# OMNIMATE Signal - series BC/SC 3.81
# SC-SMT 3.81/02/90G 3.2SN BK RL

**Weidmüller Interface GmbH & Co. KG**
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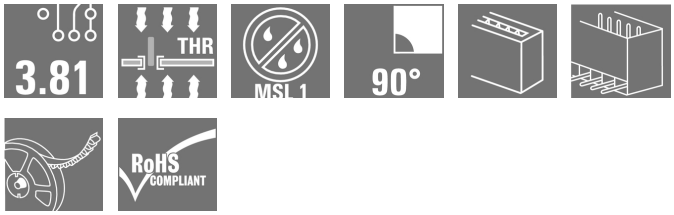


High-temperature-resistant pin header (SC-SMT 90G) in 3.81-mm pitch (0.15 inch)
- Plugging direction parallel to PCB (recumbent)
- Closed (G)
- Packed either in box (BX) or on anti-static roll (tape-on-reel, RL)
- Pin length of either 1.5 mm or 3.2 mm

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 3.81/02/90G 3.2SN BK RL |
| Order No. | 1862810000 |
| Version | PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.81 mm, No. of poles: 2, 90°, Solder pin length (l): 3.2 mm, tinned, Black, Tape (Ø 330 mm); Rs = $10^9$ - $10^{12}$ Ω |
| GTIN (EAN) | 4032248427772 |
| Qty. | 400 pc(s). |
| Product data | IEC: 320 V / 17.5 A<br>UL: 300 V / 10 A |
| Packaging | Tape (Ø 330 mm); Rs = $10^9$ - $10^{12}$ Ω |

Creation date July 2, 2018 11:36:14 AM CEST

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## Technical data

### Dimensions and weights

| | |
|---|---|
| Net weight | 1.48 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 | 90° |
| No. of poles | 2 | Number of solder pins per pole | 1 |
| Solder pin length (l) | 3.2 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 | 3.81 mm |
| L1 in inches | 0.15 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 |
| Packaging | Tape (Ø 330 mm); Rs = $10^9$ - $10^{12}$ Ω | | |

### 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. | | |

### 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.<br>• 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.<br>• 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. |

### Approvals

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

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## Technical data

### Downloads

| | |
|---|---|
| Approval/Certificate/Document of Conformity | Declaration of the Manufacturer |
| Brochure/Catalogue | FL DRIVES EN<br>MB SMT EN<br>FL DRIVES DE<br>MB DEVICE MANUF. EN<br>CAT 2 PORTFOLIOGUIDE EN<br>FL BUILDING SAFETY EN<br>FL APPL LED LIGHTING EN<br>FL INDUSTR.CONTROLS EN<br>FL MACHINE SAFETY EN<br>FL HEATING ELECTR EN<br>FL APPL_INVERTER EN<br>FL_BASE_STATION_EN<br>FL ELEVATOR EN<br>FL POWER SUPPLY EN<br>FL 72H SAMPLE SER EN<br>PO OMNIMATE EN |
| SMT white paper | Download Whitepaper |

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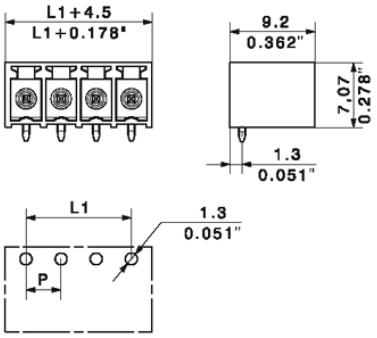
## Drawings

