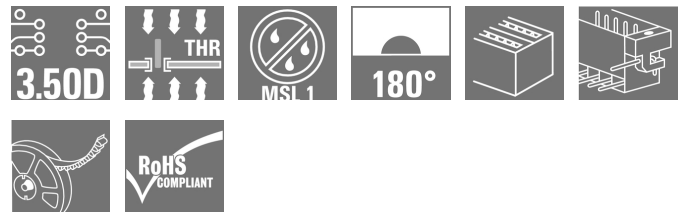


**OMNIMATE Signal - series B2C/S2C 3.50 - 2-row  
S2C-SMT 3.50/12/180LF 3.5SN BK RL**

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 26  
 D-32758 Detmold  
 Germany  
 Fon: +49 5231 14-0  
 Fax: +49 5231 14-292083  
 www.weidmueller.com

**Product image**

Similar to illustration

**High-temperature-resistant pin header.**

- touch-safe
- can be plugged into B2CF 3.50 PUSH IN female plug
- Plug-in direction is perpendicular or parallel to the circuit board (180° / 90°)
- Housing variants: closed (G) and with solder flange (LF)
- Box packaging (BX) or, anti-static, tape-on-reel (RL)
- Suitable for reflow and wave soldering applications
- Pin length of either 1.5 mm or 3.5 mm

**General ordering data**

Type	S2C-SMT 3.50/12/180LF 3.5SN BK RL
Order No.	<a href="#">1358580000</a>
Version	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 3.5 mm, tinned, black, Tape
GTIN (EAN)	4050118161335
Qty.	175 pc(s).
Product data	IEC: 200 V / 13.4 A UL: 150 V / 10 A
Packaging	Tape

Creation date May 3, 2020 6:48:02 AM CEST

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**Technical data****Dimensions and weights**

Width	24.6 mm	Width (inches)	0.969 inch
Height	17.7 mm	Height (inches)	0.697 inch
Height of lowest version	14.2 mm	Depth	10.8 mm
Depth (inches)	0.425 inch	Net weight	4.555 g

**System specifications**

Product family	OMNIMATE Signal - series B2C/S2C 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 inch	Outgoing elbow	180°
Number of poles	12	Number of solder pins per pole	1
Solder pin length (l)	3.5 mm	Solder pin length tolerance	0 / -0.3 mm
Tolerance of solder pin position	± 0.15 mm	Solder pin dimensions	d = 1.0 mm, Octagonal
Solder pin dimensions = d tolerance	+0,01 / -0,03 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	17.5 mm
L1 in inches	0.689 inch	Number of rows	1
Pin series quantity	2	Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch
Touch-safe protection acc. to DIN VDE 0470	IP 20	Can be coded	Yes
Plugging cycles	25	Plugging force/pole, max.	3.5 N
Pulling force/pole, max.	2.5 N		

**Material data**

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIb
Comparative Tracking Index (CTI)	≥ 175	Insulation strength	≥ 10 <sup>8</sup> Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
GWIT	930 °C	GWFI	960 °C
Contact material	Copper alloy	Contact surface	tinned
Layer structure of solder connection	1-3 µm Ni / 2-4 µm Sn matt	Layer structure of plug contact	1-3 µm Ni / 2-4 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.	-40 °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)	13.4 A
Rated current, min. number of poles (Tu=40°C)	12 A	Rated voltage for surge voltage class / pollution degree II/2	200 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	80 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

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**Technical data****Rated data acc. to CSA**

Institute (CSA)



Certificate No. (CSA)

200039-1121690

Rated voltage (Use group B / CSA) 150 V

Rated voltage (Use group C / CSA) 50 V

Rated voltage (Use group D / CSA) 150 V

Rated current (Use group B / CSA) 9.5 A

Rated current (Use group C / CSA) 9.5 A

Rated current (Use group D / CSA) 9.5 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) 150 V

Rated voltage (Use group C / UL 1059) 50 V

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

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

Reference to approval values

Specifications are maximum values, details - see approval certificate.

