

S2L-SMT 3.50/20/180LF 1.5SN BK RL**Weidmüller Interface GmbH & Co. KG**

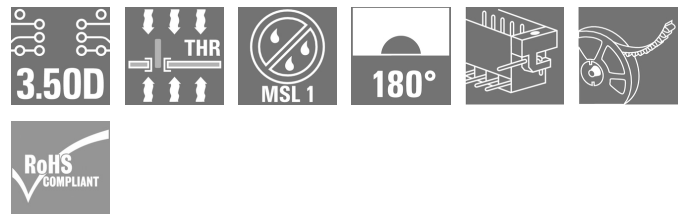
Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com**Product image**

Similar to illustration

Do not use product for new developments

High-temperature-resistant, double-row pin header for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. Solder pin 3.2 mm long, suitable for reflow and wave soldering. The male connectors provide space for labelling and can be coded.

General ordering data

Version	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, Number of poles: 20, 180°, Solder pin length (l): 1.5 mm, tinned, black, Tape
Order No.	1535410000
Type	S2L-SMT 3.50/20/180LF 1.5SN BK RL
GTIN (EAN)	4050118339543
Qty.	150 pc(s).
Product data	IEC: 160 V / 10 A UL: 150 V / 10 A
Packaging	Tape
Delivery status	This article will no longer be available in the future.
Available until	2028-12-31
Creation date	April 22, 2025 03:36 PM CEST

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Technical data**Dimensions and weights**

Depth	10.8 mm	Depth (inches)	0.425 inch
Height	12.3 mm	Height (inches)	0.484 inch
Height of lowest version	14.2 mm	Width	42 mm
Width (inches)	1.654 inch	Net weight	6.912 g

System specifications

Product family	OMNIMATE Signal - series B2L/S2L 3.50 - 2-row	Type of connection	Board connection
Mounting onto the PCB	THT/THR solder connection	Pitch in mm (P)	3.5 mm
Pitch in inches (P)	0.138 "	Outgoing elbow	180°
Number of poles	20	Number of solder pins per pole	1
Solder pin length (l)	1.5 mm	Solder pin dimensions	d = 1.0 mm, Octagonal
Solder eyelet hole diameter (D)	1.3 mm	Solder eyelet hole diameter tolerance (D) +	0,1 mm
Outside diameter of solder pad	2.1 mm	Template aperture diameter	1.9 mm
L1 in mm	31.5 mm	L1 in inches	1.24 "
Number of rows	2	Pin series quantity	2
Touch-safe protection acc. to DIN VDE 57 106	finger-safe unplugged/ back-of-hand-safe plugged	Touch-safe protection acc. to DIN VDE 0470	IP20 plugged/ IP10 unplugged
Can be coded	Yes	Plugging force/pole, max.	3 N
Pulling force/pole, max.	6 N		

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIb
Comparative Tracking Index (CTI)	≥ 175	Moisture Level (MSL)	1
UL 94 flammability rating	V-0	Contact material	Cu-alloy
Contact surface	tinned	Layer structure of solder connection	2...3 µm Ni / 5...7 µm Sn
Layer structure of plug contact	2...5 µm Sn / 1...3 µm Ni	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	100 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	100 °C		

Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	10 A
Rated current, max. number of poles (Tu=20°C)	10 A	Rated current, min. number of poles (Tu=40°C)	9 A
Rated current, max. number of poles (Tu=40°C)	8.5 A	Rated voltage for surge voltage class / pollution degree II/2	160 V
Rated voltage for surge voltage class / pollution degree III/2	125 V	Rated voltage for surge voltage class / pollution degree III/3	50 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	1.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	1.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV	Short-time withstand current resistance	3 x 1s with 77 A

Rated data acc. to CSA

Rated voltage (Use group B / CSA)	50 V	Rated voltage (Use group C / CSA)	50 V
Rated voltage (Use group D / CSA)	150 V	Rated current (Use group B / CSA)	5 A
Rated current (Use group C / CSA)	9.5 A	Rated current (Use group D / CSA)	9.5 A

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Technical data**Rated data acc. to UL 1059**

Institute (UR)



Certificate No. (UR)

E60693

Rated voltage (Use group B / UL 1059) 150 V

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

Reference to approval values

Specifications are maximum values, details - see approval certificate.

