OMNIMATE Housing - series CH20M
SHL-SMT 5.00/04GR 1.5RL

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
D-32758 Detmold
Germany
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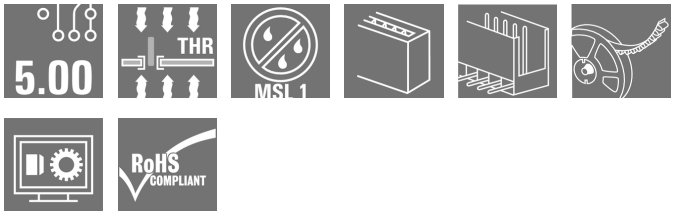
www.weidmueller.com





Naturally, the CH20M system also shows its perfection in the peripheral interface.
If you are taking into consideration design options, processing, usability, reliability and security, then pin headers and connectors are just as critical in the real world as the entire system.
In every sector, the connection technology is at the top of its class.

- **100% non-interchangeable** the unique, captive "Auto-Set" encoding ensures a misconnection-proof assignment of the connections.
- **100% safe** Touch protection for the pin header and socket block on both sides
- **100% efficient** All THR pin headers are reflow compatible

General ordering data

Type	SHL-SMT 5.00/04GR 1.5RL
Order No.	1063180000
Version	PCB plug-in connector, Connection element, right, male header, open side, THT/THR solder connection, 5.00 mm, No. of poles: 4, 90°, Solder pin length (l): 1.5 mm, tinned, black, Tape
GTIN (EAN)	4032248814855
Qty.	130 pc(s).
Product data	IEC: 400 V UL: 300 V / 9 A / AWG 26 - AWG 12
Packaging	Tape

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Technical data

Dimensions and weights

Length	27.6 mm	Length (inches)	1.087 inch
Width	20.4 mm	Width (inches)	0.803 inch
Height	14.4 mm	Height (inches)	0.567 inch
Net weight	6.55 g		

System specifications

Product family	OMNIMATE Housing - series CH20M	Type of connection	Board connection
Mounting onto the PCB	THT/THR solder connection	Pitch in mm (P)	5 mm
Pitch in inches (P)	0.197 inch	Outgoing elbow	90°
No. of poles	4	Number of solder pins per pole	1
Solder pin length (l)	1.5 mm	Solder pin length tolerance	+0.1 / -0.3 mm
Tolerance of solder pin position	± 0.1 mm	L1 in mm	15 mm
L1 in inches	0.591 inch	Number of rows	1
Pin series quantity	1	Can be coded	Yes
Plugging cycles	25		

Material data

Insulating material	LCP	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
CTI	≥ 175	Insulation strength	≥ 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.	-40 °C
Operating temperature, max.	120 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	120 °C		

Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, max. no. of poles (Tu=20°C)	10 A
Rated current, max. no. of poles (Tu=40°C)	9 A	Rated voltage for surge voltage class / pollution degree II/2	400 V
Rated voltage for surge voltage class / pollution degree III/2	320 V	Rated voltage for surge voltage class / pollution degree III/3	250 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	4 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	4 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	4 kV		

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Technical data

Rated data acc. to CSA

Institute (CSA)		Certificate No. (CSA)	200039-70153051
Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group C / CSA)	50 V
Rated voltage (Use group D / CSA)	300 V	Rated current (Use group B / CSA)	9 A
Rated current (Use group C / CSA)	9 A	Rated current (Use group D / CSA)	9 A
Wire cross-section, AWG, min.	AWG 26	Wire cross-section, AWG, max.	AWG 12
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 / UL 1059)	300 V	Rated voltage (Use group C / UL 1059)	50 V
Rated voltage (Use group D / UL 1059)	300 V	Rated current (Use group B / UL 1059)	9 A
Rated current (Use group C / UL 1059)	9 A	Rated current (Use group D / UL 1059)	9 A
Wire cross-section, AWG, min.	AWG 26	Wire cross-section, AWG, max.	AWG 12
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	27-26-07-08
eClass 7.1	27-44-04-01	eClass 8.1	27-44-04-01
eClass 9.0	27-44-04-02	eClass 9.1	27-44-04-02

