

MSTB 2,5/ 3-GF-5,08 BK - PCB header



1962024

<https://www.phoenixcontact.com/us/products/1962024>

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PCB headers, nominal cross section: 2.5 mm², color: black, 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: MSTB 2,5/..-GF, pitch: 5.08 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: Screw locking mechanism, mounting: Threaded flange, type of packaging: packed in cardboard

Your advantages

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

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1962024 |
| Packing unit | 1 pc |
| Minimum order quantity | 50 pc |
| Sales key | AA03 |
| Product key | AACSHD |
| GTIN | 4017918902704 |
| Weight per piece (including packing) | 3.04 g |
| Weight per piece (excluding packing) | 3.04 g |
| Customs tariff number | 85366930 |
| Country of origin | DE |

MSTB 2,5/ 3-GF-5,08 BK - PCB header



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Technical data

Product properties

| | |
|---------------------------|-----------------------|
| Type | Standard |
| Product line | COMBICON Connectors M |
| Product type | PCB headers |
| Product family | MSTB 2,5/..-GF |
| Number of positions | 3 |
| Pitch | 5.08 mm |
| Number of connections | 3 |
| Number of rows | 1 |
| Mounting flange | yes |
| Number of potentials | 3 |
| 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 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 | Wave soldering |
| Pin layout | Linear pinning |

Flange

| | |
|-------------------|--------|
| Tightening torque | 0.3 Nm |
|-------------------|--------|

Attachment on the PCB

| | |
|-------------------|--|
| Tightening torque | 0.3 Nm |
| Screw | Sheet metal screw ISO 1481-ST 2,2x6,5 C or ISO 7049-ST 2,2x6,5 C |

Material specifications

Material data - contact

| | |
|------|--|
| Note | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
|------|--|

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| | |
|---|-----------------------------------|
| 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) | black (9005) |
| Insulating material | PBT |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 225 |
| Flammability rating according to UL 94 | V0 |

Notes

| | |
|--------------------|--|
| 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 drawing | |
| Pitch | 5.08 mm |
| Width [w] | 25.4 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 |

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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 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 | 16 |

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 | IIIa |
| Comparative tracking index (IEC 60112) | CTI 225 |
| 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) | 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) | 3.2 mm |
| Rated insulation voltage (II/2) | 400 V |
| Rated surge voltage (II/2) | 4 kV |
| minimum clearance value - non-homogenous field (II/2) | 3 mm |
| minimum creepage distance (II/2) | 4 mm |

Environmental and real-life conditions

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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) |
| Sweep speed | 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 mΩ |
| Contact resistance R ₂ | 1 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 | 105 °C/168 h |
| Power-frequency withstand voltage | 2.21 kV |

Shocks

| | |
|-----------------|-----------------------------------|
| Specification | IEC 60068-2-27:2008-02 |
| Pulse shape | Semi-sinusoidal |
| Acceleration | 30g |
| Shock duration | 18 ms |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

Ambient conditions

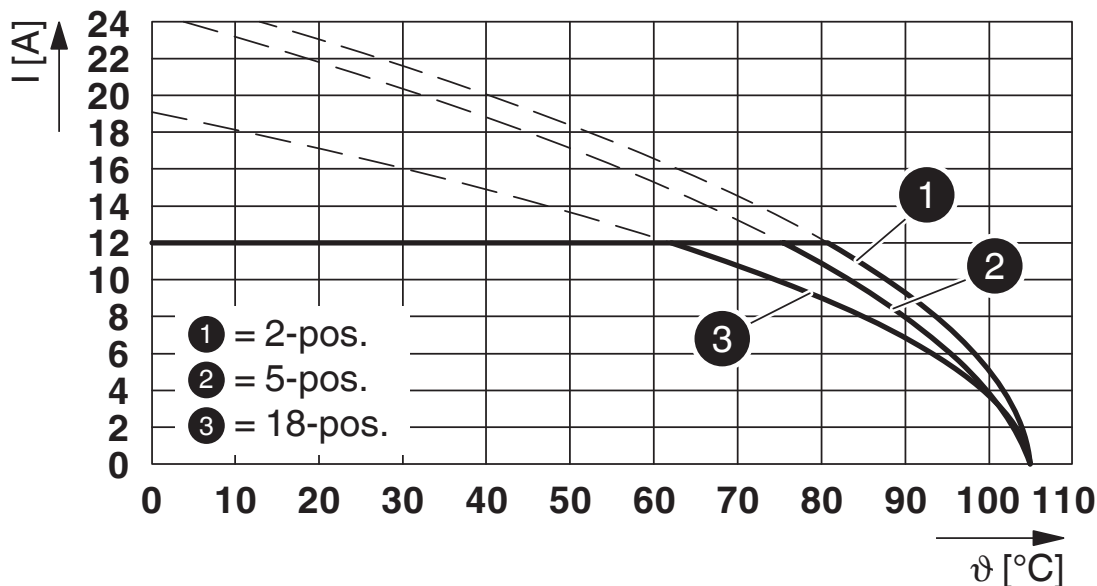
| | |
|---|---|
| Ambient temperature (operation) | -40 °C ... 105 °C (dependent on the derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |

Packaging specifications

| | |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

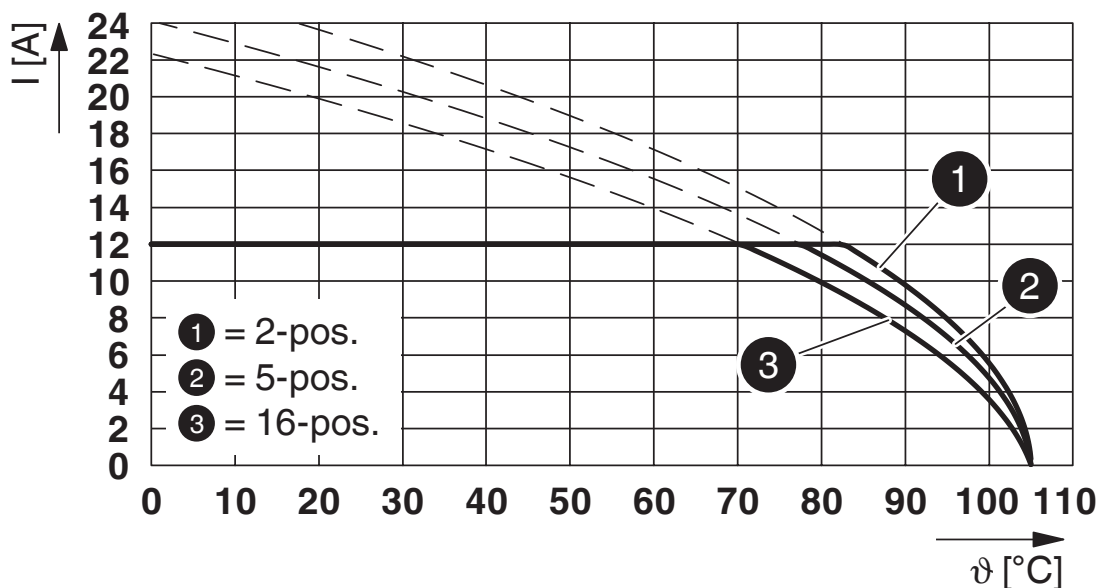
Drawings

Diagram



Type: FKCN 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

Diagram



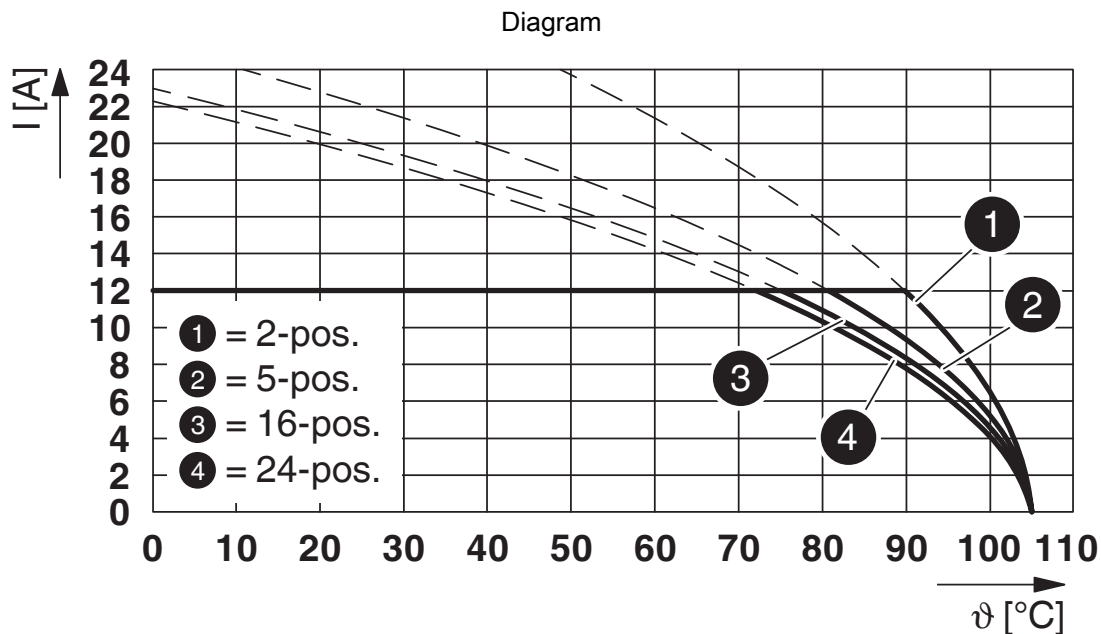
