 A / AWG 28 - AWG 14
Packaging	Tube

Creation date April 4, 2020 8:16:06 AM CEST

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Technical data

Dimensions and weights

Width	11.2 mm	Width (inches)	0.441 inch
Height	16.4 mm	Height (inches)	0.646 inch
Height of lowest version	12.9 mm	Depth	12.7 mm
Depth (inches)	0.5 inch	Net weight	2.735 g

System parameters

Product family	OMNIMATE Signal - series LSF	Wire connection method	PUSH IN
Mounting onto the PCB	THT/THR solder connection	Conductor outlet direction	135°
Pitch in mm (P)	3.5 mm	Pitch in inches (P)	0.138 inch
Number of poles	3	Fitted by customer	No
Solder pin length (l)	3.5 mm	Solder pin length tolerance	+0.1 / -0.3 mm
Solder pin dimensions	0.35 x 0.8 mm	Solder pin dimensions = d tolerance	0 / -0.1 mm
Solder eyelet hole diameter (D)	1.1 mm	Solder eyelet hole diameter tolerance (D)	+ 0,1 mm
Number of solder pins per pole	2	Stripping length	8 mm
L1 in mm	7 mm	L1 in inches	0.276 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 of operational elements	white	Material of operational elements	PPA GF
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 175	Insulation strength	≥ 10 ⁸ Ω
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.	-25 °C	Storage temperature, max.	50 °C
Max. relative humidity during storage	70 %	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, 0.25 mm ² min.	
w. plastic collar ferrule, DIN 46228 pt 4, 0.75 mm ² max.	
w. wire end ferrule, DIN 46228 pt 1, 0.25 mm ² min.	
w. wire end ferrule, DIN 46228 pt 1, 1.5 mm ² max.	

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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	H0.25/12 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	H0.34/12 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	H0.5/14 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	H0.75/14T HBL			
Cross-section for conductor connection	Type	fine-wired			
	nominal	1.5 mm ²			
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)				
Max. clamping range	1.5 mm ²				

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)	16 A	Rated current, min. number of poles (Tu=40°C)	17.5 A
Rated current, max. number of poles (Tu=40°C)	14 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 current (Use group B / UL 1059) 12 A

Wire cross-section, AWG, min. AWG 28

Reference to approval values

Specifications are
 maximum values, details -
 see approval certificate.

Rated voltage (Use group D / UL 1059) 300 V

Rated current (Use group D / UL 1059) 10 A

Wire cross-section, AWG, max. AWG 14

Packing

Packaging Tube

VPE width 20 mm

Surface resistance $R_s = 10^9 - 10^{12} \Omega$

VPE length 10 mm

VPE height 555 mm

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

UNSPSC

30-21-18-11

Notes

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.

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.

Approvals

Approvals



ROHS

Conform

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Technical data

Downloads

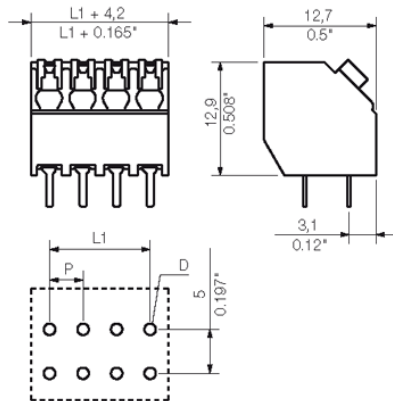
Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Brochure/Catalogue	FL DRIVES EN FL ANALO.SIGN.CONV. EN MB SMT EN FL DRIVES DE MB DEVICE MANUF. EN CAT 2 PORTFOLIOGUIDE EN FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FL INDUSTR.CONTROLS EN FL MACHINE SAFETY EN FL HEATING ELECTR EN FL APPL INVERTER EN FL_BASE_STATION_EN FL ELEVATOR EN FL POWER SUPPLY EN FL 72H SAMPLE SER EN PO OMNIMATE EN
Engineering Data	EPLAN, WSCAD
Engineering Data	STEP
White paper surface mount technology	Download Whitepaper

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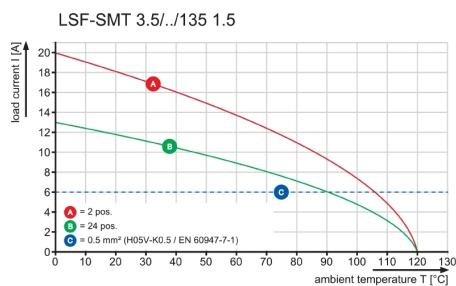
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Drawings

