# MSTBA 2,5/ 5-G - PCB header

1757501

https://www.phoenixcontact.com/us/products/1757501

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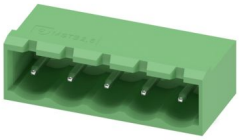


PCB headers, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Pin, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: MSTBA 2,5/..-G, pitch: 5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.23 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: packed in cardboard

## Your advantages

- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- Well-known mounting principle allows worldwide use
- Plug-in direction parallel to the PCB
- Closed contour for optimum stability of the plug-in connection
- Easy PCB replacement thanks to plug-in modules

## Commercial data

| | |
|---|---|
| Item number | 1757501 |
| Packing unit | 250 pc |
| Minimum order quantity | 250 pc |
| Sales key | AA03 |
| Product key | AACSGG |
| Catalog page | Page 313 (C-1-2013) |
| GTIN | 4017918030032 |
| Weight per piece (including packing) | 1.946 g |
| Weight per piece (excluding packing) | 1.744 g |
| Customs tariff number | 85366930 |
| Country of origin | DE |

# Technical data

## Product properties

| | |
|---|---|
| Product type | PCB headers |
| Product family | MSTBA 2,5/..-G |
| Product line | COMBICON Connectors M |
| Type | Standard |
| Number of positions | 5 |
| Pitch | 5 mm |
| Number of connections | 5 |
| Number of rows | 1 |
| Number of potentials | 5 |
| Mounting flange | without |
| Pin layout | Linear pinning |
| Solder pins per potential | 1 |

## Electrical properties

| | |
|---|---|
| Nominal current $I_N$ | 12 A |
| Nominal voltage $U_N$ | 320 V |
| Degree of pollution | 3 |
| Contact resistance | 1.4 mΩ |
| Rated voltage (III/3) | 320 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) | 630 V |
| Rated surge voltage (II/2) | 4 kV |

## Mounting

| | |
|---|---|
| Mounting type | Wave soldering |
| Pin layout | Linear pinning |

## Material specifications

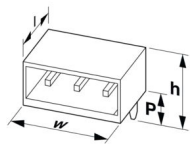
### Material data - contact

| | |
|---|---|
| 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) |
| Metal surface soldering area (middle layer) | Nickel (1.3 - 3 µm Ni) |

### Material data - housing

| | |
|---|---|
| Color (Housing) | green (6021) |
| Insulating material | PA |
| Insulating material group | I |
| CTI according to IEC 60112 | 600 |
| Flammability rating according to UL 94 | V0 |
| Glow wire flammability index GWFI according to EN 60695-2-12 | 850 |
| Glow wire ignition temperature GWIT according to EN 60695-2-13 | 775 |
| Temperature for the ball pressure test according to EN 60695-10-2 | 125 °C |

## Dimensions

| | |
|---|---|
| Dimensional drawing |   |
| Pitch | 5 mm |
| Width [w] | 27 mm |
| Height [h] | 11.8 mm |
| Length [l] | 12 mm |
| Installed height | 8.57 mm |
| Solder pin length [P] | 3.23 mm |
| Pin dimensions | 1 x 1 mm |

PCB design

| | |
|---|---|
| Hole diameter | 1.4 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

| | |
|---|---|
| Specification | IEC 60512-13-5:2006-02 |
| Result | Test passed |

Contact holder in insert

| | |
|---|---|
| Specification | IEC 60512-15-1:2008-05 |
| Contact holder in insert<br>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 |

## Electrical 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 |
| Insulating material group | I |
| Comparative tracking index (IEC 60112) | CTI 600 |
| Rated insulation voltage (III/3) | 320 V |
| Rated surge voltage (III/3) | 4 kV |
| minimum clearance value - non-homogenous field (III/3) | 3 mm |
| minimum creepage distance (III/3) | 4 mm |
| Rated insulation voltage (III/2) | 320 V |
| Rated surge voltage (III/2) | 4 kV |
| minimum clearance value - non-homogenous field (III/2) | 3 mm |
| minimum creepage distance (III/2) | 3 mm |
| Rated insulation voltage (II/2) | 630 V |
| Rated surge voltage (II/2) | 4 kV |
| minimum clearance value - non-homogenous field (II/2) | 3 mm |
| minimum creepage distance (II/2) | 3.2 mm |

