

CCV 2,5/22-GF-5,08-LR P26THR - PCB header



1827854

<https://www.phoenixcontact.com/us/products/1827854>

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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: Sn, contact connection type: Pin, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: CCV 2,5/..-GF-LR, pitch: 5.08 mm, mounting: THR soldering / wave 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: Lock-and-release locking system, mounting method: Lock & release threaded flange, type of packaging: packed in cardboard

Your advantages

- Designed for integration into the SMT soldering process
- Vertical connection enables multi-row arrangement on the PCB
- Screwable flange for superior mechanical stability
- Automatic locking and intuitive release through Lock and Release operating lever in contrasting color
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 1827854 |
| Packing unit | 52 pc |
| Minimum order quantity | 50 pc |
| Note | Made to order (non-returnable) |
| Sales key | AA03 |
| Product key | AACTBK |
| GTIN | 4046356953368 |
| Weight per piece (including packing) | 8.51 g |
| Weight per piece (excluding packing) | 7.163 g |
| Customs tariff number | 85366930 |
| Country of origin | DE |

1827854

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Technical data

Product properties

| | |
|---------------------------|--|
| Product type | PCB headers |
| Product family | CCV 2,5/..-GF-LR |
| Product line | COMBICON Connectors M |
| Type | Component suitable for through hole reflow |
| Number of positions | 22 |
| Pitch | 5.08 mm |
| Number of connections | 22 |
| Number of rows | 1 |
| Number of potentials | 22 |
| Mounting type | Lock & release threaded flange |
| Pin layout | Linear pinning |
| Solder pins per potential | 1 |

Electrical properties

Properties

| | |
|-----------------------------|--------|
| Nominal current I_N | 12 A |
| Nominal voltage U_N | 320 V |
| Contact resistance | 0.9 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 / wave soldering |
| Pin layout | Linear pinning |

Flange

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

Processing notes

| | |
|----------------------------------|-----------------------|
| 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

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1827854

<https://www.phoenixcontact.com/us/products/1827854>

| | |
|---|--|
| 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 µm - 5 µm Sn) |
| Metal surface contact area (middle layer) | Nickel (1.3 µm - 3 µm Ni) |
| Metal surface soldering area (top layer) | Tin (3 µm - 5 µm Sn) |
| Metal surface soldering area (middle layer) | Nickel (1.3 µm - 3 µm Ni) |

Material data - housing

| | |
|--|--------------|
| Color (Housing) | black (9005) |
| Insulating material | LCP |
| Insulating material group | IIIa |
| CTI according to IEC 60112 | 175 |
| Flammability rating according to UL 94 | V0 |

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 drawing | |
| Pitch | 5.08 mm |
| Width [w] | 121.87 mm |
| Height [h] | 14.6 mm |
| Length [l] | 8.57 mm |
| Installed height | 12 mm |
| Solder pin length [P] | 2.6 mm |
| Pin dimensions | 1 x 1 mm |

PCB design

| | |
|---------------|--------|
| Hole diameter | 1.6 mm |
|---------------|--------|

Mechanical tests

Visual inspection

| | |
|---------------|-----------------------|
| Specification | IEC 60512-1-1:2002-02 |
| Result | Test passed |

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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 Requirements >20 N | Test passed |

Insertion and withdrawal forces

| | |
|-------------------------------------|------------------------|
| Specification | IEC 60512-13-2:2006-02 |
| 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 | 20 |

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 175 |
| 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 |

1827854

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| | |
|---|------|
| 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

Durability test

| | |
|--|-----------------------|
| Specification | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level | 4.8 kV |
| Contact resistance R_1 | 0.9 m Ω |
| Contact resistance R_2 | 1.2 m Ω |
| Insertion/withdrawal cycles | 25 |
| Insulation resistance, neighboring positions | > 5 M Ω |

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 |

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 |
| Test directions | X-, Y- and Z-axis |

Shocks

| | |
|-----------------|-----------------------------------|
| Specification | IEC 60068-2-27:2008-02 |
| Pulse shape | Semi-sinusoidal |
| Acceleration | 20g |
| Shock duration | 11 ms |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

