

**BLF 3.50/04/180 SN BK BX**

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

www.weidmueller.com

**Product image**


Connect efficiently - in a small space: female header with spring connection (PUSH IN) as a plug-in connection level; used together with male headers in 3.50 mm pitch.

**General ordering data**

Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 4, 180°, PUSH IN with actuator, Clamping range, max. : 1.5 mm <sup>2</sup> , Box
Order No.	<a href="#">2459300000</a>
Type	BLF 3.50/04/180 SN BK BX
GTIN (EAN)	4050118474657
Qty.	132 items
Product data	IEC: 320 V / 17.5 A / 0.14 - 1.5 mm <sup>2</sup> UL: 300 V / 10 A / AWG 26 - AWG 16
Packaging	Box

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## Technical data

## Approvals

Approvals



ROHS	Conform
UL File Number Search	<a href="#">UL Website</a>
Certificate No. (cURus)	E60693

## Dimensions and weights

Depth	22.7 mm	Depth (inches)	0.8937 inch
Height	9 mm	Height (inches)	0.3543 inch
Width	14 mm	Width (inches)	0.5512 inch
Net weight	2.8 g		

## Environmental Product Compliance

RoHS Compliance Status	Compliant without exemption		
REACH SVHC	No SVHC above 0.1 wt%		
Product Carbon Footprint	Cradle to gate	0,164 kg CO2 eq.	

## System Parameters

Product family	OMNIMATE Signal - series BL/SL 3.50		
Type of connection	Field connection		
Wire connection method	PUSH IN with actuator		
Pitch in mm (P)	3.50 mm		
Pitch in inches (P)	0.138 "		
Conductor outlet direction	180°		
Number of poles	4		
L1 in mm	10.50 mm		
L1 in inches	0.413 "		
Number of rows	1		
Pin series quantity	1		
Rated cross-section	1.5 mm <sup>2</sup>		
Touch-safe protection acc. to DIN VDE 57 106	Safe from finger touch		
Touch-safe protection acc. to DIN VDE 0470	IP20 plugged/ IP10 unplugged		
Protection degree	IP20, when fully mounted		
Volume resistance	≤5 mΩ		
Can be coded	Yes		
Stripping length	8 mm		
Stripping length tolerance	min.	0 mm	
	max.	1 mm	
Screwdriver blade	0.4 x 2.5		
Screwdriver blade standard	DIN 5264-A		
Plugging cycles	25		
Plugging force/pole, max.	6 N		
Pulling force/pole, max.	6 N		

## Material data

Insulating material	PA GF	Colour	black
Colour of operational elements	orange	Colour chart (similar)	RAL 9011

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Insulating material group	II	Comparative Tracking Index (CTI)	≥ 400, ≤ 600
Moisture Level (MSL)		UL 94 flammability rating	V-0
Contact material	Cu-alloy	Contact surface	tinned
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.	100 °C

### Conductors suitable for connection

Clamping range, min.	0.14 mm <sup>2</sup>
Clamping range, max.	1.5 mm <sup>2</sup>
Wire connection cross section AWG, min.	AWG 26
Wire connection cross section AWG, max.	AWG 16
Solid, min. H05(07) V-U	0.14 mm <sup>2</sup>
Solid, max. H05(07) V-U	1.5 mm <sup>2</sup>
Flexible, min. H05(07) V-K	0.14 mm <sup>2</sup>
Flexible, max. H05(07) V-K	1.5 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.28 mm <sup>2</sup>
w. plastic collar ferrule, DIN 46228 pt 4, max.	1 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, min.	0.25 mm <sup>2</sup>
w. wire end ferrule, DIN 46228 pt 1, max.	1 mm <sup>2</sup>
Plug gauge in accordance with EN 60999 a x b; ø	2.4 mm x 1.5 mm

Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.25 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.25/12 HBL</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	0.34 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.34/12 TK</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	0.5 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.5/14 OR</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	0.75 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H0.75/14T HBL</a>
Cross-section for conductor connection		Type	fine-wired
		nominal	1 mm <sup>2</sup>
wire end ferrule		Stripping length	nominal 10 mm
		Recommended wire-end ferrule	<a href="#">H1.0/14 GE</a>

**Reference text** The outside diameter of the plastic collar should not be larger than the pitch (P). Length of ferrules is to be chosen depending on the product and the rated voltage.

