1087676

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PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: black, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Pin, number of rows: 1, number of positions: 3, product range: CCVA 2,5/..-G, pitch: 5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2.6 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 32 mm wide tape

### Your advantages

- · Designed for integration into the SMT soldering process
- · Maximum flexibility when it comes to device design one header for connectors with different connection technologies
- Closed contour for optimum stability of the plug-in connection

### Commercial data

Item number	1087676
Packing unit	1 pc
Minimum order quantity	140 pc
Note	Made to order (non-returnable)
Sales key	AA03
Product key	AACTAC
GTIN	4055626885612
Weight per piece (including packing)	4.58 g
Weight per piece (excluding packing)	4.58 g
Customs tariff number	85366930
Country of origin	DE

1087676

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### Technical data

### **Product properties**

Product line	COMBICON Connectors M
Product type	PCB headers
Product family	CCVA 2,5/G
Number of positions	3
Pitch	5 mm
Number of rows	1
Mounting flange	without
Pin layout	Linear pinning
Solder pins per potential	1

### **Electrical properties**

Nominal current I <sub>N</sub>	12 A
Nominal voltage U <sub>N</sub>	320 V
Degree of pollution	3
Contact resistance	1.2 mΩ
Rated voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Rated voltage (II/2)	400 V
Rated surge voltage (II/2)	4 kV

### Mounting

Mounting type	THR soldering
Pin layout	Linear pinning
Processing notes	

č	
Process	Reflow/wave soldering
Moisture Sensitive Level	MSL 1
Classification temperature $T_c$	260 °C
Solder cycles in the reflow	3

### Material specifications

#### Material data - contact

Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface characteristics	Tin-plated
Metal surface contact area (top layer)	Tin (3 - 5 μm Sn)
Metal surface contact area (middle layer)	Nickel (1.3 - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 μm Sn)

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Metal surface soldering area (middle layer)	Nickel (1.3 - 3 µm Ni)
Material data - housing	
Color (Housing)	black (9005)
Insulating material	LCP
Insulating material group	Illa
CTI according to IEC 60112	175
Flammability rating according to UL 94	VO

### Notes

Details for soldering processes	Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J- STD-020-C
Notes on operation	In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

### Dimensions

Dimensional of	drawing
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Pitch	5 mm
Width [w]	17.8 mm
Height [h]	14.6 mm
Length [I]	8.57 mm
Installed height	12 mm
Solder pin length [P]	2.6 mm
Pin dimensions	1 x 1 mm

### Mechanical tests

Visual inspection	
Specification	IEC 60512-1-1:2002-02
Result	Test passed
Dimension check	
Specification	IEC 60512-1-2:2002-02
Result	Test passed
Resistance of inscriptions	
Specification	IEC 60068-2-70:1995-12
Result	Test passed
Polarization and coding	