Railway application: Oscillation/broadband noise

| | |
|------------------------|--|
| Specification | DIN EN 50155 (VDE 0115-200):2022-06 |
| | IEC 61373:2010-05 |
| Spectrum | Long life test category 1, class B, body mounted |
| Frequency | $f_1 = 5$ Hz to $f_2 = 150$ Hz |
| ASD level | 0.964 (m/s ²)/Hz |
| Acceleration | 0.572 g |
| Test duration per axis | 5 h |
| Test directions | X-, Y- and Z-axis |
| Contact interruption | < 1 μ s |

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1827854

<https://www.phoenixcontact.com/us/products/1827854>

| | |
|--------|-------------|
| Result | Test passed |
|--------|-------------|

Railway application: Shocks

| | |
|--------------------------------|--|
| Specification | DIN EN 50155 (VDE 0115-200):2022-06 IEC 61373:2010-05 |
| Pulse shape | Semi-sinusoidal |
| Acceleration | 20g |
| Shock duration | 11 ms |
| Number of shocks per direction | 3 |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |
| Contact interruption | < 1 μ s |
| Result | Test passed |

Ambient conditions

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

Packaging specifications

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

Drawings

Diagram



Type: LPC 2,5/...-ST-5,08-LR with CCV 2,5/...-GF-5,08-LR P...THR

Diagram



Type: FKCN 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR



Type: MSTBT 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08 P...THR



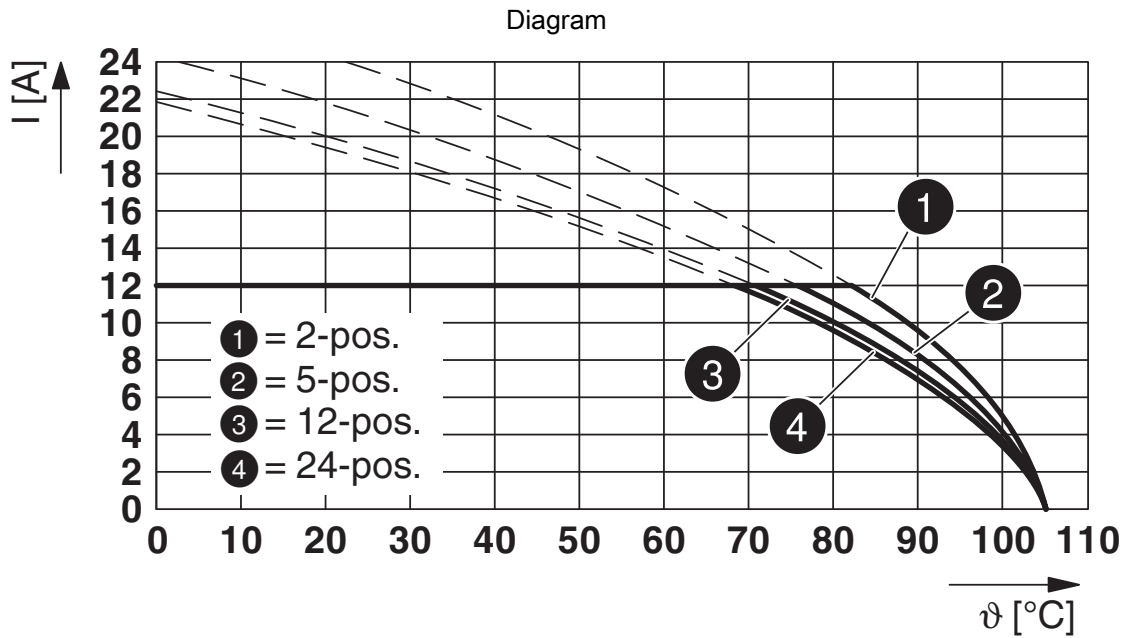
Type: MVSTB(R/W) 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR



