

## USB2.0A R1V 2.5N4 TY BK

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)



USB as a reliable data interface for your device in industrial use. Due to the many advantages, USB sockets are always used most in the electrical industry.

The extensive portfolio of USB-A, -B - C and -Micro components enables future-proof device design with speeds of up to 10 Gbit/s. Our USB PCB sockets support the robust standards USB 2.0, 3.0 and 3.1 for fast and easy data transfer.

The individual connectors meet the requirements for high durability and offer reliable connectivity.

- Up to 10.000 plugging cycles
- THT, THR or SMD soldering processes
- Available in design types 180° (vertical/upright) or 90° (horizontal/flat-lying)
- Packed either in a tray (TY) or on a roll (tape-on-reel, RL)
- Reinforced gold layer for improved corrosion protection
- USB 3.1 sockets support data rates of 10 Gbit/s for fast data transfer
- USB-C sockets enable error-free plugging due to a symmetrical design
- Robust plug & play operation - connect and disconnect without shutting down or restarting the system

### General ordering data

Version	OMNIMATE Data - USB jack, female header, 480 Mbps, THT/THR solder connection, 180°, ≥ 1500, Pitch in mm (P): 2.00 mm, Number of poles: 4, LCP, black, Tray (manual assembly)
Order No.	<a href="#">2563730000</a>
Type	USB2.0A R1V 2.5N4 TY BK
GTIN (EAN)	4050118572346
Qty.	100 pc(s).
Packaging	Tray (manual assembly)

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## Technical data

## Dimensions and weights

Depth	7.12 mm	Depth (inches)	0.28 inch
Height	19.3 mm	Height (inches)	0.76 inch
Height of lowest version	15 mm	Width	14.5 mm
Width (inches)	0.571 inch	Net weight	0.001 g

## System specifications

LED	No	Mounting onto the PCB	THT/THR solder connection
Number of poles	4	Number of solder pins per pole	1
Outgoing elbow	180°	Performance-Category	480 Mbps
Pitch in inches (P)	0.079 "	Pitch in mm (P)	2 mm
Plugging cycles	≥ 1500	Plugging force/pole, max.	35 N
Product family	OMNIMATE Data - USB jack	Protection degree	IP20
Pulling force/pole, max.	10 N	Shield surface	nickel-plated
Shield tabs	none	Shielding	Yes
Shielding material	Brass	Solder pin dimensions	Octagonal
Solder pin length (l)	2.9 mm	Soldering process	Reflow soldering, Manual soldering, Wave soldering
Tolerance of solder pin position	± 0.1 mm	Transmission rate	480 Mbps
Type of connection	Socket connector		

## Electrical properties

Dielectric strength, contact / contact	500 V AC	Insulation strength	≥ 1000 MΩ
Rated current	1.5 A at 250 V AC	Rated voltage	30 V

## Material data

Insulating material	LCP	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	II
Comparative Tracking Index (CTI)	≥ 500	Insulation strength	≥ 1000 MΩ
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact base material	Phosphorus bronze	Contact material	Cu-alloy
Contact surface	Gold over nickel	Layer structure of plug contact	30...80 μ" Ni / ≥ 30 μ" Au
Storage temperature, min.	-20 °C	Storage temperature, max.	60 °C
Operating temperature, min.	-40 °C	Operating temperature, max.	85 °C

## Packing

Packaging	Tray (manual assembly)	VPE length	269 mm
VPE width	241 mm	VPE height	13 mm

## Classifications

ETIM 6.0	EC002637	ETIM 7.0	EC002637
ETIM 8.0	EC002637	ETIM 9.0	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	ECLASS 13.0	27-46-02-01

## Approvals

ROHS	Conform
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Creation date June 4, 2024 1:31:50 PM CEST

Catalogue status 01.06.2024 / We reserve the right to make technical changes.