Packing

ESD Level packaging	static dissipative
VPE length	330 mm
VPE height	95 mm
Tape width (W)	88 mm
Tape pocket height (AO)	11.1 mm
Tape pocket separation (P1)	20 mm
Tape pocket separation (F)	42.2 mm
Surface resistance	$R_s = 10^9 - 10^{12} \Omega$
Length Pick & Place Pad (L_{PPP})	15.6 mm
Protrusion 1 Pick & Place Pad ($L_{01 (PPP)}$)	7.8 mm

Packaging	Tape
VPE width	330 mm
Tape depth (T2)	19.8 mm
Tape pocket depth (K0)	19.3 mm
Tape pocket width (B0)	70.4 mm
Tape hole separation (E)	1.75 mm
Tape reel diameter ϕ (A)	330 mm
Width Pick & Place Pad (W_{PPP})	10 mm
Diameter of the withdrawal surface (ϕD_{max})	9 mm
Protrusion 2 Pick & Place Pad ($P_{02 (PPP)}$)	7.8 mm

Classifications

ETIM 6.0	EC002637	ETIM 7.0	EC002637
ETIM 8.0	EC002637	ETIM 9.0	EC002637
ETIM 10.0	EC002637	ECLASS 9.0	27-44-04-02
ECLASS 9.1	27-44-04-02	ECLASS 10.0	27-44-04-02
ECLASS 11.0	27-46-02-01	ECLASS 12.0	27-46-02-01
ECLASS 13.0	27-46-02-01	ECLASS 14.0	27-46-02-01
ECLASS 15.0	27-46-02-01		

Environmental Product Compliance

RoHS Compliance Status	Compliant without exemption
REACH SVHC	No SVHC above 0.1 wt%

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	- In accordance with IEC 61984, OMNIMATE-connectors are connectors without breaking capacity (COC). During designated use, connectors are not allowed to be engaged or disengaged when live or under load - Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months

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www.weidmueller.com**Technical data****Approvals**

Approvals



Approvals MAMID	https://mdcop.weidmueller.com/mediadelivery/rendition/900_319262/-T1z1mm-S800/
ROHS	Conform
UL File Number Search	UL Website
Certificate No. (UR)	E60693

Downloads

Approval/Certificate/Document of Conformity	Declaration of the Manufacturer
Engineering Data	CAD data – STEP
Product Change Notification	PCN_2015_208_PL30X_SC-SMT_SL_SMT_3.xx_5.xx_new_Tape_Packaging_Step_2_EN PCN_2015_208_PL30X_SC-SMT_SL_SMT_3.xx_5.xx_neue_Tapeverpackung_Step_2_DE Change of housing geometry S2L-SMT - EN Change of housing geometry S2L-SMT - DE Changeover to ESD bags for "Tape on Reel" products Umstellung auf ESD-Beutel bei „Tape on Reel“ Produkten Changeover of the locking hook for the solder flange pin of the S2C-SMT 3.50 and S2L-SMT 3.50 Umstellung des Rasthakens für den Lötflanschstift der S2C-SMT 3.50 und der S2L-SMT 3.50
Catalogues	Catalogues in PDF-format
Brochures	FL DRIVES EN MB SMT EN FL DRIVES DE MB DEVICE MANUF. EN FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FL INDUSTR.CONTROLS EN FL MACHINE SAFETY EN FL HEATING ELECTRON 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