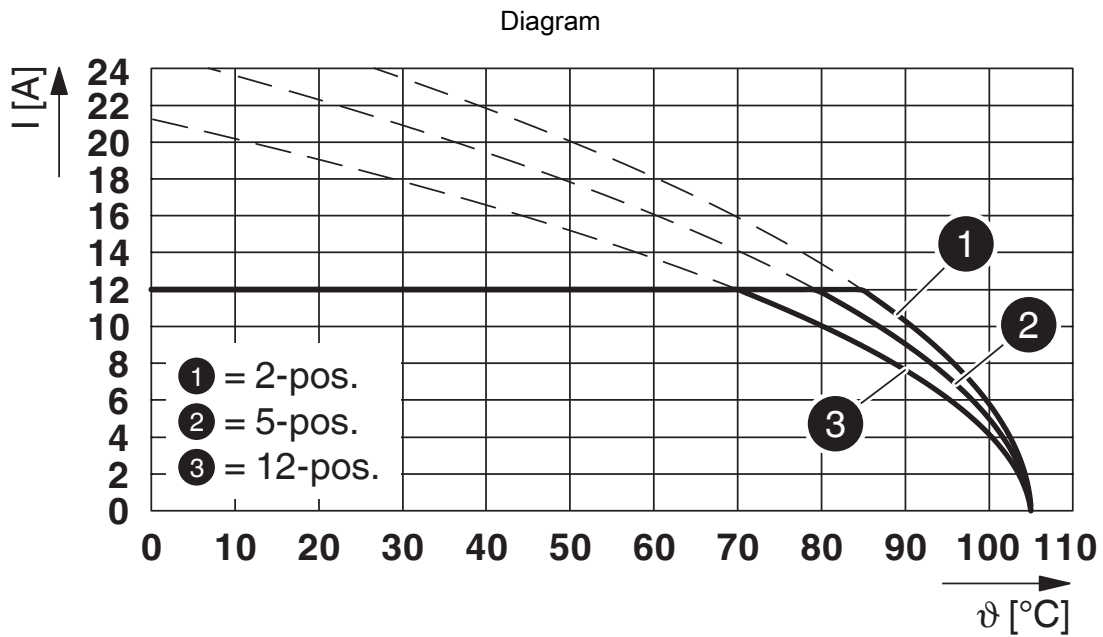
Type: SMSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR



Type: MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR



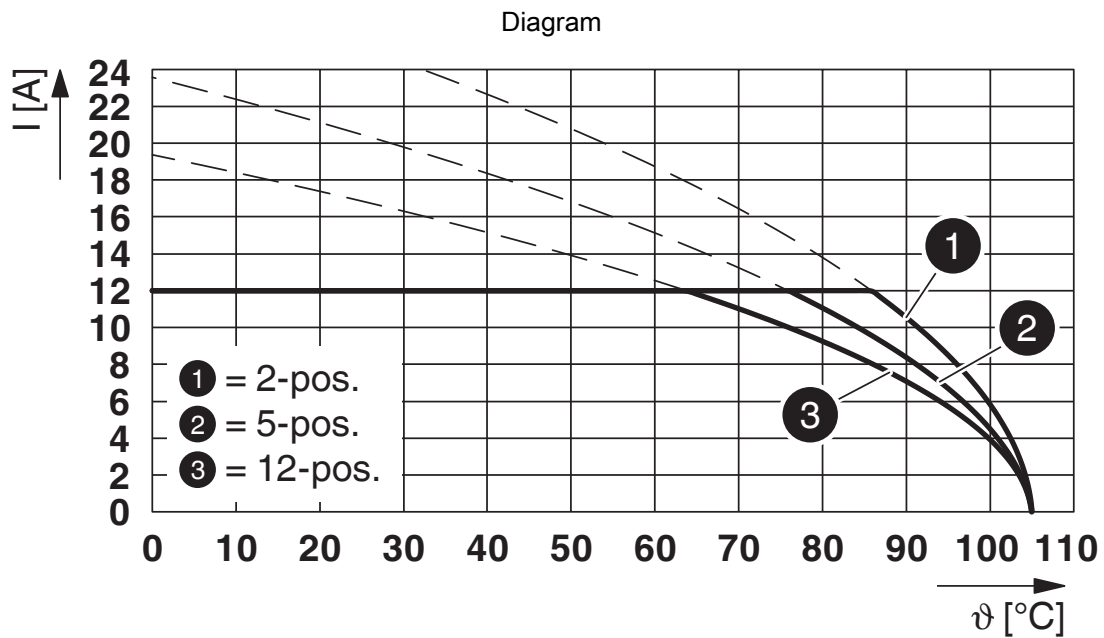
Type: FRONT-MSTB 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR



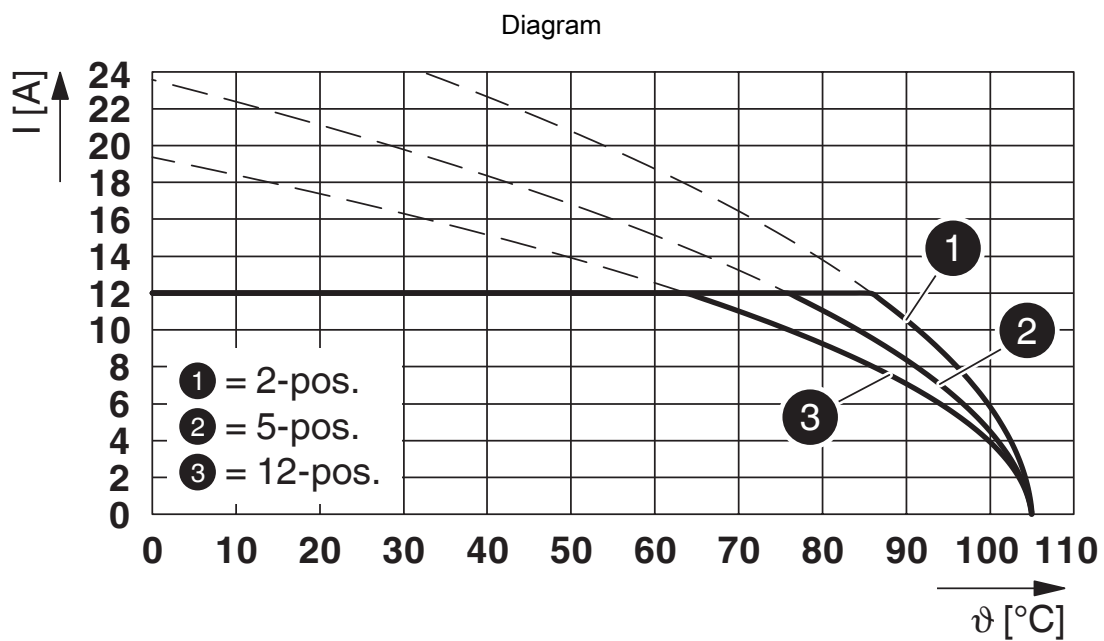
Type: FKCS 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR

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Type: FKCVR 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR



Type: FKCVW 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR

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Type: FKCT 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P26THR



Type: TFKC 2,5/...-STF-5,08 with CCV 2,5/...-GF-5,08-LR P...THR

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1827854>

|  cULus Recognized Approval ID: E60425-19931011 | | | | |
|---|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | | | | |
| Standard | 300 V | 16 A | - | - |
| D | | | | |
| Standard | 300 V | 10 A | - | - |
| Alternative 1 | 150 V | 15 A | - | - |

|  VDE report with production monitoring Approval ID: 40041286 | | | | |
|---|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 400 V | 12 A | - | - |

|  VDE approval of drawings Approval ID: 40050079 | | | | |
|--|-----------------------|-----------------------|-------------------|----------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 320 V | 16 A | - | - |

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27460201 |
| ECLASS-15.0 | 27460201 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002637 |
|-----------|----------|

UNSPSC

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

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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% |
|-------------------------------------|----------------------------|

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