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**Technical data**

**Rated data acc. to IEC**

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	17.5 A
Rated current, max. number of poles (Tu=20°C)	14.7 A	Rated current, min. number of poles (Tu=40°C)	17.1 A
Rated current, max. number of poles (Tu=40°C)	13.1 A	Rated voltage for surge voltage class / pollution degree II/2	320 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	160 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	2.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	2.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV	Short-time withstand current resistance	1 x 1s with 120 A

**Rated data acc. to CSA**

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)	10 A
Rated current (Use group D / CSA)	10 A	Wire cross-section, AWG, min.	AWG 16
Wire cross-section, AWG, max.	AWG 26		

**Rated data acc. to UL 1059**

Institute (cURus)	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)	10 A
Rated current (Use group D / UL 1059)	10 A	Wire cross-section, AWG, min.	AWG 26
Wire cross-section, AWG, max.	AWG 16	Reference to approval values	Specifications are maximum values, details - see approval certificate.

**Packing**

Packaging	Box	VPE length	348.00 mm
VPE width	135.00 mm	VPE height	31.00 mm

**Type tests**

Visual and dimensional test	Standard	IEC 605 12-1-1:2002-02
	Test	dimensional inspection
	Evaluation	passed
	Standard	IEC 605 12-1-2:2002-02
	Test	weight check
	Evaluation	passed
Test: Durability of markings	Standard	IEC 61984:2001-10 section 6.2
	Test	visual examination
	Evaluation	passed
Test: Misengagement (Non-interchangeability)	Standard	IEC 60068-2-70:1995-12 test Xb
	Test	mark of origin, type identification, pitch, type of material, date clock, approval marking UL, approval marking CSA, durability
	Evaluation	available
	Standard	IEC 605 12-13-5:2006-02
Test: Misengagement (Non-interchangeability)	Test	intentional plugging
	Evaluation	passed
	Test	180° turned without coding elements
	Evaluation	passed
	Test	180° turned with coding elements

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	Evaluation	passed
	Test	visual examination
	Evaluation	passed
Test: Clampable cross section	Standard	IEC 60999-1:1999-11 section 9.1, IEC 60947-1:2011-03 section 8.2.4.5.1
	Conductor type	Type of conductor and conductor cross-section solid 0.14 mm <sup>2</sup>
		Type of conductor and conductor cross-section stranded 0.14 mm <sup>2</sup>
		Type of conductor and conductor cross-section solid 1.5 mm <sup>2</sup>
		Type of conductor and conductor cross-section stranded 1.5 mm <sup>2</sup>
		Type of conductor and conductor cross-section AWG 26/1
		Type of conductor and conductor cross-section AWG 26/19
		Type of conductor and conductor cross-section AWG 16/1
		Type of conductor and conductor cross-section AWG 16/19
	Evaluation	passed
Test for damage to and accidental loosening of conductors	Standard	IEC 60999-1:1999-11 section 9.4 bzw. section 8.10
	Requirement	0.3 kg
	Conductor type	Type of conductor and conductor cross-section H05V-U0.5
		Type of conductor and conductor cross-section H05V-K0.5
	Evaluation	passed
	Requirement	0.4 kg
	Conductor type	Type of conductor and conductor cross-section H07V-U1.5
		Type of conductor and conductor cross-section H07V-K1.5
		Type of conductor and conductor cross-section AWG 16/1
		Type of conductor and conductor cross-section AWG 16/19
	Evaluation	passed
	Requirement	0.2 kg
	Conductor type	Type of conductor and conductor cross-section AWG 26/1
		Type of conductor and conductor cross-section AWG 26/19
	Evaluation	passed
Pull-out test	Standard	IEC 60999-1:1999-11 section 9.5

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**Technical data**

Requirement	≥20 N	
Conductor type	Type of conductor and conductor cross-section	H05V-U0.5
	Type of conductor and conductor cross-section	H05V-K0.5
Evaluation	passed	
Requirement	≥40 N	
Conductor type	Type of conductor and conductor cross-section	H07V-U1.5
	Type of conductor and conductor cross-section	H07V-K1.5
	Type of conductor and conductor cross-section	AWG 16/1
	Type of conductor and conductor cross-section	AWG 16/19
Evaluation	passed	
Requirement	≥10 N	
Conductor type	Type of conductor and conductor cross-section	AWG 26/1
	Type of conductor and conductor cross-section	AWG 26/19
Evaluation	passed	

**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**
- Additional variants on request
  - Gold-plated contact surfaces on request
  - Rated current related to rated cross-section & min. No. of poles.
  - Wire end ferrule without plastic collar to DIN 46228/1
  - Wire end ferrule with plastic collar to DIN 46228/4
  - P on drawing = pitch
  - 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.
  - The test point can only be used as potential-pickup point.
  - In accordance with IEC 61984, OMNIMATE-connectors are connectors without breaking capacity (COC). During designated use, connectors are not allowed to be engaged or disengaged when live or under load
  - Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months