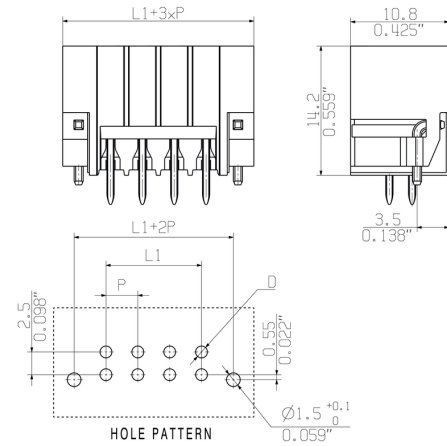
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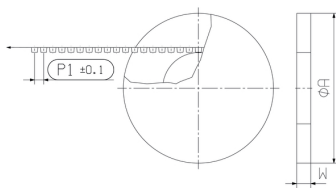
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Drawings

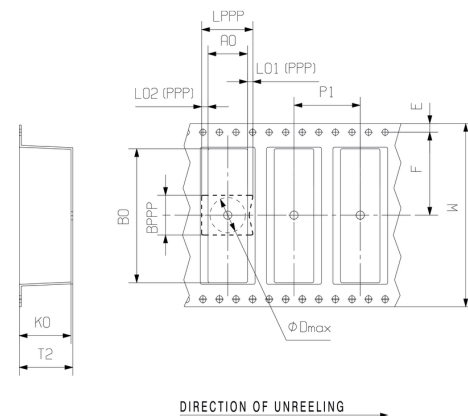
Dimensional drawing



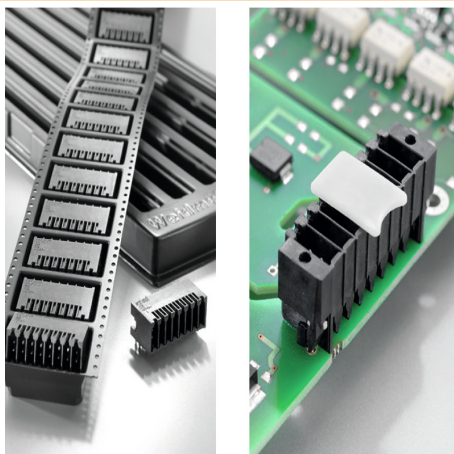
Dimensional drawing



Dimensional drawing



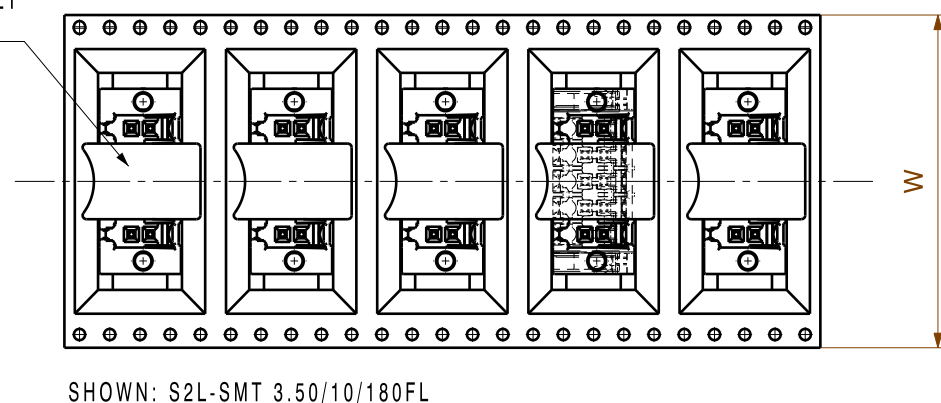
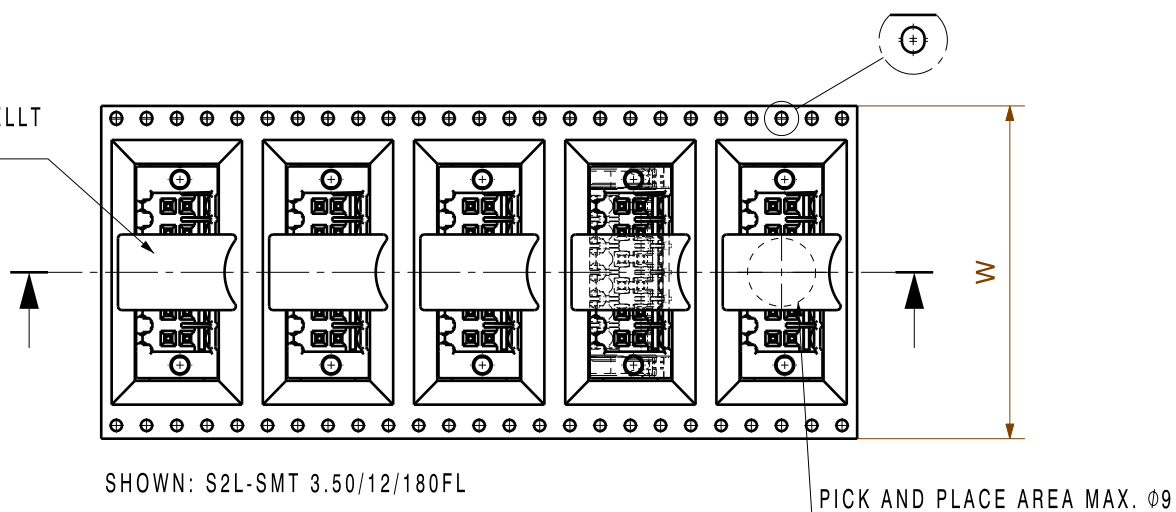
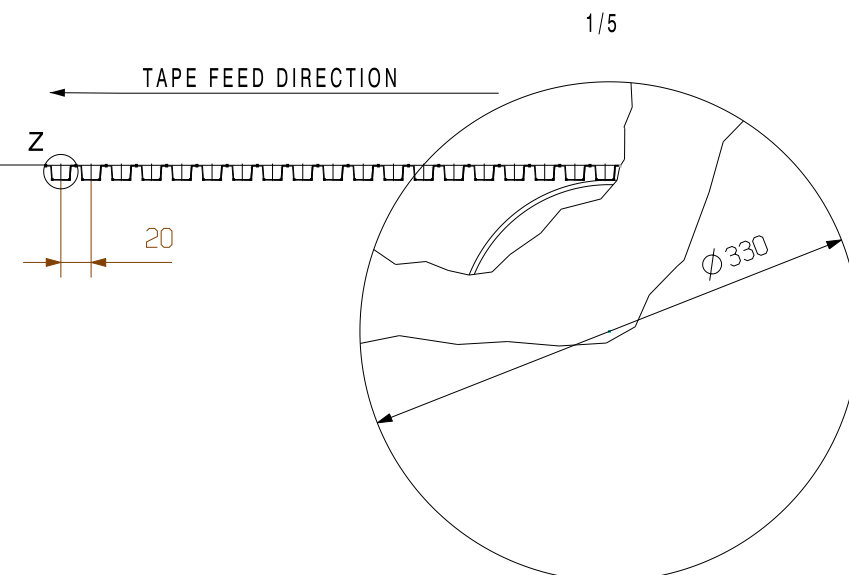
Product benefits



Optimised for the SMT process
Safe board-to-board connection

DIE DEUTSCHE VERSION IST VERBINDLICH
THE GERMAN VERSION IS BINDING

(C) WEIDMUELLER INTERFACE GmbH & Co. KG



NO OF POLES MATCHING IN TAPE															
OPEN ENDED					CLOSED ENDED					SOLDER FLANGE ENDED					
W					W					W					
32mm	44mm	56mm	72mm	88mm	32mm	44mm	56mm	72mm	88mm	32mm	44mm	56mm	72mm	88mm	
4					4					4					
6					6					6					
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MODIFICATION		DRAWING NO.	ISSUE NO.	
		SHEET 01	OF 02	SHEET
		DATE	NAME	TAPE S2L-SMT 3.50/./180 TAPE STIFTLISTE TAPE PIN HEADER
DRAWN	23.08.2007	LANG_T		
RESPONSIBLE		AMANN_A		
CHECKED	03.09.2015	HELIS_MA		
APPROVED		LANG_T		
SCALE: 1/1		PRODUCT FILE: S2L-SMT 3.50		7272
SUPERSEDES: .				

Recommended wave soldering profiles

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Germany
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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.