Type: FKCS 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

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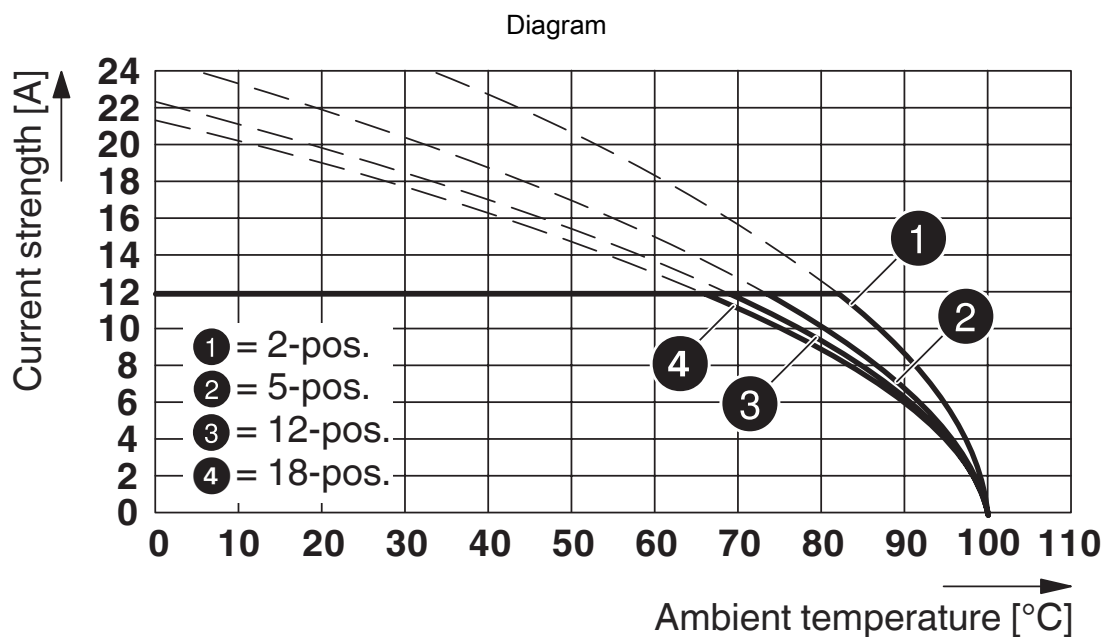


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Type: FKCO(R/W) 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