### Dimensional drawing




### Example of use

# OMNIMATE Signal - series BC/SC 3.81
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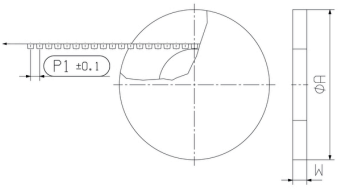
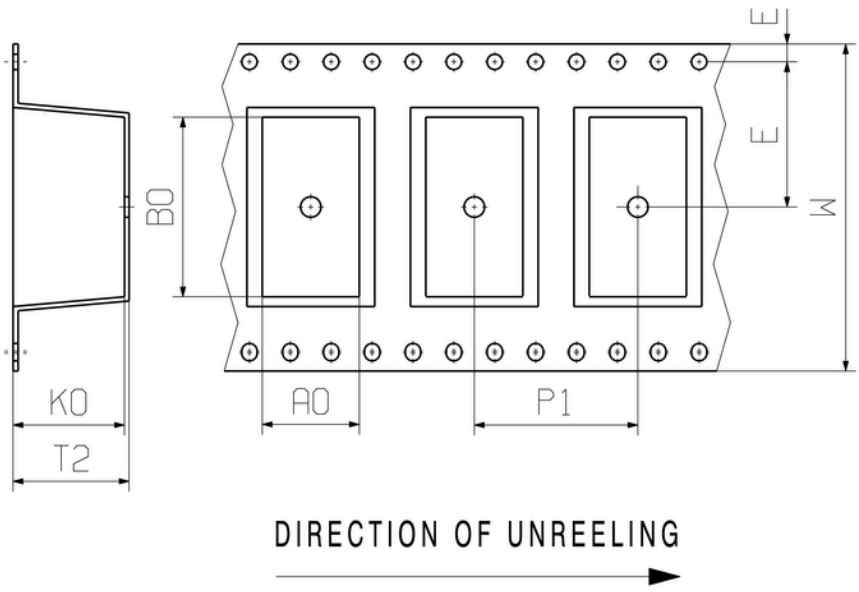
## Drawings

### Dimensional drawing




### Dimensional drawing

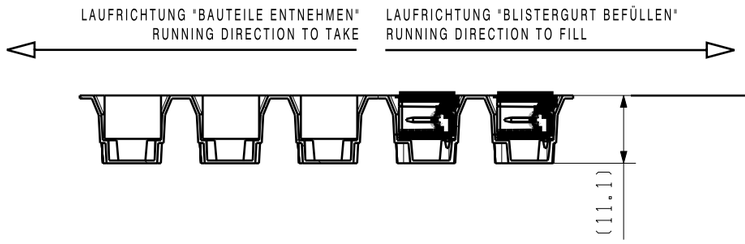


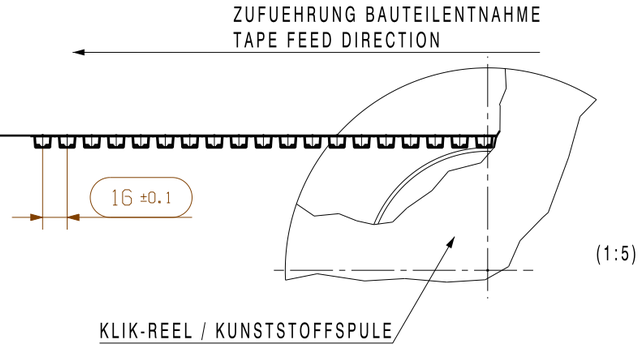
MASSE OHNE TOLERANZ SIND KEINE PRUEFMASSE
DIMS. WITHOUT TOLERANCE ARE NOT CONTROL DIMS.

