

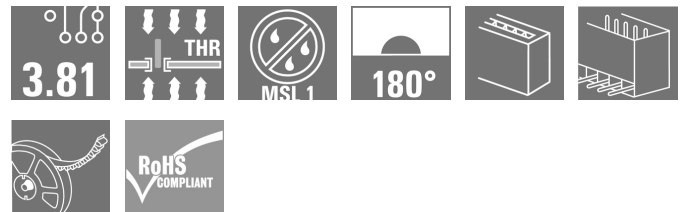
**SC-SMT 3.81/03/180G 1.5SN BK RL****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com

**Product image**

High-temperature-resistant pin header (SC-SMT 180G) in 3.81-mm pitch (0.15 inch)

- Plugging direction is perpendicular to PCB (standing)
- Closed (G) .
- Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)
- Pin length of either 1.5 mm or 3.2 mm

Weidmüller's 3.81-mm-pitch (0.15 inch) plug-in connectors are compatible with the layouts of standard connectors and offer space for labelling and coding.

**General ordering data**

Version	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.81 mm, Number of poles: 3, 180°, Solder pin length (l): 1.5 mm, tinned, black, Tape
Order No.	<a href="#">1864060000</a>
Type	SC-SMT 3.81/03/180G 1.5SN BK RL
GTIN (EAN)	4032248429189
Qty.	300 pc(s).
Product data	IEC: 320 V / 17.5 A UL: 300 V / 11 A
Packaging	Tape

Creation date May 9, 2024 1:50:27 AM CEST

## SC-SMT 3.81/03/180G 1.5SN BK RL

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## Technical data

## Dimensions and weights

Depth	7.07 mm	Depth (inches)	0.278 inch
Height	10.7 mm	Height (inches)	0.421 inch
Height of lowest version	9.2 mm	Width	12.12 mm
Width (inches)	0.477 inch	Net weight	2.06 g

## System specifications

Product family	OMNIMATE Signal - series BC/SC 3.81	Type of connection	Board connection
Mounting onto the PCB	THT/THR solder connection	Pitch in mm (P)	3.81 mm
Pitch in inches (P)	0.15 "	Outgoing elbow	180°
Number of poles	3	Number of solder pins per pole	1
Solder pin length (l)	1.5 mm	Solder pin length tolerance	0 / -0,02 mm
Solder pin dimensions	d = 1.0 mm, Octagonal	Solder pin dimensions = d tolerance	0 / -0,04 mm
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	7.62 mm	L1 in inches	0.3 "
Number of rows	1	Pin series quantity	1
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
Volume resistance	≤5 mΩ	Can be coded	Yes

## 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
Contact surface	tinned	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	120 °C	Temperature range, installation, min.	-25 °C
Temperature range, installation, max.	120 °C		

## 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)	13.9 A	Rated current, min. number of poles (Tu=40°C)	17 A
Rated current, max. number of poles (Tu=40°C)	12.4 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 76 A

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## Technical data

## Rated data acc. to CSA

Institute (CSA)



Certificate No. (CSA)

200039-1121690

Rated voltage (Use group B / CSA) 300 V

Rated current (Use group B / CSA) 11 A

Reference to approval values Specifications are maximum values, details - see approval certificate.

## 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) 11 A

Rated current (Use group D / UL 1059) 11 A

Reference to approval values Specifications are maximum values, details - see approval certificate.

## Packing

ESD Level packaging	static dissipative
VPE length	357 mm
VPE height	60 mm
Tape width (W)	32 mm
Tape pocket height (A0)	7.4 mm
Tape pocket separation (P1)	16 mm
Tape pocket separation (F)	14.2 mm
Surface resistance	$R_s = 10^9 - 10^{12} \Omega$
Length Pick & Place Pad (L <sub>PPP</sub> )	12.5 mm
Protrusion 1 Pick & Place Pad (L <sub>01 (PPP)</sub> )	6.25 mm

Packaging	Tape
VPE width	338 mm
Tape depth (T2)	14.5 mm
Tape pocket depth (K0)	14 mm
Tape pocket width (B0)	12.4 mm
Tape hole separation (E)	1.75 mm
Tape reel diameter $\phi$ (A)	330 mm
Width Pick & Place Pad (W <sub>PPP</sub> )	6.7 mm
Diameter of the withdrawal surface ( $\phi$ D <sub>max</sub> )	6 mm
Protrusion 2 Pick & Place Pad (P <sub>02 (PPP)</sub> )	6.25 mm

## Classifications

ETIM 6.0	EC002637	ETIM 7.0	EC002637
ETIM 8.0	EC002637	ETIM 9.0	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

