# MSTBO 2,5/ 3-G1R KMGY - PCB header

2853763

https://www.phoenixcontact.com/us/products/2853763

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PCB headers, nominal cross section: 2.5 mm$^2$, color: light grey, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Pin, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MSTBO 2,5/..-G1R, pitch: 5 mm, connection method: pluggable, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, locking: without, type of packaging: packed in cardboard, Product with pin output on right side

## Your advantages

- Plug-in direction orthogonal to the PCB

## Commercial data

| | |
|---|---|
| Item number | 2853763 |
| Packing unit | 50 pc |
| Minimum order quantity | 50 pc |
| Sales key | AC08 |
| Product key | ACHADB |
| Catalog page | Page 323 (C-1-2013) |
| GTIN | 4017918450113 |
| Weight per piece (including packing) | 1.875 g |
| Weight per piece (excluding packing) | 1.849 g |
| Customs tariff number | 85366930 |
| Country of origin | PL |

# Technical data

## Product properties

| | |
|---|---|
| Product type | PCB headers |
| Product family | MSTBO 2,5/..-G1R |
| Product line | COMBICON Connectors M |
| Type | Header perpendicular to the PCB |
| Number of positions | 3 |
| Pitch | 5 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Number of potentials | 3 |
| Mounting flange | without |
| Pin layout | Linear pinning |
| Solder pins per potential | 1 |

## Electrical properties

| | |
|---|---|
| Nominal current $I_N$ | 12 A |
| Nominal voltage $U_N$ | 250 V |
| Contact resistance | 1.6 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) | 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 |

Material data - housing

| | |
|---|---|
| Color (Housing) | light grey (7035) |
| 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

| | |
|---|---|
| Pitch | 5 mm |
| Width [w] | 14.95 mm |
| Height [h] | 16.5 mm |
| Length [l] | 14.65 mm |
| Solder pin length [P] | 3.5 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 | 4 |

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) | 250 V |
| Rated surge voltage (III/3) | 4 kV |
| minimum clearance value - non-homogenous field (III/3) | 3 mm |
| minimum creepage distance (III/3) | 3.2 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) | 1.6 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 $R_1$ | 1.6 mΩ |
| Contact resistance $R_2$ | 1.6 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

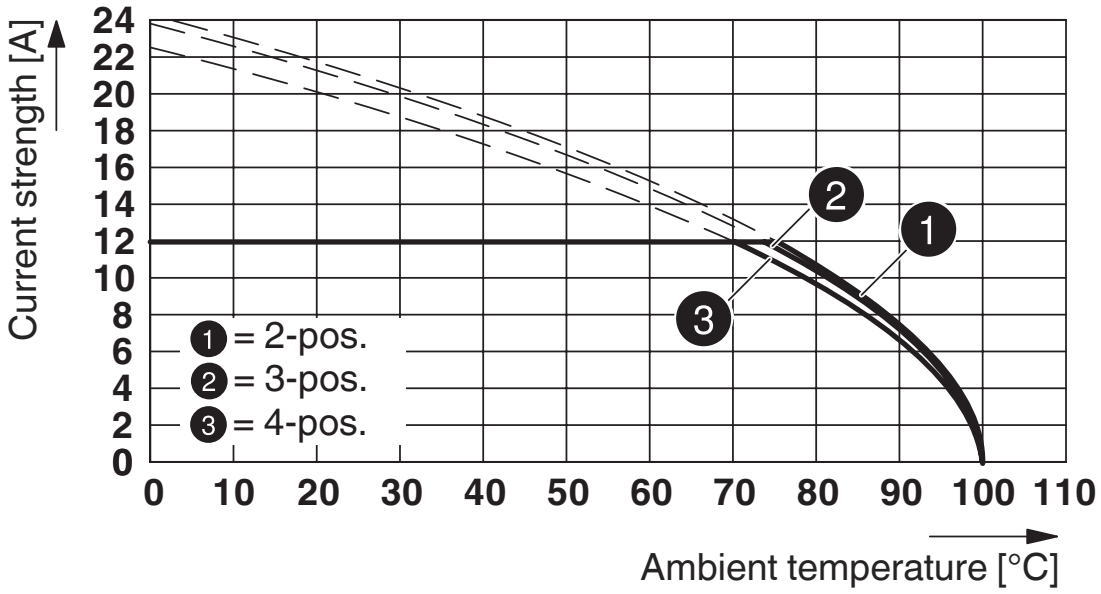
| | |
|---|---|
| Ambient temperature (operation) | -40 °C ... 105 °C (dependent on the derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 55 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |

## Packaging specifications

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

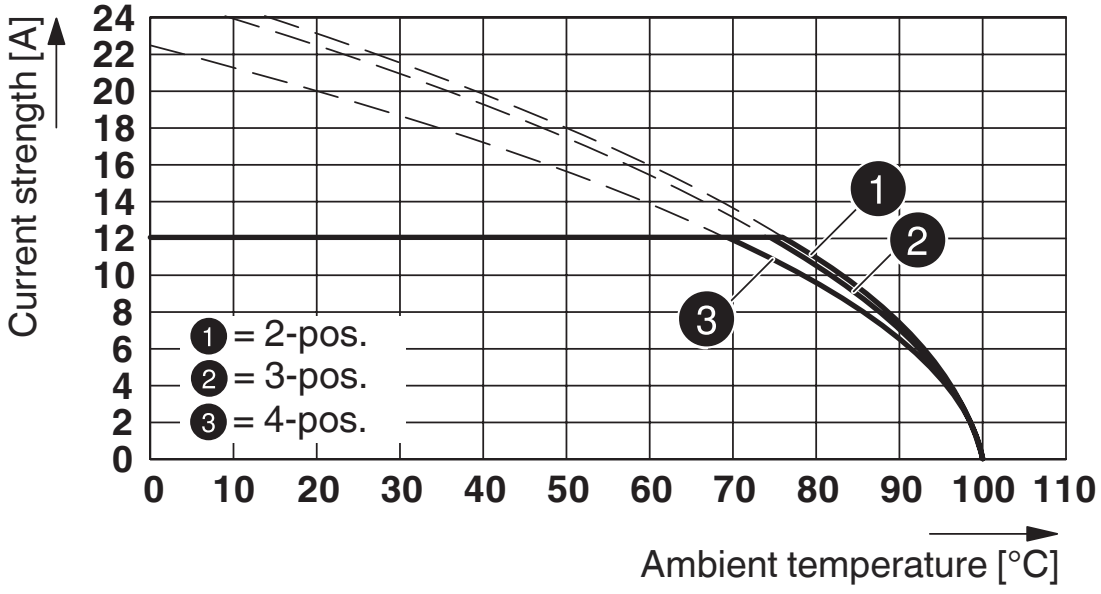
## Drawings

Diagram



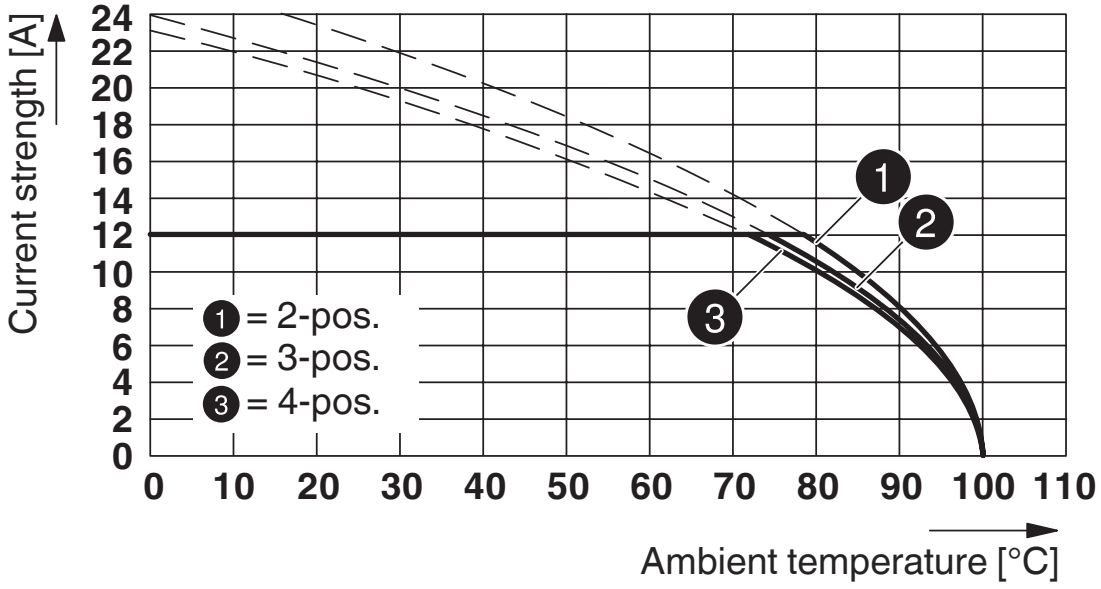

Type: MSTB 2,5/..-ST with MSTBO 2,5/...-G1R

Diagram



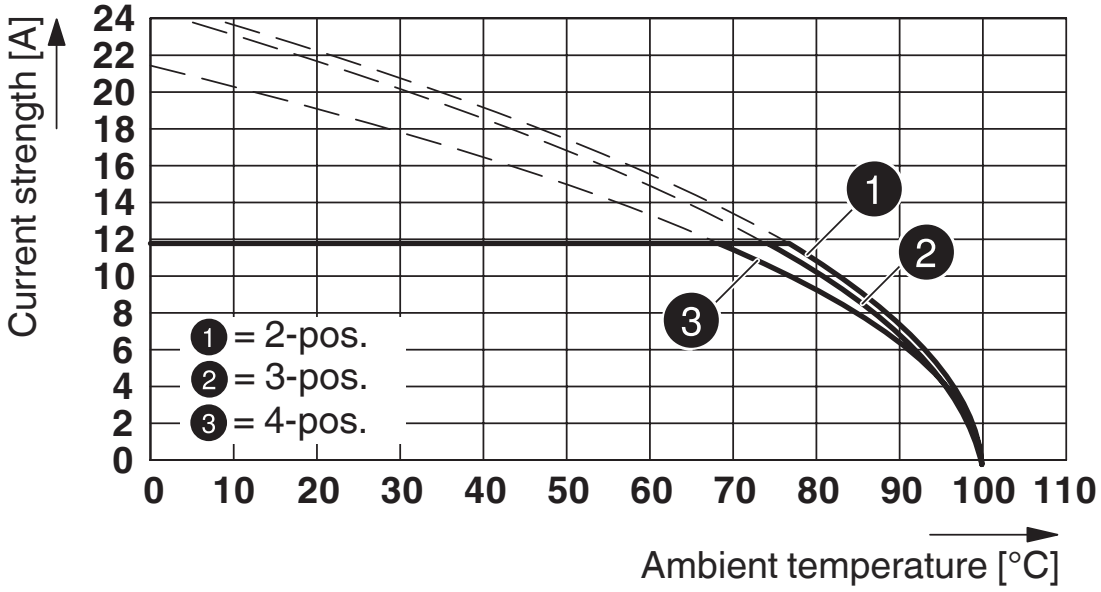

Type: FRONT-MSTB 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram



