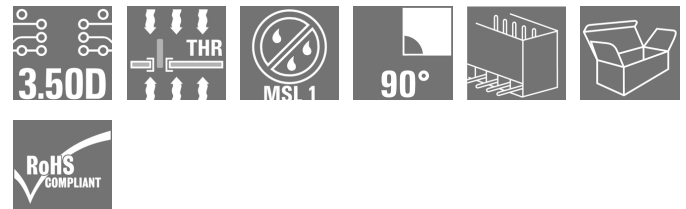


**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row
S2L-SMT 3.50/14/90G 3.2SN BK BX**

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
D-32758 Detmold
Germany
Fon: +49 5231 1429-0
Fax: +49 5231 14292083
www.weidmueller.com



High-temperature-resistant, straight, 2-tier male connector for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. 3.2 mm solder pin suitable for reflow and wave soldering. These male connectors can be labelled and coded.

General ordering data

| | |
|--------------|---|
| Type | S2L-SMT 3.50/14/90G 3.2SN BK BX |
| Order No. | 1794250000 |
| Version | PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, No. of poles: 14, 90°, Solder pin length (l): 3.2 mm, tinned, Black, Box |
| GTIN (EAN) | 4032248231300 |
| Qty. | 72 pc(s). |
| Product data | IEC: 160 V / 10 A UL: 150 V / 10 A |
| Packaging | Box |

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Technical data**Dimensions and weights**

| | |
|------------|--------|
| Net weight | 4.24 g |
|------------|--------|

System specifications

| Product family | | Type of connection | |
|---|---------------------------|--|------------------------------|
| OMNIMATE Signal - series B2L/S2L 3.50 - 2-row | | 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 | 90° |
| No. of poles | 14 | Number of solder pins per pole | 1 |
| Solder pin length (l) | 3.2 mm | Tolerance of solder pin position | ± 0.20 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 | 2.1 mm |
| L1 in inches | 0.827 inch | Number of rows | 1 |
| Pin series quantity | 2 | Touch-safe protection acc. to DIN VDE 57 106 | Safe from back-of-hand touch |
| Touch-safe protection acc. to DIN VDE 0470 | IP 10 | Can be coded | Yes |
| Plugging cycles | 25 | push-in force/pole | 3 N |
| Withdrawal force per pole | 6 N | Packaging | Box |

Material data

| | | | |
|---------------------------------------|------------------------------|---------------------------------------|---------------------|
| Insulating material | LCP GF | Colour | Black |
| Colour chart (similar) | RAL 9011 | Insulating material group | IIIb |
| CTI | ≥ 175 | Insulation resistance | ≥ 10 ⁸ Ω |
| Moisture Level (MSL) | 1 | UL 94 flammability rating | V-0 |
| Contact material | Copper alloy | Contact surface | tinned |
| Layer structure of solder connection | 2-3 µm Ni / 5-7 µm Sn glossy | Storage temperature, min. | -25 °C |
| Storage temperature, max. | 55 °C | Max. relative humidity during storage | 80 % |
| 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. no. of poles (Ta = 20°C) | 10 A |
| Rated current, max. no. of poles (Ta = 20°C) | 10 A | Rated current, min. no. of poles (Ta = 40°C) | 9 A |
| Rated current, max. no. of poles (Ta = 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 |


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

| | | | |
|------------------------------|---|-----------------------------|----------------|
| Institute (CSA) |  | Certificate No. (CSA) | 200039-1176845 |
| Rated voltage (Use group B) | 150 V | Rated voltage (Use group C) | 50 V |
| Rated voltage (use group D) | 150 V | Rated current (use group B) | 5 A |
| Rated current (use group C) | 9.5 A | Rated current (use group D) | 9.5 A |
| Reference to approval values | Specifications are maximum values, details - see approval certificate. | | |

Rated data acc. to UL 1059

| | | | |
|------------------------------|---|-----------------------------|--------|
| Institute (UR) |  | Certificate No. (UR) | E60693 |
| Rated voltage (use group B) | 150 V | Rated voltage (use group C) | 50 V |
| Rated current (use group B) | 10 A | Rated current (use group C) | 10 A |
| Reference to approval values | Specifications are maximum values, details - see approval certificate. | | |