## Environmental and real-life conditions

Vibration test

| | |
|---|---|
| Specification | IEC 60068-2-6:2007-12 |
| Frequency | 10 - 150 - 10 Hz |
| Sweep speed | 1 octave/min |
| Amplitude | 0.35 mm (10 Hz ... 60.1 Hz) |
| Acceleration | 5g (60.1 Hz ... 150 Hz) |
| Test duration per axis | 2.5 h |

Durability test

| | |
|---|---|
| Specification | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level | 4.8 kV |
| Contact resistance $R_1$ | 1.4 mΩ |
| Contact resistance $R_2$ | 1.5 mΩ |
| Insertion/withdrawal cycles | 25 |
| Insulation resistance, neighboring positions | > 5 MΩ |

Climatic test

| | |
|---|---|
| Specification | ISO 6988:1985-02 |
| Corrosive stress | 0.2 $dm^3$ $SO_2$ on 300 $dm^3$/40 °C/1 cycle |
| Thermal stress | 100 °C/168 h |
| Power-frequency withstand voltage | 2.21 kV |

Ambient conditions

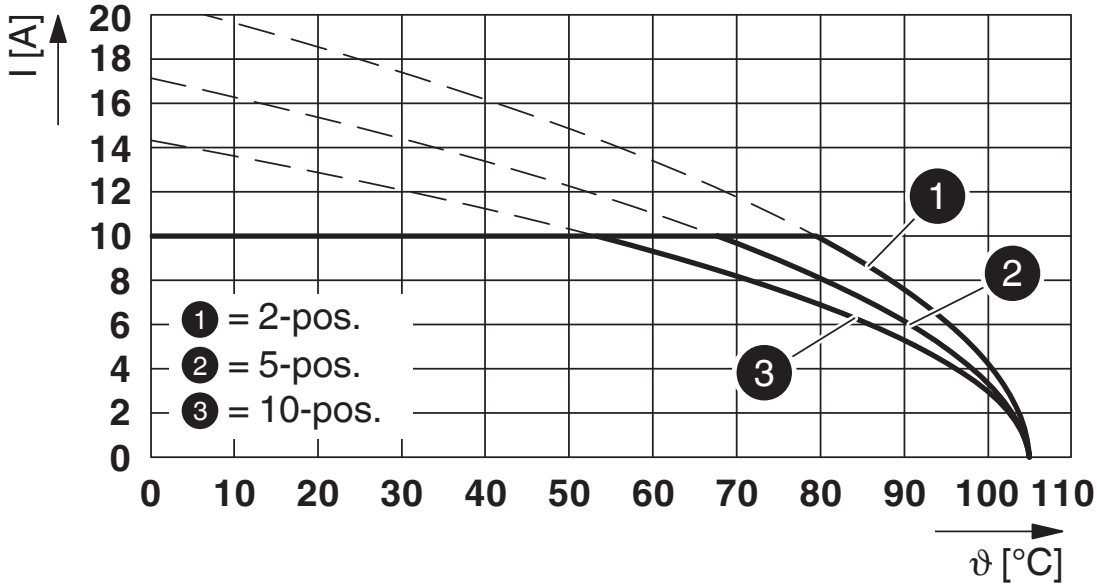
| | |
|---|---|
| Ambient temperature (operation) | -40 °C ... 100 °C (dependent on the derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |

## Packaging specifications

| | |
|---|---|
| Type of packaging | packed in cardboard |
| Outer packaging type | Carton |