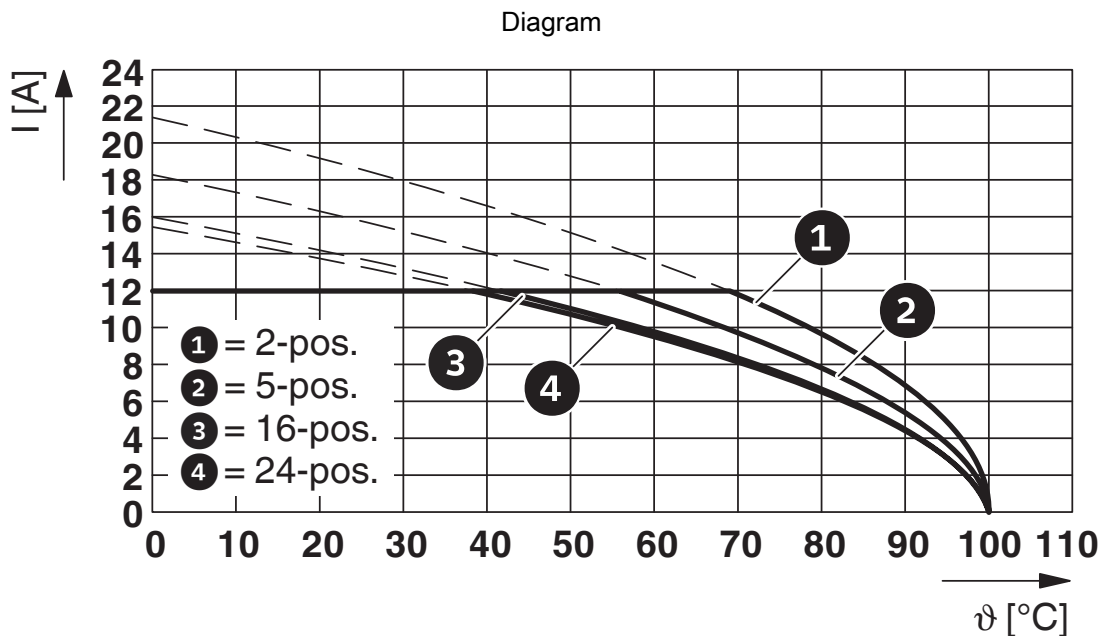
Type: FKCT 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

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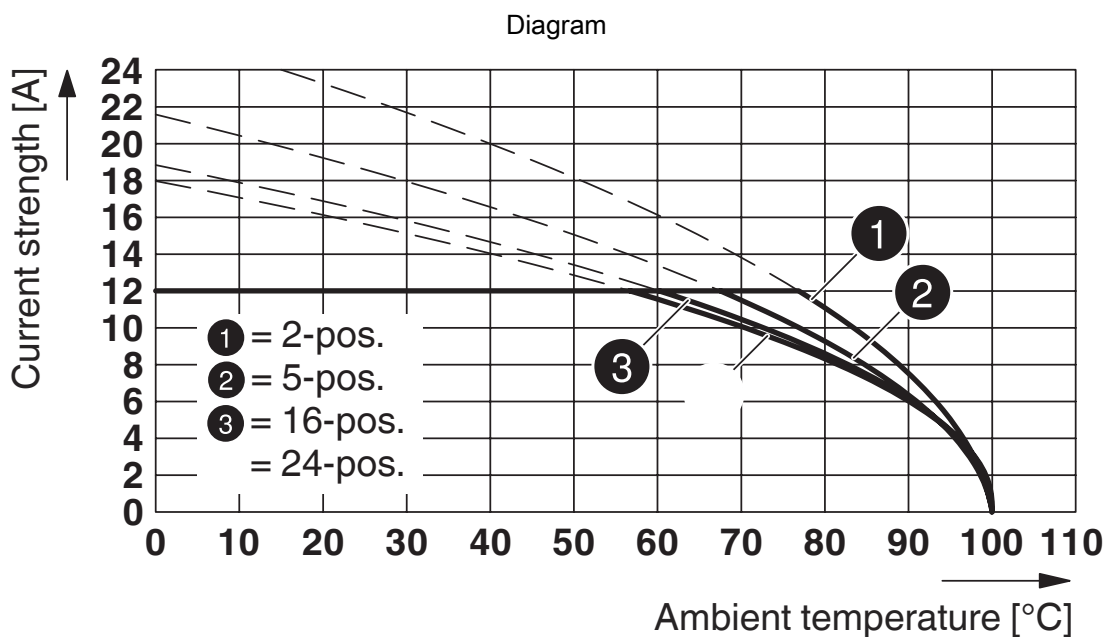


