

OMNIMATE Signal - series BC/SC 3.81
SC-SMT 3.81/04/180G 1.5SN BK RL
Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 16

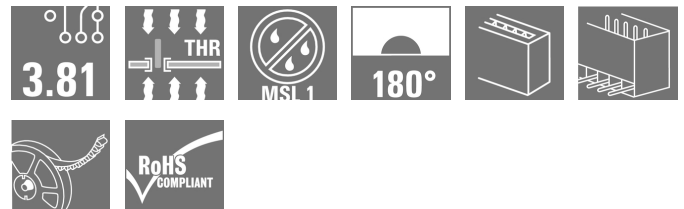
D-32758 Detmold

Germany

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Fax: +49 5231 14-292083

www.weidmueller.com



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

Type	SC-SMT 3.81/04/180G 1.5SN BK RL
Order No.	1864290000
Version	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.81 mm, No. of poles: 4, 180°, Solder pin length (l): 1.5 mm, tinned, Black, Tape
GTIN (EAN)	4032248429363
Qty.	300 pc(s).
Product data	IEC: 320 V / 17.5 A UL: 300 V / 10 A
Packaging	Tape

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Technical data

Dimensions and weights

Width	15.93 mm	Width (inches)	0.627 inch
Height	10.7 mm	Height (inches)	0.421 inch
Height of lowest version	9.2 mm	Depth	7.07 mm
Depth (inches)	0.278 inch	Net weight	2.25 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 inch	Outgoing elbow	180°
No. of poles	4	Number of solder pins per pole	1
Solder pin length (l)	1.5 mm	Solder pin length tolerance	0 / -0.02 mm
Tolerance of solder pin position	± 0.1 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	11.43 mm
L1 in inches	0.45 inch	Number of rows	1
Pin series quantity	1	Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch
Touch-safe protection acc. to DIN VDE 0470	IP 20	Volume resistance	6.00 mΩ
Can be coded	Yes	Plugging cycles	25

Material data

Insulating material	LCP GF	Colour	Black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
CTI	≥ 175	Insulation resistance	≥ 10 ⁸ Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact material	Copper alloy	Contact surface	tinned
Storage temperature, min.	-25 °C	Storage temperature, max.	55 °C
Max. relative humidity during storage	80 %	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. no. of poles (Tu=20°C)	17.5 A
Rated current, max. no. of poles (Tu=20°C)	13.9 A	Rated current, min. no. of poles (Tu=40°C)	17 A
Rated current, max. no. 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)

300 V

Rated current (use group B)

8 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)

300 V

Rated voltage (use group D)

300 V

Rated current (use group B)

10 A

Rated current (use group D)

10 A

Reference to approval values

Specifications are
 maximum values, details -
 see approval certificate.

Packaging

Packaging	Tape	Packaging unit (VPE) length	36 MMT
Packaging unit (VPE) width	330 MMT	Packaging unit (VPE) height	330 MMT
Tape depth (T2)	14.5 mm	Tape width (W)	32 mm
Tape pocket depth (K0)	14 mm	Tape pocket height (A0)	7.4 mm
Tape pocket width (B0)	16.2 mm	Tape pocket separation (P1)	16 mm
Tape hole separation (E)	1.75 mm	Tape pocket separation (F)	14.2 mm
Tape reel diameter $\varnothing$ (A)	330 mm	Surface resistance	$R_s = 10^9 - 10^{12} \Omega$

Classifications

ETIM 3.0	EC001284	ETIM 4.0	EC002637
ETIM 5.0	EC002637	ETIM 6.0	EC002637
UNSPSC	30-21-18-10	eClass 5.1	27-26-07-04
eClass 6.2	27-26-07-04	eClass 7.1	27-44-04-02
eClass 8.1	27-44-04-02	eClass 9.0	27-44-04-02
eClass 9.1	27-44-04-02		

Notes

Notes

- Rated current related to rated cross-section & min. No. of poles.
- 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.
- P on drawing = pitch

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.