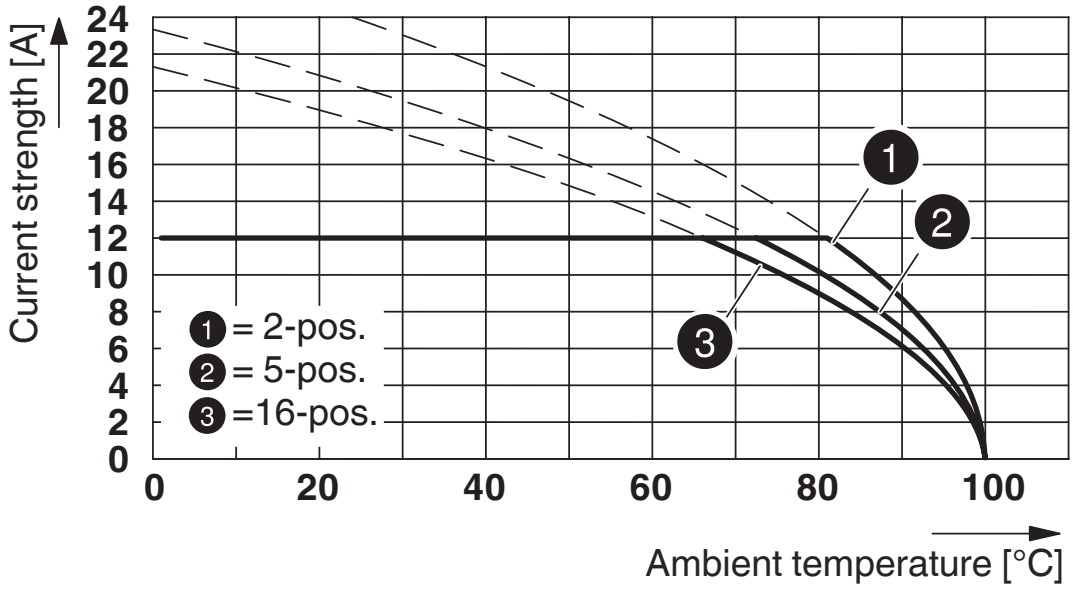
## Drawings

Diagram



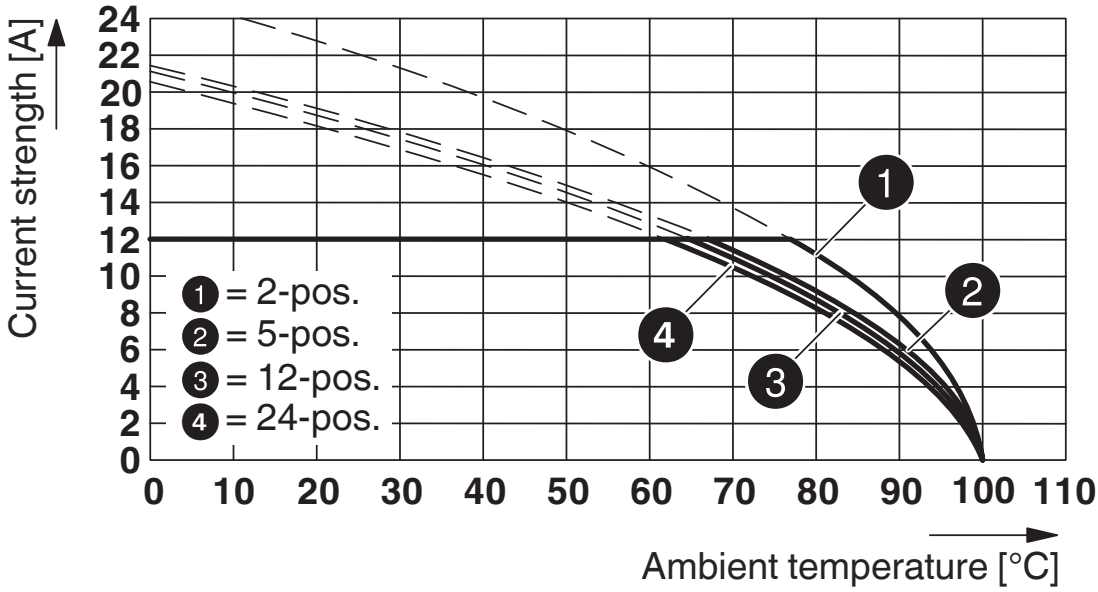

Type: TVFKC 1,5/...-ST with MSTBA 2,5/...-G

Diagram



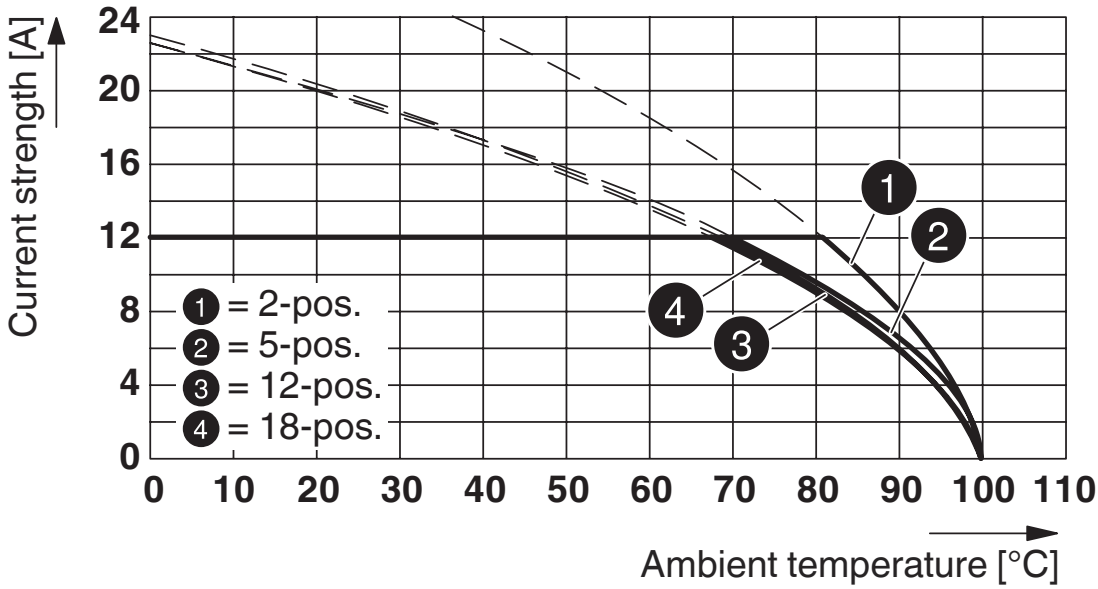

Type: FKCVR 2,5/...-ST with MSTBA 2,5/...-G

Diagram



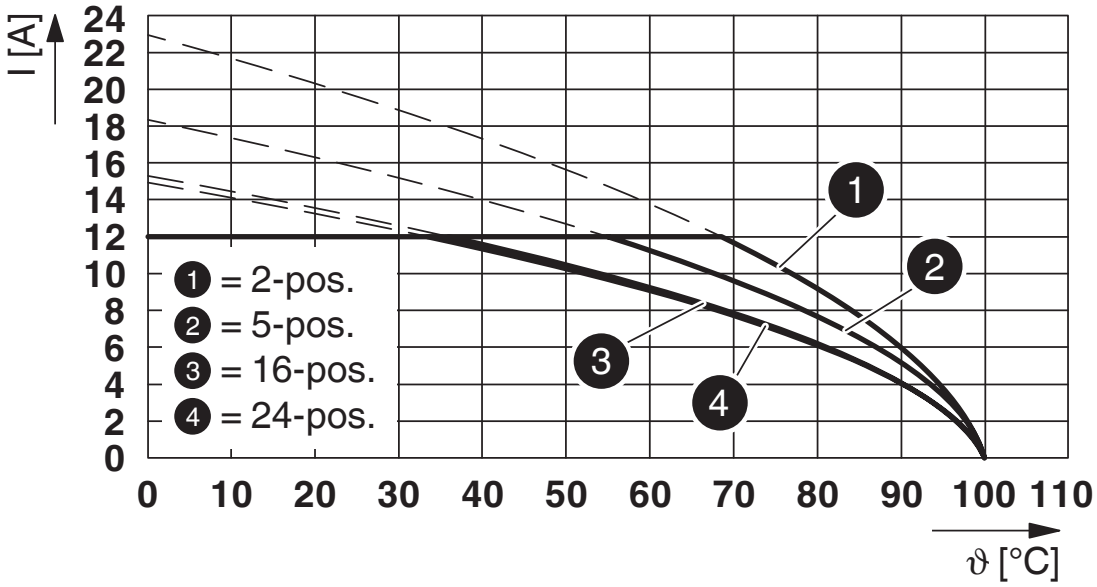

Type: MSTB 2,5/...-ST with MSTBA 2,5/...-G

Diagram



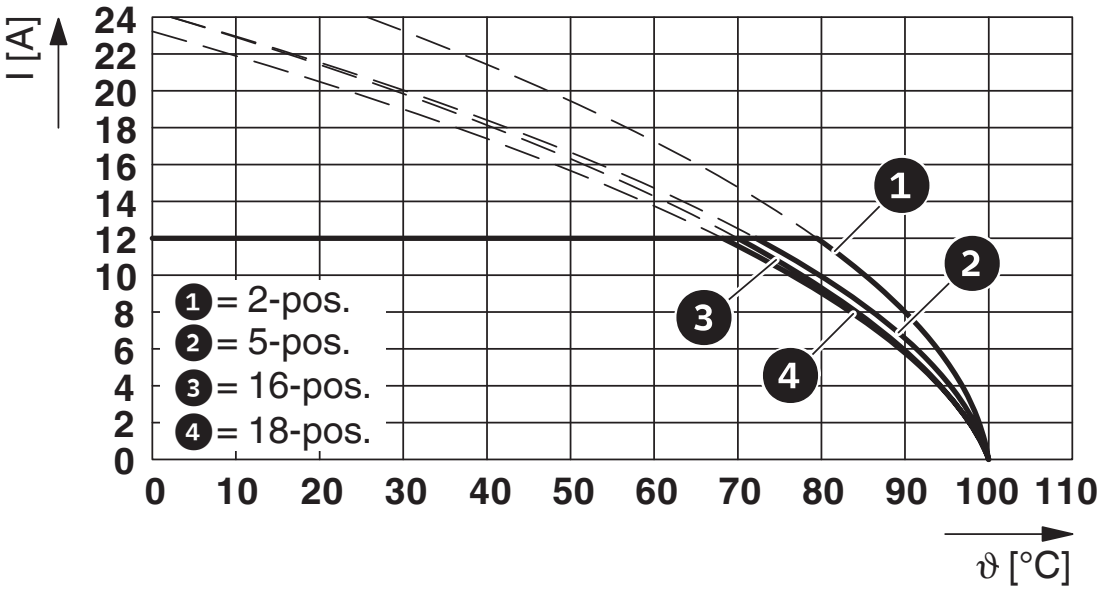

Type: MSTBT 2,5/...-ST with MSTBA 2,5/...-G

Diagram



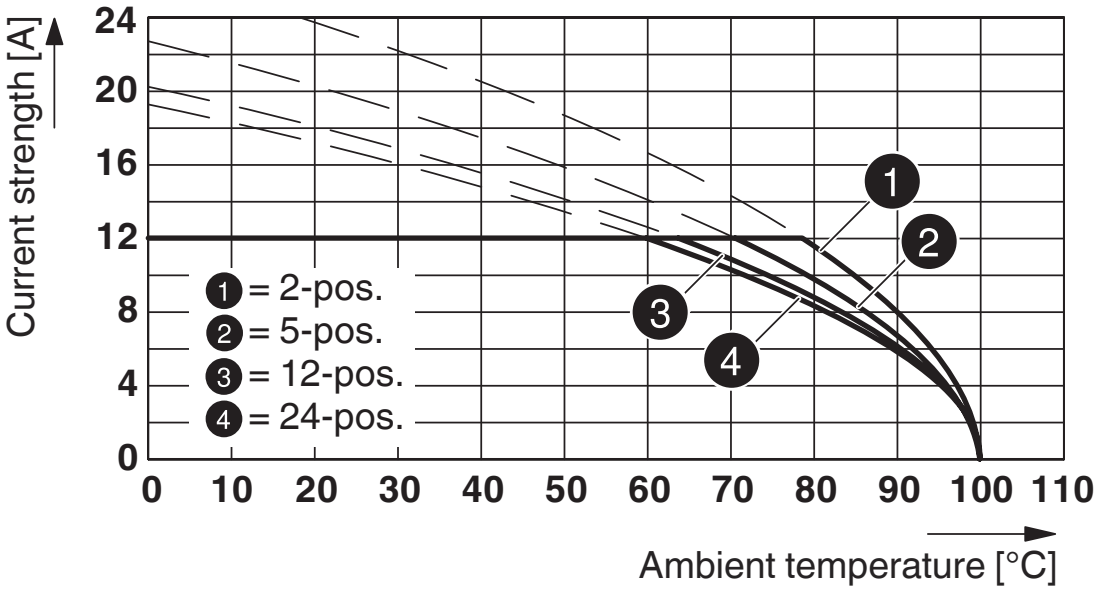

Type: MVSTBR 2,5/...-ST with MSTBA 2,5/...-G

Diagram



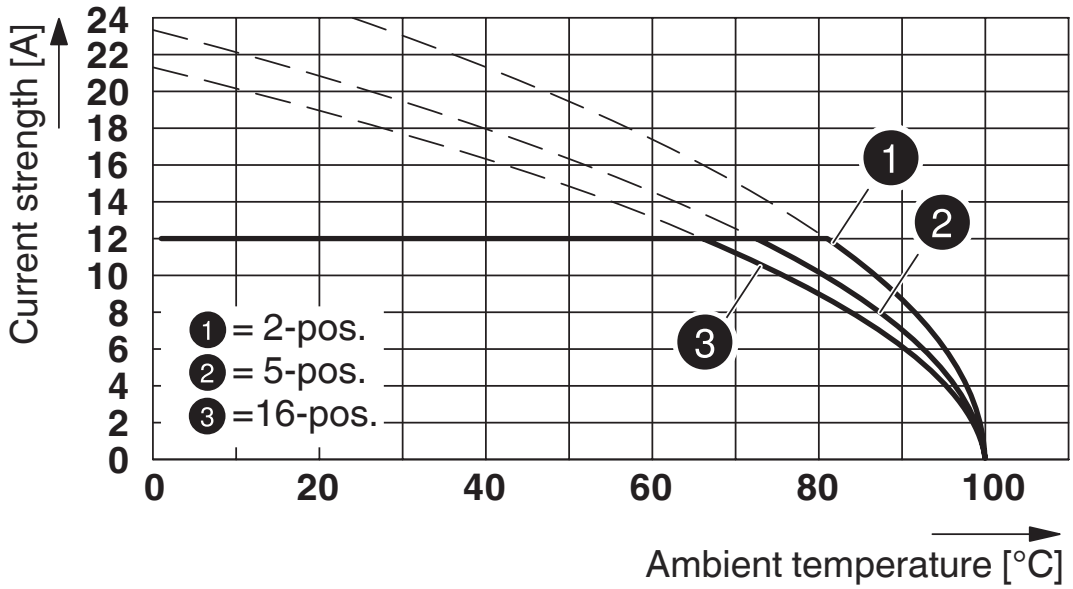

Type: FKCN 2,5/...-ST with MSTBA 2,5/...-G

Diagram