**Packing**

Packaging	Tape	VPE length	60 mm
VPE width	330 mm	VPE height	330 mm
Tape depth (T2)	19.8 mm	Tape width (W)	44 mm
Tape pocket depth (K0)	19.3 mm	Tape pocket height (A0)	11.1 mm
Tape pocket width (B0)	33.3 mm	Tape pocket separation (P1)	20 mm
Tape hole separation (E)	1.75 mm	Tape pocket separation (F)	20.2 mm
Tape reel diameter $\varnothing$ (A)	330 mm	Surface resistance	$R_s = 10^9 - 10^{12} \Omega$
Width Pick & Place Pad ( $W_{PPP}$ )	10 mm	Length Pick & Place Pad ( $L_{PPP}$ )	15.6 mm
Diameter of the withdrawal surface ( $\varnothing D_{max}$ )	9 mm	Protrusion 1 Pick & Place Pad ( $L_{01 (PPP)}$ )	7.8 mm
Protrusion 2 Pick & Place Pad ( $P_{02 (PPP)}$ )	7.8 mm		

**Classifications**

ETIM 6.0	EC002637	ETIM 7.0	EC002637
eClass 9.0	27-44-04-02	eClass 9.1	27-44-04-02
eClass 10.0	27-44-04-02		

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**Technical data****Notes**

Notes	<ul style="list-style-type: none"> <li>• Gold-plated contact surfaces on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Spacing between rows: see hole layout</li> <li>• P on drawing = pitch</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> </ul>
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

**Downloads**

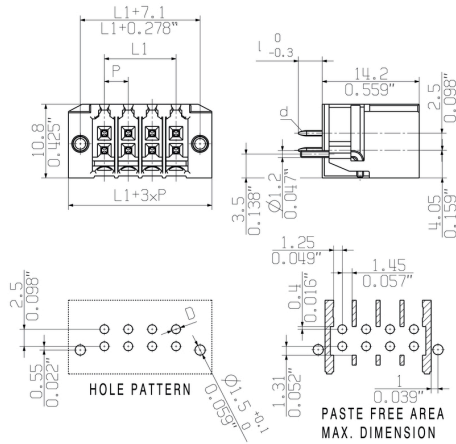
Approval/Certificate/Document of Conformity	<a href="#">Declaration of the Manufacturer</a>
Brochure/Catalogue	<a href="#">FL DRIVES EN</a> <a href="#">MB SMT EN</a> <a href="#">FL DRIVES DE</a> <a href="#">MB DEVICE MANUF. EN</a> <a href="#">CAT 2 PORTFOLIOGUIDE EN</a> <a href="#">FL BUILDING SAFETY EN</a> <a href="#">FL APPL LED LIGHTING EN</a> <a href="#">FLIndustr.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>
Engineering Data	<a href="#">STEP</a>
White paper surface mount technology	<a href="#">Download Whitepaper</a>

**OMNIMATE Signal - series B2C/S2C 3.50 - 2-row  
S2C-SMT 3.50/12/180LF 3.5SN BK RL**

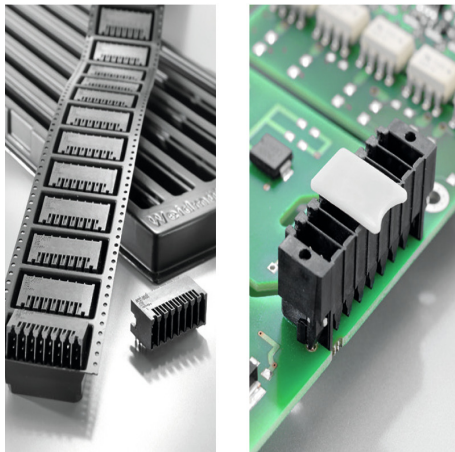
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**Drawings**

**Dimensional drawing**



**Product benefits**



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

**OMNIMATE Signal - series B2C/S2C 3.50 - 2-row  
S2C-SMT 3.50/12/180LF 3.5SN BK RL**

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**Mating connector (fully pluggable)**
**B2CF 3.50/180LR**