**Classifications**

ETIM 8.0	EC002638	ETIM 9.0	EC002638
ETIM 10.0	EC002638	ECLASS 14.0	27-46-02-02
ECLASS 15.0	27-46-02-02		

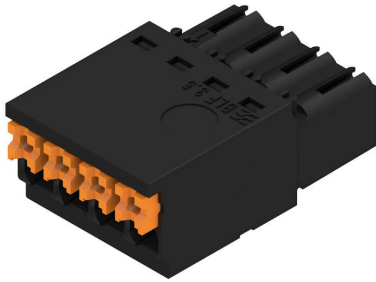
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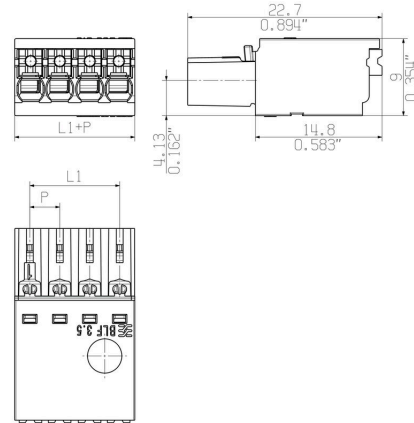
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Drawings

Product image



Dimensional drawing



Derating curve



Derating curve



Product benefits



Solid PUSH IN contactSafe and durable

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## Counterpart

## SL 3.50/180



- Pin headers for wave soldering in 3.50 mm pitch
- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
  - Housing variant: screw flange (F)
  - Packed in a cardboard box (BX)
  - Pin header can be coded

## General ordering data

Type	SL 3.50/04/180 3.2SN OR...	Version
Order No.	<a href="#">1604790000</a>	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190127855	connection, 3.50 mm, Number of poles: 4, 180°, Solder pin length (l):
Qty.	100 ST	3.2 mm, tinned, orange, Box

## SL 3.50/180G



- Pin headers for wave soldering in 3.50 mm pitch
- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
  - Housing variant: screw flange (F)
  - Packed in a cardboard box (BX)
  - Pin header can be coded

## General ordering data

Type	SL 3.50/04/180G 3.2SN O...	Version
Order No.	<a href="#">1604490000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190115852	connection, 3.50 mm, Number of poles: 4, 180°, Solder pin length (l):
Qty.	100 ST	3.2 mm, tinned, orange, Box

## SL 3.50/90



- Pin headers for wave soldering in 3.50 mm pitch
- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
  - Housing variant: screw flange (F)
  - Packed in a cardboard box (BX)
  - Pin header can be coded

## General ordering data

Type	SL 3.50/04/90 3.2SN OR ...	Version
Order No.	<a href="#">1597230000</a>	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190029838	connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
Qty.	100 ST	3.2 mm, tinned, orange, Box

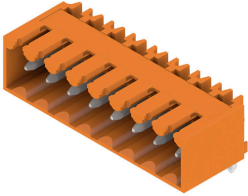
## BLF 3.50/04/180 SN BK BX

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## Counterpart

## SL 3.50/90G



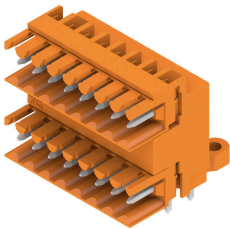
Pin headers for wave soldering in 3.50 mm pitch

- Plugging direction is parallel (90°), straight 180° or angled (135°) to the PCB
- Housing variant: screw flange (F)
- Packed in a cardboard box (BX)
- Pin header can be coded

## General ordering data

Type	SL 3.50/04/90G 3.2SN BK...	Version
Order No.	<a href="#">1719990000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190354275	connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
Qty.	120 ST	3.2 mm, tinned, black, Box
Type	SL 3.50/04/90G 3.2SN OR...	Version
Order No.	<a href="#">1605090000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190054304	connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
Qty.	100 ST	3.2 mm, tinned, orange, Box

## SLD 3.50/90

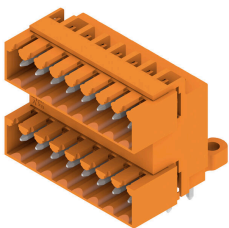


Two-tier pin header for wave soldering in 3.50 mm pitch. The connector is available in open, closed and flange versions. The male connectors provide space for labelling and can be coded. Packed in a cardboard box.

## General ordering data

Type	SLD 3.50/08/90 3.2SN OR...	Version
Order No.	<a href="#">1633370000</a>	PCB plug-in connector, male header, open side, THT solder
GTIN (EAN)	4008190257828	connection, 3.50 mm, Number of poles: 8, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, orange, Box

## SLD 3.50/90G



Two-tier pin header for wave soldering in 3.50 mm pitch. The connector is available in open, closed and flange versions. The male connectors provide space for labelling and can be coded. Packed in a cardboard box.

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## Counterpart

### General ordering data

Type	SLD 3.50/08/90G 3.2SN O...	Version
Order No.	<a href="#">1633600000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190258054	connection, 3.50 mm, Number of poles: 8, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, orange, Box

### SLD 3.50V/180G



Double-level, staggered pin header for wave soldering at 3.50 mm pitch. They are available in closed and flanged versions. The male connectors provide space for labelling and can be coded.