Type: MSTBP 2,5/...-ST with MSTBA 2,5/...-G

Diagram




Type: FKCVW 2,5/...-ST with MSTBA 2,5/...-G

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/1757501

**CSA**
Approval ID: 13631

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| Use group B | | | | |
| | 300 V | 10 A | - | - |
| Use group D | | | | |
| | 300 V | 10 A | - | - |

**cULus Recognized**
Approval ID: E60425-19931011

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| Use group B | | | | |
| | 300 V | 15 A | - | - |
| Use group D | | | | |
| | 300 V | 10 A | - | - |

**VDE Zeichengenehmigung**
Approval ID: 40050648

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| | 250 V | 12 A | - | - |

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-11.0 | 27460201 |
| ECLASS-12.0 | 27460201 |
| ECLASS-13.0 | 27460201 |

### ETIM

| | |
|---|---|
| ETIM 9.0 | EC002637 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 39121400 |

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |

China RoHS

| | |
|---|---|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|---|---|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |

## Accessories

### MSTB-BL - Accessories

1755477

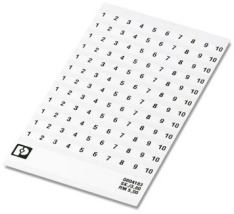
https://www.phoenixcontact.com/us/products/1755477

Keying cap, for forming sections, plugs onto header pin, green insulating material

### SK 5/3,8:FORTL.ZAHLEN - Marker card

0804183

https://www.phoenixcontact.com/us/products/0804183



Marker card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: 5 x 3.8 mm

## CR-MSTB - Coding section

1734401

https://www.phoenixcontact.com/us/products/1734401

Coding section, inserted into the recess in the header or the inverted plug, red insulating material

## SK 5/3,8:UNBEDRUCKT - Marker card

0805409

https://www.phoenixcontact.com/us/products/0805409

Marker card, Sheet, white, unlabeled, can be labeled with: Marker pen: without print, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: 5 x 3.8 mm, Number of individual labels: 120