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## 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	<ul style="list-style-type: none"> <li>Additional variants on request</li> <li>Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>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.</li> <li>P on drawing = pitch</li> <li>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</li> <li>Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months</li> </ul>

## Approvals

Approvals



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

## Downloads

Approval/Certificate/Document of Conformity	<a href="#">CB Certificate</a> <a href="#">CB Testreport</a> <a href="#">Declaration of the Manufacturer</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Product Change Notification	<a href="#">PCN 2015 208 PL30X SC-SMT SL SMT 3.xx 5.xx new Tape Packaging Step 1 EN</a> <a href="#">PCN 2015 208 PL30X SC-SMT SL SMT 3.xx 5.xx neue Tapeverpackung Step 1 DE</a> <a href="#">Changeover to ESD bags for "Tape on Reel" products</a> <a href="#">Umstellung auf ESD-Beutel bei „Tape on Reel“ Produkten</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	<a href="#">FL DRIVES EN</a> <a href="#">MB SMT EN</a> <a href="#">FL DRIVES DE</a> <a href="#">MB DEVICE MANUF. EN</a> <a href="#">FL BUILDING SAFETY EN</a> <a href="#">FL APPL LED LIGHTING EN</a> <a href="#">FL INDUSTR.CONTROLS EN</a> <a href="#">FL MACHINE SAFETY EN</a> <a href="#">FL HEATING ELECTR EN</a> <a href="#">FL APPL INVERTER EN</a> <a href="#">FL BASE STATION EN</a> <a href="#">FL ELEVATOR EN</a> <a href="#">FL POWER SUPPLY EN</a> <a href="#">FL 72H SAMPLE SER EN</a> <a href="#">PO OMNIMATE EN</a> <a href="#">PO OMNIMATE EN</a>
White paper surface mount technology	<a href="#">Download Whitepaper</a>

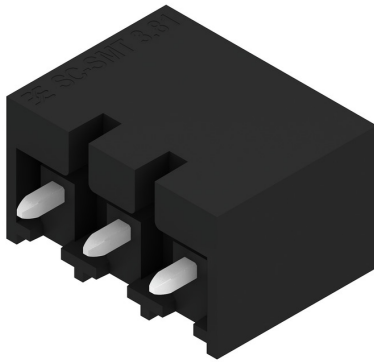
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# Drawings

## Product image



## Dimensional drawing



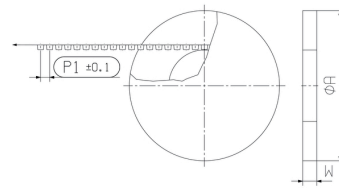
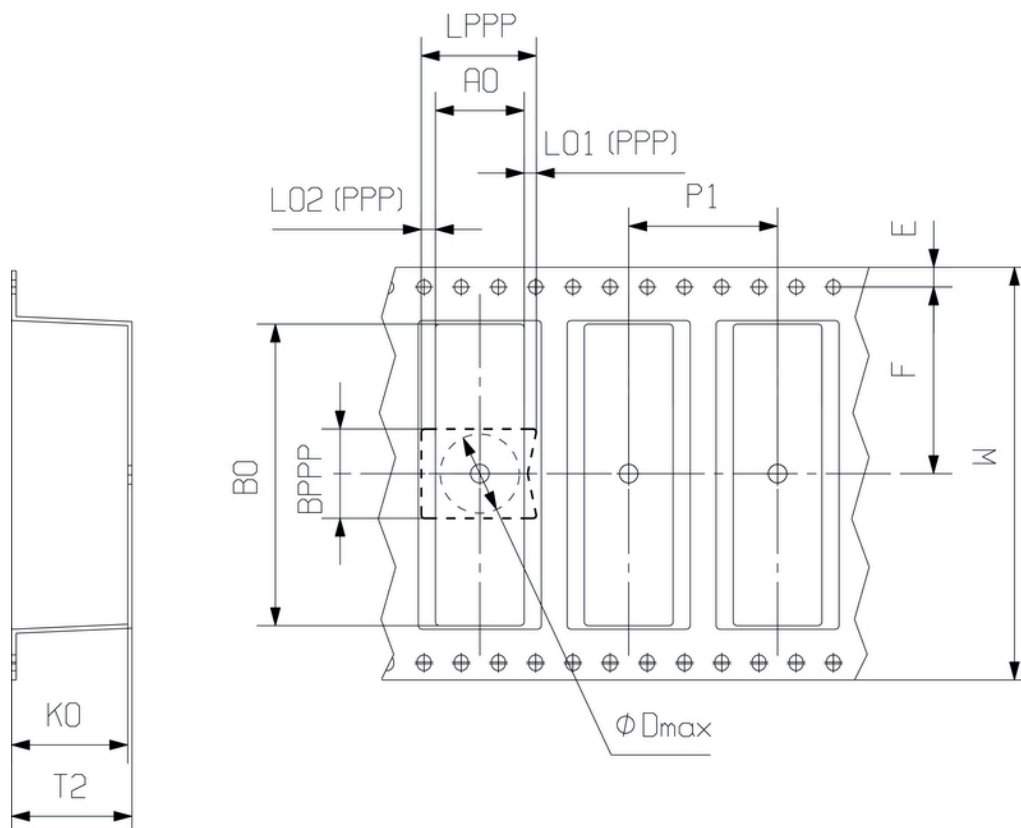
## Example of use



