# S2L-SMT 3.50/06/90 3.2SN BK BX

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

www.weidmueller.com

## Product image

Similar to illustration

High-temperature-resistant, straight, 2-tier pin header for all common soldering methods. Optimized for automatic assembly. Packed in box or tape. 3.2 mm solder pin suitable for reflow and wave soldering. These pin headers can be labelled and coded. (Packaging in tape on request)

### General ordering data

| | |
|---|---|
| Version | PCB plug-in connector, male header, open side, THT/THR solder connection, 3.50 mm, Number of poles: 6, 90°, Solder pin length (l): 3.2 mm, tinned, black, Box |
| Order No. | 1794370000 |
| Type | S2L-SMT 3.50/06/90 3.2SN BK BX |
| GTIN (EAN) | 4032248231553 |
| Qty. | 174 pc(s). |
| Product data | IEC: 160 V / 10 A<br>UL: 150 V / 10 A |
| Packaging | Box |

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## Technical data

### Dimensions and weights

| | | | |
|---|---|---|---|
| Depth | 14.2 mm | Depth (inches) | 0.559 inch |
| Height | 14 mm | Height (inches) | 0.551 inch |
| Height of lowest version | 10.8 mm | Net weight | 1.76 g |
| Width | 10.5 mm | Width (inches) | 0.413 inch |

### 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 | Outgoing elbow | 90° |
| Number of poles | 6 | 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 | 7 mm | L1 in inches | 0.276 inch |
| Number of rows | 2 | 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 force/pole, max. | 3 N |
| Pulling force/pole, max. | 6 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 | 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 / 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) | 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 (UR) | | Certificate No. (UR) | 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 | Box | VPE length | 25 mm |
| VPE width | 135 mm | VPE height | 350 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 | ECLASS 11.0 | 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 | • Gold-plated contact surfaces on request<br>• Rated current related to rated cross-section & min. No. of poles.<br>• Spacing between rows: see hole layout<br>• Rated current related to rated cross-section & min. No. of poles.<br>• Diameter of solder eyelet D = 1.3+0.1 mm<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 |

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## Technical data

### Approvals

| | |
|---|---|
| Approvals | |
| ROHS | Conform |
| UL File Number Search | E60693 |

### Downloads

| | |
|---|---|
| Approval/Certificate/Document of Conformity | Declaration of the Manufacturer |
| Engineering Data | STEP |

# S2L-SMT 3.50/06/90 3.2SN BK BX

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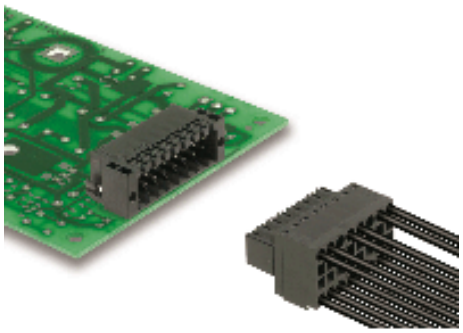
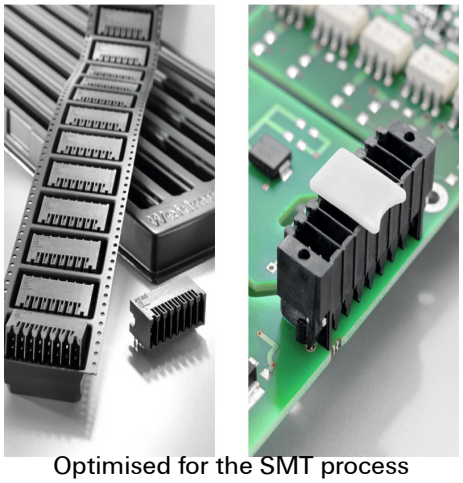
## Drawings