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Specification	IEC 60512-13-5:2006-02
Result	Test passed
Contact holder in incart	
Contact holder in insert	
Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed
Insertion and withdrawal forces	
Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N
ectrical tests	
Thermal test   Test group C	
Specification	IEC 60512-5-1:2002-02
Tested number of positions	24
Insulation resistance	
Specification	IEC 60512-3-1:2002-02
Insulation resistance, neighboring positions	> 5 MΩ
Air clearances and creepage distances	
Specification	IEC 60664-1:2007-04
Specification Insulating material group	IEC 60664-1:2007-04
Insulating material group	Illa
Insulating material group Comparative tracking index (IEC 60112)	Illa CTI 175
Insulating material group Comparative tracking index (IEC 60112) Rated insulation voltage (III/3)	Illa           CTI 175           250 V
Insulating material group Comparative tracking index (IEC 60112) Rated insulation voltage (III/3) Rated surge voltage (III/3)	Illa           CTI 175           250 V           4 kV
Insulating material group         Comparative tracking index (IEC 60112)         Rated insulation voltage (III/3)         Rated surge voltage (III/3)         minimum clearance value - non-homogenous field (III/3)	IIIa         CTI 175         250 V         4 kV         3 mm
Insulating material group Comparative tracking index (IEC 60112) Rated insulation voltage (III/3) Rated surge voltage (III/3) minimum clearance value - non-homogenous field (III/3) minimum creepage distance (III/3)	IIIa         CTI 175         250 V         4 kV         3 mm         4 mm
Insulating material group         Comparative tracking index (IEC 60112)         Rated insulation voltage (III/3)         Rated surge voltage (III/3)         minimum clearance value - non-homogenous field (III/3)         minimum creepage distance (III/3)         Rated insulation voltage (III/2)	IIIa         CTI 175         250 V         4 kV         3 mm         4 mm         320 V
Insulating material group         Comparative tracking index (IEC 60112)         Rated insulation voltage (III/3)         Rated surge voltage (III/3)         minimum clearance value - non-homogenous field (III/3)         minimum creepage distance (III/3)         Rated insulation voltage (III/2)         Rated surge voltage (III/2)	IIIa         CTI 175         250 V         4 kV         3 mm         4 mm         320 V         4 kV
Insulating material group         Comparative tracking index (IEC 60112)         Rated insulation voltage (III/3)         Rated surge voltage (III/3)         minimum clearance value - non-homogenous field (III/3)         minimum creepage distance (III/3)         Rated insulation voltage (III/2)         Rated surge voltage (III/2)         minimum clearance value - non-homogenous field (III/2)	IIIa         CTI 175         250 V         4 kV         3 mm         4 mm         320 V         4 kV         31 mm         320 V         320 N         3 mm
Insulating material group         Comparative tracking index (IEC 60112)         Rated insulation voltage (III/3)         Rated surge voltage (III/3)         minimum clearance value - non-homogenous field (III/3)         minimum creepage distance (III/3)         Rated insulation voltage (III/2)         Rated surge voltage (III/2)         minimum clearance value - non-homogenous field (III/2)         minimum clearance value (III/2)         minimum clearance value - non-homogenous field (III/2)         minimum creepage distance (III/2)	IIIa         CTI 175         250 V         4 kV         3 mm         4 mm         320 V         4 kV         3.2 mm
Insulating material group         Comparative tracking index (IEC 60112)         Rated insulation voltage (III/3)         Rated surge voltage (III/3)         minimum clearance value - non-homogenous field (III/3)         minimum creepage distance (III/3)         Rated insulation voltage (III/2)         Rated surge voltage (III/2)         minimum clearance value - non-homogenous field (III/2)         minimum clearance value - non-homogenous field (III/2)         minimum clearance value - non-homogenous field (III/2)         minimum creepage distance (III/2)         Rated insulation voltage (III/2)	IIIa         CTI 175         250 V         4 kV         3 mm         4 mm         320 V         4 kV         320 V         3 mm         4 kV         320 V         4 kV         3 mm         4 kV         3 mm         400 V

### Environmental and real-life conditions

Vibration test	
Specification	IEC 60068-2-6:2007-12
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min

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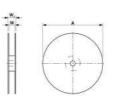
1087676

https://www.phoenixcontact.com/us/products/1087676

Amplitude	0.35 mm (10 Hz 60.1 Hz)
Sweep speed	5g (60.1 Hz 150 Hz)
Test duration per axis	2.5 h
urability test	
Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	4.8 kV
Contact resistance R <sub>1</sub>	1.2 mΩ
Contact resistance R <sub>2</sub>	1.2 mΩ
Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 MΩ
limatic test	
Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	2.21 kV
mbient conditions	
Ambient temperature (operation)	-40 °C 100 °C (dependent on the derating curve)
Ambient temperature (operation) Ambient temperature (storage/transport)	-40 °C 100 °C (dependent on the derating curve) -40 °C 70 °C

### Packaging specifications

Dimensional drawing



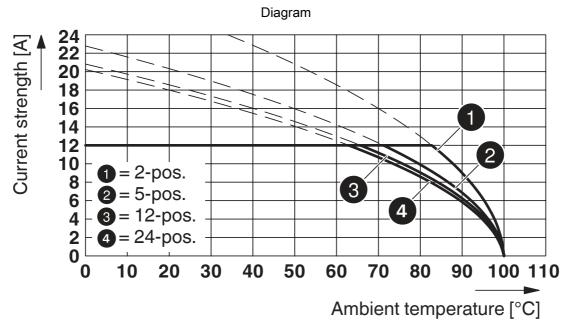
Type of packaging	32 mm wide tape
[W] tape width	32 mm
[W2] coil overall dimension	38.4 mm
[A] coil diameter	330 mm
Outer packaging type	Transparent-Bag
ESD level	(D) electrostatically conductive
Specification	DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07



