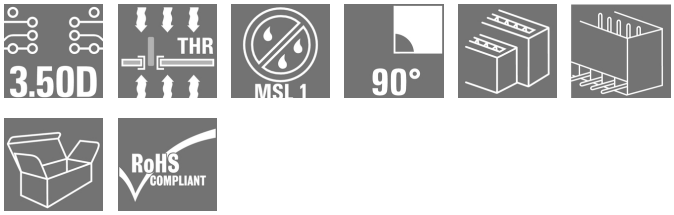
# S2LD-THR 3.50/24/90G 3.2SN BK BX

**Weidmüller Interface GmbH & Co. KG**
Klingenbergstraße 26
D-32758 Detmold
Germany

www.weidmueller.com




**The new benchmark for component density: the virtual 0.875mm pitch - for 1mm² I/O connections**
The only 4-row double level male connectors for standard IP20 sensor interfaces with 3.5 pitch
The S2L in a double pack - a standard has surpassed itself:

- Each 3.5mm wide, 4 I/O contacts for 1mm² connection cross-section
- Force-fit enclosure geometry guarantees maximum stability
- Solder flange eliminates the need for a screw fastening

Less is more - basic advantages for your applications:

- 75% space savings on the circuit board
- Solder flange reduces process costs
- Less mechanical load on the soldering points
- More space for displays in the front panel, for example

A "small" contribution to greater competitiveness: additional features in the same installation space or a more compact device with the same range of functions.

## General ordering data

| | |
|---|---|
| Version | PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 24, Solder pin length (l): 3.2 mm, tinned, black, Box |
| Order No. | 1065340000 |
| Type | S2LD-THR 3.50/24/90G 3.2SN BK BX |
| GTIN (EAN) | 4032248818518 |
| Qty. | 20 pc(s). |
| Product data | IEC: 200 V / 10 A<br>UL: 150 V / 7 A |
| Packaging | Box |

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## Technical data

### Dimensions and weights

| | | | |
|---|---|---|---|
| Depth | 24.4 mm | Depth (inches) | 0.961 inch |
| Height | 35 mm | Height (inches) | 1.378 inch |
| Height of lowest version | 31.8 mm | Net weight | 12.6 g |

### System specifications

| | | | |
|---|---|---|---|
| Product family | OMNIMATE Signal - series B2L/S2L 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 | Number of poles | 24 |
| Number of solder pins per pole | 1 | Solder pin length (l) | 3.2 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 | 17.5 mm |
| L1 in inches | 1.516 inch | Number of rows | 2 |
| Pin series quantity | 4 | Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch, plugged |
| Touch-safe protection acc. to DIN VDE 0470 | IP20 plugged/ IP10 unplugged | Can be coded | Yes |
| Plugging force/pole, max. | 3 N | | |

### Material data

| | | | |
|---|---|---|---|
| Insulating material | LCP GF | Colour | black |
| Colour chart (similar) | RAL 9011 | Insulating material group | IIIb |
| Comparative Tracking Index (CTI) | ≥ 175 | 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 |
| Layer structure of plug contact | 2...5 µm Sn / 1...3 µm Ni | Storage temperature, min. | -40 °C |
| Storage temperature, max. | 70 °C | 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. number of poles (Tu=20°C) | 10 A |
| Rated current, max. number of poles (Tu=20°C) | 10 A | Rated current, min. number of poles (Tu=40°C) | 9 A |
| Rated current, max. number of poles (Tu=40°C) | 8.5 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 | 100 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 | 1.5 kV | | |

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## Technical data

### Rated data acc. to CSA

| | | | |
|---|---|---|---|
| Institute (CSA) | | Certificate No. (CSA) | 200039-1488444 |
| Rated voltage (Use group B / CSA) | 50 V | Rated voltage (Use group C / CSA) | 50 V |
| Rated voltage (Use group D / CSA) | 150 V | Rated current (Use group B / CSA) | 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. | | |

### Packing

| | | | |
|---|---|---|---|
| Packaging | Box | VPE length | 142 mm |
| VPE width | 107 mm | VPE height | 41 mm |

### Classifications

| | | | |
|---|---|---|---|
| ETIM 6.0 | EC002637 | ETIM 7.0 | EC002637 |
| ETIM 8.0 | 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 |