Notes

Notes	
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	CSA Certificate of Compliance
Brochure/Catalogue	FL ANALO.SIGN.CONV. EN MB DEVICE MANUF. EN CAT 2 PORTFOLIOGUIDE EN FL MACHINE SAFETY EN FL 72H SAMPLE SER EN PO OMNIMATE EN
Engineering Data	WSCAD
Engineering Data	STEP

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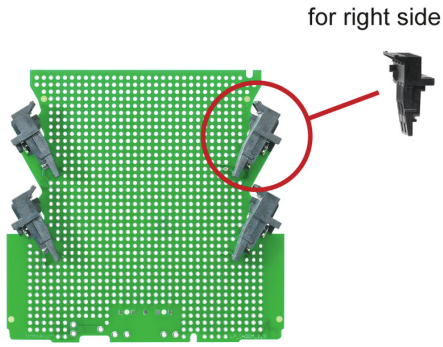
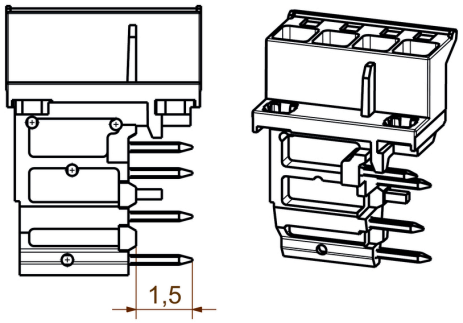
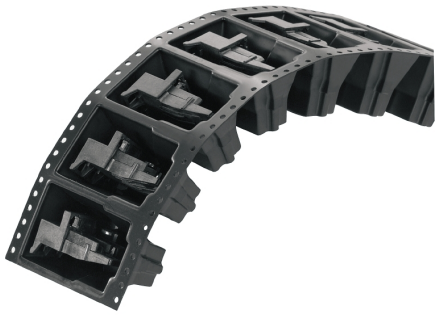
Drawings







delivery



Reflow Solder Profile

Recommended reflow soldering profile

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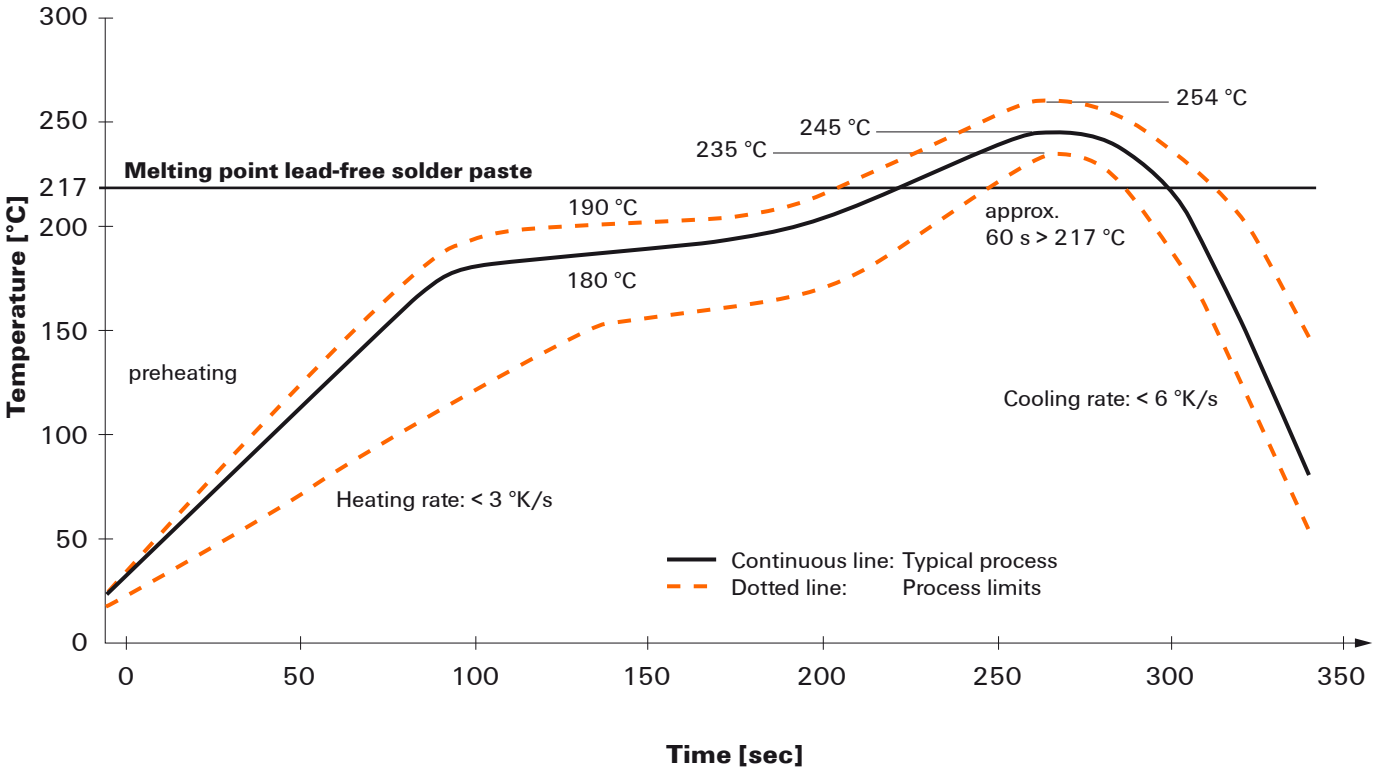