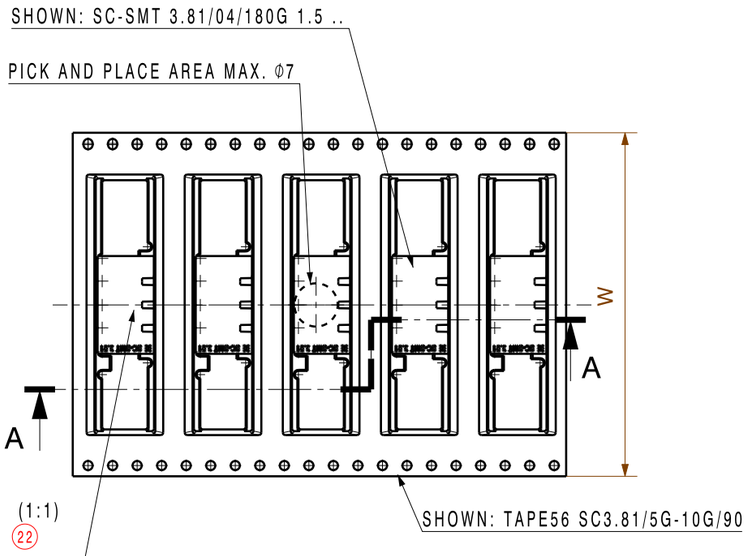
DIE DEUTSCHE VERSION IST VERBINDLICH
THE GERMAN VERSION IS BINDING

# New Universal-Tape

A - A




GERADE POLZAHL DARGESTELLT/
EVEN POLE NUMBER SHOWN

UNGERADE POLZAHL DREHUNG STIFTLEISTE UM 180°/
UNEVEN POLE NUMBER PIN HEADER ROTATED 180°

STIFTLEISTEN MÜSSEN MITTIG IM TAPE SITZEN /
PIN HEADER ASSEMBLED IN THE MIDDLE

22

| TAPEBREITE/ TAPEWIDTH (MAT.NR.) | POL ZAHL NO OF POLS | SC-SMT 3.81/../90.. **1.5 BK** | | SC-SMT 3.81/../90.. **3.2 BK** | | SC-SMT 3.81/../90.. **2.1 BK** | | SC-SMT 3.81/../90.. **1.5 OR** | |
|---|---|---|---|---|---|---|---|---|---|
| | | BESTELLNR./CAT.NO. | | BESTELLNR./CAT.NO. | | BESTELLNR./CAT.NO. | | BESTELLNR./CAT.NO. | |
| W | n | G | LF | G | LF | G | LF | G | LF |
| 32 (1437290000) | 2 | 1863140000 | 1862720000 | 1862810000 | 1863890000 | 2429820000 | | 1105060000 | |
| | 3 | 1863150000 | / | 1862840000 | / | 2128630000 | / | | / |
| | 4 | 1863160000 | / | 1862860000 | / | | / | | / |
| 44 (2017990000) | 3 | / | 1862750000 | / | 1863970000 | / | | / | |
| | 4 | / | 1862770000 | / | 1863980000 | / | | / | |
| | 5 | 1863170000 | 1862790000 | 1862870000 | | | | | |
| | 6 | 1863180000 | 1862820000 | 1862880000 | | | | | |
| | 7 | 1863190000 | / | | / | | / | | / |
| | 8 | 1863200000 | / | 1862900000 | / | | / | | / |
| 56 (1348070000) | 7 | / | 1862830000 | / | | / | | / | |
| | 8 | / | 1862850000 | / | | / | | / | |
| | 9 | 1863210000 | / | | / | | / | | / |
| | 10 | 1863220000 | / | 1862930000 | / | | / | | / |
| 88 (1396710000) | 9 | / | 1430360000 | / | 1430370000 | / | | / | |
| | 10 | / | 1430380000 | / | 1430390000 | / | | / | |
| | 11 | 1430230000 | 1430400000 | | 1430420000 | | | | |
| | 12 | 1430250000 | 1430430000 | 1430240000 | 1359450000 | | | | |
| | 13 | 1430270000 | 1430440000 | 1430260000 | 1430450000 | | | | |
| | 14 | 1430290000 | 1430470000 | 1430280000 | 1430480000 | | | | |
| | 15 | 1430330000 | 1430490000 | 1430320000 | 1430500000 | | | | |
| | 16 | 1430350000 | 1430510000 | 1430340000 | 1430520000 | | | | |

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

84755/5
04.11.15 AMANN_A 02
MODIFICATION

CAT.NO.:.

Weidmüller

3 36136 22
DRAWING NO. ISSUE NO.