### General ordering data

Type	SLD 3.50V/08/180G 3.2SN...	Version
Order No.	<a href="#">1641120000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190279523	connection, 3.50 mm, Number of poles: 8, 180°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, orange, Box

### SLD 3.50V/90G



Double-level, staggered pin header for wave soldering at 3.50 mm pitch. They are available in closed and flanged versions. The male connectors provide space for labelling and can be coded.

### General ordering data

Type	SLD 3.50V/08/90G 3.2SN ...	Version
Order No.	<a href="#">1642250000</a>	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4008190280772	connection, 3.50 mm, Number of poles: 8, 90°, Solder pin length (l):
Qty.	50 ST	3.2 mm, tinned, orange, Box

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## Counterpart

## SL-SMT 3.5/180G Box

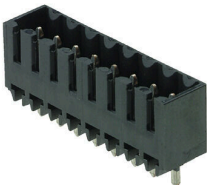


- High-temperature-resistant male header, 3.50 mm pitch.
- Plugging direction parallel (90°), straight 180° or angled (135°) to PCB
  - Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)
  - Optimised for the SMT process
  - Pin length 3.2 mm universal for all soldering methods
  - Pin length 1.5 mm optimised for reflow soldering methods
  - Packed either in a box (BX) or tape-on-reel (RL)
  - Male header can be coded

## General ordering data

Type	SL-SMT 3.50/04/180G 1.5...	Version
Order No.	<a href="#">1753002001</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 180°, Solder pin length (l):
GTIN (EAN)	4032248130894	1.5 mm, tinned, black, Box
Qty.	100 ST	
Type	SL-SMT 3.50/04/180G 3.2...	Version
Order No.	<a href="#">1842340000</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 180°, Solder pin length (l):
GTIN (EAN)	4032248353682	3.2 mm, tinned, black, Box
Qty.	100 ST	

## SL-SMT 3.5/180G Tape



- High-temperature-resistant male header, 3.50 mm pitch.
- Plugging direction parallel (90°), straight 180° or angled (135°) to PCB
  - Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)
  - Optimised for the SMT process
  - Pin length 3.2 mm universal for all soldering methods
  - Pin length 1.5 mm optimised for reflow soldering methods
  - Packed either in a box (BX) or tape-on-reel (RL)
  - Male header can be coded

## General ordering data

Type	SL-SMT 3.50/04/180G 1.5...	Version
Order No.	<a href="#">1753004002</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 180°, Solder pin length (l):
GTIN (EAN)	4032248193219	1.5 mm, tinned, black, Tape
Qty.	265 ST	

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## Counterpart

## SL-SMT 3.5/90G Box



High-temperature-resistant male header, 3.50 mm pitch.

- Plugging direction parallel (90°), straight 180° or angled (135°) to PCB
- Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)
- Optimised for the SMT process
- Pin length 3.2 mm universal for all soldering methods
- Pin length 1.5 mm optimised for reflow soldering methods
- Packed either in a box (BX) or tape-on-reel (RL)
- Male header can be coded

## General ordering data

Type	SL-SMT 3.50/04/90G 1.5S...	Version
Order No.	<a href="#">1761562001</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
GTIN (EAN)	4032248132058	1.5 mm, tinned, black, Box
Qty.	100 ST	
Type	SL-SMT 3.50/04/90G 3.2S...	Version
Order No.	<a href="#">1841650000</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
GTIN (EAN)	4032248352807	3.2 mm, tinned, black, Box
Qty.	100 ST	

## SL-SMT 3.5/90G Tape



High-temperature-resistant male header, 3.50 mm pitch.

- Plugging direction parallel (90°), straight 180° or angled (135°) to PCB
- Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)
- Optimised for the SMT process
- Pin length 3.2 mm universal for all soldering methods
- Pin length 1.5 mm optimised for reflow soldering methods
- Packed either in a box (BX) or tape-on-reel (RL)
- Male header can be coded

## General ordering data

Type	SL-SMT 3.50/04/90G 1.5S...	Version
Order No.	<a href="#">1761564001</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
GTIN (EAN)	4032248135905	1.5 mm, tinned, black, Tape
Qty.	385 ST	
Type	SL-SMT 3.50/04/90G 1.5S...	Version
Order No.	<a href="#">1761564002</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
GTIN (EAN)	4032248193349	1.5 mm, tinned, black, Tape
Qty.	385 ST	
Type	SL-SMT 3.50/04/90G 2.6S...	Version
Order No.	<a href="#">1471410000</a>	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 4, 90°, Solder pin length (l):
GTIN (EAN)	4050118278613	2.6 mm, tinned, black, Tape
Qty.	385 ST	