**Two-row female plug with PUSH IN spring connection**

- Simply insert the prepared wire - and you're done
- Intuitive to use because
- the wire-entry area and handling area are clearly separated
- Integrated push-buttons for opening the terminal point
- High component density because of low heights
- Optional: locking and releasing require no tools when using Weidmüller's release latch (LR) or release lever (LH)

**General ordering data**

Type	B2CF 3.50/12/180LR SN O ...	Version	Product data	Packaging
Order No.	<a href="#">1278080000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4050118068191	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm <sup>2</sup> ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	66 pc(s).	Box	16	
Type	B2CF 3.50/12/180LR SN B ...	Version	Product data	Packaging
Order No.	<a href="#">1278270000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4050118069242	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm <sup>2</sup> ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	66 pc(s).	Box	16	

**B2CF 3.50/180LH**

**Two-row female plug with PUSH IN spring connection**

- Simply insert the prepared wire - and you're done
- Intuitive to use because
- the wire-entry area and handling area are clearly separated
- Integrated push-buttons for opening the terminal point
- High component density because of low heights
- Optional: locking and releasing require no tools when using Weidmüller's release latch (LR) or release lever (LH)

**General ordering data**

Type	B2CF 3.50/12/180LH SN O ...	Version	Product data	Packaging
Order No.	<a href="#">1375930000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4050118176681	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm <sup>2</sup> ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	66 pc(s).	Box	16	
Type	B2CF 3.50/12/180LH SN B ...	Version	Product data	Packaging
Order No.	<a href="#">1375750000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4050118176582	180°, PUSH IN, Spring connection, Clamping range, max.: 1.5 mm <sup>2</sup> ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	66 pc(s).	Box	16	

**OMNIMATE Signal - series B2C/S2C 3.50 - 2-row  
S2C-SMT 3.50/12/180LF 3.5SN BK RL**

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 Klingenbergstraße 26  
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 Germany  
 Fon: +49 5231 14-0  
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 www.weidmueller.com

**Mating connector (fully pluggable)**
**B2CF 3.50/180F**

**Two-row female plug with PUSH IN spring connection**

- Simply insert the prepared wire - and you're done
- Intuitive to use because
- the wire-entry area and handling area are clearly separated
- Integrated push-buttons for opening the terminal point
- High component density because of low heights
- Optional: locking and releasing require no tools when using Weidmüller's release latch (LR) or release lever (LH)

**General ordering data**

Type	B2CF 3.50/12/180F SN BK ...	Version	Product data	Packaging
Order No.	<a href="#">1277900000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4050118068306	180°, PUSH IN, Tension-clamp connection, Clamping range, max. : 1.5	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	66 pc(s).	mm <sup>2</sup> , Box	16	
Type	B2CF 3.50/12/180F SN OR ...	Version	Product data	Packaging
Order No.	<a href="#">1277720000</a>	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12,	IEC: 320 V / 13.4 A / 0.14 - 1.5 mm <sup>2</sup>	Box
GTIN (EAN)	4050118067507	180°, PUSH IN, Spring connection, Clamping range, max. : 1.5 mm <sup>2</sup> ,	UL: 300 V / 9.5 A / AWG 26 - AWG	
Qty.	66 pc(s).	Box	16	

## OMNIMATE Signal - series B2C/S2C 3.50 - 2-row S2C-SMT 3.50/12/180LF 3.5SN BK RL

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 Germany  
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# Accessories

## Coding elements



**Only connects what is supposed to be connected:  
the right connection at the right place.**

Coding elements and locking devices clearly assign connecting elements during the manufacturing process and operation

The coding elements and locking devices are inserted prior to assembly or during the cable assembly phase. The Weidmüller alternative: configure online using the variant configurator to precode prior to delivery.

Incorrect assembly on the circuit board and incorrect plugging of connecting elements is no longer possible. The advantage: no troubleshooting during manufacture and no operational errors by the user.