### Example of use

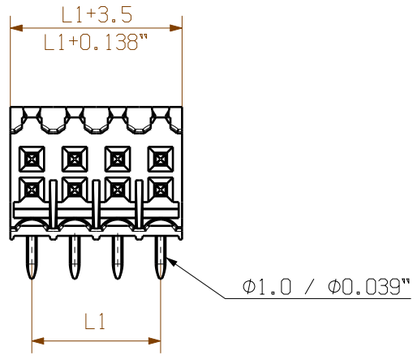


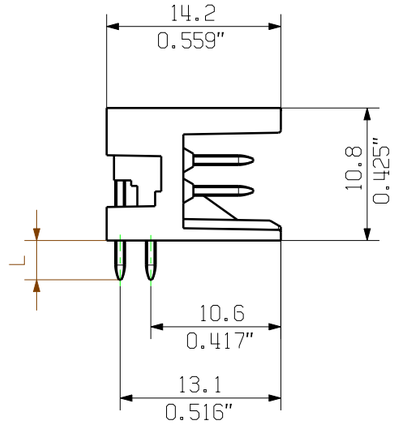
### Example of use

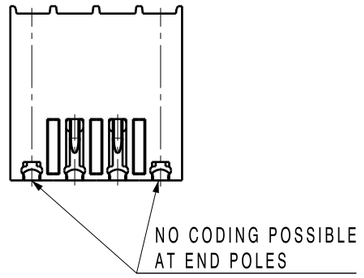
### Product benefits

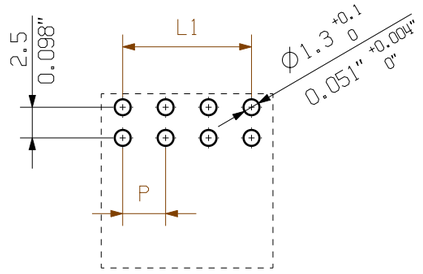


Optimised for the SMT process
Safe board-to-board connection

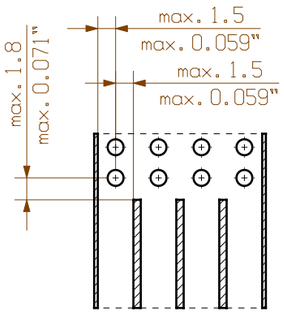


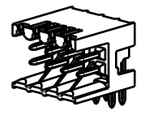




HOLE PATTERN




PASTE-FREE AREA

1:1



P= PITCH
n= NO OF POLES
SHOWN: S2L-SMT 3.50/04/90

| STIFTLAENGE/ PIN LENGTH L | TOLERANZ/ TOLERANCES |
|---|---|
| 1.5 | 0 |
| | -0.3 |
| 1.8 | 0 |
| | -0.3 |
| 2.3 | 0 |
| | -0.3 |
| 3.2 | 0 |
| | -0.3 |
| 3.5 | 0 |
| | -0.3 |

| n | L1 [mm] | L1 [inch] |
|---|---|---|
| 36 | 59,50 | 2,343 |
| 34 | 56,00 | 2,205 |
| 32 | 52,50 | 2,067 |
| 30 | 49,00 | 1,929 |
| 28 | 45,50 | 1,791 |
| 26 | 42,00 | 1,654 |
| 24 | 38,50 | 1,516 |
| 22 | 35,00 | 1,378 |
| 20 | 31,50 | 1,240 |
| 18 | 28,00 | 1,102 |
| 16 | 24,50 | 0,965 |
| 14 | 21,00 | 0,827 |
| 12 | 17,50 | 0,689 |
| 10 | 14,00 | 0,551 |
| 8 | 10,50 | 0,413 |
| 6 | 7,00 | 0,276 |
| 4 | 3,50 | 0,138 |

For the mounting of PCBs, it should be noted that the rated data relates only to the PCB components alone. The neccessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to IEC 664 / VDE 0110.
The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller PCB components are tested to the DIN EN 61984 standard, and are valid for its field of application. Provided that the components are used to the intended purpose, all requirements with respect to the occuring of electrical, mechanical, thermic and corrosive stress will be satisfied.

RoHS COMPLIANT

DIN ISO 2768

80058/3
19.01.15 HELIS_MA 01

MODIFICATION

CAT.NO.: .

Weidmüller

C 32283 26
DRAWING NO. ISSUE NO.