Classifications

| | | | |
|------------|-------------|------------|-------------|
| ETIM 4.0 | EC002637 | ETIM 5.0 | EC002637 |
| ETIM 6.0 | EC002637 | UNSPSC | 30-21-18-10 |
| eClass 5.1 | 27-26-07-01 | 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 | <ul style="list-style-type: none"> • Additional colours on request • Gold-plated contact surfaces on request • Spacing between rows: see hole layout • Rated current related to rated cross-section & min. No. of poles. • 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. |
| IPC conformity | The products are developed, manufactured and delivered according to the internationally recognised IPC-A-610 standard, category "permissible". More extensive demands on the products can be evaluated on request. |

Approvals

| | |
|-----------|---|
| Approvals |  |
| ROHS | Conform |

Creation date October 4, 2017 4:59:33 PM CEST

Catalogue status 22.09.2017 / We reserve the right to make technical changes.

**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row
S2L-SMT 3.50/14/90G 3.2SN BK BX**

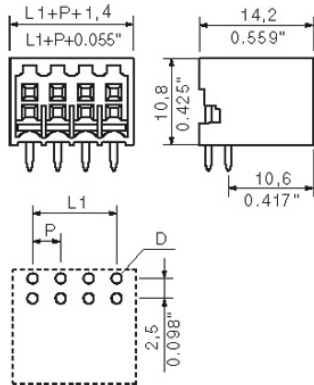
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Fax: +49 5231 14292083
www.weidmueller.com

Technical data**Downloads**

| | |
|---|--|
| Approval/Certificate/Document of Conformity | Declaration of the Manufacturer |
| Brochure/Catalogue | FL DRIVES EN MB SMT EN FL DRIVES DE MB DEVICE MANUF. EN FL BUILDING SAFETY EN FL APPL LED LIGHTING EN FLIndustr.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**

**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row
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Mating connector (fully pluggable)
B2L 3.50

Component density redefined: the future standard for signal connection

A maximum number of connections requiring minimum space - the double-row B2L sets the bar for field connections of typical sensor cables up to 1 mm² very high and closes the gap between "less space" and "more functions".

The result is a connection solution for standard industrial cables in 1.75 pitch - 30% smaller than equivalent solutions in 2.5 pitch, and with the 140% robustness of the 3.5 pitch

Dimensions: double the connection density with a 3.5mm pitch size

Connection system: tried and tested maintenance-free Weidmüller tension clamp connection

The basic application advantages:

Efficient: maximum component density on the PCB
Suitable for industrial use - minimum dimensions, maximum robustness

Process-optimised - automatic assembly and reflow soldering, fast connection

User-friendly - patented release lever for the easy release of larger numbers of poles

Application-oriented: easy labelling and reliable coding despite compact dimensions

Miniaturisation is more than just a larger number of functions within a smaller space:

Each reduction in size decreases space requirements and so reduces overall system costs for the end customer.

Thus, Weidmüller fulfils a growing demand in the engineering and industrial automation sectors.

General ordering data

| Type | Order No. | Version | GTIN (EAN) | Qty. | Product data | Packaging |
|--------------------------------|----------------------------|--|---------------|-----------|---|-----------|
| B2L 3.50/14/180 SN BK BX | 1727680000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248037872 | 72 pc(s). | IEC: 200 V / 10.3 A / 0.2 - 1 mm ² UL: 300 V / 10 A / AWG 28 - AWG 16 | Box |
| B2L 3.50/14/180 SN OR BX | 1727600000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248037735 | 72 pc(s). | IEC: 200 V / 10.3 A / 0.2 - 1 mm ² UL: 300 V / 10 A / AWG 28 - AWG 16 | Box |

**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row
S2L-SMT 3.50/14/90G 3.2SN BK BX**

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 www.weidmuller.com

Mating connector (fully pluggable)
B2L 3.50 QV SN


Female connector with integral cross-connection and clear printing for uninterrupted relaying of potential at full current-carrying capacity with the maximum cable cross-section. The cross-connection is positioned vertically between the poles of rows directly on top of each other. Conductor connection with tension clamp system with straight outlet and 3.5 mm pitch. Flange and release lever available. Packed in cardboard box.