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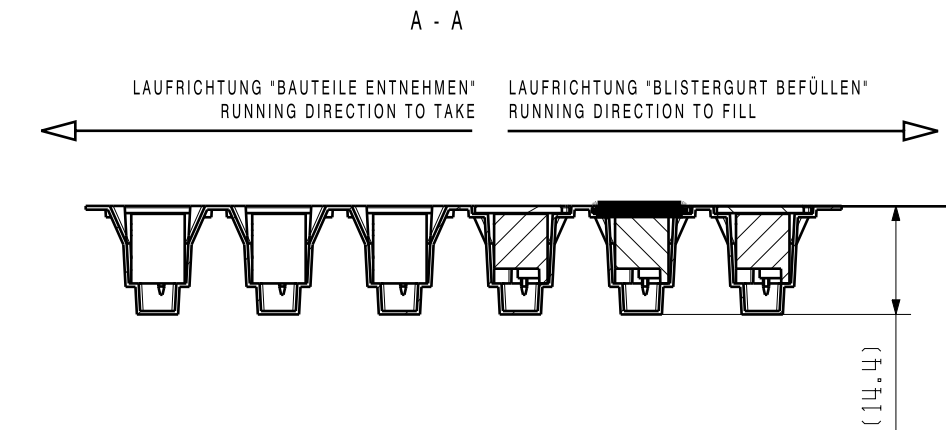
[www.weidmueller.com](http://www.weidmueller.com)

**Drawings**
**Dimensional drawing**

**Dimensional drawing**


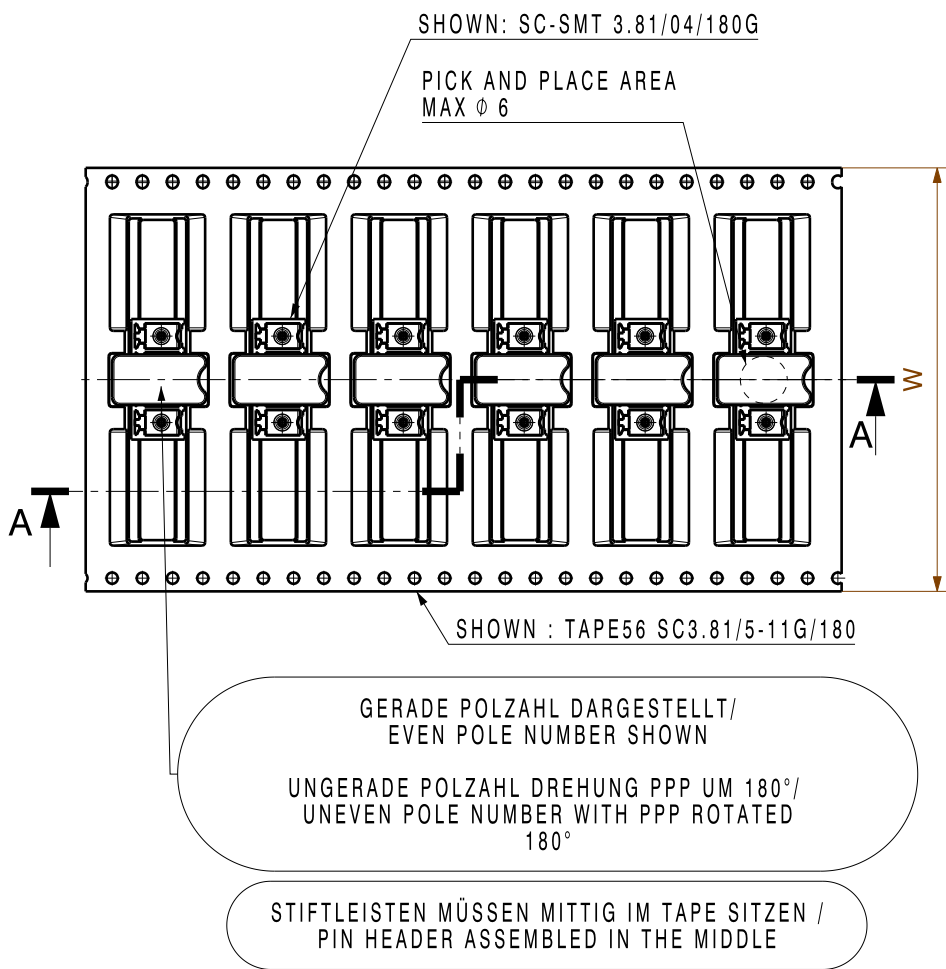
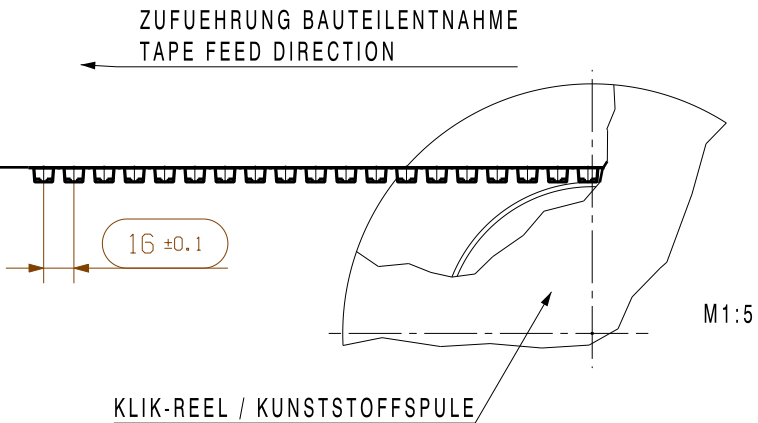
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MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE  
DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