SHEET 01 OF 03 SHEETS

| | DATE | NAME |
|---|---|---|
| DRAWN | 19.03.2007 | LANG_T |
| RESPONSIBLE | | AMANN_A |
| CHECKED | 21.01.2015 | HERTEL_S |
| APPROVED | | LANG_T |

SCALE: 2/1

SUPERSEDES: .

# S2L-SMT 3.50/../90...

STIFTLEISTE
MALE HEADER

PRODUCT FILE: S2L-SMT 3.50 7272

# Wave Solder Profile

## Recommended wave solderding profiles

**Weidmüller Interface GmbH & Co. KG**
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Fax: +49 5231 14-292083
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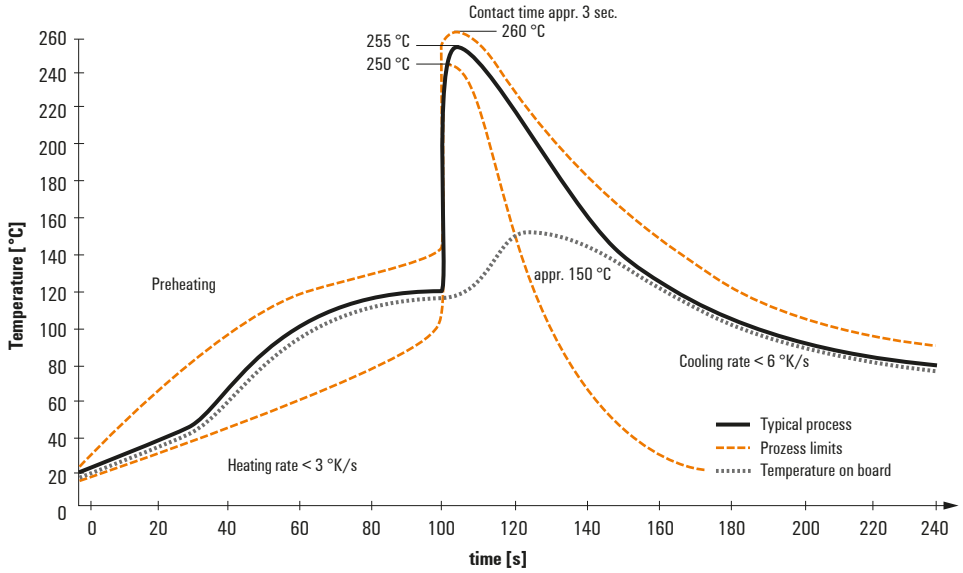
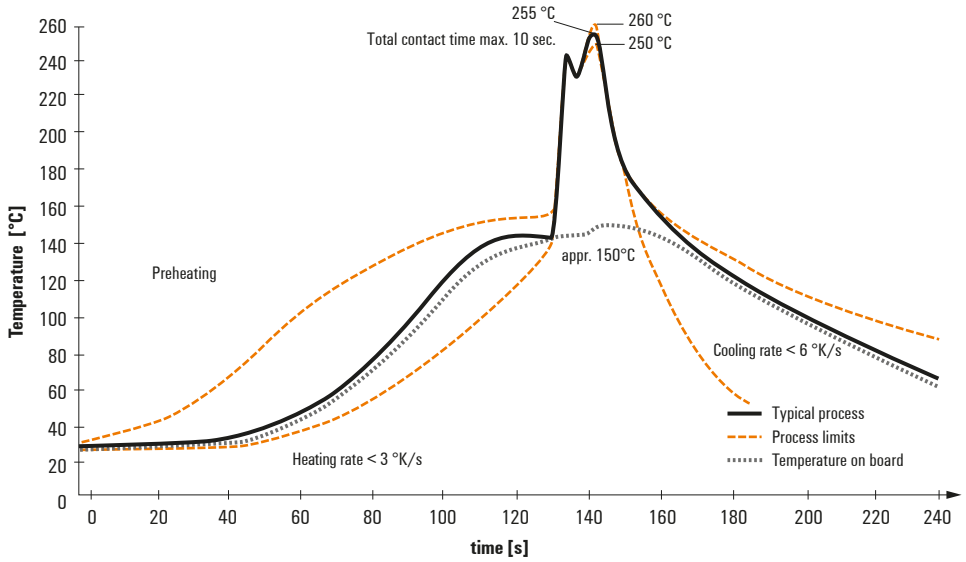
**Single Wave:**