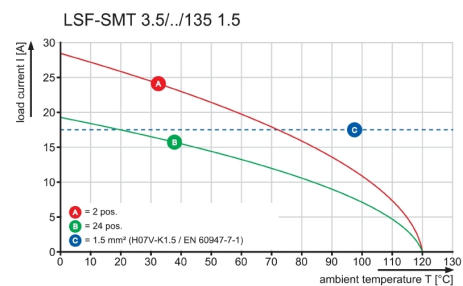
Dimensional drawing



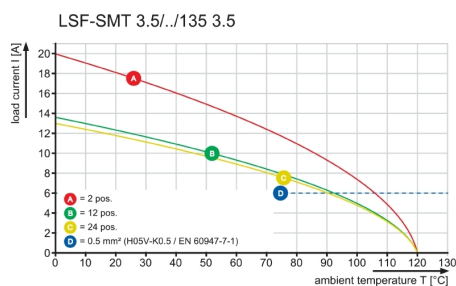
Graph



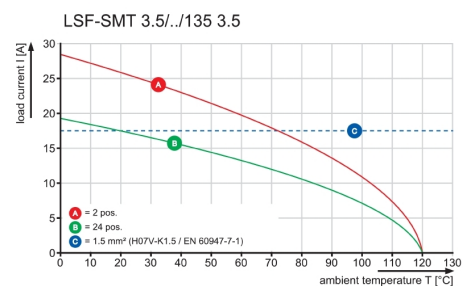
Graph



Graph



Graph



Recommended wave soldering profiles

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Single Wave:



Double Wave:



Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

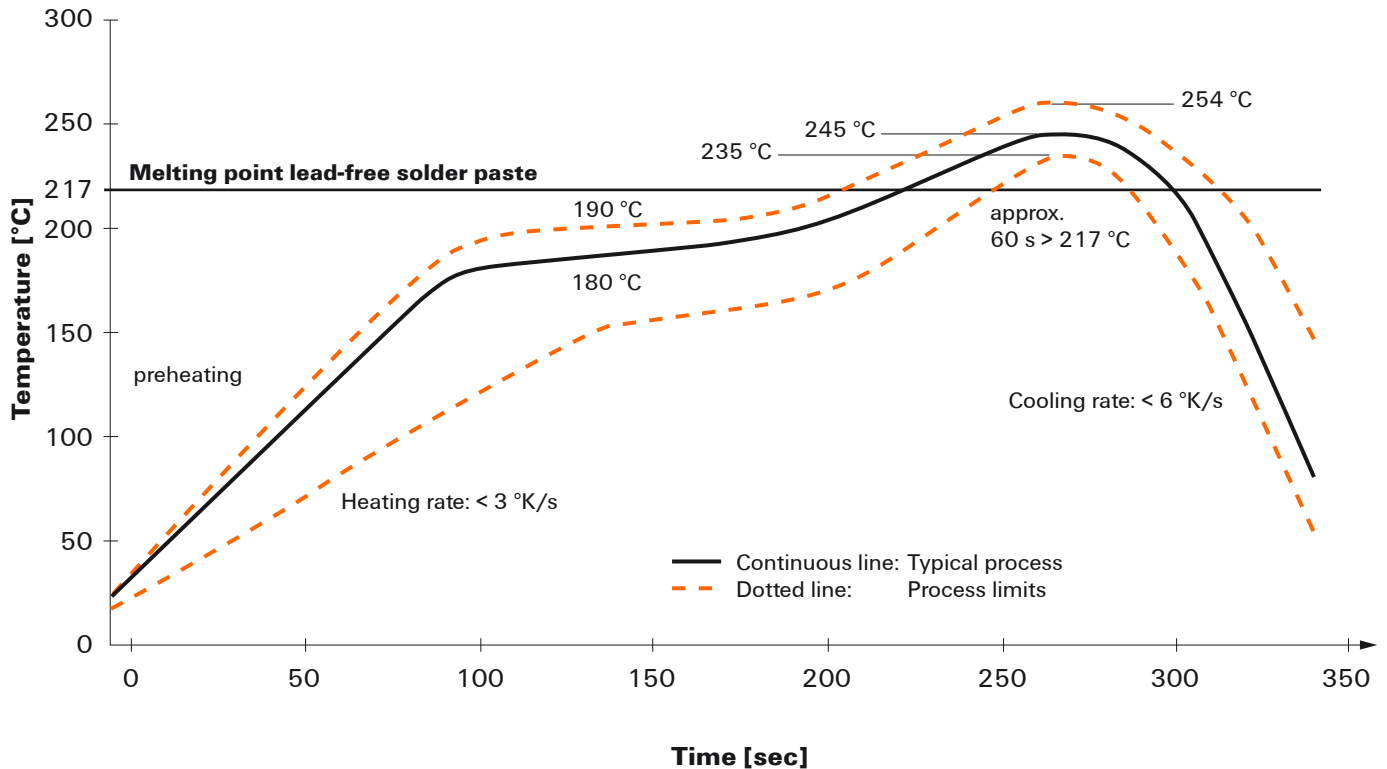
- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

We reserve the right to make technical changes.

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.