SHEET 05 OF 05 SHEETS

| | DATE | NAME |
|---|---|---|
| DRAWN | 11.11.2004 | POCTA_C |
| RESPONSIBLE | | AMANN_A |
| CHECKED | | |
| APPROVED | | LANG_T |

SCALE: 5:1
SUPERSEDES: .

SC-SMT 3.81/02...16/90..
STIFTLEISTE
MALE PLUG
In Prüfung / Verification

PRODUCT FILE: SC-SMT 3.81 7278

# Wave Solder Profile

## Recommended wave solderding profiles

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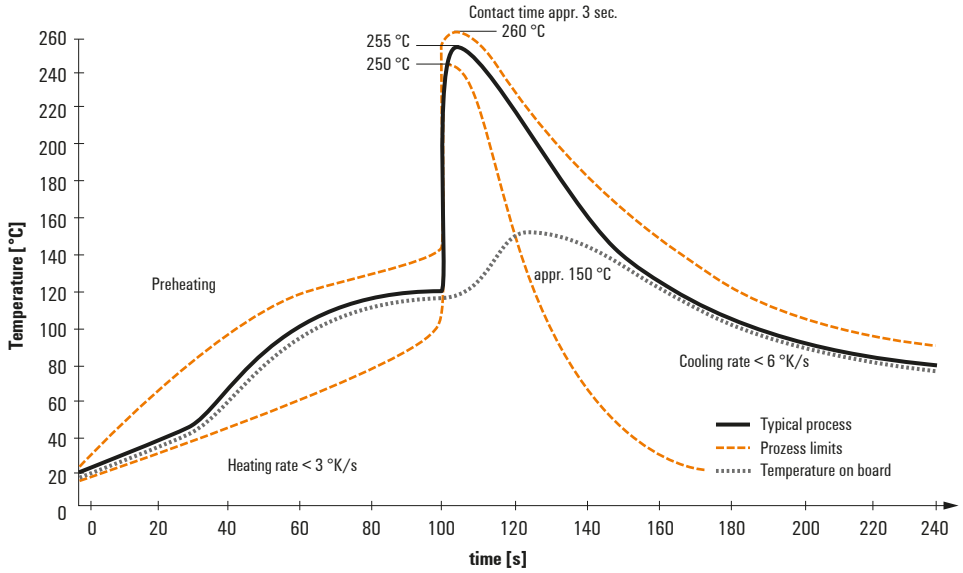
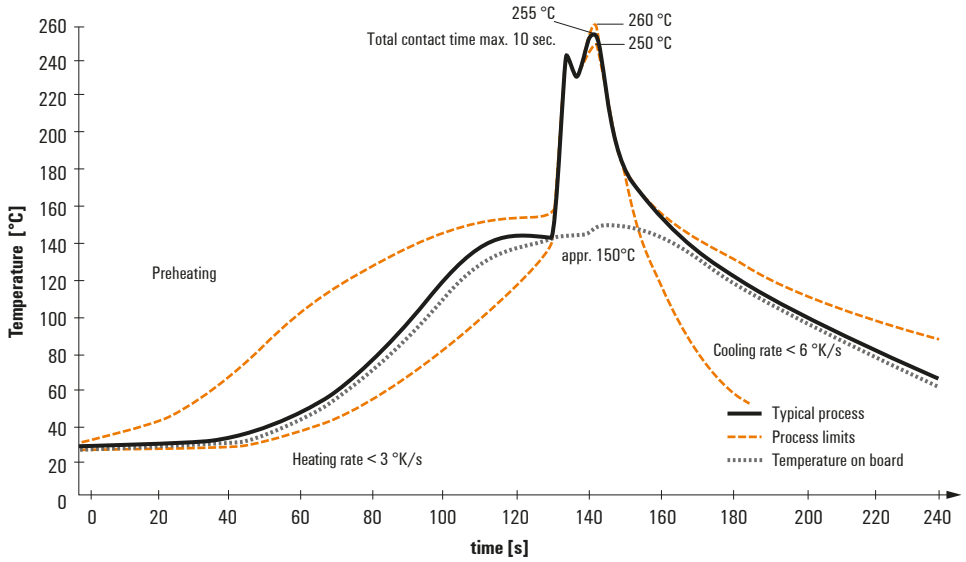
**Single Wave:**




