

B2L 3.50/12/180QV6 SN BK BX

Weidmüller Interface GmbH & Co. KG

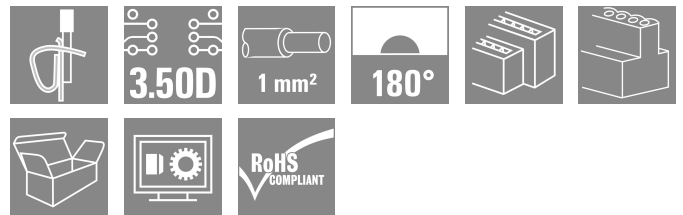
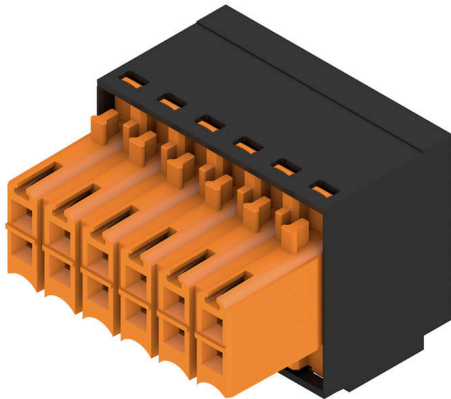
Klingenbergstraße 26

D-32758 Detmold

Germany

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Product image



Female connector with integral cross-connection and clear printing for uninterrupted relaying of potential at full current-carrying capacity with the maximum cable cross-section. The cross-connection is positioned vertically between the poles of rows directly on top of each other. Conductor connection with tension clamp system with straight outlet and 3.5 mm pitch. Flange and release lever available. Packed in cardboard box.

General ordering data

Version	PCB plug-in connector, female plug, 3.50 mm, Number of poles: 12, 180°, Tension-clamp connection, Clamping range, max. : 1 mm², Box
Order No.	1944620000
Type	B2L 3.50/12/180QV6 SN BK BX
GTIN (EAN)	4032248619559
Qty.	84 items
Product data	IEC: 200 V / 10.6 A / 0.2 - 1 mm² UL: 150 V / 7 A / AWG 28 - AWG 18
Packaging	Box

B2L 3.50/12/180QV6 SN BK BX

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Technical data**Approvals**

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate No. (UR)	E60693

Dimensions and weights

Depth	20.6 mm	Depth (inches)	0.811 inch
Height	15.7 mm	Height (inches)	0.6181 inch
Width	21 mm	Width (inches)	0.8268 inch
Net weight	6.46 g		

Environmental Product Compliance

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

System Parameters

Product family	OMNIMATE Signal - series B2L/S2L 3.50 - 2-row	Type of connection	Field connection
Wire connection method	Tension-clamp connection	Pitch in mm (P)	3.50 mm
Pitch in inches (P)	0.138 "	Conductor outlet direction	180°
Number of poles	12	L1 in mm	17.50 mm
L1 in inches	0.689 "	Number of rows	1
Pin series quantity	2	Rated cross-section	1 mm ²
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	Can be coded	Yes
Stripping length	7 mm	Screwdriver blade	0.4 x 2.5
Screwdriver blade standard	DIN 5264	Plugging cycles	25
Plugging force/pole, max.	5 N	Pulling force/pole, max.	4 N

Material data

Insulating material	PBT	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	Illa
Comparative Tracking Index (CTI)	≥ 200	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.	100 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	100 °C		

Conductors suitable for connection

Clamping range, min.	0.08 mm ²
Clamping range, max.	1 mm ²
Wire connection cross section AWG, min.	AWG 28
Wire connection cross section AWG, max.	AWG 18

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Solid, min. H05(07) V-U	0.2 mm ²
Solid, max. H05(07) V-U	1 mm ²
Flexible, min. H05(07) V-K	0.2 mm ²
Flexible, max. H05(07) V-K	1 mm ²
w. plastic collar ferrule, DIN 46228 pt 4, min.	0.14 mm ²
w. plastic collar ferrule, DIN 46228 pt 4, max.	0.34 mm ²
w. wire end ferrule, DIN 46228 pt 1, min.	0.14 mm ²
w. wire end ferrule, DIN 46228 pt 1, max.	0.34 mm ²

Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.14 mm ²
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	H0,14/12 GR SV
Clampable conductor	Cross-section for conductor connection	Type	fine-wired
		nominal	0.25 mm ²
	wire end ferrule	Stripping length	nominal 10 mm
		Recommended wire-end ferrule	H0,25/12 HBL

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.

Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	10.6 A
Rated current, max. number of poles (Tu=20°C)	8.2 A	Rated current, min. number of poles (Tu=40°C)	9.1 A
Rated current, max. number of poles (Tu=40°C)	7 A	Rated voltage for surge voltage class / pollution degree II/2	200 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	80 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	1.5 kV	Short-time withstand current resistance	3 x 1s with 77 A

Rated data acc. to CSA

Institute (CSA)	CSA	Certificate No. (CSA)	200039-1488444
Rated voltage (Use group B / CSA)	300 V	Rated current (Use group B / CSA)	7 A
Wire cross-section, AWG, min.	AWG 28	Wire cross-section, AWG, max.	AWG 18
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

Rated data acc. to UL 1059

Institute (UR)	UR	Certificate No. (UR)	E60693
Rated voltage (Use group B / UL 1059)	150 V	Rated voltage (Use group C / UL 1059)	50 V
Rated current (Use group B / UL 1059)	7 A	Rated current (Use group C / UL 1059)	7 A
Wire cross-section, AWG, min.	AWG 28	Wire cross-section, AWG, max.	AWG 18
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

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Technical data

Packing

Packaging	Box	VPE length	350.00 mm
VPE width	139.00 mm	VPE height	31.00 mm

Type tests

Test: Durability of markings	Standard	DIN EN 61984 section 7.3.2 / 09.02 taking pattern from DIN EN 60068-2-70 / 07.96		
	Test	mark of origin, type identification, rated cross-section, type of material		
	Evaluation	available		
	Test	durability		
Test: Misengagement (Non-interchangeability)	Standard	DIN EN 61984 section 6.3 and 6.9.1 / 09.02, DIN IEC 60512-7 section 5 / 05.94		
	Test	180° turned without coding elements		
	Evaluation	passed		
	Test	visual examination		
Test: Clampable cross section	Standard	DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.02		
	Conductor type	Type of conductor and conductor cross-section	solid 0.2 mm ²	
		Type of conductor and conductor cross-section	stranded 0.2 mm ²	
		Type of conductor and conductor cross-section	solid 1.0 mm ²	
		Type of conductor and conductor cross-section	stranded 1.0 mm ²	
		Type of conductor and conductor cross-section	AWG 28/1	
		Type of conductor and conductor cross-section	AWG 28/19	
		Type of conductor and conductor cross-section	AWG 18/1	
		Type of conductor and conductor cross-section	AWG 18/19	
	Evaluation	passed		
Test for damage to and accidental loosening of conductors	Standard	DIN EN 60999-1 section 9.4 / 12.00		
	Requirement	0.2 kg		
	Conductor type	Type of conductor and conductor cross-section	AWG 28/1	
		Type of conductor and conductor cross-section	AWG 28/19	
	Evaluation	passed		
	Requirement	0.3 kg		
Conductor type	Type of conductor and conductor cross-section	solid 0.5 mm ²		

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		Type of conductor and conductor cross-section	stranded 0.5 mm ²
	Evaluation	passed	
	Requirement	0.4 kg	
	Conductor type	Type of conductor and conductor cross-section	solid 1.0 mm ²
		Type of conductor and conductor cross-section	stranded 1.0 mm ²
		Type of conductor and conductor cross-section	AWG 18/1
		Type of conductor and conductor cross-section	AWG 18/19
	Evaluation	passed	
Pull-out test	Standard	DIN EN 60999-1 section 9.4 / 12.00	
	Requirement	≥5 N	
	Conductor type	Type of conductor and conductor cross-section	AWG 28/1
		Type of conductor and conductor cross-section	AWG 28/19
	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
	Requirement	≥35 N	
	Conductor type	Type of conductor and conductor cross-section	H05V-U1
		Type of conductor and conductor cross-section	H05V-K1
		Type of conductor and conductor cross-section	AWG 18/1
		Type of conductor and conductor cross-section	AWG 18/19
	Requirement	≥30 N	
	Conductor type	Type of conductor and conductor cross-section	AWG 18/1
		Type of conductor and conductor cross-section	AWG 18/19