2

**Data sheet**

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**Technical data**

**Downloads**

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Engineering Data	<a href="#">CAD data – STEP</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>

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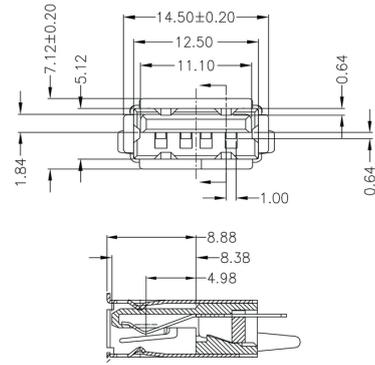
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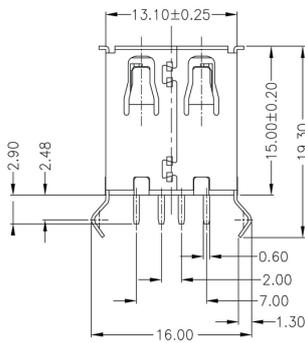
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**Drawings**

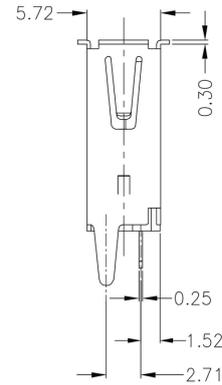
**Dimensioned drawing**



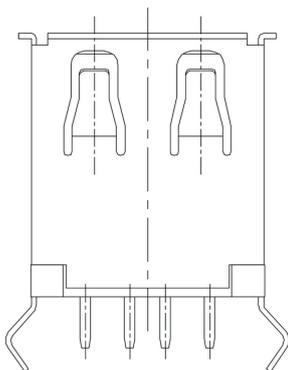
**Dimensioned drawing**



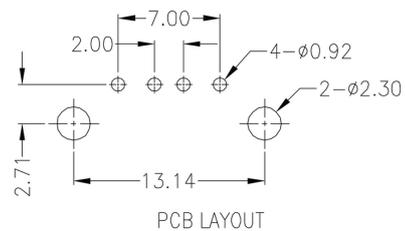
**Dimensioned drawing**



**Dimensioned drawing**



**PCB design**



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**Drawings**

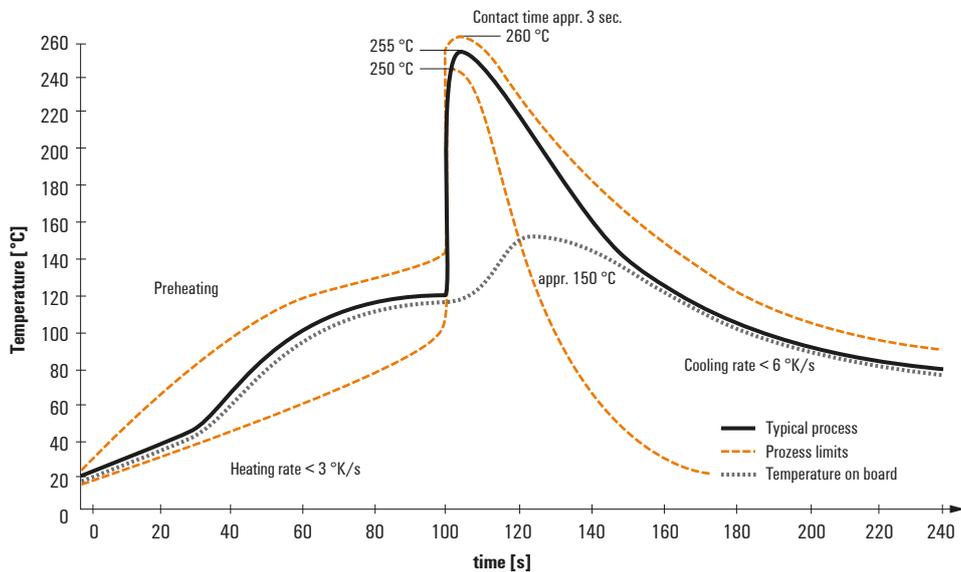
**Legend**

Code	Description	Options	Options Description
USB	USB3.0A R1V 3.0N4 TY BL		
3.0A			
R			
1			
V			
3.0			
N			
4			
TY			
BL			