**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.

# Reflow Solder Profile

## Recommended reflow soldering profile

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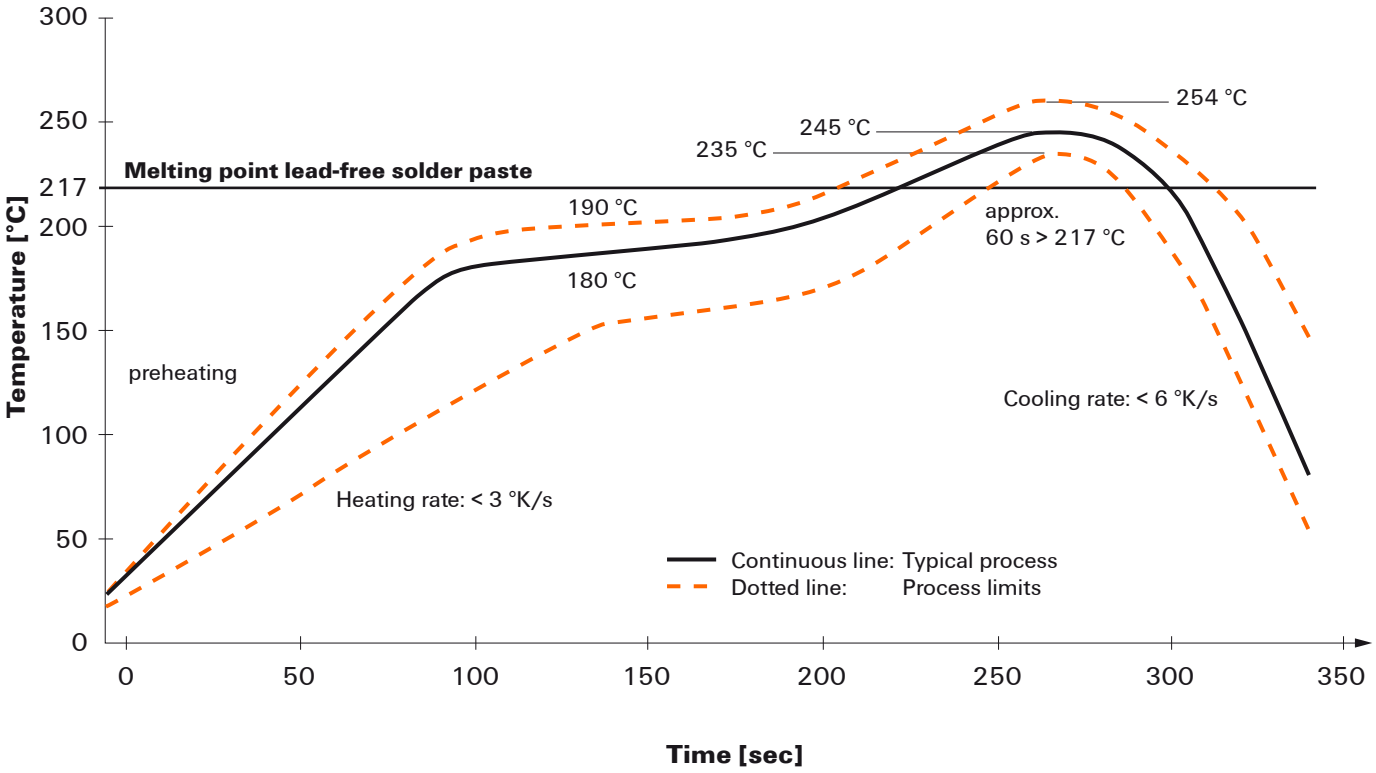


**Reflow soldering profile**

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 ≤ +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 ≥ -6K/s solder is cured. Board and components cool down while avoiding cold cracks.