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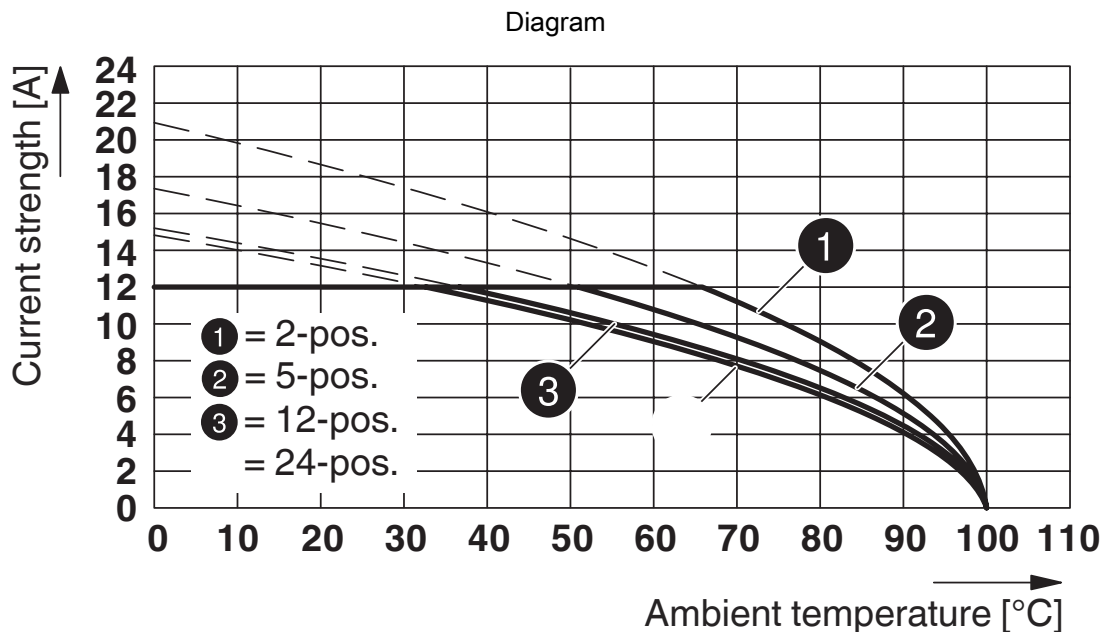
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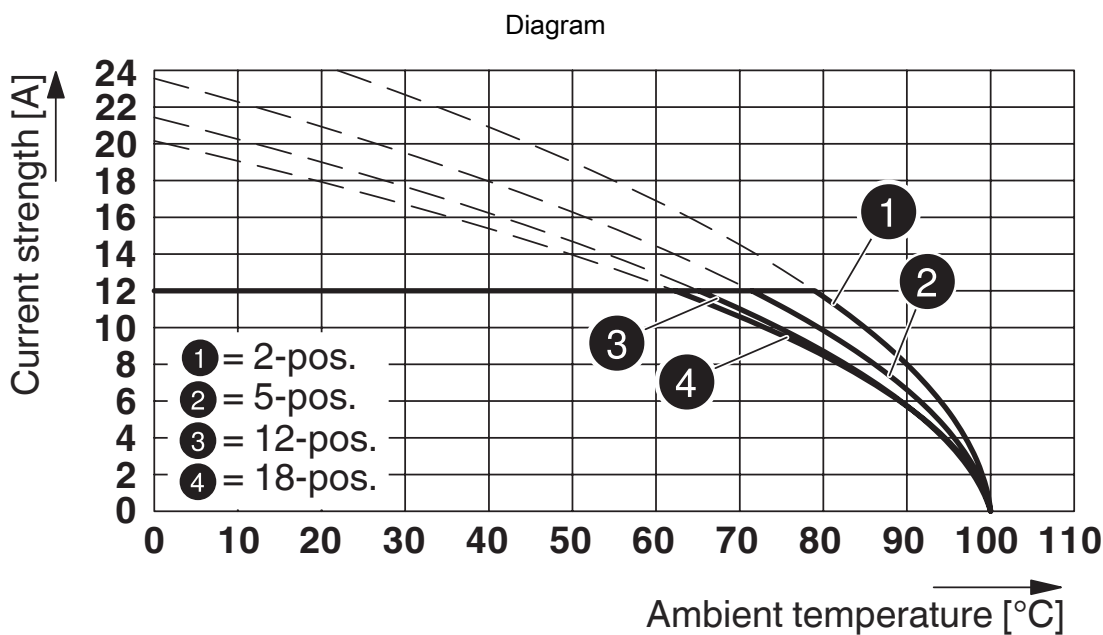
Type: SMSTB 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