### 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 | • Additional variants on request<br>• Gold-plated contact surfaces on request<br>• Spacing between rows: see hole layout<br>• Rated current related to rated cross-section & min. No. of poles.<br>• P on drawing = pitch<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>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months |

### Approvals

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

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## Technical data

### Downloads

| | |
|---|---|
| Approval/Certificate/Document of Conformity | Declaration of the Manufacturer |
| Engineering Data | CAD data – STEP |
| Catalogues | Catalogues in PDF-format |
| Brochures | FL DRIVES EN<br>MB SMT EN<br>FL DRIVES DE<br>MB DEVICE MANUF. 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 |
| White paper surface mount technology | Download Whitepaper |

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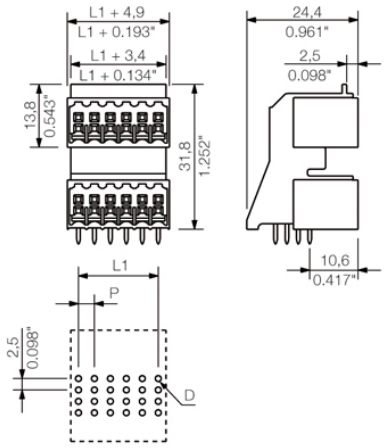
## Drawings

### Dimensional drawing



# Wave Solder Profile

## Recommended wave solderding profiles

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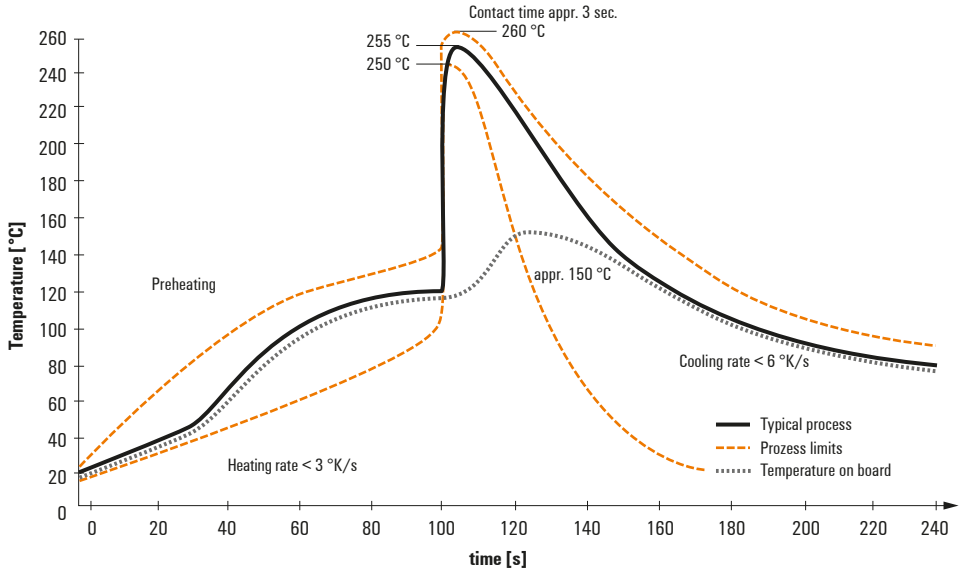
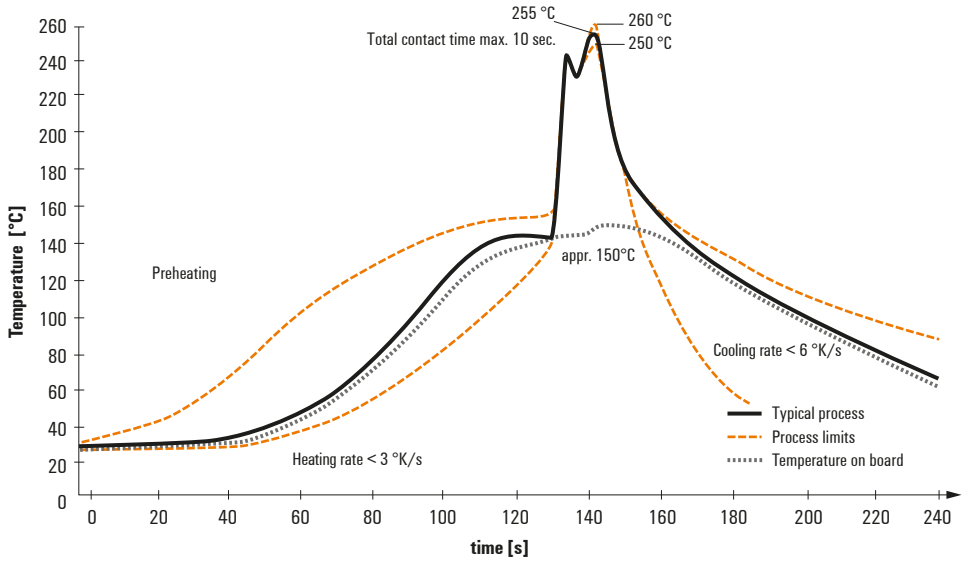
**Single Wave:**