**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.

# Reflow Solder Profile

## Recommended reflow soldering profile

**Weidmüller Interface GmbH & Co. KG**
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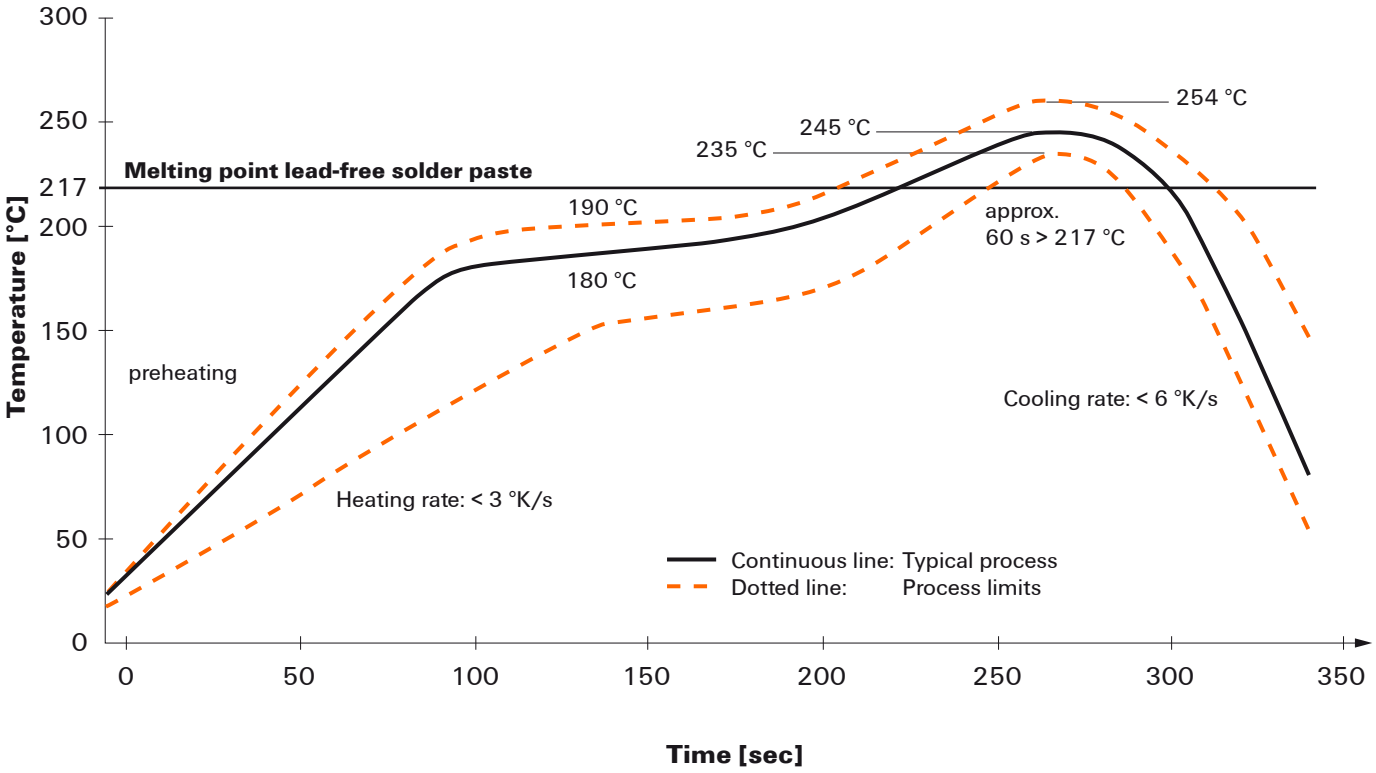


**Reflow soldering profile**

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.