Type: FRONT-MSTB 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



Type: MVSTBR 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08



Type: MSTBT 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

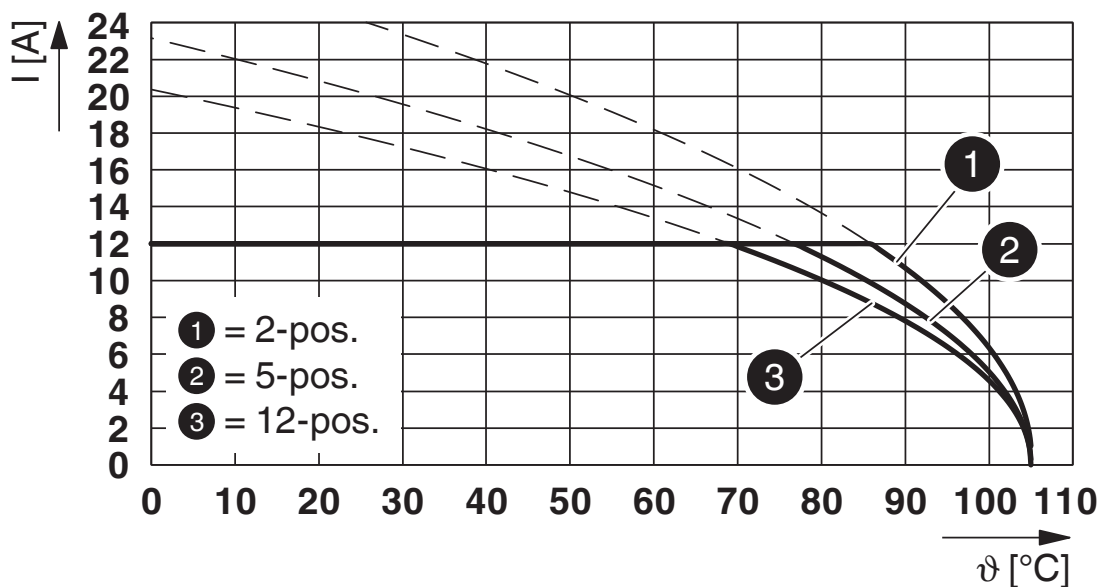
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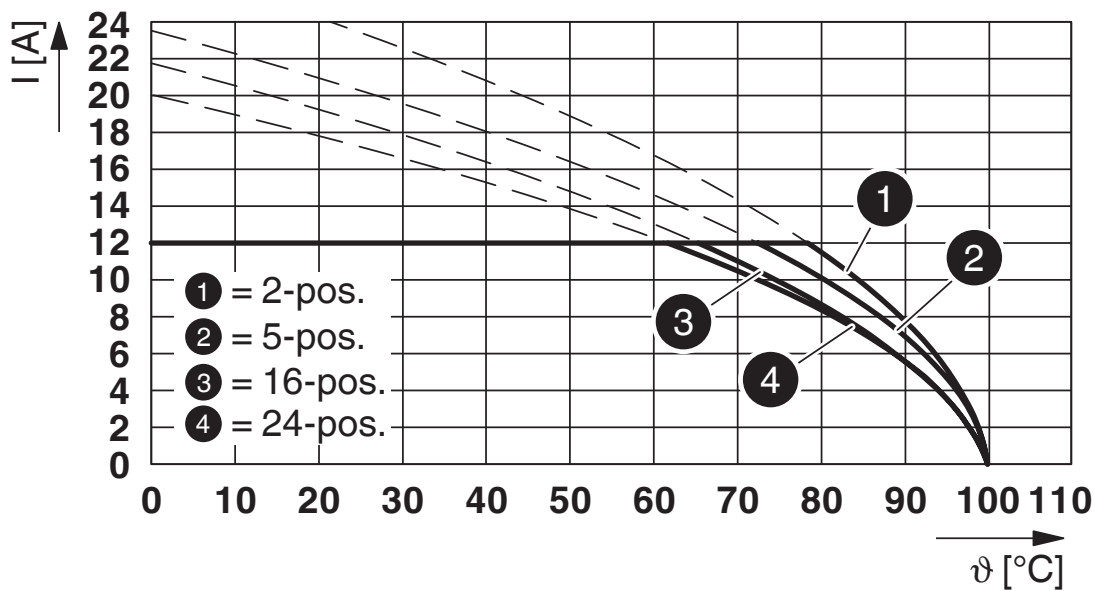
<https://www.phoenixcontact.com/us/products/1962024>