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 with plastic collar to DIN 46228/4

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Technical data

- Wire end ferrule without plastic collar to DIN 46228/1
- 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.
- Crimp shape A for wire-end ferrules with crimping tools PZ 1,5 (order no. 9005990000) or PZ 6/5 (order no. 9011460000) for larger wire cross-sections recommended.
- 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		

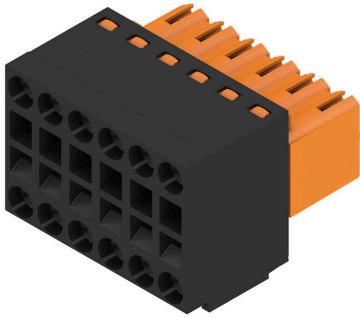
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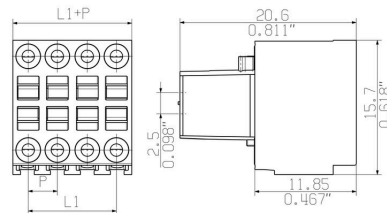
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Drawings

Product image



Dimensional drawing



Graph



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Accessories

Coding elements



Only connects what is supposed to be connected: the right connection at the right place.
 Coding elements and locking devices clearly assign connecting elements during the manufacturing process and operation.
 The coding elements and locking devices are inserted prior to assembly or during the cable assembly phase. The Weidmüller alternative: configure online using the variant configurator to precode prior to delivery. Incorrect assembly on the circuit board and incorrect plugging of connecting elements is no longer possible. The advantage: no troubleshooting during manufacture and no operational errors by the user.

General ordering data

Type	B2L/S2L 3.50 KO BK BX	Version
Order No.	1849740000	PCB plug-in connector, Accessories, Coding element, black, Number of poles: 1
GTIN (EAN)	4032248378203	
Qty.	100 ST	
Type	B2L/S2L 3.50 KO OR BX	Version
Order No.	1849730000	PCB plug-in connector, Accessories, Coding element, orange, Number of poles: 1
GTIN (EAN)	4032248378197	
Qty.	100 ST	

Cover hoods



Effective protection, optimised ergonomics and closed design:
 From the strain relief on the connected conductors and the visual/contact protection and the disconnection aid: the optional retrofit hoods perform mechanical, visual and haptic functions.
 The two half shells clip together securely, enclose the plug completely and offer the following functions:

- Cable ties or integrated cable clips provide strain relief.
- Marked with dekafix labels or adhesive strips
- Mounting side by side without losing poles or displacing the pitch
- Compatible: suitable for plugs with or without a flange or mounting bracket
- Flexible: 1-3 cable outlets leading in different directions available depending on the size

Weidmüller hoods offer added stability, better identification, complete compatibility and versatility. The result: maximum reliability and user-friendliness in any application.

General ordering data

Type	B2L 3.50 AH12 BK BX	Version
Order No.	1781590000	PCB plug-in connector, Accessories, Hood, black, Number of poles: 12
GTIN (EAN)	4032248172641	
Qty.	10 ST	

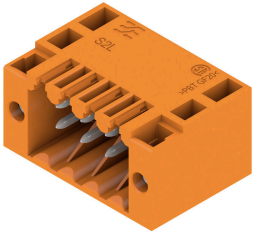
B2L 3.50/12/180QV6 SN BK BX

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Counterpart

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S2L 3.50/90F

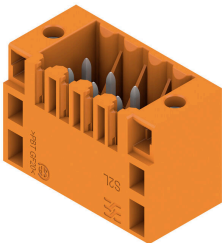


Angled, two-tier pin header available as closed-sided or with flange (open-sided pin headers on request). Pin headers with 3.5mm pins are designed for wave soldering and are packaged in a box. They can be screwed on to the PCB. The pin headers provide space for labelling and can be coded.