DIE DEUTSCHE VERSION IST VERBINDLICH  
THE GERMAN VERSION IS BINDING



New Universal-Tape



TAPEBREITE TAPEWIDTH (MAT.NR.)	POL ZAHL NO OF POLS	SC-SMT 3.81/ ../180.. 1.5 BK		SC-SMT 3.81/ ../180.. 3.2 BK		SC-SMT 3.81/ ../180.. 2.6 BK		SC-SMT 3.81/ ../180.. 2.6 TGY	
		BESTELLNR./CAT.NO.		BESTELLNR./CAT.NO.		BESTELLNR./CAT.NO.		BESTELLNR./CAT.NO.	
W	n	G	LF	G	LF	G	LF	G	LF
32 (1398390000)	2	1864050000	/		/	1508670000	/		/
	3	1864060000	/		/		/		/
	4	1864290000	/	1863490000	/		/		/
44 (2017980000)	2	/	1864220000	/	1863500000	/		/	
	3	/	1864230000	/	1863510000	/		/	
	4	/	1864240000	/	1863530000	/		/	
	5	1864300000	1864250000		1863580000				
	6	1864310000	1864260000		1863600000				
	7	1864320000	/		/		/		/
	8	1864330000	/		/		/		/
56 (1302030000)	7	/	1864270000	/	1863620000	/		/	
	8	/	1864280000	/	1863640000	/		/	
	9	1864340000							
	10	1864350000							
88 (1396720000)	9	/		/		/		/	
	10	/		/	1430710000	/		/	
	11	1430820000	1430680000	1430830000	1430690000				
	12	1430840000	1430700000	1430850000	1359440000				
	13	1430860000	1430720000	1430870000	1430730000				
	14	1430880000	1430740000	1430890000	1430750000	1222740000		1222750000	
	15	1430910000	1430770000	1430920000	1430780000				
	16	1430930000	1430790000	1430940000	1430810000				

TAPE UND REEL GEMAESS IEC 286-3 (EN 60286-3) /  
TAPE AND REEL ACCORDING TO IEC 286-3 (EN 60286-3)

84510/5 29.10.15 GUETZLAFF_T MODIFICATION		02	CAT.NO.: .	
DRAWN 06.09.2012 RESPONSIBLE CHECKED 30.10.2015 APPROVED		NAME LANG_T AMANN_A HELIS_MA LANG_T	<b>Weidmüller</b> DRAWING NO. 3 56539 SHEET 00 OF 00 SHEETS	
SCALE: 1/1 (04) SUPERSEDES: .		ANSCHLUSS STIFTLEISTE PIN HEADER PRODUCT FILE: SC-SMT 3.81 7278		

## 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.