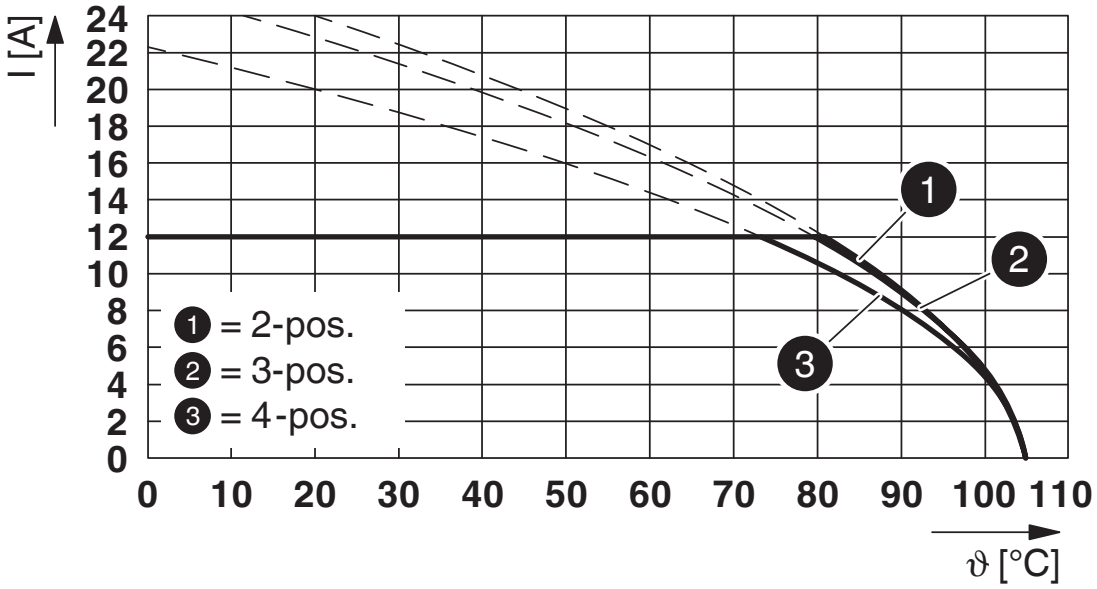

Type: MSTBT 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram



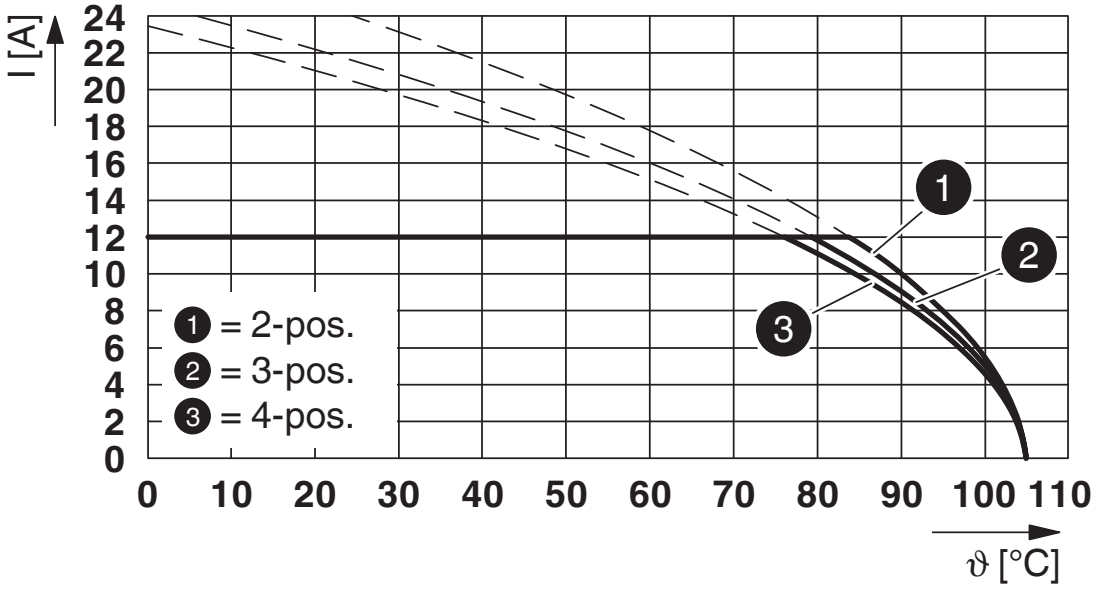

Type: MSTBP 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram



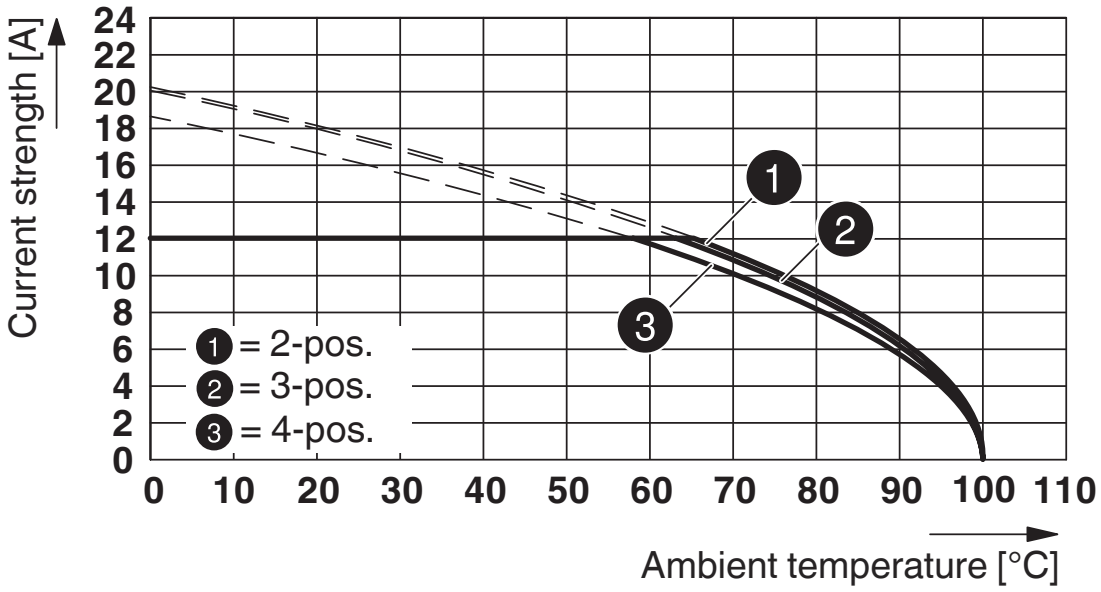

Type: FKCN 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram



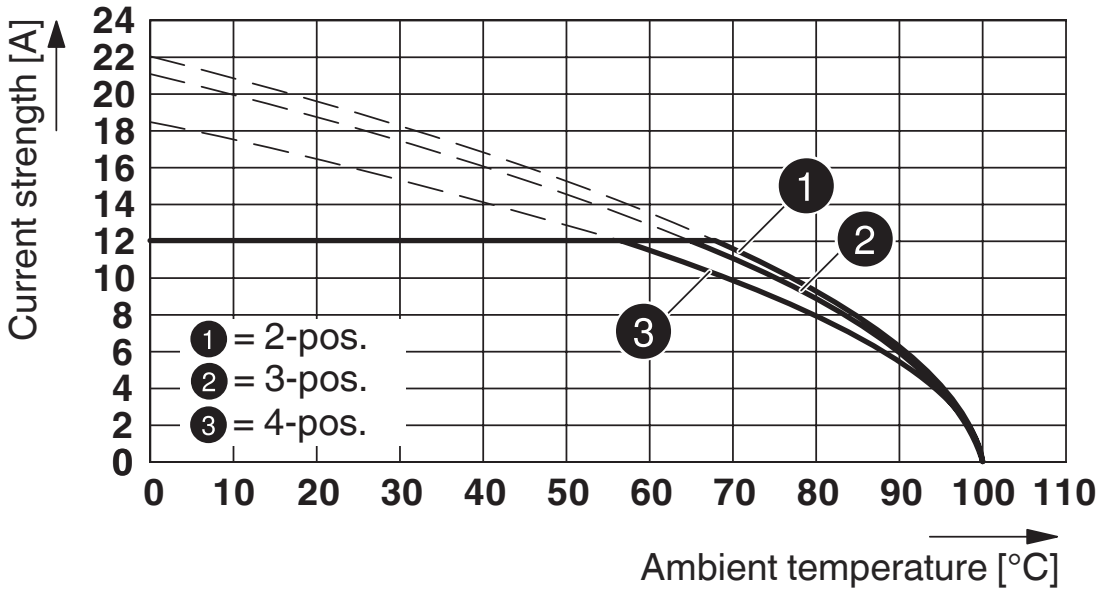