General ordering data

Type	S2L 3.50/12/90F 3.5SN O...	Version
Order No.	1728500000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248039982	3.50 mm, Number of poles: 12, 90°, Solder pin length (l): 3.5 mm,
Qty.	66 ST	tinned, orange, Box
Type	S2L 3.50/12/90F 3.5SN B...	Version
Order No.	1728660000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248040124	3.50 mm, Number of poles: 12, 90°, Solder pin length (l): 3.5 mm,
Qty.	66 ST	tinned, black, Box

S2L 3.50/180F



Straight, double-row pin header available in closed-sided or flange version (open-sided pin headers on request). The male headers with a pin length of 3.5mm are designed for wave soldering and are packed in a box. They can be screwed on to the PCB. The male headers provide space for labelling and can be coded.

General ordering data

Type	S2L 3.50/12/180F 3.5SN ...	Version
Order No.	1729460000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248040889	3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 3.5 mm,
Qty.	66 ST	tinned, orange, Box
Type	S2L 3.50/12/180F 3.5SN ...	Version
Order No.	1729620000	PCB plug-in connector, male header, Flange, THT solder connection,
GTIN (EAN)	4032248041022	3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 3.5 mm,
Qty.	66 ST	tinned, black, Box

B2L 3.50/12/180QV6 SN BK BX

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Counterpart

S2L-SMT 3.50/180LF Box



High-temperature-resistant, double-row pin header for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. Solder pin 3.2 mm long, suitable for reflow and wave soldering. The male connectors provide space for labelling and can be coded.

General ordering data

Type	S2L-SMT 3.50/12/180LF 3...	Version
Order No.	1795230000	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length
GTIN (EAN)	4032248232741	(l): 3.5 mm, tinned, black, Box
Qty.	66 ST	

S2L-SMT 3.50/90LF Tape



High-temperature-resistant, straight, 2-tier male connector for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. 3.2 mm solder pin suitable for reflow and wave soldering. These male connectors can be labelled and coded.

General ordering data

Type	S2L-SMT 3.50/12/90LF 3...	Version
Order No.	1807590000	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, Number of poles: 12, 90°, Solder pin length (l):
GTIN (EAN)	4032248278886	3.2 mm, tinned, black, Tape
Qty.	235 ST	

S2L-SMT 3.50/90LF Box



High-temperature-resistant, straight, 2-tier male connector for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. 3.2 mm solder pin suitable for reflow and wave soldering. These male connectors can be labelled and coded.

General ordering data

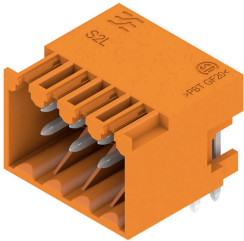
Type	S2L-SMT 3.50/12/90LF 3...	Version
Order No.	1794890000	PCB plug-in connector, male header, Solder flange, THT/THR solder connection, 3.50 mm, Number of poles: 12, 90°, Solder pin length (l):
GTIN (EAN)	4032248232345	3.2 mm, tinned, black, Box
Qty.	66 ST	

B2L 3.50/12/180QV6 SN BK BX

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Counterpart

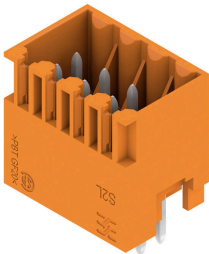
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S2L 3.50/90G

Angled, two-tier pin header available as closed-sided or with flange (open-sided pin headers on request). Pin headers with 3.5 mm pins are designed for wave soldering and are packaged in a box. They can be screwed on to the PCB. The pin headers provide space for labelling and can be coded.