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Technical data**Approvals**

Approvals



ROHS

Conform

Downloads

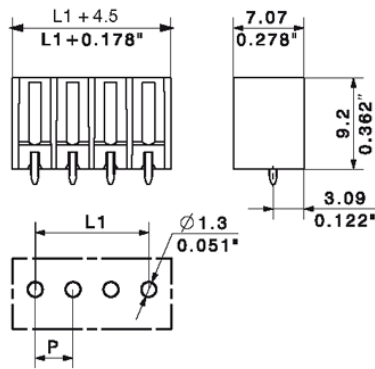
Approval/Certificate/Document of Conformity	CB Certificate CB Testreport Declaration of the Manufacturer
Brochure/Catalogue	FL DRIVES EN MB SMT EN FL DRIVES DE MB DEVICE MANUF. EN CAT 2 PORTFOLIOGUIDE EN FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FL INDUSTR.CONTROLS EN FL MACHINE SAFETY EN FL HEATING 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
SMT white paper	Download Whitepaper

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Drawings

Dimensional drawing



Example of use

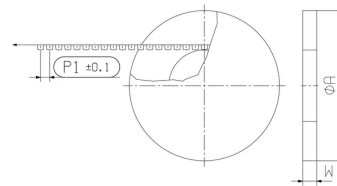


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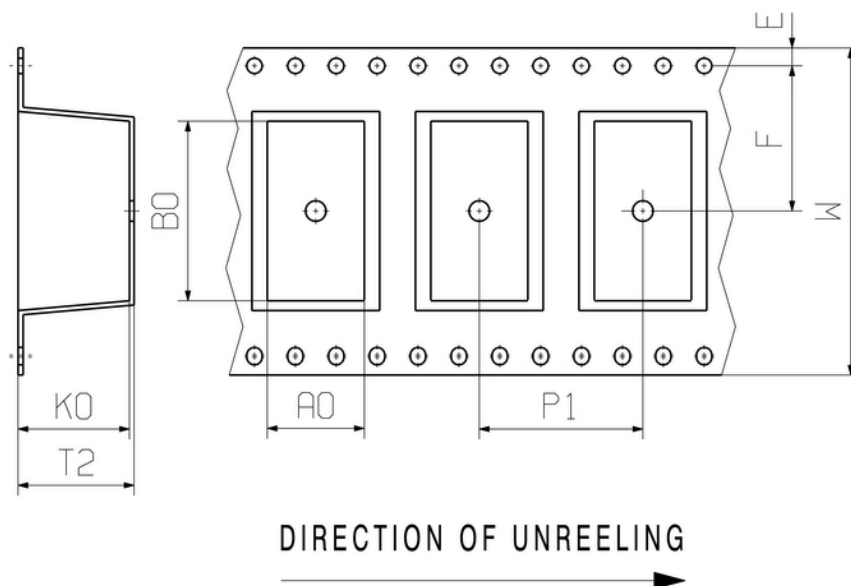
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Drawings