<b>Colour / Special Option</b>	<b>BL</b>	blue (plastic)	
	<b>BK</b>	black (plastic)	
	<b>WH</b>	white (plastic)	
	<b>SO</b>	customized product	
<b>Packaging</b>	<b>TY</b>	Tray in box (manual assembly)	
	<b>RL</b>	Tape on Reel (automated assembly)	
	<b>TU</b>	Tube	
<b>Contact surface thickness</b>	<b>4</b>	1 = 3µ', 2 = 6µ', 3 = 15µ', 4 = 30µ', 5 = 50µ'	
	<b>N</b>	no use	
<b>Solder Pin length</b>	<b>3.2</b>	3.2 mm	
	<b>1.6</b>	1.6 mm	
	<b>D</b>	SMD	
<b>Direction</b>	<b>H</b>	Horizontal (90°, side entry)	
	<b>U</b>	Horizontal Upright 90°	
	<b>V</b>	Vertical (180°, top entry)	
<b>Number of Ports</b>	<b>1</b>	1 Port	
	<b>2; 4; ...</b>	multi ports about each other, Multilevel	
<b>Assembly on PCB</b>	<b>R</b>	Through Hole Reflow - THR	
	<b>S</b>	Soldering process: Wave or Reflow soldering	
	<b>SMT</b>	Surface Mount Technology - SMT	
	<b>S</b>	Soldering process: Reflow soldering	
	<b>T</b>	Through Hole Technology - THT	
	<b>T</b>	Soldering process: Wave	
<b>Type / Performance</b>	<b>2.0A</b>	USB 2.0 Type A	
	<b>3.0A</b>	USB 3.0 Type A	