General ordering data

Type	S2L 3.50/12/90G 3.5SN O...	Version
Order No.	1727860000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248039371	connection, 3.50 mm, Number of poles: 12, 90°, Solder pin length (l):
Qty.	78 ST	3.5 mm, tinned, orange, Box
Type	S2L 3.50/12/90G 3.5SN B...	Version
Order No.	1728020000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248039517	connection, 3.50 mm, Number of poles: 12, 90°, Solder pin length (l):
Qty.	78 ST	3.5 mm, tinned, black, Box

S2L 3.50/180G

Straight, double-row pin header available in closed-sided or flange version (open-sided pin headers on request). The male headers with a pin length of 3.5 mm are designed for wave soldering and are packed in a box. They can be screwed on to the PCB. The male headers provide space for labelling and can be coded.

General ordering data

Type	S2L 3.50/12/180G 3.5SN ...	Version
Order No.	1728820000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248040278	connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length
Qty.	78 ST	(l): 3.5 mm, tinned, orange, Box
Type	S2L 3.50/12/180G 3.5SN ...	Version
Order No.	1728980000	PCB plug-in connector, male header, closed side, THT solder
GTIN (EAN)	4032248040414	connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length
Qty.	78 ST	(l): 3.5 mm, tinned, black, Box

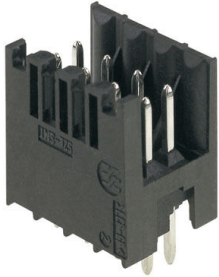
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Counterpart

S2L-SMT 3.50/180 Box



High-temperature-resistant, double-row pin header for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. Solder pin 3.2 mm long, suitable for reflow and wave soldering. The male connectors provide space for labelling and can be coded.

General ordering data

Type	S2L-SMT 3.50/12/180 3.5...	Version
Order No.	1794720000	PCB plug-in connector, male header, open side, THT/THR solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 3.5 mm, tinned, black, Box
GTIN (EAN)	4032248231904	
Qty.	84 ST	

S2L-SMT 3.50/180G Tape



High-temperature-resistant, double-row pin header for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. Solder pin 3.2 mm long, suitable for reflow and wave soldering. The male connectors provide space for labelling and can be coded.

General ordering data

Type	S2L-SMT 3.50/12/180G 3....	Version
Order No.	1807810000	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 3.5 mm, tinned, black, Tape
GTIN (EAN)	4032248279517	
Qty.	175 ST	

S2L-SMT 3.50/180G Box



High-temperature-resistant, double-row pin header for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. Solder pin 3.2 mm long, suitable for reflow and wave soldering. The male connectors provide space for labelling and can be coded.

General ordering data

Type	S2L-SMT 3.50/12/180G 3....	Version
Order No.	1794560000	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 3.5 mm, tinned, black, Box
GTIN (EAN)	4032248231744	
Qty.	78 ST	

B2L 3.50/12/180QV6 SN BK BX

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Counterpart

S2L-SMT 3.50/90G Tape



High-temperature-resistant, straight, 2-tier male connector for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. 3.2 mm solder pin suitable for reflow and wave soldering. These male connectors can be labelled and coded.

General ordering data

Type	S2L-SMT 3.50/12/90G 3.2...	Version
Order No.	1807500000	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 12, 90°, Solder pin length (l):
GTIN (EAN)	4032248278794	3.2 mm, tinned, black, Tape
Qty.	235 ST	

S2L-SMT 3.50/90G Box



High-temperature-resistant, straight, 2-tier male connector for all common soldering methods. Optimised for automatic assembly. Packed in box or tape. 3.2 mm solder pin suitable for reflow and wave soldering. These male connectors can be labelled and coded.

General ordering data

Type	S2L-SMT 3.50/12/90G 3.2...	Version
Order No.	1794240000	PCB plug-in connector, male header, closed side, THT/THR solder connection, 3.50 mm, Number of poles: 12, 90°, Solder pin length (l):
GTIN (EAN)	4032248231294	3.2 mm, tinned, black, Box
Qty.	78 ST	