Type: FKCT 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram



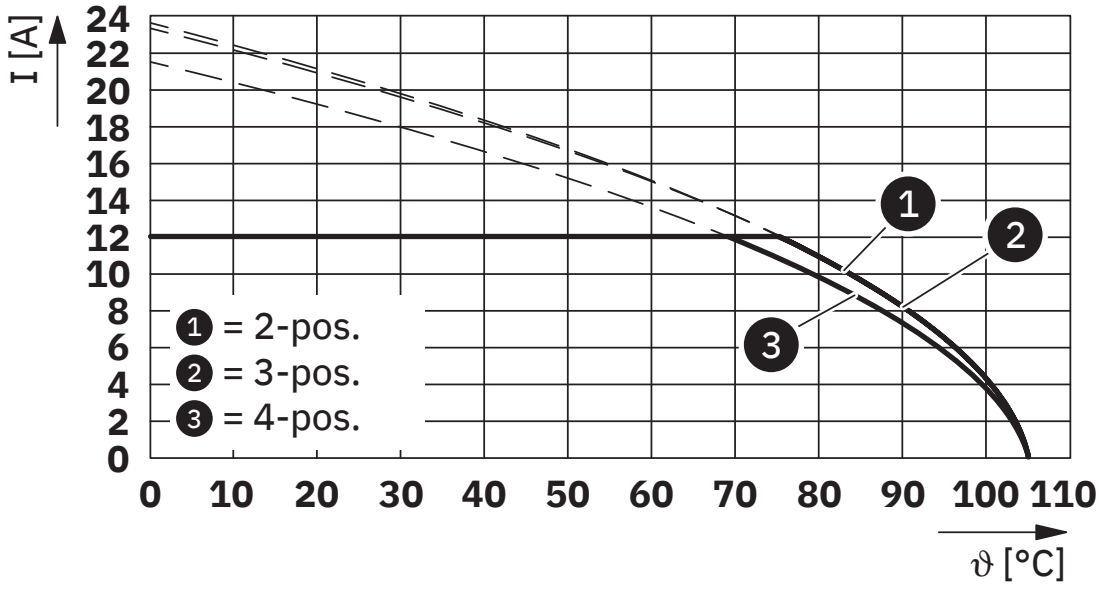

Type: SMSTB 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram



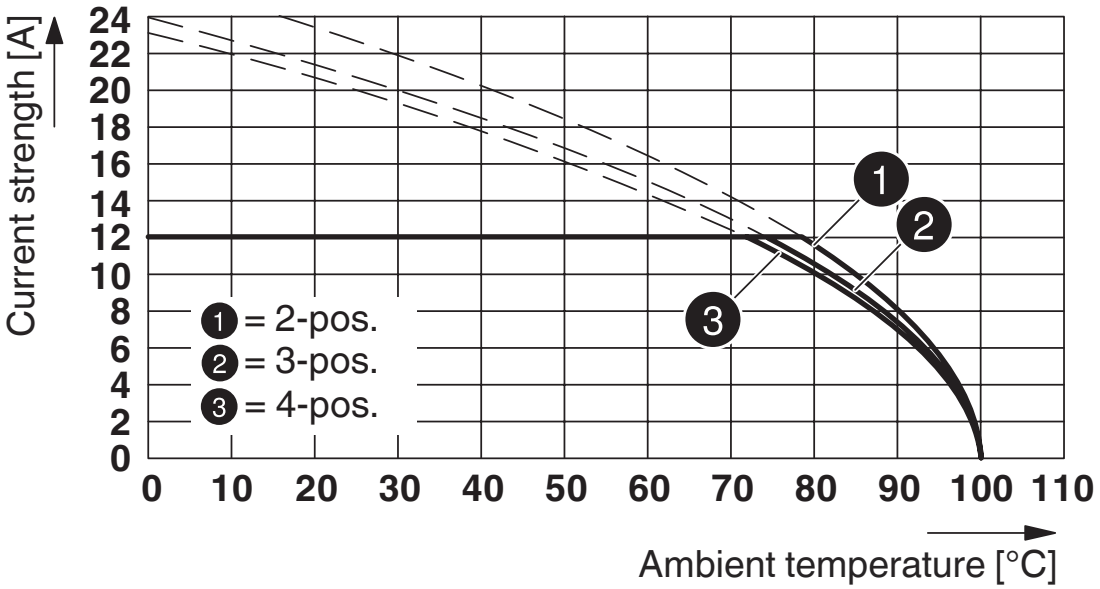

Type: MVSTB(R/W) 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram




Type: FKCVR 2,5/...-ST with MSTBO 2,5/...-G1R

Diagram




Type: MSTBTP 2,5/...-ST with MSTBO 2,5/...-G1R

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2853763

**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: E60425-20050718

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| Use group B | | | | |
| | 300 V | 16 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 | 8 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% |

## Mandatory accessories

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

1971947

https://www.phoenixcontact.com/us/products/1971947



PCB connector, nominal cross section: 2.5 mm$^2$, color: light grey, 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: MSTBT 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, pin layout: Linear pinning, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

