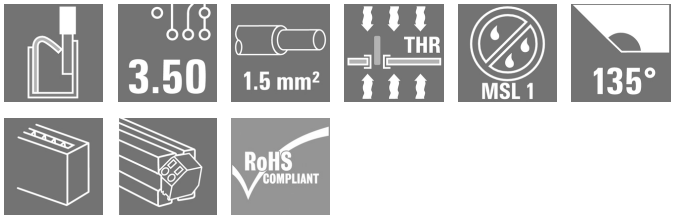
LSF-SMT SPE 3.50/03/135 3.5SN BK TU

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

www.weidmueller.com



Single Pair Ethernet PCB terminals
Simple and efficient SPE solutions for the PCB

Features and benefits:

- Reliable data transmission at 10 Mbit/s up to 1,000 meters
- Suitable for all IIoT devices for easy integration of field devices. The SPE PCB components are a cost-effective alternative to standardized SPE connectors
- Optionally available with PUSH IN, SNAP IN or screw connection for high contact and vibration resistance
- Error-free installation of components thanks to appropriate markings.
- The PCB terminal blocks can be used as a two-pole variant for unshielded or as a three-pole variant for shielded applications
- Thanks to the “Power over Data Line” (PoDL) function, up to 50 W can be transmitted in accordance with IEEE 802.3bu

General ordering data

Version	Printed circuit board terminals, block assembly, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 3, Solder pin length (l): 3.5 mm, black, Tube
Order No.	3077560000
Type	LSF-SMT SPE 3.50/03/135 3.5SN BK TU
GTIN (EAN)	4099987081733
Qty.	49 pc(s).
Packaging	Tube

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Technical data

Dimensions and weights

Depth	12.7 mm	Depth (inches)	0.5 inch
Height	16.4 mm	Height (inches)	0.646 inch
Height of lowest version	8.5 mm	Width	11.2 mm
Width (inches)	0.441 inch	Net weight	2.496 g

Temperatures

Continuous operating temp., max.	120 °C

System specifications

Category	T1-B	
Mounting onto the PCB	THT/THR solder connection	
Number of poles	3	
Number of solder pins per pole	2	
Performance-Category	T1-B	
Pitch in inches (P)	0.138 "	
Pitch in mm (P)	3.5 mm	
Protection degree	IP20	
Side termination, characteristic	closed side	
Solder eyelet hole diameter (D)	1.1 mm	
Solder eyelet hole diameter tolerance (D)	+ 0,1 mm	
Solder pin dimensions	0.35 x 0.8 mm	
Solder pin dimensions = d tolerance	Lower tolerance with prefix (reveals minimum)	-0.1
	Upper tolerance with prefix (reveals maximum)	0
	Tolerance, unit	mm
Solder pin length (l)	3.5 mm	
Solder pin length tolerance	+0.1 / -0.3 mm	
Solder pin length tolerance	Lower tolerance with prefix (reveals minimum)	-0.3
	Upper tolerance with prefix (reveals maximum)	+0.1
	Tolerance, unit	mm
Soldering process	Reflow soldering, Manual soldering, Wave soldering	

Electrical properties

Volume resistance	1.60 mΩ

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 175	Moisture Level (MSL)	1
UL 94 flammability rating	V-0	Contact material	Copper alloy
Layer structure of solder connection	4...6 µm Sn matt	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	120 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	120 °C		

Packing

Packaging	Tube	VPE length	554 mm
VPE width	21 mm	VPE height	17 mm
Surface resistance	Rs = 10^{9} - 10^{12} Ω		

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Classifications

ETIM 6.0	EC002643	ETIM 7.0	EC002643
ETIM 8.0	EC002643	ETIM 9.0	EC002643
ETIM 10.0	EC002643	ECLASS 9.0	27-44-04-01
ECLASS 9.1	27-44-04-01	ECLASS 10.0	27-44-04-01
ECLASS 11.0	27-46-01-01	ECLASS 12.0	27-46-01-01
ECLASS 13.0	27-46-01-01	ECLASS 14.0	27-46-01-01
ECLASS 15.0	27-46-01-01		

Environmental Product Compliance

RoHS Compliance Status	Compliant without exemption
REACH SVHC	No SVHC above 0.1 wt%