1087676

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### Drawings



Type: MSTB 2,5/...-ST with CCVA 2,5/...-G P20 THR



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### Approvals

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EAC	EAC Approval ID: B.01687

CULus Recognized Approval ID: E60425-19931011				
	Nominal voltage U <sub>N</sub>	Nominal current I <sub>N</sub>	Cross section AWG	Cross section mm <sup>2</sup>
Use group B				
Standard	300 V	16 A	-	-
Use group D				
Standard	300 V	10 A	-	-
Alternative 1	150 V	15 A	-	-

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### Classifications

### ECLASS

ECLASS-12.0 2746	60201
ECLASS-13.0 2746	60201

### ETIM

	ETIM 8.0	EC002637
UNSPSC		
	UNSPSC 21.0	39121400

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### Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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Accessories

**CR-MSTB NAT HT - Coding section** 

1954362

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HT coding section, prior to the reflow soldering process it is inserted into the recess on the header, made from high-temperature-resistant beige insulation material



### TVFKC 1,5/ 3-ST - PCB connector

1713842 https://www.phoenixcontact.com/us/products/1713842



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 6, product range: TVFKC 1,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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TVFKCL 1,5/ 3-ST - PCB connector

1715934

https://www.phoenixcontact.com/us/products/1715934



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 6, product range: TVFKCL 1,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

### QC 1,5/ 3-ST - PCB connector

1717974 https://www.phoenixcontact.com/us/products/1717974



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 630 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: QC 1,5/..-ST, pitch: 5 mm, connection method: Displacement connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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#### FKCN 2,5/ 3-ST - PCB connector

1732755

https://www.phoenixcontact.com/us/products/1732755



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FKCN 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

### MSTB 2,5/ 3-ST - PCB connector

1754465 https://www.phoenixcontact.com/us/products/1754465



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MSTB 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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#### MSTBP 2,5/ 3-ST - PCB connector

1765784

https://www.phoenixcontact.com/us/products/1765784



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MSTBP 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

#### SMSTB 2,5/ 3-ST - PCB connector

1768778 https://www.phoenixcontact.com/us/products/1768778



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: SMSTB 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -45 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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#### FRONT-MSTB 2,5/ 3-ST - PCB connector

1779424

https://www.phoenixcontact.com/us/products/1779424



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FRONT-MSTB 2,5/..-ST, pitch: 5 mm, connection method: Front screw connection, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

### MSTBT 2,5/ 3-ST - PCB connector

1779848 https://www.phoenixcontact.com/us/products/1779848



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MSTBT 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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#### MVSTBR 2,5/ 3-ST - PCB connector

1792029

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PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MVSTBR 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

### MVSTBW 2,5/ 3-ST - PCB connector

1792537 https://www.phoenixcontact.com/us/products/1792537



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MVSTBW 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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#### FKCT 2,5/ 3-ST - PCB connector

1909223

https://www.phoenixcontact.com/us/products/1909223



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FKCT 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

### FKCVR 2,5/ 3-ST - PCB connector

1909728 https://www.phoenixcontact.com/us/products/1909728



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FKCVR 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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#### FKCVW 2,5/ 3-ST - PCB connector

1910047

https://www.phoenixcontact.com/us/products/1910047



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FKCVW 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: -90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

#### FKC 2,5/ 3-ST - PCB connector

1910364 https://www.phoenixcontact.com/us/products/1910364



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FKC 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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#### QC 1/ 3-ST-BUS - PCB connector

1921683

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PCB connector, nominal cross section: 1 mm<sup>2</sup>, color: green, nominal current: 10 A, rated voltage (III/2): 630 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: QC 1/..-ST-BUS, pitch: 5 mm, connection method: Displacement connection, conductor/PCB connection direction: 90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard, The plug allows conductors to be looped through from module to module, without interruption

#### FKCS 2,5/ 3-ST - PCB connector

1974740 https://www.phoenixcontact.com/us/products/1974740



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FKCS 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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