**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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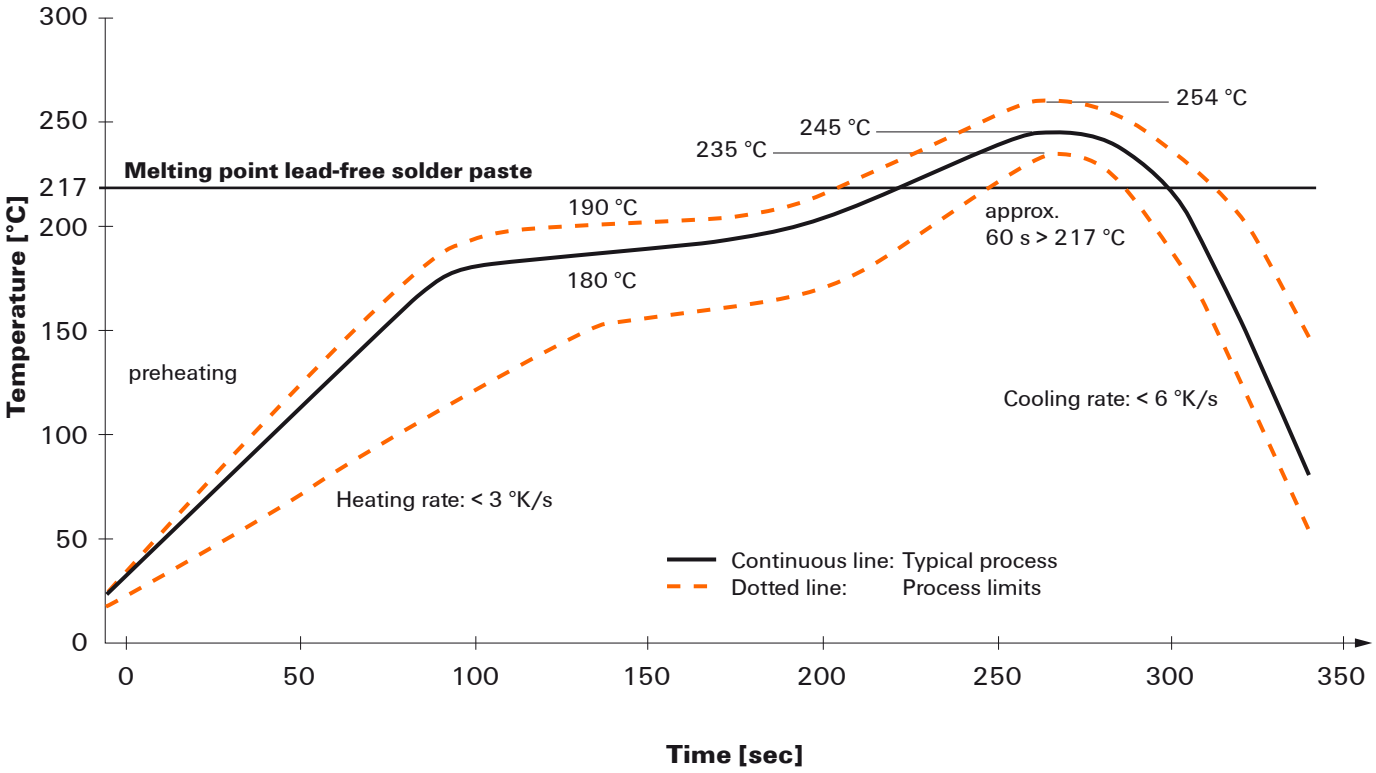


**Reflow soldering profile**

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.