General ordering data

| Type | Order No. | Version | GTIN (EAN) | Qty. | Product data | Packaging |
|-----------------------------------|----------------------------|---|---------------|-----------|--|-----------|
| B2L 3.50/14/180QV7 SN BK BX | 1944630000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm², Box | 4032248619566 | 72 pc(s). | IEC: 200 V / 10.6 A / 0.2 - 1 mm² UL: 150 V / 7 A / AWG 28 - AWG 18 | Box |

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Fax: +49 5231 14292083
www.weidmueller.com

Mating connector (conditionally pluggable)
B2L 3.50F

Component density redefined: the future standard for signal connection

A maximum number of connections requiring minimum space - the double-row B2L sets the bar for field connections of typical sensor cables up to 1 mm² very high and closes the gap between "less space" and "more functions".

The result is a connection solution for standard industrial cables in 1.75 pitch - 30% smaller than equivalent solutions in 2.5 pitch, and with the 140% robustness of the 3.5 pitch

Dimensions: double the connection density with a 3.5mm pitch size

Connection system: tried and tested maintenance-free Weidmüller tension clamp connection

The basic application advantages:

Efficient: maximum component density on the PCB
Suitable for industrial use - minimum dimensions, maximum robustness

Process-optimised - automatic assembly and reflow soldering, fast connection

User-friendly - patented release lever for the easy release of larger numbers of poles

Application-oriented: easy labelling and reliable coding despite compact dimensions

Miniaturisation is more than just a larger number of functions within a smaller space:

Each reduction in size decreases space requirements and so reduces overall system costs for the end customer.

Thus, Weidmüller fulfils a growing demand in the engineering and industrial automation sectors.

General ordering data

| Type | Order No. | Version | GTIN (EAN) | Qty. | Product data | Packaging |
|---------------------------------|----------------------------|--|---------------|-----------|---|-----------|
| B2L 3.50/14/180F SN OR BX | 1748050000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248037964 | 54 pc(s). | IEC: 250 V / 10.3 A / 0.2 - 1 mm ² UL: 300 V / 10 A / AWG 28 - AWG 16 | Box |
| B2L 3.50/14/180F SN BK BX | 1748210000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248038046 | 54 pc(s). | IEC: 250 V / 10.3 A / 0.2 - 1 mm ² UL: 300 V / 10 A / AWG 28 - AWG 16 | Box |

**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row
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Fon: +49 5231 1429-0
Fax: +49 5231 14292083
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Mating connector (conditionally pluggable)
B2L 3.50F QV SN


Female connector with integral cross-connection and clear printing for uninterrupted relaying of potential at full current-carrying capacity with the maximum cable cross-section. The cross-connection is positioned vertically between the poles of rows directly on top of each other. Conductor connection with tension clamp system with straight outlet and 3.5 mm pitch. Flange and release lever available. Packed in cardboard box.

General ordering data

| Delivery status | Available until | Type | Order No. | Version | GTIN (EAN) | Qty. |
|-----------------|---------------------------|------------------------------|----------------------------|--|---------------|-----------|
| Discontinued | 2014-05-20T00:00:00+02:00 | B2L 3.50/14/180FQV7 SN BK BX | 1944710000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248619641 | 20 pc(s). |

B2L 3.50LH


Female connectors with tension clamp connection system enable quick and simple wiring. These female header can be mounted side by side and therefore have a high connection density. The release lever simplifies the separation of the connection in confined spaces. The socket blocks provide space for labelling and can be coded.

General ordering data

| Type | Order No. | Version | GTIN (EAN) | Qty. | Product data | Packaging |
|----------------------------|----------------------------|--|---------------|-----------|---|-----------|
| B2L 3.50/14/180LH SN OR BX | 1748370000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248038152 | 54 pc(s). | IEC: 250 V / 10.3 A / 0.2 - 1 mm ² UL: 300 V / 10 A / AWG 28 - AWG 16 | Box |
| B2L 3.50/14/180LH SN BK BX | 1748530000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248038244 | 54 pc(s). | IEC: 250 V / 10.3 A / 0.2 - 1 mm ² UL: 300 V / 10 A / AWG 28 - AWG 16 | Box |

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Fon: +49 5231 1429-0
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Mating connector (conditionally pluggable)

B2L 3.50LH QV SN



Female connector with integral cross-connection and clear printing for uninterrupted relaying of potential at full current-carrying capacity with the maximum cable cross-section. The cross-connection is positioned vertically between the poles of rows directly on top of each other. Conductor connection with tension clamp system with straight outlet and 3.5 mm pitch. Flange and release lever available. Packed in cardboard box.