Reflow soldering profile

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.

We reserve the right to make technical changes.

Wave Solder Profile

Recommended wave solderding profiles

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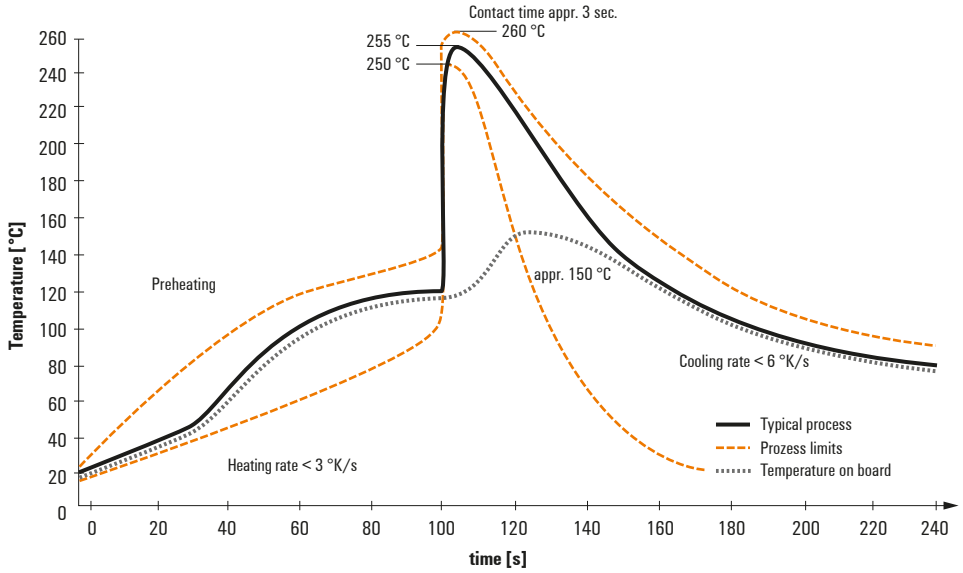
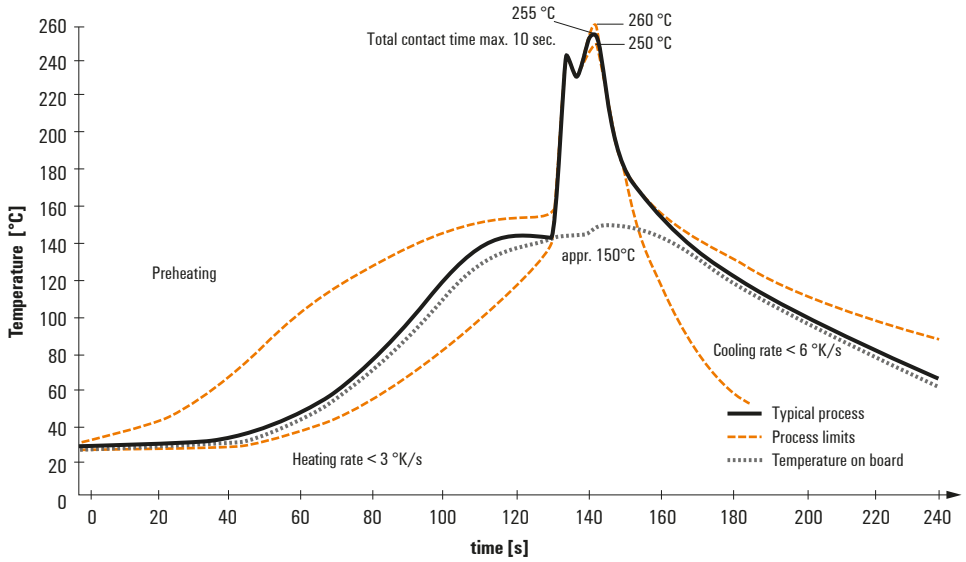
Single Wave:



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.

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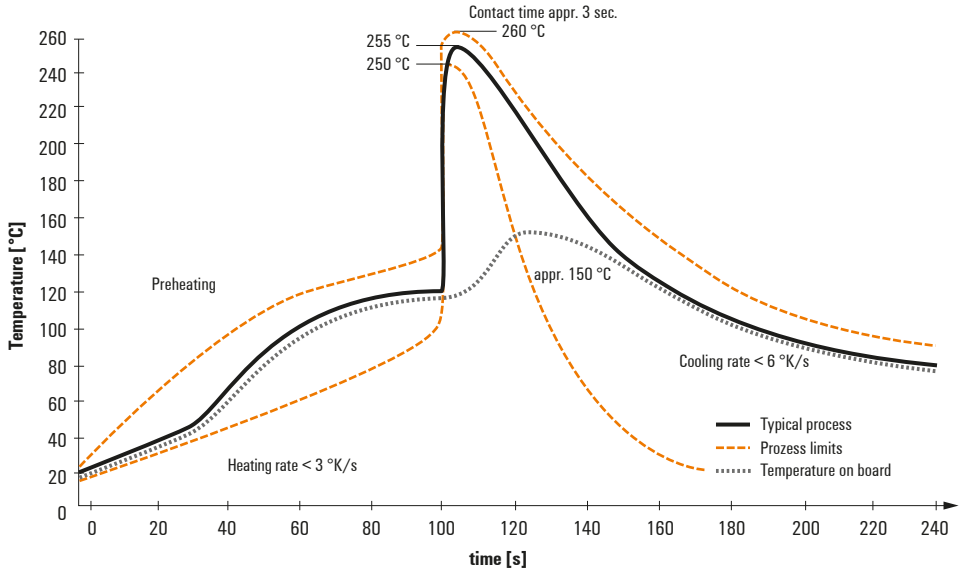

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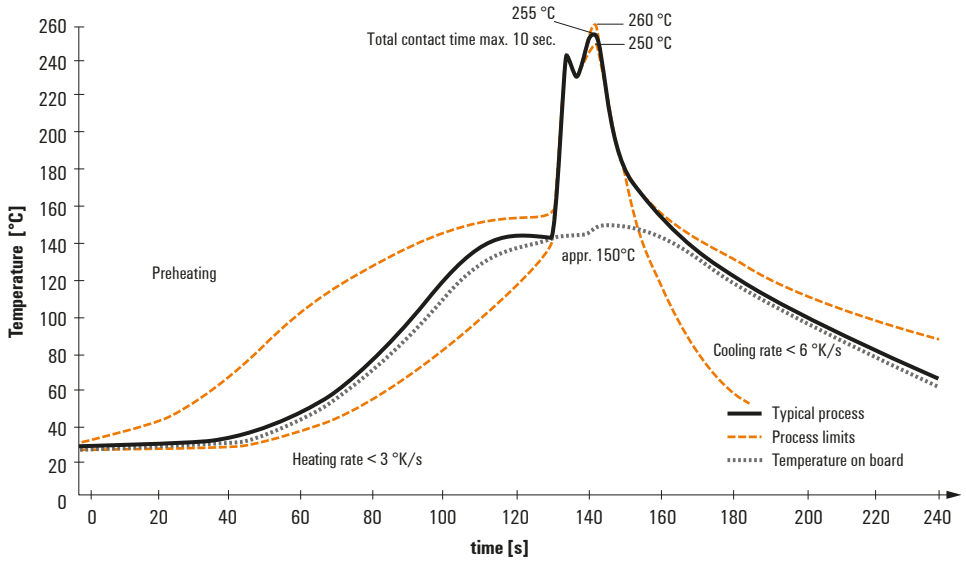