## General ordering data

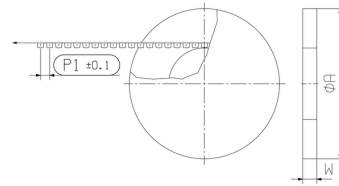
Type	B2L/S2L 3.50 KO OR BX	Version	Product data	Packaging
Order No.	<a href="#">1849730000</a>	PCB plug-in connector, Accessories, Coding element, orange, Number		Box
GTIN (EAN)	4032248378197	of poles: 1		
Qty.	100 pc(s).			
Type	B2L/S2L 3.50 KO BK BX	Version	Product data	Packaging
Order No.	<a href="#">1849740000</a>	PCB plug-in connector, Accessories, Coding element, black, Number		Box
GTIN (EAN)	4032248378203	of poles: 1		
Qty.	100 pc(s).			



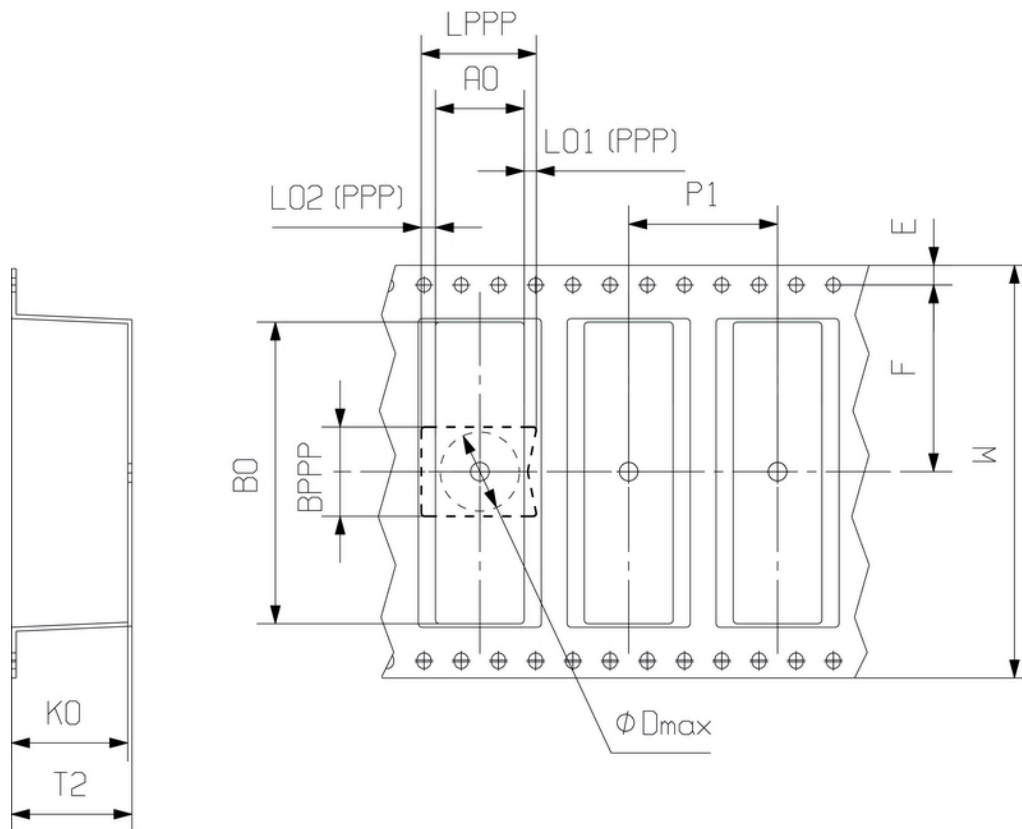
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**Dimensional drawing**



**Dimensional drawing**



**DIRECTION OF UNREELING** 

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
 Klängenbergstraße 16  
 D-32758 Detmold  
 Germany  
 Fon: +49 5231 14-0  
 Fax: +49 5231 14-292083  
 www.weidmueller.com