Dimensional drawing

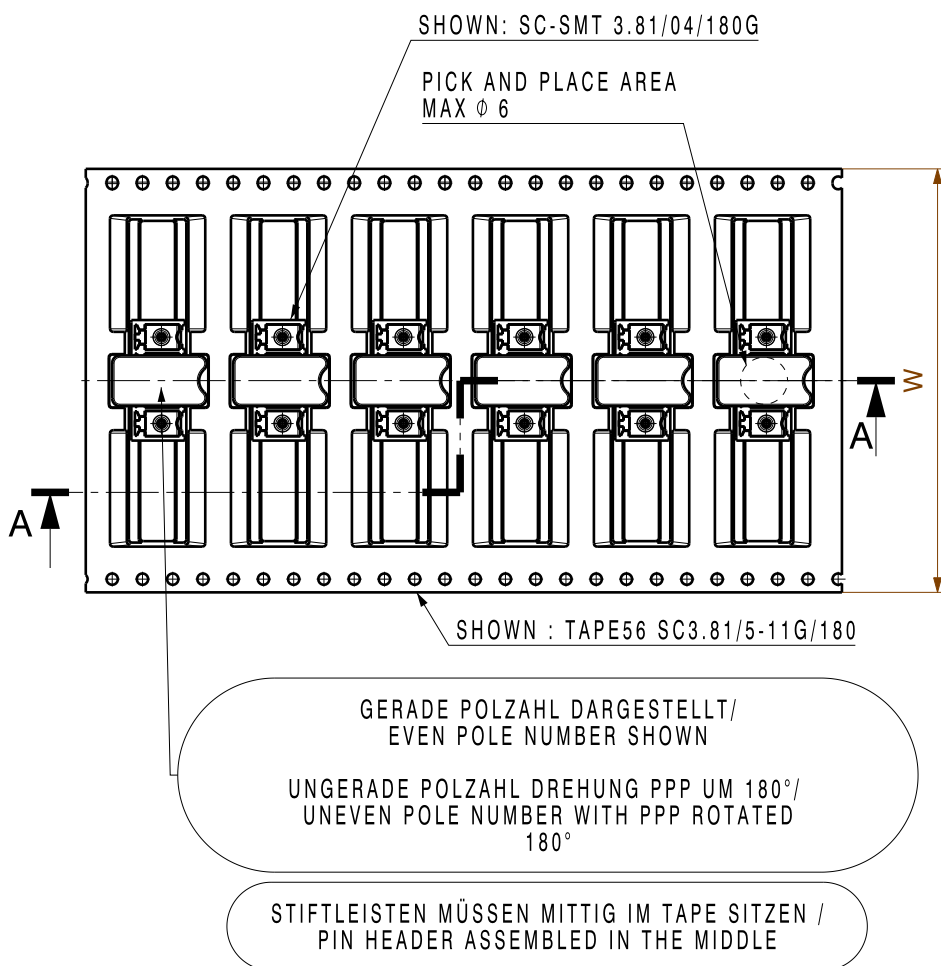
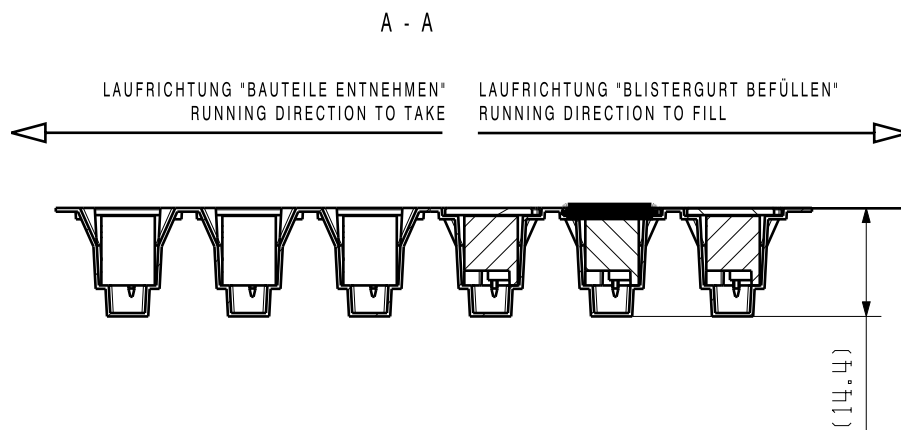


Dimensional drawing



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

New Univer



TAPEBREITE TAPEWIDTH (MAT.NR.)	P Z NO P
W	
32 (1398390000)	
44 (2017980000)	
56 (1302030000)	
88 (1396720000)	