# MSTBA 2,5/ 5-G - PCB header

1757501

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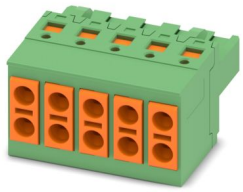
## TVFKC 1,5/ 5-ST - PCB connector

1713868

https://www.phoenixcontact.com/us/products/1713868

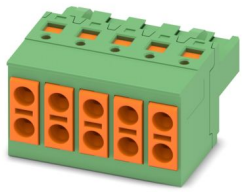


PCB connector, nominal cross section: 1.5 $mm^2$, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 10, product range: TVFKC 1,5/..-ST, pitch: 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

## TVFKCL 1,5/ 5-ST - PCB connector

1715950

https://www.phoenixcontact.com/us/products/1715950



PCB connector, nominal cross section: 1.5 $mm^2$, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 10, 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

# MSTBA 2,5/ 5-G - PCB header

1757501

https://www.phoenixcontact.com/us/products/1757501

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

1717990

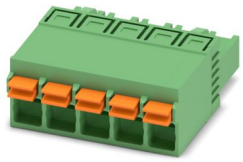
https://www.phoenixcontact.com/us/products/1717990

PCB connector, nominal cross section: 1.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 630 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

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

1732771

https://www.phoenixcontact.com/us/products/1732771



PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

# MSTBA 2,5/ 5-G - PCB header

1757501

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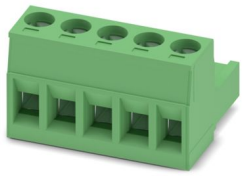
## MSTB 2,5/ 5-ST - PCB connector

1754504

https://www.phoenixcontact.com/us/products/1754504



PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

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

1765807

https://www.phoenixcontact.com/us/products/1765807

PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

# MSTBA 2,5/ 5-G - PCB header

1757501

https://www.phoenixcontact.com/us/products/1757501

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

1768794

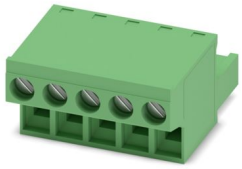
https://www.phoenixcontact.com/us/products/1768794

PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

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

1779440

https://www.phoenixcontact.com/us/products/1779440



PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

# MSTBA 2,5/ 5-G - PCB header

1757501

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

1779864

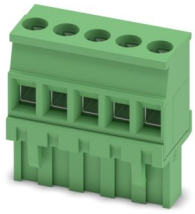
https://www.phoenixcontact.com/us/products/1779864

PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

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

1792045

https://www.phoenixcontact.com/us/products/1792045



PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

# MSTBA 2,5/ 5-G - PCB header

1757501

https://www.phoenixcontact.com/us/products/1757501

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

1792553

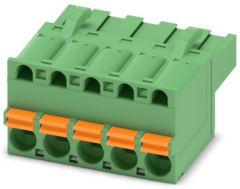
https://www.phoenixcontact.com/us/products/1792553

PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

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

1909249

https://www.phoenixcontact.com/us/products/1909249



PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

# MSTBA 2,5/ 5-G - PCB header

1757501

https://www.phoenixcontact.com/us/products/1757501

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

1909744

https://www.phoenixcontact.com/us/products/1909744

PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

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

1910063

https://www.phoenixcontact.com/us/products/1910063

PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

# MSTBA 2,5/ 5-G - PCB header

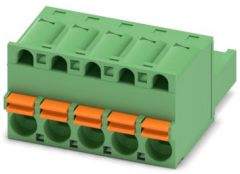
1757501

https://www.phoenixcontact.com/us/products/1757501

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

1910380

https://www.phoenixcontact.com/us/products/1910380



PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

## QC 1/ 5-ST-BUS - PCB connector

1921706

https://www.phoenixcontact.com/us/products/1921706

PCB connector, nominal cross section: 1 $mm^2$, color: green, nominal current: 10 A, rated voltage (III/2): 630 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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

# MSTBA 2,5/ 5-G - PCB header

1757501

https://www.phoenixcontact.com/us/products/1757501

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

1974766

https://www.phoenixcontact.com/us/products/1974766

PCB connector, nominal cross section: 2.5 $mm^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, 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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