General ordering data

| Delivery status | Available until | Type | Order No. | Version | GTIN (EAN) | Qty. |
|-----------------|---------------------------|----------------------------------|----------------------------|--|---------------|--------------|
| Discontinued | 2014-05-20T00:00:00+02:00 | B2L 3.50/14/180LHQV7 SN BK BX | 1944790000 | PCB plug-in connector, female plug, 3.50 mm, No. of poles: 14, 180°, Tension clamp connection, Clamping range, rated connection, max.: 1 mm ² , Box | 4032248619726 | 20 pc(s). |

Data sheet

**OMNIMATE Signal - series B2L/S2L 3.50 - 2-row
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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.

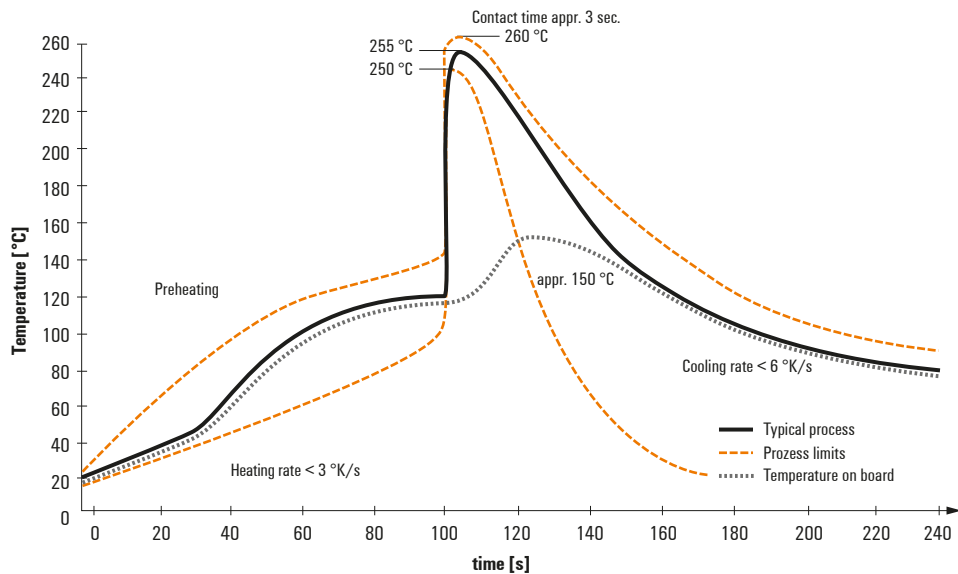
General ordering data

| Type | Order No. | Version | GTIN (EAN) | Qty. | Product data | Packaging |
|--------------------------|----------------------------|--|---------------|------------|--------------|-----------|
| B2L/S2L 3.50 KO OR BX | 1849730000 | PCB plug-in connector, Accessories, Coding element, Orange, No. of poles: 1 | 4032248378197 | 100 pc(s). | UL: | Box |
| B2L/S2L 3.50 KO BK BX | 1849740000 | PCB plug-in connector, Accessories, Coding element, Black, No. of poles: 1 | 4032248378203 | 100 pc(s). | UL: | Box |

