

### Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 16 D-32758 Detmold

Germany

Fon: +49 5231 14-0 Fax: +49 5231 14-292083 www.weidmueller.com





















### 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

Туре	S2C-SMT 3.50/12/180G 3.5SN BK BX
Order No.	<u>1290070000</u>
Version	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, No. of poles: 12, 180°, Solder pin length (I): 3.5 mm, tinned, Black, Box
GTIN (EAN)	4050118083095
Qty.	78 pc(s).
Product data	IEC: 200 V / 13.4 A UL: 150 V / 10 A
Packaging	Вох



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## **Technical data**

### **Dimensions and weights**

Width	22.4 mm	Width (inches)	0.882 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	4.21 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°
No. of poles	12	Number of solder pins per pole	1
Solder pin length (I)	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		Can be coded	
0470	IP 20		Yes
Plugging cycles	25	push-in force/pole	5 N
Withdrawal force per pole	5 N	Packaging	Box

### **Material data**

Insulating material	LCP GF	Colour	Black
Colour chart (similar)	RAL 9011	Insulating material group	IIIb
СТІ	≥ 175	Insulation resistance	≥ 10 <sup>8</sup> Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact material	Copper alloy	Contact surface	tinned
Layer structure of solder connection	2-5 μm Sn / 1-3 μm Ni	Layer structure of plug contact	2-5 μm Sn / 1-3 μm Ni
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.	-40 °C
Temperature range, installation, max.	120 °C		

### Rated data acc. to IEC

tested acc. to standard		Rated current, min. no. of poles	
	IEC 60664-1, IEC 61984	(Tu=20°C)	13.4 A
Rated current, min. no. of poles		Rated voltage for surge voltage class /	
(Tu=40°C)	12 A	pollution degree II/2	200 V
Rated voltage for surge voltage class /		Rated voltage for surge voltage class /	
pollution degree III/2	160 V	pollution degree III/3	80 V
Rated impulse voltage for surge voltage		Rated impulse voltage for surge voltage	
class/ pollution degree II/2	2.5 kV	class/ pollution degree III/2	2.5 kV
Rated impulse voltage for surge voltage		Short-time withstand current resistance	
class/ contamination degree III/3	2.5 kV		3 x 1s with 80 A



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### **Technical data**

### Rated data acc. to CSA

Institute (CSA)	Ø₽:	Certificate No. (CSA)	
			200039-1121690
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)	9.5 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 (cURus)		Certificate No. (cURus)		
	U # 100 US		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	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

Gold-plated contact surfaces on request
Rated current related to rated cross-section & min. No. of poles.
Spacing between rows: see hole layout
• P on drawing = pitch
<ul> <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>
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 ® c **S**N°us Ⅲ ROHS Conform



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## **Technical data**

### **Downloads**

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



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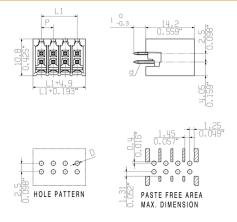
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### **Drawings**

### **Dimensional drawing**





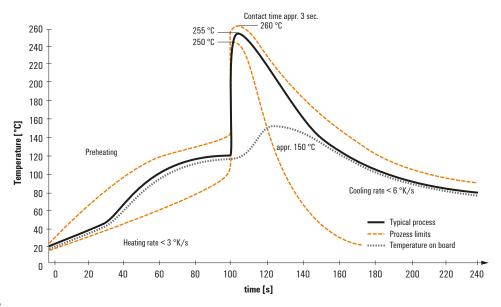
### Recommended wave solderding profiles

### Weidmüller Interface GmbH & Co. KG

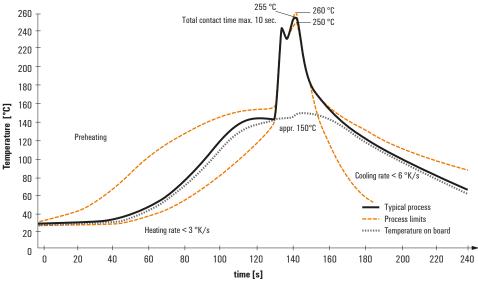
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### Single Wave:



### **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.

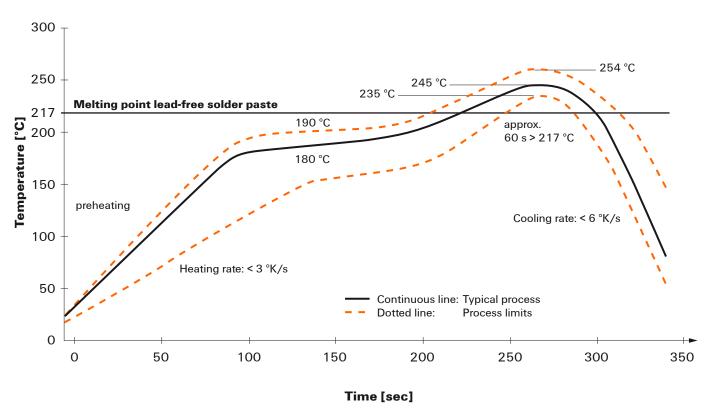


### Recommended reflow soldering profile

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### **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  $\leq +3$ 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  $\geq$  -6K/s solder is cured. Board and components cool down while avoiding cold cracks.