### 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.

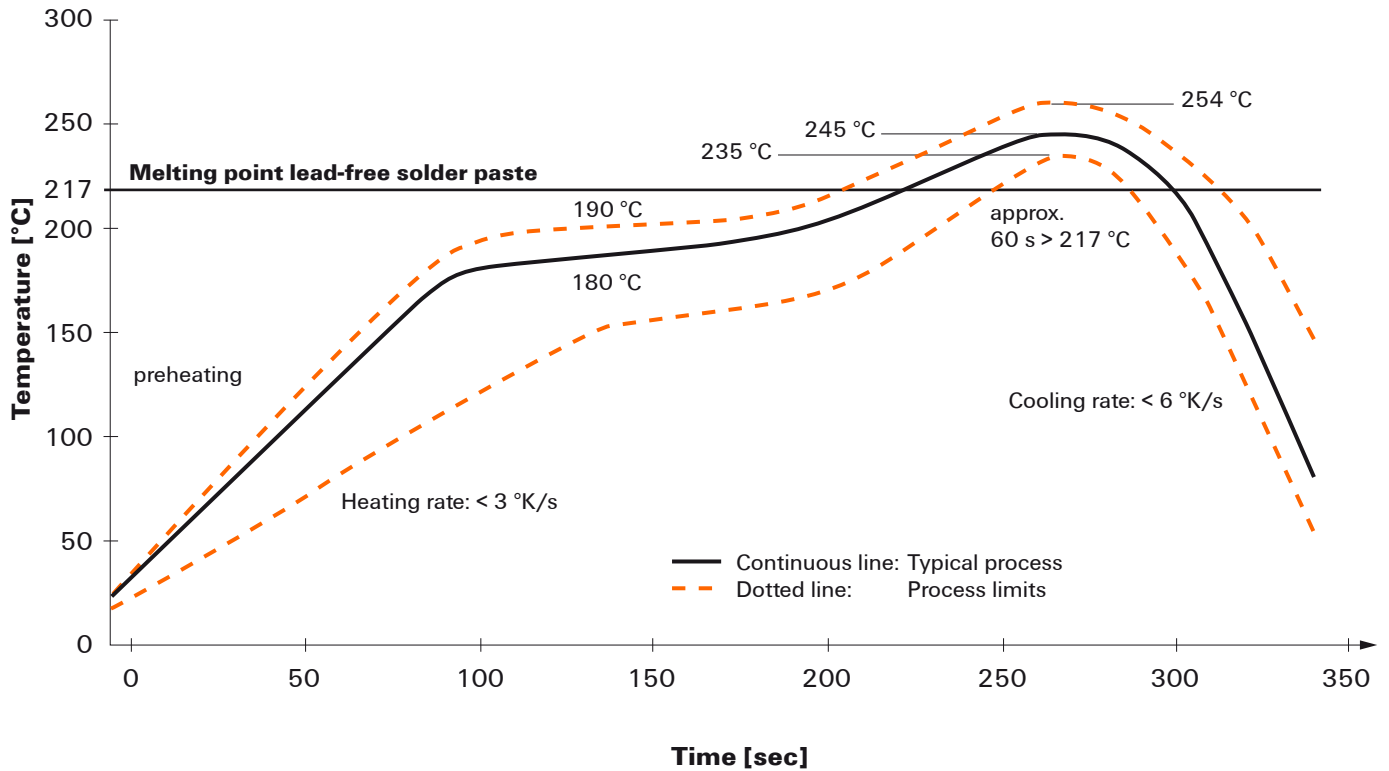
When choosing a suitable profile for your application, the following factors also need to be considered:

- 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.

## Recommended reflow soldering profile

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergstraße 16  
 D-32758 Detmold  
 Germany  
 Fon: +49 5231 14-0  
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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  $\leq +3K/s$ . 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  $\geq -6K/s$  solder is cured. Board and components cool down while avoiding cold cracks.