Approvals

ROHS	Conform

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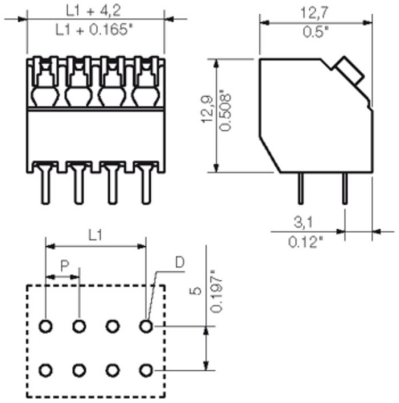
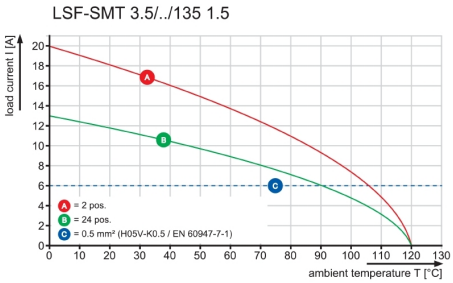
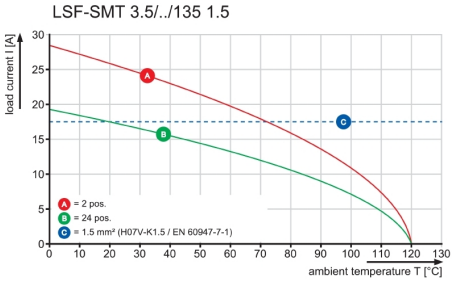
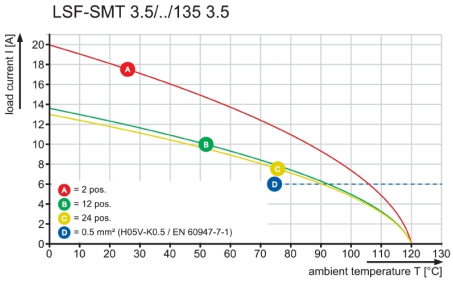
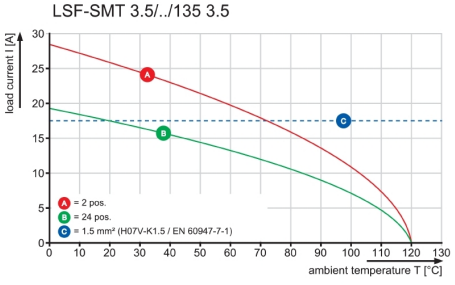
Drawings











Wave Solder Profile

Recommended wave solderding profiles

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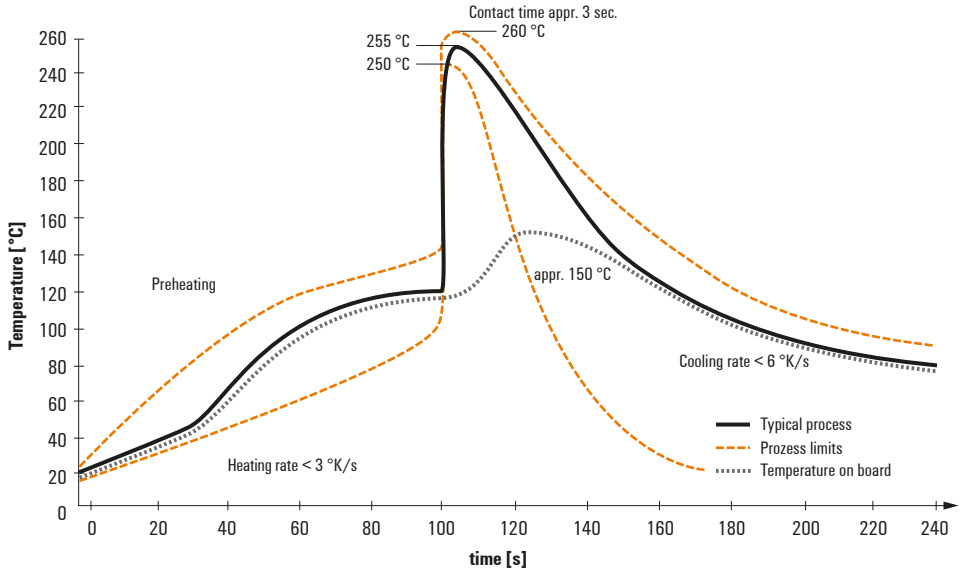
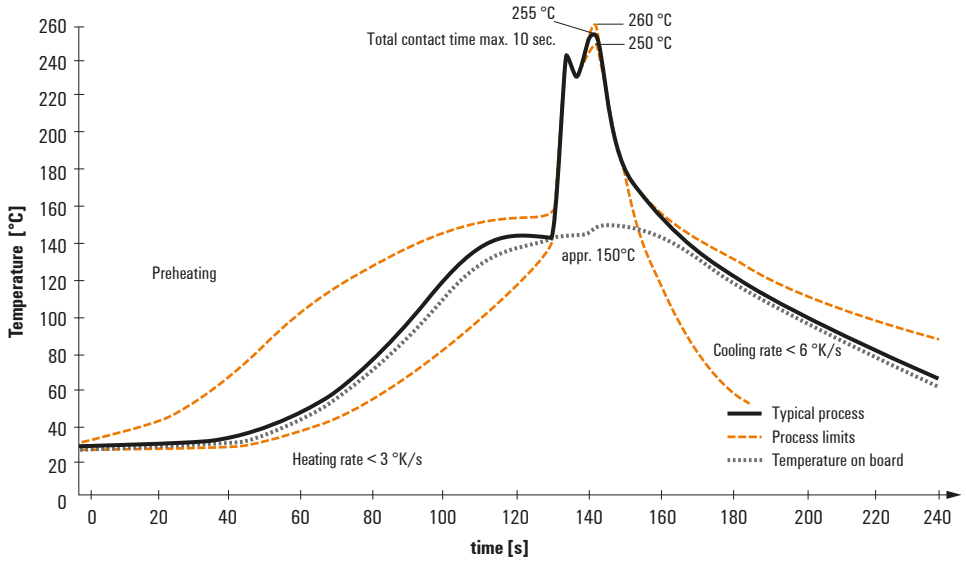
Single Wave:



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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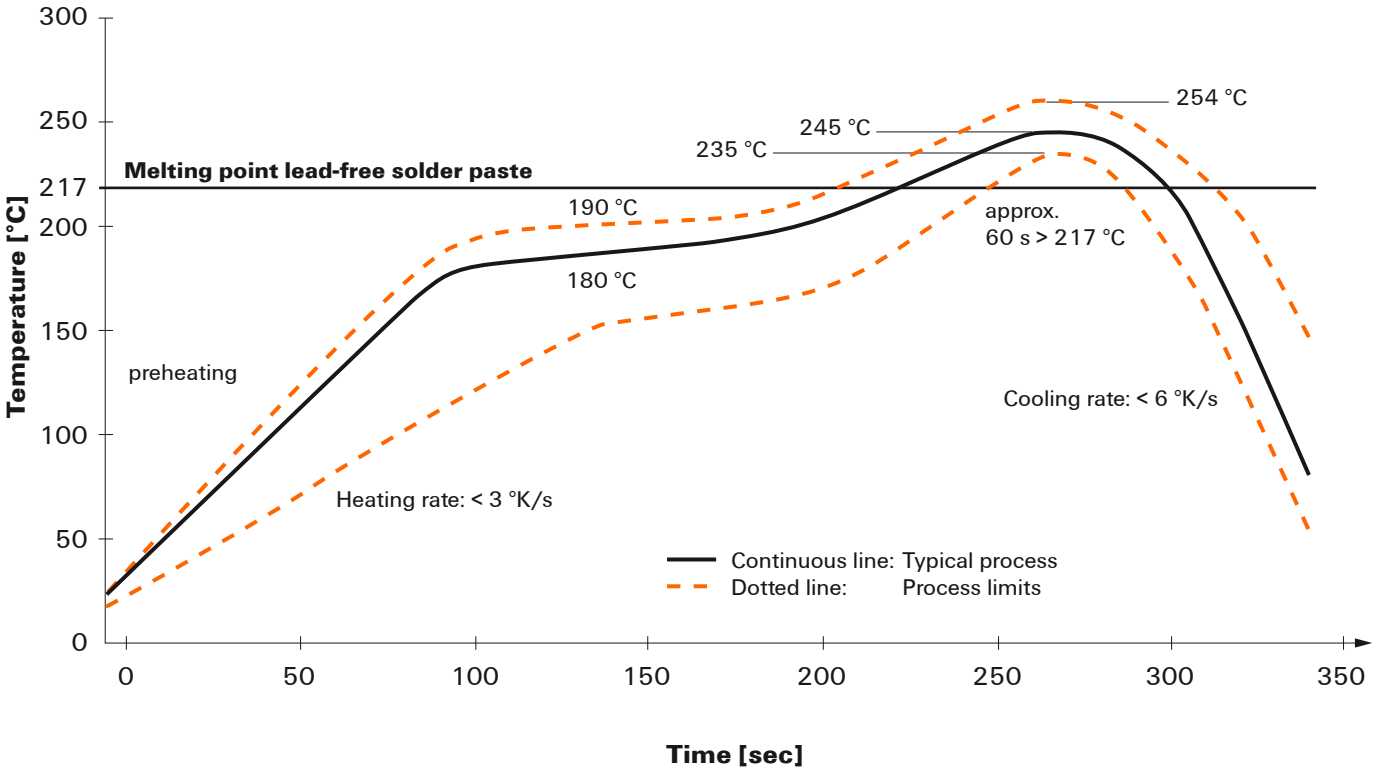

Reflow soldering profile

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.