### PSPT 2,5/ 3-ST KMGY - PCB connectors

2202345

https://www.phoenixcontact.com/us/products/2202345



PCB connector, nominal cross section: 2.5 mm$^2$, color: light grey, nominal current: 16 A, rated voltage (III/2): 300 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: PSPT 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, locking: without, mounting: without, type of packaging: packed in cardboard, Color of the spring lever: orange

## Accessories

## CR MSTBO-G1 - Coding section

2199618

https://www.phoenixcontact.com/us/products/2199618



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

## MSTB-BF - Accessories

1759981

https://www.phoenixcontact.com/us/products/1759981



Mounting flange, for fixing both ends of the header onto the PCB, green insulating material, with M 2 x 14 screws and nuts.

## MSTB-BL - Accessories

1755477

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

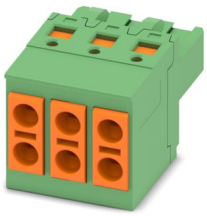


Keying cap, for forming sections, plugs onto header pin, green insulating material

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

1713842

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

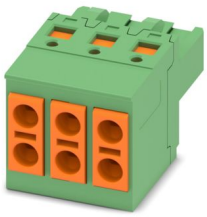


PCB connector, nominal cross section: 1.5 mm$^2$, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 6, product range: TVFKC 1,5/..-ST, pitch: 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

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

1715934

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

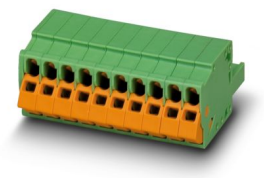


PCB connector, nominal cross section: 1.5 mm$^2$, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 6, product range: TVFKCL 1,5/..-ST, pitch: 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

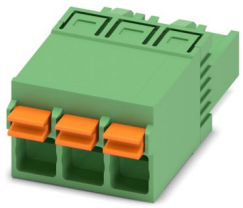


PCB connector, nominal cross section: 1.5 mm$^2$, color: green, nominal current: 12 A, rated voltage (III/2): 630 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: QC 1,5/..-ST, pitch: 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

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

1732755

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



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: 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

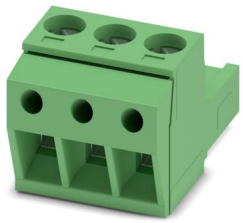


PCB connector, nominal cross section: 2.5 mm$^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MSTB 2,5/..-ST, pitch: 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

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

1765784

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



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: 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

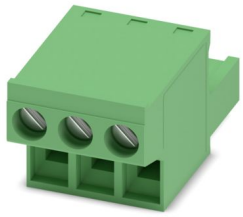


PCB connector, nominal cross section: 2.5 mm$^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: SMSTB 2,5/..-ST, pitch: 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

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

1779424

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



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: 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$^2$, 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

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

1792029

https://www.phoenixcontact.com/us/products/1792029



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: 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

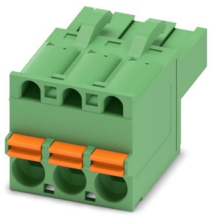


PCB connector, nominal cross section: 2.5 mm$^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: MVSTBW 2,5/..-ST, pitch: 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

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

1909223

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



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: 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$^2$, 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

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

1910047

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

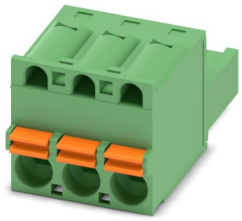


PCB connector, nominal cross section: 2.5 mm$^2$, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: FKCVW 2,5/..-ST, pitch: 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$^2$, 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

# MSTBO 2,5/ 3-G1R KMGY - PCB header

2853763

https://www.phoenixcontact.com/us/products/2853763

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

1921683

https://www.phoenixcontact.com/us/products/1921683

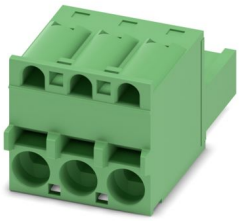


PCB connector, nominal cross section: 1 $mm^2$, color: green, nominal current: 10 A, rated voltage (III/2): 630 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: QC 1/..-ST-BUS, pitch: 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 $mm^2$, 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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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com