Diagram



Type: FKCVW 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

Diagram



Type: FKCVW 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

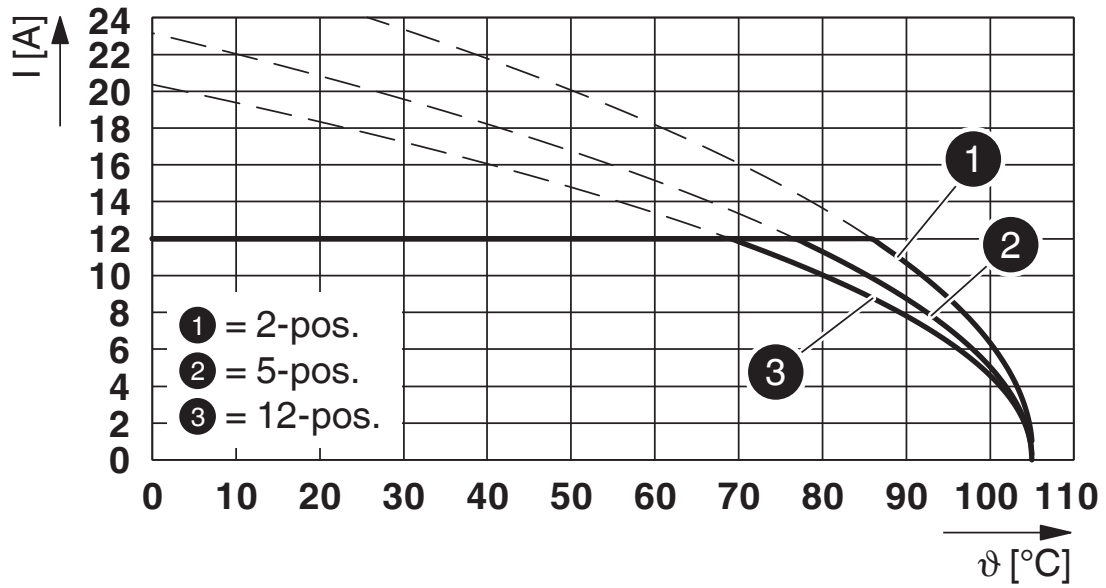
MSTB 2,5/ 3-GF-5,08 BK - PCB header



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Diagram



Type: FKCVR 2,5/...-STF-5,08 with MSTB 2,5/...-GF-5,08

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1962024>

|  CSA Approval ID: 13631-2585951 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | 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 | - | - |

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Classifications

ECLASS

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

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

MSTB-BL - Accessories

1755477

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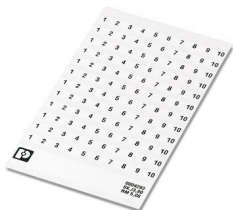


Keying cap, for forming sections, plugs onto header pin, green insulating material

SK 5,08/3,8:FORTL.ZAHLEN - Marker card

0804293

<https://www.phoenixcontact.com/us/products/0804293>



Marker card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 5.08 mm, lettering field size: 5.08 x 3.8 mm

MSTB 2,5/ 3-GF-5,08 BK - PCB header

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SK U/3,8 WH:UNBEDRUCKT - Marker card

0803906

<https://www.phoenixcontact.com/us/products/0803906>



Marker card, Din A4, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, Office printing systems, mounting type: adhesive, for terminal block width: 210 mm, lettering field size: 186 x 3.8 mm, Number of individual labels: 1440

B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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X-PEN 0,35 - Marker pen

0811228

<https://www.phoenixcontact.com/us/products/0811228>



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

FRONT-MSTB 2,5/ 3-STF-5,08 - PCB connector

1777811

<https://www.phoenixcontact.com/us/products/1777811>



PCB connector, nominal cross section: 2.5 mm², 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/...-STF, pitch: 5.08 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: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