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

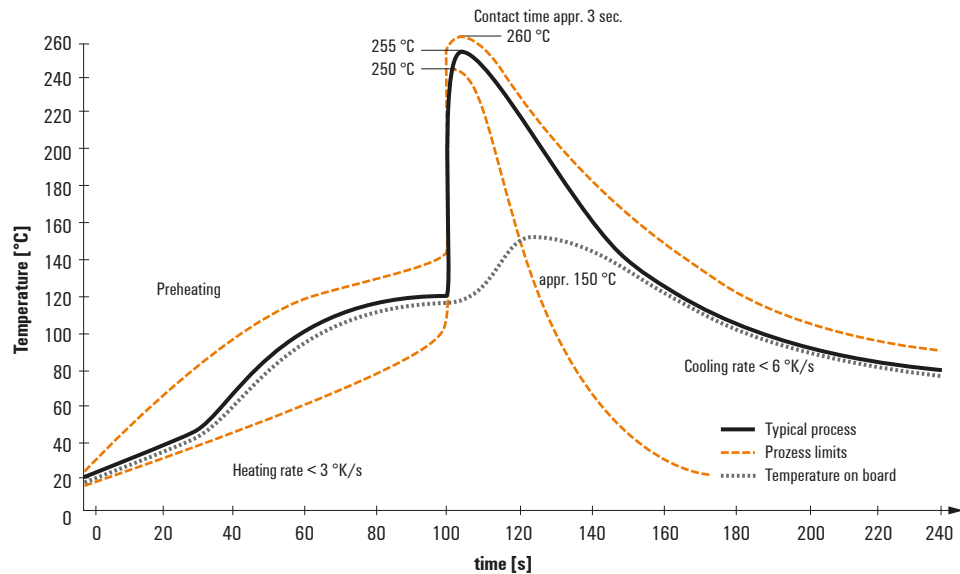
WEITERGABE SOWIE VERVIELFÄLTIGUNG DIESER DOKUMENTS, VERWERTUNG UND MITTEILUNG SEINER INHALTS SIND VERBOTEN, SOWEIT NICHT AUSDRUECKLICH GESTATTET.
ZUWIDERHANDLUNGEN VERPFLICHTEN ZU SCHADENERSATZ. ALLE RECHTE FUER DEN FALL DER PATENT-, GEBRAUCHSMUSTER-, ODER GESCHMACKSMUSTEREINTRAGUNG VORBEHALTEN.
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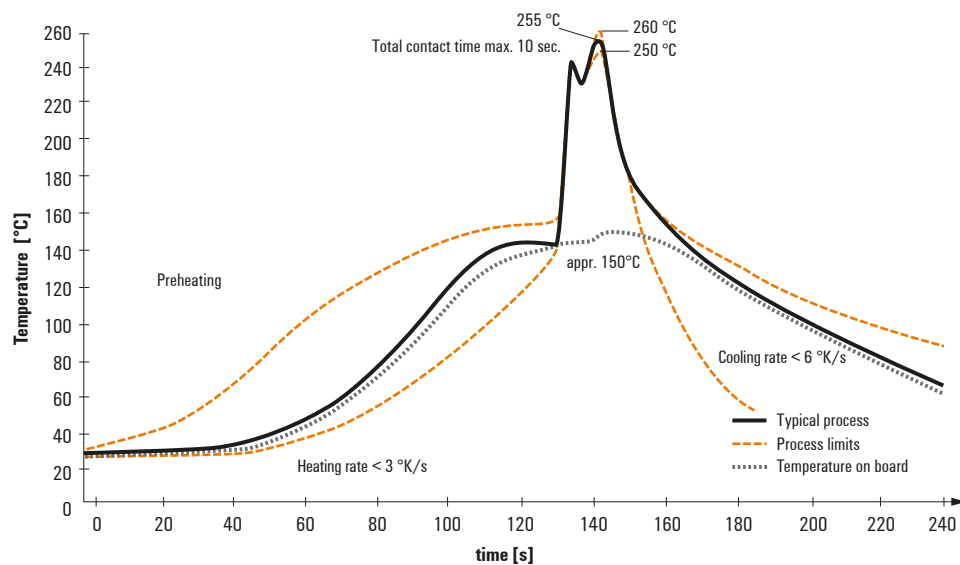
Recommended wave soldering profiles