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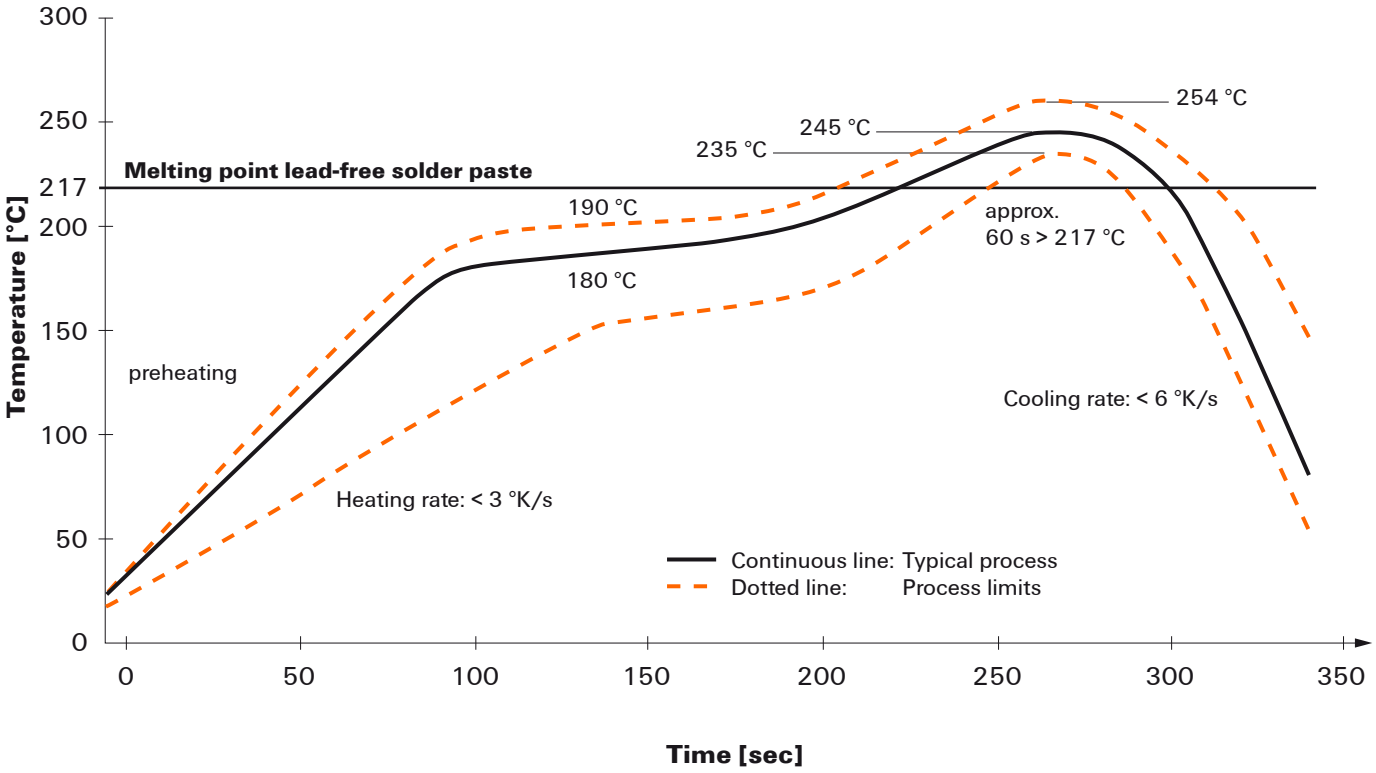

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