MSTB 2,5/ 3-GF-5,08 BK - PCB header

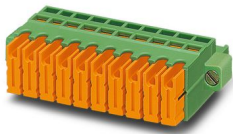
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QC 1/ 3-STF-5,08 - PCB connector

1883365

<https://www.phoenixcontact.com/us/products/1883365>

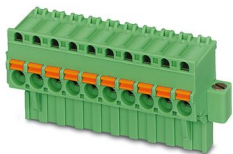


PCB connector, nominal cross section: 1 mm², color: green, nominal current: 10 A, rated voltage (III/2): 630 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: QC 1/...-STF, pitch: 5.08 mm, connection method: Displacement connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

FKCVR 2,5/ 3-STF-5,08 - PCB connector

1874112

<https://www.phoenixcontact.com/us/products/1874112>



PCB connector, nominal cross section: 2.5 mm², 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/...-STF, pitch: 5.08 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

MSTB 2,5/ 3-GF-5,08 BK - PCB header

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FKC 2,5/ 3-STF-5,08 - PCB connector

1873210

<https://www.phoenixcontact.com/us/products/1873210>



PCB connector, nominal cross section: 2.5 mm², 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/...-STF, pitch: 5.08 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

FKC 2,5/ 3-STF-5,08 BK - PCB connector

1973165

<https://www.phoenixcontact.com/us/products/1973165>



PCB connector, nominal cross section: 2.5 mm², color: black, 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/...-STF, pitch: 5.08 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

MSTB 2,5/ 3-GF-5,08 BK - PCB header



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TMSTBP 2,5/ 3-STF-5,08 - PCB connector

1853117

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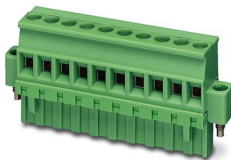


PCB connector, nominal cross section: 2.5 mm², color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Socket, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 6, product range: TMSTBP 2,5/...-STF, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard, The plug allows conductors to be looped through from module to module.

MVSTBR 2,5/ 3-STF-5,08 - PCB connector

1835106

<https://www.phoenixcontact.com/us/products/1835106>



PCB connector, nominal cross section: 2.5 mm², 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/...-STF, pitch: 5.08 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: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

MSTB 2,5/ 3-GF-5,08 BK - PCB header

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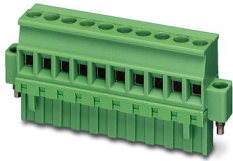
<https://www.phoenixcontact.com/us/products/1962024>



MVSTBR 2,5/ 3-STF-5,08 BK - PCB connector

1914205

<https://www.phoenixcontact.com/us/products/1914205>



PCB connector, nominal cross section: 2.5 mm², color: black, 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/...-STF, pitch: 5.08 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: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

MVSTBW 2,5/ 3-STF-5,08 - PCB connector

1834916

<https://www.phoenixcontact.com/us/products/1834916>



PCB connector, nominal cross section: 2.5 mm², 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/...-STF, pitch: 5.08 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: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

MSTB 2,5/ 3-GF-5,08 BK - PCB header



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MSTBC 2,5/ 3-STZF-5,08 - PCB connector

1809747

<https://www.phoenixcontact.com/us/products/1809747>



PCB connector, nominal cross section: 2.5 mm², 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: MSTBC 2,5/..-STZF, pitch: 5.08 mm, connection method: Crimp connection, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard, Corresponding female crimp contacts with current [A] and conductor cross section range [mm²] data: 10A/MSTBC-MT 0,5-1,0 (3190564); 10A/MSTBC-MT 0,5-1,0 BA (3190645); 12A/MSTBC-MT 1,5-2,5 (3190551); 12A/MSTBC-MT 1,5-2,5 BA (3190658). BA = Bandkontakte

MSTB 2,5/ 3-STF-5,08 BK - PCB connector

1961973

<https://www.phoenixcontact.com/us/products/1961973>



PCB connector, nominal cross section: 2.5 mm², color: black, 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/..-STF, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - without locking clip, plug-in system: COMBICON MSTB 2,5, locking: Screw locking mechanism, mounting: Screw flange, type of packaging: packed in cardboard

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