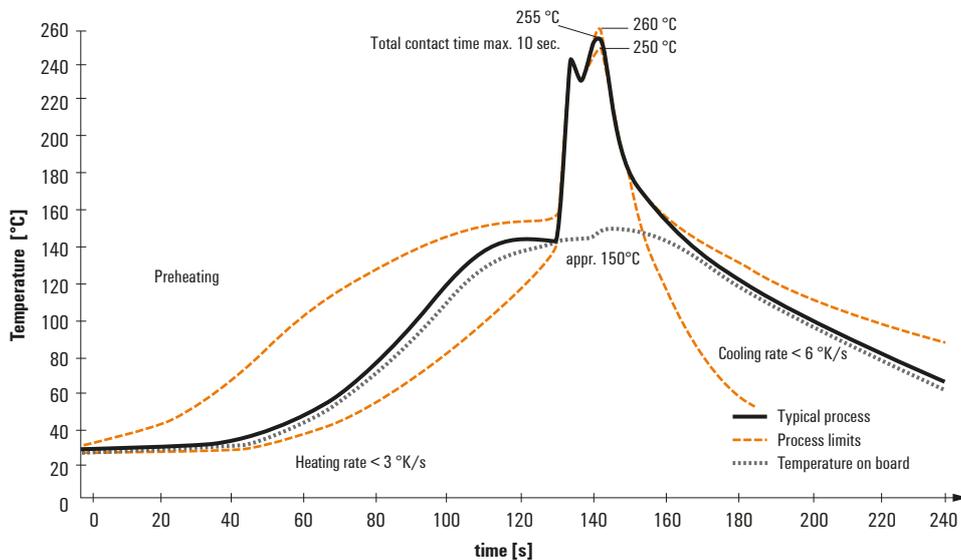
## Recommended wave soldering profiles

**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.

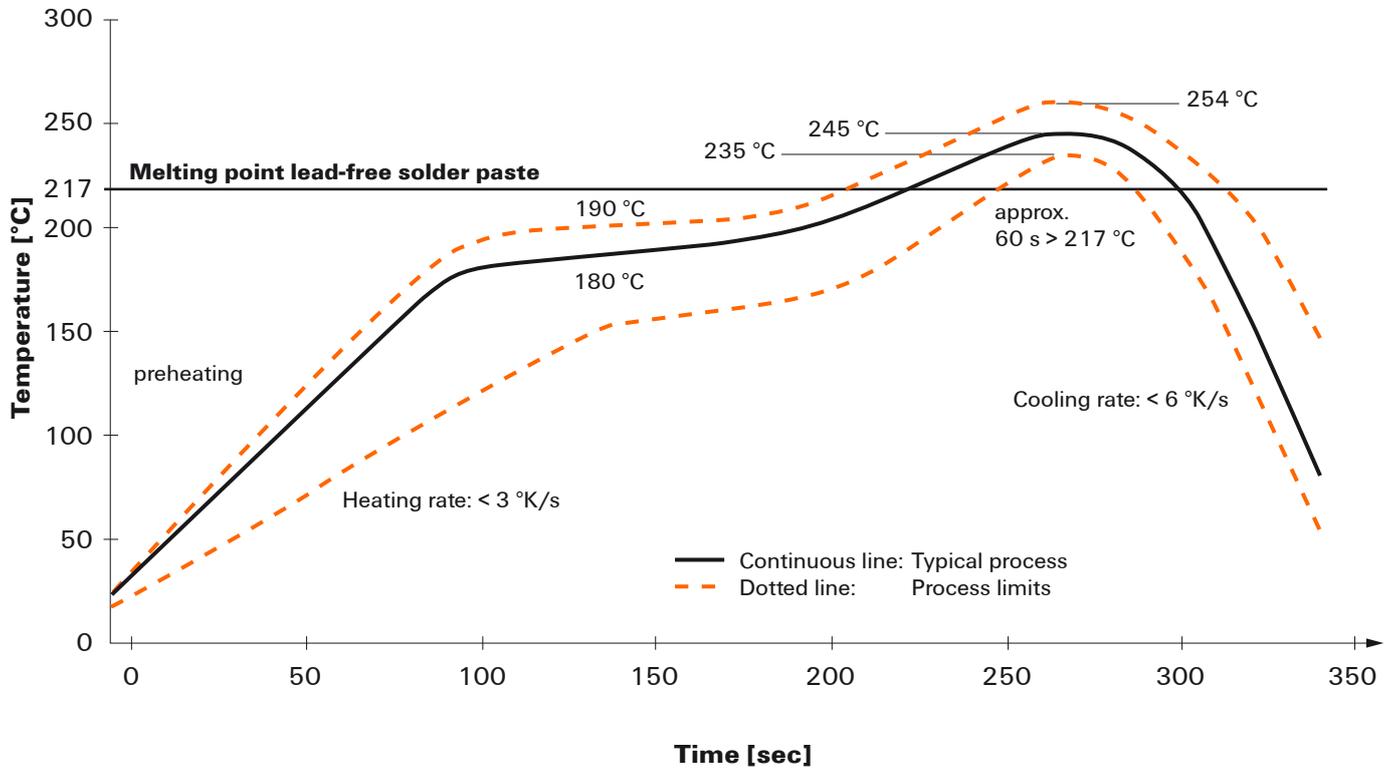
When choosing a suitable profile for your application, the following factors also need to be considered:

- 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  $\leq +3\text{K/s}$ . In parallel the solder paste is ‚activated‘. The time above melting point of  $217^\circ\text{C}$  the paste gets liquid and components and boards begin to connect. The maximum temperature of  $245^\circ\text{C}$  to  $254^\circ\text{C}$  should stay between 10 and 40 seconds. In the cooling phase at  $\geq -6\text{K/s}$  solder is cured. Board and components cool down while avoiding cold cracks.