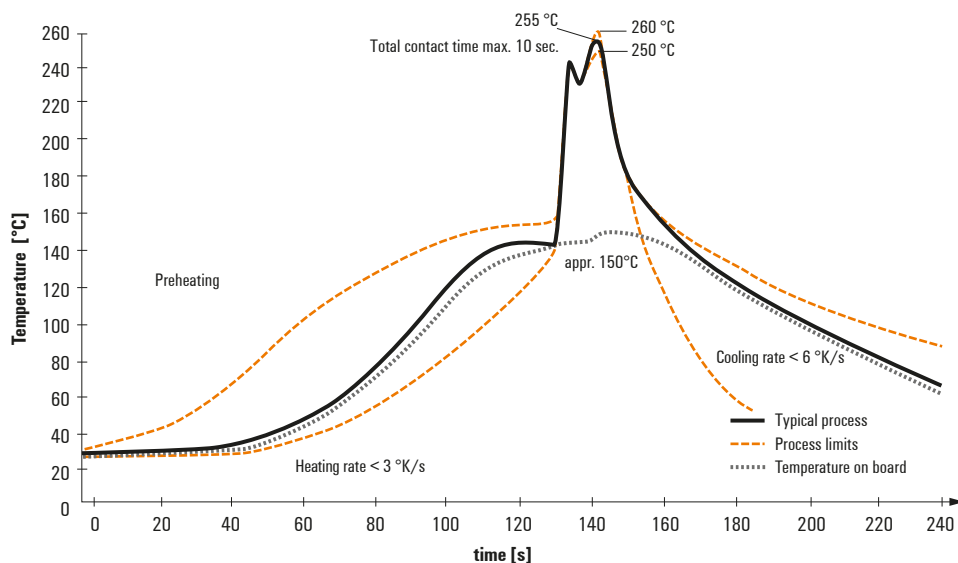
Recommended wave soldering profiles

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 D-32758 Detmold
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 Fon: +49 5231 14-0
 Fax: +49 5231 14-292083
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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.

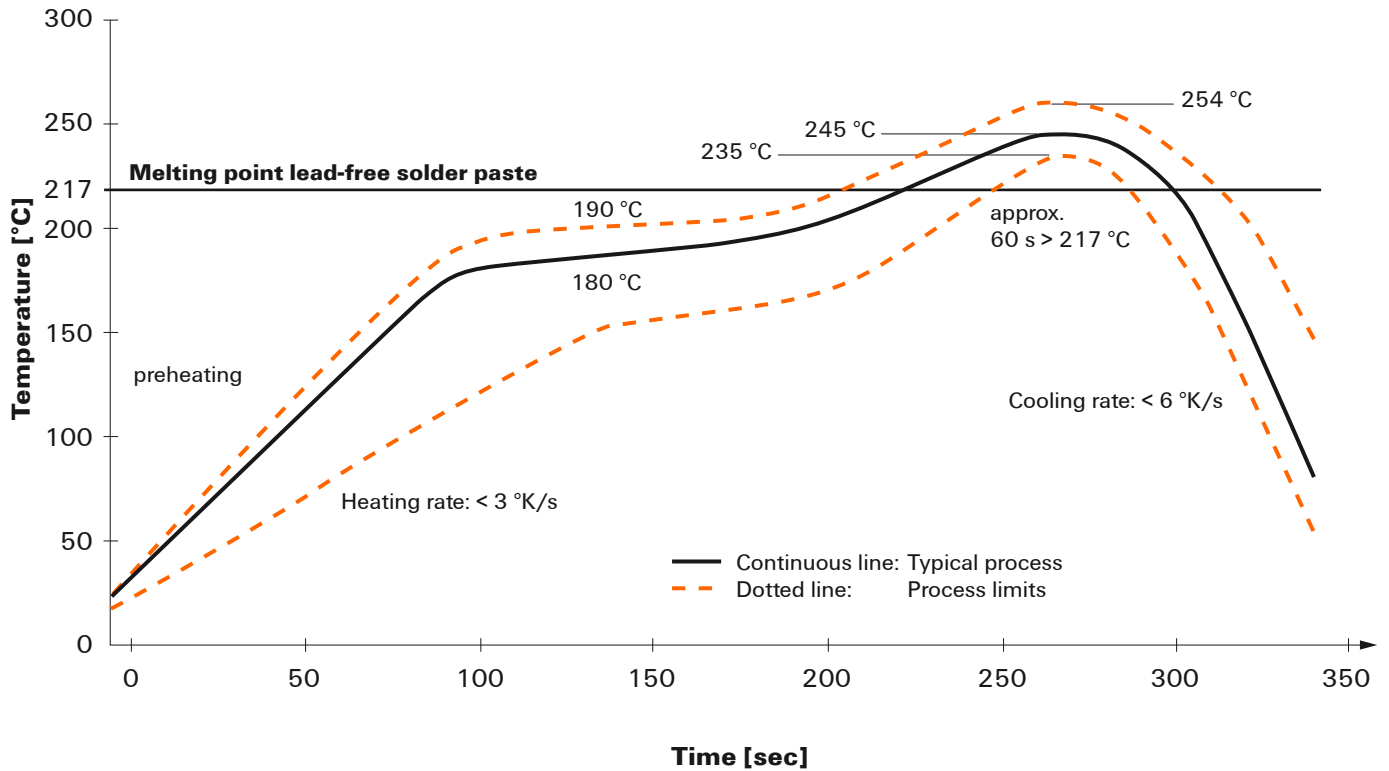
When choosing a suitable profile for your application, the following factors also need to be considered:

- 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.

Recommended reflow soldering profile

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 www.weidmueller.com



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.