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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:

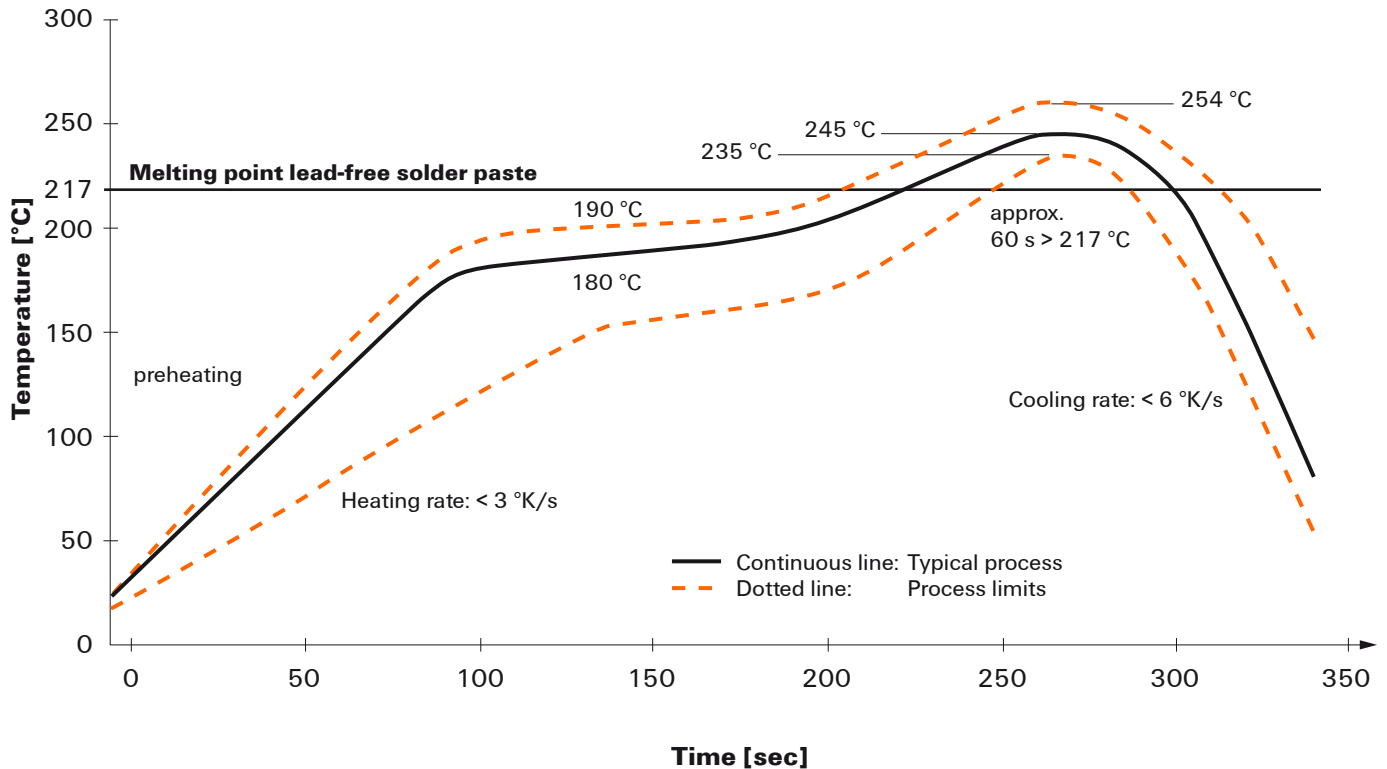
- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

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.

